Architectural thinking in practice

A qualitative study of architectural practice seen from the view point of a reflective practitioner

Hansen, Birgitte

DOI
10.4233/uuid:66359c20-47f8-4782-904c-721f839df4fb

Publication date
2018

Document Version
Final published version

Citation (APA)
Hansen, B. (2018). *Architectural thinking in practice: A qualitative study of architectural practice seen from the view point of a reflective practitioner*. [Dissertation (TU Delft), Delft University of Technology]. https://doi.org/10.4233/uuid:66359c20-47f8-4782-904c-721f839df4fb

ARCHITECTURAL THINKING IN PRACTICE

- a qualitative study of architectural practice
seen from the view point of a reflective practitioner

by: Birgitte Louise Hansen

title page

Architectural Thinking in Practice

- a qualitative study of architectural practice seen from the view point of a reflective practitioner

Dissertation
for the purpose of obtaining the degree of doctor
at Delft University of Technology
by the authority of the Rector Magnificus Prof.dr.ir. T.H.J.J. van der Hagen
Chair of the Board for Doctorates
to be defended publicly on
Tuesday, 25 September 2018 at 12.30 o'clock

by Birgitte Louise HANSEN
architect, The Royal Danish Academy of Fine Arts, School of Architecture, Denmark
born in Glostrup, Denmark

This dissertation has been approved by the promotors.

Composition of the doctoral committee:

Rector Magnificus	chair person
Prof. emeritus T. Fretton	Delft University of Technology, promotor
Prof. dr. ir. T.L.P. Avermaete	Delft University of Technology, promotor

Independent members:

Prof. dr. C. Wagenaar	Delft University of Technology (RUG)
Prof. dr. ir. L. Schrijver	University of Antwerp
ass. Prof. dr. K. Lotz, MAA	The Royal Academy of Fine Arts, Schools of Architecture, Design and Conservation, Copenhagen
Prof. dr. F. Nilsson	Chalmers University of Technology

Reserve member:

Prof. D.J. Rosbottom	Delft University of Technology

ACKNOWLEDGEMENTS

Quite a few people have through the years contributed to the dissertation in diverse ways. First of all, some have been of great help in the data collection. I here think of people in libraries and archives such as Det Kongelige Bibliotek, Stadsarkivet, Rådhusbiblioteket, Medicinsk Museion, Kunstbiblioteket, and KADK. I was permitted access to the archives of Bispebjerg Hospital and Hvidovre Hospital by respectively architect Vibeke Dalmark and architect Abelone Dyrup. People have guided me around at Kommunehospitalet (operations manager Erwin Koster Kristensen), Bispbejerg Hospital (security chief Alf Lewkovitch), and Hvidovre Hospital (technical designer Peter Farrington and architect Abelone Dyrup). Peter Lohfert, Gunner Gundersen and his daughters, Flemming Skude, Elsbeth and Karen Speyer have lend me material from their private archives as well as shared their personal stories. Secondly, many people have given me valuable insights into the subject for my case study research. Abelone Dyrup, project architect at Hvidovre Hospital, has been helpful in telling me about the history of the hospital and its functioning at the moment. The architects Gunnar Gundersen, Peter Lohfert, Jørgen Gabriel, Flemming Skude, Knud Holscher, Jan Søndergaard, and Asger Vincentzen have told me about their time and work at Krohn & Hartvig Rasmussen in the 1960s-1970s. Landscape architect Knud Lund Sørensen provided insight into the work of Morten Klint. And the architects Kim Holst Nielsen (Schmidt, Hammer, Lassen Architects), Mette Dan-Weibel (Arhus Architects), and Thomas Käszner (C.F. Møller Architects) told me about the extension and renovation of Hvidovre Hospital and shared their views on the old hospital by Krohn & Hartvig Rasmussen. Next to this, my brother Dr med Lars Jørgen Hansen has been helpful in the analysis of hospital organisation and in understanding the Danish Health System. My friend journalist Marianne Bom has given me guidance on communication. And senior researcher Patrick Healy informed me on matters of philosophy. Another group of people who played a part in the formation of my work are my former colleagues at TU Delft at the Chair of Interiors, Buildings, Cities with whom I have taught and exchanged thoughts for many years, who have shown their kind support for my work, and of which some shared their views on research such as Irene Cieraad, Mark Pimlott, Jurjen Zeinstra and Eireen Schreurs, not to speak of Christoph Grafe, without whom the research would not have begun, and who advised me as a co-supervisor the first three years of my research period. As I will explain in the dissertation, the way he thinks has informed the interpretive historical part of the research. Additionally, the methodological work developed in conversation with the many students who have passed through my courses in architecture analysis and research. Finally, this work would not have been possible without the generous and patient support of my two supervisors; professor emeritus Tony Fretton and professor Tom Avermaete. In each their way, they have shared their knowledge as well as provided a critical framework of thoughts within which my own thoughts, insights and knowledge could grow. I am grateful for this. Last but no least I would like to thank my family and friends for their interest and help, in particular Paul for his advice on many matters, his personal support and trust that this project would one day come to an end, not to forget Bjørn, my son, who has shown appreciation for my work and way of thinking in his own way.

PROLOGUE

Personal Motivation

The starting point for the research is my position as a practitioner. Besides working as an architect, I have for several years worked as a teacher in architecture analysis and architectural research. These two activities have been formative for the way in which I have approached the work.

Having a practice background made me think about how I could address issues that are practice related while working on an academic research. I did not want to leave my identity behind, nor did I want to exclude the knowledge I had developed through practice – on the contrary. I wanted to write about practice and use that in the academic context.

The link between the academic ‘theoretical world’ and the ‘real world’ of practice is essential to me. I investigate the world of practice and write about the things I discover. By doing so I can use evidence from practice as an illustration in an academic context, but my work can also be used in the field of practice to inform the discussion that is taking place there. The issues I deal with are thus founded in ‘the everyday life of practice’. This has lead me to do field work (observations), talk with architects and/or interview them, participatory processes, as well as studying what architects say and write while looking at the buildings and/or visual documents they make.

There is a descriptive - empirical – line in my work; to depict the data (information of different kinds) that I have found while researching as objective as possible. But there also is an analytical – a questioning – line in my work whose purpose is to find out, what has driven the architects (whose work I study) to think, act and articulate themselves as they do. I am thus not only interested in the objects the architects make, I am interested in the designer, the design and the decision-making process as a way of acting in the world actively, participating, critically. Next to this I am occupied with theories and methods that encourage a critical consciousness about being a practitioner - in teaching as well as in practice. From a ‘design-oriented practitioner’ I have become a ‘reflective practitioner’.

The reflective practice perspective has led me to ‘reflective teaching’ and ‘experiential learning’. The objective is to stimulate architecture students to think about who they are, where they come from, and why they are doing what they are doing. A big part of my work with students - as well as my own analytical work - thus takes as its departure point an interpretative culture historical tradition. I believe that the culture historical perspective is important. All design work - and thinking - be it a chair, an interior, a building or an urban plan - are embedded into a culture and thus a history about a group of people. They are architectural arte facts, historical documents and the materialisation of meaning at the same time. A ‘reflective interpretative practice’ therefore involves a search for the conscious and unconscious thoughts, values and ideas that informed the designer, with whom the designer worked, as well as what was going on in the surrounding society.

With the title ‘Architectural thinking in practice’ I want to communicate that I am studying the thoughts that underlie decisions in practice. By directing the attention to the field of thoughts - the though field - instead of the form,

I break with a convention that architecture is about buildings. Contrary to this I study what architects think and how they act in their practice from a reflective view point. To be able to do so, I have studied how I could describe the field of architecture from a practice perspective.

As will be evident from the dissertation, I do not define architecture in terms of form. My work is therefore not tied to a specific ‘school of architecture’ - or for that matter what constitutes ‘good’ architecture. My view on architecture is more fundamental. It is about ‘being an architect’ - the ‘modus operandi’, - and therefore hopefully something that all practitioners, whatever view they might have, can relate to in their work. What is more, in my work I will unfold how I do not think that architecture is a single knowledge field. Architects work in many different ways and in different areas of work.

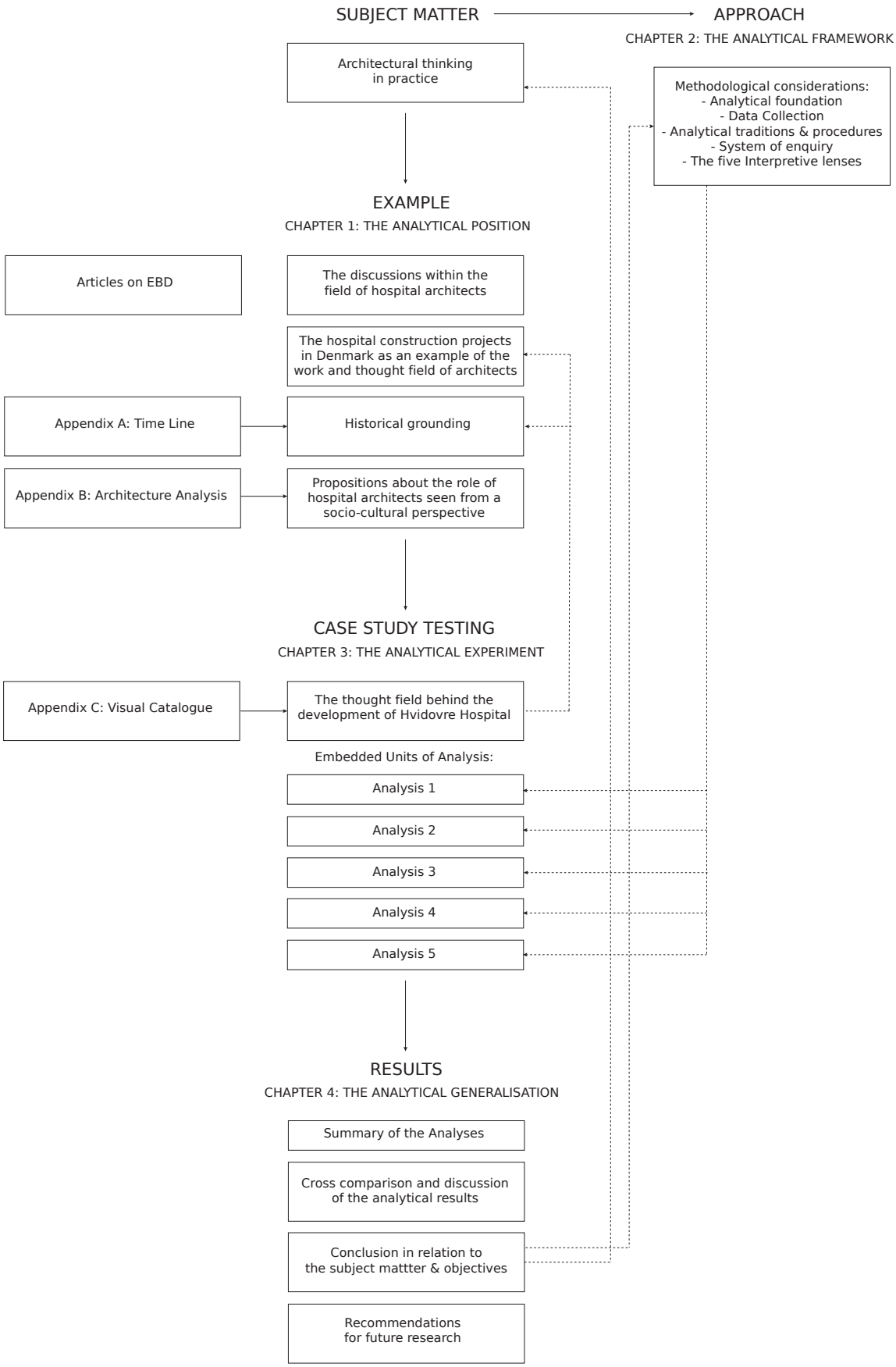
A fundamental reason for ‘opening up’ the notion of architecture is that the narrow scope on form has had a limiting effect on the perception of the discipline of architecture. Hence, there is a tendency to think that architects mainly design objects like interiors, cities or buildings. This is far from how practice works, and any practising architect knows that. Having an interest in the culture historical aspect of an architect’s work, one of the things I forward in my work is the interaction architects have with other actors in the decision process, whether these be clients, users, collaborative partners or craftsmen. The reason for that is that architects can with their visual and verbal work help stimulate debate about how people see, interact, live and work with each other, and possibly change some of these conditions. When I choose to focus on architecture as a thought field, it is exactly because I am interested in this significant aspect of an architect’s work - architecture as a reflective (and potentially transformative) practice.

My research work has led me to have talks with practicing architects about the motivation for their work. Common to most of them is that they do not have the time to think deeply about their practice and especially to write about it. This means that the knowledge developed in practice is not being recorded and voiced. It is tacit; embedded into their work. This is problematic in a time (and world) where architects are required to provide proof of virtually all actions they take. That very few architects map their decision-making process or write about their experience of being an architect is, the way I see it, also a sign of a disciplinary misunderstanding; that it is not considered that important. It is moreover a missed opportunity of showing people outside the architectural field what architects do, which is again mirrored and confirmed in the press, magazines, as well as in the books that are published about architecture. The lack of understanding makes the position of the discipline vulnerable. With my work, I would therefore like to show that it makes sense to reflect upon being an architect.

Last but not least, I have a modest hope that my practice-oriented research - and focus on architecture as a thought field - can influence the education of architects. It is my belief that architecture students should not only be trained to be good designers. They should be trained to reflect upon their own actions with a critical awareness and curiosity that will enable them to challenge the thought patterns that govern the field, and the way practice is performed. In my opinion, architects have an active role to play in the development of new socio-cultural ideas. It is therefore of importance, that they are able to work from a conscious, interpretative and reflective position; to question what is going on - and what their role in it is – or could be.

TABLE OF CONTENTS

3. THE ANALYTICAL EXPERIMENT


SUBJECT MATTER
APPROACH
CHAPTER 2: THE ANALYTICAL FRAMEWORK
Architectural thinking in practice
Methodological considerations:
- Analytical foundation
- Data Collection
- Analytical traditions & procedures
- System of enquiry
- The five Interpretive lenses
EXAMPLE
CHAPTER 1: THE ANALYTICAL POSITION
Articles on EBD
The discussions within the field of hospital architects
The hospital construction projects in Denmark as an example of the work and thought field of architects
Appendix A: Time Line
Historical grounding
Appendix B: Architecture Analysis
Propositions about the role of hospital architects seen from a socio-cultural perspective
CASE STUDY TESTING
CHAPTER 3: THE ANALYTICAL EXPERIMENT
Appendix C: Visual Catalogue
The thought field behind the development of Hvidovre Hospital
Embedded Units of Analysis:
Analysis 1
Analysis 2
Analysis 3
Analysis 4
Analysis 5
RESULTS
CHAPTER 4: THE ANALYTICAL GENERALISATION
Summary of the Analyses
Cross comparison and discussion of the analytical results
Conclusion in relation to the subject mattter & objectives
Recommendations for future research

STRUCTURE & LAYOUT

The dissertation consist of four main parts:

1. THE ANALYTICAL POSITION; in which I position my work academically

2. THE ANALYTICAL FRAMEWORK; about the methodological side of my work

3. THE ANALYTICAL EXPERIMENT; a case study research

4. THE ANALYTICAL GENERALISATION; about the overall analytical results

The four text parts are introduced by a PROLOGUE, the present text about STRUCTURE & LAYOUT as well as a text about THE HISTORY OF THE RESEARCH. At the end of dissertation is a BIBLIOGRAPHY and a SUMMARY.

The case study research described in THE ANALYTICAL EXPERIMENT consists of five separate analyses and forms the central body of the dissertation. It is related to a discussion of hospital architecture as described in the chapter THE ANALYTICAL POSITION as well as the methodological development and work as described in the chapter THE ANALYTICAL FRAMEWORK. These two chapters are, so to speak, the platform for the case study.

The main line of the argument is compiled into this document.
Next to this, 4 appendices are added: APPENDIX A, B, C and APPENDIX D.

> APPENDIX A is a time line.

> APPENDIX B is the result of a historical investigation, which has been used to formulate a series of propositions about the role of hospital architects; propositions that informed the case study research.

> APPENDIX C is a visual catalogue – a portfolio. The appendix is compiled in relation to THE ANALYTICAL EXPERIMENT.

> APPENDIX D is a compilation of three texts I wrote in the first phase of my research on health care architecture. They are a supplement to the argument I make in the chapter THE ANALYTICAL POSITION.

The layout of the dissertation into different units mirrors the way in which the research was approached. I will discuss this in HISTORY OF THE RESEARCH.

The ordering of my observations and work has played an important part in the formation of the research, and the way in which I think about architecture. The reason I work with a main document and appendixes is the issue of transparency. My ambition with the appendixes is to give access to certain aspects of my thought process – and to make source material accessible - for those who would like to have their own interpretive moment.

As the historical investigation mapped in APPENDIX A and APPENDIX B forms units on their own, they can be read as independent historical accounts.

The results of THE ANALYTICAL EXPERIMENT are recorded in a text format. Next to this I have compiled a series of visual artefacts per analysis. Some of these artefacts illustrate aspects, which I discuss in the textual part of the analyses. Others are added afterwards to deepen specific issues. They are therefore not only illustrations. They have a value on their own. The material disposed reflect the character and perspective of the analysis. There are thus minor differences in the approach, composition and layout.

All Danish quotes and texts are translated by myself.

HISTORY OF THE RESEARCH

What I propose in the dissertation is the result of an on-going reflective process of learning, framing and re-framing the research issues, and adjusting the focus in the search to define the core of my work.

The process contained a number of learning processes. One was related to the definition of the research subject; - what I wanted to study and why. Another was related to methodological considerations and data collection; - how I could perform the study. A third dealt with schools of thought; - how my work related to the work of others. A fourth learning process dealt with the analytical process and writing; - how I could write about my thoughts.

The research process was also characterized by being a part-time occupation. Next to working on the research I have been working as a designer, a teacher, a lecturer and sometimes a writer. Having to shift between different mind sets and types of activities over a long time span has been complex and made me look for interconnections I might otherwise not have found, between the field of practise and academia, between teaching and research. Links that are important to my work.

The history of the research can be divided into four phases. As the research field is hospital architecture, the first phase was primarily about positioning myself in the discourse on hospital architecture. My work was at that moment guided by a curiosity to understand how concepts of healing have been translated into architecture throughout history. At the advice of my supervisors I changed this rather conceptual scope to become instead an object-based examination in which I would look for the ideas that are embedded into buildings. My interest in the relationship between the field of architecture, medicine and culture then became an interpretative historical investigation of the development of hospital buildings in Copenhagen focusing on one particular building in specific; that of Hvidovre Hospital as a prime example of welfare state architecture. In this phase I did most of the archival work. However, analysing the buildings opened a door to a more methodological discussion. This soon developed into its own independent research track, which I define as the third research phase. The interaction with students played an important part in this work. The classroom was, so to speak, my analytical laboratory. In this phase the relationship architect - client - user became central to my work. The research was no longer about buildings but about motivations, ideas and interest - reflective practice. What made the architects think and act as they did? Who were the decision makers? What did the architects decide on in the decision process? And with what means did they work? The fourth research phase has primarily been about sorting and ordering information, interpretation and writing.

The thoughts I developed in phase one and two lead to the chapter THE ANALYTICAL POSITION. The methodological discussion in phase three lead to the chapter THE ANALYTICAL FRAMEWORK. The results of the fourth phase are displayed under the heading of THE ANALYTICAL EXPERIMENT as well as in the chapter THE ANALYTICAL GENERALISATION.

CHAPTER 1

THE ANALYTICAL POSITION

1.1 INTRODUCTION

As an example of 'ARCHITECTURAL THINKING IN PRACTICE' I have chosen to study the work field of architects within the hospital sector.

My professional experience with the healthcare sector began with the design of a general practitioner's clinic in Gilleleje in Denmark in 2005. This was followed by designs for another clinic in The Netherlands, a research at The Agricultural University of Sweden in gardens and parks for rehabilitation in 2006, as well as coordinating and teaching a Master class at TU Delft in buildings for post treatment recovery in 2007, at which point I also initiated the symposium Beyond Clinical Buildings. The analytical position, I take in this research, is the consequence of a series of questions, I at that point started to pose myself as a practitioner about the role and work of architects within the health care sector, which lead me to research and writing [1] .
In the course of developing my research I have participated in diverse conferences, workshops and symposia on health care design; occasionally as a speaker. Furthermore, I have during the years taught classes at the TU Delft in architecture analysis and research on issues such as care hotels, rehabilitation centres, care centres for elderly people with dementia, people with mental disabilities, disabled children, and health clinics. All of which has helped shape my view on the field of health care design.

While studying the discussions in the hospital debate and the work of architects, I became curious about the things I learned about the profession, and how architects position themselves in the field. The discussions on health care architecture made me aware that architects in the field of practice think differently about their role as architects. There are diverse ideas about design and research, the disciplinarity, confusion about terminology, diverging mind sets et cetera. What is more I became aware that people from the health care sector usually are not that informed about what architecture is. To them it plays a minor role which made me conscious of the conflicts within decision making. All of this meant, that I wanted to use my research to investigate, what the discipline has to offer and how to describe it, - to make it transparent for people inside and outside the profession. A purpose, that extends beyond that of health care architecture.

Finally, due to the complexity of hospital designs the field of hospital architecture has proved to be the perfect testing ground for a qualitative study of the role of architects and decision making. Here, issues of health and healing are mixed with; - economic considerations, - political ambition, laws and regulations, - medical motivations and ideas on nursing, - cultural matters, - hierarchy, power and bonding, - logistics and organisation, - human concerns and experiential feelings, - imagery and identity. Studying hospital architecture is to map the premises under which architects think, act and work in large scale buildings projects, how much they can decide on, who the decision makers are, what the interrelationship is between architects and other actors in the decision process. In fact, how architects commit to the responsibility of being a public person and an actor within society.

1 In APPENDIX D I have added three documents: -The first document is an article I wrote on Evidence-based Design seen from a practice perspective. In relation to this I interviewed 3 prominent actors in healthcare design in The Netherlands; Harry Abels from IAA Architecten, Bas Molenaar from EGM Architecten, and Don Murphy from VMX Architecten. These interviews made me aware, that there was no consensus in the field when it comes to research informed design. - The next document is a report I made on the Beyond Clinical Buildings symposium. An event where I had invited speakers from different disciplines (such as antrophology, performance art, installation art, interior design, architecture, and history) to speak about their experiences with the health care sector. It showed how the Arts and Humanities knowledge fields had ways to make observations and research that we architects could learn from. - The last document is an interview I made with the American architect and Evidence-based Design expert Kirk Hamilton in which we spoke about the challenges for architects in the healthcare sector and the role of research.

1.2 THE DISCUSSION WITHIN THE FIELD OF HOSPITAL ARCHITECTURE

PROBLEM STATEMENT

Seen from a practice perspective academic literature on hospital architecture is a field governed by books on the history of hospital architecture, building technology, or real estate and housing. If it is not some type of research informed handbook on how to make a supportive design. The perspective of 'architectural thinking in practice' is missing. It seems as if no academic research has been done on how architects think and act in this specific field.

Yet not all research is performed by academics. In The Netherlands architect offices, for example, complete quite a large amount of design research on healthcare architecture supported by either national or private funds[2]. 'Best Practice' books on hospitals belong to the same category[3]. These publications primarily document the imagery of contemporary healthcare architecture supplemented with very short description of the projects. Despite the lack of in-depth information these design-informed publications together with architecture competitions about hospital designs give an indication of what it is, that architects think, they can contribute with in the discussion on health care design. However, the decision process is not a part of the record. Neither is the design driven knowledge and experience or the analytical thought processes being documented and voiced. This means that reflection, evaluation, negotiation, critique, discussion and debate is not being represented as a part of the architect's work.

What is more, if architects working within the healthcare sector speak or write about their work in public, they will often explain, how it complies with the expectations, values and ideas of the health care market, - preferably that their architecture is a 'Healing Environment'[4] and/or an 'Evidence-based Design'[5], - instead of talking about architecture as an expertise in itself - architecture as a knowledge domain. The lack of perspective - and in a way professionalism - is probably related to a profound wish within the discipline of pleasing the client. It is also ideologically informed, as architect most often like to believe, that the environment can assist patient recovery. Despite the lack of a clear casual definition of what a 'Healing Environment' is, architects working within the health care sector are therefore keen to use the notion.

In the light of the impact that illness and disease have on people and society the focus on health and healing in hospital designs is an understandable aim. The term 'Evidence-based Design' has, however, introduced another

2 Stimuleringsfonds for Creative Industrie is one of these funds. It was formerly known as Het Stimuleringsfonds voor Architectuur. Another private fund is STAGG. It stands for Stichting Architectuuronderzoek Gebouwen Gezondheidszorg. It was founded in the 1970's by a group of architecture offices who worked with healthcare assignments. To my knowledge, the foundation is no longer active.

3 An interesting example of this type of publication is the Dutch Hedy d' Ancona publication, mapping 'best practice' projects within the health care sector In The Netherlands. It was initiated by Het Stimuleringsfonds Creative Industrie. These publications are more than just a collection of images.

4 The notion 'Healing Environment' originates from the United States. The theory behind it is, that environments could make a therapeutic contribution to the course of care. It often is a matter of belief more than it is science. This does not make it less relevant. It just makes it harder to proof - at least if you only use quantitative measures. An interesting aspect of the healing environment discussion is, that qualitative theories on public health have influenced the development of the built environment since Antiquity - not only in the Western World but around the globe. And it still is so. Hospitals should be healthy places and environmental qualities are seen as essential.

5''Evidence-based Design requires the designer to review the best available evidence from credible research. The goal is to create an unbroken chain of logic from research to design concepts'' (quote Kirk Hamilton, 2008). The term is related to the medical 'Evidence-based Medicine'. The name was chosen as it was analogous, convenient and compelling to the hospital client. I problematize and discuss 'Evidence-based Design' in the two articles: - 'Is meten weten?, Notities over Evidence-based Design vanuit ontwerpperspectief', published in the book *AU!, Bouwen aan de Architectuur van de zorg*, by Architecture in Health, College Bouw Zorginstellingen and Atelier Rijksbouwmeester, 2007, - and 'I believe that all architects are making hypotheses' published in the book *All designers use evidence*, by Architecture in Health and Platform GRAS, Utrecht, 2008. Both articles are included in APPENDIX D.

aspect into the design process than the often culturally based associative belief system in a 'Healing Environment', and that is the scientifically proven evidence. Through its name 'Evidence-based Design' insinuates that it is possible to measure the effect of architecture in, for example, quantitative goals like medical intake, blood pressure and recovery, which has had a positive effect on the perception of hospital architecture in the medical sector, as if architecture could work in the service of medical science. However, the origin of the 'Evidence-based Design' movement was intentionally not as 'transparent' in character and client minded as it seems[6]. Contrary to what most architects know, the objective of being an 'Evidence-based Designer' was not only about research and getting access to 'best possible research data', it was also about reclaiming a central position in the decision-making process. It was about power just as well as it was about rigor. One of the founding fathers of the Evidence-based Design movement, the American architect Kirk Hamilton formulated it as follows: ''When I entered the profession, it had a certain amount of respect. In the 30 years that I have been practicing, I have observed how the level of respect has diminished. Today architects have less control and power over projects than they did when I started. The role of the architect is squashed. The economists decide on the budget. The engineers decide on the systems. The contractors decide on the methods. The architect has a smaller and smaller role. I believe this is in part because we have not had good rigor. ... But if the architect could demonstrate that the last ten hospitals he or she designed out performed every other hospital in his country, then hospital clients would be begging him or her to be involved earlier in the process, and to have a greater role in the project's decisions. That's the potential of an Evidence-Based Design process for the profession''. (Hamilton, 2008: 17)[7]

A recent text 'Resurrection of the architect's profession' by the Danish architect Jan Søndergaard exemplify how the problems described by Kirk Hamilton on behalf of American architects are equal for architects in European countries like Denmark[8]. He wrote: ''The architect's position in the central part of the building processes is challenged and this is increasing. A development that expands solely through the disciplines continuous acceptance of the fact that competencies and knowledge fields constantly, imperceptibly and without particular attention, are transferred to other professional groups in the construction industry. ... In my opinion, we have reached a crossroad that challenge our beliefs about the proper functioning of the architects. Therefore, we must ask a number of questions to ourselves, to the architectural discipline. ...'' (Søndergaard, 2016: 71).

For Kirk Hamilton the solution to the problem is rigor and evaluation research. However, the evidence based data collection and processing could very well end up reducing architecture to become numbers in a statistical excel sheet - calculating cost benefits - that is economic measures. If the problem for the profession and its position in the decision field is a problem of awareness, visibility and explanation, an alternative strategy would be, that architects improve at explaining the value of how they think, act and work instead of primarily focusing on presentations of the objects they make. The lack of position is also the responsibility of architects themselves. It is

6 I here refer to my interview with one of the founding fathers of the Evidence-based Design movement - Kirk Hamilton - published in *All designers use evidence*, by Architecture in Health and Platform GRAS, Utrecht, 2008

7 Interview with Kirk Hamilton in 2008: 'I believe that all architects are making hypotheses', published in the book *All designers use evidence*, by Architecture in Health and Platform GRAS, Utrecht, 2008 (APPENDIX D)

8 KHR Architecture, Seventy year anniversary magazine, published 2016 – Jan Søndergaard is a senior designer in KHR, and known in Denmark, as he has been practising since the 1970s. KHR Architecture furthermore is – and have been - involved in several large scale projects in Denmark i.e. hospitals.

related to a confusion within the field about what the role of architects is and the definition of architecture. A view which apparently is shared by prominent actors on the contemporary Danish architecture scene like Jan Søndergaard, who in his article argued that architects need ‘’to reconsider the disciplines self-understanding, which forms the basis for the development of the individual architect … it is about identifying the disciplines holistic foundation … The architect must rethink (retrieve) him/her self’’ (Søndergaard, 2016: 17). Thus, Jan Søndergaard argues for introspection and a redefinition of the architect. This could, in my opinion, very well start by looking at practice as a knowledge field. This would also not go against an evidence-based practice, on the contrary, it would be about collecting qualitative evidence from the everyday life of practitioners. What nobody seems to stress in the discussion of Evidence-based Design, Kirk Hamilton said himself in a master class for critical care in Rotterdam: That ‘’it is literally impossible for a designer to make every decision on a project on the basis of serious investigations ... 99,9 % of the decisions that are made in designing, for example, a hospital are going to be made on the basis of consensus best practice in the profession’’ (Hamilton, 2008)[9]. That he by ‘best practice’ meant the views of physicians does not change the argument that design decisions can not entirely be based on rigorous data and research. Architectural decisions are also based upon intuition, reflection, cultural and social sensitivity, empathy, professional skills, knowledge, tradition and craft embedded in the discipline and in history, as well as the decisions are the result of an interaction with other actors in the field and with society. It is the purpose of the dissertation to demonstrate the value of this type of practice.

1.3 THE HOSPITAL CONSTRUCTION PROJECTS IN DENMARK

To illustrate the interrelationship between the work and thought field of architects and that of other major decision makers in the hospital field I will depart from a discussion of the development of hospital architecture in Denmark, specifically in Copenhagen in The Capital Region. To my knowledge, the hospital development in Denmark - and the accompanying debate - is similar to that in many other countries in the Western world, thereby making Denmark not a unique example but exemplary. What makes Denmark unique is the extent of the national hospital development.

THE ECONOMICAL AND POLITICAL PERSPECTIVE

Denmark is a small Scandinavian country in Europe with approximately 5.8 million citizens. It has a constitutional monarchy organized as a unitary parliamentary democracy and is known as a universal welfare state, meaning that all citizens have equal access to education, health care and support from the Danish government, independent of how much tax they pay or their societal situation. Different parties have through the years questioned the sustainability of the welfare model and measures have been made to cut costs where ever it was possible while maintaining the core of the idea. Under the heading of centralization, a structural reform took place in 2007, where the then 13 counties were turned into 5 counties - also called ‘Regions’. The idea was, that the new regions would have greater financial and professional sustainability. As the health sector is one of the large posts on the national budget, the structural reform made a demand on the five new regions, that they reorganize their hospital services. This means that a high number of hospitals have to be built, re-built and/or extended, and

9 Kirk Hamilton, Master Class ‘Evidence-based Design for Critical Care’, Berlage Institute, Rotterdam, 2008

that other hospitals are being closed down. The need to modernize the hospital structure and the associated investments in physical facilities new technology and equipment forms part of the budget agreement between the Danish Government and the Danish Regions in 2008. 'Kvalitetsfonden' ('The Quality Fond') was established as part of the Danish Governments quality reform in 2007. 25 billion Danish Kroner – equaling 3.37 billion Euro - of the funds resources are to be spend on government co-financed investment in a new and improved hospital structure. The regions own financial contribution of approximately 40 % is added to this, bringing the total investment pool to approximately 41.4 billion Danish kroner = 5.54 billion Euro (2009 prices)[10]. This seems like a lot of money especially when the existing hospitals were of a rather good standard and well-functioning. The governmental estimation is though, that the re-organization will make it possible to save money in the operation of the new and re-built hospitals, thereby making it a reasonable action seen from an economical perspective.

The digital forum and web site www.godtsygehusbyggeri.dk created by the Danish Regions gives an overview of the Danish hospital construction projects[11]. Of the total of 38 hospital projects that are to be realized, 16 projects have been given a grant from the Danish government. The rest are funded by the regions themselves. Six of the eighteen projects are *Supersygehuse* ('Super Hospitals') meaning superb and very big hospitals. The purpose of the Danish hospital construction project is according to the web site to provide: - a better and more coherent patient treatment, - increased patient safety, - efficiency, - and higher quality[12]. Concentrating on The Capital Region, the largest region in Denmark with approximately 1.7 million inhabitants, we see, that they have made their own hospital plan 'Hospitalplan 2007'. The plan was developed in the year 2006 with the assistance of 40 professional health councils and submitted for public hearing in 2007. The plan has later been modified into what is known as 'Hospitalsplan 2020'. In this, four policy objectives are described saying that the Capital Region with its hospital construction projects should focus on achieving: - patient centered care, - high professional quality and safety, - an expansive knowledge environment, - as well as a green and innovative metropolis[13]. The purpose of the hospital projects within the Capital Region is thus not only centered around creating a high quality patient care in line with the national ambition of the Danish Hospital Construction Projects as described on www.godtsygehusbyggeri.dk, it is to stimulate knowledge innovation, as it is to create an attractive metropolis thereby making it more feasible that new companies will settle in the region giving them an economical advance over the other regions. These points - seen from an economic and political perspective - not only are about patient care but about commercial interests, business and regional politics.

THE DISCUSSION ON ARCHITECTURE

Neither 'Hospitalsplan 2007' nor 'Hospitalsplan 2020' are very specific in describing the architecture of the new hospital projects in the Capital Region. In a two page note, on 'The quality in the Capital Regions hospital construction projects' the regional council stated that the intention of the hospital construction projects is to create the best possible circumstances for

10 http://www.danishhospitalconstruction.com/Goals-and-management

11 Danske Regioner is an employer organisation for the five Danish regions. Through the web site it is possible to get access to information about all the Danish hospital construction projects on line as well as their developments.

12 www.godtsygehusbyggeri.dk/maal og styring/Principper for godt sygehusbyggeri

13 Hospitalsplan 2020, page 16.

an efficient operation[14]. This complies with the idea that the purpose of the hospital construction project is to save money. Quality is here understood as: - flexibility in the built environment, - focus on patient safety, - low and easy maintenance, - optimization in terms of energy use, - and that the buildings inside and outside support their purpose. Another point is added under the heading: 'Aesthetics, Architecture and Art': ''There are many examples that aesthetically weighted hospitals support cure. Patients admitted to these departments are hospitalized fewer days compared to patients with similar symptoms and the same procedure in a conventional department. There are a number of analyses of the factors that affect the healing in addition to treatment: light, sound / noise, view / vision, colors and art '' (Note by the Capital Region, 2008). The report 'The Capital Regions recommendations for Healing Architecture' from 2010[15] is another example of this view. The report was written by a group of 16 people who were appointed by the Capital Region due to their senior position in the development of the larger hospital construction projects in the region. According to the report, the group attended two seminars with American lecturers and four workshops, and it is stated that these inputs were formative for the report. Who the American lecturers were, is not mentioned, but if you look at the literature list the name Roger S. Ulrich is mentioned as is 'The Center for Health Design' - both related to Kirk Hamilton and that of Evidence-based Design[16]. This is an example of how an American discourse on hospital architecture is now informing the Danish[17]. It also points at the fact that the way hospital architects in Denmark think shares similarities with how architects operating within a liberal market like the US are compelled to think. It is market driven. On the first page in the Danish report it is thus emphasized that a hospital can benefit economically from Healing Architecture. This shows how the argument for a 'Healing Environment' is influenced by economic reasoning.

An interesting aspect of the Capital Regions report on 'Healing Architecture' is that it is written with a certain amount of ambiguity. On the one hand, they insinuate that a 'Healing Environment' could improve healing, on the other hand, they say it is hard to prove[18]. At some point they write that a 'Healing Environment' is about 'Patient Safety'[19], whereas in the beginning they define 'Healing Environments' as sensorial aspects like daylight, smell, colours, sounds, atmosphere, views to the outside and nature related to psychological feelings of privacy, comfort and ease. Finally, and most importantly, the term 'Architecture' is more or less not defined. It is as if this is not important. That the report for a large part is written by architects makes this surprising. It may be that the report was primarily written for

14 I here refer to the note: 'Kopi af sagsfremstilling brugt ved fremlæggelse for regionsrådet af Region Hovedstadens Kvalitet i byggeprojekter i april 2008'.

15 'Region Hovedstadens anbefalinger for Helende Arkitektur', Rapport maj 2010, made by Region Hovedstaden.

16 Roger Ulrich is not an architect. He is known for his research on how views could have a positive effect on healing. Internationally he is the most cited researcher on healthcare designs. Together with Kirk Hamilton he was the co-founding director of the Centre for Health Systems and Design at Texas A&M University in The United States.

17 The same is true for other countries in Europe like The Netherlands and Sweden. This is a development which has been growing over the last ten years. For an article I wrote in 2007 on Evidence-based Design for the book 'AU! Bouwen voor de Architectuur' I argued, that European architects are probably less keen to adopt a scientific approach to architecture - like the one insinuated by Evidence-based Design. (See APPENDIX D). This statement was based on a series of interviews I had then made with architects in The Netherlands. What I see now, is, that the rhetoric is commonly used everywhere. Primarily the notion Healing Environment is popular among architects.

18 This complies with a study that was made in The Netherlands by Drs. K. Dijkstra and professor A. Pruyn associated with the Faculty of Behavioural Sciences of The University of Twente. From an international collection of around four thousand 'Healing Environments' related publications they tried to uncover what exactly had been proven. After the first selection 533 studies remained and after a second selection round, only thirty. This demonstrates there might be flaws or at least uncertainties in the argumentation for a 'Healing Environment'.

19 'Patient Safety' is a discipline within Evidence-based Design which is about controlling and preventing airborne diseases, reducing infections spread by contact, reducing infection risks by advocating single-bed rooms, designs to reduce medical errors, stress and to improve outcomes by i.e. reducing noise etc. Roger Ulrich work is related to this branch of work - and is its prime advocate. The focus on Patient Safety is by the way yet another example of how economics - 'the safety culture' - dictate the debate on hospitals designs, as hospital mistakes might lead to law suits.

people working within the health care sector, who are less interested in architecture and more in healing. There is also the possibility that notions like ‘Healing Architecture’, ‘Healing Environments’ or ‘Healing Gardens’ are uncritically used by Danish architects in several of the hospital construction projects because a large part of the Danish population appreciates fresh air, daylight, views to the outside, a natural and peaceful surrounding. They might intuitively even think that the natural environment is healing[20]. It is as such a cultural belief system within which they live and that they pass on to their children[21]. As a result a ‘Healing Environment’ could have been argued differently - as a socio-cultural - and therefore qualitative - parameter within designing. However, as the medical sector is founded on hard statistical quantitative evidence, soft qualitative data seldomly count as evidence. This illustrates the dilemma of working as an architect within the healthcare sector - and the conflict between quantitative and qualitative research and evidence[22]. From an architectural perspective this is fundamentally problematic, as architecture per definition is a socio-cultural construct, which means, that its value can only be measured by including qualitative measures. That the architects do not argue from the view point of culture or society is essentially a mistake. It is an indication of some sort of alienation which confirms that introspection and awareness building is needed.

1.4 HISTORICAL GROUNDING

In the previous section it has been shown how the discussion on the Danish Hospital Construction projects seems to go against a commonly made assumption that the development of hospital buildings primarily follows medical science, technology and patient care. It proposes that there might be other things at stake such as politico-economic interests and socio-cultural concerns[23]. It can serve as an example of how motivations and values are embedded into the development of buildings. It also suggests that buildings are born out of a collective conception. They are not the result of one mind alone like an architect[24]. In the analysis of hospital architecture (and the work of the architect), I therefore suggest that emphasis should be put on the interrelationship between the thought field of architects, the client and other actors in the decision field as well as with the surrounding society.

To map the complex situation and context within which hospitals emerge, a historical inquiry was made of the development of hospitals in the Municipal of Copenhagen in relation to a wide range of historical facts and societal changes. The information was sought in overview literature and translated into a timeline – here known as APPENDIX A. The timeline

20 Roger Ulrich has thus found a non-critical audience in Denmark and a community of architects who share his belief system. Symptomatically he is today adjunct professor at the University at Ålborg in Denmark, where they also have performed research in Healing Environments. (He is also professor at the Chalmers University in Sweden)

21 The emphasis on nature, the ‘natural’ environment and its ‘healing’ / comforting qualities permeates for a large part the way people live in Denmark. There are many examples of this; - a large part of the Danish population sleeps with open windows at night, - parents park their prams outside so that their babies can gain access to fresh air while sleeping, - a large part of the population spend their holidays and weekends in allotment gardens, holiday cabins in nature areas or they go camping, - there is a spreading tendency to eat green, drink purified water, - not to speak about the way in which they decorate their homes with plants, natural materials and wooden furniture.

22 Using research to inform design seems right but wanting to do it ‘right’ can also go ‘wrong’. Words like ‘evidence’ and ‘healing’ imply an outcome which leads to questions such as: Who was the patient? How was he or she healed? Where did the evidence come from? The scientific ambition neglects the intangible and symbolic nature of the designed environment as well as it ignores the fact that there is no universal subject. What is more, striving to make the perfect healthcare building might lead to rules that more likely oppress than comfort people. As it might lead to an environment where supporting people has been replaced by control, risk factor analysis and safety issues.

23 Adrian Forty also writes about this in ‘The Modern hospital in England and France: The social and medical uses of Architecture’, printed in the book *Buildings and Society*, edited by Anthony King. His view is related to a critique of Pevsner’s book *A history of building types* - that it does not explain why buildings change. It therefore is reductionist.

24 Dana Cuff has also written about this in her book *Architecture, The story of Practice*, MIT Press, 1991

information was structured into five main categories; - the urban and socio-cultural perspective, - the perspective of the architectural profession, - the institutional perspective, - the economic and political perspective, - and the cure and care perspective. Methodologically speaking, the timeline was an analytical tool to map the most important moments in time. It also made it possible to compare information on the individual sub timelines to see, whether and where there were interrelations between the historical data.

THE TIMELINE ANALYSIS

The historical investigation - mapped on the timeline - showed how the large-scale hospital investments and health interventions are not new in Denmark. They started in the middle of the 19th century and are closely related to the development of the Danish Welfare society of the 20th century, in which the state played a key role in the protection and promotion of the social and economic well-being of its citizens. Seen from an interpretative historical view point hospitals like Kommunehospitalet, Bispebjerg Hospital and Hvidovre Hospital are physical manifestations of the development towards an equalitarian society, in which all citizens have access to free health care. The historical study also accentuated how the development of the medical profession, medico-technique, changing disease panoramas, as well as views on nursing and patient care played a role in the way in which the hospitals were supposed to work. What is more, history showed how the development of hospital buildings were interrelated with the development of the city of Copenhagen; its residential areas, public facilities, and infrastructure. The architects working on the hospitals were thus surrounded by several ideas within society of which some had to do with political ambition, economic ideas, technical progress, social and human ideals, others with the definition of the public domain, public behaviour, the hospital as an institution within society, the house of medicine, a place of patient care and nursing.

While the hospital buildings mapped on the timeline overview could be read as historical documents, meaning that they can be used to illustrate historical moments and changes through time, each building can also be perceived as the materialization of culture. They are tied to the views, ideas and values of the people within society who made them happen. From a culture analytical view point the hospital buildings are cultural artefacts. As a result the study of the hospital architecture leads to a study of who and what made these hospitals happen; how and why the people involved acted and thought as they did. An example is given by social scientist Karin Lützen, who in her book *Byen tæmmes*[25] described the initiatives taken by the Danish middle class in Copenhagen in the 19th century to influence, control and tame the public through legislation, political activity, charity work etc. It is her idea that their family values, ideas about the good life but also fears and anxieties about the untamed life in the city, - which they saw in their daily passing on the streets - , are at the core of the Danish Welfare State. With this in mind, the perspective on the hospitals built within the municipal of Copenhagen from the middle of the 19th century onward changes. Apparently, these hospitals were not only about municipal public health regulation and internal things such as a medicine, healing and nursing but also about the creation and meaning of ‘the public’; what hospitals should look like, how people should behave, hierarchies and class issues. The hospital architecture is reminiscent of a political and socio-cultural process and progress; the emancipation of the middle class and their culture history.

25 Karin Lützen, *Byen Tæmmes*, Hans Reitzels Forlag, København,1998.

As agents for the ideas, values and beliefs of people, architects were one important group of citizens in the development of hospitals. From the view point of public health the medical doctors were of more importance. Some of these played an active and critical role, which led to urban sanitation, better living and working conditions for the poor, child care, birth control, the separation of poor relief and public health care services etc. They also participated in committees on the development of the municipal hospitals in for example Copenhagen. If we look at the decision-making process leading to the three largest municipal hospitals; - Kommunehospitalet (1863), - Bispebjerg Hospital (1913), - and Hvidovre Hospital (1976) there thus seem to be two main actors; that of the Municipality of Copenhagen and that of 'Københavns Hospitalsvæsen' (The Municipal Hospital Services) consisting of people from the hospital field. In all three cases there was a series of committees working on the program for the hospitals before the architects entered the project[26]. These committees were composed by the Municipality of Copenhagen. In all of them there were equally political and medical representatives. As Københavns Hospitalsvæsen did not exist before the formation of Kommunehospitalet, the doctors that participated in the committee work must have been outstanding and probably also politically active in their own field. Furthermore, it was symptomatic for all the doctors that participated in all decision processes that they had a high medical profile and expertise within their own field. In a later stadium head nurses were invited into the decision process as well. It looks like the committee work continued after the architects started their work. The thought process - as well as the process of designing - was as such under the influence of the municipal client (state officials) and potential users (managers, doctors and nurses), which makes you think about what role the architects had (and could have) next to these very well informed and influential people.

THE INTERPRETIVE HISTORICAL ANALYSIS

While studying the historical perspective I started to collect material about the three previously mentioned largest municipal hospitals: - Kommunehospitalet drawn by architect Christian Hansen inaugurated in 1863, - Bispebjerg Hospital drawn by architect Martin Nyrup inaugurated in 1913, - and Hvidovre Hospital drawn by the architects Krohn & Hartvig Rasmussen inaugurated in 1976. The three hospitals were marked on the timeline overview by means of a line. The line represents a vertical 'section' in the historical development - a historical panorama - indicating the field within which each of the three hospital architects would have operated. The purpose of the study of the three hospitals was that I wanted to know, whether it was possible to trace how the architects had related to the historical context and societal situation by analysing the buildings and drawings they made. I also looked at photographs of the hospitals from the time period when they were built, while conducting a literature survey on the architects, their work, and the hospital architecture.

APPENDIX B is a documentation of the investigation into the three hospitals. It consists of visual material (photographs and drawings) from different libraries, archives, from historical overview literature as well as my own photographs from field visits to the hospitals. Next to the visual material I have included short texts in which I write about 'what I saw and questioned' in relation to 'what I had come to know' by studying the historical overview literature (mapped in APPENDIX A). At some point in the comparative

26 The committee work is discussed in Sigurd Jensen, *Københavns Hospitalsvæsen 1863-1963,* GEC Gads Forlag, København, 1963.

analysis different architectural themes and interpretative ideas started to emerge. It meant that I ordered the material in APPENDIX B in relation to five analytical categories, which were derived through experimentation and research. As can be seen in APPENDIX B, each analytical category led to a proposition - a narrative - about the possible significance of the architects work and their role (position) in the relation to other actors in the decision-making process. To mention them briefly, the categories were: - Public Building, Representation, Imagery, - Building Culture, Materialisation, Constructional Spaces, - Use, Organisation, Distribution of Activities, - Social Relations, Hierarchy, Power & Bonds, - Experience, Imagination, Memory. The ordering later developed into a methodological discussion and a classification system, which I will unfold in the methodological chapter: THE ANALYTICAL FRAMEWORK. The historical inquiry - and comparison of the work of Christian Hansen, Martin Nyrup and Krohn & Hartvig Rasmussen as mapped in APPENDIX B - has as such been formative for the way in which I understand and analyse architecture and the work of architects, which I will demonstrate later in the case study analysis: THE ANALYTICAL EXPERIMENT.

1.5 THE OBJECT OF STUDY

The historical study and comparative analysis of the three architects work confirmed that, equal to what I had seen in my study on the present debate on hospital architecture in Denmark, economic-political and socio-cultural motivations and ideas have had an impact on the work of architects throughout centuries. It also brought my attention to the culture historical aspect of hospitals, how institutions like a hospital mirror the values and ideas of a surrounding society, while also establishing a life world of its own. What is more, the historical study showed how change in the built environment did not happen by it self, it was initiated by actors in the decision-making process. As it is the relationship between these actors and the active role of the architect - more than it is the historical development and change in itself - that interests me, I will in my analytical experiment continue with Hvidovre Hospital as a single case study in which I will explore the five propositions that I developed in the comparative study further. The case was chosen as the hospital emerged in a moment in history marked by social and democratic values and welfare ideals. As a result is ties into the present re-evaluation of welfare state architecture in Denmark[27] as well as in other countries in Europe[28], and the adjacent role of welfare architects. It is also one of Kvalitetsfondens hospital construction projects, and as such it has a part to play in the present hospital debate as a cue for collective memory.

HVIDOVRE HOSPITAL

Of the six hospital construction projects in the Capital Region, today only

27 Different books and reports have been written about the Danish Welfare State such as; - 'Den Danske Velfærdsstat' (2004) by Velfærdskommissionen, - Jensen, Per H., *Velfærd, dimensioner og betydninger*, Frydenlund, 2007, - and (ed) Petersen & Petersen, *13 løsninger for den Danske velfærdsstat*, Syddansk Universitet, 2006. Kulturstyrelsen (Danish Agency for Culture and Palaces) and RealDania have supported diverse research projects on Welfare Architecture such as; - 'Velfærdsamfundets bygninger' (2008), - 'Forstadens Bygningskultur 1945-1989, på sporet af Velfærdsforstadens bevaringsværdier' (2010). Nordic Journal of Architectural Research has published diverse theme issues on the Welfare City, such as; - 'Welfare City Theory (nr 2, 2004), and 'Arkitektur & Politik' (nr 2, 2005). Aalborg University has in collaboration with SBI (Danish Building and Research) run a research project called 'Urban Welfare - Lifestyles, Architecture and Resource Consumption', which concluded in the anthology *Urban lifescape*, Aalborg Universitetsforlag, 2004. The School of Architecture in Aarhus has run the research group 'The Welfare City' leading to i.e. the publications; - Nielsen, Tom, *Gode intentioner og uregerlige byer*, Arkitektskolens Forlag, 2008 - Pedersen, Poul Bæk, *Arkitektur og plan i den Danske Velfærdsby 1950-1990*, Arkitektskolens Forlag, 2005. And the architecture school in Copenhagen (KADK) has recently launched a 4-year research project which they call 'Spaces for Danish Welfare'. None of this deals with hospitals in specific.

28 The work by Tom Avermaete and Dirk van den Heuvel is here an example of this. Together they wrote: Avermaete, Van Den Heuvel and Swenarton, *Architecture of the Welfare State*, Routledge, London, 2014

one is a completely new hospital. The others are modernizations of existing buildings, extensions and/or reconfigurations. A large part of these hospital buildings was built in the postwar period at the same time as a lot of town halls, kinder gardens, schools, universities, sport centres and prisons were made to house the public facilities, institutions and administration of the growing state. Now, after 40 years of working as a university hospital, Hvidovre Hospital is under modernization and heading for a large extension. Thus, the hospital construction project is related to a Danish heritage discussion, and as Hvidovre Hospital is situated in the suburb of Copenhagen in specific, the discussion on the Danish suburban building culture. In a report by 'Danish Heritage' (*Dansk Bygningsarv*) they highlighted suburban architecture as something special: ''... communal planners, politicians and not the least Danish citizens increasingly see cultural heritage as a factor that enhance the quality of the built environment ... the suburb has a special building culture that has generated architectonic and culture historical values that are worth building on and preserving'' (H.P. Svendler, 2010:1)[29]. The jury for the architecture competition about the extension of Hvidovre Hospital apparently shared the same view point, as they wrote: ''We are speaking about the development of one of Denmark's few and main modern hospital complexes from the latter half of the 20th century ... Hvidovre Hospital is an exemplary building ... '' (Jury report, 2014: 3). An opinion which was shared by the architects who won the competition who stated the following: ''The existing Hvidovre Hospital is an iconic building in Danish health architecture, and we are pleased to have the opportunity to build on such a grand basis.'' (Kim Holst Jensen / Schmidt, Hammer & Lassen Architects, 2014)[30]

As part of my research on Hvidovre Hospital I explored what the architecture of the 'old' Hvidovre Hospital had meant for the competition proposal by Schmidt, Hammer & Lassen and Aarhus Arkitekterne[31]. What I realised was that the architects had studied the old project by Krohn & Hartvig Rasmussen in relation to their own work. To them Hvidovre Hospital was not only a historical example of hospitals from the 1970s, they saw specific humanistic values in it, iconic Danish Design references, as well as they had used different architectural ideas for their work, which they thought suitable for a proposal of today. What is more, there was a sincere respect for the office Krohn & Hartvig Rasmussen and their work on e.g. Hvidovre Hospital [32] : ''... Hvidovre Hospital is fascinating ... if you walk around in it, you may some places sense, that it's a big machine ... that the project was done with a modern mindset ... but there are also places where it's very humanistic ... a fine human scale ... It is probably also an image of Krohn & Hartvig Rasmussen ... the spirit they stood for ... It's very KHR and very straight ... It's almost as if you have the B&O radio in front of you ... It is still interesting ... a certain societal way of thinking (*samfundstænkning*) ... It is a clear and unique picture of the way one thought the world should be solved ... Now, one can off course discuss the word icon ... Herlev Hospital has icon status due to its volume; the height and the architectural treatment. Hvidovre Hospital has iconic traits due to its thinking. ... If there are two hospitals that symbolize the change Denmark went through from agricultural country to industrialized country after the Second World War, it is Herlev Hospital and Hvidovre Hospital. And that's why it's an icon.'' (interview: Kim Holst Jensen

29 I quote Hans Peter Svendler from Realdania, who supported the project. The quote is from the foreword to the publication: 'Forstadens Bygningskultur 1945-1989, på sporet af Velfærdsforstadens bevaringsværdier' (2010)

30 The quote is taken from the web site of Hvidovre Hospital, where they present the new hospital in Hvidovre

31 Interview with Kim Holst Nielsen, Schmidt, Hammer & Lassen & M. Dan-Weibel, Aarhus Arkitekterne 16.06.2014

32 Same goes for C.F. Møllers architecture office, who is performing the modernisation of the old building. I made an interview with Thomas Käszner from C.F. Møllers tegnestue in Copenhagen on 17.06.2014

/ Schmidt, Hammer & Lassen Architects, 2014). The quote shows how the architect read the significance of the building in relation to the society within which it was made. The following quote shows how certain ideas within the proposal are still valid: ‘’... Hvidovre Hospital is thought in a section. It’s amazingly beautiful in fact. Where in almost any other hospital in the country one arrives by car and goes to a front door ... Hvidovre Hospital is thought completely different. You get into your car and drive down below, to the upturn you are going to, and then you go upstairs. ... The distribution of the program is very accurate around the stairs & elevator towers ... And it is absolutely essential that if one had maintained the distribution of patient flows, one would have had a modern hospital, but as it is now, one has trouble orienting one selves in the maze ... So they were thinking right, one just could not predict that it was not the ward buildings that were in focus in the long run but the out-patient clinics. It was a social change - a cultural change.’’ (interview: Mette Dan Weibel / Aarhus Architects, 2014)

By talking to the architects, it became apparent, how the architecture of Hvidovre Hospital had a significant culture historical value, as well as it had served as an inspiration for the development of the new building. It also seemed as if the work of the previous Krohn & Hartvig Rasmussen has a name in practice. This cannot be seen if you do a literature review on Danish Architecture, where next to nothing is written about their work[33]. Considering that Krohn & Hartvig Rasmussen was one of the biggest architecture firms in Scandinavia in the 1960s - 1970s, when Hvidovre Hospital was built, this seems strange, as a large group of architects have been informed by their office, the same way as a large group of the Danish population were formed by their buildings. It is an example of the position that many critics and historians unfortunately take when they write about architecture; that the discussion about the architectural discipline and its history should primarily be about what is considered ‘best practise’ or the intellectual elite[34]. However, the suburban heritage discussion - and in this case the discussion of Hvidovre Hospital - might lead to a reconciliation with the work of Krohn & Hartvig Rasmussen. If, as also suggested by the Danish Heritage committee, suburbia indeed has its own kind of architecture, Hvidovre Hospital could very well be seen as a suburban monument - one which blends in, which is not that spectacular or strange, but which fits the identity and wishes of the ‘ordinary’ suburban Danish people, - a more silent attitude.

But what was the architecture in Hvidovre about? What ideas informed the design and the decisions the architects took? The winning proposal for Hvidovre Hospital was a horizontal volume; a ground scraper. In 1963 this was an unusual proposal for a hospital, and in that sense, it can be considered a pioneer. But why was it chosen by the Municipal representatives in the jury? And what did Krohn & Hartvig Rasmussen think about the project themselves? What were their motivations for doing what they did? And what happened when they started to develop the idea? Who participated in the decision-making process? How did it relate to the other projects they were doing at that time? And what was their relationship with what was happening in the surrounding society? These are some of the questions that have investigated in the case study analysis.

33 Tobias Faber mentions their work in his book *Dansk Arkitektur*, and some of their work is recorded in guide books.

34 In my conversations with former employees at Krohn & Hartvig Rasmussen, such as Knud Holscher, Jan Søndergaard and Flemming Skude, they mentioned that the work was perceived as too main stream by architecture historians - not original enough – and also too commercial. In my conversation with Knud Holscher he for example explained how people demonstrated disappointment, indignation and surprise when he decided to work for Krohn & Hartvig Rasmussen in the 1960s after having worked for Arne Jacobsen. The Danish architecture writer Henrik Steen Møller supposedly also told Jan Søndergaard, that he would never write about the work of the office. This shows how architecture critics and historians can be judgemental - reflecting certain values and personal opinions.

OBJECTIVE

The former hospital director at Hvidovre Hospital, Torben Mogensen stated in a film from 2006 that culture history is important for one's self-understanding. I see it the same way. In a time of cultural fragmentation and globalization it is essential to contemplate our own role in human history seen from a socio-cultural perspectives, to challenge biased beliefs about the distribution of power, and maybe also find some kind of understanding, acceptance or guidance to future societal developments and thoughts.

Another fundamental issue is that history shows how in-sight and knowledge is relative. Hence, an idea from the past might be meaningful and relevant for the present. Seen from that view point, I am curious what can be learned from the Hvidovre project, the process and the architects. And even though this is outside the scope of my project, I am also curious what kind of questions it indirectly poses to the current developments in hospital architecture in Denmark - or to architecture in general - to what it meant to be an architect then, and whether if could help to inform architects of today.

The investigation into the architecture of Hvidovre Hospital, the time period and the decision field is kind of a time journey - re-visiting the past with the eyes of the present. It is also the possibility to meet some of the fellow colleagues who poured their mind, hart and lives into their work to help realise and create the society within which we live today. It is an attempt to understand not only the architectural means of the architects, but even more so to display the thought processes the architects went through and the decision making processes in which they took part. Hopefully it can inspire architects of today to write down their own story, processes and thoughts so that contemporary practice in its complexity can become part of history.

Concluding I also wish to stress, that the dissertation is not written from a historiographic perspective. It is primarily about architectural practice.

Four objectives has guided the research process. Based on the observations and thoughts exposed in this chapter, the first objective is to show how the limited view within the present hospital debate could benefit from a broader definition of architecture. The second objective is to discuss - possibly demonstrate - why architecture analysis should include societal and culture historical parameters. The third objective is to unfold the complexity of practice, and to give examples of how practice is a knowledge field of its own. The fourth objective is to develop and test tools of analysis and research. While the first objective relates directly to the discussion of hospital architecture, the last three objectives relates to a broader field of different interests and analytical ideas which have been discussed in the prologue.

In the next chapter I will discuss how the analytical and reflective work is driven by a methodological curiosity, which is related to my work as a teacher in architecture analysis and research, but also to the aim of creating a common platform of understanding for architects in practice; An analytical way of understanding architecture which architects can relate to in their work and use in the development of their own reflective practice and thinking.

CHAPTER 2

THE ANALYTICAL FRAMEWORK

2.1 INTRODUCTION

This chapter is about the methodological side of my work. I do not see this part of my work as secondary to the discussion taking place in THE ANALYTICAL POSITION. It is equally important and has its own independent value as it is possible to use the thoughts I expose here in architectural research in general, in architectural education, in the debate about the discipline of Architecture or in Practise. The point is that my work is not only about how a group of architects in Denmark thought in their practice, but about exploring how architecture can be understood, analysed and discussed as a field of thoughts; a thought field. To this purpose I have developed an analytical framework, which I will unfold in this text. As part of it I have defined five interpretative lenses that makes it possible to portray the complex world within which architects operate from the objective (the material / tangible) to the subjective (the immaterial /intangible).

Through the years it has become an essential issue for me to develop my understanding of the methodological side of architectural research and analysis. In my opinion, there is room for more knowledge about this. Contrary to disciplines such as Sociology or Natural Science there is no exact characterization in the discipline of Architecture on research methodology which leaves it open for interpretation. This might be a good thing but can also lead to misconceptions, confusion and mistakes in and around the field about what architecture is, - what architects do, - and how to talk about it. What is more, I have experienced through teaching that students in architecture analysis and architectural research long for a knowledge platform from which they themselves can develop their own fundamental questions, architectural explorations and research, and receive help on how to approach it from a methodological view point. Finally, my methodological framework is also developed for people in practice, whom I believe could become better at explaining how they think, act and work. Embedded into my methodological work is thus indirectly a critique of the architectural discourse as it is most commonly done; focusing on the material side of objects and also leaving out the practice perspective. I believe it is important that architects actively participate in debates, that they take ownership over the language they use, and that they see methodological research as an opportunity to reflect upon practice. Last but not least, each interpretive lens takes another view on the role of the architect, which, if used well, could open fields of new opportunities and interdisciplinary challenges for architects while making lay people see the complexity of the discipline.

The chapter consists of seven parts, of which this introduction is one. I will discuss: - the analytical foundation for the research, - the premises, - data collection and analytical techniques, - the analytical traditions and procedures I refer to in my work, - the thought paradigm and system of inquiry, - and I will elaborate on the five interpretive lenses I have developed for the analytical experiment.

While I believe that my analytical framework has reached some solidity, it is still experimental in character and not complete. It is based upon my experience as a practitioner, diverse literature studies, through analysing architecture on my own, as well as through analytical workshops with students at the TU Delft in which I had the opportunity to investigate and test my analytical ideas. It has been - and still is - an ongoing learning process, open for future explorations and development.

2.2 THE ANALYTICAL FOUNDATION

It is a common conception, especially among lay people, that architecture is the same as building. This is not my position. Architecture is, as also discussed in THE PROLOGUE about more than creating physical objects. With the title 'Architectural Thinking in Practice' I want to convay that I analyse, interpret and perceive architecture as a thought field; a way of being in the world. It is related to a discussion of the architectural discipline and how practice is performed, and to the fact that there are: a.- different ways architects think in practice (from preparing, planning, testing and making to observing, reflecting, analysing, interpreting and evaluating but also presenting, debating, negotiating, communicating, and collaborating), b. - different practice forms (roles, responsibilities, areas of expertise), and c. - different interpretations (attitudes and positions) in the field. The analytical work is a qualitative study of these variations in meaning.

The idea of a thought field is derived from the reflective practice perspective. In fact, reflective means thinking about thinking. This implies taking a critical stance towards how architects think, but also looking at how their thoughts are constructed in relation to a number of factors of which some are internal and tied to the individual thinking, others related to external stimuli, contextual conditions and the collective. Thinking is the field of Cognitive Psychology and Philosophy, and it would become too much to mention all the philosophers whose books I have studied through the years. One, whose work I came across in the study of reflective practice in teaching, is the American philosopher John Dewey. John Dewey is interesting as he pointed at what he called 'reflective action'; that ''reflective thought is a chain which involves not simply a sequence of ideas but a con-sequence'' (Dewey, 1933: 4). Reflective thinking implies deep learning, which can lead to professional growth and awareness building. It can stimulate self-evaluation, introspection and make it possible to establish an independent freedom of mind. As a result, people who pertain to such activities will be able to critical investigate their before sub-conscious values, thoughts and ideas, so that they can explore the way they think from different perspectives acknowledging and allowing interpretations which are freed from bias or discrimination. That thinking is not neutral is naturally also the reason why I believe that architects should pertain to reflective activities, as their work have a deep impact on society; the way people life, work and interact with each other.

The thinking of American theorist and philosopher Donald Schön relates to the same realm and research field as John Dewey. His work is another reference, when it comes to the discussion of 'Architectural Thinking in Practice'. In the book *The Reflective Practitioner. How Professionals Think in Action*[1] he described how ''Our knowing is ordinarily tacit, implicit in our patterns of action and in our feel for the stuff with which we are dealing … Similarly, the workaday life of the professional depend on tacit knowing-in-action … On the other hand, both ordinary people and professional practitioners often think about what they are doing, sometimes even while they are doing it … Usually reflection on knowing-in-action goes together with reflection on the stuff at hand. There is some puzzling, or troubling, or interesting phenomena with which the individual is trying to deal … It is this entire process of reflection-in-action which is central to the 'art' by which practitioners sometimes deal well with situations of uncertainty, instability, uniqueness, and value conflict'' (Schön, 1983: 49-50). Put shortly, Donald Schön is concerned with 'thinking in the making'. Reflection-in-action

1 Schön, Donald, *The Reflective Practitioner, How Professionals think in action*, Basic Books Inc, London, 1983, 1991

according to him also means, that the designer becomes a researcher in the practice context. ''He is not dependent on the categories of established theory and technique, but constructs a new theory of the unique case'' (Schön, 1983: 68). Important to the argument of Donald Schön is the sensibility towards the situation within which the designer work. In a key note talk at a conference in Edinburgh in 1991, he argued how designers ''respond to the demands and possibilities of a design situation, which, in turn, they help create'' (Schön, 1991: 4). He called this a ''reflective conversation with the situation''. The situation which he referred to is not necessarily something external to the design profession but can be something internal to the discipline like a visual code. He formulated it like this: ''Designing is primarily social. ... The agents of design are individuals who occupy institutional roles, in interaction with one another. Hence, designing is a communicative activity in which individuals are called upon to decipher one another's design worlds' (Schön, 1991: 5). That design worlds are embedded into institutional settings and moments in history is therefore something that should be taken into consideration in the analysis of the work and thought field of architects.

Finally, I would like to mention the work of the British design researcher Nigel Cross, who is known for his theories about 'Design Thinking'. In his text 'Designerly ways of knowing'[2] he described five characteristics of the way designers think and act. These were: ''- Designers tackle 'ill-defined' problems, - Their mode of problem-solving is 'solution-focused', - Their mode of thinking is 'constructive', - They use 'codes' that translate abstract requirements into concrete objects, - They use these codes to both 'read' and 'write' in object languages'' (Cross, 1982: 226). An important condition for this 'designerly ways of knowing' has, according to Nigel Cross, to do with the kind of tasks designers handle as well as the time limits under which they work. Designers are so to speak asked to 'produce' a solution to a maybe ill-defined problem, or a problem for which there is no 'right' solution, in a very short time. As a result, designers do not have the time for deep analysis but will choose to try-things-out, rely on prior experiences and/or refer to ordering principles; visual codes, which are derived from the surrounding material culture. Concurrently Nigel Cross stressed that design knowledge resides not only in 'processes of designing' but equally so in the 'products of designing'. ''Designers are immersed in this material culture, and draw upon it as the primary source of their thinking ... Designers have the ability to both 'read' and 'write' in this culture ... Essentially, we can say that designerly ways of knowing rest on the manipulation of non-verbal codes in the material culture'' (Cross, 1982,: 225) . This thought links back to the ideas of Donald Schön, in which he stated that designing is a communicative activity, and that designers 'reflect on the stuff at hand'. This corresponds with my plea to see architecture as a socio-cultural and historical construct. As a consequence architecture analysis should include qualitative measures.

While the work of John Dewey, Donald Schön and Nigel Cross has been fundamental for the way in which I approach the analysis of architecture as a thought field, I have not been able to use their work literally for the development of my analytical framework. Complementary to their work, - which is primarily about the cognitive aspects of creative practice; the process of making architecture; thinking through making, - my work is about how the thinking of architects is informed; thinking about making. I do not study 'how' (mental) decisions are made but focus on the 'why'. Thus, even though we look at the same field, the purpose - and subject of - our analyses

2 Cross, Nigel, 'Designerly ways of knowing', printed in *Design Studies*, vol 3, no 4, October 1982

is different. Seen from the view point of academia, the distinction between the two approaches corresponds with the split in architectural education between teachers who teach design studios, and teachers (who like myself) teach architecture analysis and research. While teachers of design studios, - who often have a design practice themselves most often apply a master-apprentice relationship thereby communicating their tacit knowledge implicitly, - we who deal with the more academic side of education are asked to make things explicit; to explain and discuss why things are the way they are. As a consequence, scholars who deal with the academic - and intellectual - training of students often have a more distanced critical, theoretical and/or interpretive historical view towards designing than practitioners have. With my work I wanted to serve both worlds: To go deep into the matter of things, exploring how I could analyse, interpret and discuss the thought field and actions of architects in the field of practice in a manner that would make it possible to connect the more artistic research done by practitioners with an academic debate about the classification of a.o. architectural means, roles and responsabilities and the production of meaning. As pointed out in the prologue, I believe that this type of work is important for not only practitioners but also for academia and the education of architects. A view which is shared by academics like Julia William Robinson, who make a plea for a revision of architectural education in her article 'The Form and Structure of Architectural Knowlegde; From Practice to Discipline'[3] as does Fredrik Nilsson in his article 'Making, Thinking, Knowing Architecture. Notes on Architecture as a making Discpline and Material Practice'[4]. The whole purpose of the work by Nigel Cross is furthermore educational. So does he also address the education of teachers – and their didactical skills - in 'Designerly ways of knowing'.

There is not a long line of work in practice-related research the way I do it. American architect and social scientist Dana Cuff's book *Architecture: The Story of Practice*[5] has from the beginning of my research served as an inspiration for my work. Similar to her, I consider my research as an anthropological expedition exploring the field of my own discipline, which is why I have also studied the ways in which anthropologist perform research and map their observations. I am also aware off the work of the British anthropologist Albena Yaneva, who has written several books on architecture for example *The Making of a Building: A Pragmatist approach to Architecture*[6] in which she discusses 'The Actor-Network Theory' in the light of architectural decision-making. These two authors confirmed my own experience as a practitioner; how necessary it is to not only look at architecture as objects, but to look at it as a discipline in which decision making plays a large part; the social aspect of designing. Next to this I, in my research, emphasize how designing is also about the ability of the designer to actively, – and maybe critically - , situate and position the work in a larger framework of material culture; that architects design in contexts with which they in the words of Donald Schön have 'a reflective conversation' or in the words of Nigel Cross demonstrate ''metaphoric appreciation''.

3 Robinson, Julia William, 'The Form and Structure of Architectural Knowledge: From Practice to Discipline', in: Robinson & Piotrowski, *The Discipline of Architecture*, The University of Minnesota Press, Minneapolis, 2001

4 Nilsson, Fredrik, 'Making, Thinking, Knowing Architecture. Notes on Architecture as a making Discpline and Material Practice', in Dehs, Jørgen (ed), *When Architects and Designers Write / Draw / Build / ?. Essays on Architecture and Design Research*, Arkitektens Forlag, København, 2013

5 Cuff, Dana, *Architecture, The story of Practice*, MIT Press, Massachusetts, 1991

6 Yaneva, Albena, *The Making of a Building: A Pragmatist approach to Architecture*, Peter Lang Publishing Group, Bern, 2009

2.3 THE PREMISES

Central to the interpretation of the material is that it is ordered around the ideas of the architects whose work I study. I am interested in uncovering how the architects thought and acted, individually and as a team, and to trace how they made meaning out of the complex interdependent relationship they had in the decision process with; - the surrounding society, - the client (in this case the municipality of Copenhagen), - specific user groups (like the hospital organisations and its staff members), - the architectural culture to which they belonged, - the collaborating partners and builders, - and themselves as individual people with bias and personal agendas. My analyses are thus informed by different view-points, which also are the premises for the research. Each view point represents a specific relationship I explore, a type of knowledge I am looking for, specific research questions and a similar specific data collection. Together they portray the complex and layered world of architectural thinking.

The premises (viewpoints) are:

- A media view point ... in which the relationship between the different media of the architect is questioned and analysed (language, models, drawings, buildings, photographs). What should be considered is; - that architects might say one thing and do another, - several ideas can overlap, - or what the architect's state might have been formulated after the building was made. Furthermore, the question is, how conscious the architects were about what they were doing. Were they explicit, or were their motives intuitive? The study leads into a study of the ideas, views and values of the architect(s); their architectural preferences (and references) and personal bias.

- A relational view point ... in which the field of interests is being analysed. Here the architects are seen as actors in a complex decision-making process where they investigate, negotiate and guide a particular scheme in an interdependent relationship with other professions, clients, user groups and stake holders. An issue is how much influence the architects could have had on the scheme – how free they were in their choices. What did the architects decide on? How did other people in the decision-making process influence the work of the architect(s) etc.? The study leads into the study of the interrelation between the views, values and priorities of the client (in my case the municipality of Copenhagen), the users of Copenhagen Hospital Services (medical staff), the architect(s) and their collaborating partners.

- An interpretive historical view point ... in which the architecture is analysed in relation to the context of the large historical panorama of societal ideas, activities, developments and changes in which the architect(s) operate. With what historical events can the work of the architect(s) be associated? What made the large hospital projects happen? What was the condition within which the architects had to operate? What - and who - did their work represent? The study leads into a study of other fields such as social politics, urban planning, the culture history of hospitals, architectural discourse etc.

In terms of knowledge, the ambition of the three viewpoints are:
- To uncover (un)conscious themes and patterns in the thought field
- To describe and document prominent actions, events and ideas in the social field of investigation; the decision process
- To show patterns that are part of creating the investigated phenomena

The starting point for the analyses is the media view point. I here study how the architectural 'thought field' was made manifest: - how the architects talked and wrote about their work and what words they used; - compare language with presentations like models and drawings; - look at how the ideas were turned into buildings; - and examine how the buildings were documented by the architects themselves in magazines and other media. The reason for doing so is that architects do not only design buildings, they act within society and use different media in their work. What is more, there is not a 1:1 relationship between the different media that an architect uses. They belong to each their category of expression. You could say that the representational system of architecture consists of five parts: - the building, - photographs / film, - drawings of different kinds, - models, - and language (the discussion in and about it). The end result might not even be a building but a book, drawings, a model, an exhibition, a film, or an event. Theoretically speaking, the precise number of parts in the representational system could be discussed as could the word 'system'. I use the word here to emphasize that architecture is a notion - a concept - that can be analysed and understood in different ways and from different viewpoints. A discussion I will get back to under the heading of 'thought paradigm' (point 2.6). The idea of architecture as a 'media system' is shared by other academics. An example is the British architecture historian Adrian Forty. In the introduction to *Words and Buildings. A Vocabulary of Modern Architecture*[7], - while discussing whether language is a part of architecture (as a system) -, he referred to the work of the French semiotic Roland Barthes. Barthes supposedly, in his text 'The Fashion System', described Fashion as a three-part system; - a material product (the garment), - images (the fashion photograph), - and words (the fashion commentary). Roland Barthes thereby provided another model for the interpretation and meaning of fashion than that fashion is only about clothes, the same way as I claim that architecture is more than buildings. Concluding Forty reasons that ''architecture is a three-part system constituted out of the building, its image (photograph or drawing), and its accompanying critical discourse (whether presented by the architect, client or critic)'' (Forty, 2000: 13). Under the argument that drawing in architecture is a system in its own right Forty adjusted his statement to say, that architecture is a four-part system. As I believe that models are fundamentally important to the discipline of Architecture the representational system of architecture, in my view, becomes a five-part system. Another academic who has written about architecture as a representational system is the American architect Beatriz Colomina. In *Privacy and Publicity. Architecture as Mass Media*[8] she argued that ''... it will be necessary to think of architecture as a system of representation, or rather a series of overlapping systems of representation ... The building should be understood in the same terms as drawings, photographs, writings, films, and advertisements; not only because these are the media in which more often we encounter it, but because the building is a mechanism of representation in its own right'' (Colomina, 1994: 13-14). Due to the fact, that modern architects primarily were made known through photographs and printed media, she made the case that the site of architectural production no longer can be seen as exclusively the construction site. Instead it has become the immaterial sites of architectural publications, exhibitions and journals: Architecture as media. The analysis of 'Playboy Architecture' by Colomina in collaboration with Princeton University students is another example of this[9].

7 Forty, Adrian, *Words and Buildings, A Vocabulary of Modern Architecture*, Thames & Hudson, London, 2000

8 Columina, Beatriz, *Privacy and Publicity, Modern Architecture as Mass Media*, MIT Press, Cambridge, Massachusetts, 1996

9 Columina, Beatriz (ed): 'Playboy Architecture 1953-79', in *Volume*, no 33, Interiors, Archis, fall 2012

While the media view point leads to media analysis and the discussion of representation, the relational view point leads to the analysis of decision making; thus not products but processes. The distinction between the two interpretations was, as previously pointed out, also made by Nigel Cross saying that design knowledge resides in the 'products' and 'processes' of designing. Nigel Cross by 'process' obviously meant the mental process of the indvidual designer designing. In my work, I look at it differently. As architects do not work on their own but in relation to other people, it seems natural to investigate, not only how the architects articulated their thoughts, but also how the thought field of the architects were informed by the people, who surrounded them in the decision-making process. The perception and interpretation of 'designing' thereby change from 'making things' to the things designers make being a materialisation of a relationship, a negotiation, a real-life situation in which they participate. Contrary to the more conventional interpretations of architecture as an autonomous 'object of art', architecture is thereby seen as a result of an inter-disciplinary process and sometimes also power, politics, law and regulations, economics or other matter on which the architects might have little influence. In terms of positioning, the knowledge that architects gain by participating in such decision-making processes diverts from what is normally considered the field of architecture. While there are numerous stories within practice about conflicts in the making, architects usually leave out these types of reports in their curricula, as if they were not important. This is what makes the work of Dana Cuff an interesting read and also the work of Albena Yaneva. They point at an area in the knowledge field of practice, which is worthwhile contemplating, and where architects have something to offer, confirmed by the observations made by Nigel Cross and Donald Schön. In fact, within the Design Discipline 'Design Thinking' the last many years has been a subject for research as well as a commodity of interest for people from the business sector and IT[10]. That 'the process of making' is not addressed in the discussion of architecture has to do with a too narrow definition of the discipline excluding a.o. the more social aspect of designing. Julia William Robinson, in her work, problematises this in the light of education, making a plea for a more integrating approach between architecture and the neighbouring disciplines. In the case of decision-making processes this would lead to The Social Sciences, where in the field of Sociology, 'The Actor Network Theory' by French philosopher and sociologist Bruno Latour has proven usefull to describe the dynamics of relationships[11]. Seen from the view point of Sociology, Architecture, in for example the work of Albena Yaneva, is concordantly subservient to the discussion of The Network Theory. This leaves open the question, how architectural decision-making processes could be described from the view point of the architectural discipline and the role of architects and their media in it.

In the last part of the analyses I apply the interpretive (culture) historical view point. This examplify a third interpretation of designing. Here the products of designing are seen as historical documents and the materialisation of culture. The view point corresponds with the previously described ideas of Donald Schön saying, that designers have a ''reflective conversation with the situation'' (Schön, 1991: 4), and of Nigel Cross writing that designers are ''immersed in material culture, and draw upon it as the primary source of their thinking'' (Cross, 1982,: 225). Architects work in the context of a socio-cultural situation that ties their work to a specific time and a place. The manifestation of their thought field - the

10 Dorst, Kees, 'The Nature of Design Thinking', Design Thinking Research Symposium, 2010

11 Latour, Bruno, *Reassembling the Social: An introduction to Actor-Network Theory*, Oxford University Press, 2005

building, its imagery and the language they use - are ‘cultural artefacts’. The word ‘artefact’ comes from the field of anthropology and covers the visible, tangible and audible remains of cultural behaviour. I use the expression ‘cultural artefact’ to indicate that there is a qualitative aspect to the interpretation of architecture. It is outside the scope of my work to give a profound definition of the term culture. Instead I quote Julia William Robinson who in her thesis *Architecture of Institution & Home: Architecture as Cultural Medium*[12] defined culture as a ‘’collective process, maintained through practises, but supported by artefacts and by memory. Collective memory is fundamental to culture, and artefacts serve to cue collective memory’’ (Robinson, 2004: 3). Seen from this view point, architecture is a product of the cultural exchange in which it take part between a subject and an object, a giver and a receiver, a collective cultural identity and a person’s individual experience. Embedded into this position is the belief that architecture holds the potential to facilitate and enhance different aspect of being human, like; - to give shelter, - to support activities, - to manifest, encourage or hinder social relationships, - to present and represent matters of value, - to make places people can identify with, - a place to belong. Thus, different intentions and ideas can inform the way architects think. Some of these can be explicitly formulated in words like a manifesto, a brief, a report or a speech. Other are hidden, implicit and/or intuitive. They are embedded into behaviour (habits, ceremonies, rituals), patterns of thinking (conventions, norms, traditions) but also in organisational rules, national laws and governmental regulations. The idea that architecture can serve ‘a purpose’ brings agency to architecture; that it can represent people’s values, thoughts and ideas. Seen from this perspective architecture takes part in the meaning-making process that define people as; - individuals, - families, - groups of people, - institutions or organisations, - nations, cities, societies and cultures. As people, society, perceptions and views inevitably change, so does the meaning of architecture. Its meaning is created and re-created, interpreted and re-interpreted through time by people and their shifting self-image, belief system, motivations and interests. You could call this the culture historical aspect of designing. As a result the study of the thought field of architects - and its embedded story lines and ideas - inevitably lead to a deeper discussion of discource and the assessment of the socio-cultural and historical situation as well. This type of analysis is related to the courses ‘Architectural Studies’ and ‘Fundamentals’, which I have taught at TU Delft in architecture analysis and research. The work of my former colleagues architect Christoph Grafe (*Cafe’s and Bars. The Architecture of Public Display*[13] and *People’s Palaces. Architecture, culture and democracy in two European post-war cultural centres*[14]), anthropologist Irene Cireaad (i.a. *At Home. An Anthropology of Domestic Space*[15]) and architect Mark Pimlott (*The Public Interior as Idea and Project*[16]) are therefore academic reference points for the socio-cultural and historical interpretations I make next to the work of many other authors like sociologist Anthony D. King (*Buildings and Society*[17]) art historian Heidi de Mare (i.a. *Urban Rituals*[18]), or architect Tom Avermaete and Dirk van den Heuvel (i.a. *Architecture of the Welfare State*[19]).

12 Dissertation, Delft University of Technology, 2004

13 Grafe and Bollerey, *Cafes and Bars, The Architecture of Public Display*, Routledge, London 2007

14 Dissertation, Delft University of Technology, 2010

15 Cieraad, Irene (ed), *At Home*, Syracuse University Press, New York, 1990

16 Pimlott, Mark, *The Public Interior as Idea and Project*, Jap Sam Books, Heijningen, 2016

17 King, *Buildings and Society, Essays on the social development of the built environment*, Routledge, London, 1980

18 Heidi de Mare and Anna Vos (ed), Urban Rituals in Italy and The Netherlands, Van Gorcum, Assen, 1992

18 Avermaete, van den Heuvel and Swenarton, *Architecture of the Welfare State*, Routledge, London, 2014

2.4 DATA COLLECTION AND ANALYTICAL TECHNIQUES

The three viewpoints guided the data collection:

Data for the analysis from the media view point:
- drawings (plans, sections, elevations, details)
- models and photographs of models
- photographs and some types of drawings
- texts and oral statements by the architects
- impressions of the building on site

Data for the analysis from the relational view point:
- reports, documents from the process
- the jury report, briefs by the municipal and hospital organisation
- texts by the architects about the process
- interviews with architects who worked at the project
- film documentaries in which the process is described

Data for the analysis from the interpretive historical view point:
- historical overview literature on the time period
- film documentaries about the making of Hvidovre Hospital
- the portfolio of the office at that time period
- the work of other architects at the same time
- interviews with architects who worked at the office

2.5 ANALYTICAL TRADITIONS AND PROCEDURES I REFER TO IN THE ANALYSES OF THE COLLECTED MATERIAL

While Context, Methodology and Theory are fundamental building blocks to all research projects not all researchers approach them the same way. As British academic Ray Lucas pointed out in *Research methods for Architecture*[20] a distinction can be made between three approaches; - Context led, - Methodology led, - and Theory led (Lucas, 2016: 11-14). In my research, it was intentionally the context that was in focus; that is the thought field of architects. The research was in that sense initially empirical and data driven, not theoretically or methodologically motivated. It was about looking at what is there. However, as discussed in the previous chapter, methodological considerations are closely related to the debate on hospital architecture. The focus of the research therefore became two-fold. Being involved with architecture analysis and research in education this at some point meant that I could test and experiment with the methodological side of the research in my teaching; how to perform architectural research, analyse, interpret and understand data, matters of classification, terminology and referencing. It has been an iterative process of analysing, interpreting and processing data while developing my understanding of architectural research and the methodological framework. As part of this, there was a need for some sort of theoretical positioning. Context, methodological considerations and theories thus became intertwined in my work.

As discussed under point 2.4 the data collection for the case study research followed the three viewpoints; - what I wanted to know about the thought field of Krohn & Hartvig Rasmussen in their work on Hvidovre Hospital, - with whom the architects worked, - and how the thought field was informed by the surrounding socio-cultural context. The scheme on the following page depict

20 Lucas, Ray, *Research Methods for Architecture*, Laurence King Publishing, London, 2016

THE MEDIA VIEW POINT

KEY QUESTIONS	ANALYTICAL TECHNIQUE	DATA UNIT	DATA COLLECTION
The Visual Narratives: *What is it?*	Drawing Analysis	Drawings: 1963, 1968, 1976 (plans, sections, elevations, details)	Archival work
What does it look like?	Model Analysis	Models: Process and Presentation	Archival work
How is the project documented? *What does the data show?* *What does the data not show?* *How does it work?*	Image Analysis	Photographs: - Photo documentation - Documentation in magazines Some types of drawings: - perspectives / artist impressions	Archival work & Publications
Versus	Direct observation	The Building and the urban situation	Field study
The Verbal Narratives: *What does the architects say / write about their work?* *What does the architects not say / write about their work?*	Text Analysis	Texts by the architects: - Proposal texts a.o. the competition - Reports about the project - Project descriptions in magazines - Diverse written statements	Archival work & Publications
Are they explicit about their motivations and interest?	The Analysis of Oral Statements	Film documentary	Archival work

THE RELATIONAL VIEW POINT

KEY QUESTIONS	ANALYTICAL TECHNIQUE	DATA UNIT	DATA COLLECTION
Who build it? Why? *Whose interest does it serve?* *What was the assignment?* *How did the project develop?* *How did the decision making process take place?* *With whom did the architects work? How did these people inform the architects?* *How much freedom did the architects have to decide for themselves?*	Comparative Text Analysis	Texts by the client: - Reports about the project - The program for the competition - The jury report - Press releases	Archival work & Publications
		Texts by the hospital organisation: - Books and reports by Københavns Hospitalsvæsen about their hospitals - Magazines by Kbh. Hospitalsvæsen - Articles in other magazines	
		Texts by the architects about process: - Reports about the project - Articles in magazines - Other texts written by the architects	
	The Analysis of Oral Statements	Film documentaries	Archival work
		Transcripts from conversations with architects who worked on the project	Interviews

THE INTERPRETIVE HISTORICAL VIEW POINT

KEY QUESTIONS	ANALYTICAL TECHNIQUE	DATA UNIT	DATA COLLECTION
With what historical, political, societal and cultural events can the project be associated? *How does the project relate to other projects made by the same office at the same time?* *How does the project relate to the work of others? Are there any visual / verbal references?* *Does the work mirror societal conditions and life style issues?* *Is the project original / artistic - transcending a cultural chord? Or is it affirmative consolidating what is already there?*	The Analysis of Historical Overview Literature	Diverse Subjects: a.o. - Danish history - Political history and social policy - Urban planning in Copenhagen - Københavns Hospitalsvæsen - The Danish medical profession - Danish nursing and patient care - Danish Architecture history - Danish Landscape history - Danish design and life style	Publications
	Comparative Visual Analysis	Drawings, models, photographs: - The portfolio of the office - The work of other architects - Other visual references	
	The Analysis of Oral Historical Data	Film documentaries	Archival work
		Transcripts from conversations with architects having worked at the office	Interviews

how the analytical techniques and data collection for the case study made use of more than one research strategy like collecting and cross analysing: - drawings, - images, - models, - buildings, - and texts, but I also conducted; - archival work, - interviews, - historical analyses, - and comparative visual studies. What is more I used the same data for different purposes. Due to the fact that the research questions were related to the three analytical viewpoints and research categories (media, field of interests, historical context), the perspective on and interpretation of the source material changed with that view point. In doing so I shifted between different research attitudes (interpretive traditions) and procedures. To be able to describe the relational, interactive and behavioural component of architectural thinking in practice, I included data about decision making (reports and interviews), as well as material about the way in which the architects communicated, interpreted or represented their design. What I would like to emphasize by doing so, is that I see Practice (the profession) as areas of expertise. It is a series of acts, procedures and tasks – not a single act. This can be observed from the diverse roles that architects have in practice, ranging from; - public relation, presentation and sale; - negotiation, coordination and collaboration; - administration, planning and budgeting; - developing, testing and designing models, drawings and buildings; - fact finding, analysis and research; - calculations, technique, mechanical engineering, etc.

The diversity of tasks in practice is a fundamental issue. What is more, the field of architecture is by nature related to the work of other disciplines. As there is only a little amount of literature written about architecture analysis seen from a methodological viewpoint, I have looked at the work of other knowledge fields that deal with the qualitative aspect of architecture to see, what I could learn about their methodological procedures, such as: - History (Interpretative Historical Analysis)[21], - Cultural Anthropology (Culture Studies)[22], - Social Sciences (Qualitative Research)[23], - Language Studies (Discourse Analysis)[24], - and Media Studies (Media Analysis)[25]. Gaining knowledge about these domains and their research procedures has informed the way in which I look at, read and understand architecture as a knowledge field. The media view point, relational view point, and interpretive historical view point are as such connected to other research fields and their system of thought. While there is not a direct relationship it goes without saying that the interpretive historical viewpoint is related to the discipline of History, the relational view point to Social Sciences, and the media view point to Art, Media and Language Studies. Besides, all five analyses are informed by

21 In the interpretive historical tradition objects of architecture are studied in relation to the historical context and societal circumstances within which they were made. Objects of architecture are analysed and discussed in relation to other historical documents like texts and images. As history is handed over as an interpretation narrative forms are used for its explanation. Groat & Wang described the research strategy in *Architectural Research Methods*

22 The purpose of a culture analysis is to uncover hidden and implied aspects of social relationships within a group of people. Culture studies can be done in the field or by studying artefacts (whether these are material objects, verbal articulations or behaviour). In this tradition architectural artefacts can be read as the manifestation of culture. The book *Kulturanalyse* by anthropologists Hastrup, (Rubow and Tjørnhøj-Thomsen, Samfundslitteratur, 2011) describes the analytical tradition as well as the research methods one can use to perform a culture analysis.

23 Linda Groat & David Wang quote Norman Denzin and Yvonne Lincoln in *Architectural Research Methods,* saying that: '' Qualitative research is multimethod in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense, or interpret, phenomena in terms of the meaning people bring to them. Qualitative research involves the studies use and collection of a variety of empirical materials'' (Groat & Wang, 2002: 176). Another, more thorough description is to be found in Dimitri Mortelmans book H*andboek Kwalitatieve Onderzoeksmetoden* (Acco, 2007).

24 Discourse analysis is a method within Language Studies. It is not only concerned with the content of the text, 'what they say', but also with 'how they say it'. Applied to the study of architecture and the field of architectural thinking the study is about how the perception of buildings are shaped through the use of language. The method and its application to the field of architecture is described in Markus & Cameron, *The words between the spaces* (Routledge, 2002). Adrian Forty's *Words and Buildings* (Thames & Hudson, 2000) also described language use.

25 Image analysis and cross media analysis are methods used by art historians and people studying visual communication in for example modern media or mass media etc. The book *Kulturanalyse* by the anthropologists Hastrup, Rubow and Tjørnhøj-Thomsen (Samfundslitteratur, 2011) provides a short description of the method. A more detailed account can be found in Luc Pawels & Jan Marie Peters' *Denken over beelden* (Acco, 2005)

Cultural Anthropology (a culture historical perspective)[26].

Contrary to the neighbouring social science disciplines, who seems to have no problem addressing the issue of architecture in their research, it is less obvious, whether and/or how their methodological procedures and theoretical insights can be applied directly into architectural research in a way in which, it would correspond with the architectural knowledge field and discipline of practice. A book like *Architectural Research Methods*[27] by Linda Groat and David Wang gives an indication but is far from complete. That so little has been written about how to perform qualitative architectural research and analysis exposes conventions in the knowledge field; that framing architecture as a socially constructed and cultural object has still to be accepted. Hence, the discussion on what constitutes architectural research and analysis is, - as also discussed under point 2.3 Premises, - related to the definition and focus of design paradigms (ways to understand design, designing and the role of the designer). What is more, there is not a long and strong tradition of rigorous architectural research done by architects. The scientific procedures and processes of validation are therefore still in the making. In my case this meant that setting up the analytical framework has been learning by doing. As a consequence some of the links I make to the analytical procedures of other disciplines are tentative and not fully developed in a scientific meticulous way.

Similar to the data collection, there is in the data processing also specific references in my work to different analytical traditions and procedures. As described above, my method has been to collect data to subsequently analyse it to see what it would communicate to me in terms of ideas. Even though I did have specific ideas (theories) of my own, the purpose of the data collection was not to prove a point. It was more like a dialogue. The source material did therefore sometimes change the way I would look at the area of research, I was studying, which meant that I would have to go back and readjust the focus, and maybe change my research strategy. An example of this procedure is the historical inquiry and comparative study of the work of the three architects Christian Hansen, Martin Nyrup and Krohn & Hartvig Rasmussen on the three municipal hospitals in Copenhagen as mapped in Appendix B. This iterative process is, as described in for example the book by Robert Yin *Case Study Research*[28], an important part of 'The Case Study Method' within qualitative research, in which there is a dynamic relationship between; - the research design, - preparations for data collection, - the data collection, - the analytical process, - and sharing the information.

While analysing the data, certain notions started to appear, and specific ideas became central to my perception and reading of the material. This enabled me to structure the source material thematically into conceptual categories, which I could write about. Inevitably, this was also a repeated process in which tests were made to see, whether it was reasonable to proceed the way I did. This open-ended procedure, and the practise of 'coding' is characteristic to qualitative research and shares similarities with the approach of 'Grounded Theory', which is a general methodology within The Social Sciences, a way of thinking about and conceptualizing data, developed by the two sociologists Barney Glaser and Anselm Strauss.

26 Culture Studies is described under footnote 15. Besides *Kulturanalyse* by anthropologists Hastrup, (Rubow and Tjørnhøj-Thomsen, Samfundslitteratur, 2011), I would like to refer to the reader *Ruimtelijke Rituelen, Het huis als plaats der gewoonten* (compiled door de Mare, Vos, Tummers, and Wuertz for Sector Vrouwenstudie, TU Delft, 1994), and the book *At Home* (Syracuse University Press, New York, 1996) by cultural anthropologist Irene Cieraad.

27 Groat, Linda and David Wang, *Architectural Research Methods*, John Wiley & Sons Inc., New York, 2002

28 Robert K. Yin, *Case Study Research*, Sage, 2009

In *Architectural Research Methods* the two authors Linda Groat and David Wang quote Strauss and Corbin describing Grounded Theory the following way: “In this method, data collection, analysis and eventual theory stand in close relationship to one another. A researcher does not begin a project with a preconceived theory in mind (unless his or her theory is to elaborate and extend existing theory). Rather, the researcher begins with an area of study and allows the theory to emerge from the data ... grounded theories“(Strauss & Corbin, 1988, - in Groat & Wang, 2002: 181). They also write that it is assumed within Grounded Theory that the object of study cannot be fully explained on “the first take”. The analytical process is, the way I understand it, similar to the analytical procedures within Culture Anthropology which describes a process that starts with a systematic overview of all the material collected followed by an open, as well as a focused, coding procedure in which the material is organised and studied in relation to governing notions that ‘presents themselves’ in the reading of the source material. While there might be a theoretical perspective informing a Culture Analysis, the purpose of it is not to develop theory, which is where it differs from Grounded Theory. The idea behind a Culture Analysis is to create hypothetical interpretations based on observations within the field of study that reflect on larger socio-cultural developments. I believe that my methodological approach relates to both strategies. It is equally about reflective work - and making observations - as it is about testing propositions and analytical theories.

Barney Glaser and Anselm Strauss at some point in their academic career developed a disagreement about the interpretation of Grounded Theory. This controversy is the subject for an article written by German sociologist Udo Kelle called: ‘’ ‘Emergence’ vs. ‘Forcing’ of Empirical data? A Crucial Problem of ‘Grounded Theory’ Reconsidered’’[29] While one of the main purposes of the Grounded Theory method was to challenge the hypothetico-deductive approach within Sociology demanding precise theories and/or hypotheses before the data collection could take place, Glaser and Strauss were both aware that ‘’researchers always have to draw on their existing theoretical knowledge in order to understand, describe and explain empirically observed social phenomena’’ (Kelle, 2005: 18). Neither Glaser nor Strauss believed in what is called ‘naïve empiricism’; that empirical researchers can ‘free their mind’ from any theoretical pre-conceptions, which is what empiricist philosophers such as Franics Bacon or John Locke otherwise claimed possible. As discussed within Philosophy ‘seeing’ itself is a theory-laden undertaking: ‘’Qualitative researchers ... always bring with them their own lenses and conceptual networks. They cannot drop them, for in this case they would not be able to perceive, observe and describe meaningful events any longer’’ (Kelle, 2005: 3). ‘An open mind’ should therefore not be confused with ‘an empty head’. The ability to see ‘relevant data’ was by Glaser and Strauss named ‘theoretical sensitivity’. The question – and argument between Glaser and Strauss – dealt with the issue of whether these ‘theoretical ideas’ would emerge from the data (as Glaser believed), or whether the researcher was recommended to draw upon and use previous theoretical knowledge to identify relevant phenomena in the data (as Strauss believed). Where Glaser recommended the use of ‘coding families’ in the data processing, Strauss thought it necessary for the researcher to build ‘a skeleton or axis’ for developing grounding theories; also called ‘the paradigm model’. For Glaser this never the less meant that researchers could end up ‘forcing’ categories onto the data. The ‘true path’ of the methodology of Grounded Theory was according to him to not have any precise research questions, research

29 Kelle, Udo, ‘’ ‘Emergence’ vs. ‘Forcing’ of Empirical data? A Crucial Problem of ‘Grounded Theory’ Reconsidered’’, printed in *Forum: Qualitative Social Research*, Volume 6, No. 2, Art. 27, May 2005

problems or reviewing literature beforehand. What he did not consider, as Kelle pointed out, was, that it is only experienced researchers who are able to handle the challenging situation of not having any theory at hand, as it requires a theoretical background to develop theories ‘ad hoc’ while processing data. Strauss’ ‘coding families’ are in that sense, as Kelle wrote, ‘more ‘’user-friendly’’. At the end of the article Kelle made a plea to revise Grounded Theory with the use of concepts well known for contemporary methodology and epistemology such as for example ‘abductive inference’; logical reasoning related to previous knowledge, – or ‘hypothetical inferences’; the application and creative play with existing theories .

2.6 THOUGHT PARADIGMS & SYSTEM OF INQUIRY

The discussion of Grounded Theory shows how methodological reflection is related to Philosophy and Hermeneutics; the theory and methodology of interpretation. While Hermeneutics, in a traditional sense, is concerned with the interpretation of texts, the German philosopher Martin Heidegger with his work pointed at that interpretation is not only about gaining knowledge, - in a rational sense, - but about being-in-the-world. An interpretation, - off for example a text, art work or architecture, - also reveals something about the ‘inner world’ and experience of the interpreter. Hence, Heidegger’s ‘Hermeneutic Circle’ described interpretation as a repetitive circular process between individual parts and the whole, where ‘the meaning’ of ‘things’ is to be situated within the world as a part of a larger order of things; its literary, cultural and historical context. This comes close to the ‘metaphoric appreciation’ that Nigel Cross wrote about in describing how designers are immersed in material culture; that they ‘read’ and ‘write’ at the same time. The views of Heidegger does as such not only confirm the dilemma of Glaser and Strauss. He pointed at a deeper and epistemological level of interpretation: That practising (concrete examples of real world phenomena) informs theorization (abstract models of real world phenomena) and vice versa. As a consequence, it should, in an analytical process, not only be kept in mind that the interpretive process is circular and never ending, the hermeneutic circle point at, that there is a relationship between the interpreter and the interpretation,. In that sense, I, - in my way of thinking and being in the world, - take part in the interpretation of the data collection and the thought field of the architects, which in The Social Sciences is termed ‘inter-subjectivity’. Having said this, it is also my belief that it is possible – through a reflective process of interpretation - and transparency – to come to some general understanding of what is going on, which makes it possible to develop a data-driven theory. Should there be a larger theoretical framework for my analytical work it thus has to be theories about ‘Critical Awareness’ or ‘Critical Reflection’, which would imply; - assumption analysis (challenging beliefs), - contextual awareness (determining the contexts that influence the assumptions), - imaginative speculation (challenging current ways of thinking), - and reflective scepticism (questioning universal claims or previous knowledge)[30]. With ‘Critical Awareness’ I as such mean that the interpretation of the data includes some kind of critical introspection and contextual awareness. Within the creative disciplines such as The Arts and Music this is a much more common interpretative approach than it is in architecture. It is as if people in these fields are more conscious, critically and actively aware, of their ‘being in the world’ or at least their personal standing. Thinking back on the analytical process of my research I also recognize and acknowledge, how my reflective approach has led my research

30 The list is from Dalhousie Writing Centre: Brookfield, 1988, - cited by Clark, 2011

and methodological work towards the research of my own thought field, challenging myself on a fundamental and philosophical level to reconsider, how I see the world and hence interpret architecture.

In the analysis and structuring of the data collected for the comparative analysis of the three municipal hospitals (APPENDIX B) the notion ‘architecture’ at some point became an area of investigation in itself. While I have suggested that architecture can be made manifest in five ways, - as building, language, drawings, models, and images, - this does not say much about what the architects were designing. What I saw in the analytical process was that ‘the architecture’ seemed to be more than one ‘thing’ or ‘act’. It covered several aspects taking place at the same time. To be able to describe this, I started a study of its own, which eventually led me to define five interpretive lenses which together form an interpretive system. Each of the lenses represent a specific research paradigm and analytical perspective. The word ‘paradigm’ is used here to clarify that the definition of the lenses relate to an epistemological and philosophical discussion about ways of seeing and being in the world. As a result, each paradigm stands for a particular interpretation of what architecture is. They are large diaphragm’s through which architecture can be explored as different thought fields. The research paradigms determine the analytical perspective, the analytical parameters and group architectural means into categories. As such they served as the backbone for a classification system. In APPENDIX B I have already given an impression of what these five paradigms (perspectives) are about in describing the five propositions about the role and work of the architects on the three municipal hospitals in Copenhagen ranging from: - the material world of construction, - a dynamic world of use, organisation and distribution of activities, - a social world of relationships, hierarchy, power and bonding, - a symbolic world of representation, narrative and imagery, - and an experiential world of perception, imagination and memory.

While the system of the five interpretive lenses ‘emerged’ by analysing the data, they were also informed by my ‘theoretical sensitivity’ due to the fact that I had been working with architecture analysis for many years. In fact, the classification system of the five interpretive lenses, worked as something similar to Strauss ‘paradigm model’, as I could use them to think systematically about the data and to relate the data in complex ways. As a result, they were very helpful in the coding procedure. What is more, each lens refer to a specific ‘research position’ and also ‘theory about the world’. They therefore constitute the link between method and theory. Whether the ‘paradigmatic model’ of the five interpretive lenses is the result of an inductive or deductive process is actually rather difficult for me to say. Another possibility is to see the interpretive analytical system as a reasoned and rational affair based on several try outs; not only my own analyses but the analytical work with students throughout the years. In that case, they could be perceived as, what Kelle termed ‘hypothetical inferences’; a result of hypothetical reasoning; a creative combination of existing theories with new empirical findings. The originality of the analytical procedure and theoretical framework lies therefore not so much in the definition of the specific lenses but in the inherent complexity. In combination with the three analytical perspectives (ways of understanding the design world) a multifarious interpretive analytical framework developed. Something which I have not seen before. Due to the fact that each lens stands for a specific knowledge field within the discipline they also served as broad and general ‘heuristic concepts’ which I could use to think about while analysing the empirical case study data. In that sense they constituted the theoretical

background and framework for the developing theories and propositions in the case study research.

Despite that it is common practice in architecture analysis to look at buildings from different analytical viewpoints, - think of form, function, space, - I believe that my analytical framework is different in that it portrays how architects do not operate within one world view (one reality) but simultaneously in several world views. In addition, my analytical framework also suggest that what architecture is, - and what architects do, - differs following the way you look at it. Even though this might seem strange from a positivist view point, it is defendable from a reflective view point; that several worlds co-exist depending on the interpretation. This type of interpretation and research is, - according to the categorisation of Linda Groat and David Wang in *Architectural Research Methods*, - 'Interpretive / Naturalistic'. The basic ontological premise in interpretive / naturalistic research is that there are multiple, socially constructed realities. The corresponding epistemological position is that it is neither possible nor necessarily desirable for research to establish a value-free objectivity. Naturalistic researchers are explicit in stating the theoretical position and values inherent in their work and acknowledge the role of interpretation and creation in reporting their findings (Groat & Wang, 2002: 32-33).

That I strive to elaborate so explicitly on the system of inquiry is in line with the objectives of the research; - to solidify arguments for the qualitative aspect of architecture. The methodological investigation and discussion of theory is meant to serve the context of my dissertation; to improve the understanding of practice as a knowledge field; a way of thinking and acting in the world in diverse ways. That architects might not see, what I see, is beside the point. It is an analytical perspective, which in the hands of practitioners could become an analytical tool, so that they may learn how to see, read and act in the field of practice from multiple perspectives and take responsibilities for the roles they have. In a similar way, the interpretive system can be used in education to encourage students of architecture to think deeply about how they position themselves in the world.

2.7 THE FIVE INTERPRETIVE LENSES

On the following pages you will find two pages per analytical lens. The scheme on the first page describes the characteristics of the analytical lens including: - a description of the perspective, - the classification categories, - synonyms (terms that are used in practice), - media, - relationship / links to other fields and disciplines, - a discussion of the analysis, - the literary references I make in defining the lens or in the analytical procedure, - an example of the graphic representation, - and key aspects in the analysis.

As described, the five interpretive lenses have been developed through experimentation and research; analysing the source material in different ways and ordering it into categories. They are an important part of the thematic conceptual categories, - the coding, - which helped me structure the work. Teaching courses in architecture analysis and research served as an intellectual testing ground for the ideas. The conversations with students about the more experiential side of my analytical work, - and how to use it in a didactical practice, - has as such informed the work. However, as discussed under the heading of Grounded Theory, it cannot be excluded, that the interpretive lenses mirror my own 'inner' perception and conception

or reality. As Udo Kelle wrote; ‘’Qualitative researchers … always bring with them their own lenses and conceptual networks’’ (Kelle, 2005: 3). Next to being a philosophical; methodological and theoretical discussion, the idea of different interpretations of the world is as such related to my own ‘being in the world’ in a Heideggerian sense. The way I think is related to my Danish cultural background, to the education and training at different schools of architecture and design in Denmark, my experience as a practitioner, and the interdisciplinarity of my work field as a designer. To give an example, the idea of space as an enactment in time is informed by the work I did as a stage designer in the field of Site Specific Performance Art in which ‘a fictional world’ interact with ‘the existing’ thereby revealing aspects of reality not necessarily visible to the eye. My experience with stage design, exhibition design, installation art and multimedia made me aware that designing a space can be about ambiance or designing a certain presence. It can be about imagery, a platform for thoughts. Or it can be about making people meet, exchange and communicate etc. Having worked in the field of the creative arts have informed my perception of what architecture is about. The idea of being able to describe architecture from different viewpoints - like seeing the world through different glasses - or walking through the same building five times but in another condition - has a performative quality, which links it back to my experiences in the world of art, multimedia and theatre. Next to this, the way I think, is also informed by a cultural curiosity and interest, which has drawn my attention towards how people think, act and live in different parts of the world. This taught me that thinking about thinking asks for the inclusion of a cultural perspective. Applied as a tool in architecture analysis, the five interpretive lenses can therefore act as a way to surface different perceptions of reality, space, place, behaviour and sense-making of which some are more naturalised (normal) in one part of part of the world than in another. An example is the discussion on the ritual (social) aspect of space or experience, which I in my teaching have had many enlightening conversations with students from all over the world about, and which has demonstrated that the interpretation of ‘doors’, ‘windows’, ‘passages’ and ‘thresholds’ are depending on the cultural background and lay-perspective of the person perceiving. They are architectural means that can be used to articulate and address specific aspects in the material culture. The five interpretive lenses, as a research project in itself, therefore necessarily have to include considerations about culture.

While the interpretive lenses have an abstract philosophical character, the systematic approach with which they are scrutinized is an attempt to make them accessible to others. The systematic approach is also related to the world of academia and the discussion on architecture analysis. As will be seen on the individual sheets per lens, I give examples of how the thought frame and analytical strategy is related to the work and discussion of others. However, combining the five strategies into one analytical system is not something I have encountered in the work of many fellows. The work of the architect Thomas Markus is one of the exceptions. In his book *Buildings & Power*[31], he devoted a chapter to what he called ‘Some underlying ideas’. Here we find the text ‘Tools of Analysis’, in which he made a distinction between the analysis of what he called ‘Form’, ‘Function’, and ‘Space’. The three analytical procedures are though not descriptive in nature like ‘Plan

31 Markus, Thomas A., *Buildings & Power*, Routledge, London and New York, 1993

Analysis' at TU Delft[32]. Where Plan Analysis is centred on the visual and physical aspect of architecture, - the architectural object and especially the drawings of the project (the building) as the object of study, - Markus' architecture analysis goes deeper as he includes the socio-cultural aspects of designing and in specific the discussion of social relationships; power and bonding. While *Buildings & Power* relies heavily on the 'Space Syntax Method'[33] as a way of analysing architecture, Thomas Markus also wrote another book *The Words between the Spaces*[34], together with linguist Deborah Cameron, in which they demonstrated how Language Studies can be helpful in understanding how language, - speaking and understanding it, - is interwoven with the activities of architects. Another analytical system, which is similar to mine in its pluralistic approach but different in its execution, is that of the Danish art historian Lise Bæk. In her text 'Arkitektur som rum og ramme', - printed in *Rumanalyser*[35], - she discussed a model for architecture analysis. In it she described five 'space creating factors', which according to her informs and influences the architect in the development of an idea. The space creating factors are; - The formal (morphology, order, style), - The practical (typology, subdivisions in relation to function), - The scenographic and social (sacral or profane activities, rituals/ceremonies and patterns of use, social relations as systems and conventions, habits and life style, style as a scenographic indicator), - The iconographic and signification (representation of a specific value system - character, image making associations, style as signification), - The visual and experiential (art and aesthetics, style as aesthetical means, the experience by the user, perception). Together they form a sliding sequence from the material to the immaterial similar to the range of my interpretive lenses. However, she did in her text not explicitly state that each analytical factor represents a specific research paradigm, nor did she explain how to perform the analyses. The architecture analyses compiled in the book *Rumanalyser* can also not serve as an illustration on 'how to' perform architecture analysis.

The text by Lise Bæk has been used at KADK; the architecture school in Copenhagen to inform a course in architecture analysis. The teachers; architect Peter Thule Christensen, architect Henrik Ingemann Nielsen and idea historian Christian Bundegaard in an introduction text to the studio encouraged the students to consciously reflect upon their own senses, experience and perception in the analysis of buildings. They described how ''A particular look, a particular way of isolated analyzing the object, gives a different object than other ways of looking. In other words, our understanding of something is not neutral'' (Kursusbeskrivelse, SA, 2244, 2012: 4). Thus, their approach towards architecture analysis is comparable with mine. However, the work of the students printed in the book *Værkanalyse 2012*[36], does not convey how the analytical 'lenses' of Lise Bæk had been integrated into the architecture analyses. Seen from a

32 Plan Analysis was developed at the TU Delft in the 1970s. The original purpose of the method was to demonstrate that it is possible to 'deconstruct' a design into a number of descriptive parts. The analytical parameters used are; - context (the position of the house in its landscape or urban situation), - mass (the form of the house, composition of the facade), - program (which functions are where in the house, logistics and use), - space (spatial composition, proportions, views and routes through the building), - construction (the constructive system, materials and building methods, detailing), - decoration. - I quote here from 'Wat is (plan)analyse?' by Willemijn Wilms Floet, TU Delft.

33 The Space Syntax method was developed by Bill Hillier, Julienne Hanson and colleagues at The Bartlett, University College in London in the 1970-1980s as a tool to help urban planners simulate the likely social effects of their designs. The space syntax technique of mapping is used in different fields.

34 Markus, T. A. and D. Cameron, *The Words Between the Spaces, Buildings and Language*, Routledge, London and New York, 2002

35 Rumanalyser is edited by Lise Bæk together with Henrik Oxvig and published by Fonden til udgivelse af arkitekturtidsskrift B, to my knowledge in 1997

36 Kristensen, Peter Thule(ed), *Værkanalyse 2012, Opgavebesvarelser 2. studieår*, Kursus SA/2244, Kunstakademiets Arkitektskole, Institut 1, 2012

methodological and theoretical view point, the lenses had become tacit; implicitly present. Another example from education is a former lecture series and course called 'Research Methods and Design Practices' at the TU Delft. (The course is now called 'Methods and Analysis'). The course was initially coordinated by the two architects and academics Tom Avermaete and Lara Schrijver. The purpose of the course was to help master students to take a position in the research that was performed in the framework of the design studios. The lecture series introduced the idea of four types of 'episteme', which the students could use to reflect upon their own thinking. The word 'episteme' stands for knowledge (field), and the four types were; - Typology, - Phenomenology, - Semiology, - Praxeology. Point of departure for the lecture series was ''the existence in the field of architecture of so-called 'episteme': specific thought frames from which architects operate and that offer them a basis for analysis, comprehension and intervention in the built environment'' (AR3A160, spring 2013: 2). The 'episteme' discussion referred to the work of French philosopher Michel Foucault, who wrote about episteme, - and the production of knowledge, - in his book *The Order of Things*[37]. Similar to the way Foucault saw an 'episteme' as a frame that influence the way people think and know, Avermaete and Schrijver stated that ''architectural research is not considered as a value-free pursuit, but rather as an activity that reflects a particular value frame (vis-a-vis the built environment and architecture) and has a meaningful orientation'' (AR3A160, spring 2013: 2). The lectures were discursive in nature (as the present lecture series in Methods and Analysis still are) and did not explain 'how to' perform research or analyses. They never the less provided a framework like my interpretive lenses with which to discuss architecture as a number of knowledge fields.

Finally, I would like to mention that the five interpretive lenses are essentially five different types of research, which I will discuss on the following pages. As stated they could be seen as an example of Strauss 'paradigm model' corresponding with the American organisational theorists Gareth Morgan and Linda Smircich's continuum of research paradigms as described in Groat and Wang's *Architectural Research Methods*[38]: - Reality as a concrete structure, - Reality as concrete process, - Reality as a contextual field of information, - Reality as a symbolic discourse, - Reality as a social construction, - Reality as a projection of human imagination (Groat & Wang, 2002: 30). Complex in its context and tentative in its formulation, it is a research approach and procedure in development, which is open for future exploration and research.

37 Foucault, Michiel, *The Order of Things*, Routledge, London and New York, 2005, - first published in French, 1966

38 Groat, Linda and David Wang, *Architectural Research Methods*, John Wiley & Sons Inc., New York, 2002 - p 30

INTERPRETIVE LENS NUMBER 1

RESEARCH AREA	THE PHYSICAL ASPECT OF ARCHITECTURE
PERSPECTIVE (thought field)	In this world view reality is seen as material - a world of tangible objects - where humans are responding mechanisms. In practice architects refer to this paradigm, when they talk about how their architecture should be build. The category 'the physical' could therefore also have been called 'building' or 'construction'. The perspective leads to the analysis of the material aspect of architecture: construction, craft and industry, detailing and materialization. The analysis furthermore relates to the building classification system, which makes a distinction between; - construction resources, - construction process, - property characteristics, - and construction results.
CLASSIFICATION (categories)	Building Culture, Constructional Spaces, Details
SYNONYMS (terminology)	Construction, Structure, Tectonics, Building System
MEDIA	Technical Drawings, Models, Language
RELATIONSHIPS (to other fields and disciplines)	Engineering, Building Technology, Building Crafts
DISCUSSION	A large amount of literature has been written about the analysis of form - mass - shapes. The discussion I wish to take here is different. It is not related to order, proportions, scale, balance etc. It is about ‘making’, and the ideas that are embedded into the production of buildings. I am in specific interested in how the production methods relate to the prevailing building culture, and whether or not they were part of a generative and transformative process not only in relation to the construction of hospitals, but for the profession of architects and the surrounding society. In doing so I address the ‘material culture’ discussion in Archeology and Anthropology of which I would like to mention archeologist Michael Shanks, who in his book *Art & The Early Greek State, An Interpretive Archeology* proposes that clay jars made it possible to develop a new life form - a new society - in the old Antique. The production of the clay jars were according to him thus related to society and social change, to human agency and ideology. Another book which I find interesting is the book *Concrete and Culture, A Material History* by Adrian Forty. The book does not only describe how architects have made use of concrete, it also discusses concrete as culture and its role in politics, literature, cinema and labour-relations. In relation to the analysis I have furthermore looked at the book *Constructing Architecture, Materials, Processes, Structures* by Andrea Deplazes, which portrays building as an artistic, creative act of will related to cultural and historical aspects, as I have looked at the chapter ‘Structure’ in the book *Design and Analysis* from the TU Delft.
REFERENCES 1 (definition of the thought field)	- Shanks, Michael: *Art & The Early Greek State, An Interpretive Archeology*, Cambridge University Press, Great Britain, 1999 - Forty, Adrian: *Concrete and Culture*, *A Material History* Reaktion Books, London, Great Britain, 2012
REFERENCES 2 (methodological approach)	- Deplazes, Andrea: *Constructing Architecture, Materials, Processes, Structures,* Birkhäuser - Publishers for Architecture, Basel-Boston-Berlin, 2005 - Leupen, Bernard: the chapter ‘Structure’, from *Design and Analysis* 010 Publishers, Rotterdam, The Netherlands, 1997

REFERENCE:
GRAPHIC
REPRESENTATION

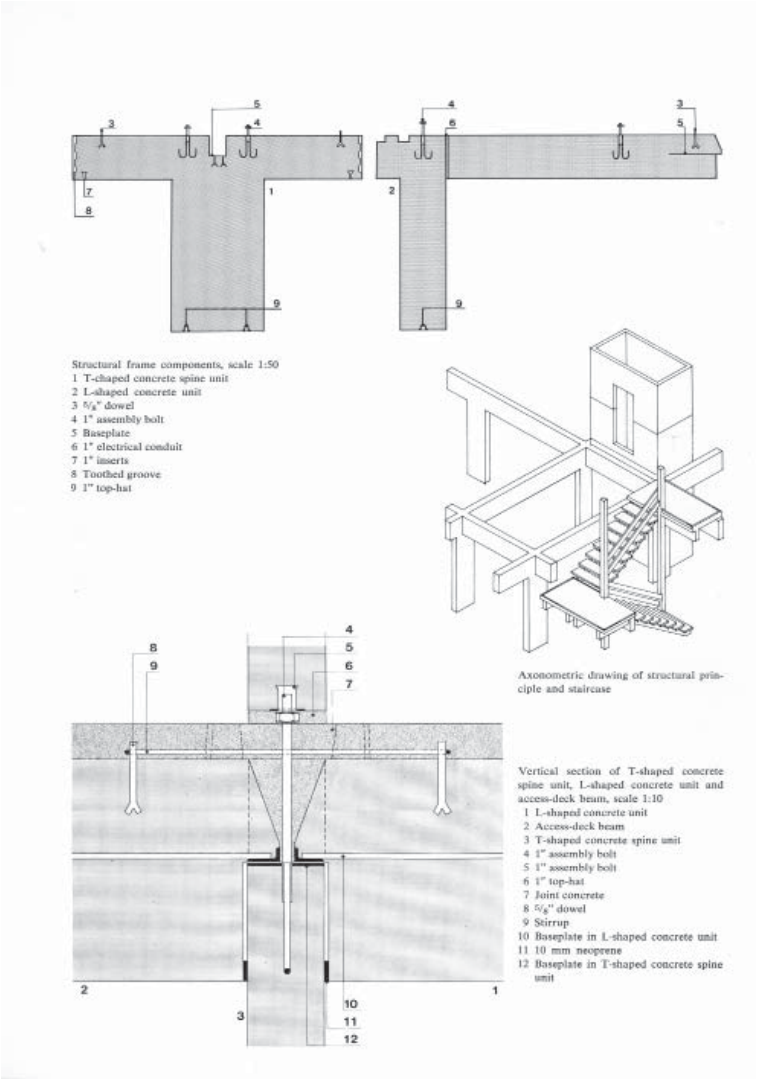


Illustration from *Industrialized housing in Denmark*, Danish Building Centre, 1976

The three drawings depict the structural frame components, an axonometric drawing of the structural principle and a detail

KEY ASPECTS IN
ANALYSIS 1

- Building Culture - Production methods - Tradition and Innovation

- Constructional Spaces

- Primary Constructions and Secondary Constructions

- Fabrication - Assembly - Technique - Detailing

- Materialization

INTERPRETIVE LENS NUMBER 2

RESEARCH AREA	THE DYNAMIC ASPECT OF ARCHITECTURE
PERSPECTIVE (thought field)	In this world view reality is seen as process, a formless world of interactive relations, where humans participate on the same terms as objects and information. In practice architects refer to this paradigm, when they talk about how their architecture relates to the activities, work processes and patterns of use, that are to take place in a building. It is interconnected with the interpretation and organisation of the program. The category 'the dynamic' could therefore also be called 'use' or 'the organisational'. The perspective leads to the analysis of how activities, work processes and flows of patients, staff and goods are directed by the work of the architect.
CLASSIFICATION (categories)	Objects, People, and Information
SYNONYMS (terminology)	Activities, Processes, Patterns of Use, Functionality
MEDIA	Schemes, Diagrams, Flow Charts, Language
RELATIONSHIPS (to other fields and disciplines)	Function Analysis, Organisational Theory, Information Architecture
DISCUSSION	The analysis of use is often approached in a rational way as if the program of a building is something predictable and fixed. Think of hand books like Neufert's *Architects Data*. The analytical view here is different. It is not about naming the 'functions' in the building. It is about understanding the 'dynamic interrelation' between activities and processes that take place in a house (here hospitals). The procedure is similar to that of 'information architecture' or planning procedures in urbanism. In this view the architecture can be seen as infrastructure. Another aspect of the study is to look at how architecture (the organization of space and in space) influence and direct use (inhabitation) in different ways; what happens where and how. As use aspects in i.a. hospitals for diverse reasons have developed over time, the research on use becomes tied to hospitals culture history. It can be about pragmatic ideas; what works well within a specific domain, as well as cultural beliefs, bias and assumptions, as it can be about the re-interpretation of a program; to make something new happen within the domain. The chapter 'Function' in the book by Adrian Forty *Words & Buildings* demonstrated how there through history has been a need in the discipline of Architecture to address the relationship between buildings and the life within them. The Chapter 'Classification' in the book *The Words between the Spaces, Buildings and Language* Thomas Markus and Deborah Cameron examined how labelling have been used to naturalise specific culture historical developments. The organisation of the program is thus not a neutral activity but about interpretation.
REFERENCES 1 (definition of the thought field)	- Forty, Adrian: the chapters 'Function' and 'User' from *Words and Buildings* Thames & Hudson, London, United Kingdom, 2000 - Markus, Thomas A. & Deborah Cameron: the chapter 'Classification', from *The Words Between the Spaces*, Routledge, London and New York, 2002
REFERENCES 2 (methodological approach)	- Lohfert, Peter: 'Anvendelse af Systematisk Funktionsanalyse' & 'Systematisk Funktionsanalyse', *Tidsskrift for Danske Sygehuse*, nr 18 and nr 19, 1969 - Leupen, Bernard: the chapter 'Use' , from *Design and Analysis* 010 Publishers, Rotterdam, The Netherlands, 1997

REFERENCE:
GRAPHIC
REPRESENTATION

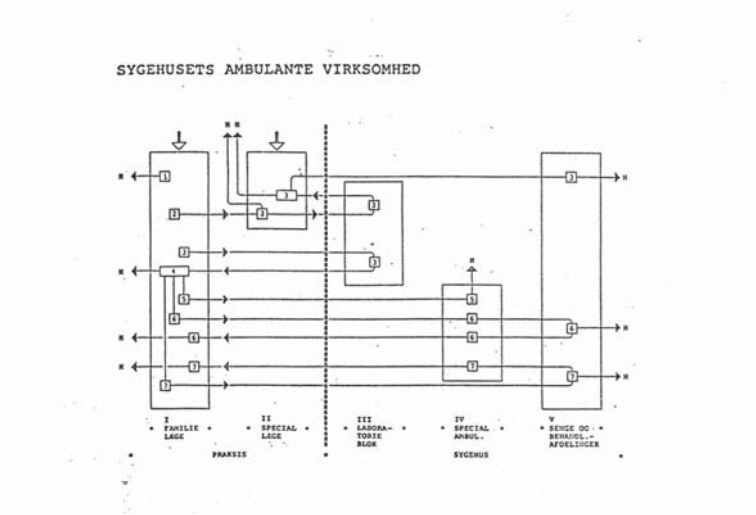


Illustration from handbook by Gunnar Gundersen, Blok 374, Sygehusbyggeri, 1983

The diagram illustrate patients flows between; - I the general practitioners, - II medical experts, - III laboratories, - IV out patient clinics, - V hospital wards. The numbers refers to 7 scenarios.

Illustration from *Envisioning Information* by Edward Tufte, Graphics Press, 1990

The drawing shows the narrative description of a Czechoslovakian air transport system. Here a complex network of routes is brought together with flight times and identification numbers in one map / schedule.

KEY ASPECTS IN
ANALYSIS 2

- General outline - Organization principle and ideas
- Zoning, Distribution, and Routing
- Types of programs in the scheme (for what purpose are they?)
- Programmatic Interrelation - Connections and Separations
- Ways of Working (Teams, Diagnostic partition, Care Paths?)

INTERPRETIVE LENS NUMBER 3

RESEARCH AREA	THE SOCIAL ASPECT OF ARCHITECTURE
PERSPECTIVE (thought field)	In this world view reality is seen as a social construction. Here humans are social actors in a network of contact and exchange, power and bonds. In practice architects refer to this paradigm, when they talk about, how their architecture can support or hinder peoples behaviour and movement in space as well as their interconnection, contact and relation with others. The perspective leads to the analysis of the social aspect of architecture; how an architectural scheme can influence, direct and manifest social (and cultural) relations, rituals and hierarchies between people.
CLASSIFICATION (categories)	Distribution of, Distribution in, and Distribution through Space
SYNONYMS (terminology)	Social Space, Lived Space, Social Practice, Social Structures
MEDIA	Perspectives, Plan Drawings and Sections, Texts
RELATIONSHIPS (to other fields and disciplines)	Anthropology, Sociology, Political Science, Social Art Forms
DISCUSSION	The analysis of the social aspect of architecture is about social relations - including the social aspect of use. Adrian Forty describes in his book *Words & Buildings* how 'The Social' through history has taken on different meanings in relation to the discussion of Architecture. I refer to Thomas Markus, who in his book *Power & Buildings* defines social relations on three levels: - the level of the reflective individual, - the level of the self to others (shared goals and conflict for resources and power), - and the level of the self, or the others, to the Other (divine or humane order). Thomas Markus also describes how there are two types of social relationships; - those of power, - and those of bonds. Besides, I in the analysis refer to his 'analysis of space' in which distribution is seen as one of the key elements in social relations: - distribution of space (configuration), - distribution in space (location of people and things), - distribution through space (enactment in time). The analysis will thus address how social relationships can be read from the spatial configuration; the 'who is where in the building'. It will also explore how the location of people says something about, how they were valued and viewed within the hospital organisation. As routes and views through the building will say something about the performative social relationship between people, whether this was intended or not. The thesis by Julia William Robinson 'Architecture of Institution & Home, has moreover been helpful in my overall understanding of social relations - in specific her view on spatial gradients and transitions.
REFERENCES 1 (definition of the thought field)	- Forty, Adrian: the chapter 'Describing the Social', from *Words and Buildings* Thames & Hudson, London, United Kingdom, 2000 - Markus, Thomas A.: the chapter 'Some underlying ideas', from *Buildings & Power,* Routledge, London and New York, 1993
REFERENCES 2 (methodological approach)	- Robinson, Julia William: *Architecture of Institution & Home, Architecture as Cultural Medium*, Thesis, TU Delft, 2004 - Koch, Daniel: *Spatial Systems as Producers of Meaning* Thesis, KTH - School of Architecture, Stockholm, 2004 - Evans, Robin: the chapter 'Figures, Doors and Passages', from: *Translation from Drawing to Building*, Architectural Association Publication, London, 1996

REFERENCE:
GRAPHIC
REPRESENTATION

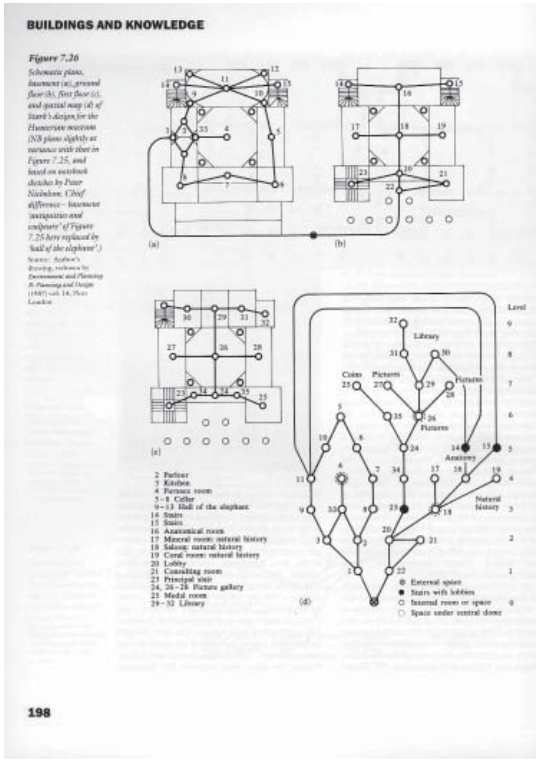


Illustration from *Buildings & Power* by Thomas A. Markus, Routledge, 1993, figure 7,26, page 198

The diagrams show the schematic plans and spatial map of a museum according to the space syntax method of Hillier & Hanson who represent spatial structures by the standard method of graphs. Each space is represented by a circle and each entrance or interconnection between spaces by a line.

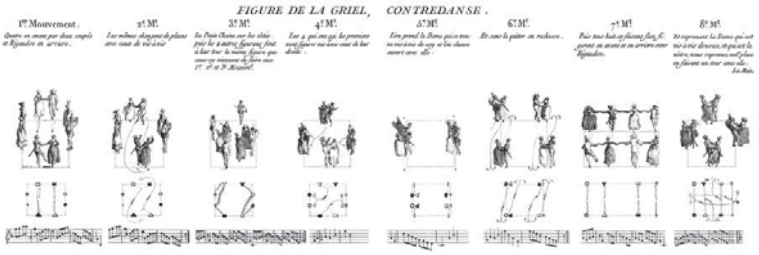


Illustration from *Envisioning Information* by Edward Tufte, Graphics Press, 1990

The drawing depicts the narrative of dance - movement through time and space. A system of dance notation translate human movements and order into signs transcriptions.

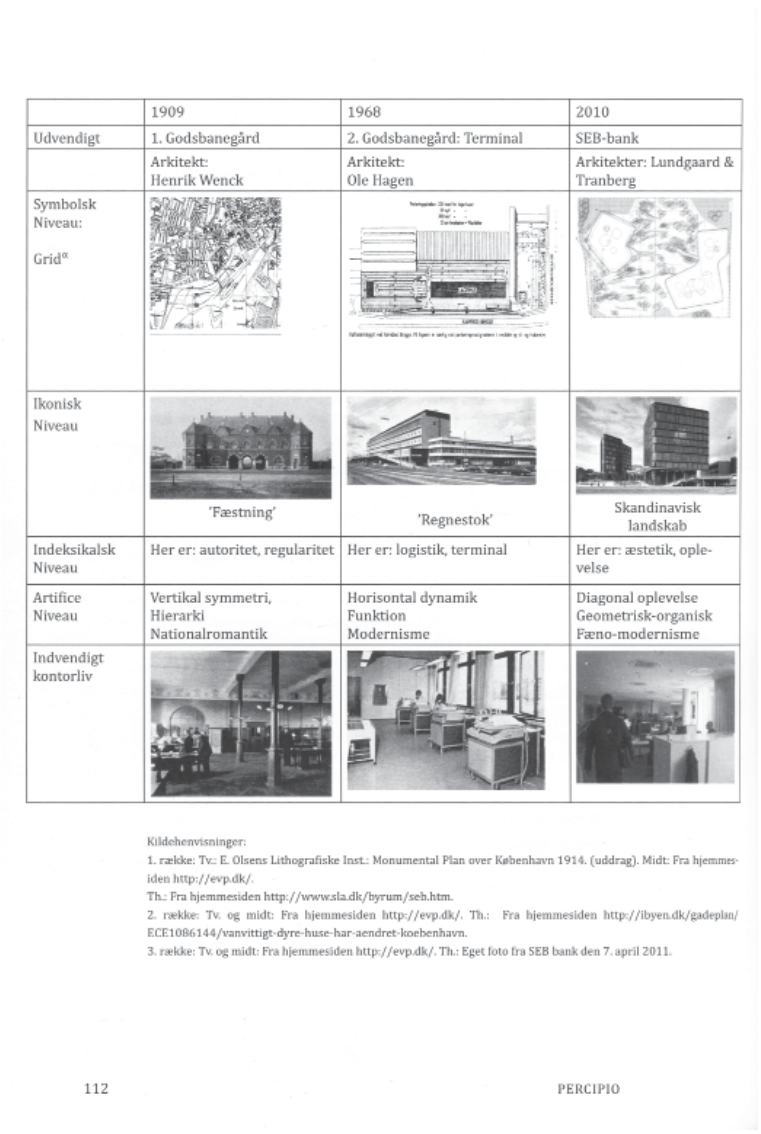
KEY ASPECTS IN
ANALYSIS 3

- Ordering, Accessibility, Ownership, Size - Hierarchy
- Territorial Demarcations - Boundaries
- Clustering versus Separations - Segregations versus Integration
- Public versus Private, and Intimate, Formal versus Informal
- Location and Relations between people - Power or Bonding
- Routes and Views through the building - Social Rituals

INTERPRETIVE LENS NUMBER 4

RESEARCH AREA	THE NARRATIVE ASPECT OF ARCHITECTURE
PERSPECTIVE (thought field)	In this world view reality is seen as a discourse of values, norms and ideas. Here humans participate in the meaning making process that defines the world around them. In practice architects refer to this paradigm when they talk about how their architecture can convey and communicate the identity of a client like a hospital organisation through the architectural imagery. The perspective leads to the analysis of the representational and narrative aspect of architecture: the components, character and intentions of the imagery.
CLASSIFICATION (categories)	Linguistic Message, Symbolic Message, Literal Message
SYNONYMS (terminology)	Imagery, Representation, Architectural Sign System
MEDIA	Images and Language
RELATIONSHIPS (to other fields and disciplines)	Language Studies (Semantics), Culture Studies, Media Studies, Art History
DISCUSSION	The analysis of the representational aspect of architecture is about the relationship between the imagery of architecture (visual and verbal) and what it represents. It is not about something absolute. It is a matter of interpretation. The analysis is informed by the work of Roland Barthes i.a. his text 'The Rhetoric of the Image' in which he identified three classes of messages in an advertising image: - the linguistic message in text, - the coded symbolic message, - and non-coded literal message in visual images. Similarly architecture could be seen as a sign system. The signification could be informed by language. It could also be understood through its literal similarity with something known. Style is for example a carrier of meaning. It is also possible, that the imagery refers to or mirror something through resemblance. The meaning is thereby established through means of association. Another kind of signification is the symbolic message, where the architectural imagery represents certain values and ideas or a convention. In all cases the analysis of the imagery starts by reading the coded and non-coded signs, motives and themes that are (re)presented in the work of the architects. As I do not believe, that architecture is an autonomous communication system (a language), that can be understood by deciphering the code of the imagery alone, the analysis is concerned with the interface between the sign system and the real world situation in which 'the sign system' is used. The purpose is to understand the values and ideas, that informed the design, whether these were ideological, philosophical or cultural in nature. The question is therefore not only, what does the work mean, but to whom does it mean and why.
REFERENCES 1 (definition of the thought field)	- Barthes, Roland: 'The Rhetoric of the Image', 1964 - Forty, Adrian: the chapter 'Language and Drawing', from *Words and Buildings,* Thames & Hudson, London, United Kingdom, 2000 - Markus & Cameron: the chapter 'Images', from *The Words Between the Spaces,* Routledge, London and New York, 2002
REFERENCES 2 (methodological approach)	- Columina, Beatriz (ed): the chapter 'Playboy Architecture 1953-79', printed in *Volume*, nr 33, Interiors, Stichting Archis, fall 2012 - Campbell, Margaret, the article 'What Tuberculosis did for Modernism ...', printed in *Medical History*, 2005, 49; 463-488

REFERENCE:
GRAPHIC
REPRESENTATION



	1909	1968	2010
Udvendigt	1. Godsbanegård	2. Godsbanegård: Terminal	SEB-bank
	Arkitekt: Henrik Wenck	Arkitekt: Ole Hagen	Arkitekter: Lundgaard & Tranberg
Symbolsk Niveau: Grid[α]			
Ikonisk Niveau	'Fæstning'	'Regnestok'	Skandinavisk landskab
Indeksikalsk Niveau	Her er: autoritet, regularitet	Her er: logistik, terminal	Her er: æstetik, oplevelse
Artifice Niveau	Vertikal symmetri, Hierarki Nationalromantik	Horisontal dynamik Funktion Modernisme	Diagonal oplevelse Geometrisk-organisk Fæno-modernisme
Indvendigt kontorliv			

Kildehenvisninger:
1. række: Tv.: E. Olsens Lithografiske Inst.: Monumental Plan over København 1914. (uddrag). Midt: Fra hjemmesiden http://evp.dk/.
Th.: Fra hjemmesiden http://www.sla.dk/byrum/seb.htm.
2. række: Tv. og midt: Fra hjemmesiden http://evp.dk/. Th.: Fra hjemmesiden http://ibyen.dk/gadeplan/ECE1086144/vanvittigt-dyre-huse-har-aendret-koebenhavn.
3. række: Tv. og midt: Fra hjemmesiden http://evp.dk/. Th.: Eget foto fra SEB bank den 7. april 2011.

112 PERCIPIO

Illustration from *Percipio (II: praksis)*, KADK, 2011, from 'Spatial semiotik' (Spatial Semiotics) by Peter Allignham.

The scheme shows how iconic drawings and maps are used as a representation for the symbolic (meaning).

KEY ASPECTS IN
ANALYSIS 4

- Components and Character of the Image (Signs, Motives, and Themes)
- Image making Associations and Resemblances (What does it refer to?)
- Purpose? (Who does the sign system represent and for what reason?)
- Link between sign system and the real world situation (Value system)

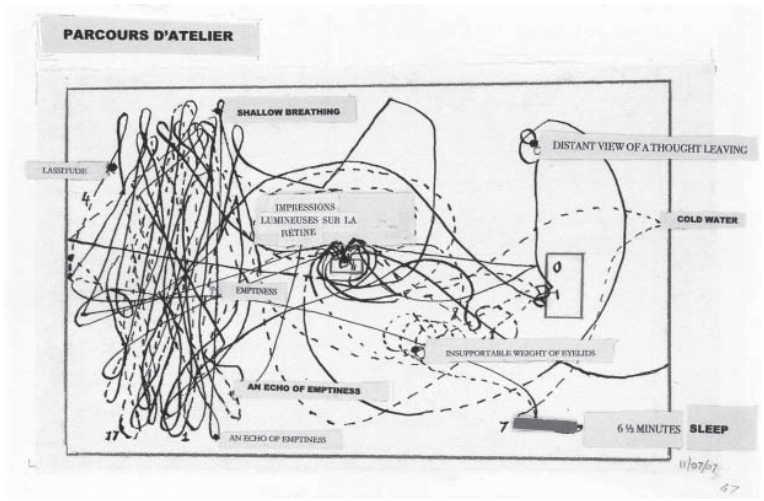
INTERPRETIVE LENS NUMBER 5

RESEARCH AREA	THE EXPERIENTIAL ASPECT OF ARCHITECTURE
PERSPECTIVE (thought field)	In this world view reality is seen as a projection of imagination, memory and personal experience; a subjective world where humans are intuitive, emotional and sensing beings. In practice architects refer to this paradigm, when they talk about the impression or effect their architecture will have on people and/or the artistic and poetic quality of their work. The perspective leads to the analysis of the experiential aspect of architecture. How it is expressed through materiality, transparency, light / shadow, and qualities of the senses. It will also look at how these physical characteristics merge with cultural beliefs, artistic and personal interpretations of the architects.
CLASSIFICATION (categories)	Joyful, Melancholic, Poetic, Majestic etc.
SYNONYMS (terminology)	Physical Presence, Spatial Character, Atmosphere (Feeling / Mood)
MEDIA	Impressionistic Drawings and Language
RELATIONSHIPS (to other fields and disciplines)	Creative Arts (Literature, Poetry, Art, Music, Theatre), Ethnography
DISCUSSION	The analysis of the experiential aspect of architecture is approached from the view point of the architect. I will analyse how the architects 'experienced' what they were doing; in specific how they perceived the potential experience of the user. Different words are being used when talking about the experiential aspect of the architect's work. Gernot Böhme uses the term 'mindful physical presence'. The central concept in this is 'sensitivity', which described in types of moods could be applied to architecture. So can architecture make you feel oppressed, elevated, confined, confirmed, comforted etc. Böhme proposes three characteristics: - massiveness and load, - qualities of the senses, - social and cultural characteristics. Klaske Havik in her work stresses that, while it is architecture that can awaken a wealth of sensory experiences, it is literature that can describe them. Writers are according to her able to formulate a spatial experience, that is both highly individual (subjective) and universal (general). Transcending the self is also a theme in the work of Gaston Bachelard. His book *The Poetics of Space* advocates the poetic, as poetic experience to him is central to being human. There is no need for scholarship. It is the property of a naive consciousness. 'Poetic experience' and 'imagination' is furthermore related to the notion 'memory'. Some of which has to do with a persons individual life story (the lay perspective) but also collective memory embedded into culture. Seen from the view point of experience, there is no 'objective' world, only perceptions. The analysis of the experiential aspect of architecture is made with this in mind.
REFERENCES 1 (definition of the thought field)	- Bachelard, Gaston: *The Poetics of Space* (La poetique de l'espace), (English Translation 1964), The Beacon Press, Boston, 1969 - Böhme, Gernot: 'Atmosphere as Mindful Physical Presence in Space', *Oase,* nr 91, nai010publishers, Rotterdam, 2013
REFERENCES 2 (methodological approach)	- Havik, Klaske: 'Lived Experience, Places Read: Toward an Urban Literacy', *Oase,* nr 70, nai010publishers, Rotterdam, 2006 - Rasmussen, Steen Eiler: *Om at opleve arkitektur,* (First edition, 1957), GEC Gads Forlag, Copenhagen, 1975

REFERENCE:
GRAPHIC
REPRESENTATION

The drawing 'Ruines du Colisée a Rome' by Francois Stella, printed in the book 'Mémoires d'aveugle' by Jacques Derrida, Réunion des musées nationaux, 1991.

In the publication Derrida reflects upon the phenomenon of seeing. The drawing of the ruin is equally an impression of a situation as it is a metaphor, and a door to a catalogue of memories and associations.



The drawing 'Parcours d'Atelier' by William Kentridge, printed in *Images de Pensée* by Marie-Haude Caraes and Nicole Marchand-Zanartu, Publication de la Réunion des musées nationaux, 2011.

The drawing depicts the physical and mental movement of the artist through his atelier. The art work is associatively linked to Guy Debord 'dérives'. The dérives goals include studying the terrain of the city (psycho geography) and emotional disorientation, both of which lead to the potential creation of Situations.

KEY ASPECTS IN
ANALYSIS 5

- Spatial Character

- Materiality (size, shape, texture, rhythm, colour) and Transparency

- Quality of the Senses - Haptics, Acoustics, Odour, Sight

- Mindful physical Presence - Ambiance - Mood

- Poetic Experience - Imagination - Transcending time, space and the body

- Culturally embedded Memories and Myths

2.8 THE ANALYTICAL PROCEDURE

Each of the five analyses in the case study research (THE ANALYTICAL EXPERIMENT) consists of three parts and an introduction. The three parts relate to the three viewpoints as described in THE ANALYTICAL POSITION: media view point, relational view point, and interpretive historical view point.

As each analysis is about another interpretation of the architect's thought field, roles and work, they will refer to different sources, highlight different aspects of the same source or make different interpretations.

The five analyses can serve as five independent variables; thereby making it possible to compare patterns. The question is whether they will show the same results. I will discuss this in THE ANALYTICAL GENERALISATION.

The analyses shift between a descriptive mode and interpretation. In the descriptive mode I describe what I see, hear, read. In the interpretative mode I situate the thoughts and ideas of the architects in a larger framework.

The analyses synthesize the data I have found. They are not chronologically ordered. They are centred on the ideas in the architects' work, how the ideas are informed by different actors, conditions and claims in the decision process and a search to understand what the motives and ideas might mean seen from an interpretive (culture) historical view point.

THE LINE OF INQUIRY IN THE ANALYSES IS AS FOLLOWS:

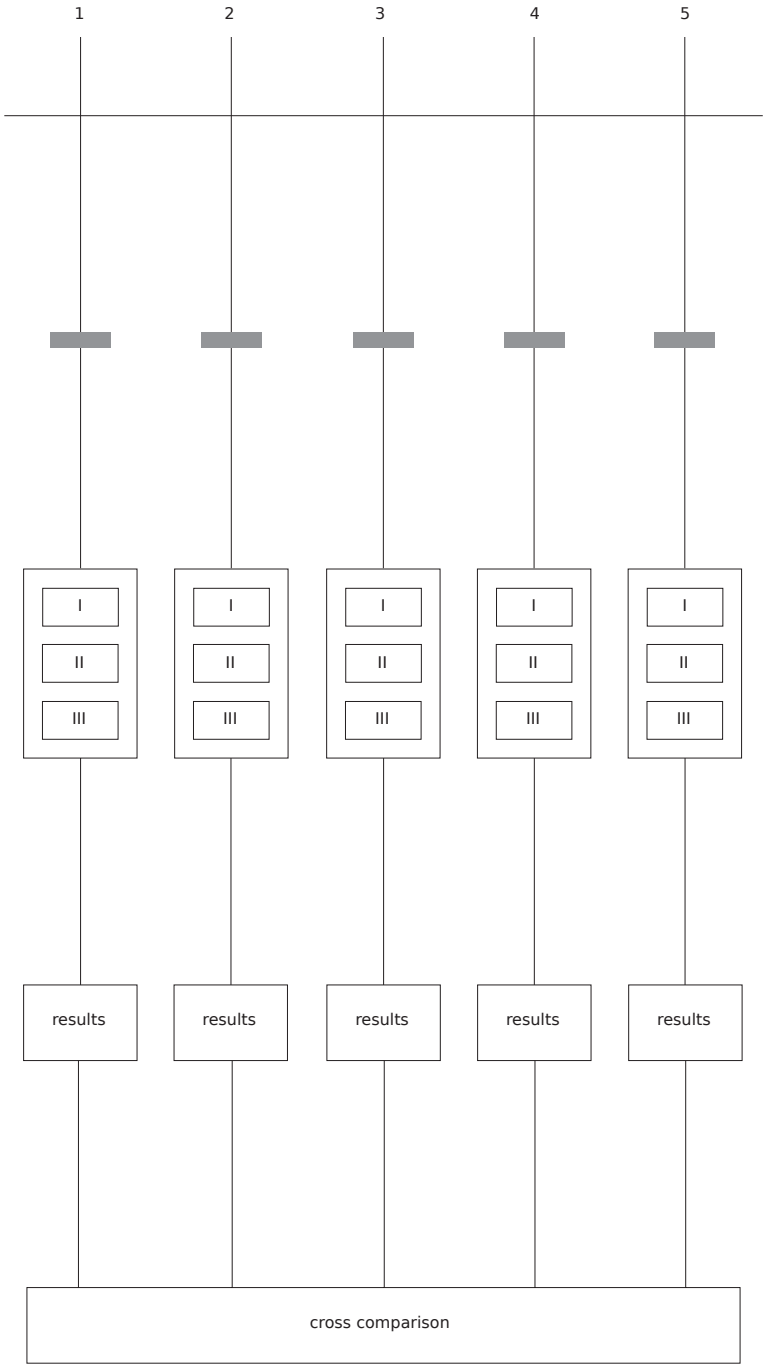
Introduction
In this text part I give a short overview of the data I have found on the culture historical context of Hvidovre Hospital - the frame within which the architects had to work, and the challenges they met.

I: Media Analysis
In this part I discuss the architectural thoughts and ideas that are embedded into the project based on a comparison of the verbal and visual side of the architects' work. I do not describe all aspects of the work but concentrate on examples that are representative for the analysis.

II: Decision-making Process
In this part I look at the interrelation between the thought field of the architects, the client (the municipal of Copenhagen and the Copenhagen Hospital Services) and the collaborating partners to see in what way the architects were informed by the people who surrounded them in the decision process. Who these people were will depend on the analytical lens.

III: Historical Perspective
In this part I will zoom out and focus on the historical context and societal developments in Denmark in the 1960s / 1970s. I also look at the portfolio of the office. The purpose is to discover whether there are any references to the work of other architects, to architectural trends, urban developments, societal conditions and discussions, social or political commitment etc.

THE SYSTEM OF INQUIRY



PARADIGM
Way of seeing the world
Epistomological stance

INTERPRETIVE LENS
Related to the analytical classification system

RESEARCH FIELD
The classification system decides the data used

ANALYTICAL EXPERIMENT:
I: Media analysis
II: Decision-making process
III: Historical perspective

ANALYTICAL RESULTS:
Visual and verbal means
Roles and actions
Patterns and themes

ANALYTICAL GENERALISATION:
What does the material show?
Discussion and conclusion

CHAPTER 3

THE ANALYTICAL EXPERIMENT

INTRODUCTION TO THE CASE

Hvidovre Hospital was built between 1968 and 1976. The design was by the Danish architecture firm Krohn & Hartvig Rasmussen and was the result of a Scandinavian architecture competition in 1962 - 1963.

The name Hvidovre Hospital refers to the fact that the hospital was placed on a site in the municipality of Hvidovre. A site, which the municipality of Copenhagen had bought in the 1930s. In the post war period it was decided to place the new municipal hospital here in relation to the reorganisation and expansion of the Copenhagen Hospital Services. A developing infrastructure of public transport and automobiles made up for the dislocation. Besides, large groups of people had been moving into the suburbs since the 1960s.

Hvidovre Hospital was primarily intended to serve people living in the western and south-western areas of the municipality of Copenhagen. The hospital was also to take care of the clinical teaching and examination of medical students at the University of Copenhagen as well as to work as a training centre for student-nurses. When completed, the hospital should have about 1200 beds distributed across various departments, and with accompanying treatment and service departments and teaching facilities. Gross floor area was estimated to approximately 300.000 square meter.

The hospital was supposed to be built in three stages. The first started at the end of 1968, and the second at the end of 1972. The third phase was never begon. The teaching block was opened in 1972. The first ward block was opened in 1974. The official inauguration took place on 26th of March 1976.

Several municipal committees worked on the proposals for the development of the Copenhagen Hospital Services. Each committee issued a report. Before the architect competition for Hvidovre Hospital was initiated, two comprehensive reports had been made; one in 1952, another in 1960. The competition program was assembled by a third committee in 1962. The discussion on Hvidovre Hospital therefore began quite some time before the hospital was built. Since the project was developed over a long period, I have studied the process chronologically, starting with the political decision to build the hospital in 1952 and ending with the opening speeches in 1976. The first documents were texts. With the architecture competition in 1962 – finishing in 1963 – the visual process began. The scheme was revised between 1963 and 1968, when the building process began.

I have decided to focus on three key moments in the process: - that of the 1963 architecture competition, - the 1968 draft proposal, - and the final building in 1976. For all three moments I have looked at all the material I could find about the project, process and work of the architects in libraries and archives. There was no material to be found in the archive of KHR Architects - the former Krohn & Hartvig Rasmussen. Having access to the archive at Hvidovre Hospital has therefore been of great importance. Besides archival work, I have visited the hospital several times, as well as talked to people who themselves are part of the history of Hvidovre Hospital. Architect Abelone Dyrup, who has worked as a project manager in the hospitals building department (*byggeafdeling*) for more than 25 years, has furthermore showed me around at the hospital and explained its reorganisation. Former employees at Krohn & Hartvig Rasmussen: - project architect Gunnar Gundersen, - architect Peter Lohfert, - architect

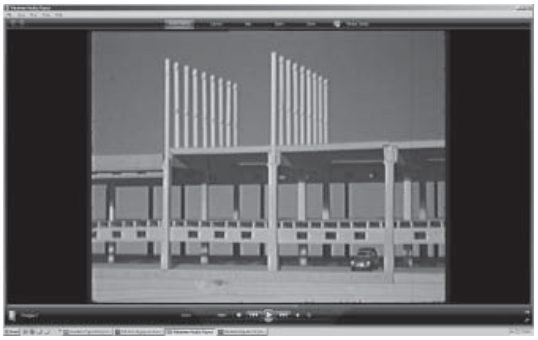
Jørgen Gabiel, - and architect Flemming Skude have also provided me with essential information about the project and the decision making process, and it turned out, that Gunnar Gundersen had kept a copy of some important documents in his private archive, that I could borrow. I also talked with these architects about the office of Krohn & Hartvig Rasmussen, the office culture, and other projects that ran simultaneously with Hvidovre Hospital. This was supplemented by the views of other former and present employees: - architect Knud Holscher, - architect Jan Søndergaard, - and architect Asger Vincentzen. I also interviewed landscape architect Knud Lund Sørensen, the partner of the deceased landscape architect Morten Klint, who designed the gardens at Hvidovre Hospital. Last but not least the daughters of the deceased Eigil Hartvig Rasmussen and the daughters of the now deceased Gunnar Gunnersen have been helpful in sharing their impressions and views of their fathers work, as they as well have lent me images about Hvidovre Hospital they had kept in their private archives.

Collecting the data did not only give me insight into the thought field of the architects who developed Hvidovre Hospital, it made me aware, that behind every architectural project there are stories of life. The architect – and author of the project - Eigil Hartvig Rasmussen at some point started to play an important role in the history about the project, as did the people he gathered around himself to realise what would become his last project.

The people who knew Eigil Hartvig Rasmussen draw a picture of a quiet, kind, caring, intelligent and analytical person. He was an attentive sensitive human being with a creative mind, but he was also a strong personality, stubborn, and good at drafting proposals. Just as dedicated as he was in retrieving projects for the office, just as focused was he in finding the people he needed to realise them. He had no ambition or interest in deciding everything himself. This attitude became important for the development of the Hvidovre project. The interpretation of the competition proposal that Eigil Hartvig Rasmussen had designed all on his own, in the following years became influenced by the different people who worked on the project with each their competencies, thoughts, interests and values. In the study of the thought field on which the architecture of Hvidovre Hospital was based, we therefore not only meet the thoughts of a single mind, that of Eigil Hartvig Rasmussen, it was the result of many authors. These people did not only include employees of Krohn & Hartvig Rasmussen. Representatives of the municipality of Copenhagen and Copenhagen Hospital Services as well as user groups of the hospital had - on equal terms with the collaborating engineers, technicians, landscape architects and others - an important role in the decision-making process, as those who the architects talked to in the development of the project. The project was influenced by participation and democracy. Needless to say, that this matched very well with the surrounding culture in the 1960s and 1970s, where collaboration and communality was in favour. In that sense, it was a very modern project with Eigil Hartvig Rasmussen as a role model for an inclusive type of leadership.

Film about the municipal hospital in Hvidovre - 1973


Architect Eigil Hartvig Rasmussen


Model


Drafting at the office of Krohn & Hartvig Rasmussen


Drafting at the office of Krohn & Hartvig Rasmussen


Field work


Construction


Construction

Impression of the hospital gardens

Building Committee meeting

Drafting

Architect Gunnar Gundersen

Testing in 1:1 scale model

Eigil Hartvig Rasmussen and Edel Saunte i.a. on site

Construction

Coordination at the construction site

PREPATORY COMITEE WORK INITIATED BY THE CITY OF COPENHAGEN:

1944 Comitee number 1 - set up to investigate the expansion of the Hospital Services
1950 Report number 1 - in which it is suggested, that Hvidovre Hospital is built

1952 Comitee number 2 - set up to investigate the program for Hvidovre Hospital
1954 Report number 2 - description of the program for Hvidovre Hospital

1960 Comitee number 3 - set up to investigate the improvements of the Hospital Services
1961 Report number 3 - in which it is recommended to hold an architect competition

Comitee members in prepatory work: a.o.
director A. Andersen
civil engineer J. Buus
city architect F. Jørgensen
chief physician T. Knutzon
chief physician N.B. Krarup
+ 3-6 others

THE ARCHITECT COMPETITION:

1961 Comitee - set up a to prepare the architect competition program
1961 Borgerrepræsentationen grants funds for the architect competition
1962 The program is ready

1962 August - the competition is launched
1963 March - Deadline for the architect competition
1963 Spring-summer - Comitee meetings - assessment of the submitted proposals
1963 July - publication of the results of the competition (the jury report)

The competition program comitee consists of:
director A. Andersen
civil engineer J. Buus
city architect F. Jørgensen
chief physician T. Knutzon
chief physician K. Iversen
head nurse I. Enslev
office manager P. Larsen

secretary B. Gurlev
secretary DAL E. Nielsson

THE DEVELOPMENT OF THE DRAFT PROPOSAL:

1963 September - the city council receives the results of the architect competition
1964 February - the magistrate proposes to cover the cost of a draft proposal
1964 April - The money is granted, under the condition that research is made

1964 The architect / engineers begin the development of the draft proposal
1967 Preliminary proposal is presented to the municipal
1968 April - Draft proposal is finished
1968 October - Draft proposal is approved by the City Council for the Municipal

1968 The Copenhagen Municipal Corporation appointed a building comitee to supervise the design and construction of the hospital
1968 November - Construction begins

The planning of the new hospital was done with representatives from:
Københavns Hospitalsvæsen
Stadsarkitektens Direktorat
Dansk Kommunalarbejderforbund
a.o. with diverse medical and nursing experts such as:
chief physician H. Faber
head nurse I. Enslev
architect F. Jørgensen
(who also advised the jury)

secretary B. Gurlev

Building Comitee: *
(meeting every 14 days)

chairman:
mayor Edel Saunte
(City of Copenhagen)
vice chairman:
director Stengaard Hansen
(Kbh. Hospitalsvæsen)

secretary B. Gurlev
Københavns Hospitalsvæsen

*
The Building Comitee includes representatives for:
Doctors & nurses
Dansk Kommunalarbejderforbund
Stadsarkitektens Direktorat
Københavns Kommunes rådgivende ingeniørkontor
Direktoratet for stadens faste ejendomme

in collaboration with:
Copenhagen Hospital Services and diverse representatives for the user groups from the different departments at Hvidovre Hospital

Jury Comitee:
Architect competition

Representatives DAL:
architect Tobias Faber
architect W. Groth-Hansen
architect F. Jørgensen

Representative for the
Nordic union of architects:
architect F. Lofstrom

Representatives for the
City of Copenhagen:
mayor Edel Saunte
town councilor N. Arup
town councilor F. Grut

Advisors for the jury:
director A. Andersen
civil engineer J. Buus
chief physician K. Iversen
head nurse I. Enslev
office manager P. Larsen
chief physician H. Faber
chief physician Toftemark

secretary DAL E. Nielsson

1963

COMPETITION PROPOSAL
Eigil Hartvig Rasmusen

assistant:
Egon Nissen

consulting engineering firms:
Birch & Krogboe
Johannes Jørgensen A/S

1968

DRAFT PROPOSAL
Krohn & Hartvig Rasmussen
(Eigil Hartvig Rasmussen)

assistants: a.o.
Egon Nissen
Erik Brabrand
Aage Katborg
Knud Holscher

collaborating engineering firms:
Birch & Krogboe
Johannes Jørgensen A/S

CONSTRUCTION 1968 - 1976

Building project administration:
architect Gunnar Gundersen

Work Comitee:
(meeting every week)

Representatives for
each department,
the architects,
and the engineers

prepares material for
the building comitee

Joint construction office:
Krohn & H. Rasmussen
Birch & Krogboe
Johannes Jørgensen

Construction manager:
architect Bent Nielsen

Function analysis &
hospital planning

Supervision:
architect Peter Lohfert

Gray Reports

Detailed design

- architects
- engineers
- extrenal consultants

T-book

Montage (Sideløbende
projektering & udførelse)

Supervision - on site:
architect Albert Jensen

external consultants: a.o.

garden design:
landscape architect Morten Klint

interior color scheme:
architect Niels Schou

public art work:
artist Palle Nielsen

architecture:

raw house, building elements, main wires
interior, furniture, textiles etc.

Krohn & Hartvig Rasmussen
work group leaders (architects):
Aage Katborg (a.o. facades, staircases)
Salli Kvetny (a.o. walls, transport system)
Jack Andersen (a.o. furniture, textiles)
Poul Ovesen (a.o. ceilings, ventilation, light)
Ove Henriksen (a.o. fixtures (fast inventar)
Bjarne Jansen (a.o. technique)

engineering:

technical installations &
transport system:
Johannes Jørgensen

construction &
acoustics:
Birch & Krogboe

ANALYSIS 1

PHOTO OPPOSITE PAGE:

SUBJECT: The construction site
SOURCE: Hvidovre Archive
Year: Unknown, begin 1970s

THE PHYSICAL ASPECT OF ARCHITECTURE

PART 1: MEDIA ANALYSIS

The primary sources for this text are: - the competition proposal from 1963[1], - the draft proposal from 1968[2], - the publication *Københavns kommunes hospital i Hvidovre* from 1973[3]. In addition, I have visited the building several times and studied various photos I have found in diverse public and private archives[4].

By reading through the texts written by the architects at Krohn & Hartvig Rasmussen, I have been able to locate four overall architectural ideas that relate to the physical aspect of architecture. These are: - flexibility, - an open constructional principle (*det åbne konstruktionsprincip*) , - standardization, modulation and industrialization, - concrete, field factory and prefabrication. In the following text I will discuss these ideas.

1.1 FLEXIBILITY

The 1963 competition proposal as well as the 1968 draft proposal shows how the architects faced a challenge. New demands were constantly made to the operation of hospitals. This meant that a modern hospital like that in Hvidovre would continuously have to be redeployed, expanded and changed. The question was, how the architecture could comply with such a requirement. Architect Eigil Hartvig Rasmussen proposed in the 1963 competition proposal that "the hospital should be designed in terms of the widest possible **flexibility** in the construction (*det bygningsmæssige*) and so that each department can expand independently" (Rasmussen, 1963: 11). This led to the idea of a "**low decentralized building**" (Rasmussen, 1964: 5), as changes and extensions on one floor would not interfere with upper and lower floors. The low level construction would – according to Eigil Hartvig Rasmussen – also provide different economic benefits, and the construction could be "carried out with simple, lightweight and **standardized units** according to a **system** that can speed up and shorten the building process" (Hartvig Rasmussen, 1963: 18). The notions 'flexibility', 'standardized units' and 'system' were introduced here, and they became symptomatic for the further development of the physical aspect of the architecture; the way the hospital was built. The 1968 draft proposal gave a detailed account of the potential of a flexible building system. In this context, we encounter the word 'freedom', when they argued for the "**planning of the facility's freedom**" (*planlægning af anlæggets frihed*), (Krohn & Hartvig Rasmussen, 1968: 5). The underlying idea was - in line with the idea of flexibility - that it was possible to change, move around, expand and add new departments without interfering with the existing facility and its use. The word 'freedom' added an extra dimension to the discussion of flexibility, since freedom is a condition not a word normally used to characterize a building. 'Planning the facility's freedom' can be seen as a story telling device; a narrative which was embedded into the thought frame of 1968[5]. The word 'freedom'

1 The 1963 competition proposal was published in *Arkitekten* nr 18, 1963. *Tidsskrift for Danske Sygehuse*, årgang 40, 1964 included an edited version of the text by Eigil Hartvig Rasmusen. I have had a full copy of the text from Gunnar Gundersens private archive, from where I also lend slides of the competition panels. See APPENDIX C.

2 The 1968 draft proposal was not published. I found the proposal in the archives of Hvidovre Hospital. The written report is a document of 184 A4 pages, which is accompanied by a 40-page drawing compendium in a large format.

3 The publication *Københavns Kommunes hospital i Hvidovre* is not dated. I estimate, that it is from around 1973. It is published by Københavns Hospitalsvæsen and put together by Krohn & Hartvig Rasmussen .

4 For this part I made use of the Hvidovre Hospital archive and the private archives of Gunnar Gundersen.

5 In part 3 of the analysis I will describe how the concept of flexibility, planning and the idea of 'freedom' took part in a discussion on the way in which architects operate within the field.

was a metaphor which is not only about technicalities, and the ability to move around the building components if possibly needed. The idea that the elements are ‘free’ (meaning not fixed) insinuates a dynamic structure; one which is free in character[6]. This is an important point, as the story probably gave the wider design team a way of understanding the project, as they designed it and engaged with the client.

1.2 THE OPEN CONSTRUCTIONAL PRINCIPLE

The static structure of the flexible building system consisted of a load-bearing system (a column-girder structure with large column spacing) and a non-load-bearing system (the inner walls). The two systems were in the 1968 draft proposal respectively referred to as “the primary” and “the secondary construction”. Whereas the primary construction was fixed, the secondary construction was the flexible element in the plan. Later in the text, the system was called “**the open constructional principle**” (Krohn & Hartvig Rasmussen, 1968: 162). Like the word ‘freedom’, the word ‘open’ insinuated that the constructional principle was centred around the idea of flexibility. As ‘freedom’, ‘open’ is a word, which was associatively linked to the time period and tied into a larger international discussion on practice and practice forms[7]. While it is not addressed in the written material, the word ‘open’ could insinuate that the physical structure (‘the open constructional principle’) would leave space for appropriation and interaction by other actors in the decision field than the architects. That the architects did not address the issue in their written reports, could be an indication, that they were unaware of this possibility. The consequence will be demonstrated later in the analysis. The 1968 draft proposal described how a large amount of time was spend developing the ‘open constructional principle’ into a valid building system. This was a rather complicated procedure. A construction module had to be designed that could accommodate the hospital’s many functions (and their possible future developments), and a major analytical effort had to be made with regard to standardization of space (typing), building components (building elements), and fixtures. This work involved looking into measurements of various kinds and their relationship from the large scale of the building, bed space requirements to the detailing of the construction. As the hospital facility consisted of two different constructional building types[8] , a module with a large span width was chosen for the big horizontal treatment building, while the ward blocks lying on top of the treatment building received a module of lesser extent, which allowed smaller columns to be incorporated into the interior walls. It was, however, a complex task to coordinate and integrate all buildings elements with each other, and the 1968 draft proposal mentioned numbers of analyses, studies, and models on different scales but also a full-sized mock-up of a 4-bed room with corridor toilet and bathroom. The construction module for Hvidovre Hospital’s open constructional principle was thus not a random goal - or a standard - that they had been using before. It was the result of an in-depth analysis and innovative process taking place within this particular project.

6 I will continue this argument in part 2 of the analysis - in relation to decision making

7 I will get back to the discussion on practice and practice forms in the historical part of the analysis. I use the category ‘practice forms’ to suggest, that there are different ways to practice. What is more, the analysis will show, how the way in which the architects practised became a subject for discussion, as well as it was about territory.

8 See APPENDIX C for a detailed account of the scheme.

1.3 STANDARDIZATION, MODULATION AND INDUSTRIALISATION

The idea of an open constructional principle led to a widespread standardization. The purpose was referred to in the 1968 draft proposal as “a building **rationalization** with extensive use of **standardized and prefabricated components**“ (Krohn & Hartvig Rasmussen, 1968: 145). It was envisioned that all elements such as pillars, beams, ribbons and facade elements could be standardized and prefabricated. It was also conceived that all standard rooms, partitions, installation units and fixtures, to a large extent, could be designed using prefabricated standard components. As will be described in Analysis 2, the flexibility of the facility (how it was used) was based on the standardization, as it provided an unconstrained and open use of the structure. Seen from the perspective of architectural engineering it was a pure and beautiful idea; to create the perfect building technological system - one which is open for different structural combinations and use during the conception and afterwards. But the standardization also had a less idealistic and more pragmatic goal, which was the need for a rapid execution of the building process. The open constructional principle was not only relied upon for the desired flexibility, it should be easy and fast to build. What is more, the word ‘rational’ tells us, that we are dealing with a specific way of thinking centred around logistics. The focus on flexibility had led to ‘system thinking’ which introduced ideas of standardization, modulation and typing. In addition, it provided the opportunity to industrialize the building process. In the 1968 draft proposal it is described as follows: “The deadline devoted to the construction of the building requires a rationalization and partial **industrialization of the building process** with extensive use of **mechanical aids and assembly systems**” (Krohn & Hartvig Rasmussen, 1968: 13). The argument changed here from being use-oriented to being economical in the sense that time equals money. The terms ‘mechanical aids’ and ‘assembly systems’ indicate the wish to use cranes that could lift and put the ‘standardized’ and previously mentioned ‘prefabricated’ items in place. An assembly system was system thinking in its utmost consistency. The standardization was not anymore about flexibility in the ‘use of’ the construction but about production and processing.

1.4 CAST CONCRETE, FIELD FACTORY AND PREFABRICATION

In the development of the 1968 draft proposal it was decided the primary construction of the building system should be made of concrete. They did not reason or discuss the choice of material in the 1968 draft report. It seems as if it was taken for granted. We must assume that it was considered as being a natural consequence of the system approach, and the idea that the hospital should to be carried out as an assembly system. In addition, concrete was introduced into many large-scale building projects in the time period, which I will get back to later in the analysis. The choice for a concrete construction was - seen within a historical framework - not ordinary or self-evident. It was progressive and ‘modern’ in more than one way[9]. In this case though the choice for concrete was also - and maybe primarily - influenced by the economy of the project. In order to reduce costs, the load-bearing structures were manufactured at a field factory, i.e. a temporary factory at the construction site. As described in the 1968 report, they could not use elements from the concrete element factories’ current standard production

9 In this analysis I will discuss how industrialised concrete constructions led to a new type of practice. But concrete also gave architects the possibility to experiment in a material sense. In Analysis 4 I will, for example, show how the architects at Krohn & Hartvig Ramussen worked with sculptural quality of concrete in the imagery of the facades.

as “these products are not developed with hospital construction in mind” (Krohn & Hartvig Rasmussen, 1968: 145). It was moreover described, how they estimated that no existing concrete factory would be interested in tying their production to one task for a number of years. A field factory therefore seemed like a good idea. For foundations, retaining walls, secured structures and structures exposed to water pressure, “cast concrete” was used. The only concrete elements that were not produced onsite were the facade elements. As they had special requirements for surface treatment, and only a small number was needed, they were produced in a conventional pre-casting factory. The relevant aspect is that economics played a major role in the choices that were made. Not only should they build fast, it should be cheap. As described above, this had an implication for the design process as well as the material selection. It also had an impact on the building process and workflow on the construction site. The 1968 draft proposal described it like this: “Hvidovre Hospital is mainly intended to be carried out as prefabricated construction. The immediate advantages of using prefabricated building elements are **a reduction in production time** on the construction site and the possibility to **reduce the need for skilled labour**” (Krohn & Hartvig Rasmussen, 1968: 145). Mechanization meant that fewer man-hours would be used on the construction site, but it also meant lower wages, as the construction was made with the use of unskilled workers instead of skilled workers. The idea of an ‘open constructional principle’ had started to alter the building culture; which was the transformative effect of industrialisation.

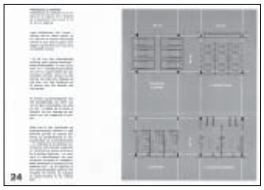
1.5 THE BUILDING TODAY

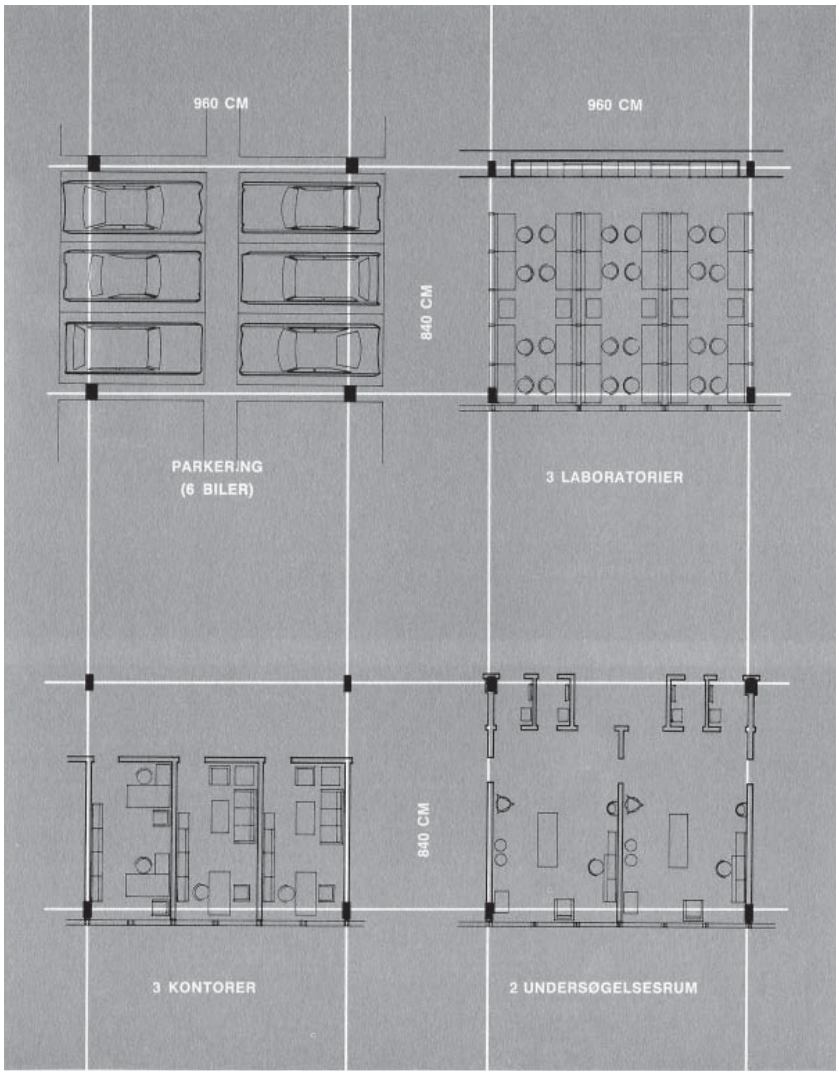
Hvidovre Hospital’s main building structure is still largely preserved today. The primary construction and the façade stands as in 1976, just aged. The changes that have been made are in the secondary constructions. The biggest change lies in the treatment facilities, which have undergone major restructuring, refurbishment and renovation to provide the opportunity for another type of use of the out-patient clinics. Here, a large part of ‘the secondary construction’ (the lightweight inner walls) have been moved. From a constructional point of view, it can be concluded that the hospital building has complied with the demands made by architect Eigil Hartvig Rasmussen in the 1963 competition proposal, describing how the hospital should be a flexible and open building that could be altered over time. It demonstrates the power of the original idea if you look at the building as a building system. However, a field trip to the building revealed that the building was never completed the way it was intended. Large concrete carriers and an unfinished facade were still waiting for continuation. Ward building 5 was obviously never built, and the hospital did not get the ambulance hall that was planned. From an analytical view point, it is interesting that you have to visit the building to understand this. No publications illustrate that the project does not look like the 1968 draft proposal; that a piece of the building is missing. But what happened during the development? This leads to the decision-making process and the decision-makers, as who and what affected the building process in addition to the architects who drew it?

GRAPHIC REPRESENTATION - MODULE NET

The drawing depicted how the module net of 960 cm x 840 cm provided the possibility for different types of use; - parking space, - 3 small offices, - 3 laboratory units, - 3 clinical investigation rooms. It refered to the study that was made in designing the net; that is the distance between the columns in the primary construction.

The image represented the flexibility of the open constructional system. It can be seen as a statement - a way to depict an idea. It is more a diagram than it is plan drawing. Like the notion 'planning of the facility's freedom' it has a metaphorical dimension translated into a graphical language. The white lines floating above the gray field indicates a certain lightness. The black cubicles has (as columns should have) a certain gravity that anchors the net visually to the ground. The use patterns are drawn with a thin line, as if the author wanted to say, that they at any time could be removed and replaced by something else. It is the purity of a mathematical order and the freedom of use in one glance.





VISUAL 1.1

SUBJECT: Hvidovre Hospital - Module net
SOURCE: *Københavns Kommunes Hospital i Hvidovre*, page 24
YEAR: 1973

PLAN DRAWING - MODULE NET

The drawing depicted one part of the service floor. The area was marked in the scheme underneath.

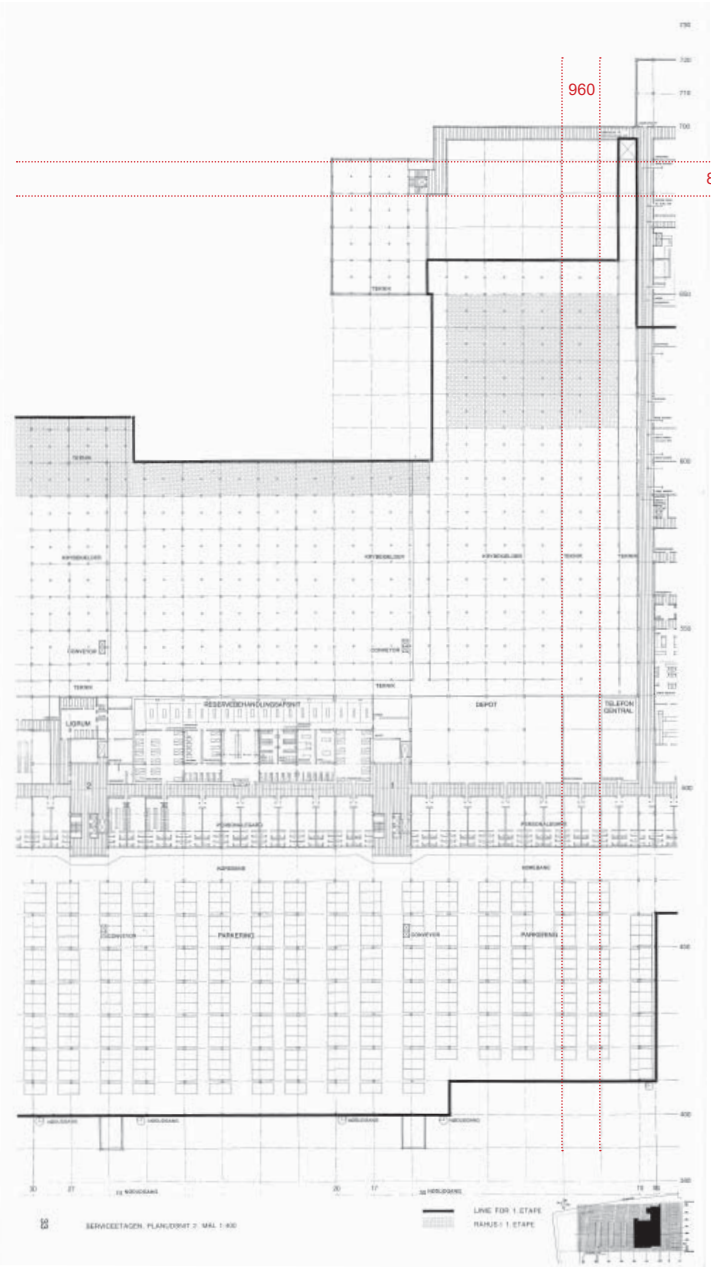
As can be seen the drawing was build upon the 960 cm x 840 cm net system, which was marked by dotted lines. The primary construction was marked as points in the net.

From the upper part of the drawing we can read, that they planned on using this area for a basement like function ('krybekælder'). In the middle of the drawing were placed a morgue, a reserve treatment section, a depot, a telephone central and staff wardrobes. In the lower part of the drawing we find a large parking garage.

The drawing is an example of the placement of the secondary construction; the inner walls and the inhabitation of the plan. From the drawing it can be seen, how they consequently kept the width of the different spaces within the proportions of the net, where as the depth of the spaces varied. It is also to be seen, how they tried to standardize the spaces (refered to as 'typing'), so that it was possible to use the same type of prefabricated elements in the construction.

Despite the detailed furnishing the drawing is of a technical character. The purpose was to give an indication of the positions and proportions of the spaces - nothing more.

One thing of particular concern is the gray fields in the basement. These were unused areas - what they called *råhus*. These areas indicate another kind of flexibility in the building - that empty constructional spaces were made available for later appropriation and use.



Red lines and numbers are added onto the original material

VISUAL 1.2

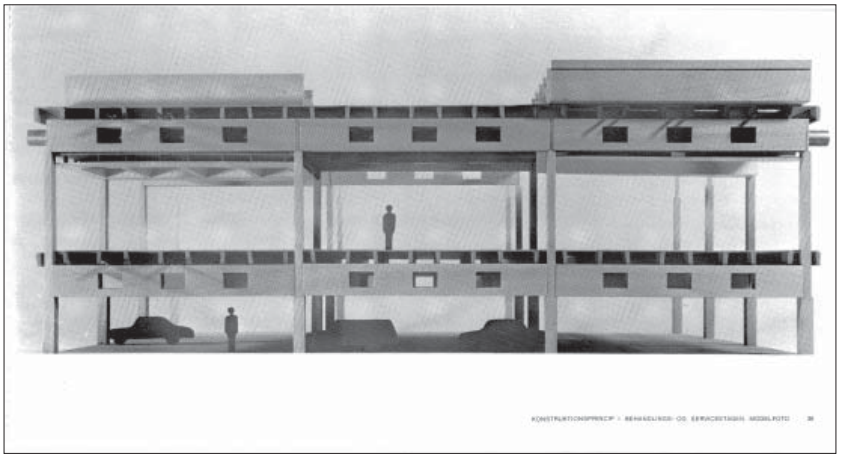
SUBJECT: Hvidovre Hospital - Plan drawing Service floor
SOURCE: *Skitseprojekt april 1968*, page 33
YEAR: 1968

The large model photography is from the 1968 draft proposal. The model is a section of the service and treatment floor. The scale was illustrated by the cars that were placed on the service floor (indicating the parking garage) and a person standing on each floor, which made it look like that the two floors had each their room height.

Due to the fact that the model was 3D, it gives another insight into the constructional ideas than the 2D drawings. The photo demonstrates how the additive building system is envisioned as an open column space in a two level grid. If you look closely you see, that the grid is uneven. The middle section is a bit narrower than the two sides. (The narrow column spacing refers to the measures of the pedestrian street in the middle of the plant).

The beams carrying the deck are rather thick. The height is most probably an indication, that this area was seen as a floor in itself; a technical floor. The idea was to make a combined installation and construction floor within which both spatial division and installations could be changed. The technical installations are thus an integral part of the constructional system. On the above deck we see a tube sticking out of the model, which very well could be a signature for the technical installations or water pipes running horizontal through the plant. On the left side we furthermore see something, that could look like a hanging ceiling, which tells us, that there is access to the installations.

The smaller photos are from a film produced by the Municipal of Copenhagen in 1973. We see here something that look like the same model. It was used to demonstrate the assembly of the primary construction in a stop motion film. Not only did the film portray, how the prefabricated columns were of a double floor height. It illustrated that there were two types of columns, as it showed how the elements were made to fit into each other. The detailing of the construction - the joints - were as such an important part of the assembly system.



VISUAL 1.3

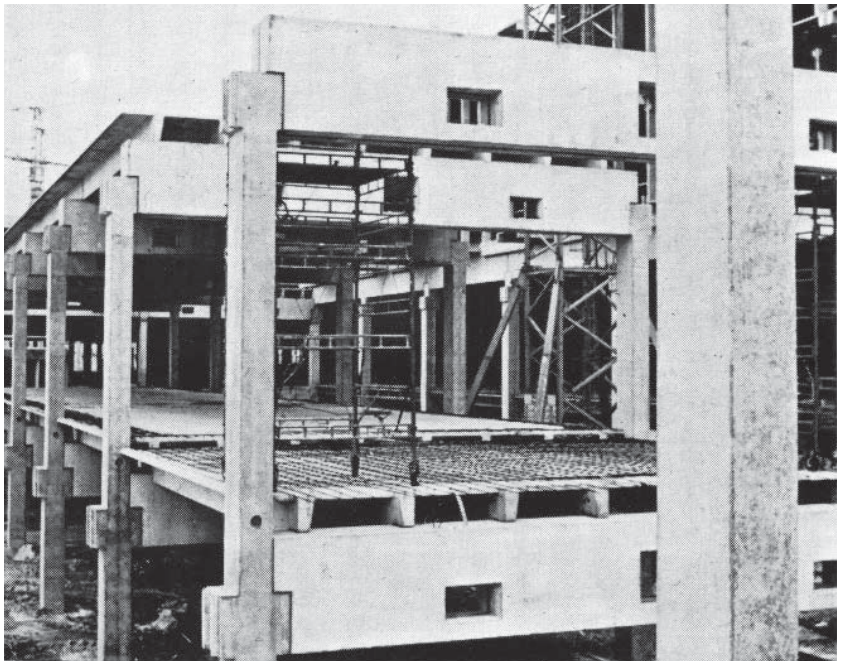
SUBJECT: Hvidovre Hospital - Model of the primary construction
SOURCE: Above - *Skitseprojekt april 1968*, last page
Below - the film: 'Opførelse af Københavns Kommunes Hospital i Hvidovre'
YEAR: 1968 and 1973

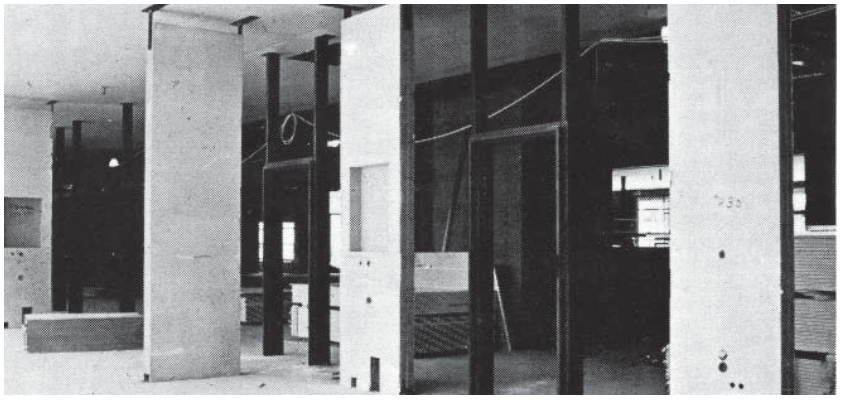
While the constructional system had a rather important role in the hospitals architecture, the execution of it - the assembly of the building - the building project - was rarely shown in the architects presentation of the project nor in architecture magazines. There were only two photos in *Tidsskrift for Danske Sygehuse* (Magazine for Hospitals) in 1976.

The photo above shows a close up of the 'raw house' (the primary construction). The photo below shows the light inner walls (the secondary construction). It is obvious how much the actual building looked like the model (shown on the previous page). The difference is the materiality, the thickness of the different elements and the detailing of the assembly and the joints.

The design of the prefabricated concrete elements are worth noticing. As indicated in the 1973 stop motion film showing the assembly of the model, the elements of the primary construction were joined together in a simple and well proportioned building system. The photography illustrated that the erection was made without the use of bolts. The montage was as such an easy procedure.

The photographs emphasized that thoughts have been made about the construction. Seen from that view point in time the photos might even have been taken with some pride to show the elegancy of the constructional ideas.





VISUAL 1.4

SUBJECT: Hvidovre Hospital - The site of construction
SOURCE: *Tidsskrift for Danske Sygehuse*, july/august 1976, page 140
YEAR: 1976

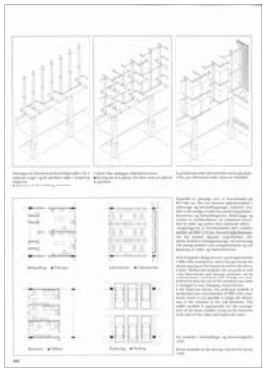
ASSEMBLY SYSTEM - FACADES - WARD BUILDINGS

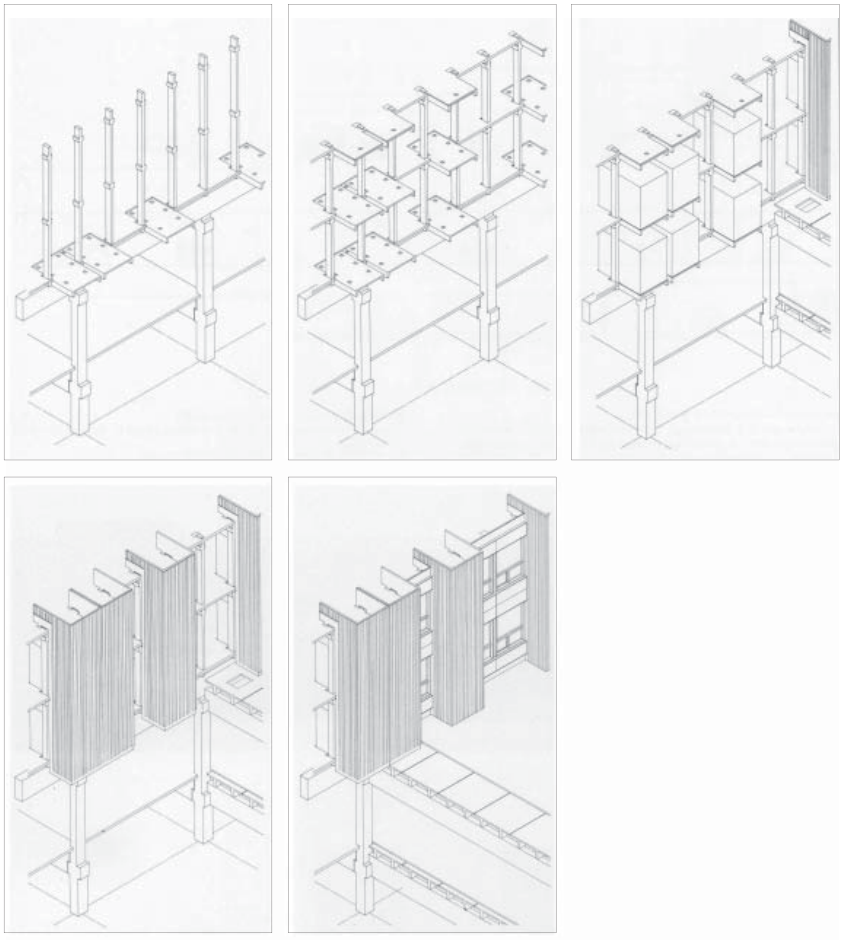
In *Arkitektur DK* No. 8 from 1975 in an article about Hvidovre Hospital we find the following drawings. They depicted the assembly of the ward buildings facades. The same series of drawings are to be found in the engineering magazine; *Byggeindustrien* nr 11 from 1976. According to architect Jørgen Gabriel, who worked on the Hvidovre project (e.g. on the presentation of the project) the illustration was most probably made by the engineers. It is therefore interesting, that it was used by an architectural magazine - without doubt in agreement with the architects. It shows, that the large prefabricated concrete facade elements - and their montage - were recognized as architecture.

The first drawing showed the thick pillars of the two lower floors and thinner pillars of the ward buildings. The second and third drawing showed how the floor elements and the prefabricated toilet cabins were installed. The fourth drawing showed how the precast concrete elements covered the toilet cabins over the full height of the two storeys. The fifth drawing showed the mounting of the standardized window façade elements in between.

As discussed in the text the concrete facade elements were made at a stationary element factory off site. The article in *Byggeindustrien* mentioned, that these elements were (as far as they knew) the largest prefabricated concrete elements made in Denmark up until that period. Due to their height they had a considerable weight of 11 ton each. The montage of the facade elements were of a more complicated nature than the rest of the construction, as the U formed shapes had to be fitted around the already installed toilet units while leaving exactly the right amount of space for the prefabricated window elements to fit in.

The drawing is an illustration of the collaboration between architects and engineers. It moreover demonstrates how the architecture was thought from the view point of construction and detailing.





VISUAL 1.5

SUBJECT: Hvidovre Hospital - The assembly of the ward building facade
SOURCE: *Arkitektur DK*, nr 8, page 312-313, and Byggeindustrien, nr. 11, page 406-407
YEAR: 1975 and 1976

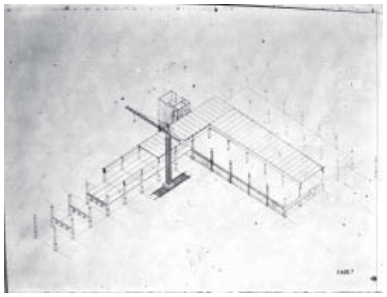
ILLUSTRATION - ASSEMBLY SYSTEM

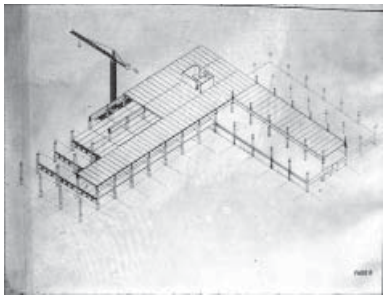
Architect and building project manager Gunnar Gundersen Ikept in his private archive a small suitcase filled with slides. The slides were thoroughly numbered and named by Gunnar Gundersen, who most probably used them for some of his many talks about the project. Among these slides were the axonometric drawings showed here.

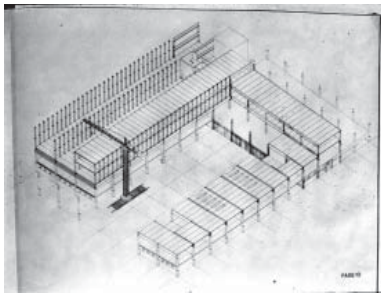
The drawings illustrated the assembly system of a ward block on top of the service and treatment section. The ward block was interconnected with another ward block through a constructional space in between (which was used as the hospital hall way and pedestrian area). The constructional space of the ward building consisted of four rows of columns placed in a grid structure with beams and decks on top. The proportions of the ward pavilions thus followed the net system.

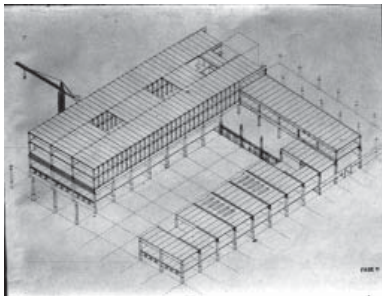
The illustration makes us aware, that the ward buildings were finished before the service and treatment building as the cranes had to drive in between the pavilions. The tracks for the cranes were thus deciding for the order of the construction. It points at that the building project was thought from the perspective of mechanization.

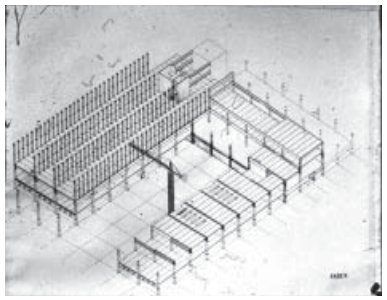
That Gunnar Gundersen kept an illustration in his archive of such nature tells us, that the construction of the hospital in itself was an unusual procedure at that period in time. The logistics of the planning procedure was moreover probably a matter for discussion among peers.











VISUAL 1.6

SUBJECT: Hvidovre Hospital - Assembly system - ward buildings
SOURCE: Slides from the private archive of Gunnar Gundersen. Non - published material.
YEAR: Unknown

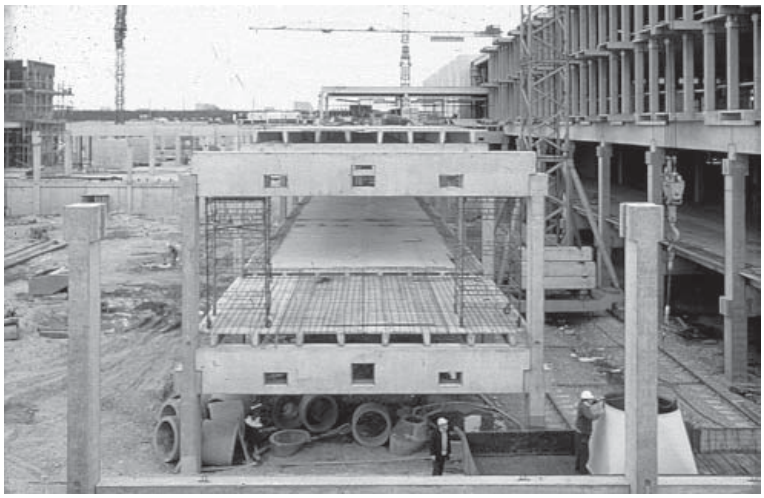
The two top photos are from the private archive of Gunnar Gundersen. The photo below is from the Hvidovre Hospital archive. All three of them have to my knowledge not been published anywhere.

The photographs give a certain insight into the planning of the building procedure as well as the scale of the building project and the constructional elements used. For those working in or with the building industry it will activate memories of cast concrete and construction, the dust of earth, the sounds of machines and people working.

The photo below was taken at an early stage of the building process. We see certain parts of the facility being finished. The photo in the middle seems to be taken later. The photo depicted the same moments as the photo used in *Tidsskrift for Danske Sygehuse* from 1976. On this photo we though also see a ward buildings on the side, which links back to the axonometric drawing in *Arkitektur DK* from 1975. We are here able to see the small platforms that are installed for the toilet units. We also see the space that was kept open around the ward buildings for the crane tracks.

The photo above is from another constructional phase, where the ward buildings have been finished - including the mounting of the precast concrete facade elements. They are now busy constructing the treatment floor in between and on the side. On the left side we see the residential neighbourhood. The photo depicted how ground work had been made - that a part of the hospital would lie under street level.

The photographs make us aware of the work of the architects on site. They are reminisces of the origin of the discipline; the architect as 'the master of the building ceremony' - an educated craftsman.



VISUAL 1.7

SUBJECT: Hvidovre Hospital - The Construction site
SOURCE: The two top phototgraphs are from the private archive of Gunnar Gundersen, the photo below is from the Hvidovre Hospital archive. None of the photographs have been published.
YEAR: Unknown

The drawing is from a presentation booklet about Hvidovre Hospital from approximately 1973. The booklet is seemingly made by Krohn & Hartvig Rasmussen for the municipality of Copenhagen.

From a constructional view point the drawing indicated more things:

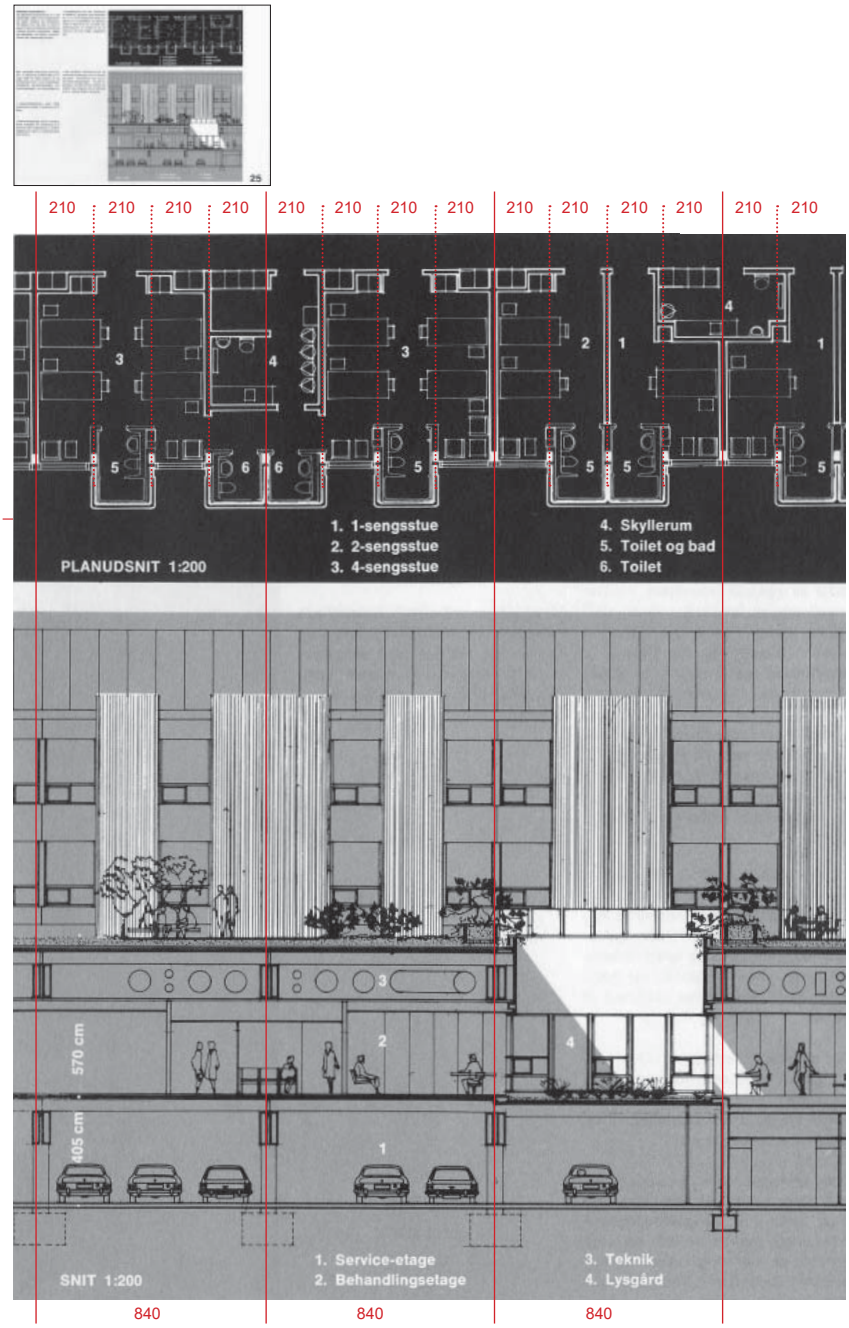
If you compare plan drawing and section you see how the 4 x 210 cm spacing between the columns in the ward building fitted the net system of the primary construction underneath with a distance between the columns of 840 cm. The plan drawing also depicted how the columns in the ward building was reduced to become part of the wall.

The plan drawing moreover illustrated how the floor plan of the 1, 2 and 4 bed rooms were built up according to the same module. This fits the idea of standardization and typing. The same goes for the toilet cubicle and the towards the corridor built in cabinet components. All of this testifies to the systematic thinking described in the proposal texts, which formed the basis for industrialised prefabrication.

In the section we recognize the technical installation floor, which was also mentioned in the discussion of the model. We see here, that there is only one installation floor, whereas the photography of the model could have suggested, that there was two. In the section it furthermore becomes clear, that the before seemly higher floor in the treatment section actually is the same as on the service floor.

The section drawing also shows how the high girders not only carried the ward buildings but a roof top garden. This was in itself a constructive challenge in terms of weight, roots, irrigation, etc. not to mention the vegetation. The roof top garden at Hvidovre was as such a constructional experiment in itself and the first of its kind in Denmark.

Lastly the section indicated that there were small open air patios with small roof top gardens in the treatment section. The drawing illustrated how day light penetrates into the spaces placed around them. Rain water was led away through a drainage system, which was shown as a water pipe on the section in the corner of the patio.



Red lines and numbers are added onto the original material

VISUAL 1.8

SUBJECT: Hvidovre Hospital - Section ward building and the facilities underneath
SOURCE: *Københavns Kommunes Hospital i Hvidovre*, page 25
YEAR: 1973

STANDARDIZED INVENTORY ITEM

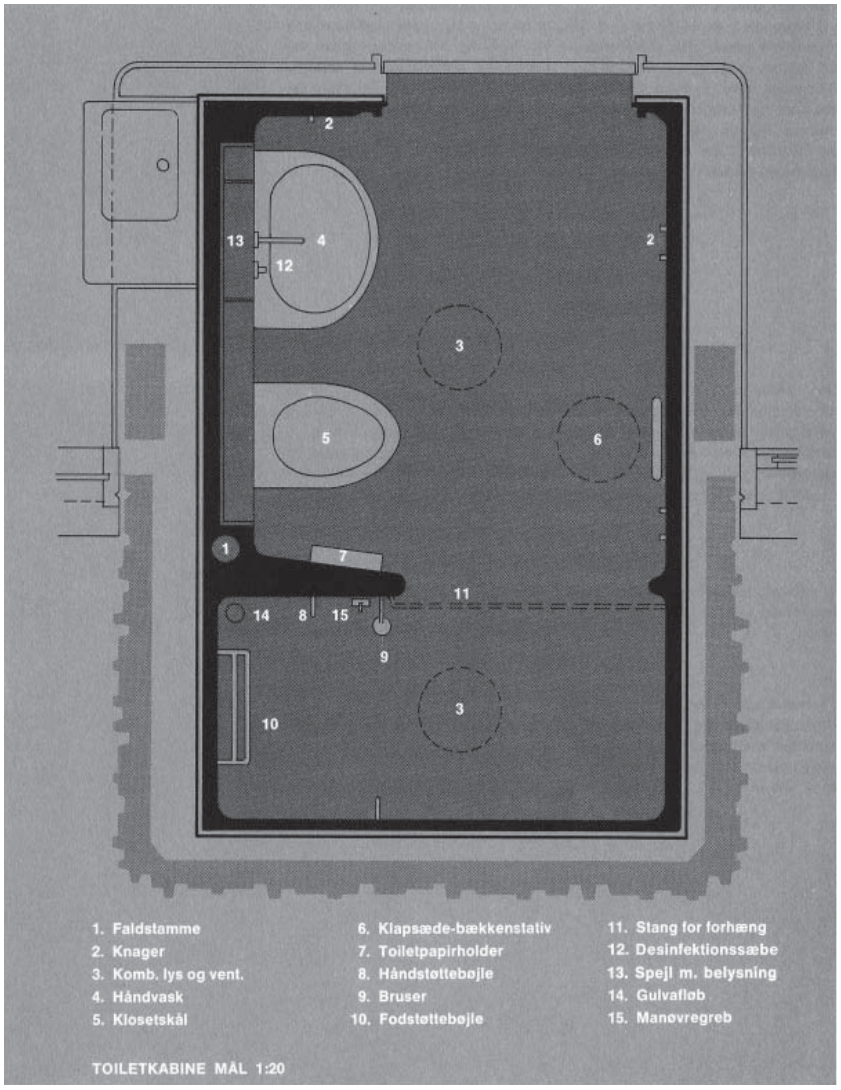
In the same booklet as the plan drawing and section on the former page we find a plan drawing of the toilet units. It was used as an example of the standardized inventory objects. In fact not only the toilets were designed in the interior. A lot of other elements were designed e.g. for the laboratory, the clinics, surgery etc. The toilet cubicles were though of a specific kind. As part of an experiment initiated by the architects they were industrially produced, completely finished products in polyester manufactured elsewhere and placed as a box, which can be seen on Visual 1.5.

The material and construction technique was new at the time. Like the building system the toilet cabins were thus a matter of innovation.

On the drawing we see how downpipe, ventilation, lighting, floor drains, and mirror with lighting are built into the cabin's outer wall and that room was reserved for placement of hooks, sinks, toilet bowl, toilet paper holder, shower rod for curtain, etc. in the layout, dimensioning and construction of the cabin. The idea of flexibility had here been replaced by the idea of designing the 'perfect toilet unit'.

Outside the cabin on the left side we see a built-in sink and at the lower side a horizontal section through the profiled concrete facade element. The relationship between the cabin box and the façade was not clarified in this drawing. Inner and outer walls nearly melt together as a whole. The drawing is in that sense a conceptual drawing.

Despite its abstract character, the drawing shows, that the hospital was not only made by anonymous standardized elements. These were contrasted and varied by elements of another character and materialisation - whether this be a door knob, a hand rail, doors, windows, wall elements or furniture. I will get back to the detailed design of this 'counter point play' in Analysis 4.



VISUAL1.9

SUBJECT: Hvidovre Hospital - Toilet Cabin
SOURCE: *Københavns Kommunes Hospital i Hvidovre*, page 26
YEAR: 1973

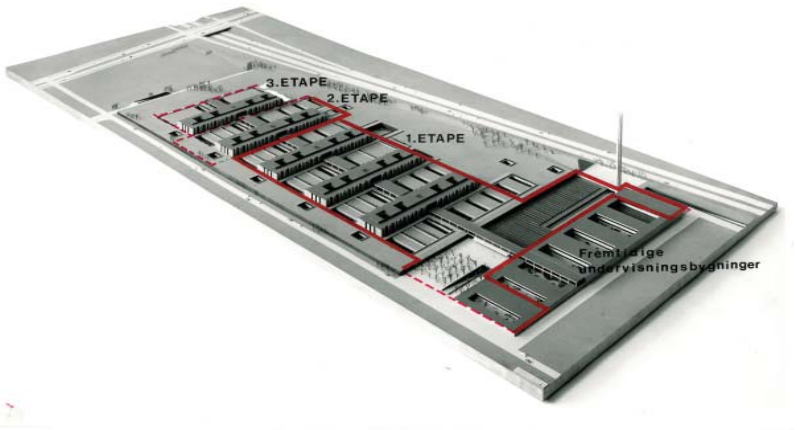
PHASING

On the opposite page you find two types of photographs from a film produced in 1973. The first column are images of the scale model. The second column are images of the realised construction. I include them here to give an impression of the relationship between the scale model and the building as well as to give a view of the totality of the construction proposed.

The top photograph on this page is from Hvidovre Hospital archive. The red lines on the image indicated the phasing of the building project.

Below are two images from the 1973 film about the hospital project. We see here a young architect (Gunnar Gundersen) explaining how the building project would be split into three stages. He made use of the same model as seen above.

Despite the flexible and open character of the building system as described in the proposal texts, in the drawings and the scale model formerly shown, it is obvious from looking at the scale model of the whole hospital design, that the project was not envsioned as an additive system that could be expanded and changed in all directions but as a closed composition; a whole.



VISUAL 1.10

SUBJECT: Hvidovre Hospital - Presentation of the building project
SOURCE: Large photo above - Hvidovre Hospital Archive, (year unknown)
Small photos below - from the film *Opførelse af Københavns Kommunes Hospital i Hvidovre*
YEAR: 1973

THE MODEL

THE BUILDING

VISUAL 1.11

SUBJECT: Hvidovre Hospital - Presentation of the building project
SOURCE: The film *Opførelse af Københavns Kommunes Hospital i Hvidovre*
YEAR: 1973

PART 2: THE DECISION PROCESS

In this text I have compared statements from the 1968 draft proposal[10], texts written by project architect Gunnar Gundersen[11], statements from various architects who witnessed the development and construction process including a text written by Eigil Hartvig Rasmussen about the development of the project[12], reports prepared by the City of Copenhagen in 1954[13] and 1961[14], the competition program from 1962[15], the jury report from 1963[16], internal notes from the city archive (*Stadsarkivet*) in Copenhagen, and an article in *Tidsskrift for Danske Sygehuse* in 1967[17].

Generally speaking, there were three phases in the decision-making process. The first phase started with a report issued by the municipality of Copenhagen in 1952 about a new hospital in Hvidovre and ended with the architect competition in 1962. The second phase was from the jury report in 1963 to the development of the 1968 draft proposal. The third phase was the building project running from 1968, where the hospital commission was granted, until 1976, where the hospital was officially inaugurated.

2.1 THE MAIN ACTORS IN THE DECISION PROCESS

The work of architect Eigil Hartvig Rasmussen began in 1962 with the interpretation of the competition program. He was more or less alone in this part of the thought process[18]. The fact that he - in the 1963 competition proposal - not only wrote about abstract conceptual ideas but also about the realisation of the building and its constructional system was without doubt related to a life time of experience as a building architect. He was aware of the conditions under which he worked as an architect. Above all he thought architecture, construction, economy and building process as a whole. A mindset that not only characterized this one project but all of Krohn & Hartvig Rasmussen's projects at that time[19]. After having won the competition, Eigil Hartvig Rasmussen gathered a continuously growing group of people between 1963 and 1968 to develop the project[20]. One of these was Gunnar Gundersen, who in 1967 was appointed to lead the upcoming building process, manage the budget, the time planning as well as the coordination. Gunnar Gundersen had experience in hospital construction and management from his work on Rigshospitalet[21]. He therefore had the

10 The 1968 draft proposal was not published. I found the proposal in the archives of Hvidovre Hospital. The written report is a document of 184 A4 pages, which was accompanied by a 40-page drawing compendium in a large format.

11 For this part I made use of two texts in specific; - a hand book called 'Blok 374 Sygehusbyggeri made by Gunnar Gundersen for Danmarks Forvaltningshøjskole, Forvaltningsfagligt diplomkursus for sygehusadministrativt personale, del 2', - an unpublished text by Gunnar Gundersen about the making of Hvidovre, found in his private archive.

12 I have spoken to the architects Gunnar Gundersen, Flemming Skude and Jørgen Gabriel that all were involved in the building process. I have also found a bibliographical text - in which Eigil Hartvig Rasmussen described the role of Gunnar Gundersens in the Hvidovre case - in the private archives of the family of Eigil Hartvig Rasmussen.

13 'Betænkning afgivet af det af Københavns magistrat under den 27. marts 1952 nedsatte udvalg vedrørende opførelse af et hospital I Hvidovre'. The report was printed in 1954, which is why I use this year of date.

14 'Betænkning vedrørende opførelse af et nyt hospital afgivet af Københavns hospitalsvæsens planlægningsudvalg den 6 juli 1961'

15 The program was made by more or less the same people that had been writing the 'betænkninger' (the municipal reports on the development of the program) in 1952 and 1961. Stadsarkitekt (city architect) Frode Jørgensen was one of them. DAL (the union of Danish Architects) send architect Erik Nilsson as their secretary.

16 The jury report was printed in *Arkitekten* nr 18 from 1963

17 'Redegørelsen vedrørende Hvidovre Hospital', printed in: *Tidsskrift for Danske Sygehuse*, årgang 43, 1967

18 That Eigil Hartvig Rasmussens developed the 1963 competition proposal on his own was not unusual. That it was signed Eigil Hartvig Rasmussen and not Krohn & Hartvig Rasmussen is an indication, that he saw it as his project and not the office. One architect assisted him in the execution - a person called Egon Nissen.

19 I will get back to this argument in the historical part of the analysis.

20 On drawings that I found in the archives of Hvidovre Hospital dated between 1963-1965 we see names like Egon Nissen, Erik Brabrand, Aage Katborg and Knud Holscher. I will get back to the role of Aage Katborg in Analysis 4. It is also interesting to note that Knud Holscher worked on the project for several years before he won the competition for Odense University. This is a hidden link between his work and that of Eigil Hartvig Rasmussens / Hvidovre Hospital.

21 Gunnar Gundersen worked at the office of Buch Hansen og Stærmose from 1962-1967. He had a leading role in the execution of Rigshospitalet (the main hospital in Denmark), and was head-hunted for the job at Hvidovre Hospital.

expertise to lead this rather demanding building project. From 1964 until 1967 Eigil Hartvig Rasmussen himself had had the leading architectural role in the planning committee with representatives for a. o. engineers, the municipality of Copenhagen and the hospital staff. With the construction work beginning in 1968, and Gunnar Gundersens' presence as the project manager, his activity diminished. In 1972 he resigned from his position as partner of Krohn & Hartvig Rasmussen, leaving the Hvidovre process completely to Gunnar Gundersen, who at that time became partner in Krohn & Hartvig Rasmussen[22]. Gunnar Gundersen had from that moment on the leading role in the building committee. The complex character of the building project and the rather strict demands of the client also asked for another type of person than Eigil Hartvig Rasmussen. And Gunnar Gundersen was not only a social and friendly person, he had a military-like discipline and order, a good memory, was diligent, pragmatic, well organized, good at planning and good at negotiating and managing a project[23]. Eager to do a rigorous job he also encouraged fundamental research like fact-finding in literature, participations in international congresses of the International Hospital Federation on hospital construction[24], study trips to Sweden and the USA[25], as he wrote about the construction in various journals and gave guided tours at the construction site for visitors, what connected him to a large national and international network[26]. From 1972 onward it was thus Gunnar Gundersen, who represented the project to the outside world, as at the office, he became the person in charge of the building project.

2.2 THE COMMON OFFICE (*FÆLLESTEGNESTUEN*)

Another important person at the office of Krohn & Hartvig Rasmussen in the handling of the building project was architect Bent Nielsen. He was employed at about the same time as Gunnar Gundersen. Krohn & Hartvig Rasmussen, and the two consulting engineers Birch & Krogboe and Johannes Jørgensen had entered a joint building management team, which in principle served as an overall adviser for the client[27]. To this end, a joint building office was established, which was in charge of the planning and execution of the construction under the daily management of Bent Nielsen. While Gunnar Gundersen operated from inside the office, Bent Nielsen was most often to be found on the construction site, where another 10-15 people had been placed in temporary pavilions from where they worked. These people were a mix of architects, technicians and engineers. If we look at the drawing material, we see that some plan drawings were signed *Fællestegnestuen*, and we must assume that it refers to the collaboration between architects and engineers. The decision process was as such influenced by the

22 The resignation of Eigil Hartvig Rasmussen as a partner of Krohn & Hartvig Rasmussen should be understood in the light of his age, his deteriorating health as well as his bad relationship with Gunnar Krohn. As he was not able to finish the Hvidovre project, he wanted to make sure, that one of 'his men' was in charge of the project, and that Gunnar Krohn would have no influence on it. In a bibliographical text I have found at the home of his daughters, Eigil Hartvig Rasmussen described how he saw his resignation as kind of a sacrifice. It was obviously his hope, that a person like Gunnar Gundersen could help improve the office culture, as he was a reliable and friendly person and a co-operative colleague. He himself does not have the energy or will to continue.

23 The characterisation of Gunnar Gundersen is based on the interviews I have made with people who knew him like Flemming Skude, Knud Holscher, Jan Søndergaard and his three daughters.

24 In my interview with Gunnar Gundersen he explained how they collected and studied diverse reports on hospital constructions. They especially made use of data from the Swedish Hospital Institute.

25 In the US they visited open plan hospitals, schools, and prisons. They were primarily interested in constructional and technical ideas - of which some were not known in Europe - such as dry wall systems.

26 After the Hvidovre Hospital project Gunnar Gundersen worked at hospital planning projects around the world (a.o. The Middle East, Africa, Greenland) He also taught courses in hospital planning - oddly enough not at the Danish schools of architecture in Copenhagen or Århus but at a school for nursing - see footnote 15.

27 Being a 'overall advisor' meant, that the architects - in collaboration with the engineers - were also in charge of the budget, time planning, and the execution of the project, next to designing the hospital.

collaboration between Krohn & Hartvig Rasmussen and the two consulting engineering companies from 1963 to the final execution of the project in the period 1968-1976. Symptomatic for the bond between architects and engineers, Krohn & Hartvig Rasmussen had taken the initiative in the late 1960s to build an office complex called *Teknikerbyen* ('The Technical City'). The idea of *Teknikerbyen* was that architects and engineers should have the ability to reside in the same building, thereby making it easy to have daily contact in the development of the joint projects. What is more, the proximity made it possible to establish a more integrated mode of thinking, in which architectural and engineering concerns went hand in hand. Who thought what in the development of the constructional principle for Hvidovre Hospital is therefore difficult to know. Seen from the view point of the architects, it might not have been that important either. It was not about authorship. It was about thinking together, - therefor the name *Fællestegnestuen*. Comparing texts written by architects and engineers we also see how they had developed a 'common language' - a 'lingua franca'[28] - as they more or less use the same words and highlighted the same aspects in the project such as flexibility, expansion, and change[29]. Consequently, the project for Hvidovre Hospital was not only conceived by an architectural firm with a sense of construction. It was developed with engineering in mind. Thus, it cannot be excluded that the system thinking, modular construction, and standardization were heavily influenced by the engineers' way of thinking. However, system architecture was also a time-sensitive architectural issue, which I will deal with in the historical part of the analysis.

2.3 FIELDS OF INTERESTS

As described above, the constructional aspect of the project for Hvidovre Hospital was developed in a collaboration between architects and engineers. The municipality of Copenhagen also played an important role in the planning and development work of the building project. Their interest in the physical aspect of architecture was not to be read from the 1962 competition program, which mentioned next to nothing about the construction, materialisation, realisation criteria or the building process. However, point number 7 in the competition program stated: "The hospital must in its function be as **rational** a whole as possible taking into **economical consideration** both the construction and the operation. In the design of treatment units and laboratories **opportunities for future changes and extensions should be kept in mind**" (*Konkurrenceprogram*, 1962: 4). Point number 7 is one out of forty-eight points in the competition program. This shows how little the Municipality of Copenhagen and Copenhagen Hospital Services at that point in the process were thinking about the construction and the building process. Their lack of concern was also reflected in the communal reports from 1952 and 1961 which were primarily about the program. In spite of this, Eigil Hartvig Rasmussen understood the importance of point number 7, as he underlined how his competition proposal was both flexible and offered good opportunities for extensions. The idea of the 'freedom' of the facility, the open constructional principle and architecture as a building system refer to this. It is as if Eigil Hartvig Rasmussen knew what was written between the lines; that he anticipated what kind of architecture his potential client (unconsciously) were looking for. He saw an architectural idea in its making. And it was this analytical gaze

28 'Lingua franca' meaning a language that could serve as 'a bridge' between the two disciplines.

29 This statement is based on a comparison of texts written by the architects and the engineers - for example a text written by Ole Harvig-Jensen from Johannes Jørgensen in *Byggeindustrien* nr 11, 1976.

that characterized his way of being an architect[30].

In spite of Eigil Hartvig Rasmussens detailed account in the 1963 competition proposal, the Municipality of Copenhagen asked in 1964 for a comprehensive study of the functional and building technological aspect of the project while granting the money for the development of the draft proposal. The purpose was to provide a common module for both wards and the treatment building. This led to the standardization process as described in Part 1 of the analysis. As mentioned, this was a time-consuming piece of work. But the municipality believed that the time lost could be won back in the building process, as the common module had significant advantages once the fabrication of the elements of the buildings was started[31]. The idea of standardisation did as such not come solely from the architects. As I will explain in the historical part of the analysis, the municipality - the Danish state - was in favour of an industrialized building process as part of a wider initiative in Denmark for prefabrication. The following quote is from the architect's contract:

"In addition to form and function, the project management and planning must take into account the conditions of the buildings executions, so that it becomes a '**production-oriented design**'. This means that the choice of constructions and materials and the design of illustrations must **take into account the mode of operation that is best carried out on the site**, including - as far as possible - utilization of the repetition of **prefabricated structures and installation parts** as well as equipment, all with the purpose of using least workforce in the construction".[32]

The intention was clear. Hvidovre Hospital should not be built as brick work. It should be an assembly system[33]. As already mentioned in Part 1 of the analysis, economics played a major role in this decision. The project's financial management was carried out in collaboration with the Directorate of Copenhagen Hospital Services. The Municipal's 2nd Department, which was responsible for hospital construction in the City of Copenhagen, wished to follow the constructional phase closely. Thus, the mayor of the department, Edel Saunte, became chairman of the building committee[34]. Besides managing the building project, Gunnar Gundersen's role as the administrative project leader therefore also consisted of mediating between architects, the municipal officials and hospital representatives in the building committee meetings. This meant negotiating the decisions that should be made about the execution of the building of which some were crucial for the realisation of the 'kind of architecture' that Krohn & Hartvig Rasmussen wanted to create[35]. The role of Edel Saunte was primarily to ensure that the budget was kept, with secretary Bent Gurlev as the intermediate person. The municipality was afraid that the project would ruin the municipality's economy. The municipal authorities therefore made a demand that the

30 This impression is based on the interviews I made with Gunnar Gundersen and Flemming Skude who both knew Eigil Hartvig Rasmussen very well. According to them, Eigil Hartvig Rasmussen was - due to his analytical nature - very good at making competitions. He also won quite a lot of prizes.

31 'Redegørelsen vedrørende Hvidovre Hospital', trykt i *Tidsskrift for Danske Sygehuse*, årgang 43, 1967

32 Quote from the architects contract. It is taken from an unpublished text by Gunnar Gundersen, which I found in his private archive. In it he described and discussed the building process.

33 The societal cause for the municipality's priority will be discussed in the historical part of the analysis.

34 The building committee was put together by the municipality of Copenhagen. Besides representatives for the architects and the engineers, it consisted of mayor Edel Saunte, hospital director P. Stensgård Hansen, city architect Frode Jørgensen from *Stadsarkitektens Direktorat* as well as representatives for doctors, nurses, the municipal workers union, the municipal engineers, and *direktoratet for stadens faste ejendomme*.

35 In my interview with Gunnar Gundersen he talked about how he would prepare himself for these meetings strategically to get his points across. In one case, for example, he managed to convince Edel Saunte that the municipality should invest in rather expensive toilet cabins by referring to the architects' contract, which stated that the architects were obliged to work with innovative materials and prefabricated elements. Thus, Saunte had to agree.

building project should be phased in order to spread the costs over a longer period of time. This was not in accordance with the recommendation of Krohn & Hartvig Rasmussen and the engineers in the 1968 draft proposal. In this, they warned exactly against a phasing of the project, saying that it would not only complicate and delay the construction procedure, it would eventually increase the production costs, starting and stopping the building process, as new negotiations would have to be made. The open constructional principle and standardized system had resulted in a new kind of project management; where others than the architects could decide how much was to be built and when. The phasing of the building project is another example of how the municipality's financial interests affected the project. The consequences of phasing the building project also meant that phase 3 was never built, as the municipality no longer had the necessary financial background to complete the hospital at the time of the grant application in the 1970s[36].

2.4 EXAMPLE OF THE DECISION PROCESS

At the end of the 1968 draft proposal, it was explained that the first building stage was expected to start during the winter of 1968/69 and completed in the fall of 1974. In order for this to be done, a process was proposed in which design (*projektering*) and building production takes place at the same time. It was called "parallelism between design (*projektering*) and construction (*byggeri*)"[37]. It broke with the traditional building management (*totalprojektering*), where one completes the design on the level of details (*detailprojektering*) before construction starts. "Therefore, a **system** has been chosen that should guarantee that no decisions are taken which block or hamper later design work, which means that **all problems are processed in a logical order** where each problem in principle is only tackled and resolved once" (Krohn & Hartvig Rasmussen, 1968: 168). The word 'system' reappeared here. This time it was not about a building system but about a planning system - an optimal and logical process (Visual 1.13). The idea was that they would not have to consider the same question more than once. The words 'logic' and 'order' bear witness to an almost scientific mindset[38]. The 1968 draft proposal had identified the important components and dimensions that were binding for the design. It was now about planning.

The planning system was divided into three phases: - standardization phase, - detailing phase, - work drawing phase[39]. In the standardization phase, all building components that could be standardized were processed in parallel with a detailed functional planning[40]. The result of the standardization was a compilation of all existing building components: a type overview. The parallel design (*projektering*) and execution meant drawing and realizing things at the same time. It also meant that the hospital could be used as parts of the facility was completed. The planning system (*projekteringssystemet*) is a good example of how the traditional approach to designing and building was replaced by a system approach. It is also an example that the architects' work with Hvidovre Hospital was not only to develop and draw the hospital or to cooperate, discuss and negotiate with the parties involved. It was also

36 Whether there was the will to finish the project at Hvidovre as it was intended, is also questionable. The distribution of treatment facilities within the municipality between the different hospitals had been drawn into doubt. This led to the belief that ward building 5 maybe was not necessary at Hvidovre.

37 Page 168, 'Beskrivelsen af skitseprojektet: Tidsplanlægning og projekteringsmetodik'

38 I will get back to this way of thinking in Analysis 2, when I discuss the work of Peter Lohfert.

39 Page 168-171, 'Beskrivelsen af skitseprojektet: Tidsplanlægning og projekteringsmetodik' - Grundtanker vedrørende projekteringssystemet. On these pages the three phases were described in detail.

40 I will get back to the analysis of the hospital function in Analysis 2.

a matter of analysis, organization and planning. It is an example of how the role of architects was expanding these years. As the architects had not been trained in these matters through their education, it was something they would have to learn in the field of practice. No doubt though, that the collaboration with the engineers must have helped.

2.5 TEAM WORK AND BUILDING MANAGEMENT

In the period leading up to the realization of the building in 1968, the office of Krohn & Hartvig Rasmussen underwent a transformation. The size of the assignment necessitated that about 100 employees were working exclusively on the Hvidovre Hospital case. With such a large number of employees, it was necessary to divide the work into smaller work groups with each their group leader. Some took care of the design of i.a. facades, partitions, ceilings, floors, fixed fixtures, etc. Others were involved in the 'joint building management team' and responsible for the construction. While yet another group of architects worked on functional analyses in collaboration with Copenhagen Hospital Services. One can speak of a kind of decentralized responsibility, although it was the Building Committee under the guidance of Gunnar Gundersen, which made the most important - and economic - decisions based on the material produced by the work groups.

The work groups used what they called the 'T-book' for design planning and contracting. The T-book consisted of type overview drawings, type drawings, detail drawings and product cards. Even though the architects, in collaboration with the engineers (*Fællestegnestuen*), had devised a simple construction system for the hospital in Hvidovre, it was complex to perform. The standardization required a mindset, a working method and a system approach that was new in the history of architecture, and which I will get back to in the historical part of the analysis. The approximately 20,000 handmade drawings the office produced give witnesses to the work they did in realizing the building project[41]. However, the standardization at Hvidovre Hospital was not unique, nor was the industrialization. It was a trend that could be seen in the surrounding society, where several institutions and multi-story buildings were constructed in this way. To understand the project Hvidovre Hospital we must necessarily include a historical perspective. In the next section of the analysis, I therefore consider how the thoughts and ideas developed by Krohn & Hartvig Rasmussen related to the development and needs of the surrounding society and the architectural debate.

41 The number is compelling when considering that every drawing was made by hand. The drawings had a large value. To protect them against fire, for example, they casted a concrete chamber on the construction site, where they were stored. The drawing archive is now at Hvidovre Hospital in a locked room. They still use them from time to time.

The diagram depicted a hierarchy. At the top was the client. In the case of Hvidovre Hospital - the City of Copenhagen. The Building Committee was named *Byggeudvalg*.

In the case of Hvidovre Hospital, the city administration's second department (*anden magistrat*) was in charge of the economy while representatives from Københavns Hospitalsvæsen were in charge of the programming.

Hvidovre Hospital's Building Committee (*Byggeudvalg*) was set up by the city authorities to act as client in this particular case. It consisted of mayor Edel Saunte, hospital director P.Stensgård Hansen, a number of representatives for the doctors, nurses and the Municipal Workers Union, as well as representatives from Copenhagen municipality's engineering office and the directorate for communal real estate. Architect Frode Jørgensen from Stadsarkitektens kontor (the city architects) was appointed as the secretary.

Gunnar Gundersen's role was to act as the leader of the building project (*Byggesagsadministration*). His work area included organization, administration, coordination, time management and budget. The committee meets every 14 days.

Under 'building project administration' we find three other areas;
- Management (*Styring*) - Planning (*Projektering*) and - Functional Analysis (*Funktionsanalyse)*.

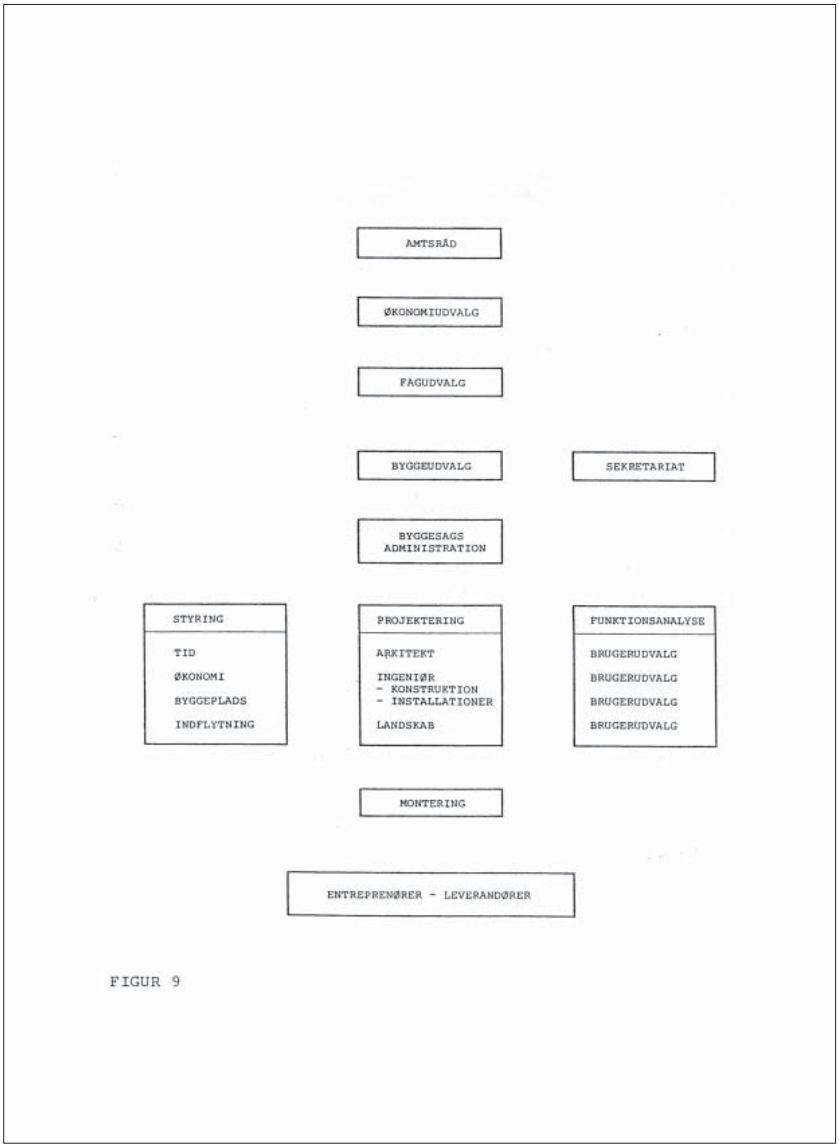
The notion 'management' (*styring*) stood for construction site management. Krohn & Hartvig Rasmussen and the two consulting engineers Birch & Krogboe and Johannes Jørgensen had entered a joint building management team, which in principle served as a total adviser. Architect Bent Nielsen was responsible for this area.

The notion 'functional analysis' refered to the programmatic planning. At Hvidovre Hospital this work was done by the planning department of the Directorate of Copenhagen Hospital Administration (*Københavns Hospitalsvæsen*) in cooperation with Krohn & Hartvig Rasmussen, Birch & Krogboe and A / S Johannes Jørgensen and representatives from the hospital staff (*brugerudvalg*). Architect Peter Lohfert was on behalf of Krohn & Hartvig Rasmussen responsible for this area.

The notion 'planning' (*projektering*) stands for the design work the architects and landscape architects did on the building structures, installations, the interior and the landscape. The engineers at Birch & Krogboe were responsible for the technical installations, and the engineers at Johannes Jørgensen were responsible for the bearing structures and acoustics. Individual group leaders were responsible for each their area of work. They furthermore prepared material for the building committee meetings.

At the bottom of the scheme we find *Montering* (montage) as well as *Entreprenører* (entrepreneurs) and *Levenrandører* (delivering companies). These people were external parties.

THE ORGANISATION OF THE BUILDING PROJECT



FIGUR 9

The different aspects of the building project are important to know, so as to understand the field Gunnar Gundersen was operating in as the administrative leader of the decision-making process. In an instruction booklet for the Danish School of Public Administration from 1980 Gunnar Gundersen described the aspects that were to be considered in hospital construction. We must assume, that he in his text drew on his experiences from the Hvidovre project. One of the issues he discussed was the organisation of the decision process. For this purpose the above diagram was made.

VISUAL1.12

SUBJECT: The organisation of the decision process
SOURCE: Gunnar Gundersen, *Undervisningsmateriale til Blok 374 - Sygehusbyggeri, Danmarks Forvaltningshøjskole, Forvaltningsfagligt diplomkursus for sygehusadministrativt personale*, page 12
YEAR: 1980

The scheme depicted how design (*projektering*) and building production took place at the same time.

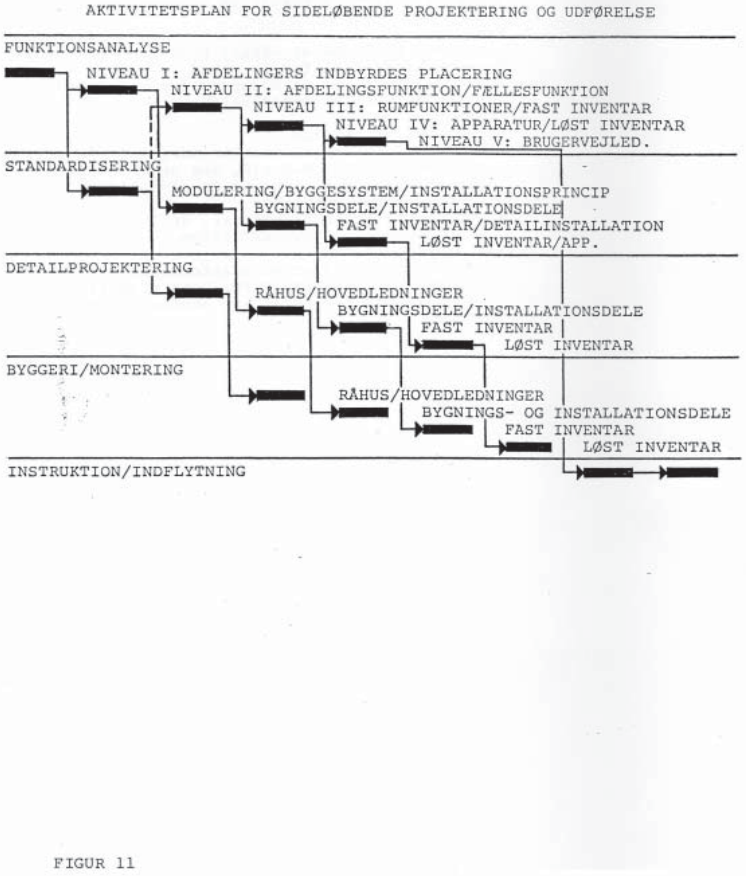
An essential issue was, that there was a delay between processes of conception and production. So was the large scale building elements designed first, ending with furniture.

Seen from above and down, it was divided into 5 categories;
- *Funktionsanalyse* (function analysis), - *Standardisering* (standardization), - *Detailprojektering* (detail planning), - *Byggeri / Montering* (building), - and *Instruktion / Indflytning* (instruction / inhabitation).

The function analysis was divided into 5 levels (*niveau*); - the hospital departments and their internal relationships, - the individual departments, - specific spaces (functions) within the departments and their inventory, - equipment of different kinds and loose furniture. - and the instruction manual. (In Analysis 2 I will deepen how these analysis were made and their content).

The standardisation, detail planning, and building project took place at 4 scale levels and followed more or less the same pattern starting with the scale of the building system (the primary construction and its main technical installations), followed by the building parts (the secondary constructions), the in build inventory items (toilet cabin, laboratory units etc), and the loose inventory (furniture, lamps etc).

Contrary to a traditional planning procedure where all scale levels of a building project is planned and drawn in detail before the construction begins, the building project in Hvidovre began before everything was drawn and planned on all levels. The thought processes therefore ran parallel - thus simultaneously - though with a important delay in mind - so that the information gained in for example function analysis level 1 could be used for the standardisation of the primary constructions and so forth. As described in the analysis the idea was to ensure the best possible coordination between all parts of the building process.



FIGUR 11

VISUAL1.13

SUBJECT: Activity planning of parallel building development and execution
SOURCE: Gunnar Gundersen, *Undervisningsmateriale til Blok 374 - Sygehusbyggeri, Danmarks Forvaltningshøjskole, Forvaltningsfagligt diplomkursus for sygehusadministrativt personale*, page 33
YEAR: 1980

PART 3: THE HISTORICAL PERSPECTIVE[42]

In this text part I refer to Tobias Faber's book *Dansk Arkitektur* from 1977[43], Nils-Ole Lund's book *Teoridannelser i arkitekturen* from 1972[44], *Tag over hovedet* by Erik Nygaard from 1984[45], Kim Dirkinck-Holmfeld's texts in the overview *Dansk Arkitektur 1960-1995* from 1995[46], and Jørgen Sestoft's articles in *Arkitektur DK*, No. 7-8 from 1979[47], amongst others[48]. In addition, I have studied a number of Krohn & Hartvig Rasmussen projects to see how the Hvidovre Hospital's constructional system related to other projects in the office portfolio. I have specifically looked at the Atlas Machine Factory, the Contex Factory, Grønttorvet, Rødovre Center and the University in Odense[49].

3.1 THE WORK OF KROHN & HARTVIG RASMUSSEN

As discussed in the previous section, Krohn & Hartvig Rasmussen built *Teknikerbyen* in the late 1960s / early 1970s to house their own office and the cooperating engineers. In short, the construction was an open column structure with parking on the ground floor and office buildings above. The interior was arranged around a series of courtyards. That *Teknikerbyen* had the same 'open constructional principle' as Hvidovre Hospital was no coincidence. The idea of an 'open construction' formed the basis for several of Krohn & Hartvig Rasmussen's first projects. It was developed by the two founding architects Eigil Hartvig Rasmussen and Gunnar Krohn together. The thinking behind Hvidovre Hospital's constructional system was thus linked to the cooperation Eigil Hartvig Rasmussen had with Gunnar Krohn from 1946 until an irreconcilable distrust separated them personally[50]. From the construction of the Atlas Machine Factory and The Contex Factory in the late 1940s / early 1950s and the Copenhagen Wholesale Vegetable Market Halls (*Grønttorvet*) from the late 1950s / early 1960s, an imaginary straight line can be drawn to Hvidovre Hospital's low modular industrialized building system a decade later. The design considerations that led to the factory halls were continued in Hvidovre Hospital. The simple 'system architecture' of the early projects had become a 'mega structure'. The construction module at Hvidovre Hospital had as such similarities with the contemporary structuralists net-systems like the work of architects Aldo van Eyck, John Habraken, Yona Friedman or Candilis, Josic and Woods. However, the modular principle was not only developed for Hvidovre Hospital. It was used in several of Krohn & Hartvig Rasmussen's projects realized during the same time period as Hvidovre Hospital; for example, in the shopping centre Rødovre Centrum and Odense University, respectively drawn by Gunnar Krohn and Knud Holscher's department in the office. The three projects were linked through their systematic approach to architecture and structural thinking, even though they supposedly were developed by each their department of architects without contact with each other. The similarity between them must be found in the unintentionally common minds[51] but also in the time period.

42 A part of this text is published in my article 'From constructive system to mega structure, Krohn & Hartvig Rasmussens plads i efterkrigstidens byggekultur' published in KHR's jubileum book, 2016.

43 Faber, Tobias, *Dansk Arkitektur*, Arkitektens Forlag, København, 1977

44 Lund, Nils Ole, *Teoridannelser i arkitekturen*, Arkitektens Forlag, København, 1972

45 Nygaard, Erik, *Tag over hovedet*, Arkitektens Forlag, København, 1984

46 Dirkinck-Holmfeld, Kim, *Dansk Arkitektur 1960-1995*, Arkitektens Forlag, København, 1995

47 Sestoft, Jørgen, *Architektur DK*, No. 7-8, 1979

48 I have also looked at, for example, Poul Bæk Pedersens *Arkitektur og plan i den danske velfærdsby* from 2005, *Nordic Journal of Architectural Research* (Welfare Architecture), and Nils-Ole Lunds book *Nordisk Arkitektur.*

49 The information is found in the the architecture magazine *Arkitekten.*

50 Despite their controversies they continued to work in the same company until 1972.

51 In my interviews with former employees such as Knud Holscher (who was in charge of Odense University), Gunnar Gundersen (who was in charge for Hvidovre Hospital), and Asger Vincentzen (who worked for Gunnar Krohn for many years), it became clear that the three departments at the office did not seek any contact unless necessary. They also claim that they did not look at each other's work. The references are therefore unintentional.

3.2 THE NATIONAL & INTERNATIONAL ASPECT OF THE DISCUSSION

World War II had left a great need to build housing, and with the desire to develop the Danish welfare state, not only housing, but also factories, hospitals, nursing homes, schools, colleges, universities, prisons, and administrative buildings for the state needed to be built. In a historical overview of the development of Danish architectural practice, Jørgen Sestoft described it like this: “The building demand was high, but the realization was hampered by material shortages and the limits of productivity set by traditional construction methods, particularly masonry work. The rationalization of construction was on the agenda the following years as a prelude to a real industrialization” (Sestoft, 1979: 338). Through their work, Gunnar Krohn & Eigil Hartvig Rasmussen supported this development in Denmark. In an article in the Danish architecture magazine *Arkitekten* from 1949 Gunnar Krohn described his observations from a study trip to the United States[52] (Visual 1.17). He was fascinated by the type of construction that the industrial boom had caused there. Krohn’s trip to North America was typical for Danish post-war architects. Inspiration was drawn from the American building industry, where in Tobias Faber’s words: “Prefabrication and assembly construction were put in system, and steel and iron skeleton structures had found a very widespread application“ (Faber, 1977: 226).

Expectations for industrialization were high - not only in Denmark but throughout Europe. The idea was that industrialized building would be able to deliver good quality for little money - a desirable aim in a society of social and democratic ideals like the Danish. However, the interest in industrialized building was not just about mass production. It was also about flexibility and open use. So was Eigil Hartvig Rasmussen’s idea for Hvidovre Hospital in line with ‘the open form philosophy’ propagated by Team X[53]. As Gunnar Krohn and Eigil Hartvig Rasmussen, the Team X architects were concerned with how to solve the major construction problem that faced Europe as a whole. Oscar Hansen, one of the leading people in the discussion of the open form philosophy, was cited in Nils-Ole Lund’s book *Teoridannelser i Arkitekturen* (‘Theories in Architecture’) for saying: “Time is today a more important factor than ever, and we can no longer make use of fixed elements. Our works are outdated already in the moment they are created. ... To get out of the blind street I suggest a system which I call the open form. ... The new system utilizes the industry in such a way that the specialists take care of the objective elements, as in the closed form, while leaving the subjective to the users’ initiative” (Oscar Hansen, 1959, - in Lund, 1972: 73)[54]. And this was exactly what Hvidovre Hospital’s open constructional principle could deliver. The primary (fixed) construction at Hvidovre Hospital was, what Oscar Hansen called ‘the objective elements’. The secondary (light construction) were ‘the subjective elements’. At Hvidovre Hospital, these items were not moved around by the users themselves, but the staff had a great influence on where they were located, which I will discuss in Analysis 2[55].

However, the ‘open constructional system‘ of Eigil Hartvig Rasmussen was in thought not exactly the same as the ‘open form‘ of Team X. It was not about ‘open use’ (the appropriation by inhabitants) but about the possibility for future alterations. How much Eigil Hartvig Rasmussen related to Team

52 Gunnar Krohn, ‘Fabriksbyggeri i USA’, *Arkitekten* nr. 2-3, 1949

53 According to Nils-Ole Lund - *Teoridannelser i arkitekturen* - the philosophy of the open form dates back to 1958

54 Nils-Ole Lund, *Teoridannelser i arkitekturen*, Arkitektens Forlag, København, 1970,1972, 1985

55 I will describe this decision process in Analysis 2. In Analysis 3 I will also discuss how the constructional principle at Hvidovre provided the possibility for user interaction, which is what Oscar Hansen also points at.

X and the open form philosophy is also a question. He was a man of few words and not one to discuss architecture theory at the office[56]. As he was keen to make competitions, we may assume that he kept an eye on what was going on in the thought field of the architectural discipline - among his contemporary fellows in practice. Symptomatic for this was the well-stocked library - including the latest architecture journals - at the office of Krohn & Hartvig Rasmussen. However, there is also the possibility, that he did not care to much about the intellectual ideas of Team X. According to Nils-Ole Lund, architecture was not something architects, at that time period, talked about. It was something they practised. They were not clear about which conclusions one could draw from their experiments, and thus, "openness has usually manifested itself as functional and constructive functionality" (Lund, 1972: 68). It is an example that 'thinkers' and 'doers' does not always meet. Team X was the intellectual upper class of the discipline, far away from the way in which common practicing architects were thinking and acting in the field - at least in Denmark. And the Hvidovre team did not seek the connection either. Their knowledge was embedded into their work, and thus tacit. It is the idea of a 'mute approach'. Their lack of self-reflection is probably one of the reasons why Hvidovre Hospital never was recognized by the Danish architecture historians as an 'open form' project - and part of an international movement - the same way Odense University was[57].

3.3 THE BUILDING CONSEQUENCE OF THE INDUSTRIALISATION

As described in the previous sections of the analysis, economical reasoning influenced the development of Hvidovre Hospital - in specific that it was made as a standardised, modular montage system. The rationalization of building must be seen in light of the fact that brick work was slow and expensive. It was therefore in the Danish state's interests to replace masonry with industrial buildings made of concrete. To support this development the State had already in 1947 initiated *Statens Byggeforskningsinstitut* ('The National Building Research Institute') and *Boligministeriet* ('the Ministry of Housing'). They funded the magazine *Byggeindustrien* ('Building Industry'), which became an important forum for exchanging experiences about industrialized architecture. And *Produktivitetsfonden* ('The productivity fund') was established in 1953; a consultancy regulation with 15 specially trained rationalization consultants. There was, as Erik Nygaard wrote in *Tag over hovedet* "talk about a very determined effort" (Nygaard, 1984: 95).

With the upswing in the 1960s came major government building tasks such as Hvidovre Hospital. But with the economic boom came problems as well: "The country was in the 1960s until 1972 characterized by economic progress with high employment and large building activities. With rising wages and land prices and an increase in interest rates, disproportionate price increases were particularly noticeable in housing construction, and shifting governments sought with the Ministry of Housing as a control body to keep prices down by supporting rationalization efforts and favouring economic production technology considerations at the expense of quality" (Faber, 1977: 270). In light of this, Hvidovre Hospital's building project can work as an example of the relationship between architecture, state, innovation and market. As discussed the architect's contract showed, it was excluded that Hvidovre Hospital could be built of bricks. It should

56 This statement is based on my interviews with Flemming Skude, Gunnar Gundersen and Knud Holscher.

57 Contrary to Hvidovre Hospital, Odense University has the position within Danish architecture history of being the project that brought Structuralism - and the thoughts of Team X - to Denmark.

be an assembly construction. In an information film from 1973, a proud Copenhagen municipality showed Hvidovre Hospital's industrialized building process as if it was something heroic (Visual 1.18). The clicking cranes and the proud workers looking high in the sky resemble commercials. The images moreover remind of Krohn & Hartvig Rasmussen's own picture of young children playing with blocks in an article about the Contex factory in 1952 (Visual 1.15). This time, the little hands had merely been replaced by cranes. But the industrialization of building was also subject to architectural criticism. The period in which Hvidovre Hospital was developed and built, was a period of conflicts between; - a progressive belief that a well-developed building industry could result in something beautiful in favour of welfare ideals and democratization, - and a certain scepticism and criticism of the results that the industrialized building showed. As previously described, the project for Hvidovre was based on research, education and a constant pursuit of technical knowledge and insights accelerated by the progress of development. But the architects also had to think, act and built faster and more than they were used to, and that became significant for the work. For the same reason, the office of Krohn & Hartvig Rasmussen got the nickname 'The Factory', which referred to the way the work was organized in divisions[58]. But it was also a critique; that they had replaced the artistic core of the architectural discipline with utilitarian architecture and technique.

3.4 THE TIPPING POINT - PRACTICE TRANSFORMED

The interest in taking on large assignments had led Krohn & Hartvig Rasmussen to become one of the largest offices in Scandinavia in the 1960s-1970s. With the large-scale projects came a big financial turnover but also a responsibility, which meant that the office had to follow the developing building industry and market. This had a transformative effect on their practice. The architects had, so to speak, to develop a new form of identity. It was the same for a lot of the contemporary practices. The architectural discipline was during the post-war period in a rapid development, where architects in the words of Tobias Faber's must "see some of their traditional tasks disappear" (Faber, 1977: 270). The progress of industrialisation meant that the architects - as in the project of Hvidovre - no longer were the closest adviser to the client, they had to share the space with other specialists such as engineers and contractors. What is more, the work form at the architecture offices had to change to be able to meet the demands of the industrialized building projects in terms of systematics, planning and organization. But the rationalization-oriented architecture also challenged the architects' professionalism. Where was the architecture if the building had become a mere structure? In his book *Dansk Arkitektur* ('Danish Architecture') Tobias Faber summarizes the period 1963-1976 as one big question: "Contemporary theorists have announced the 'death of architecture' as a consequence of the requirements for a building that, in a dynamic age, still needs to be changed and therefore merely appears as an anonymous frame for general individual filling" (Faber, 1977: 326). Nils-Ole Lund is no more optimistic in his description of the period, when he writes: "The idea of pursuing open forms has gradually been accepted. Everybody plans for growth ... But ... What can the planner do if the openness introduced by him stifles the same openness?" (Lund, 1972: 84-85). The statements by Tobias Faber and Nils Ole Lund brings us to Gunnar Gundersen who, in 1988 (12 years after the inauguration of Hvidovre Hospital) – in a text written for Copenhagen Hospital Service's 125th anniversary

58 Jan Søndergaard from KHR told me this anecdote.

book - expressed his frustration about the unfinished building project: "The building was thought and planned as a whole, and although it was a structure that functionally and building technologically-wise was suitable for gradual expansion, in architectural terms the project was not shaped as an organic structure that can bud shoot, grow and set branches, and which at all times can appear as a harmoniously concluded and completed whole. The construction today stands as a living expression of a troubled economy"(Gunnar Gundersen, 1988)[59].

Behind the idea of the 'open constructional principle' was a pronounced and fundamental openness which one can see as something positive and at the same time criticize for its naivety. The close cooperation with engineers, the City of Copenhagen and Copenhagen Hospital Service meant that these actors were given the opportunity to influence the decision-making process, which influenced a.o. the building project. The architects were no longer the 'masters of the building ceremony' (their previous raison d'etre). But it also meant that the architects gave away sovereignty. This obviously had consequences. In 1972, the employee Mads Tvedegård wrote a review of a recently held employee meeting in Krohn & Hartvig Rasmussen's staff magazine, No 3. In it he referred to what Gunnar Krohn had told about the future of the company, but he also wrote about the need to discuss the role of the architect as well as the role of the company. His purpose was to start a debate about the employees' pros and cons of big business. He said:

"Architect Krohn started by talking about the projects going on at the moment, their status and how long it was before their completion ... The conclusion was that the company had assignments for the next 5 years. Compared to other offices, it was at least three years longer than them. However, this did not mean that the company could employ as many employees as now, as one had to count on a decline with the subsequent completion of the assignments. ... Next, architect Krohn addressed the line of business the company would follow in the future, as a result of the development that have occurred in the building industry with regards to design planning (*projektering*) and management of the building process. ... In the future, the role of the traditional architectural firm as a project leader must be combined with building consultation services, where know-how about all phases of the building process can be delivered separately or collectively. This means that the company must increasingly consist of specialist groups and, to a lesser extent, needs all-round educated people. Architect Krohn ended up saying that whether one liked the development or not, it was a fact. 'We must chalk the shoes and stand firm, or we will not get out of the place'." (Mads Tvedegaard, 1972)[60].

The above quote illustrates the consequences of industrialization for architectural practice. There were less jobs for architects. And the architects had come into a competitive relationship with planners, economists, engineers and contractors - the work territory was decreasing. Jørgen Sestoft wrote in *Arkitektur DK* about the period 1968-1979: "Even before the so-called oil crisis in the autumn of 1973, it could be foreseen that the growth in domestic consumption, and hence building, was likely to show a declining trend. At the same time, the effects of the industrialization showed that standardization and serial production had removed a large projection volume" (Sestoft, 1979: 364). The architects in Denmark had lost 90% of the

59 The text was never published. I have a copy from Gunnar Gundersen's private archive.

60 Flemming Skude gave me a copy of the staff magazine. He had it in his private archive.

housing market to type-house companies[61]. Architects were therefore afraid of losing the big public construction projects if the authorities would choose for standard solutions. Krohn & Hartvig Rasmussen had benefited from large scale complex construction assignment like Hvidovre Hospital and Odense University, but time was running out for them, and Gunnar Krohn therefore believed that the company had to change strategy. Mads Tvedegård was not enthusiastic about this and believed that development should be the basis for a broad debate on the role of the architect in future building. He wrote: "Are there any use for architects in this company in the future? The majority of the aforementioned specialists could very well be engineers, in some cases only engineers. Should he (the architect) just be a facade designer or artistic consultant?" (Mads Tvedegaard, 1972). And he was not alone in his concern. The profession was in a crisis that was partly economically rooted, partly ideologically in the sense that doubts had arisen about the role that architects could play in society as well as in building. A role that the architects through their own enactments had endangered. What started out as a necessity had ended up being a professional dilemma.

61 The first type houses were drawn by architects. Quickly, this market was taken over by entrepreneurs.

The office of Krohn & Hartvig Rasmussen was based on the collaboration Eigil Hartvig Rasmussen and Gunnar Krohn began after having won the competition for Atlas Machine Factory in 1946.

The 50.000 m2 project was thought as a large horizontal facility with the main part of the buildings in one floor. The hall was designed as an open construction with sky light windows. The primary construction was made in reinforced concrete. The roof was a shell construction.

The Atlas project was presented in the magazine *Arkitekten* in 1952, No. 7-8. Here the architects wrote: '' For reasons of flexibility a building type has been chosen with one floor with roof lights. This type, which has successfully conquered the industrialized world, has proven to be the only appropriate [solution] when it comes to mass production of this kind ''. The argumentation without doubt refered to Gunnar Krohns article in Arkitekten nr 2-3 from 1949, where he argued for the use of the American standardized and uniform factory type, which - with its large span widths, over dimensioned ceiling heights and possibilities for expansions - according to him was the ideal flexible form for industry.

The idea of a flexible (open plan) horizontal building was as such already a part of their first project.

Indkørsel til fabrikken fra Landsdalsvej

Konstruktioner

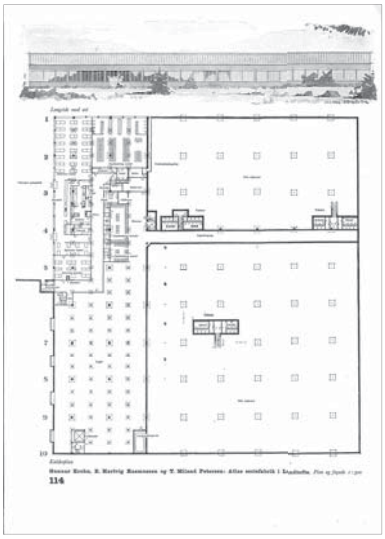
Hvis fabrikken havde været anlagt i en gammeldags fløretagen bygning, havde sådanne anordninger været betydeligt vanskeligere og i nogle tilfælde umulige.

Bygningen er en helstøbt jernbetonkonstruktion med skalvirkning i taget. De svingende dragere, som bæres skallerne, har på grund af deres form en naturlig elasticitet over for udvidelser i jernbetonen. Der er derfor ingen dilatationsfuger parallelle med ovenlyskonstruktionen. Ovenlysene er udført med dobbelt glas, og sprossekonstruktionen er udført af forpostede betonprofiler, hvor fastspændingsbolte og anker er udført af bronze.

Men har ulidelen undgået anvendelse af jern, selv i galvaniseret stand, for at gøre vedligeholdelsen så billig som mulig.

Taget er isoleret på ovensiden med 10 cm gasbetonblokke, og paas har af benyttet til eventuelt kondensvand, som opstår i indvendigslaget, udført et vandtætsende pudslag under isolationen. Dette pudslag, som nok tillader de størtede dampe at vandre udad, men som stopper det kondenserede vand, har affødt af nogle sekundære ulemper i allafdeklinne. Taget er herved afdækket med 2 lag asfaltpap oa i de laveste zarrier med 3 lag. Denne løsning har man valgt, fordi tagets store udstrækning gør det vanskeligt at udføre en ventilation af isolationen til det fri. Fremføring af kabler til maskiner eller grenrør kabelgrave med

117

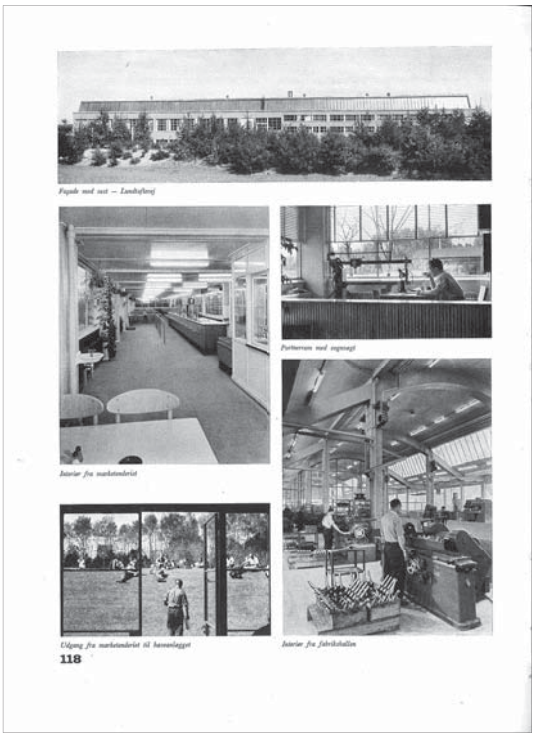


Langside med ur

Kælderplan

Stenmur Krohn, E. Hartvig Rasmussen og T. Mikael Petersen: Atlas maskinfabrik i Kopenhavn. Plan og facade 1:500

114



Facade mod vest – Landsdalsvej

Interiør fra markedsområdet

Portparti med engang

Udgang fra markedsområdet til havnelægget

Interiør fra fabrikshallen

118

VISUAL1.14

SUBJECT: Machine Factory Atlas
SOURCE: *Arkitekten*, nr 7-8, page 113-119
YEAR: 1952

The Contex factory is another example of how Krohn & Hartvig Rasmussen were working on architecture as a building system.

The project was presented in the same issue of Arkitekten as the Atlas building. The use of concrete was here emphasized: " We had worked for several years with factory constructions consisting of reinforced concrete elements, which were manufactured at the supplier and transported to the site. We had through various model tests found a construction according to the simplest possible principle, comparable to children playing with blocks. The system is in short, that the building blocks, the reinforced concrete beams, does not have any consols or taps or any of such kind, but pure simple are mounted on top of each other in several layers, so that the crossing carriers does not meet. This small simplification of the building blocks mean, besides a large relief in the assemblage, the advantage, that you get a building, where you can install water pipes, electricity cables and so forth without having to cut holes in the primary construction ". (Krohn & Hartvig Rasmussen, 1952)

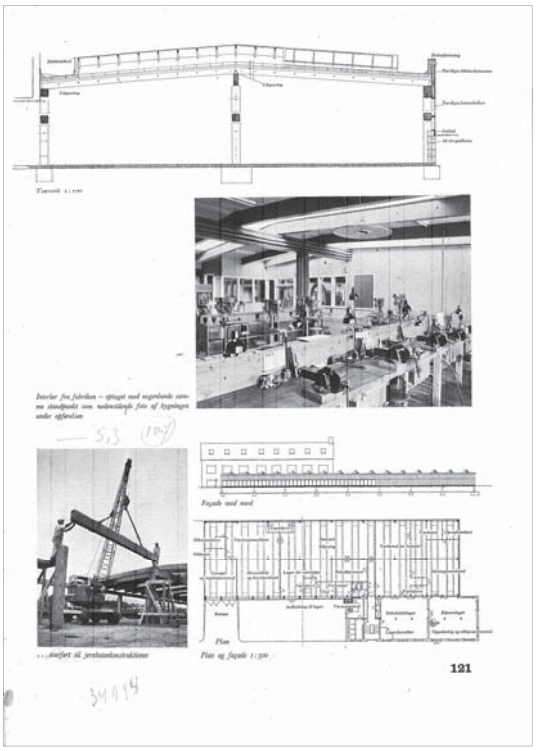
The simple construction method made it possible to raise the building, columns, girders and roofing sheets in 10 days and finish the 850 m2 factory in 7 months.

The article confirms, that Krohn & Hartvig Rasmussen had experience working with concrete elements, prefabrication, standardisation and industrialisation before the Hvidovre case. It also tells us how working with buildings for the industry in the 1940s and 1950s should become a good preparation for the production methods that was needed for the projects they made in the 1960s and 1970s like Hvidovre Hospital. They were already thinking in 'system architecture'.

REGNEMASKINFABRIK CONTEX

120

122



121

VISUAL1.15

SUBJECT: Machine Factory Contex
SOURCE: *Arkitekten*, nr 7-8, page: 120-122
YEAR: 1952

The sales hall to the Københavns Engros Grønttorv (Copenhagen Wholesale Market) was realised after the same principle as the Contex factory. The project was developed by Krohn & Hartvig Rasmussen during the 1950s and presented in *Arkitekten*, No. 2 in 1961.

The building covered a total area of approximately 36,000 m2, of which the sales hall occupied 26,000 m2.

Based on a function analysis it was decided that the market hall should be designed as a large shed where vegetable and flower producers could drive in and place their cars in rows in assigned demarcated places (stalls). Because the vans had different sizes the space should allow for flexible use. As in the Atlas and Contex buildings it was therefore decided to make an open-plan construction in prefabricated reinforced concrete in a modular system - a large room with columns. The decision was argued as follows: " We have seen abroad how they built halls with large spans which meant a freer use of the floor area. This has the disadvantage however, that as the need for covered space grew, one had difficulty in extending such constructions. It was therefore decided in Copenhagen to use a construction with columns. These columns are located at a distance of 10 m in one direction and 17.2 m in the other. Two such fields form a module of 20 x 17.2 m, which can be divided into either 16, 12 or 10 stalls ". (Krohn & Hartvig Rasmussen, 1961). The idea of an open construction system was connected here with a modular concept - a net - like in the Hvidovre case.

The elegancy of the Atlas, Contex and Grønttorvets simple constructional spaces are striking. Together they illustrate how Gunnar Krohn and Eigil Hartvig Rasmussen saw the construction as an integrated part of the architecture in line with architects from the time period such as Mies van der Rohe and Arne Jakobsen or architects as Erik Christian Sørensen, Jørgen Bo and Vilhelm Wohlert, a.o. There was a certain purity in the projects standardized building system.

Københavns Engros Grønttorv

Arkitekter: Gunnar Krohn og Hartvig Rasmussen, M.A.A.

Salgsgade, 17,2 m bred

Salgsgade i torvetiden med parkerede salgsvogne, optrukkede varer og håndvogne til varetransport

27

VISUAL1.16

SUBJECT: Københavns Engros Grønttorv
SOURCE: *Arkitekten*, nr 2, page: 21-29
YEAR: 1961

The three pages are from Gunnar Krohns 10 page article 'Fabriksbyggeri i U.S.A.' (factory building in the USA). Published in 1949.

The article was based on a trip Gunnar Krohn took in spring 1948 - thus while he - together with Eigil Hartvig Rasmussen - was working on the Atlas Machine Factory.

In line with the argumentation in the historical analysis, we see here an architect, who is in favour of progress, who share no fear of industrialisation, and who warn against being retrogressive.

'' It is not the architect's task to begin to fight the rational form, the factory has got, it can never be anything but backwardness ''

'' The demands, that a modern production form make, are like a nature law, and if one is in favour of cheap industrial products for the benefit of the entire community, one must also accept mechanical production with all its requirements for the design of the factory. Danish industry stand in these years on a crucial crossroad. If we want to try to develop our industry so that it can meet the future with a skill full competitive production apparatus, we must go all in for industrial rationalization. If architects get frightened of this development and follow the road of backwardness, we are not our job adult. If the leaders of industry get the impression that architects are going against the trend and want to introduce romance and 'hyggepolitik' ('the policy of cosiness') in the industrial building at the expense of the free mobility of production, yes, then the solutions will not be left to architects. And then the battle is lost in advance for both parties. ''

Gunnar Krohn argument is interesting, as it demonstrates how he did not only think as an architect and as a businessman, but also as a progressive socially informed thinker; that it should be possible for all citizens to have access to the same quality of life - (here meaning material goods). The way he saw it - industrialisation was the means to make this happen. His thoughts were thus a mix of social ideals and liberal goals, which by the way also made him develop *Teknikerbyen* as a community, that would help his employees perform in their daily activities. So did it have day care facilities, a restaurant, library etc.

The speech of 1972 show, how he - later in life - also did not display any regrets having supported industrialisation. There seem to be no doubts - that architects should follow the development of the market .. no matter the consequences. -

Fabriksbyggeri i U.S.A.

Af Arkitekt M.A.A. Gunnar Krohn

Europa ilikker stadig sine tår efter den s. verdenskrig, og ingen kan rigtig få overblik over de skader, krigen forvoldte. Men samtidig med udslettelsens værk stod på i Europa, oplevede man en industriel højkonjunktur i U. S. A., hvis omfang verden aldrig før havde set magen til. Kæmpefabrikker blev planlagt, og eksisterende fabrikker udvidet. Efter Pearl Harbour fik de samme fabrikker ordre til en 2-skiftning af produktionsmaskinerne. Under denne kolossale ekspansion havde amerikanerne mulighed for at udnytte deres erfaringer fra årene før krigen hvor smagt industrielt byggeri blev bragt industrier arkitekturens virkefelt.

I årene før 2. verdenskrig opstod adskillige specialfirmaer i U. S. A., hvor ofte arkitekter som ingeniører var tilknyttede, og som havde til specialet at opføre bygninger for industrier.

Nogle af disse firmaer var særdeles entreprenører, og ganske enkelte havde endda udviklet deres virksomhedet til også at omfatte selve tilvirkningsgren af produktionsfaciliteter i fabrikerne. Ved opførelsen af fabrikker til krigsproduktionen fik man rigtig chancen for rationel planlægning af industrianlæg fra bunden, som ikke altid kunne realiseres før krigen, fordi man ved udvidelser og ligesnde altid valgte kompromisser og i de fleste tilfælde måtte tage hensyn til eksisterende ting.

Men hvorledes udnyttede amerikanerne disse chancer, og hvad få mon ud af den? Var det landsindlæggere på området industriel arkitektur, som vi kan bruge og få gavn af også efter krigen? Det var for at dømme mig et billede af disse ting at jeg i foråret også begav mig på en studierejse til U. S. A.

Fabrikker til rumindustrien – anlagt under krigen – er næsten alle placeret på helt jomfruelige arealer, i mange tilfælde langt fra de store industriByer. Denne tendens til udflytning til nye industricentrere i mindre byer havde udviklingen længe gået svangre med, men det var krigen, der gjorde alvor af planerne.

Fabrikerne var i mange tilfælde så enorme i grundareal, at det gamle stræbt var umuligt at finde plads i de eksisterende byer. En fabrik f. eks. som Willow Run, bygget af Ford Motor Company i nærheden af Detroit, beregnet til fremstilling af bombefly-maskiner, har en samlet gulvflade af ca. 600.000 m², hvoraf de 400.000 m² er under ét tag. I forbindelse med fabrikken er anlagt en flyveplads, som nu bliver anvendt i civilt øjemed, og til fabrikens arbejdere blev opført en by. Men imidlertid i efterkrigens industriBYggeri viser også store tegn til at søge udenfor på det åbne land. Man er blevet klar over, hvad det vil sige, at en fabrik ikke har udvidelsesmuligheder i fremtiden. Den store kapitalkoncentration, som er skrt i den ældre storindustri, bevirker også, at nyanlagte industrier af hensyn til den fuldt mekaniserede produktion stræber i stor skala, og ikke som i ældre tider vokser op fra små industrier.

Udflytningstendensen gælder også de mindre industrier. Nogle fremmer har specialiseret sig i opførelse af små industribygninger til udlejning. Et pengestærkt konsortium opkøbte f. eks. et stort areal

udenfor den gamle bydannelse. Her planlægges og opføres en mindre by med industribygninger, boliger (rækkehuse), community centers, forretningskvarterer, o. s. v. Industribygningerne opføres på en ekstra måde, så næsten enhver produktion indenfor letindustrien kan anvende dem, og bygningerne omtrent lejes eller købes. Hele helbyggeren mindre om vore værkstedhuse blot i større målestok.

Den vistе plan af „over grass" ved Chicago opføres f. eks. af et cooperativt selskab, men i de fleste tilfælde er den privat kapital der står bag opførelsen af disse mindre industribyer.

Situationsplanen

Intet i amerikansk industribyggeri er blevet mere typisk end situationsplanen til en fabrik. Denne skyldes udviklingen i første række de ensartede krav til fabriksbygningerne: samlig produk-

Det, at der gennem en årelang udviklingsproces efterhånden har udkrystalliseret sig en klar planstype, hvor elektrotransport, fordelingsvejtransport, adgang for arbejdere og funktionærer samt udvidelsesmuligheder, er faldt klart ude fra hinanden, og hvor der er taget alle mulige hensyn til det sensible levende væsen, som benævnes produktionen, skyldes et udmærket samarbejde mellem ingeniører og arkitekter. Det er nk til den helt simple løsning, er alle nogst der koster tid og besvær, og vejen fører over individuelle og dårlige løsninger. Ingen kender det bedre end vi arkitekter, når vi gennem et langt skiteringsarbejde har nået en ganske enkel og simpel løsning. Man kan til fristes til at sige: „Herregud, er det det hele".

Men opgaverne fremover er lige så vanskelige.

Den amerikanske fabrikstype, som her kort er skildret, er blevet til med stræbig skelen til „alt for produktionen og økonomien". Det bliver en mindre ligeså vanskelig opgave i fremtiden at bringe disse fabrikker ind i menneskelige baner og forbinde dem med omgivelserne, således at det tvedelte af arbejderens hverdag, han tilbringer i fabrikken, fyldes med arbejdsglæde.

Det kan selvfølgelig ikke gøres udelukkende ved arkitektens arbejde, men her må arkitekten gå i nøje samarbejde med alvel fabrikens ledelse som arbejderens repræsentanter. Det er ikke arkitektens opgave at bekæmpe den rationelle form, fabrikken har fået, det kan aldrig blive til andet end bagstræb.

De krav, som en moderne produktionsform stiller, er noget af en naturlov, og vil man gå ind for billige industriprodukter til gavn for hele samfundet, må man også acceptere den mekaniske produktion med alle dens krav til fabrikkens udformning. Dansk industri står i disse år på en afgørende skillevej. Hvis vi vil gøre os håb om at udvikle vor industri, så den kan møde fremtiden med et konkurrencedygtigt produktionsapparat, må vi gå ind med brask og bram for en industriel rationalisering. Hvis arkitekterne lader sig forskrække af denne udvikling og går bagstræbets vej, så er vi ikke vor opgave voksen. Hvis industriens ledere får det indtryk, at arkitekterne stamper imod udviklingen og vil indføre romantik og hyggepolitik i industribygeriet, på bekostning af produktionens albuerum, ja – så bliver opgavernes løsning slet ikke overladt til arkitekter. Og så er slaget på forhånd tabt for begge parter.

En trykmag af arkitekterne Ole Bang og Preben Dal om „fabrikker for mennesker", som udkom i efteråret 1948, behandler alle disse ting og indeholder en mængde gode oplysninger, så længe forfatterne holder sig til i forvejen undersøgte og prøvede ting. Men på et meget afgørende punkt dukker fatharbejderens skræk for det store rum op, og Bang & Dal griber til at skinnere i slutningen af hæftet en trykt maskinfabrik, opdelt i en mængde rum af „gunstende" størrelse. Hvorfor så ikke hellere gå til fabrikshotellet og få indført forbud mod rumvognen-systemet og flydende produktion, så får vi hyggelige husfliidsfabrikker, men så må vi også skyde en hvid pind efter det nu. århundredes tekniske fremskridt med billige industrivarer.

"Det er ikke arkitektens opgave at begynde at bekæmpe den rationelle form, fabrikken har fået, det kan aldrig blive til andet end bagstræb ... "

"De krav, som en moderne produktionsform stiller, er noget af en naturlov, og vil man gå ind for billige industriprodukter til gavn for hele samfundet, må man også acceptere den mekaniske produktion med alle dens krav til fabrikkens udformning. Dansk industri står i disse år på en afgørende skillevej. Hvis vi vil gøre os håb om at udvikle vor industri, så den kan møde fremtiden med et konkurrencedygtigt produktionsapperat, må vi gå ind med brask og bram for en industriel rationalisering. Hvis arkitekterne lader sig forskrække af denne udvikling og går bagstræbets vej, så er vi ikke vor opgave voksen. Hvis industriens ledere får det indtryk, at arkitekterne stamper imod udviklingen og vil indføre romantik og hyggepolitik i industribygeriet, på bekostning af produktionens albuerum, ja – så bliver opgavernes løsning slet ikke overladt til arkitekter. Og så er slaget på forhånd tabt for begge parter".

Gunnar Krohn
Arkitekten, nr 2-3, page 34

VISUAL1.17

SUBJECT: Gunnar Krohn's article on factory building in the US
SOURCE: *Arkitekten*, nr 2-3, page 25-34
YEAR: 1949

The structural ideas in the first projects by Eigil Hartvig Rasmussen and Gunnar Krohn was with Hvidovre Hospital translated into a concrete assembly systems.

Being itself a large scale experiment - and a national investment - the industrial building process was documented in a film by the Municipality of Copenhagen in 1973. The clicking cranes and the proud workers under the sky has references to commercial film. The sound track was a combination of joyful music, a voice over talking about the assembly and real sound from the site. And you sense a certain pride in the presentation.

The assembly of the building seem simple, and it is obvious how the emphasis was put on the systematic approach. The film was shot when a large part of the primary construction was built. In the first column we see images of how the toilet cabins were placed in the construction. The images in the second column show how the 2-storey precast concrete façade elements arrived on site and were installed. The images in the third column show how the prefabricated windows were put in place.

As described in the text, the portrait is similar to Krohn & Hartvig Rasmussen's image in the 1952 Contex article showing children demonstrating their building system with wooden blocks (Visual 1.17)This time the little hands were just replaced by cranes. In reality - and as described in the text - the building project was not as simple as shown. It was the result of a carefully staged and planned process. Still the imagery is convincing .. that the new hospital in Hvidovre was the result of a modern building culture.

VISUAL1.18

SUBJECT: Hvidovre Hospital - The construction site
SOURCE: The film *Opførelse af Københavns Kommunes Hospital i Hvidovre*
YEAR: 1973








To illustrate the large scale industrial building projects that took place in the 1960s in Denmark, I here include a page on Albertslund West. The page is taken from Jørgen Sestofts volume on the development of Danish Architecture in *Arkitektur DK* from 1979.

He wrote:

" In the course of the 1960's industrial building methods were developed to a technically high level. Large, rationally laid out developments were required in order to fully utilize the new methods, including the highly mechanized assembly of prefabricated building components.

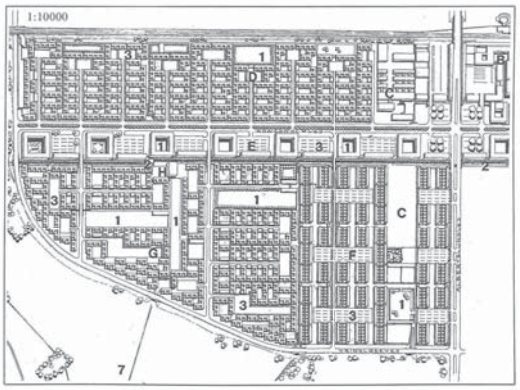
Albertslund, West of Copenhagen, is designed as a self-sufficient urban entity with low dense residential building comprising 1-storey atrium houses with two wings, 2-storey row houses, and 3-storey apartment blocks. A central walkway along an artificial canal connects the dwellings with a town centre which has all kinds of common facilities in eluding a covered meeting space, an agora, shops, amusements, clinics, and a town hall. "

The whole complex was built by the Public Cooperative Housing Associations. Peter Bredsdorff and Knud Svensson served as consultents to the municipal planners. The buildings were designed by the architectural firms of Møller-Jensen & Tyge Arnfred and Mogens J. Pedersen & Jørn Ole Sørensen.

I løbet af 60'erne var de industrielle byggemetoder blevet udviklet til et teknologisk højt stade. Den fulde udnyttelse af de nye metoder, herunder en stærkt mekaniseret montage af præfabrikerede bygningskomponenter, krævede store, samlede bebyggelser. Albertslund vest for København er udformet som en hel bydel med lavt-tæt boligbyggeri, énetages vinkelhuse, toetages rækkehuse og treetages karreer. Et centralt gangstrøg langs en kunstig kanal forbinder boligerne med et bycenter med alle former for fælles faciliteter, en overdækket mødeplads, en agora, butikker, forlystelser, klinikker og rådhus.

Bebyggelsen er opført af almennyttige boligselskaber Kommunens planlæggere har som konsulenter haft Peter Bredsdorff, Ole Nørgård og Knud Svensson. Bygningerne er tegnet af arkitekterne Møller-Jensen & Tyge Arnfred, Mogens J. Pedersen & Jørn Ole Sørensen.

■ In the course of the 1960's industrial building methods were developed to a technically high level. Large, rationally laid out developments were required in order to fully utilize the new methods, including the highlymechanized assembly of prefabricated building components. Albertslund, west of Copenhagen, is designed as a self-sufficient urban entity with low dense residential building comprising 1-storey »angle houses« (atrium houses with two wings), 2-storey row houses, and 3-storey apartment blocks. A central walkway along an artificial canal connects the dwellings with a town center which has all kinds of common facilities in-



350

VISUAL1.19

SUBJECT: Albertslund West
SOURCE: *Arkitektur DK*, nr 7-8
YEAR: 1979

'' When we occasionally think with fear about an increased industrialisation of the building industry, it is because we imagine a conventional development with a concentration of the production on fewer companies, that produces a growing number of similar apartments in larger and larger areas of uniform urban environments. .. But it is not the fault of the industrialised methods, if it goes like that. On the contrary a highly developed building industry could be the condition, that we can produce new and better environmental qualities, create larger variation, and offer a richer range of facilities. Whether the development will go one way or another is not a matter of coincidence, it is a matter of government and a conscious combination of technological knowledge and analysis ". .. What Gunnar Krohn sees as the task of architects.

Quote: *Arkitekten* nr 21, 1969, page 504-505 - Above:'When the Building Industry becomes Industry'

Cover page and page 18 from the publication *Industrialised Housing in Denmark* published by *Byggecentrum* in 1976.

The publication gives a complete overview of the developments of industrialised housing in Denmark in the 1960s-1970s, including; - locations, - composition of apartments, - floor areas, - a description of the structural principles that were used as well as images of the projects; exteriors as well as the interiors. It is as such a catalogue of ideas.

One of the projects, that was presented in the publication is the development 'Brøndby Strand' from 1971. The architects were Svend Høgsbro and Th. Dreyer.

In the light of the heavily industrialized housing, that were shown in the publication, the project at Brøndby Strand is interesting, as it was designed from the view point of a greater variation in the domestic environment without giving up the industrialized construction methods by creating sculptural building forms. However, the size of the complex, with some 3000 apartments proved difficult to rent out. Contrary to the ideas exhibited in the above 1969 article from *Arkitekten* the focus on variation was not enough to create a success. Today Brøndby Strand stands as a monument over the misbelief of the time period; that industrialisation was in the benefit of architecture.

VISUAL1.20

SUBJECT: Industrialised Housing in Denmark
SOURCE: Above - *Arkitekten*, nr 21,1969, Below - cover of publication and page 18 from *Industrialised Housing in Denmark, 1965-76*, by Marius Kjeldsen, Byggecentrum, Copenhagen
YEAR: 1961 and 1976

ANALYSIS 2

PHOTO OPPOSITE PAGE

SUBJECT: Meeting about the distribution of activities
SOURCE: Hvidovre Archive
Year: 1966

THE DYNAMIC ASPECT OF ARCHITECTURE

INTRODUCTION

To be able to describe the cultural historical perspective on the program for Hvidovre Hospital, I have made use of the following book publications; - *Københavns Hospitalsvæsen 1863-1963*[1] from 1963, - *Københavns Hospitalsvæsen 125 år ... i stadig udvikling*[2] from 1988, *25 år i udvikling, Glimt fra Hvidovre Hospitals historie*[3] from 2001, and I refer to the jubilee DVD *Hvidovre Hospital 30 år* produced by Hvidovre Hospital in 2006[4].

In Analysis 1 we have seen how Krohn & Hartvig Rasmussen – due to their work on factory buildings and market halls – were accustomed to the idea of flexibility, industrialised architecture, prefabrication and standardisation. And even though the construction of the hospital made a huge demand on the office in terms of planning, organisation, team management and work load, the challenges of the building project in Hvidovre did not extend beyond what was more or less known in the prevailing building culture. However, the encounter with the organisational culture of *Københavns Hospitalsvæsen* (Copenhagen Hospital Services) introduced a new territory to the architects, as they had to get accustomed to another discipline's way of working, medical ideas about cure and care, requirements for the different hospital activities, as well as everyday routines, rituals of use, customs and perspectives of the hospital staff. A big part of the work on the hospital became to analyse and understand these daily activities and (cultural) behaviour, something which later developed into a specialisation; 'function analysis and hospital planning'. The ambition was to realise 'the ideal hospital'. This was a complex matter and meant new ways of working for the architect. Not only did doctors specialize in the post war period, architects did as well. A new type of communication was developed, and a new type of decision making process was introduced; one in which all user groups were involved (indirectly) in the development of the scheme in the form of representatives. There was a democratic component in this. It was also a time-consuming process and a constant negotiation of intentionality's. Analysis 2 is an exploration into this area of knowledge.

One of the main ideas in the planning of the work at Hvidovre Hospital was the fusion of the traditional medical specialities[5]. The economic upswing in Denmark had ensured high employment, resulting in a lack of skilled labour among others of nurses and doctors. To save time, labour and money in the hospital organisation, centralisation in larger units was introduced as an idea[6]. That the medical specialities had to collaborate in for example a Central Surgical Department or an Accident and Emergency Department was related to a process of joint optimisation of the medical operation of the hospital, extensive rationalization, streamlining and standardisation in the

1 Jensen, Sigurd, *Københavns Hospitalsvæsen 1863-1963*, published by Direktoratet for Københavns Hospitalsvæsen, G.E.C Gads Forlag, København, 1963

2 Andersen, Edith et al (editor), *Københavns Hospitalsvæsen 125 år ... i stadig udvikling*, published by Københavns Kommune, Magistratens 2. afdeling, 1988

3 Stentoft, T et al (ed), *25 år i udvikling, Glimt fra Hvidovre Hospitals historie*, Hvidovre Hospital, 2001

4 H*vidovre Hospital 30 år*, produced by Bastard Film Corporate A/S for Hovedstadens Sygehusfællesskab, 2006

5 A text from the staff magazine at Hvidovre Hospital in 1976 by Ebbe L Kragelund describes the new medical organisation at Hvidovre. While the treatments sections and wards had joint staff and a centralised nurse and secretary department, the medical specialties were distributed over several departments and sections. So were the patients at the acute care treated by a team of doctors from different departments. The central operation consisted of a common staff of approximately 60 people and the out-patient clinics were common for several specialities. In my interview with Peter Lohfert (who worked on the function analysis at Hvidovre) he also mentioned, that the purpose at Hvidovre was to create a departmental structure, where the medical specialties not only worked individually, they worked together in groups. The idea of 'centres' will moreover be discussed throughout the analysis.

6 Gunnar Gundersen wrote about this in a text about the development of Hvidovre Hospital. The text is from 1988 and not published. I have a copy, which I got from his personal archive.

treatment units. Similarly for the Central Kitchen, Central Supplies, Central Cleaning and a Central Bed cleaning, which were also about relieving the nurses from some of their service and help functions so that they could concentrate on the nursing. Moreover, the growing medical insight and technical development meant that hospitals could offer more advanced treatment options which had an influence on the health, age and life expectancy of the Danish population as well as the patient population, with the effect of longer lifespans. The consequence was that increasing demands were made for development, change and speed in treatment; in everything that had to do with health services[7]. As a result out-patient clinics were developed. Thus, the out-patient clinics at Hvidovre Hospital exemplify how the hospital function was changing over these years. Before, hospitals would only receive in-patients. The focus on efficiency meant that the hospital – and in specific its functions – was compared to that of a factory[8]. The underlying thought was that you could organize the work rationally like a production process in the industry. It was about analysis and planning as well as mechanization, automation, digitalization and electronics to ensure a rapid expedition. The architecture at Hvidovre Hospital did as such not only have to support the daily activities at the hospital. It had to enable the hospital management to initiate and realize a new mode of operation.

PART 1: MEDIA ANALYSIS

The primary sources for this part of the analysis are: - the 1963 competition proposal[9], - the 1968 draft proposal[10], - the 1973 publication *Københavns Kommunes hospital i Hvidovre*[11], and various booklets concerning function analysis at Hvidovre Hospital[12]. In addition, I have visited the building several times, where I talked to project architect Abelone Dyrup[13] about the building's re-organization and use over time, as I have talked with architect Peter Lohfert, who was in charge of the initial function analysis of the hospital while working for Krohn & Hartvig Rasmussen.

While I have suggested that the architects at Krohn & Hartvig Rasmussen in their work on Hvidovre Hospital had to become familiar with the perspective, habits and rituals of 'hospital people', they had previously designed hospitals as competition proposals[14]. Their knowledge was thus abstract and conceptual, when they started the process with Hvidovre Hospital. However, the previous competition work had given them the necessary background to position their project within the present discussion on hospital architecture. The 1963 competition proposal by Eigil Hartvig Rasmussen was as such introduced by quite a long discussion on the development of hospital types in the time period. It is of particular concern for this analysis that we see

7 Sigurd Jensen describes the problem in his book *Københavns Hospitalsvæsen 1863-1963*, page 113-115 as well as Søren K. Sørensen in 'Ændringer i sygdomspanoramet 1963-1988', Københavns Hospitalsvæsen 125 år, page 9-10.

8 Anders Tengbom uses the term 'factory' directly in his speech at the 'International Hospital Congress' in Stockholm in 1965 in which he addresses hospital functions. It is obvious, that he sees the Hvidovre scheme as a factory type.

9 The 1963 competition proposal was published in *Tidsskrift for Danske Sygehuse*, årgang 40, 1964 and in *Arkitekten* nr 18, 1963. The original drawings are lost. Gunnar Gundersen had black and white slides of parts of it, that I have copied to my own archive. See Appendix C. I refer to an unpublished text adjoining the competition panels.

10 The 1968 draft proposal was not published. I found the proposal in the archives of Hvidovre Hospital. The written report is a document of 184 A4 pages, which is accompanied by a 40-page drawing compendium in a large format.

11 The publication *Københavns Kommunes hospital i Hvidovre* is not dated. I estimate that it is from around 1973. It is published by Københavns Hospitalsvæsen and put together by Krohn & Hartvig Rasmussen.

12 The reports are made by Krohn & Hartvig Rasmussen in collaboration with Direktoratet for Københavns Hospitalsafdeling (the planning committee) as well as Birch & Krogboe Rådgivende Ingeniører. I have found copies of the reports in Hvidovre Hospitals archive.

13 Architect Abelone Dyrup has worked at Hvidovre Hospital in the technical department for more than 25 years and has an extensive knowledge about the history of the hospital, its development and use.

14 Krohn & Hartvig Rasmussen a.o. participated in the architect competition for Rigshospitalet in Copenhagen, where they won a second prize. They also participated in the architect competition about Haukeland Hospital in Norway, where they got first prize. The project was supposedly drawn by Eigil Hartvig Rasmussen. The competition in Norway was in 1961. The realisation of the Hvidovre project though began before the project in Norway. As Eigil Hartvig Rasmussen had enough to do with the project in Hvidovre, Gunnar Krohns department took over the Haukeland project to great regret for Eigil Hartvig Rasmussen, who thought he ruined the design.

an architect who does not argue for type and form but for relevancy in terms of use - which I call the dynamic aspect of architecture as it is about activities, processes and flows. In the analysis of the material, I have been able to locate 5 main ideas, which are related to this way in which you can analyse and understand the architectural means of the architects, and which I will discuss in the following text. These are: - horizontal decentralisation, - geographical proximity as organizational principle, - decentralised local centres (*centre*) and centralised centrals (*centraler*), - connector, corridor, walk way and axis, - and the separation of traffic flows.

1.1 HORISONTAL DECENTRALISATION

Eigil Hartvig Rasmussen's departure point for the 1963 competition proposal was that the treatment section should be organised in a horizontal 1-2 story building[15]. While it was common practice to stack the wards in a high-rise building (a sky scraper or a block), Eigil Hartvig Rasmussen proposed to spread the hospital wards horizontally across the low treatment building, as that, in his opinion, would fit the use of the building better than a vertical concentration[16]. His hypothesis was that each care section was related to a particular treatment and ambulatory section. It therefore seemed "more rational to use a solution with decentralized wards in direct contact with the associated treatment sections", (Hartvig Rasmussen, 1963: 3), than stacking the wards on top of each other. The proposal was based on the assumption that horizontal and vertical distances do not mean the same, if you look at it from an infrastructural view point – specifically the vertical distribution. The key to understanding this is elevator traffic. Since, according to Eigil Hartvig Rasmussen, no studies had been conducted in this area, he undertook a personal investigation in which he collected data about the elevator traffic at Glostrup Hospital, which he used for an analysis on patient transports. Based on this study he concluded that an 8 x 2 storey decentralized facility was preferable[17]. One could save time on patient transport by decentralizing the patient buildings, thus easing elevator traffic. The premise was that the wards were linked to specific treatment sections.

The idea of thinking the building from the view point of use was a durable and strong point, which led to a different type of scheme than the other proposals in the architecture competition. It exemplify another way of perceiving (thinking) architecture; as flows of activities instead of as a type. That Eigil Hartvig Rasmussen was able to divert from the already known was due to his analytical way of thinking. The discussion on horizontal decentralisation as an architectural means is thus an example of how reflection and research can lead to new ideas. The 28-page long argumentation in the competition proposal brings evidence that Eigil Hartvig Rasmussen was a reflective thinker. As I will explain later in the analysis had it not been for this quality, he would not have won the architect competition.

15 A 1-2 storey treatment building was easy to alter and expand - if it was constructed as shown in Analysis 1. Eigil Hartvig Rasmussen in his proposal also points at that it was considered common best practice to use this configuration. His argument thus departs from what is being done in the field.

16 In the 1963 competition only 4 out of the 46 proposals were made as low-rise hospital buildings. All other proposals organised their wards in a tower like building. I will get back to this in part two of the analysis.

17 Different people have told me, how Eigil Hartvig Rasmussen himself went to Glostrup Hospital to collect data about the use of the elevators there. The data collection was used to develop a co-efficient that expressed the individual patient ward's share of the transport per bed per week. The co-efficient was subsequently used for a comparative analysis of patient transports in three types of patient buildings; - a 16-storey building, - a 2 x 8-storey building, - and an 8 x 2-storey building, all of which rested on a large 1 floor treatment building. Based on this study, Eigil Hartvig Rasmussen concluded that an 8 x 2 storey decentralized facility was preferable.

1.2 GEOGRAPHICAL PROXIMITY AS AN ORGANISATIONAL PRINICPLE

Hospital traffic, however, is not just about patients, and Eigil Hartvig Rasmussen emphasized in his text to the 1963 competition proposal how staff transports actually impacted the elevator system 3-5 times more than patient transport in a high-rise building[18]. Another important point about the low-rise decentralized facility was, according to him, that it would encourage the staff to use the stairs instead of the elevator. The staff's load on the elevator system would thus be significantly reduced. In addition, "the division into 'small hospitals' would give patients and staff a sense of being within a smaller, limited area of work, taking into account the department's special requirements for intensive or mental care, work rhythm and working climate". (Hartvig Rasmussen, 1963: 4). It was thus not only sensible to decentralize from a traffic point of view, as the internal traffic became easier. The decentralization – and the shorter and more direct distances between the care sections and treatment sections – would, according to Eigil Hartvig Rasmussen, improve workflow and patient care. Geographical proximity was used here as organizational principle.

However, the horizontal decentralized form also had its problems. The 1968 draft proposal described how the treatment building had become so large that several people feared that it would hamper the contact between the departments. This was not taken into account in the 1963 competition proposal. There was obviously not only a need for close contact between the individual wards and the affiliated treatment section below. There was a need for contact between the sections in the treatment area (on the same floor). In the 1968 draft proposal two forms of contact were described; - a practical, - and a personal. The practical contact concerned information of a general character (such as messages and orders) and the exchange of goods. The personal contact was about the need for exchange of information (i.e. communication and dialogue) and that patients were to be transported from one department to another. The solution was to introduce an underground automatic freight transport system for food and goods and an electronic communication system for messages. Without these two technical installations it would have been hard to maintain that a horizontal distribution of the wards was preferable instead of a concentrating them into a block or a high-rise building[19]. But just as important was the division of the facility into decentralized *lokalcentre* ('local centers') and centralised *centraler* ('centrals'), which will be discussed in the following text.

1.3 DECENTRALISED LOCAL CENTRES AND CENTRALISED CENTRALS

Throughout his career, Eigil Hartvig Rasmussen participated in quite a lot of architect competitions as he also encouraged his employees at Krohn & Hartvig Rasmussen to participate in such activities. Some of these competitions were about urban planning. Considering the scale of the hospital facility, it can therefore be of no surprise that he, in the 1963 competition proposal, made use of an urban metaphor to describe how he perceived the hospital's decentralized wards as "*planetbyer der understøtter storbyens fælles anlæg*" ('planet cities supported by the big city's joint facilities'), (Hartvig Rasmussen, 1964: 212). With 'joint facilities' he meant the service and treatment areas in the hospital. The urbanistic

18 The numbers Eigil Hartvig Rasmussen mentions were 3-400 patient transports vs 2-3000 staff transports per day.

19 What is more, the underground conveyor belt for the transportation of goods and food made it possible to save money on porters (portører). The 1968 draft proposal mentioned 30 people.

way of thinking is important for the understanding of the project. It informed the development of the scheme in different ways, which is also to be read from the language the architects used, and which I will address in more of the analyses. In this analysis – the analysis of the dynamic aspect of architecture (its use) – the comparison between hospital and city primarily work if you understand the city as a principle; that is a system. The way in which the architects discuss 'internal traffic' conditions in the hospital can be compared to a city planner's work on infrastructure. And the division of the treatment and service floor into decentralised 'local centres' and centralised 'centrals' can be compared to neighbourhoods in a city and questions about de-concentration and concentration / dispersal and centrality / the separation and connection of functions: All urban design principles.

The decentralised 'local centres' at Hvidovre Hospital contained the departments that had the largest contact, traffic and transport frequency. They were grouped around vertical lines named 'traffic centres'. In the 1968 draft proposal, these were connected with decentralized entrances in the underground parking garage. The idea of a decentralised hospital is thus further developed in the process towards the 1968 draft proposal. The centralised 'centres' were distributed on the treatment and service floor, and there were two groups. The first group was units on the service floor such as Central Kitchen, Central Supplies, and Central Sterilization. The other group was units on the treatment floor, such as Central Out-Patient Clinic, Central Surgery and Central Laboratory. Where the centralization of the kitchen, the supplies, and the sterilization were related to the re-organisation / re-definition of the work of the nurses in the wards, the Central Out-Patient Clinic, Central Surgery and Central Laboratory were an indication, that they wanted to join the different ward sections examinations and treatments.

Eigil Hartvig Rasmussen had already described in the 1963 competition proposal that he thought it would be a good idea to centralize the wards secondary functions. His idea was, for example, that the food could be better prepared and organized in a centrally located catering kitchen than in the departments. Nurses could thus concentrate on the care work instead of having tasks such as cooking, doing the dishes etc. As mentioned in the introduction this was in line with the hospital policy. Eigil Hartvig Rasmussen was thus aware of what was going on in the sector in terms of work flow and organisation, which can be seen in the following statement from 1963: "In recent years, where the staff shortage has started to become present, people have been forced to be interested in new ways of organizing the care work". (Rasmussen, 1964: 18). The centralization of the secondary functions was primarily about efficiency, and what should be the main activity of nurses. It also had a staff political dimension, which will be addressed in Analysis 3 under the social aspect of architecture.

1.4 CONNECTOR - CORRIDOR - WALK WAY / HALL WAY - AXIS

In the 1963 competition proposal the idea was that visitors as well as out-patients should be distributed via a long *fordelingsgang* ('distribution corridor') on the entrance floor. The principle of a horizontal connection across the hospital was also to be found in the 1968 draft proposal; however, now throughout three of the facility's floors. On the entrance floor, it was called *Vandrehal* ('pedestrian hall way') which refers to the use of it being changed to become more than a connection. *Vandrehallen* was thus in the 1968 draft proposal thought of as a recreational area with various

facilities for patients and relatives like a lobby or a passage – hence the word *hal* ('hall')[20]. On the two underlying floors – i.e. on the treatment and service floor – the horizontal connection was described as a *korridorsystem* ('corridor system'). The notion 'corridor system' indicates, that it was a place you moved through – not somewhere you stayed[21]. The notion *korridor* ('corridor') indicates, that it was an organisational tool – an architectural means – whose primary function was to lead and distribute.

The word 'system' indicated a mentality that was also to be found in the following quote about the distribution on the treatment floor: "All examination and treatment sections are located north and south of the main axis (*hovedaksen*) in the treatment building: To the east, the main axis establishes connection from the hospital facility itself to the major service departments, i.e. Central Kitchen, Central supplies and Administration, as well as to the education area '' (Skisteforslaget, 1968: 8). The notions *forbindelsesgang* ('distribution corridor' or 'connector') and *korridorsystem* ('corridor system') were here replaced with the notion *hovedakse* ('main axis'). The use of the word 'axis' is significant. 'Axis' is an abstract term used in several knowledge fields such as mathematics (axis of rotation, symmetry), in politics (axes of power), in landscape architecture and urbanism (monumental axis). Although reference is made to urban planning in the discussion of the project, and the word 'axis' could refer to the idea of an urban axis, it was undoubtedly used in another meaning in this context. The main corridor on the treatment floor was perceived as a 'line' around which the units on the treatment floor were grouped respectively north and south. It was seen as the 'main axis' in a spatial coordination system – an imaginative and conceptual relationship. The language usage shows a high form of abstraction. The words 'main axis', 'corridor system', 'connector', and direction indicators such as east / west / north / south testify that the architects were thinking about relational parameters and non-stationary conditions; the dynamic aspects of architecture.

1.5 THE SEPARATION OF TRAFFIC FLOWS

Thinking the building from within led to urbanistic ideas such as; - a low horizontally dispersed hospital, - decentralised wards, entrances and centres, - and centralised service centres. It also manifested itself in the distribution of people through the building, of which we can distinguish between two principles; - an intangible principle which was guided by unwritten rules of behaviour, colour codes and numbering, - and a tangible principle guided by the way in which the building would separate people through the means of separate entrances, routes and walls.

An example of the intangible principle is that it was envisioned that visitors, out-patients, bedridden patients and staff used separate corridors on the treatment floor. The different *bevægelsesrum* ('passages') were marked at the hospital with the help of stripes, letters and numbers on the walls and floors. On the architectural drawings they were marked with dotted lines and arrows, with diagrams and flow charts. The different use of the four decentralised traffic centres is another example of an intangible principle. The idea was that Centre 2 and 4 were used for the distribution of out-

20 The design and use of *Vandrehallen* (the walk way) is important for the project. In the following three analyses I will look at the social, representational and experiential aspect of this.

21 That the 'corridor' space on these two floors was perceived as a tool for distribution rather than as a place has an impact on the way in which it was designed and the experiential quality of it. I will describe this in Analysis 5.

patients in the Central Out-Patient Clinic, and Centre 1 and 3 were used for the distribution of in-patients. It was not a definite ordering but an idea. It is an example of a (profane) ritual aspect of the design – one which had to be maintained by daily use and habits.

Contrary to the intangible principles of flows was the separation of people, activities, and traffic in certain cases also manifested physically. The chapel, the supplies, the emergency reception and the underground parking garage, for example, had separate entrances. Here, it was the location of the entrances and the distance between them, which determined the separation. But the activities were also separated through the architecture of the interior spaces. One example is the design of the examination rooms in the Central Out-Patient Clinic, in specific the way in which the rooms could be accessed from two sides by staff and patients, respectively[22]. The idea was that staff and patients did not mingle[23]. A comparable principle was used in the Central Surgery Department, where patients and staff had each their own entrance to the operating room. The logic of the two systems was the same. The central surgery, however, had a more complex system to avoid cross-infection. In one room the patients changed from their hospital bed to an operation stretcher. From here they were driven to the operation room in a separate corridor. After the operation, they were transferred to another room and a clean bed via a series of rooms. The staff went to the operation room through a number of changing / sanitary rooms and an internal corridor from which they had access to the operating room via the preparatory room. Also, clean and soiled goods were brought to and from separated rooms next to the operating room connected to the mechanical transport system. It was a logistically operational and rational procedure. The relevant aspect here is that there was (in the scheme) no distinction between the movement of people, data, cars and containers. Together they formed a system of activities, comparable with a clockwork or a machine.

1.6 THE BUILDING TODAY

From my visits to Hvidovre Hospital, it is clear that a number of changes have been made, especially with regard to the treatment floor. The Central Out-Patient Clinic, for example, now is completely different. Some departments have grown or shrunk, others have disappeared or have been added onto. And a large part of the departments is placed differently than they were, when the hospital opened in 1976. In addition, it has not been possible to fully adhere to the basic principle that the out-patient clinics and treatment facilities are placed directly under the associated wards. Today, contrary to the proposal of Krohn & Hartvig Rasmussen, one must therefore transport some patients over longer distances. The centralised ‘expedition centres’ (*ekspeditionscentraler*) in Traffic Centres 2 and 4 are moreover closed down under the request of the staff, as the different sections preferred their own decentralised receptions[24]. The consequence has been a certain fragmentation. Moreover, the decentralised reception can be hard

22 The treatment floor was in the southern area designed as parallel patches (bånd) in the east-west direction, separated by corridors. The examination rooms in the Central Out-Patient Clinic were placed here. Out-patients arrived at Traffic Centre 2 or 4 to a dispatch centre (ekspeditionscentral). From here they were directed to the examination rooms via what was called ‘the out-patient clinic walk way’ (ambulatoriegangen) or ‘patient walk way’ (patientgangen). The patients entered the examination room from ‘patientgangen’ south of the examination rooms. The staff had access to the examination rooms via the ‘staff corridor’ on the northern side of the examination rooms.

23 Seen from a social view point this had to do with privacy. But it also made it easier for the staff to perform their daily tasks if the patients were not around and/or able to see them. As it made contact between them easier.

24 Abelone Dyrup (who is working as an architect at Hvidovre Hospital) has told me about how the staff felt, that the decentralised receptions made the contact with their patients easier.

to find for the patients. This is an example of a situation in which priorities have been made not in terms of logistics but in terms of habits and daily use. In addition, out-patients typically do not use *Vandrehallen* as a transitional space as they are guided directly into the corridors of the treatment floor. The out-patients in the treatment area are thus disconnected from the more recreational and pleasant side of the facility upstairs. Finally, the areas of the Central Out-Patient Clinic have grown so much that it has been necessary to place a part of it upstairs in what was formerly known as a ward area, which is possible as the number of in-patients has decreased. The alteration of the out-patient area should be seen in the light of the constant changes and developments that take place within medical treatment and examination. This has also led to another out-patient system than that of present, which will be added to the new wing[25]. But it is also a matter of staff priorities. Thus, the territorialisation in the out-patient clinic by the different specialities has made its demand on the number of square meters needed, which is also why the offices have moved up and into a new roof floor to make space for more examination rooms. This goes against the original idea, where the standardisation in the out-patient clinic was exactly about flexible use. As a consequence, the staff at the roof floor has less contact with the activities in the clinic[26]. The program and use of *Vandrehallen* has also been radically altered due to the development of the patient population, as the hospital management argues that there is no need for a lot of recreational facilities in a hospital where most patients are out-patient[27]. The hospital is thus currently experimenting with blood bank and patient associations in those areas that formerly hosted the library and flower shop. All of this testifies to the dynamic state the hospital is in – in a continuous change and redefinition of patient flows and medical activities. But it also tells us that the program and use of a hospital is not just a matter of analysis and planning. It is also about negotiation, customs and preferences. A large part of the spatial organisation is determined by the hospital staff itself and what they think appropriate, convenient or practical. Some of which might not seem logical from an architectural view point. The following part looks at how these two cultures met in the decision process in the making of the original proposal.

25 I am referring to the 'FAM' - which is another way in which acute patients are received in the hospital.

26 The relocation also manifests that the examination rooms in the out-patient clinic are not used continuously - that is all the time. A large part of the time, the doctors work elsewhere, in their offices amongst others. The physical separation is thus not a large issue for them. In fact, the use of the examination rooms in the out-patient clinic seem (seen from an outside perspective like mine) rather inefficient, as they are only used maybe 2 days a week. The reason here for is, that the different areas of expertise has claimed a certain amount of spaces for their disposal, which means that they cannot be used by other specialists. As the medical staff only examine patients approximately 2 days a week, the spaces stay empty the rest of the week. From a critical view point you could say, that the need for extra square meters is derived from an inefficient use of the present spaces.

27 Unless you see *Vandrehallen* as a place for the staff - or reinterpret the relationship with the out-patient clinics.

The argumentation in the 1963 architect competition by Eigil Hartvig Rasmussen was elaborate and clear. He started by giving a short summary of the present condition in the hospital field; the escalating developments in medical science and the associated economical situation of cost-benefits and challenges. The need for rationalisation had as a consequence, that hospitals had been divided into a number of main work areas (services) which subsequently were divided in relation to medical specialities, the character of the patient material (out-patient, in-patient, acute care) etc.

As argued in Analysis 1, the prospects was, that new medical insights and technical innovations would continuously led to new demands in terms of architecture. As a consequence Eigil Hartvig Rasmussen as explained in Analysis 1, proposed, that the hospital in Hvidovre should be build as an open and flexible construction system.

The latest hospital developments had shown, that it was in specific the diagnostic and treatment area that was expanding. The need for flexibility and the possibility for further expansion had meant, that it was common practice to place this part of the hospital program in a large 1-2 storage building with on top wards stacked on top of each other; - a high rise on a matchbox kind of typology. The question Eigil Hartvig Rasmussen asked was, whether this was durable seen from a rational view point. The argument for his low decentralised and horizontal proposal takes thus as its starting point the conditions within the health care sector as well as an analysis of the present - best practise - developments.

While the original posters for the architect competition are lost, it is possible to see on a copy I have found in the archive of the now deceased Gunnar Gundersen, that the long verbal argumentation was placed on the posters next to the drawings. Eigil Hartvig Rasmussen was thus aware, that his alternative proposal would need guidance, - that his proposal was not only what you could see, but the analysis & the plea for an alternative approach. It demonstrates, that Eigil Hartvig Rasmussen saw architecture as a thought field, and that it could manifest itself as verbal language.

Finally it is worth noticing, that the argumentation - in its full length - was printed in a hospital magazine. The Danish architecture magazine *Arkitekten* had only brought a short 2 page review in 1963 in relation to the discussion of the competition proposals and the jury report. Could this be seen as an indication, that the analysis of use was not considered architecture? While Eigil Hartvig Rasmussen maybe did not get the attention he had wanted from his fellow peers, the scientific language had meant, that he had won the attendance of the municipal hospital client. Without, he had most probably not won the competition.

QUOTE 1

De sidste 20-30 år har sygehusbyggeriet været inde i en voldsom udvikling, som har affødt en række nye sygehustyper. Baggrunden for dette må naturligvis søges i den stærkt internationaliserede lægevidenskab, som i disse år har kunnet anvise nye og forbedrede metoder inden for næsten alle diagnostiske og terapeutiske områder. men også andre problemer som sygehusvæsenets stadigt stigende udgifter, manglen på arbejdskraft, behovet for rationalisering m.v. har fremtvunget de nye sygehustyper. Udviklingen kan kort karakteriseres ved følgende to forhold: - Den voksende lægevidenskabelige udspecialisering, - Behandlingens og plejens intensivering. Bygningsmæssigt har disse forhold fundet udtryk i sygehusenes opdeling i hovedafsnittene for diagnostik og behandling, patientpleje, hjælpeafdelinger og administration. Indenfor hvert af disse afsnit er der sket en stadig underopdeling efter lægevidenskabelige discipliner, patientmaterialets karakter o.s.v. Ambulatorier, intensivafdelinger og centraldepoter er enkelte resultater af den voksende specialisering og intensivering. Den nærmere fremtid vil sikkert bringe nyskabelser inden for den præventive sygdomsbekæmpelse, efterbehandlingen og den psykiske pleje. Stadigt vil der stilles nye krav til sygehusene, og udviklingen synes langt fra at have kulmineret. ... I en tid med nyskabelser og omvurderinger inden for alle lægevidenskabelige, praktiske og økonomiske områder af sygehusvæsenet vil det være af afgørende betydning, at de kostbare sygehusanlæg stadigt kan følge udviklingen op og tilpasse sig de fremtidige krav. Det store problem i dag er at planlægge vore sygehuse, så de ikke i løbet af en kort årrække er forældede.

Eigil Hartvig Rasmussen
Konkurrenceforslaget, 1963

QUOTE 2

Når det gælder de store sygehuse med patientantal på 500-1000, synes interessen efterhånden at samle sig om nogle få bygningstyper med visse fællestræk, som der kort skal redegøres for: De senere års sygehusbyggeri viser en kraftig tendens til ekspansion inden for behandlingsafsnittene. Dette i forbindelse med de øgede krav til flexibilitet og udvidelsesmuligheder for disse afsnit har affødt en ny type behandlingsbygninger i 1 eller 2 etager, som i langt højere grad end de tidligere flere etagers bygninger tager hensyn til den lægevidenskabelige udspecialisering og den stærke udvikling på det diagnostiske og terapeutiske område. Efterhånden er det blevet almindeligt anerkendt at kombinere disse stadigt voksende behandlingsafsnit med stærkt koncentrerede patientbygninger i 10-20 etager. Medens behandlingsbygningerne således breder sig horisontalt, koncentreres plejeafsnittene vertikalt ... Disse sygehuse med stærkt koncentrerede patientbygninger har indlysende bygnings- og kommunikationsmæssige fordele og er opstået ud fra teorierne om færrest mulige trafikknudepunkter. ... (Men) Er de gængse sygehusetyper de mest rationelle? ... Forfatteren til nærværende forslag har forsøgt ved en undersøgelse af den interne trafik mellem patientafdelingerne og samtlige behandlingsafsnit ved amtssygehuset i Glostrup at få klarlagt, om de gængse sygehustyper med mere eller mindre koncentrerede patientbygninger i forbindelse med 1-etages behandlingsbygninger giver mindre trafikmæssig koncentration end sygehustyper med decentraliserede 'hospitalsenheder'. Som det straks skal påvises, synes den lille undersøgelse at vise, at behandlingsbygningen i Hvidovre, hvis den opføres i 1 etage, har overskredet en sådan størrelse, at det vil være mere rationelt at benytte sig af en løsning med decentraliserede sengeafsnit i direkte kontakt med de samhørende behandlingsafsnit.

Eigil Hartvig Rasmussen
Konkurrenceforslaget, 1963

VISUAL 2.1

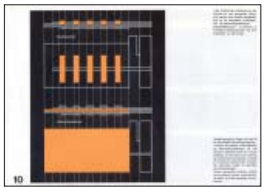
SUBJECT: Hvidovre Hospital - the 1963 architect competition
SOURCE: *Tidsskrift for Danske Sygehuse*, årg 40, 1964, page 207-16
YEAR: 1964

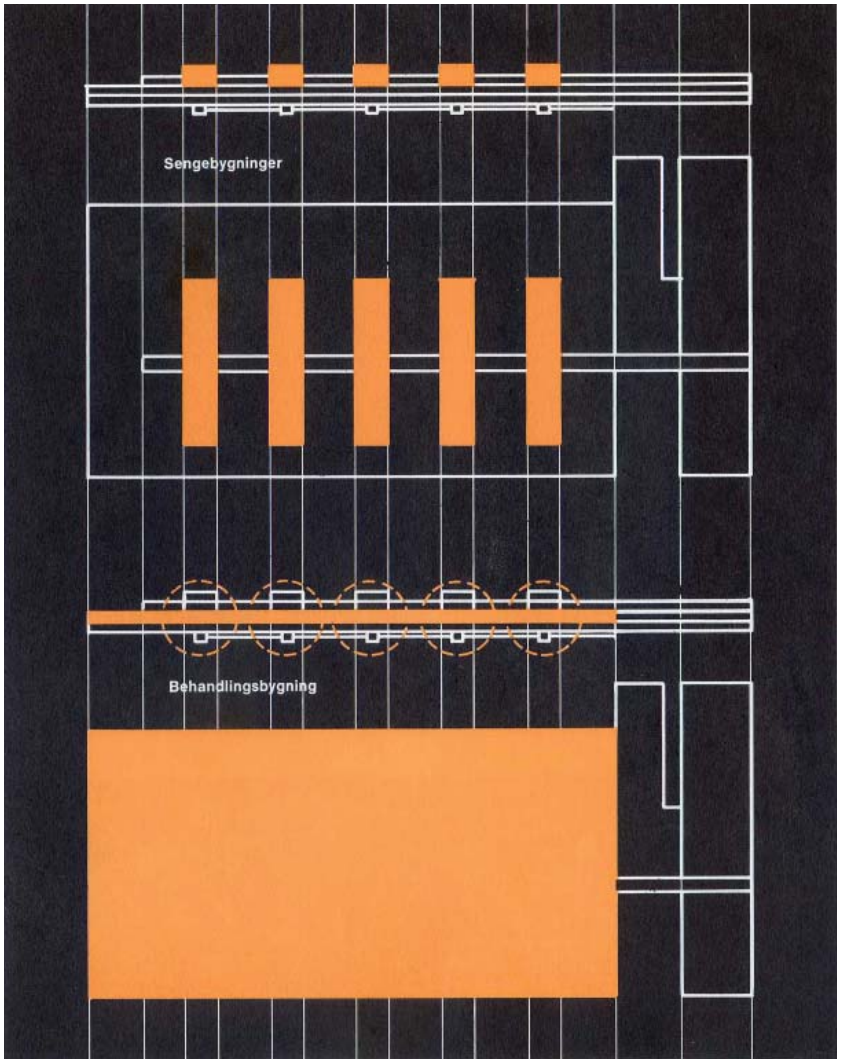
DECENTRALISATION

The text for the 1963 architect competition can be seen as a verbal function analysis. Except for one small drawing on elevator traffic, no analytical drawings were included into the competition report. Similarly the 1968 draft proposal did only include one analytical drawing. The dynamic principles, that were fundamental for the project, were also here described with the use of verbal means. A publication made by Krohn & Hartvig Rasmussen around 1973 though suddenly features a series of conceptual - and analytical - drawings. These drawings were made to graphically represent what they call 'the functional design' (*den funktionelle opbygning*).

The presence of the analytical drawings in the material made by the architects depicts, how drawing as a media - a mediation of ideas - had changed. Contrary to the previous drawings, which depicted tangible conditions, these drawings were meant to express intangible, and in this case abstract dynamic relationships. The language use and the emphasis on 'functional design' furthermore shows, that a distinction was made in what constituted architecture. Seems as if 'functional design' was a perception; one way of understanding architecture, and that there might be others in the project.

The drawings have a strong visual language, which is - if looked at it in terms of communication - almost distracting from, what they are trying to communicate. In the drawing depicted on this page the thin white vertical lines seems to suggest, that there is a relationship between the five horizontally dispersed ward buildings (here indicated as orange blocks) and the treatment floor underneath (the large orange square). The main narrative element is though the section with the dotted orange circles explained in text as; '' The functional design aims at a close geographical connection between the various ward units and the related examination and treatment departments''. How this connection was made is though not to be read from the drawing. The story was that, '' each examination and treatment department is, as far as possible, located under the particular ward unit it is mainly intended to serve, thereby forming a chain of functionally related units, which together constitute the actual hospital departments. This provides the shortest possible distance for patients and personnel moving between cooperating departments ''. The five orange circle thus stands for the idea of five small hospitals.





VISUAL 2.2

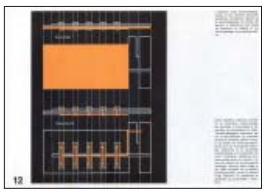
SUBJECT: Hvidovre Hospital - Horisontal decentralisation & Decentralised centers
SOURCE: *Københavns Kommunes Hospital i Hvidovre*, page 10
YEAR: 1973

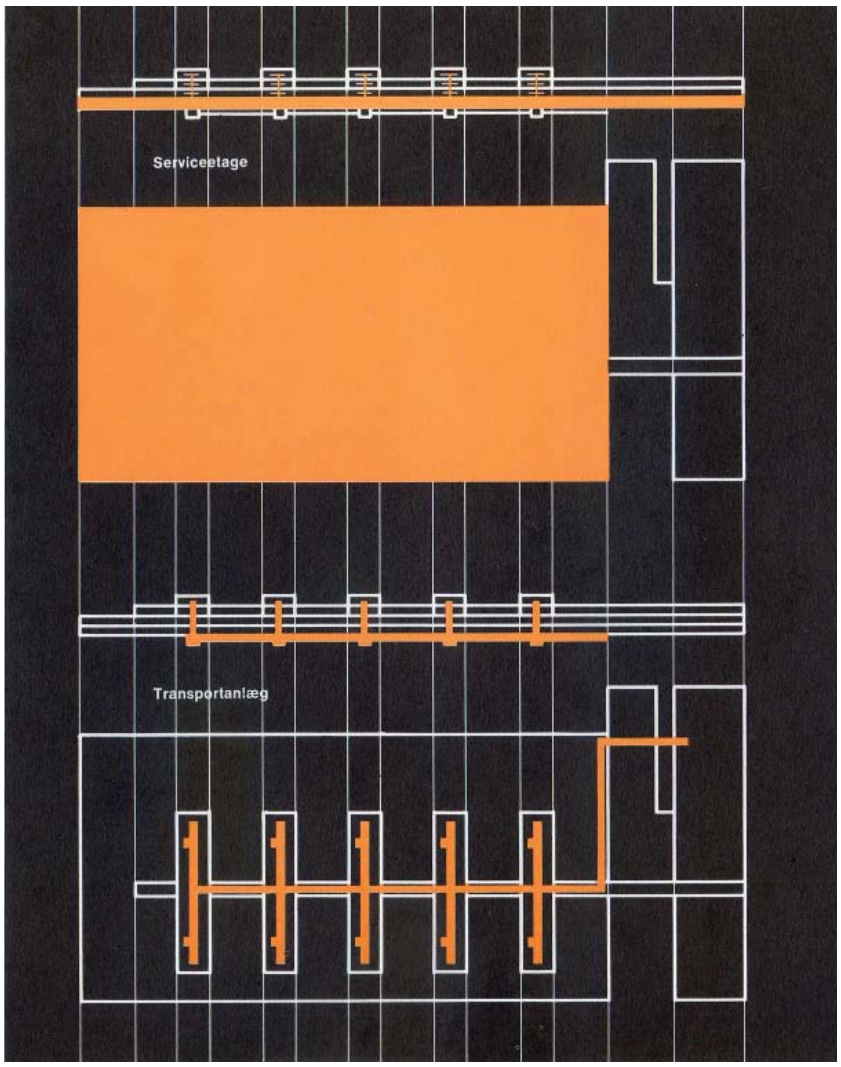
While the drawing on the opposite page communicate, that there are five rectangular blocks on top of a large square connected by some kind of circle (meaning interactivity), the drawing on this page seems to suggest something about the internal traffic situation. The drawing is though a bit less decipherable than the previous one.

The top part of the drawing is meant to depict the decentralised entrances (the traffic centres) which connected the parking garage on the service floor, the treatment floor and the wards (which were in two levels). The large orange square is though a bit disturbing as it does not correspond with the story line of the centres. Never the less it does communicate something about scale; that the hospitals treatment and service building consists of two enormous floors above each other.

The thick orange line on the lower part of the drawing is a signature for the automatic transportation system, which was located under the service floor in a basement tunnel system and in vertical shafts, which made it possible to transport goods and food: '' All goods are transported by containers, which are carried by a rail system controlled by electric driving gear through a series of tunnels and shafts from the supply centres to the departments requesting the goods. ''

Considering that the decentralised entrances, the traffic centres and the automatic transport system were essential elements in the functionality of the horizontal and decentralised hospital, this drawing - like the opposite - points at two core ideas. That it was a matter of dynamic principles would probably have been more obvious had the orange lines been drawn as arrows.





VISUAL 2.3

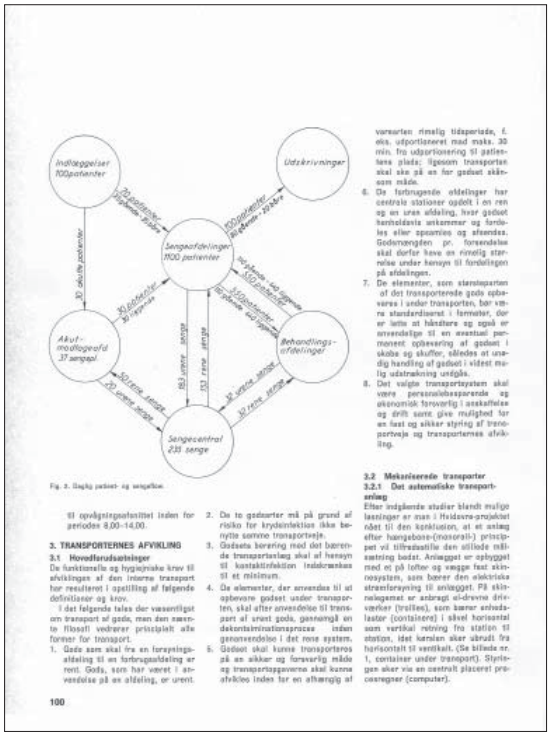
SUBJECT: Hvidovre Hospital - Decentralised entrances & Automatic transportsystem
SOURCE: *Københavns Kommunes Hospital i Hvidovre*, page 12
YEAR: 1973

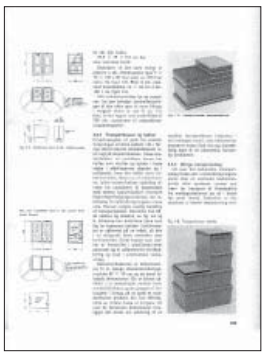
The article shown was written by two engineers from the collaborating engineering firm Birch & Krogboe. It was called 'The organisation of the internal transport of The Copenhagen City's hospital in Hvidovre'. It was primarily about the automatic transportation system; - the task of the system, - the performance, - the equipment, - and the economy.

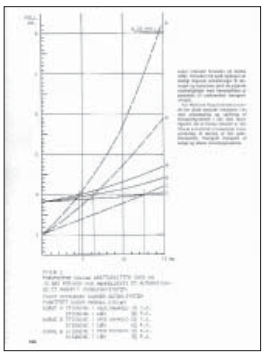
Contrary to the simplicity with which the architects depicted the automa tic transport system as merely a line we sense through this article the complexity of the assignment. That it was a matter of research, calculation, and tests before the system would work. The difference between these two expressions might serve as an example of the interrelation between architecture and enginee ring; that architects - with their ideas - might ask a question, that only an engineer can answer. The automatic transport system is an example of this symbiosis. Knowing that the engineers took part in the development of the proposal after 1963 only emphasize this.

If we look at the article we see, how it made use of different types of drawings; - an axonometric drawing depicted the position of the transport system in the hospital, - schemes (spreadsheet) show calculations, data and measurements, - a diagram illustrated the daily flow of patients and beds, - detailed design drawings gave insight into the measurements of the containers, - and a figure demonstrated the operating expenses seen over a period of 15 years. Next to this we find different photographs, that illustrate the system, the containers, and the boxes it carried. All of which makes it easy to read, as it demonstrates the creativity of problem solving. The article was moreover written in a descriptive language, which makes you think, that the language Eigil Hartvig Rasmussen used in his competition proposal was actually an engineering language - maybe more than it was architectural.


Organisationen af den interne transport på Københavns Kommunes Hospital i Hvidovre







VISUAL 2.4

SUBJECT: Hvidovre Hospital - The automatic transportsystem
SOURCE: *Tidsskrift for Danske Sygehuse*, årgang 49, page 97-106
YEAR: 1973

The two drawings on this page depicted the two internal transport systems; - the automatic transport system for goods, - and the electronic data communication system.

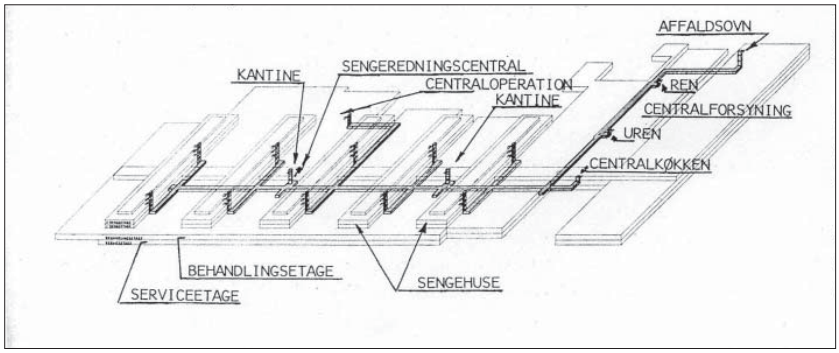
The top drawing is like a metro map indicating the send and receive 'stations' in the automatic transport system. The position of the centrals described in the analysis are to be seen on this drawing. To the right; - the central supplies, - the central kitchen, - and in the middle central surgery, - the bed central, - as well as two canteens. We also see that there were two separated flows; - clean goods, - and unclean goods.

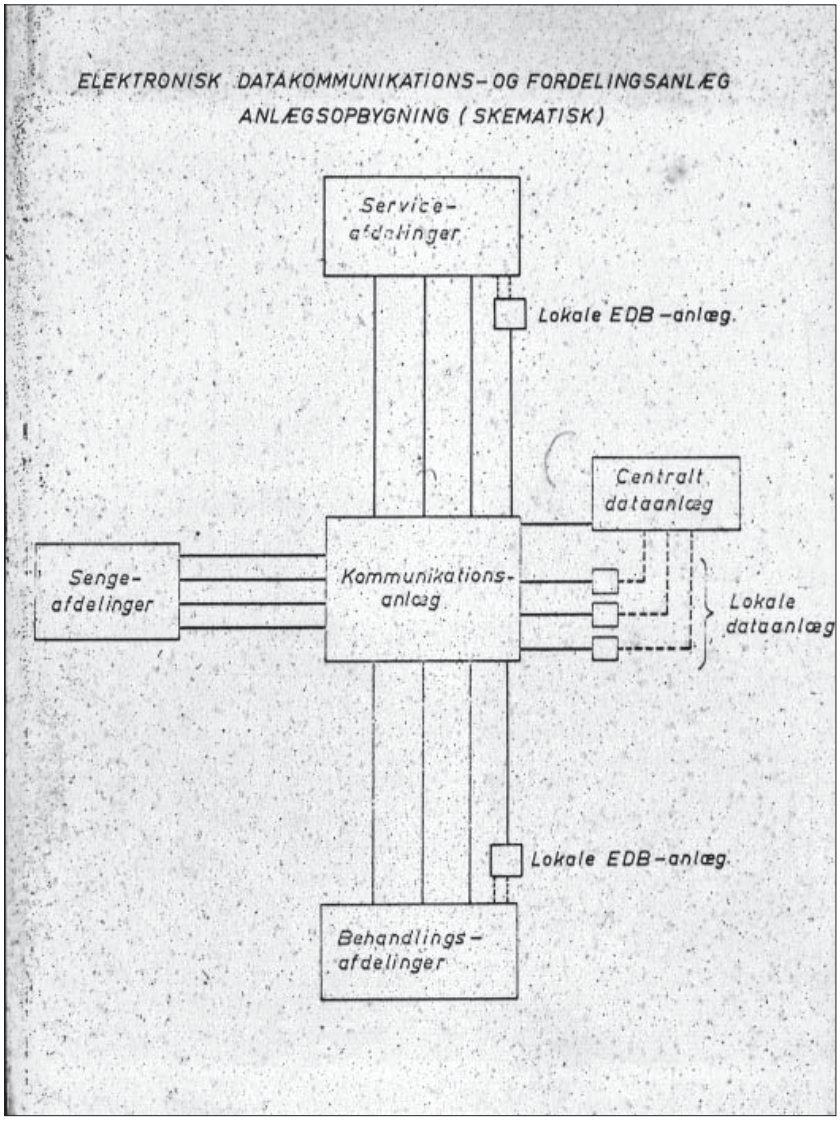
While the axonometric drawing of the transport system was directly related to the physical - and spatial - condition of the hospital, the drawing below of the data communication system was more abstract and conceptual. It was basically about the structure of the system (*anlægsopbygning*). The lines indicated lines of information. Whether the separate lines stood for separate wiring (cables) is uncertain. We do see, that some lines were connected to a local electronic data system. A distinction was thus made between the lines.

Basically the scheme depicted how data (the electronic information) coming from the service departments, the wards, and the treatment departments were distributed through a communication system (*kommunikationsanlæg*). which was controlled by a central data system. (*centralt dataanlæg*). This made it possible to have easy daily contact.

Like the automatic transport system the electronic data communication system was an essential part in why the hospital could be horizontal and decentralised. As people would not have to walk long distances to have contact. The presence of the two systems also put emphasis on, that dynamic relationships in architecture are not only about people and their daily activities but about the flow of goods and information.

Both of the systems were not developed by the architects, but by engineers. They were also new technologies. The advancements in modern technology so to speech created a platform on which an alternative form of architecture could be developed, one in which technology had substituted human activities - like porters distributing supplies, or secretaries delivering oral and written messages. Hvidovre Hospital was as such also a site of technological innovation and experimentation.





VISUAL 2.5

SUBJECT: Hvidovre Hospital - Automatic transportsystem and Electronic data communication system
SOURCE: Top - T*idsskrift for Danske Sygehuse*, årgang 49, Below - slide from Gunnar Gundersens archive
YEAR: respectively 1973, and unknown

As explained the architects rarely made use of analytical drawings, when communicating about their work in reports or publications. The drawings depicted previously as visual 2.2 and 2.3 (with the orange signatures) were one exception. Another is the drawing shown on this page. It was printed in the description of the 1968 draft proposal in relation to the point *intern trafik* (internal traffic) on page 11.

The drawing was a diagram about the corridor system on the treatment floor (here named building). It was called *gangsystem* meaning either passage or corridor. The language indicates that is was about the distribution of people - not stay.

A dotted line was the sign for in-patients in beds, a solid line was the signature for walking patients, and a dashed line the signature for staff.

The numbers 1,2,3,4,5 stood for the five decentralised traffic centres.

The letter H stood for *hoved-forbindelsesgang* (main axis) as described in the analysis. The traffic centres were placed along this axis. The orientation was east west.

The secondary corridor system was oriented north south. The narrative of the different types of lines in the drawing was, that differentiation should be made between the three types of traffic in the corridors.

On the south side of the main axis we see the letter P and A. While P stood for a transverse corridor for personnel, A stood for a transverse corridor for walking patients. As described in the analysis, the idea of the double (and triple) corridor system was, that the staff and patient traffic did not mingle. The transverse corridor for the staff moreover created the possibility for (a fast and private) connection across the specialities. The idea was that this would support the interdisciplinary collaboration.

The drawing was kind of a 'contract' in the sense that it was supposed to depict rules of conduct. It is an example of how the architects saw architecture as dynamic flows of activities not only physical form.

In the immateriality of the flow chart was also a challenge as the behavioural pattern had to be maintained through rituals of daily use and guiding signs. The irrational character of the human mind was though not taken into account, and people got lost in the corridors.

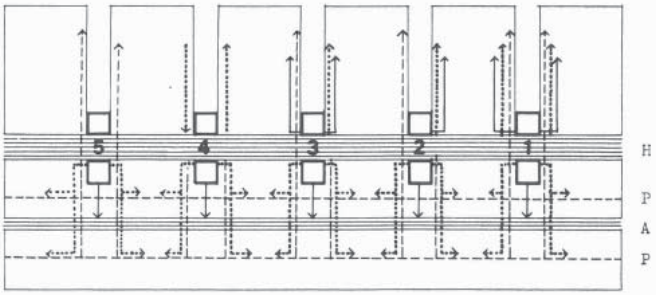


FIG. 1.
Diagram for behandlingsbygningens gangsystem

..... patienter i senge
_____ gående patienter
-------- personale

H: hovedforbindelsesgang
P: personalegang
A: ambulatoriegang (gående patienter)
Ambulatoriegangen giver adgang til samtlige ambulatoriers og laboratoriers undersøgelsesrum.

VISUAL 2.6

SUBJECT: Hvidovre Hospital - Distribution of patients and staff - Treatment floor
SOURCE: Description - Draft proposal (*Skitseprojektet*), page 11
YEAR: 1968

Complementary to the drawing on the opposite page, the drawing on this page depicted the internal traffic system in the out-patient clinic. The drawing was - like the drawings with the orange sign - from a publication made by Krohn & Hartvig Rasmussen around 1973.

The white line was a sign for traffic flows. The solid line stood for out-patient traffic, and the dashed line stood for staff traffic.

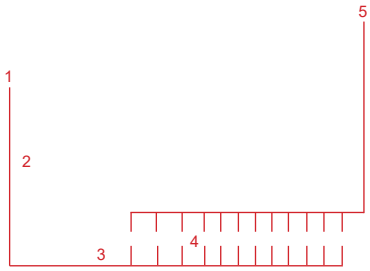
Out-patients arrived through the traffic centre (1), from where they walked into the waiting area (2). In the waiting area, they would find the common reception (secretary) - in Danish called *ekspeditionscentral* - for the specialities present in the area. To enter the examination rooms (4), the patients made use of the patient corridor (3). The staff entered the same examination room from the staff corridor (5). As described in the analysis the examination rooms could thus be accessed from two sides in what you could call a 'fork principle' (see red line drawing on top)

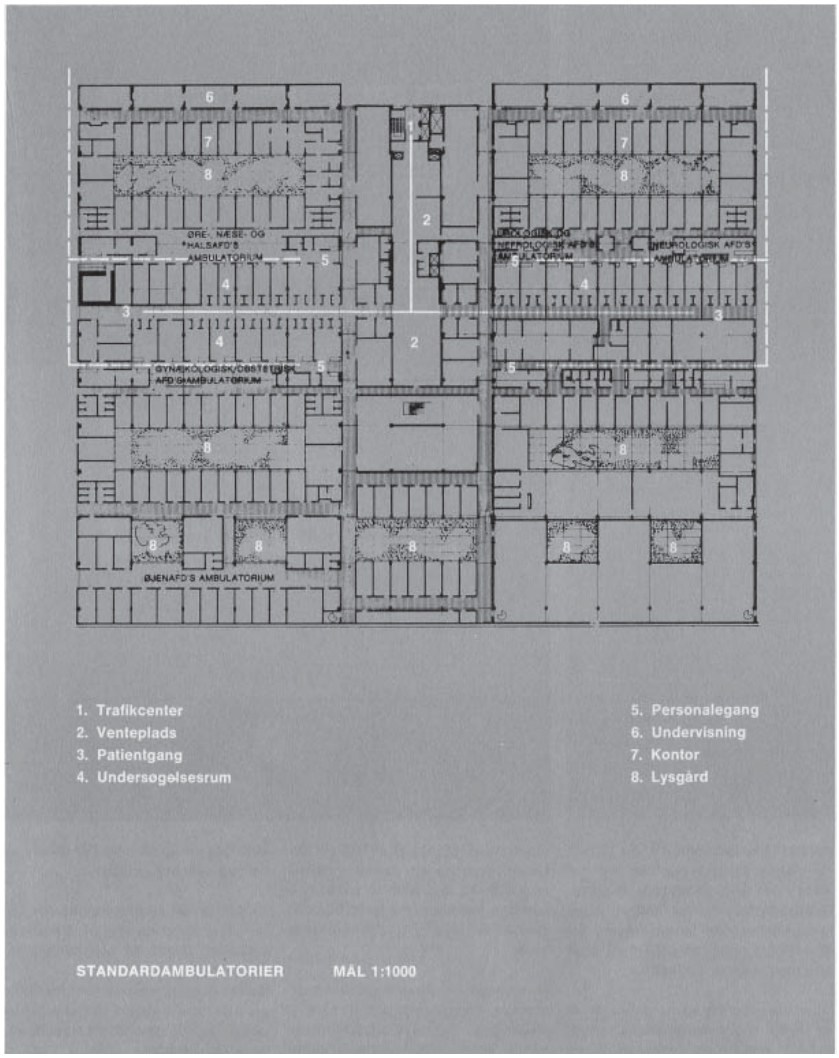
As described in the analysis, the drawing also indicated that the staff did not make use of the same traffic centre as the out-patients. Traffic centre 2 and 4 were for the out-patients, and traffic 1 and 3 for the staff and bedridden in-patients. The staff thus had their own way to access the area, their offices, the spaces for education, etc.

The area depicted on the drawing could be seen as an example of a 'decentralised centre' as described in the analysis - centred around a traffic centre and the common reception area (*ekspeditionscentral*). The idea was moreover, that the specialities grouped in this area would collaborate in the treatment.

Considering drawing 2.2, where the orange circles indicated, that the departments in the examination and treatment department were located under the related ward, the dashed line (5) would indicate how the staff walk back and forth between their offices in the clinic (7) and the ward when visiting the in-patients, as well as how the in-patients were driven into the clinic for tests (4) and back.

The principle of transverse corridors as shown on drawing 2.6 is though less obvious on this drawing. The thought that the whole out-patient clinic could work as one centre is - considering the scale of the building - also a less obvious one.





1. traffic center
2. waiting area
3. patient corridor
4. examination room
5. staff corridor
6. education
7. office
8. atrium

VISUAL 2.7

SUBJECT: Hvidovre Hospital - Distribution of patients and staff - Outpatient Clinic - Treatment floor
SOURCE: *Københavns Kommunes Hospital i Hvidovre*, page 17
YEAR: 1973

PART 2: DECISION PROCESS

In this part of the analysis I have compared statements from the 1968 draft proposal regarding the development process from 1963-1968[28], texts written by project architect Gunnar Gundersen[29], statements from various architects who witnessed the development process[30], texts by Peter Lohfert / Department of Functional Analysis and Hospital Design[31], reports (*betænkninger*) prepared by the municipality of Copenhagen in 1954[32] and 1961[33], the 1962[34] competition program, the 1963 jury report[35], internal notes from the city archive in Copenhagen and an article in *Tidsskrift for Danske Sygehuse* (The Journal of Danish hospitals) in 1967 on the decision process[36].

2.1 THE MAIN ACTORS IN THE DECISION PROCESS

As we have seen in the first part of the analysis, the dynamic aspect of the use of a building posed great demands on the architect's ability to analyse abstract relationships. What is more, the layout and planning of how a hospital should work had a high degree of complexity. Eigil Hartvig Rasmussen's overall analytical talent thus played a decisive role in the preparation of the competition proposal. His insight, investigation, analysis and argumentation were crucial for the submitted scheme to be considered as a winner of the competition by the jury committee, which will be discussed in the following text part 'Field of Interests'.

However, the continued development work, in-depth analysis and planning was beyond the competences of Eigil Hartvig Rasmussen and, according to certain sources, also his area of interest. He had no ambition to be in charge of this part of the process himself – on the contrary[37]. At the time when Krohn & Hartvig Rasmussen was busy developing the draft proposal, German-born architect Peter Lohfert was therefore asked to join the office to be in charge of this work[38]. Peter Lohfert was a system thinker and had experience with function analysis and hospital planning from hospital projects in Sweden, where he had previously worked. He quickly got a central position in the Hvidovre team, where he became responsible for a group of people analysing the work flows and functions of the various hospital departments and their interrelationships. Peter Lohfert's group prepared the principles the

28 The 1968 draft proposal was not published. I found the proposal in the archives of Hvidovre Hospital. The written report is a document of 184 A4 pages, which is accompanied by a 40-page drawing compendium in a large format.

29 There are two different documents: - Gunnar Gundersen, *Blok 374 Sygehusbyggeri*, Danmarks Forvaltningshøjskole, Forvaltningsfagligt diplomkursus for sygehusadministrativt personale, del 2, - and Gunnar Gundersen's unpublished text about the making of Hvidovre Hospital from 1988 (stored in his private archive).

30 I have spoken to the architects Peter Lohfert and Gunnar Gundersen. I have also found a text in which Eigil Hartvig Rasmussen describes the Hvidovre project short and mentions the role of Peter Lohfert.

31 Before talking to Peter Lohfert the second time, I worked mainly with the text 'Information 73' from 1973 of which I found a copy in the City Archive of Copenhagen. Attached was a letter to B. Gurlev - *Byggeudvalgssekretariatet for Københavns Kommunes Hospital i Hvidovr*e. The document was obviously made for the municipality that they would become aware of the services that he could offer. I also studied the different reports that Peter Lohfert was in charge of in relation to the function analysis of Hvidovre Hospital. The reports were made by Krohn & Hartvig Rasmussen in collaboration with *Direktoratet for Københavns Hospitalsafdeling* (the planning committee) as well as Birch & Krogboe Rådgivende Ingeniører. I have found copies of the reports in Hvidovre Hospitals archive. At my second interview with Peter Lohfert, he gave me two articles ('Systematisk funktionsanalyse som grundlag for hospitalsprojektering' and 'Anvendelse af systematisk funktionsanalyse ved hospitalsprojektering') as well as a booklet about the history of his company. The two articles were printed in *Tidsskrift for Danske Sygehuse* repsectively nr 18 and nr 19, 1969.

32 The report ('Betænkning afgivet af det af Københavns magistrat under den 27.marts 1952 nedsatte udvalg vedrørende opførelse af et hospital I Hvidovre') was printed in 1954, therefore I use this year.

33 'Betænkning vedrørende opførelse af et nyt hospital afgivet af Københavns hospitalsvæsens planlægningsudvalg den 6 juli 1961'

34 The competition program was made by approximately the same people that wrote the municipal reports in 1952 and 1961. City architect Frode Jørgensen was one of them. DAL send a secretary the architect Erik Nilsson.

35 The jury report was printed in *Arkitekten* nr 18 from 1963

36 'Redegørelsen vedrørende Hvidovre Hospital', printed in *Tidsskrift for Danske Sygehuse*, årgang 43, 1967

37 Peter Lohfert has addressed this view point in one of my interviews. Flemming Skude - as well as the daughters of Eigil Hartvig Rasmussen - also also expressed the idea, that he was primarily interested in the conceptual side of the projects - inventing the schemes and drawing them - than he was in the pragmatics of realising them.

38 Eigil Hartvig Rasmussen had met Peter Lohfert at the hospital in Lund, where Lohfert worked. The project in Lund was finished in 1966/ 1967, which is when Lohfert started at Krohn & Hartvig Rasmussen.

hospital should follow in collaboration with (*direktoratet for*) Copenhagen Hospital Services and the collaborating engineers. Their work resulted in a large number of reports by some called 'the grey literature'[39]. As will be explained under point 2.3 the content of the reports was synchronized with the development of the architects' plan drawing work. Thus, Lohfert and his team functioned as a link between architects and hospital staff. In relation to the decision-making process on use – the dynamic aspect of architecture – the Institute's work was therefore very important with Peter Lohfert as one of the main actors. However, Copenhagen Hospital Services also played an important part in the development of the reports, as well as a large part of the hospital's employees were involved in the preparation and decision-making process in various user committees. I will discuss this part of the work in the text on the decision-making process below.

In 1970 – during the period of the construction of Hvidovre Hospital – Peter Lohfert's work group was transformed into a co-operative called *Institut for Funktionsanalyse og Hospitalsprojektering* (Institute for Function Analysis and Hospital Planning), that he could undertake assignments independent of Krohn & Hartvig Rasmussen[40]. The assignment for Hvidovre Hospital had thus given Peter Lohfert the possibility to develop his own area of expertise. It is an example of the specialisation that took place within practice.

2.2 FIELD OF INTERESTS

Whereas the description by Eigil Hartvig Rasmussen of the 1963 competition proposal was 23 A4 pages, the description of the 1968 draft proposal was 184 A4 pages, of which the discussion of the program was the main part. The focus on program was informed by the fact that Hvidovre Hospital was connected to the overall municipal and state official planning policy. The process leading up to the 1962 competition is in itself evidence of how important the program was for The City of Copenhagen as well as its Hospital Services. As it is of importance for the understanding of the role of the architects in the decision process, a part of the discussion is included here.

Copenhagen Hospital Services had suffered from a shortage in hospital beds and many inefficient, old and outdated hospitals for a long time. In 1951 the municipality had already issued a report proposing the provision of two new central hospitals in Copenhagen of which one was a hospital in Hvidovre[41]. In 1952, the municipal set up a committee composed of doctors, nurses, technicians and hospital administrators who were asked to prepare a program for the hospital. The result of the committee's work was presented in June 1954. The text gave a very detailed description of the program, i.e. which departments the hospital should contain and how they should function. At that time, the committee had had 46 meetings and visited several hospitals abroad. From this we can deduce that it had been a large amount of work. An interesting detail is that the committee's

39 The notion 'grey reports' is used at Hvidovre Hospital. It was also used by several of the architects I spoke to. Peter Lohfert himself refer to them as 'blue reports'. That other people consider them 'grey reports' is without doubt related to their 'grey' content of numbers and schemes - gray being a symbolic indication of 'dull to read'.

40 Due to his expertise Peter Lohfert was - while he was working on Hvidovre Hospital - soon asked to be involved in other hospital projects in Denmark as well as abroad. As he was going to work for different hospital organisations and official bodies, while KHR was a private architect company, he and his team had to become an independent cooperation. Thus, a separation from Krohn & Hartvig Rasmussen was necessary to make sure that there were no conflicts of interests. Peter Lohfert was supported financially by Eigil Hartvig Rasmussen personally as a gesture of kindness and trust. It is a token of the generosity with which Eigil Hartvig Rasmussen surrounded and supported the people he liked. The office of Peter Lohfert is today called Lohfert & Lohfert - and is run together with his brother.

41 The municipal of Copenhagen had in 1934 bought the land. Through time they had several discussions on whether they should build a hospital there. Within the earth banks of the city there was no available site.

report indicated that they did not consider it appropriate to hold an architect competition, which makes you wonder, as there had been several architect competitions in the 1950s about large hospitals in Denmark[42]. However, economic difficulties prevented the further planning of Hvidovre Hospital. In 1960, a new tax regulation was introduced for the hospital service. The idea was that the money should be used for the renewal and expansion of hospitals[43]. A quick-working planning committee was therefore set up to identify the modernization and development work that should be carried out in the municipality within the next few years. In 1961, the committee issued its second report. This reaffirmed the construction of a hospital in Hvidovre. In this report, it was – contrary to the 1954 report – proposed that an architect competition be held[44]. In 1961, the magistrate issued a committee to compile the competition program[45], which was announced in August 1962.

In comparison to the detailed accounts in the 1954 and 1961 reports on the hospital activities, the 1962 competition program was surprisingly short and more or less reduced to a list of functions. The municipal officials were supposedly not entirely comfortable about an architect competition, as the magistrate in 1961, in a letter to the Danish Association of Architects, requested to derogate from the Nordic competition rules which was saying that the majority of judges in an architect competition must be architects. It was implicitly stated that architects are not able to judge the task of designing a hospital to full satisfaction. The Danish Association of Architects (DAL) wrote back, that they could not recommend a derogation from the rules on the composition of the jury committee, "but instead, it should draw to the attention of the magistrate that, the jury committee, if it within the limited framework should not be possible to accommodate the interests of all eligible persons, could connect a group of experts in the assessment of the proposals received. The limitation for this group is that, in the event of any voting during the assessment, it has no voting rights" (Erik Nielsson, secretary DAL, 1962) [46]. The letter exchange is an example of a conflict of interests in the decision field between, on the one hand, the Municipality of Copenhagen and Copenhagen Hospital Services, and, on the other hand, the architectural profession. The solution was in the case of the competition – as DAL suggests – that a group of hospital experts were designated to assists the jury committee. Of these seven specialists, five had contributed to the writing of the competition program in 1961, and four of them had participated in the making of the previous reports in 1954 and 1961[47]. The discussion on Hvidovre Hospital was thus based on a thought process, research and investigation that went ten years back for some of the people involved. The City of Copenhagen furthermore designated three persons for the judging committee, among which mayor of the second department Edel Saunte and two citizen representatives[48]. The Danish Association of Architects had on their part three of their own experts involved, one of

42 The committee members were maybe not convinced by the quality of the architect's work. A statement like that is though pure speculation, as the report does not explain their view point.

43 This statement is based on the book by Sigurd Jensen, *Københavns Hospitalsvæsen 1863-1963*, page 112

44 The planning committee in 1961 was more or less the same as in 1952. Why they have changed their mind concerning an architect competition is not explained. The 5 new people in the group might have convinced the rest.

45 The committee consists of a group of doctors and nurses together with representatives for Copenhagen Hospital Services (*Hospitalsdirektoratet*) and the Danish Association of Architects (*Danske Arkitekters Landsforbund*).

46 Letter with the title: 'Vedrørende arkitektkonkurrence om et nyt hospital i Hvidovre', written 2nd of February 1962 by secretary Erik Nilsson, DAL. I found the letter in the City Archive in Copenhagen.

47 According to the competition program, the specialists were: Hospital director Aksel Andersen, Civil engineer J. Buus (direktør for Københavns Kommunes rådgivende ingeniørkontorer), Head nurse I. Enslev, professor dr. med. Kurt Iversen, Chief of Staff P. Larsen, Professor dr. med. Helge Faber and dr. med. Per Lous.

48 The second department (*København 2 Afdeling*) was in charge of The Municipal Hospital Services (*Københavns Hospitalsvæsen*). Edel Saunte was mayor for this department.

whom was the known architect and writer Tobias Faber, another the City Architect Frode Jørgensen who had extensive knowledge about the municipal hospitals as well as having been a jury member in the architect competition on Glostrup Hospital, Odense Hospital as well as on Rigshospitalet (The State Hospital)[49]. It more or less looks like that each of the involved parties had positioned their main and most equipped actors in the jury committee, as if the discussion there was a competition in itself.

The divergent – and well argued – opinions and interests in the jury committee were reflected in the 1963 jury report, which was of a previously unknown dimension and length. In the light of this, Eigil Hartvig Rasmussen's 28-page verbal argumentation had an important role to play. His horizontal and decentralized proposal was at that moment in time of an unknown character for a modern hospital, and out of the 46 proposals submitted, only 4 were designed as low-rise buildings. The quality of the proposal by Eigil Hartvig Rasmussen was thus not only that he had come up with an original idea; it was that he was able to explain it in a language that was convincing and clear[50]. Had it not been for the architect competition, Hvidovre Hospital was unlikely to have become a horizontal decentralised hospital. An internal note in the City Archive shows how three of the hospital experts, – and in specific those who had been responsible for the committee work with Hvidovre Hospital program from 1952 onward – voted for a high-rise proposal[51]. They were thus in favour of a more conventional proposal. The editor of the Danish architecture magazine *Arkitekten* (probably Skriver) wrote in relation to the 1963 architect competition: "If the City of Copenhagen had simply given the job of designing the new hospital to an architect with experience in such a construction, the solution would without doubt have been in full compliance with the dogmatic perception, that marked all the other projects in the competition. The wards would have been concentrated in a high-rise building with the examination- and treatment sections located in low buildings around the high-rise buildings. Everyone must acknowledge, that a project competition was the only option to change the development, to induce a new hospital type" (Arkitekten, 1963: 333). When no more architects attempted to formulate an alternative, it was probably because "there is a heavy burden of proof for those who differ from the traditional and already known" (Arkitekten, 1963: 333). The long and comprehensive jury report could thus also be explained as a political document; that the jury was very well aware, that there was a risk in proposing new ideas[52]. And even though the jury found that the scheme by Eigil Hartvig Rasmussen was '' one of the most interesting schemes" (jury report, 1963: 337), they also had their doubts as they stated, that the project "must be subject to a number of changes during further processing" (jury report, 1963: 337)[53]. An alternative scheme may have won, it should be rigorously scrutinized in the further development. In 1964, the Municipality

49 The third member is arkitekt maa William Groth Hansen.

50 This statement is supported by the leader in *Arkitekten*, nr 18, from 1963, which points at the verbal qualities of Eigil Hartvig Rasmussen, saying: "The qualities of the first prize is not at least, that its author has had the capacity to present his ideas so convinsing and clear, that the special committee of doctors and hospital people, that assisted the jury committee, has had the courage to follow the projects revolutionizing idea".

51 The note is hand written, and there is no author. It is titled 'Afstemninger' (Votes), and it is basically a list, where you can see who voted for which proposal. From the list it is to be seen, that Hospital director Aksel Andersen, Civil engineer J. Buus, and chief of staff Paul Larsen thought that proposal number 34 (a high-rise proposal) should win the first prize, while the rest of the jury voted for number 5 (the project by Eigil Hartvig Rasmussen). Andersen and Buus had been involved in the committee work dating back to the 1950s and all three of them had been working on the program for the architect competition.

52 The jury report is printed in *Arkitekten* nr 18, 1963 as well as in *Tidsskrift for Danske Sygehuse*, årgang 39, 1963

53 They are in specific critical towards the treatment building. In an intern document from the city archive it is to be read, that architect William Groth Hansen for example has some negative comments on the 'functional' part. Doctor Kurt Iversen also points at some departments are placed in an unfortunate way in relation to one another.

of Copenhagen - while granting the money for the realisation of the project - therefore issued a “request for a comprehensive function survey, as the competition proposal radically violates the principles that have been most commonly used the last 20-30 years in the construction of hospitals”[54]. Copenhagen Hospital Services and the Municipality of Copenhagen were – regardless of Eigil Hartvig Rasmussen’s burden of proof in the competition proposal – obviously not convinced of the quality of the decentralized hospital. This meant that several aspects needed to be examined and tested in connection to the revised draft proposal[55].

As stated in Analysis 1, the development of the draft proposal took 4 years. For this purpose, the municipality set up a committee responsible for the planning of the new hospital in Hvidovre. The committee consisted of representatives for the architects, the engineers, Copenhagen Hospital Services, the municipality, the union of communal workers, the city architect’s office and hospital experts[56]. The 184-page 1968 draft proposal report was the result of the committee work, which in its detailed account and discussion on the program was comparable to the report of 1954. The municipality – and probably more Copenhagen Hospital Services - had a large influence on the development of the scheme in specific in the discussion of the programming part. The program was continuously revised until the final stage of the building process – thus after the draft proposal was completed and accepted by the officials[57]. The 1968 draft proposal contained an overview of the study trips the committee was on during the period of 1963-1967. From this it can be seen that they had been visiting at least 20 hospitals located in Denmark, Germany, Sweden, the United States, England and Belgium. This confirms the amount of work (time and money) that was invested (again) in the development of the hospital; in specific how it should function. What is more, the whole decision process from 1952 until 1976 demonstrates a certain dedication – or maybe even obsession from the officials – that all options, innovations and new ideas had to be mapped before one could decide on the final scheme[58].

Without doubt, one of the major challenges were the in-depth analysis of the functions of the hospital and their internal relationships. As will be described in the following text, this type of work broke with the experience a regular trained architect had, which is why Peter Lohfert was employed at Krohn & Hartvig Rasmussen’s office in 1967. His work did not follow an already known procedure within the discipline. He embodied a new way to practice. But his job was not only about analysing the hospital functions. With the diverging interests in the hospital field, he had to develop a decision procedure; a way of communicating – as well as mediating – between Copenhagen Hospital Services and its employees at Hvidovre Hospital and the architects of Krohn & Hartvig Rasmussen. It required a special insight and ability to operate in two so diverse cultures, and the mindset that followed inadvertently. A quality that Peter Lohfert fully possessed – and even more so during the

54 *Tidsskrift for Danske Sygehuse*, årgang 43, 1967, page 181

55 The aspects are: - traffic, - double corridor system, - noise, - program analysis, - parking, - standardisation

56 The committee consists of Eigil Hartvig Rasmussen from Krohn & Hartvig Rasmussen, 2 people from the collaborating engineering firms, 2 people from the Directorate of Copenhagen Hospital Services (*Direktoratet for Københavns Hospitalsvæsen*), 5 hospital experts (that is doctors and nurses), 1 from The Danish Union of Communal Workers (*Dansk Kommunalarbejderforbund*) and 1 from the City Architects Office (*Stadsarkitektens Direktorat*) - architect Frode Jørgensen. He has as such been a part of the whole process from the reports (*betænkningerne*) in 1952, 1961, the committee work on the competition program in 1961, and the jury work in the architect competition.

57 The development of the program for the hospital in Hvidovre was related to a re-distribution of people and specialities on all the municipal hospitals. As discussed in Analysis 1, Hvidovre hospital was not developed as it was originally planned. As far as I know, certain department were never moved to Hvidovre as intended.

58 Amongst others, they studied automatic transport systems in Germany, US and Sweden. They also studied how other hospitals were planned. It is in this context that they visited the hospital in Lund, where Peter Lohfert worked.

1970s when he pursued the education as a doctor next to his practice as a hospital analyst and planner. Through research and reflective thinking, he built a bridge of understanding between the field of architecture and the hospital field, an expertise and a career of his own[59]. And even though you can be critical towards the utilitarian approach in the systematic way of thinking, the 'modus operandi' introduced by Peter Lohfert in the decision-making process was exemplary and outstanding. Without these qualities the decision-making process with people from the hospital field would not have worked. The following text part gives an example hereof.

2.3 EXAMPLE OF THE DECISION PROCESS

As described under Analysis 1, the execution of Hvidovre Hospital was divided into three areas of work: - Construction site management, - Building management and design planning (*projektering*), - and Function analysis. The Planning Department of Copenhagen Hospital Services (*planlægningsafdelingen fra Direktoratet for Københavns Hospitalsvæsen*), Krohn & Hartvig Rasmussen, as well as the engineering firms Birch & Krogboe and A / S Johannes Jørgensen were collectively in charge of the function analyses. The work was directed by a working committee (*arbejdsudvalg*), that was in charge of a series of sub-committees (*underudvalg*). These sub-committees in turn made use of 'user committees' (*brugerudvalg*). The working committees had an advisory function in the preparation of the general and cross-cutting functions at the hospital as well as in the preparation of the function analyses for the individual departments. User representatives were designated, depending on the department that was to be investigated, planned and programmed, so that all relevant professional groups (*faggrupper*) for the department concerned were represented. This meant that there were different 'teams' for the different wards, the central surgery and units in the out-patient clinic, amongst others. The idea was, that the users acted by 'addressing the problems' (*problemstillere*) while the architects and engineers served by 'solving the problems' (*problemløsere*). Peter Lohfert described the concept behind the analytical approach in an article for *Tidsskrift for Danske Sygehuse* in 1969 by saying; "The idea (of systematic function analysis) is based on the thought, that the formulation of the assignment, planning and realisation of a hospital building, is a common problem complex for the client and the technicians, and only a basis, that can be judged by all parts, can create the basis for a clear decision making procedure and therefore an effective planning process for the execution (*projekteringsproces*)" (Lohfert, 1969: 270)[60]. This complies with the above-mentioned statement, that Peter Lohfert saw the systematic function analyses as a way of mediating between the two different cultures of communication and professional perspectives.

The work of the user committees resulted in the previously mentioned 'grey reports' – of which Peter Lohfert was in charge – recording the results of the 'systematic function analysis'. Overall, the reports contained a description of: - Functions in the department, - Workflows, - Requirements for room layouts, - Requirements for appliances and fixtures, - as well as a certain number of

59 The career of Peter Lohfert is quite out of the ordinary. He did not only graduate as an architect and a doctor, he also took a PhD in both disciplines - both on the issue of function analysis and hospital planning. In the 1970s his brother joined the office, in Germany. The office of Lohfert & Lohfert have today realised more than 2000 projects around the world as Peter Lohfert has written several books on his in-sights and experiences.

60 Peter Lohfert, *Tidsskrift for Danske Sygehuse*, nr 18, 1969, page 270, -
Quote (in Danish): Ideen baserer sig på den tanke, at opgaveformulering, planlægning og udførelse af et hospitalsbyggeri er et fælles problemkompleks for bygherre og tekniker og kun en basis, som kan vurderes af alle parter, kan danne grundlag for en klar beslutningsprocedure og dermed en effektiv projekteringsproces.

drawings. The drawings were different in character and could be anything from flow charts to floor plans (2.12). The function analyses were moreover developed in levels with an increasing degree of detail. With the concurrent building management and design planning (*sideløbende projektering*), function analysis and construction, the degree of detail in the analyses were tailored to the needs at the time of execution, and the floor plans were revised according to the acquired insight[61]. However, the idea of it was easier than the actual work. In an article from 1969 Lohfert mentioned diverging opinions between the technicians (meaning architects and engineers) about the phasing of the building project; and what these might mean: “Notions as sketch proposal, draft proposal and final proposal are used daily, but the definition and detailed function of the phases in the building management process (*projekteringsprocessen*) is different” (Lohfert, 1969: 270)[62].

In general, Peter Lohfert’s way of thinking questioned the way in which the architects worked at Krohn & Hartvig Rasmussen. An example is his focus on the process of communication between the architect, the client, and the users, and the means that were used to make these people meet. When he was employed in 1967, the procedure had so far been that the architects developed plan drawings – sketch proposals – products that were based on the room program (a list with square meters), which they presented and discussed with the hospital staff. When participating in these meetings, Peter Lohfert saw that this form of communication did not work, as the architects had very little sense of the activities and processes that took place in a hospital, which meant that they constantly had to change their plan drawings, because there was something they had not understood or had not included. Moreover, the hospital staff was not trained to read floor plans. They therefore wasted time talking about things that the other group did not understand or spoke past each other. Peter Lohfert suggested a different approach, which was that they would start by drafting ‘principle sketches’ (*principskitser*) showing the order of activities to be carried out in time, and what should take place in which room; the position of the activities and their interrelationships. Once these ‘basic principles’ were approved, the architects could begin with the plan drawings. The architects plan solutions would that way have a ‘theoretical’ foundation. The ‘principles sketches’ (*principskitser*) could function as a contract between users and architects[63]. It was about creating a platform of common understanding before designing.

It was therefore Peter Lohfert who took the initiative to distinguish between an analytical process and designing at Krohn & Hartvig Rasmussen. The ‘principle sketches’ (*principskitser*) were abstract conceptual drawings such as ‘schemes’, ‘diagrams’, or ‘flow charts’, which graphically described the dynamic relations between the activities that took place in the hospital, whether it was about the distribution of supplies, communication of different types, patient and staff transport, etc. The drawings were central to the reports prepared by the user committees per hospital unit as well as for the cross-cutting activities. They demonstrate how a “dynamic model” was developed for how the hospital was to be used. The work groups did not make use of existing literature or manuals. They performed a real piece of research and development work. This form of work was new and ground-breaking, and led to a new architectural specialty, that of Function Analysis

61 This part of the text is informed by: - the text by Gunnar Gundersen ‘Brugerudvalg’ from his book *Blok 374 Sygehusbyggeri*, *Danmarks Forvaltningshøjskole, Forvaltningsfagligt diplomkursus for sygehusadministrativt personale*, del 2, page 33-34, - a description in the report ‘Retningslinjer for funktionsanalyse i nivueau II, december 1969, page 4-5, - as well as my conversations with Peter Lohfert.

62 Peter Lohfert, *Tidsskrift for Danske Sygehuse*, nr 18, 1969, page 270

63 The description of the development - and Peter Lohfert’s role in it - is based on my interviews with him.

and Hospital Planning. It was also one big experiment. Although Peter Lohfert had experience from hospital planning in Sweden, The Municipality of Copenhagen and the Copenhagen Hospital Services had virtually no experience with this kind of procedure and planning process. As the number of specialties and the composition of specialist (*specialesammensætning*) grew dramatically in this time period, it was more or less only the doctors who fully understood what was going on in the hospital[64]. One of the major tasks in the work committees was therefore partly to listen to the doctors, partly to make them understand that the systematic function analysis was not about them stating their personal opinion[65]. In their statements and views they should go beyond their own areas of (departmental and professional) interest and think in entirety – the hospital as a whole[66]. This is evidence that the architects had a guiding role in the decision process.

Even though the user involvement in the work committees and the detailed function analyses were a time-consuming aspect of the decision-making process, they were also indispensable and led to a significant simplification and clarification of the project in terms of use[67]. It was also a unique empirical process that, through Peter Lohfert's work and insight, was exemplary for the work on other hospitals. Associatively speaking you could say, that the horizontality of Eigil Hartvig Rasmussen's project proposals had spread into the decision-making process based as it was on user involvement and field analysis – although not everyone participated in the decision-making process. They sent representatives. The systematic function analysis, however, was not only a unique mapping and planning tool. The reports are a historical document of the patient material, the supply system, the staff organization, and the norms at that time. They also depict the dynamic field of countless information that the architects should relate to. What is more they had to draw the hospital, while the program was developed. It required a large amount of goodwill and patience as well as a certain amount of creativity. As the functions of the hospital were under continuous change, it meant, as described above, that they had to develop a new way of thinking about architecture; architecture as a dynamic system. Peter Lohfert is an example that not only doctors specialized in certain areas. So did architects. The specialization was an expression of an increasing degree of complexity. It had simply become harder to operate in the complex hospital field. As a result, many decision-makers in the process did not have the necessary knowledge to relate to what was going on in the hospital, what kind of tasks and challenges its employees faced in everyday life. The conflict of interest between the architect, the Municipality of Copenhagen and Copenhagen Hospital services is therefore not entirely unfounded. In this regard, Peter Lohfert's interdisciplinarity can serve as a role model. The increasing complexity required conversion and change. But it was not only hospitals that were changing, society was changing as well. The post-war architects faced major construction tasks, but not least challenges in planning. The discussion about the way in which the architect working on Hvidovre Hospital thought in terms of dynamic principles and use thus has a societal component, which will be discussed in the following part of the analysis.

64 This statement is based on my interview with Peter Lohfert.

65 This statement is based on my interview with Peter Lohfert.

66 In the analysis of the social aspect, I will get back to the role of the doctors in the decision process

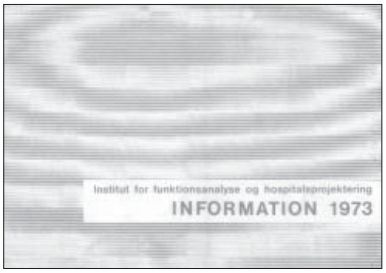
67 I base this statement on a text by Gunnar Gundersen, in which he described, how the function analyses led to a simplification of for example the out-patient units.

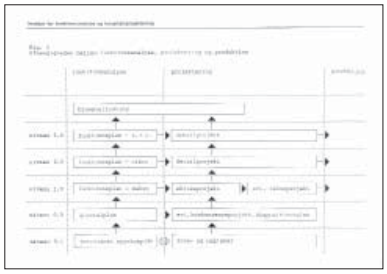
In February 1973 Peter Lohfert send a letter to office manager Bent Gurlev at the City of Copenhagen (secretary for the Hvidovre Hospital building committee) on behalf of *Institut for funktionsanalyse og hospitalsprojektering*. The purpose was to give an impression of the institutes work tasks and methods as well as of the programming and planning work done. Attached was the report ‘‘Information 73’’.

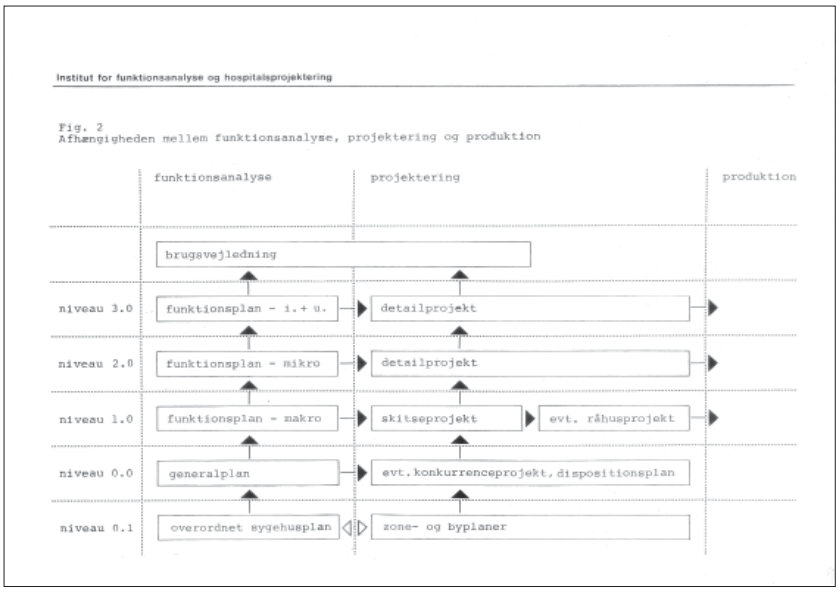
The institute of Peter Lohfert had in 1970 become independent of Krohn & Hartvig Rasmussen to ensure, that they could be affiliated with hospital projects that were developed by other architects. The knowledge field of the institute was founded on the work done for Hvidovre Hospital. It illustrates how function analysis and hospital planning had developed into an expertise and work area of its own.

Information 73 is a short explanation of the ‘what, why and how’ of function analysis and hospital planning according to Lohfert. The report began with an analysis of the present political and economical situation, saying that the government, to lower the costs, had taken the initiative to ensure, that resources in the health care sector should be best possible used. The means to do so was planning. To solve the complex assignments within hospital planning Lofhert suggested to use planning methods, that had been developed within industry such as; - statistics, - operation and cost benefit analysis. He also pointed at, that it was important to develop objective evaluation criteria, as it was crucial to have access to the right data (information). Lohfert moreover suggested, that the systematic approach of the institute meant, that their work could help create a knowledge platform. Essentially their work could be a link between architects, users and clients with the purpose of planning hospitals that an optimal utilisation of resources could occur and that the planning might run effectively.

The drawing - figure 2 - showed the dependency of functional analysis, and design planning (*projektering*). It was fundamental for the planning system developed by Lohfert. It contained 5 levels starting at the level of the overall planning by the municipal official and ending with the planning of the detailed interior - a macro, meso, micro approach.







VISUAL 2.8

SUBJECT: Function Analysis and Hospital Planning
SOURCE: *Information 1973*, Institut for funktionsanalyse og hospitalsprojektering, side 2-3 and 9
YEAR: 1973

The planning system described in the report 'Information 73' was based on the planning process at Hvidovre Hospital, where function analysis, standardisation, design planning, and construction was parallel processed but displaced in time (see Visual 1.13).

The analytical process at Hvidovre was subdivided into five levels. The levels were described in an article from 1969 by Peter Lohfert printed in Tidsskrift for Danske Sygehuse.

The schemes to the right came from two of the pages in the article. They depict, how Lohfert had envisioned, that the levels of the function analysis corresponded with the phasing of the design planning process. Where as the top drawing show the five levels and phases on each their side of a pyramid figure, the bottom drawing show the detailed interplay between the function analysis and the design planning process as kind of a time line in which the corresponding relations were displaced in time so that each level / phase could inform the other.

Levels:

Level 0: function analysis of the common and cross-cutting functions in the whole hospital

level I: function analysis of the main principles of the individual departments and their interrelations with other departments

level II: function analysis of the space requiring (functions) within the departments and their inventory

level III: function analysis leading towards the standardisation of a.o. spaces and building components

level IV: functional analysis around the individual room's detailed design

level V: manual for the operation of the departments

Phases:

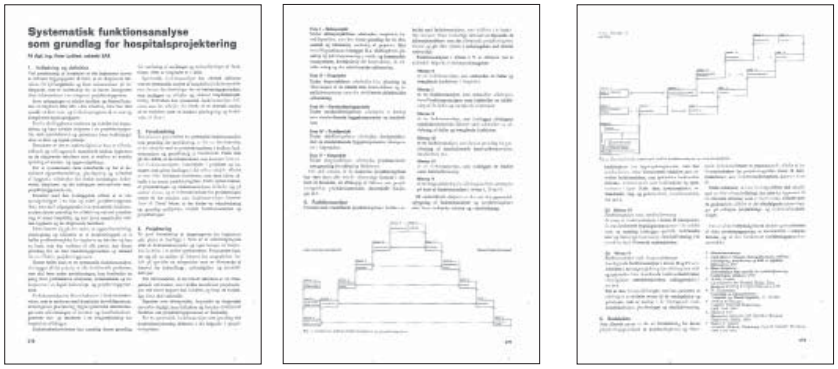
phase 1 - sketch project - the urban planning proposal

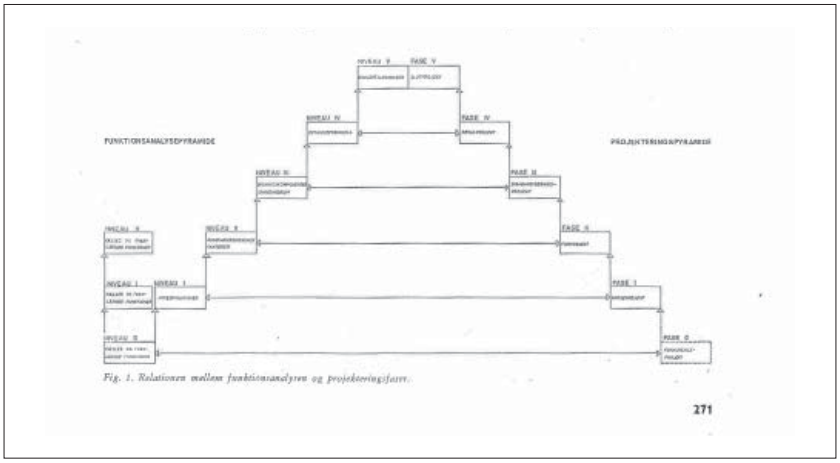
phase 2 - draft proposal - the building - incl. dimensions of spaces, constructions and installations

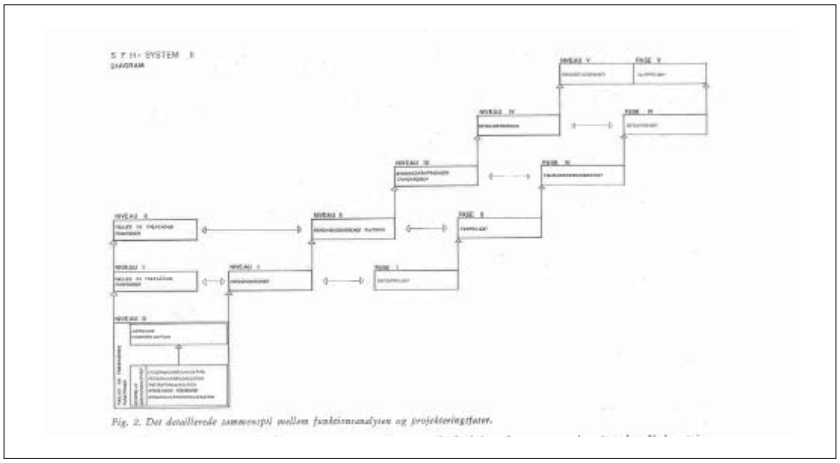
phase 3 - standardisation - leading to a catalogue of building components and standardized spaces

phase 4 - detailing

phase 5 - end project - in which material will be developed, that can be used for budgeting & licitation







VISUAL 2.9

SUBJECT: Function Analysis and Hospital Planning
SOURCE: *Tidsskrift for Danske Sygehuse*, nr 18, page 270-273
YEAR: 1969

While the first article in *Tidsskrift for Danske Sygehuse* was about the general principles behind the systematic planning process, and the dependency of functional analysis, and design planning (*projektering),* Lohfert wrote a second article about the application of the design planning process, which was printed in the next number of the magazine. The pages are displayed here.

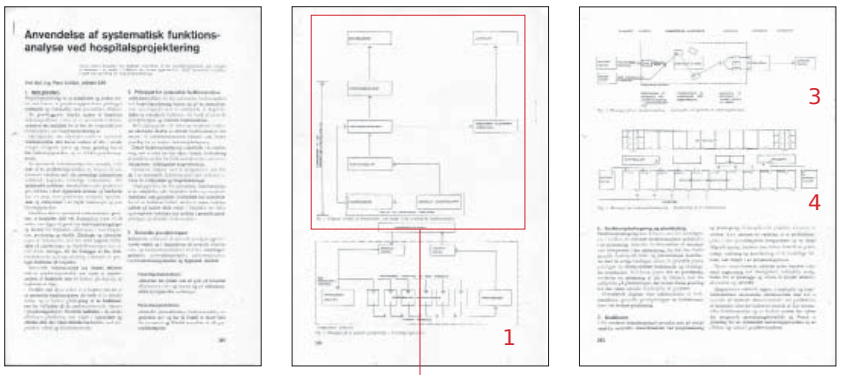
In the article Lohfert described how a systematic function analysis was based on research. The approach consisted of abstract analysis of functions, a specific planning, and a description, and Lohfert emphasized, that "The material produced must be able to be assessed by all participants and form the basis for a clear decision-making procedure". As described in the analysis the material should build a bridge of understanding between the disciplines.

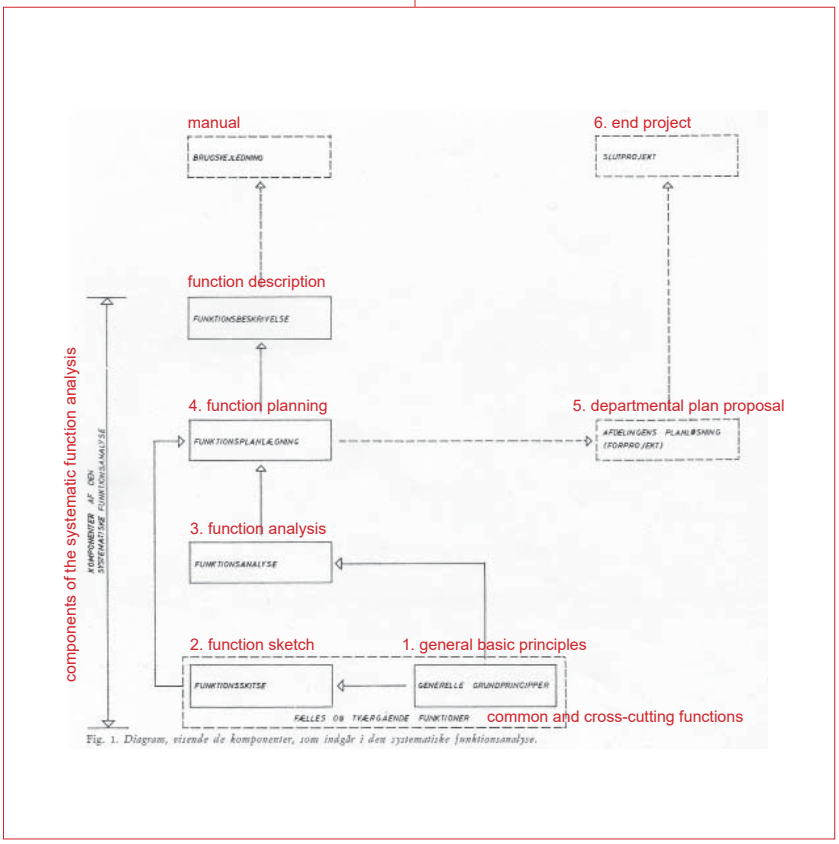
The scheme shown on this page describes a series of steps. The steps corresponded with the procedure described on the previous page starting by the analysis of the common and cross-cutting functions. Peter Lohfert made here a distinction between what he called 'general principles' and 'function sketches'. The following step in the analysis were abstract function analyses for all the hospitals departments and their interrelationships. The information led to diagrams, which he called 'function analyses' The abstract function analyses were following incorporated into a plan proposal called 'function planning' , which led to two things; - a description and a manual, - and a 'departmental plan proposal' as well as the 'end project'.

Thus, the article of Peter Lohfert made a distinction between four types of analytical drawings:
1. general basic principles
2. function sketches
3. function analyses
4. function planning

Examples of these are to be seen on the opposite page. Next to the four types of analytical drawings Lohfert described two other types of drawings; a plan (draft) proposal (5) and an end (final) project (6).

The scheme confirm, that Peter Lohfert found it important that architects - before designing a physical form - would spend time understanding, what their designs were for. The design (the form) was thus subordinated the use of it (flows and activities) .. Important to understand, is that Peter Lohfert did not see the 'functions' as static conditions but as dynamic principles and relationships. Research was therefore important as one could not rely on old data from the past (like hand books of different kinds). One had to undertake an investigation. His work was thus a plea for research informed design.



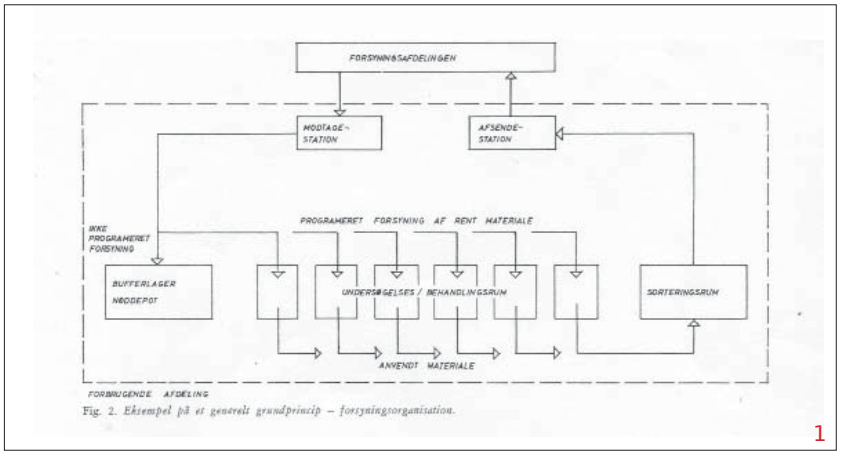


VISUAL 2.10

SUBJECT: The application of systematic functional analysis at hospital design
SOURCE: *Tidsskrift for Danske Sygehuse*, nr 19, page 289-292
YEAR: 1969

1. 'The general basic principles' would be described in a verbal form as well as in a diagram. The article described five types of principles related to; - supplies, - staff, - patients, - communication, - hygiene.

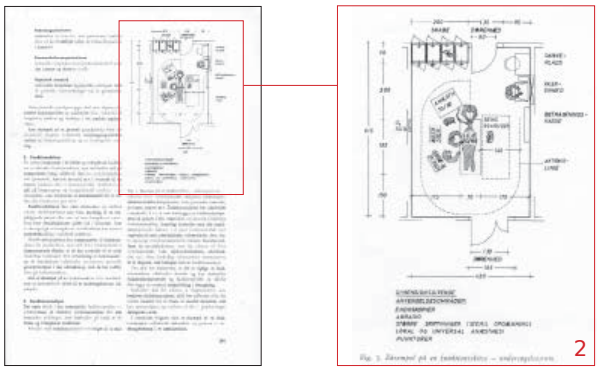
This diagram shown here depicted the organisation of supplies.



1

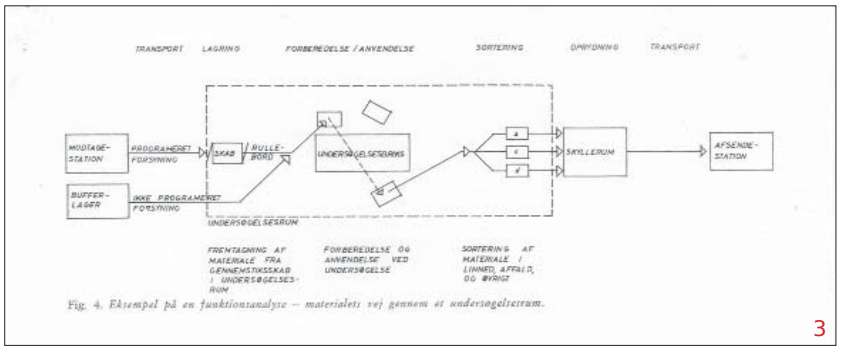
2. ' The function sketches' were about a specific function or event (like feeding a bed patient or more complicated procedures). The drawings included measurements of components (like chairs and tables) and of movements (staff, patients, or material on wheels). Sometimes these analyses could led towards standardisation of certain spaces.

The diagram shown here depicted an analysis of an examination room.


2

3. 'The function analyses' led to abstract analytical drawings. The work with the function analyses was conditioned by the analyses of the individual components in the functional process like the staff, the goods, the patients, the tests etc. All service units should be indicated.

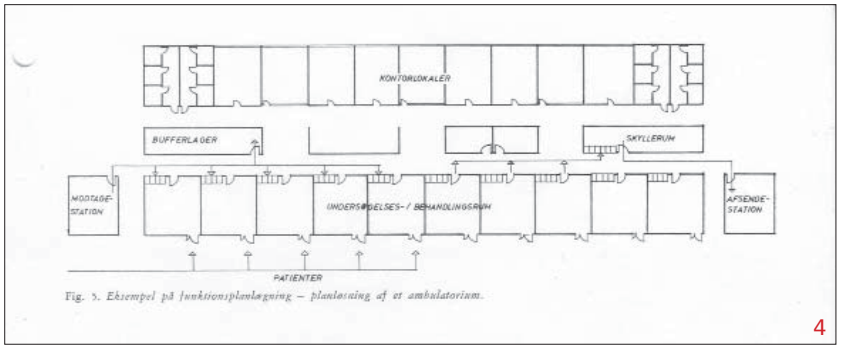
The diagram shown here depicted how goods were transported through an examination room.



3

4. 'The function planning' was the working process in which the function analyses were incorporated into a plan solution. It was also a matter of priorities and evaluations.

The drawings shown here depicted a plan for the out-patient clinic.



4

The two articles by Peter Lohfert were published in *Tidsskrift for Danske Sygehuse* in 1969. This was around the same time as he (and his work group) were working on the reports on the function analysis of Hvidovre Hospital. The pages shown here are from these reports.

A large number of reports were made. Most of them were about the departments on the treatment floor.

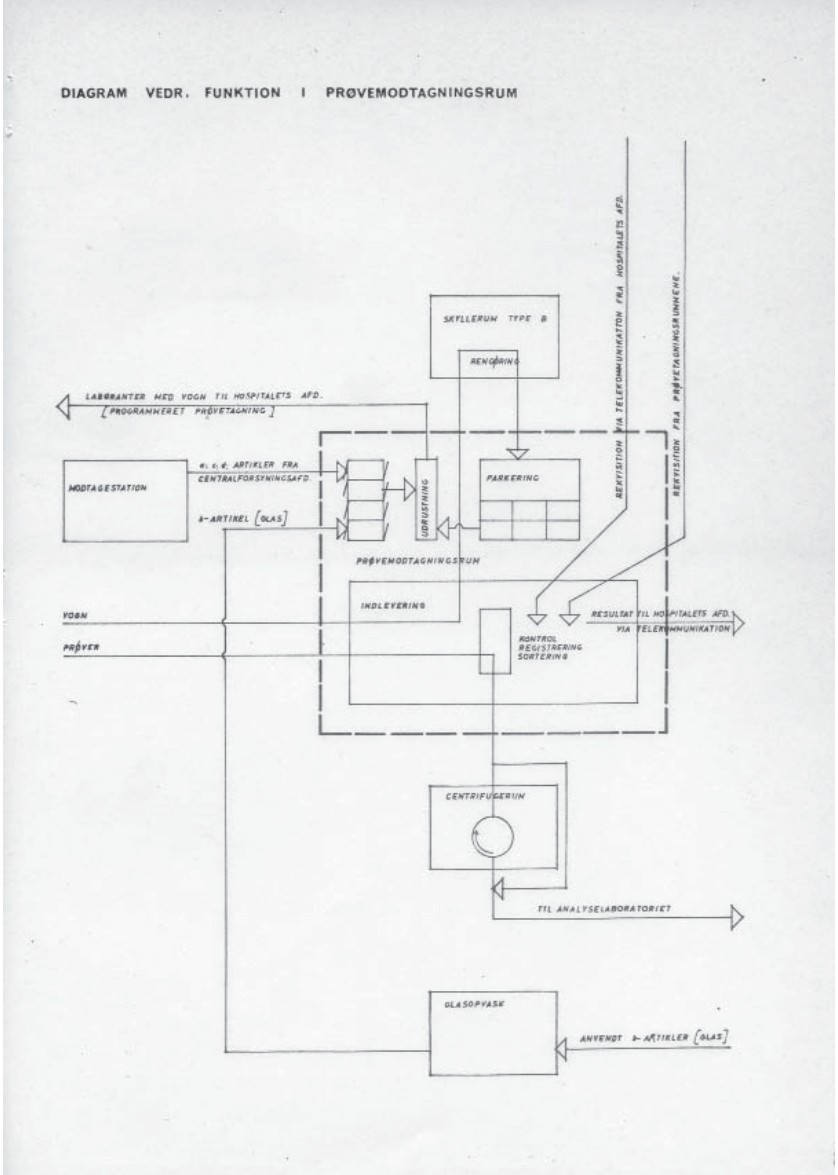
The overview of pages - opposite - are about the Clinical Chemistry department; - the office area as well as the laboratory. They belong to the report about The Central Laboratory. In total 138 pages. As can be seen were the reports a compilation of texts, analytical function diagrams, schemes about the organisation, and plan drawings (also called 'function planning').

The diagram - to the right - is an example of the graphic representation of - a function analysis - flows of information, staff, wagons, articles and tests through the test area.

The analysis of the clinical chemi stry department consisted of; - an introduction, - and a function analysis of the sampling area. The function analysis was subdivided into a number of parts; - text about sampling cabinets and diagram about the function in the test area, - text about sampling spaces and diagram about the function in the reception room, - text about centrifugation, - text about ventilation and ceiling heights and diagram about the circulation of the material and tests in the area. For each text part there was thus a diagram. Translated into the 'language' (terminology) of the articles by Lohfert, the diagrams in the gray reports were all 'function analysis'. They portrayed abstract and dynamic relationships in time. In the mapping of flows and activities no distinction was made between information, people, things and fluids. In the reports also colour coding was used to differentiate between flows.

Compared to Lohferts scheme (2.10) about the 'systematic function analysis' we find in the reports the following categories present; - function analysis, - function description, - plan proposals. The common and cross-cutting functions had been mapped in another report. The notions were though not always the same, as the logic sometimes seem to disappear in the compilation of information. This makes you think, that the articles might portray 'an ideal world' - a system that Peter Lohfert had developed while experimenting on Hvidovre Hospital. The 'reality' - what they had done was maybe less straight forward.

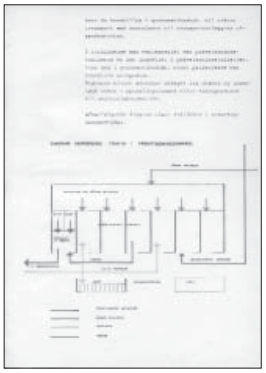
The amount of work put into the reports is overwhelming. No other hospitals had ever been the subject for such a thorough investigation. Whether or not effective in a rational sense - it was an achievement.

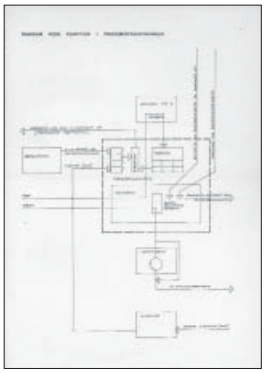
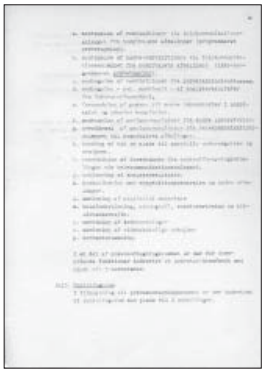


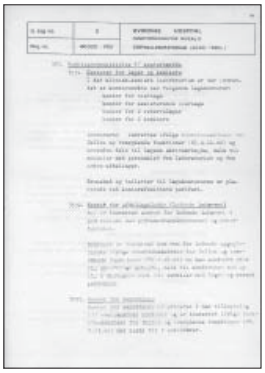
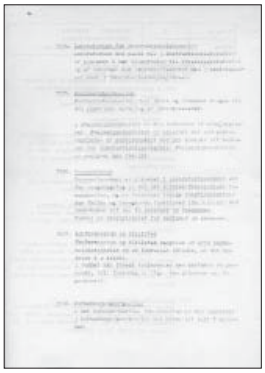
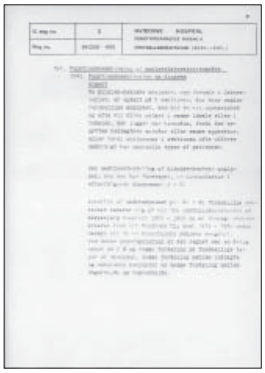
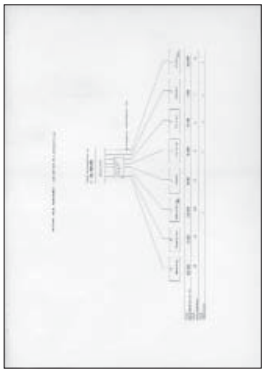
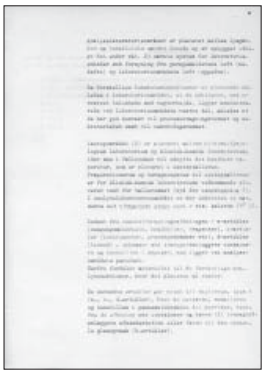
VISUAL 2.11

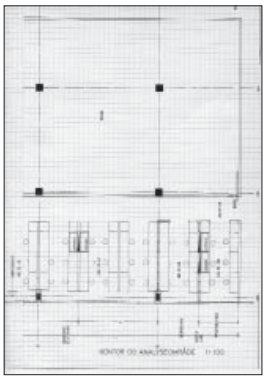
SUBJECT: Hvidovre Hospital - Function Analysis - The Gray reports
SOURCE: *Funktionsanalyse vedrørende Centrallaboratorium*, (Klinisk Kemisk Laboratoium), Niveau II
YEAR: 1969






PART 3: THE HISTORICAL PERSPECTIVE

In this part of the analysis[68], I refer to Tobias Faber's book *Dansk Arkitektur* from 1977[69], Nils-Ole Lund's book *Teoridannelser i arkitekturen* from 1972[70], Jørgen Sestoft's articles in *Arkitektur DK*, nr 7-8 from 1979 and the publication *By Center Menneske* published by *Institut for Center-planlægning* (Department of Center Planning) in 1965[71]. In addition, I have studied a number of Krohn & Hartvig Rasmussen projects, as well as read what they have written in the magazine *Arkitekten*, to see how Hvidovre Hospital's horizontal decentralisation related to other projects made by the office in that time period. I have in particular looked at Københavns Engros Grønttorv[72], Rødovre Centrum and Odense University[73]. Finally, my work also refers to texts written by Gunnar Gundersen, in which he described and discussed Hvidovre Hospital in relation to the historical development[74].

In the previous text we have seen how Eigil Hartvig Rasmussen and Peter Lohfert were the two main actors in the decision-making process in relation to the use aspect of architecture. Seen from a historical perspective these two architects were informed by each their own history and field of interests. Different in age they were also representatives for each their generation of architects. What is more important, in their work they refer to different thought fields and discussions. While Eigil Hartvig Rasmussen was referring to Architecture and Urbanism, Peter Lohfert was referring to Analysis and Planning, as well as System Thinking and Scientific Operation Research. The two approaches is an example that several knowledge fields – and ways of thinking architecture – were embedded into the project. What is more, the interdisciplinarity was characteristic for the project.

3.1 FUNCTION ANALYSIS AND HOSPITAL PLANNING

As described in the discussion about the decision-making process, the work of Peter Lohfert went far beyond how architects were trained. His way of operating in the field had significant value as it contributed to the development of a specialisation. His integral approach and personal education was moreover out of the ordinary. What needs to be considered is, that he in his thinking was informed by his stay in Sweden, and the work he did on the hospital in Lund, as it served as an analytical foundation for his work with Hvidovre Hospital[75]. The Systematic Function Analysis that Peter Lohfert was proposing for Hvidovre Hospital was as such related to the discussions that took place in the hospital sector in Sweden at that time period[76]. Sweden was if you think of system approach, function analysis and hospital planning further than Denmark and maybe even all other countries

68 The mentioned texts are the primary sources. They are all published approximately the same time period as the hospital was made - the 1960s and 1970s. I have though also looked at texts that have been written in recent years like Arne Gaardmands *Dansk Byplanlægning 1938-1992* from 1993, Poul Bæk Pedersens *Arkitektur og plan i den danske velfærdsby* from 2005, *Nordic Journal of Architectural Research* has treated the issue of the Danish Welfare State, the book by Nils-Ole Lunds *Nordisk Arkitektur* from 2008 discusses the development of architecture in the Nordic countries from the second world war and onward, as several books has been written about Danish urban planning, landscape architecture etc.

69 Faber, Tobias, *Dansk Arkitektur*, Arkitektens Forlag, København, second edition 1977

70 Lund, Nils-Ole, *Teoridannelser i arkitekturen*, Arkitektens Forlag, København, 1972

71 *By center menneske*, Institut for Center-planlægning, Arkitektens Forlag, Lyngby, Denmark, 1965

72 *Arkitekten*, 1961, nr 2

73 Respectively *Arkitekten*, 1967, nr 4, and *Arkitekten*, 1971, nr 10, *Arkitektur DK*, 1976, nr 8

74 The texts I am referring to are: - the script for a speech Gunnar Gundersen held in 1996 at KHRs 50 years jubilee, - and a long description about the development of the hospital from 1988. This text was intentionally written for the publication *Københavns Hospitalsvæsen 125 år i stadig udvikling*, published by the City of Copenhagen.

75 In my second interview Peter Lohfert explained how the systematic analytical approach, that he proposed for Hvidovre Hospital was a continuation of his work in Lund.

76 The German background and architectural training might also have had an impact. However, Peter Lohfert himself does not see a connection with thinkers as Neufert, the books by Hassenpflug etc.

in Europe[77]. In the development of the Hvidovre project Krohn & Hartvig Rasmussen therefore made use of research performed by the Swedish Hospital Institute[78]. With Peter Lohfert coming to Denmark, a Swedish discourse on hospital analysis and planning entered the Danish architectural culture. Interestingly, the 1963 competition proposal by Krohn & Hartvig Rasmussen also informed the Swedish discussion on hospitals, which is to be read from an article published in the magazine *World Hospitals* (*l´Hôpital dans le Monde*) in 1966, where the Swedish architect Anders Tengbom mentioned that he saw the horizontal and decentralised proposal by Eigil Hartvig Rasmussen as a new type of hospital. A model, which they had been testing in terms of infrastructure in Sweden. This is an indication of the interaction that was taking place in the thought field between actors in the hospital field; that people were aware of the research and work of each other. The value of the work by Peter Lohfert should thus be understood within a specific field of interest of which the yearly international hospital conferences and excursions of the IHF (The International Hospital Federation) most probably have been of great importance, as well as the magazine *World Hospitals*[79]. In the article called 'Systematisk funktionsanalyse som grundlag for hospitalsprojektering' (Systematic function analysis and hospital planning) printed in *Tidsskrift for Danske Sygehuse* in 1969 we also can read how Peter Lohfert refers to literature from Sweden, US and Denmark. This confirms how he, in his work, was informed by other thinkers, as they must have looked towards what he was doing[80]. While Eigil Hartvig Rasmussen without doubt knew about parts of the hospital debate, he was no expert like Peter Lohfert. Contrary to Peter Lohfert's detailed knowledge and profound in-sights into the working of hospitals, Eigil Hartvig Rasmussen was more of a generalist. His 1963 competition proposal for Hvidovre was related to a broader discussion on architecture, and connected to other projects drawn by the office, which will be discussed in the following paragraph.

3.2 THE PROJECTS OF KROHN & HARTVIG RASMUSSEN

In the discussion of the decision-making process it became clear how the 1963 decentralized and horizontal competition proposals were seen as innovative and as an expression of a new way of thinking about hospital designs. In fact, in the leader of the Danish architecture journal *Arkitekten* the word 'revolutionary' was used to describe the project[81]. The radical proposal surprised the jury committee but also the surrounding community of Danish architects[82]. As can be read from the other submitted proposals in the 1963 competition, the perception among most architects at that time was that a modern hospital should consist of a multi-story high-rise building containing the wards in combination with low-rise buildings for the

77 I base this statement on my interviews with Lohfert and Gundersen. The reason why Sweden was further in their work on function analysis and hospital planning, I do not know for sure. Sweden a.o. had a better economy in the post war period, as they had not been involved in the Second World War as other countries in Europe. What is more the systematic function analysis (and its focus on use and user groups) is directly related to the social values of the Swedish Welfare State. And they still perform quite a lot of this type of research in the field of hospital architecture.

78 Gunnar Gundersen told me so in my interview with him.

79 Gunnar Gundersen also mentioned (in my interviews with him), that they went to the IHF conferences and read international reports. As previously described, they also went to numbers of study trips.

80 All in all, this suggests that his contribution to the discipline was foremost in the procedure that he suggested for the decision-making process, rather than the systematic function analyses themselves. His view on user participation, communication and media awareness were exemplary.

81 The word *revolutionerende* (revolutionary) was used in the leader in *Arkitekten*, nr 18, 1963.

82 An example is the article by architect Allan de Waal in the Danish newspaper Information in 1963, which he used to criticize the project. It is obvious, that he thought, that the high-rise project by the architect office of Henning Larsens should have won. Sestoft, in his article in *Arkitekten* was also not that positive about the project. Their critique was though more about style than it was about the use of the building. In Analysis 4 I will discuss this.

examination and treatment sections. This view was also expressed in the architect competitions for a hospital in Glostrup, a new large hospital in Odense and Rigshospitalet in Copenhagen in the 1950s, as it was reflected in the architect competition for Herlev Hospital, which took place at the same time as Hvidovre Hospital in the 1960s[83]. Even though low-rise buildings pavilion buildings had been developed since the 1950s in Denmark in for example school buildings[84] and hospitals, Eigil Hartvig Rasmussen's horizontal competition proposal still can be seen as a pioneering project within the hospital sector, as hospital schemes were mostly blocks or high-rise buildings. That Eigil Hartvig Rasmussen was able to 'think out of the box' was clearly related to the fact, that he was not a hospital architect.

A central issue in the 1963 competition proposal was, as previously pointed out, that it was not thought of as a type of form. It was thought from within in terms of activities, infrastructure and flows: An unconventional way to think hospital architecture in that time period. As explained in the media analysis, the horizontality and decentralised principle was in the first place the consequence of an analytical process in which architecture was seen as a dynamic infrastructural system[85]. Though, these thoughts were an integral part of more projects made by the office. Not only were Krohn & Hartvig Rasmussen's early factory buildings like the Atlas Machine Factory and Københavns Engros Grønttorv (Copenhagen Vegetable Market) from the 1950s low-rise buildings. Their designs were based on considerations about traffic conditions (infrastructure) and the relationship between individual units; distribution of the program. Whereas the open structure of the 1950's factory halls were derived from thoughts about flexibility and practical considerations of use[86], were two other low-rise and large-scale projects developed in the 1960s simultaneously with Hvidovre Hospital about urban ideas of centre formation. So was Rødovre Centre not only intended as a shopping mall but as a pedestrian area in a new city centre with streets and squares, and Odense University was thought of as a network of faculties organized around a centre street with pedestrians and cars separated into two plans. These two projects were not drawn by Eigil Hartvig Rasmussen or his team at the office. Despite this they were indirectly related to the ideas developed in the Hvidovre project from 1963 to 1968.

The architect Knud Holscher seems to be the invisible link between Hvidovre Hospital and Odense University. As he worked four years on the Hvidovre scheme before designing his proposal for the Odense competition in 1967, his thoughts must have been informed – and formed – by what he had seen there; at least in terms of infrastructure and the complexity of the program[87]. No doubt, his thoughts also informed the development of the 1968 draft proposal. In the analysis of the ideas present in the Hvidovre proposal it is thus relevant to closely read his article in *Arkitekten* from 1968, as he argued

83 In this foot note I would like to point at, that Krohn & Hartvig Rasmussen in their proposal for the architect competition about Rigshospitalet in 1954 also drew a scheme with wards organised in a high-rise building (*patienttårn*). Their project for the competition in Haukeland; Norway was the same. There were obviously at Krohn & Hartvig Rasmussen also diverging ideas. In both proposals the view of Gunnar Krohn played a part. It is uncertain if it was his idea, that both schemes should be vertical. But it is a fact, that he was not involved in the competition proposal for Hvidovre Hospital, which was drawn by Eigil Hartvig Rasmussen alone. It should also be considered, that the site for Rigshospitalet (and maybe also Haukeland) did not leave space for a horizontal organisation.

84 An example is Arne Jacobsens design for Munkegaardskolen in Søborg from 1948-1957

85 Analysis 4 will discuss how horizontality also is a matter of style.

86 As described in Analysis 1 the design of the vegetable market sales hall's open constructional space is for example based on the idea, that it should be flexible. But it is also a practical issue as the producers (vegetable suppliers) should be able to drive their wares to the market place without bumping into columns and other things.

87 The project for Odense University had many similarities with the proposal for Hvidovre Hospital - in particular if you look at it from an infrastructural view point - as a dynamic system. They both had a long passage / a central walk way / hall way, the program units were grouped in parallel patches (båndprincippet), they made use of centre formations and the traffic was divided into a pedestrian level and a level for automobiles.

for ‘the dynamic’ in large building assignments[88]. Despite its flexibility, ‘an open constructional principle’ – like the one proposed in Hvidovre – was not enough. According to Holscher, architecture had to be thought of as a dynamic structure open for interpretation and use by its inhabitants in the future. A view point which was added to the Hvidovre Hospital proposal in the development work – thus between 1963 and 1968, when Holscher worked at the scheme. The view point of Holscher was based on a critique of what he called ‘the ethics of the machine age’ – ‘monotony, repetition, rationality and economy’ as the main cause. To him the challenge was to create an ‘organic’ environment based on “human proportions, systems of communications and regional relations” (Holscher, 1968: 152). In its core not that different from what Eigil Hartvig Rasmussen and Peter Lohfert were thinking. Considering, that Peter Lohfert was busy developing ways in which you could work with the ‘dynamic structure’, that Knud Holscher wrote about, it is curious, that Holscher did not involve Lohfert in the analysis and planning of Odense University even though they sat close to each other in the office of Krohn & Hartvig Rasmussen, while developing each their ideas from 1967 onward. Could it be, that the design-oriented Holscher did not recognize what Peter Lohfert was doing? Or that he considered him too little of an architect (in a traditional sense). Moreover, Peter Lohfert did have a less theoretical view on the ‘dynamics of architecture’. To him it was about understanding the dynamics of the everyday life – in the present – which is why he considered field work and empirical studies important. He did therefore probably not seek the connection either. That these two people did not collaborate was without doubt also influenced by the fact, that the office was marked by conflict and professional standings between the partners. What is more, the type of work that Peter Lohfert represented, was in that time period not yet completely understood as architecture, even though it took as its departure point human activities, which was a popular subject for discussion in the surrounding society.

3.3 THE NATIONAL & INTERNATIONAL ASPECT OF THE DISCUSSION

The shift from a problem-oriented and more pragmatic mindset in the 1950s to a problematizing and human-oriented in the 1960s had to do with a critique that characterized the time period. Denmark’s economic situation had changed at the end of the 1950s, and the positive impact could be felt on housing construction and employment[89]. During the 1960s, housing construction grew from about 20,000 to 50,000 homes a year, and Rødovre city, to which the Rødovre Center was built, had, for example, become a town in only one year. Similarly, a large number of new institutions, educational facilities and public buildings were built[90]. These were, in many cases, located in the city’s periphery. Odense University is a good example of this, as is Hvidovre Hospital. The rapid urban development, however, also began to show features that from the mid-1960s put ‘the society of growth’ (*vækstsamfundet*) as well as the Danish planning community under critique. In the book *Dansk Byplanlægning 1938-1992* (Danish Urban Planning 1938-1992)[91], author Arne Gaardmand described how “It is characteristic for the time around 1960, that there was not much debate about the ideals and values that directly and indirectly were included in

88 Knud Holscher, ‘De store opgaver’, *Arkitekten* nr 7, 1968, page 152

89 This is described in Analysis 1.

90 In this part of the text I refer to Arne Gaardmand, *Dansk Byplanlægning 1938-1992*, Arkitektens Forlag, 1993, page 12 where he describes the urban development in the 1960s.

91 Gaardmand, Arne, *Dansk Byplanlægning 1938-1992*, Arkitektens Forlag, København, 1993

the plans. This was due to the fact that the planning of cities was first and foremost regarded as practical tasks made by the emerging (and by most desired) growth and welfare society, and which 'simply' should be solved as appropriately as possible" (Gaardmand, 1993: 77). In 1965 *Institut for center-planlægning* (The Institute for Center Planning) published *By center menneske* (City Center Human)[92]. The publication was based on a critique of the contemporary urban planning, whose residential areas, according to the authors, did not contain the same qualities as the cities of the past. It said: "The expansion of our cities so far seems to be burdened with outdated formal performances, and in areas where you could benefit from the functional experiences of the past you throw them vigorously overboard" (Institut for center-planlægning, 1965: 7). The authors were not opposed to the development the Danish welfare society took, they were critical of the way the cities were designed. Of particular interest for this analysis is the fact that the intention of the book was not to give 'a guide to aesthetics'. It was about organizational principles. One of the things, they suggested, was, that large centres should be built in the new suburbs. They wrote: "The centres of the future must be built as gathering points where as many different companies and institutions as possible are placed around a coherent, concentrated pedestrian area" (Institut for center-planlægning, 1965: 8). Rødovre Centre was one of the examples used in the book. The significance of the centre also far exceeded its mercantile intentions. It was the new city's gathering place. Similarly, was Odense University thought of as a centre built upon the idea of establishing a community of interests. The word 'centre' is therefore not something that was used only in the project for Hvidovre Hospital, it was used in several contexts – in Krohn & Hartvig Rasmussen's different projects – but also in the rest of society. Seen from the view point of urban planning, it would not be wrong to perceive Hvidovre Hospital as one of these new centre areas – in line with Rødovre Centre and Odense University. The purpose of Hvidovre Hospital was (as previously demonstrated), that it – seen from the inside – should be able to establish its own system of activities. In this analysis the dynamic principles of the use aspect is discussed, in Analysis 3 it is the social aspect.

Another visible feature that connects Hvidovre Hospital to an urban discussion is the issue of horizontality. The book *By center menneske* pointed out that "concentration in the centre" does not mean "high buildings". It was implicitly said that the new centres should be thought horizontally as a pedestrian area. This is in line with the way Hvidovre Hospital was envisioned. Once more, we see, how Eigil Hartvig Rasmussen's thoughts for Hvidovre Hospital were in line with the discussion that took place in urban planning. Hvidovre Hospital in many ways also resembled a city area more than a building. It was a city centre, and at the same time the building was thought of as a city, – think of its complexity, its planning – but also in the organizational principles underlying the project. The idea that a building could be organized around traffic conditions of different kinds – human movement and activities – was moreover part of an international discussion among architects like the Greek-French, French, American architects Candilis, Josic & Woods or the British architects Alison and Peter Smithson. Like Eigil Hartvig Rasmussen's 1963 competition proposal for Hvidovre, Candilis, Josic & Woods were working on a proposal for a new university in Bochum in 1963, based on the idea of a centre street, around which the departments were distributed as if it was a small town[93]. Similarly, Alison and Peter Smithson saw the city as a dynamic and open system. They became spokesmen for

92 *By center menneske*, Institut for Center-planlægning, Arkitektens Forlag, Lyngby, Denmark, 1965

93 Described in Nils Ole Lunds *Teoridannelser i arkitekturen*, Arkitektens Forlag, København, 1970, page 81

what was called the ‘mat building’. The mat building was a free and flexible way of organizing a building or city based on interrelations and activities. It also became a model for how the discussion on city and building could meet, as a mat building was both city and building, private and public, structure and infrastructure[94]. Characteristics that could very well be used for the Hvidovre project, which makes us aware that Hvidovre Hospital – in its own way – was kind of a system theoretical and structuralist project, even though it was not positioned as such in history. It shows how architects in Denmark and abroad shared some of the same thoughts – though Eigil Hartvig Rasmussen was not keen on articulating his voice in the architectural debate. The relationship with the work of Team X and Candilis, Josic & Woods is also not made. Thus, it was Knud Holschers Odense University who received the acknowledgement of being the first structuralist project in Denmark, while a more nuanced history writing had probably been more accurate[95].

The proposal for Hvidovre fitted into several discussions. Depending on how you look at it, it could be seen as an urbanistic project leading to ideas about: - structure and infrastructure, - communication and network, - centres of contact and activity, - as well as corridors for distribution and separation of flows. It was also with the work of Peter Lohfert and his work groups a functionalist and system theoretical project, which was about: - optimized applied research decisions, - scientifically based models about what would work right, - user participation, field work and mediation, - and decision-making. While you could read the 1963 competition proposal as if it was in favour of both positions, the later descriptions and published articles in architectural magazines about the project did not emphasize the complexity and interdisciplinary approach that was embedded into the project, as well as the research done. This is probably why, the project in the time to come, never was fully acknowledged for its original contribution to the discussion of how architecture could be thought of as a dynamic system. Or that the innovative user-oriented approach in the decision making process was not included into the history of Danish architecture as a unique experiment.

94 I refer here to Hashim Sarkis book *Le Corbusier’s Venice Hospital and the Mat Building revival*, Harvard University, Prestel, New York, 2001, page 13. Candilis, Josic & Woods projects from the 1960’erne are mats. Another example is Le Corbusier’s Venice hospital from 1964. The project was never realised.

95 Diverse books on Danish architectural history suggests that it was Knud Holscher - with his project for Odense University - that introduced structuralism in Denmark. A more detailed account would take into consideration that he in his thinking was informed by the work he did on Hvidovre - and the thoughts by Eigil Hartvig Rasmussen. There is though no doubt about, that the proposal for Odense was informed by the work of Candilis, Josic & Woods.

The Danish architecture magazine *Arkitekten* published in 1963 a copy of the jury report for the Hvidovre Hospital competition. Included were examples of some of the submitted proposals as well as a short introduction - most probably written by the editor Poul Erik Skriver.

Poul Erik Skriver argued, that it had been a difficult and complex competition as it had posed great demands on the participants insight into rational hospital technology and the ability to reconcile a myriad of considerations. According to him, it would therefore not be reasonable to expect a perfect answer.

It was (as also pointed out in the analysis), the view of Poul Erik Skriver, that had it not been for the architect competition, ‘‘the solution would have certainly followed the dogmatic perception that marked all the other projects in the competition. The wards would have been concentrated in a high rise building with the examination and treatment sections in low buildings around the high rise‘‘. The competition was therefore a means to change the ruling convention. But as Skriver wrote, there was also a heavy burden of proof for those who differ from the traditional and recognized. Language becomes here essential. ‘‘The quality of the first prize project is, in particular, that its author has had the ability to make his ideas so clear and convincing that the expert committee of doctors and hospital staff who assisted the jury committee has dared to follow the revolutionary idea of the project‘‘.

Finally, it is interesting, that Skriver pointed at, that even though the competition was important, its significance was ‘‘the very fact, that a new principle has been recognized, that will make other designers think in unconventional lanes. ... ‘‘

On the opposite page are shown examples of the submitted proposals. As can be seen it was only the first prize project by Eigil Hartvig Rasmussen, that was horizontal with decentralised wards. All the other proposals had stacked the wards in a high rise building. The treatment and examination section though look like it was arranged more or less the same way in 1-2 story buildings. On this part there seems to be consensus .. which is also what Eigil Hartvig Rasmussen wrote in his competition proposal.

QUOTE

Det umuliges kunst

Mange, også blandt de konkurrerende, må have stillet sig det spørgsmål, om det kan være rigtigt at udskrive en projektkonkurrence om en så kompliceret byggeopgave som et nyt storhospital. Den nordiske konkurrence om Københavns Kommunes nye hospital i Hvidovre stillede så store krav til de projekterendes indsigt i rational sygehusteknik og evne til at forene et utal af hensyn, at ingen med rimelighed kunne forvente en fuldkommen besvarelse. …

Første-præmie projektet anviser en ny og overraskende mulighed for et storhospitals udforming. Hvis Københavns Kommune blot havde overdraget arbejdet med projekteringen af det nye hospital til en arkitekt med erfaring i sådant byggeri, ville løsningen med sikkerhed havde fulgt den dogmatiske opfattelse, der prægede alle de øvrige projekter i konkurrencen. Sengeafsnittene ville være blevet koncentreret i et højhus med undersøgelses- og behandlingsafsnittene placeret i lave bygninger omkring højhuset. Denne type har kendte og åbenbare behandlingsmæssige og driftsøkonomiske fordele. Typens svagheder med hensyn til det miljømæssige har ikke hidtil givet anledning til så alvorlig kritik, at man fra kommunal side ville stille krav om radikale ændringer. ...

Alle må vist erkende, at en projektkonkurrence var den eneste mulighed for at ændre på udviklingen, for at fremkalde en ny hospitalstype. Et konkurrenceprogram kan ikke opstille et eksakt grundlag for, hvorledes de forskellige hensyn indbyrdes skal afstemmes. Allerede heri ligger der en appel til de konkurrerende om at finde frem til nye løsninger. Når ikke flere har fulgt denne appel, skyldes det, at der hviler en tung bevisbyrde for den, der afviger fra det traditionelle og anerkendte. Førstepremieprojektets kvaliteter er ikke mindst, at dets forfatter har haft evnen til at fremstille sine ideer så anskueligt og overbevisende, at den særligt sagkyndige komite af læger og hospitalsfolk, der bistod dommerkomiteen, har turdet følge projektets revolutionære ide. …

Konkurrences betydning for hospitalsbyggeriets udvikling i de kommende år er uomtvistelig. Det vil dog næppe – sådan som dommerkomiteen synes at mene det, - blive det ved konkurrences indkomne materiale , der vil præge de kommende års byggeaktivitet. Dertil er materialet altfor utilgængeligt, og den publicering det får alt for utilstrækkelig. Det er selve den omstændighed, at et nyt princip er blevet anerkendt, der vil få andre projekterende til at tænke i ukonventionelle baner. ...

Poul Erik Skriver (editor)
Arkitekten, 1963, nr 18, page 1

VISUAL 2.12
SUBJECT: Hvidovre Hospital - The 1963 architect competition
SOURCE: *Arkitekten*, nr 18, 1963, page 333 - 349
YEAR: 1963

to the left - 1. prize:
architect Eigil Hartvig Rasmussen
and his employees Egon Nissen
and the civil engineers J Tønnesen
and Johnannes Jørgensen

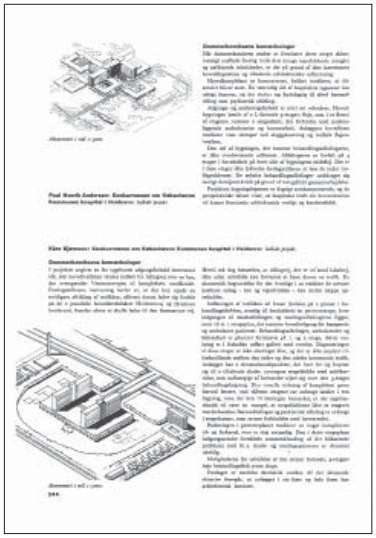
to the right - 2 prize:
the architects David Birnbaum, Jørn
Bisgård, C.F. Møller & Poul Zacho
Rath and employee Egon Larsen

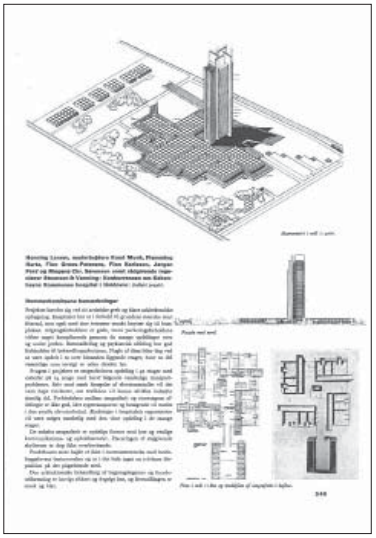
to the left - 3. prize:
architect H. Carl Andresen and
Asger, Uffe and Stig Andresen

to the right - 4. prize:
architect Nils Andersen and Salli
Besiakow and employee Ole Ernst

to the left - bought project
- above
architect Poul Henrik Andersen
- below
architect Kåre Bjørnson

To the right - bought project
architect Henning Larsen and
employees Knud Munk, Flemming
Hertz, Finn Groes-Petersen, Finn
Karlsson, Jørgen Pers, and Mogens
Chr. Sørensen and the engineers
Steensen & Varming





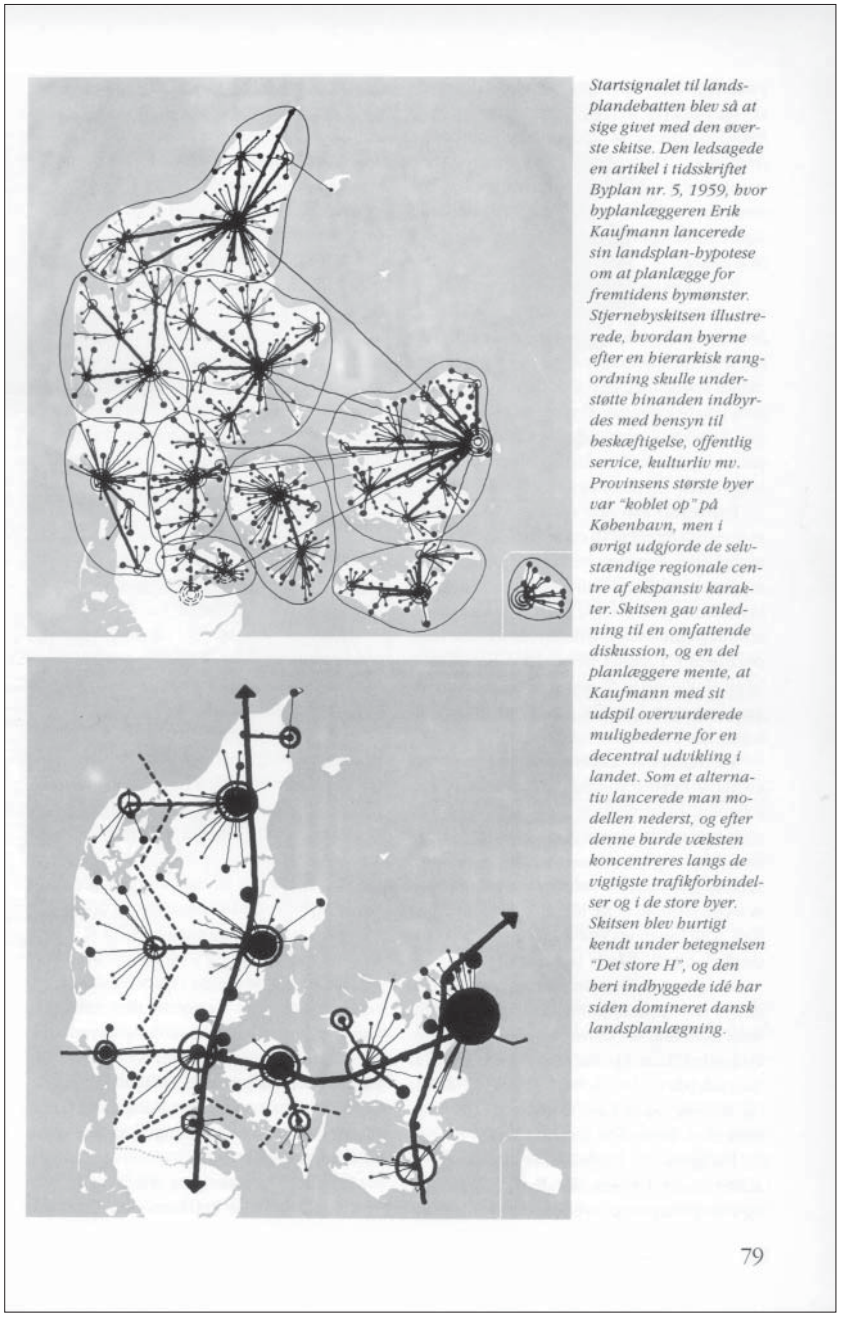
The horisontality of the competition proposal by Eigil Hartvig Rasmussen no doubt was related to his analysis of the traffic conditions at hospitals. That his thoughts were informed by contemporary urban planning discussions on infrastructural issues is though also evident.

As described in the analysis the housing construction was in a rapid development in the 1960s. Planning was the tool, that should guide the urban development and ensure an effective transportation of people and goods between home, work and leisure destinations.

The page shown here is from Arne Gaardmand's book on Danish urban planning. On page 79 we find two diagrams. The top diagram was published in the magazine *Byplan* from 1959 accompanying an article by the urban planner Erik Kaufmann in which he proposed that cities in the future in Denmark may be developed so that they supported each other in a hierarchical order in terms of employment, public service, cultural activities etc. The drawing depicted a pattern of larger and smaller cities joined together in a dynamic system. The idea was, that smaller cities were hooked onto larger cities as they would also constitute independent entities of their own. The idea of decentralisation and organisational hierarchy shows similarities with the idea of Eigil Hartvig Rasmussen in the competition proposal, in which he wrote, that the hospital's decentralized wards were to be seen as *planetbyer der understøtter storbyens fælles anlæg* (planet cities supported by the big city's joint facilities). Knowing that the drawing of Kaufman was called *stjernebyskitsen* (the star city pattern sketch) the language use is even of the same character.

The drawing below was an alternative to Kaufmans decentralised model. Instead the urban growth would be concentrated along main traffic connections and larger cities. A sketch which was later called the big H. The discussion in urban planning in the 1960s was thus - as in the discussion on Hvidovre - about centralisation and decentralisation.

But Kaufmans model was not only about infrastructure. Seen from a political - and economical perspective - it was also about the distribution of money and power. Kaufman seemed to say, that Denmark should be developed as a whole. Progress and prosperity should not be reserved for people in the larger cities but should be equally accessible to all - in the towns as in the country. There was a social democratic component in this. While the discussion of Hvidovre Hospital was different in scale, the decentralisation did though address a social and political discussion, which I will discuss in Analysis 3.



Startsignalet til landsplandebatten blev så at sige givet med den øverste skitse. Den ledsagede en artikel i tidsskriftet Byplan nr. 5, 1959, hvor byplanlæggeren Erik Kaufmann lancerede sin landsplan-hypotese om at planlægge for fremtidens bymønster. Stjernebyskitsen illustrerede, hvordan byerne efter en hierarkisk rangordning skulle understøtte hinanden indbyrdes med hensyn til beskæftigelse, offentlig service, kulturliv mv. Provinsens største byer var "koblet op" på København, men i øvrigt udgjorde de selvstændige regionale centre af ekspansiv karakter. Skitsen gav anledning til en omfattende diskussion, og en del planlæggere mente, at Kaufmann med sit udspil overvurderede muligbederne for en decentral udvikling i landet. Som et alternativ lancerede man modellen nederst, og efter denne burde væksten koncentreres langs de vigtigste trafikforbindelser og i de store byer. Skitsen blev hurtigt kendt under betegnelsen "Det store H", og den heri indbyggede idé har siden domineret dansk landsplanlægning.

79

VISUAL 2.13

SUBJECT: Urban Planning - Denmark - the 1960s
SOURCE: *Byplan nr 5*, 1959 (printed in Dansk Byplanlægning 1938-1992 by Arne Gaardmand, 1993)
YEAR: 1959

The urban plan discussion in the 1960s about centralisation versus decentralisation related to the discussion of the 1950s on concentration versus de-concentration. Notions which were integrated into the Hvidovre proposal with its centres and centrals. On top to the left is a sketch called *Fingerplanen* (The finger plan). It depicted the idea that the residential areas of Copenhagen would be developed so that green areas of land were left in between 'the urbanistic fingers'. The 'bone' structure in the hand would be the infrastructure .. thus main traffic roads and s-trains.

The idea that smaller cities were connected to larger cities (like Kaufmans star like idea) and that they both might benefit from this mutual exchange - or you could say decentralisation - became the case of Copenhagen as the surrounding suburb from the 1950s onward was developed creating a series of new centres around the old Capital city. The metaphor of Eigil Hartvig Rasmussen might even refer to that.

The rapid housing development also meant, that large areas of land was filled with homes without people - and politicians - realising what they would get. On top to the right is a drawing of Hvidovre village from the 1930s. Next to it is another village called Avedøre. The area is to be found in the 'thumb' of the 'Fingerplan'. Avedøre was like Hvidovre developed in the 1960s. The photo in the middle depicts how the settlement 'Avedøre City' had been placed into the country side next to an area of free standing houses and the motorway. It is an example of the large settlements that were developed by nonprofit housing associations in the 1960s and 1970s. The construction of the 2266 flats started around 1972 - thus in the same time period as Hvidovre Hospital was built.

Similar to Avedøre was the industrialised housing developments in Denmark a mix between high and low rise. According to Arne Gaardman, it was characteristic for Danish urban planning not to choose categorically between; - high or low building,- the tightly controlled or random urban development, - pedestrian traffic or automobiles. Instead proposals were in between compromises, where the conflict-creating considerations were combined in one project. Quite similar to the high-low proposals that were submitted in the architect competition for Hvidovre Hospital. That the proposal by Eigil Hartvig Rasmussen was considered innovative - and revolutionary - might thus also have to do with its non-compromising character.

Seen in the light of the almost mechanical and compromising urban plan development in Denmark, the concluding remark of Skriver in *Arkitekten* becomes meaningful. He might have written it as a general critique of the lack of reflection in the field. That the significance of the architect competition was, ''that it might make other designers think in unconventional lanes'', could be read as, that he was tired of the consensus seeking Danes.

VISUAL 2.14

SUBJECT: Urban Planning - Denmark - the 1960s
SOURCE: Fingerplanen, areal foto Avedøre, and group foto (printed in *Dansk Byplanlægning 1938-1992* by Arne Gaardmand, 1993) . map Hvidovre 1930s (the internet),
YEAR: 1930s, 1950s, 1960s, 1990s

As described in the analysis, not only Skriver was disapproving of the way work was done in the field. A critique was developing in the 1960s on Danish urban planning. The publication *By centre menneske* (City, center, humans) from 1965 by *Institut for center-planlægning* (Institute for centre-planning) was contributing to that debate.

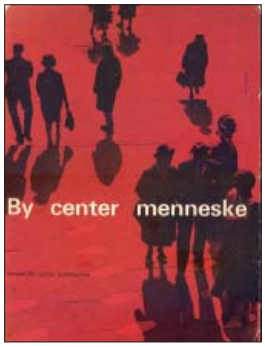
The book consisted of two parts. The first part began with a discussion of the changing infrastructural conditions within society - in specific how the presence and use of automobiles had altered the use and design of the urban public space. The consequence of the growing infrastructural complexity was, that a certain differentiation between flows of traffic was needed. But the publication also described how a fragmentation was taking place within public behaviour, as the new suburban settlements did not necessarily create places for people to gather and meet, which is why they introduced the idea of 'centres'.

One type of centre was according to the book the 'shopping centre'; a combination of a pedestrian shopping street, and a square. While the first part of the book was devoted to the debate, the second part of the book was an atlas - thus a catalogue of squares, (pedestrian) shopping streets and shopping centres, - primarily in Scandinavia. One of these places was the newly opened Rødovre Centre designed by Krohn & Hartvig Rasmussen.

The illustrations on this page come from *By center menneske*. The discussion - and pages - on the top two rows were about the fragmented (sub)urban landscape and its infrastructure. Underneath are two pages with drawings. The diagrams on the page to the left and in the middle depicted how the former external shopping street had become internal streets in deep buildings - which they compared with the organisational structure of Turkish bazaars or the European market. These streets were different in character. They were a field of traffic between different internal traffic systems - different centres.

The diagrams on the page to the right were about the qualities at Rødovre Centre. We see the authors indicate, that there was not one profile for the internal streets (and squares) indirectly saying that the scale would cause different types of behaviour. The idea of Rødovre Centre was in conjunction with that it should be used for more than shopping. It should be a dynamic and communal centre for the city of Rødovre. In Analysis 3 I will address the social aspect of this.

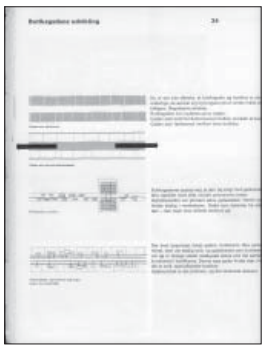
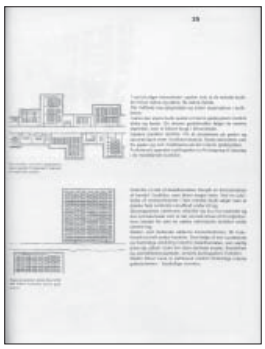
While the decentralised horizontal proposal of Eigil Hartvig Rasmussen (with its flows of traffic, internal streets, centres and centrals) might have been new to the hospital field, they were part in the contemporary discussion on city development. It confirms how the thought field was informed by urbanists views.




Tidligere foregik ændringerne i et langsommere tempo, - nu sker de både hurtigt og voldsomt. En helt ny dimension er i færd med at ændre bybilledet totalt. - quote page 10-11



Arkitekten går på vingerne, bebyggelsesplanen skal opleves fra luften ... De nye, store dimensioner til visse formål har ført til en planlægning, hvor man kritikløst opfotograferer alle mål. - quote page 22


Større butikker med internt gadesystem. Gaden spænder fra bagvæg til bagvæk i de modstående butikker. ... Meget store butikker. Gaden bliver trafik-areal imellem forskellige interne gadesystemer.- quote page 34-35

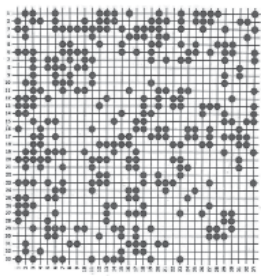
VISUAL 2.15

SUBJECT: Urban Planning - Denmark - the 1960s
SOURCE: *By Center menneske* by Institut for center-planlægning, page 10, 11, 22, 35, 81
YEAR: 1965

Rødovre Centrum was conceived as the new city centre in Rødovre. And even though Hvidovre Hospital - like Rødovre Centre - was supposed to work as a centre (for the Copenhagen Hospital Services), the notion 'centre' was in the Hvidovre proposal used differently than in Rødovre Centrum. As described in the analysis the decentralised 'local centers' at Hvidovre Hospital contained the departments that had the largest contact, traffic and transport frequency. We are here not talking about a physical centre but about a dynamic principle.

The idea of a dynamic principle was also present in the proposal for Odense University in 1967 - and the thinking of Knud Holscher in general. The information on the top half part of this page is from an article Knud Holscher wrote to *Arkitekten* in 1968. In this he expresses how he thinks, that '' houses should form a framework for interchangeable functions ''. They should be 'structures, - initiating processes, - '' satisfying the authority of the individual or at least the experience of freedom''. Thoughts that also were part of the Hvidovre project. The article featured a drawing (top middle) of an abstract pattern of dots in a coordination system .. which makes you think of two systems of thoughts overlapping each other - the one being static and predictable, the other flexible and free. Similar to the constructional system in Hvidovre Hospital.

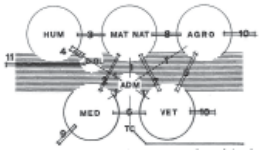
How much Holscher influenced the scheme in Hvidovre is unknown. By analyzing the language he used, it is though possible to see, how the two projects - as thought fields - were intertwined. There is a pattern in the conceptual language overlaying the physical propositions. So did Holscher describe how he saw his task as an architect to create 'order' in something that was unpredictable, which is very much what Eigil Hartvig Rasmussen also wrote about. The university centre should moreover work as a network of communication (a centre of contact and exchange), as the building was arranged around a long central street in more than one level. All ideas which were present in the Hvidovre proposal. Another link between the two proposals is the diagram in the middle. It depicts the relationship between the Odense faculties. The drawing resembles the diagrams of Peter Lohfert and his work group, though it is not substantiated by function analysis. It is based on assumption and ideas. Holscher saw architecture as an intellectual discipline. It was about ideology and ideas. In accordance with this Odense University Centre should be a 'structure' that could be used in different possible spatial combinations - '' an un-authoritarian organization but also a coherent whole, a university centre thought of as a city ''. In thought much like Hvidovre Hospital .. though Holscher himself primarily saw how it resembled the thoughts of Candilis, Josic & Woods.

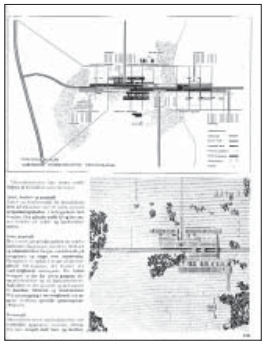


QUOTES

Det let gennemskuelige of statiske 'idealudtryk' er passe. ... Det nye er at huse danner ramme om omskiftelige funktionelle indhold - husene bliver generelle og antager karakter og bliver en struktur, som bærer af variable livskorte funtkionsprogrammer. ... Den størst mulige åbenhed bør være udgangs-positionen. En planlægning, hvis arbejdsområde er igangsættende processer, er åben og tilgodeser enkeltmenneskets myndighed eller i hvert fald oplevelsen af frihed, som måske er lige så vigtig. ... Det er sammenhænge og ikke færdig orden, der er udgangsposition for kompleksiteten. ... mulighed for ved åbne systematiske løsninger med frie sammenstilningsmuligheder at skabe de formuleringer, der passer til de nye byggeopgaver af stor størrelse.

Knud Holscher
Arkitekten, nr 7, 1968, page 182





QUOTES

Universitetscentrets fysisk og teknisk ubegrænsede opbygningsmuligheder ønskes tilført en arkitektonisk orden, en intellektuel disciplin, der overhovedet gør det muligt at formulere centrets organisation.

Over et kommunikationsnet er derfor udlagt faggrupper og fakulteter, grupperet om et fælles, linært centerstrøg. Forslaget kan opfattes som et muligt forsyningsnet med mulighed for opbygning af mulige rumlige kombinationer, der her - håber forslagstilleren - optræder som en uautoritativ organisation.

Således kan man forestille sig centret i dets uddannelsesmæssige og forskningsmæssige funktioner som et sammenhængende hele, således er centret også en sammenhængende bebyggelsesmæssig helhed, en universitetsby.

Knud Holscher
Arkitekten, nr 4, 1967, page 81

VISUAL 2.16

SUBJECT: The thought field of Knud Holscher - Odense University
SOURCE: *Arkitekten* nr 4, 1967, page 70 - 86, and *Arkitekten* nr 7, 1968, page 182
YEAR: 1967, 1968

Contrary to Odense University Hvidovre Hospital never got a prominent position in Danish architecture history. There probably are several reasons for this. One is the silent attitude of its creators. Another is, that it was judged by the 'look of it' - its style features - and not the dynamic principles that were embedded into the use of it.

While the Danish architectural press seemed to be stuck in a more conventional view on what architecture is, architects working within the hospital field found inspiration in the ideas of the Hvidovre proposal. In the international magazine *World Hospital* we thus find an article written by the president of the Swedish Architects Association in 1966 in which he described how the Hvidovre scheme had stimulated design discussion on hospitals in the whole of Scandinavia. The decentralised proposal by Eigil Hartvig Rasmussen had become a role model for another way of thinking hospitals. As a result several hospital schemes were derived from Hvidovre Hospital.

The article in *World Hospital* interestingly also was quite futuristic. The infrastructural calculations - cost benefit analyses - and the need for a fast and efficient operation in the hospital sector - and maybe even the scheme for Hvidovre - made the author Anders Tengbom describe the future hospital - ''a large and flexible factory building'' - as ''light weight units that can easily be pulled down again or extended in all axes'' .. which makes you think of structuralism .. maybe even high tech .. The 'functionality' and unpredictable character of medical science, patient care and treatment had thus altered hospital building - but most importantly maybe also the perception of architecture. In the words of Holscher .. the architecture should be a structure, that supports and initiates processes .. the free flow of activities through time.

But Anders Tengbom in his article also described how the hospitals should be run like ''hospital machines''. He was warning against the utilitarian mind set, where human ideals and values were replaced by technical issues and financial calculations. He seems to suggest, that the role of architects is to maintain that architecture is a complex activity in which different views needs to present. One which has to do with processes of use, others with the social, the aesthetic and experiential etc. Though, that architects like Holscher and Lohfert did not collaborate is an example of how difficult it is to make different minds - and world views - meet.
.

QUOTE

Recent Developments in the Design of Hospitals in Scandinavia'

The growing and changing demands for medical care lead to new types of lay-out. The very large out-patients department, which we have in Scandinavian hospitals has a considerable influence on the design.
…
As regards their design, the hospitals we are now building or planning in Scandinavia can, with some simplification, be grouped under a few headings.
…
The various examples illustrate different ways of answering the constant and fundamental question of whether to build high or low, densely or decentralised, horisontally or vertically. On the one hand you want short, neat communications – all departments near to one another – and on the other hand you want unlimited flexibility and, preferably, unlimited opportunities for extension. To there opposed requirements are added demands for a human environment and beautiful, animated architecture.

This is a difficult task indeed and, faced with it, we work – like our colleagues elsewhere - on two main lines: the block hospital and a modernised version of the pavillion plan.

The block-type hospital occurs in varying degrees of concentration. The new Rigshospitalet in Copenhagen is on a very limited site and therefore a high density design featuring a tall, heavy block. The Glostrup hospital has a larger site and rises to only about half the height, as it has four ward departments on each floor. The type of hospital which is sometimes called the 'matchbox on a muffin' hospital, seen frequently in the U.S., has not been used much in Scandinavia in its pure form. (…) It seems to be all right for medium-sized hospitals with 300 to 600 beds. (…) A highly interesting Danish scheme, is the hospital in Herlev near Copenhagen.
…
The second line of approach, the decentralised hospital, also has its advocates. (…) The principle has been applied to completely new hospitals. Two years ago the Danish architects Rasmussen won a competition for a hospital with 1000 beds, at Hvidovre, with a very interesting scheme, which has stimulated design discussions in Scandinavia a great deal. It is a pavillion hospital in modern form, with buildings rising only two stories above ground. The architects maintain that great distances in the horizontal plane, resulting from the low height of the building, are of less importance to operating costs if you have automatic conveyors. The scheme offers great architectural possibilities and seems to have better expansion potential than most block-type designs.
...

These examples show that both high-density and decentralised principles can be embodied in very good designs and the question then arises, which is right? Which is the hospital of the future?
...
In order to obtain a measurable – and not merely instinctive – economic evaluation of the principles in hospital construction, an interesting investigation was carried out in Stockholm on a planned 1200 bed hospital. (...) The results showed that the pavillion project and the compromise project were highly comparable as regards economy of transportation, and were clearly superior to the high-rise block.

...

Functionally speaking, a hospital may come to resemble a large and flexible factory building, with ample space in all dimensions allowing conduits to be run from any point in all direction, and built of light weight units that can easily be pulled down again or extended in all axes. We shall see all kinds of labour-saving aids, particularly in transportation and communications.
...
Hospitals will also have to be run like factories, much more efficiently and intensively than they are today.

I hope that when designing these efficient hospital machines of tomorow, we architects will not forget what is perhaps our most important role in the planning team - to fight for human, aestetic and architectural values under the numerous technical and financial pressures.
...
The functional solution of a problem is not necessarily beautiful. It is the functional solution, well designed and expressed, that makes the attractive result.

Anders Tengbom, President of the Swedish Architect´s Association
World Hospitals, volume 2, no1, jan 1966

VISUAL 2.17

SUBJECT: The hospital debate of the 1960s
SOURCE: *World Hospital*, Volume 2, no 1, 1966, page 1 - 4
YEAR: 1966

ANALYSIS 3

PHOTO OPPOSITE PAGE

SUBJECT: A building committee meeting - The social aspect of the decision making process
SOURCE: *Opførelse af Københavns Kommunes Hospital i Hvidovre,* film by Nordisk Film
Year: 1973

THE SOCIAL ASPECT OF ARCHITECTURE

INTRODUCTION

In the introduction text, I refer to the publication *25 år i udvikling, Glimt fra Hvidovre Hospitals historie* from 2001[1], articles from: - *Hospitals Nyt* from 1976[2], - *Absalon* from 1977[3], the first staff magazine at Hvidovre Hospital from 1976[4], and the anniversary film *Hvidovre Hospital 30 år, bygget på pionerånd og entusiasme* from 2006[5].

Unlike the subjects dealt with in Analysis 1 and 2, little has been written about the social aspect of the architecture at Hvidovre Hospital. Neither the communal reports (*betænkninger*), the competition program nor other notes written by the municipal client or *Københavns Hospitalsvæsen* (The Copenhagen Hospital Services) indicated that there was a specific 'socially informed program', although it is clear that there were social ambitions. As discussed in Analysis 2, one wished to stimulate cooperation and communication between staff, and to separate out-patient transport routes in the treatment department from bedridden patients and staff areas. You could call this the social aspect of use (here understood as activities). By looking into secondary sources like the ones listed above I have been able to trace a different category of the social aspect. One which had to do with the way in which the work was organised and controlled. Here, it was about who decided, status and power – understood as the relationship between actors. When Hvidovre Hospital opened in the mid-1970s, a new organization within nursing, for example, was introduced with partially self-governing groups[6]. The doctors had to collaborate across specialities in a new emergency and acute care department. And the doctor secretaries were gathered in large secretariats to serve several departments at the same time[7]. The re-organisation was not only about new work routines but a democratization of the decision-making process. New types of behaviour (*omgangsformer*) and equality thoughts (*lighedstanker*) marked the first years at Hvidovre Hospital. Accordingly, it was decided that all employees should say *du* (informal you) to each other instead of *De* (formal you)[8], titles were abolished, and all uniforms were made uniform, so that it was not possible to differentiate nurses, health care assistants and doctors from each other[9]. Furthermore, staff, visitors and patients made use of the same service facilities as *Vandrehallen* (the pedestrian hall way) and the roof garden area. The idea behind all of this was, that all people were equal no matter their position in the hospital. The hospital was, by some, therefore also called the 'red hospital' insinuating that the organisational structure and attitude was

1 The publication is edited by Annie Hagel and published by Hvidovre Hospital in 2001

2 'Hvidovre Hospital, klar til indvielse 26 marts', printed in *Hospitals nyt,* 5 årg, marts 1976

3 'Store ændringer for lægesekretærerne på Hvidovre Hospital', printed in *Absalon*, februar 1977

4 'Personaleblad for Københavns Kommunes Hospital i Hvidovre' - no name - editor in charge G.V. Pedersen, published by *samarbejdsudvalget* (work council) at Hvidovre Hospital, 1976

5 *Hvidovre Hospital 30 år,* produced by Hvidovre Hospital, 2006

6 The idea was to divide the big hospital into smaller parts. Nursing was divided into six areas with each their area leader (*områdeforstander*). Each area had a number of groups with group leaders. The groups were responsible for patient care and planned and distributed the tasks themselves, just as they could decide the working method themselves. Head nurses (afdelingssygeplejersker) were herewith abolished. The development is described on page 16, in *25 år i udvikling, Glimt fra Hvidovre Hospitals historie*, published 2001 by Hvidovre Hospital

7 The doctor secretaries (*lægesekretariaterne*) were to provide service across the different departments and the patient records became commonly available. I refer here to the article in *Absalon*, årg 79, februar 1977, page 28-30. Chief physicians (overlæger) still had their own secretary though.

8 Contrary to the English language, where the use of the word 'you' does not reveal hierarchy, respect and / or familiarity, the Danish words *du* and *De* has a different connotation, - similar to the Dutch 'jij / je' and 'u'. In the past it was custom in Denmark to use the formal *De* form for everybody you did not know. It was also used as a sign of respect when you, for example, addressed an older person, also in families. A person of lower rank would also say *De* to a superior in, for example, a hospital organisation. The *De* and *du* is thus culturally coded.

9 Page 14, from *25 år i udvikling, Glimt fra Hvidovre Hospitals historie*, published 2001 by Hvidovre Hospital

informed by the political ideology of socialist parties[10]. Another important aspect of the contact between staff members concerned the technological development. Doctor secretaries did not make rounds (*stuegang*) with the doctors visiting the patients, as they had previously done. They received patient information via voice recorder. A new electronic data processing system made it possible to order examinations and treatments of patients electronically, followed by electronic patient journals, which had a huge impact, as contact details and other information could now be shared without any physical contact[11]. In addition, transportation of goods and food could be carried out with the help of an automatic transport system monitored by the technical centre, thus without the help of porters. What is more, the patients had the opportunity to stay in touch with the ward nurses via patient calls. These relations were not about a direct human social relationship but about things that linked one to a social network. All in all, the new hospital in Hvidovre was characterized by a high degree of freedom, participatory processes (*medindflydelse*), co-responsibility (*medansvar*) and teamwork (*samarbejde*) supported by a large amount of modern technology. Some of this had to do with the wish to break down various forms of hierarchies. On the other hand, the electronic and mechanic social relations also led to new types of surveillance and control of people's behaviour and data.

PART 1: MEDIA ANALYSIS

The primary sources in this analysis are: - the 1963 competition proposal[12], - the 1968 draft proposal[13], - the booklet *Funktionsanalyse vedr. Ambulatorier og Fælleslokaler* from 1969[14], - photos from Hvidovre Hospitals archive, - *Hospitals Nyt* from 1976[15], - *Tidsskrift for Danske Sygehuse* from 1976[16], - the publication *Københavns Kommunes Hospital i Hvidovre* from 1973[17], - perspective drawings from the film *Opførslen af Hvidovre Hospital* from 1973[18]. In addition, I have visited the building several times, and in this regard, talked with employee and project architect Abelone Dyrup about the social aspect of the building over time[19].

Similar to Copenhagen Hospital Services and the Municipal of Copenhagen, the architects at Krohn & Hartvig Rasmussen wrote very little about the social aspect of the architecture at Hvidovre Hospital. By studying the drawing material, photos as well as visiting the hospital in Hvidovre, I have nevertheless been able to locate several architectural ideas that relate to the social aspect of architecture. However, the word 'social'' can be subject of diverse interpretations[20]. In my interview with Gunnar Gundersen he expressed how he did not even consider the hospital architecture as having

10 The notion *det røde hospital* is from a jubilee video by Hvidovre Hospital from 2006

11 The system was called ELKOM. Electronic data processing had not been used before. It is an example of how modern Hvidovre Hospital was when it opened. The doctor secretaries were the first at Hvidovre Hospital to make use of it. The electronic patient journals replaced the paper versions.

12 The 1963 competition proposal was published in *Tidsskrift for Danske Sygehuse*, årgang 40, 1964 and in *Arkitekten* nr 18, 1963. The posters possibly burned at the fire at Krohn & Hartvig Rasmussen's office. Gunnar Gundersen had a black and white copy of parts of it as well as slides of the proposal of which I have made a copy.

13 The description of the 1968 draft proposal is not published. I have found a copy in the archive of Hvidovre Hospital. It consists of a text of 184 A4 pages. Next to this is a portfolio in large format of 40 pages.

14 The publication is developed by Krohn & Hartvig Rasmussen in collaboration with *Direktoratet for Københavns Hospitalsafdeling, planlægningsudvalget* (the directorate of Copenhagens Hospital Services) as well as the engineering firm Birch & Krogboe. I have found a copy of it in the archive at Hvidovre Hospital.

15 'Hvidovre Hospital, klar til indvielse 26 marts', printed in *Hospitals nyt*, 5 årg, marts 1976

16 *Tidsskrift for Danske Sygehuse*, årg 52, juli/august 1976

17 The publication *Københavns Kommunes hospital i Hvidovre* is not dated. I think it must date from 1973. It is published by Københavns Hospitalsvæsen, organised and edited by Krohn & Hartvig Rasmussen.

18 The film is produced by Nordisk Film for The City of Copenhagen in 1973.

19 Abelone Dyrup has worked at Hvidovre Hospital as an architect in the technical department the last 25-30 years.

20 In the book *Words and Buildings* the British architecture historian Adrian Forty discusses the notion 'the social' in the chapter 'Dead or Alive – Describing the Social', Thames & Hudson, London, 2000.

been informed by social ambitions, as the word ‘social’ for him meant being a socialist. Social relations were – for an architect like Gunnar Gundersen – thus tied to the political domain. In the historical part I will explain how that connotation fits with the 1960s - 1970s during which the hospital was made. It is interesting to keep in mind, that the projects administrator was not aware - or had forgotten - that there was a social ambition embedded into the project, which in itself is an indication that it was not a subject, which was explicitly addressed at the office amongst the architects. We are therefore dealing with implicit (tacit) social qualities.

In the following analysis of the social aspect of architecture, I have arranged the discussion in relation to two factors: - social conditions that can be identified through the analysis of the hospital’s spatial disposition, i.e. the distribution of space / people in the building, - and social conditions that can be recognised by moving or looking through the different rooms of the building, as well as how the transitions were articulated [21].

1.1 EQUAL CONDITIONS FOR ALL

As described in Analysis 2, the distribution of rooms at Hvidovre Hospital was to a large extent conditioned by the function analyses of the hospital’s treatment and care area[22]. The decentralized horizontal hospital was, from the 1963 competition proposal onwards, argued from the view point, that there should be short and direct distances between the treatment sections and the related wards. However, formulations such as ‘intimate contact’ in the competition proposal also point towards a social goal. Although few in words, the architects’ social intentions can be read in, for example, the perspective drawings, showing how people in the hospital interacted with each other. We see here how the architects imagined that their architecture could encourage and support social encounters, and/or protect people from them – even though they did not articulate it specifically in a verbal form.

Seen from an urban perspective, the horizontality of the hospital can be understood as a social gesture as the low horizontal building quietly fitted into the horizontally dispersed sub-urban surrounding[23]. The social aspect of the horizontality was also present in the distribution of spaces (program / people) within the building. On the treatment floor was, for example, the hospital administration, offices for doctors and chief physicians as well as offices for head nurses among offices for laboratory workers, common spaces, treatment and examination areas within the departments. They were not separated as in hospitals of an earlier date. This could indicate that people, despite rank, seniority and professional authority, should not have a special status (articulated in terms of spatial separation and special care). It also confirms the idea, that the organization was a-hierarchical. The uniform distribution of similar spaces in the hospital seems to reflect this as well. All care units had the same facilities, and out-patient clinics and treatment sections were built over the same room module. Standardisation was thus not only a means in the construction to secure flexibility in use as described in Analysis 1. The standardisation of offices spaces, for example, fitted with the desire not to differentiate with professional status in mind. Or at least it

21 The classification is informed by Daniel Koch’s dissertation *Spatial systems as producers of meaning* (KTH, 2004) in specific chapter 2.4 ‘meaning as produced in spatial systems’, where he makes a distinction between the following categories: - Distribution of space (with a reference to the space syntax model), - distribution in space (relation between people and things), - Distribution through space (looking through or walking through a building).

22 See Analysis 2 for the description of the function analyses.

23 I will deepen this representational aspect in Analysis 4

should not be visibly decipherable who was in charge and who was not.

A close reading of the section, in particular, however, also gives a different impression (Visual 3.1 & 3.2). The floors, more specifically, were used as a zoning and distribution principle by allocating different groups of people on separate levels. On the upper two floors were the care sections (wards) with patients, visitors and nursing staff. Situated directly below was the treatment floor with doctors, medical secretaries, laboratory staff and administration. In the basement were the kitchen staff, technicians, cleaning staff, depot workers, etc. The appropriation of certain floors for certain people could be read as the territorial demarcations of different users. What is more, it questions the priorities of the organisation, suggesting that the distribution mirrors a hierarchy. The disposition, with people of a lower status like servants in the cellar in small spaces without daylight, and people of a higher status like doctors, administration and hospital directors on the upper floors with better spatial relationships and space for socializing, was the same as in hospitals from the 19th century[24]. This goes against the idea of social equality regardless of whether the reasons were pragmatic or unsocial.

The location of doctors on the treatment floor and nurses on the floor above in company of patients is also worth noticing. Here too, we see a social and cultural-historical repetition of an old pattern[25]. The position of the nurses close to the patients communicates that it was their job and responsibility to keep the daily contact with the patients, while the doctors came and went. As the doctors were placed on another floor, this relationship was emphasized. The architecture, in the floor separation, thus materialised a physical boundary, which supported the maintenance of conventional roles of doctors and nurses. The doctors' more or less autocratic position on the treatment floor also suggests, that the diagnostic area was their professional field and focus, and that the nurses in the wards were supposed to care for the patients, and that alone. The partially self-governing groups within nursing could be seen as their political answer. That they, on their part, had their own knowledge field, which they felt very well capable of governing themselves without interference from others (in particular doctors).

Furthermore, by looking at the plan for the office areas in the out-patient clinics on the treatment floor, for example, it becomes clear that, despite the uniform spatial disposition, there still were signs of discrimination based on status. Thus, some chief physicians had their own larger office with i.a. a sofa (Visual 3.3). The entrance to their rooms was protected by a 'buffer zone', being the office of their private secretary, who also would assist them on their rounds visiting the patients[26]. Doctors with less status (professional authority) had to share their room with others, make use of voice recorders and the common secretariat. The entrance to their rooms was directly from the corridor. The difference in room size, accessibility, privacy and rights indicate an order. The titles, signs and surnames may have been removed from the physical surrounding; however, there still was a hierarchy at the hospital. The hierarchy was also expressed in the way people behaved towards each other. It was, for example, still the chief physicians who were leading the staff meetings, symbolically sitting at the end of the table, in

24 In this comparison I draw upon the observations I made while comparing Kommunehospitalet, Bispebejrg Hospital and Hvidovre Hospital - discussed and shown in Appendix B.

25 Like mentioned in the above footnote, I here refer to my historical study.

26 The 'buffer zone' & private secretaries for chief physicians is not to be seen on the bottom drawing (Visual 2.3) As can be seen on the drawings - top to the right - they did exist though. I myself have also seen them at Hvidovre.

charge of the main decisions[27]. The distribution and position of the hospital staff does as such not only express something rational. It is also a story about power relationships that draw lines back in history[28].

Seen from a historical perspective, the newness in the spatial configuration at Hvidovre Hospital, in relation to the social aspect of architecture, was mainly the patients' occupational position in the plan with access to the same gardens and service facilities as the staff. This was in line with the 'equality policy' (*lighedspolitik*) at the hospital, where they wanted to be "at eye level with the patient" – talking with the patients instead of to them[29]. However, as soon as the hospitalised patients moved from the care section to the out-patient clinic on the treatment floor, this changed. Here, bedridden patients were placed in kind of niches on the staff corridor (Visual 3.2 - C). While the staff had their own half-private space in offices alongside the staff corridor, the patients were thus situated in a shared and half-public space. Although it was undoubtedly not a deliberate act, this prioritization and plan disposition is another example of a social hierarchy – that some people had more rights than others – expressed in terms of space, access and degree of privacy. Likewise, the out-patients in the clinic were placed in waiting rooms without windows or in long corridors next to the examination rooms, while the staff offices had views and access to patio gardens. The spatial design of the treatment floor as such expressed that this was not a recreational area for the patients. This was a diagnostic domain.

1.2 ROOMS FOR SOCIAL INTERACTION AND COMMUNALITY (*fællesskab*)

In the former text I looked at social conditions, that became apparent through the analysis of the distribution of people in the building. In the following text I will look at social relations determined by how people moved or looked through the building. You could call this the performative aspect of architecture, indicating that it is about an enactment (a time - space relation) and not something solid and fixed in time. I will distinguish between two types of distribution in space; - those that are bound to a 'necessary act' (= the social aspect of use), - and 'voluntary acts' (eg. relaxation or socialising). In the text I refer to these as 'formal' and 'informal' meetings.[30]

The new work routines at Hvidovre Hospital were as mentioned based on teamwork, collaboration and participation. A study of photos from the time after the hospital opened draws a picture of a socially involved hospital staff. The relationships that the staff had with each other could very well have been an expression of spontaneous or deeper human relationships; bonds that had nothing to do with the building[31]. There was, for example, a sports club in the hospital where you could socialize, and some employees were member of the same political party. The role of the architecture is therefore not completely clear, at least if you only look at plan drawings and photographs. Furthermore, there is no 1:1 relation between what the plan

27 I base the statement on the documentary about Hvidovre Hospital - as well as from my talks with Peter Lohfert, who knew the hospital culture very well, as he had worked there himself as a doctor.

28 I here refer to the culture history of nursing and medical practice.

29 I refer here to what the jubilee video about Hvidovre Hospital, as well as the article 'Før og nu, Stuegang og omgangsformer' by chief physician Åge Chr. Thomsen, printed in *Københavns Hospitalsvæsens 125 år* from 1988.

30 In the distinction I make here between social activities, I relate to the work of Jan Gehl, who in his book *Livet mellem husene*, Arkitektens Forlag, 1971 described three forms of social activities; - necessary activities (what I call use – and which I discussed in Analysis 2), - voluntary activities, - and activities that follow something else (defined as the social aspect of use).

31 I think here of family relationships, friendship and leisure activities, political groups or religious communities.

drawings show and the written statements. One example is the idea of the 'local centres'. As described in Analysis 2 the local centres were supposed to contain the departments that had the largest contact, traffic and transport frequency. They should be grouped around the vertical 'traffic centres' (in relation to the four decentralised entrances), and positioned, so that there was as little distance as possible for the people who needed to have contact with each other workwise. By studying the floor plans of the treatment floor, we can nevertheless see, how there was no actual physical centre. The 'local centres' were thus a performative space - meaning 'a space created by social enactment and interaction' – people having a meeting in a corridor or in an office. As architecture, the centre idea was articulated in the way in which the offices on the treatment floor were located between the research and laboratory areas, so that the staff could easily meet in-between their daily activities. Another example was the out-patient clinic, where the offices lay side by side in a block configurations on both sides of an 'expedition centre', which is comparable to the design of neighbourhoods in city planning (Visual 3.3). The location of the specialists (groups) in the overall plan thus determined, what their chances were to socialize and meet with 'the others'.

In the out-patient clinic, alongside the long distribution corridor, a number of larger rooms were situated. On a plan drawing from one of the analytical reports[32] (Visual 3.3), it is to be seen that they were meant for student meetings, educational purposes, or for larger conference meetings. This type of social interaction is an example of the formal meetings taking place within the hospital building. Particular to these spaces was their location; in the middle of the diagnostic and treatment area. What is more, the traditional table arrangement and auditoria setup on the interior drawings seem to communicate that the spaces were meant for knowledge transfer and professional purposes, not private conversations and informal social encounters. The out-patient clinic was, however, also supposed to house two small staff rooms per ambulatory block with sofa arrangements. We must assume that they were used for more intimate and unofficial meetings, a short break or a moment on your own. These small half-private spaces for the staff – away from the patients – are also to be found on plan drawings of the wards (Visual 3.6). To access them you would have to walk past a nurse station. The entrances were thus supervised – somewhat protected. Despite their small size and invisible position in the plan, the presence of this type of spaces does tell us that there was a need for a more casual and free interaction between staff members and withdrawal from the daily work.

Photos from the out-patient clinic (Visual 3.4) show how the staff met in the corridors, by the actual treatment of a patient, in different office rooms, at the diagnosis, but they also show a great deal of activity around the joint medical secretariats, of which there were two in each block, as previously mentioned. A photo from the publication *Hospitals Nyt* from 1976 is of particular interest (Visual 3.5). It depicted how a small staff group were having a meeting in one end of the medical secretariat, while two other people communicated via a windowsill at the other end, and a third person was passing through the room. There is something easy going and relaxed about the atmosphere. As if this was a type of living room – only not at home but at work. The attention of the different people was aimed at each other, and you get the impression that they were discussing today's tasks and challenges. The photo could be read as that these medical secretariats might have functioned as sort of a centre area – a communal room[33]. The

32 The report I refer to is 'Funktionsanalyse vedr. ambulatorier', from 1969

33 The receptions / nurse stations (*Vagtcentraler*) in the wards might have had the same social function.

secretariats were placed just around the corner of the blocks in the out-patient clinics, meaning close to two corridors crossing (Visual 3.3). Not only the location, but the dimensions of the space encouraged social interaction, as it was large enough to contain several activities at the same time. In addition, it had not only a door but a window section, which mediated between the half-private office space and the half-public corridor outside. This meant that people passing in the corridor could get a glimpse of what was going on in the secretariat, as well as that they could stick their head in through the window opening and participate. The social interaction and sense of community was as such supported by the design of this particular space contrary to the surrounding semi-private offices that were closed off towards each other, although there was some kind of visual contact across a patio court yard (Visual 3.3). The communality – 'sharing' – therefore had to be found on the corridors, in the various staff rooms or at the secretariats. The differentiation in the layout of the corridors, the design of the office spaces, and the palette of different spaces of use (*brugsrum*) were the way in which the architecture helped to provide and support the provision of formal and informal meetings, social interactions and relations.

1.3 ACCESSIBILITY, THE FREEDOM TO MOVE, AND CONTROL

While the two previous texts were about the distribution of and within a space, the next text part will be about transitions and accessibility in the building[34]. If you follow the verbal language – the rhetoric – around Hvidovre Hospital you could assume that the focus on equality and sense of community would lead to a hospital with an open, transparent and easily accessible distribution throughout the hospital, not only for the staff working there but for patients and visitors alike. The study of the transitions from the public space to the hospital's internal private and more intimate space demonstrates, however, a high degree of spatial differentiation (Visual 3.7).

While some patients and visitors used public transport to get to the hospital, most of them arrived by car. Whichever entrance you took in the parking garage, you had to go through a bottleneck of several entrance areas, doors, stairs or elevators before entering the intimate spaces; the patient rooms or the examinations and treatment rooms. Architecturally, the hospital's intimate spaces were thus separated from the public space of the surrounding city via a multiple, spatially articulated and layered barrier. The patients were as such placed 'deep' within the hospital building, thus protecting the vulnerable patients. Not an insignificant act, which can be traced back through history to hospitals before Hvidovre Hospital. The position of the patients – the depth – within the building is therefore in itself an indication of a social relation; that of the patient and the outside world.

Between the public space outside the building and the intimate space deep in the building, there was a broad range of half public, private[35] and semi-private spaces. Entrance areas, stairs, elevators and corridor rooms were half public. These transitional spaces were connected directly, meaning

34 In this part of the analysis I refer to Julia William Robinson's dissertation *Architecture of Institution & Home* (TU Delft, 2004), chapter 7 'spatial structure of control & empowerment' in which she discusses 'the territorial gradient'. On page 165 she describes four architectural means by which the creation of territory may occur; - the creation of boundaries (the existence of defined edges, visible or not), - division into physically separated spaces (by walls, ceilings etc.), - elaboration of marking of spaces (window, door etc.), - structuring relations (the way spaces relate to each other, proximity/difference, separation/linkage etc.). I also refer to the discussion she made on page 170-174 on which she defined three types pf spatial structures; - spaces connected in a linear pattern (often entrances) = the separation of public outdoor from indoor, - connected arrangements (living rooms, dining, kitchen) = link the more public living areas / private, - fan-shaped arrangements (bedroom) = link the least public spaces / intimate.

35 The word private refers here to the area belonging to the hospital. It should not be confused with privacy.

that one space led into another. The private spaces were, for example, the out-patient areas in 'the expedition centrals' (*ekspeditionscentralerne*) and *Vandrehallen* (the hallway). Characteristic for this type of private spaces was that they were connected to several spaces. Where the out-patient waiting area consisted of only a number of seating arrangements, *Vandrehallen* was a large recreational area with many different facilities such as TV lounges, winter gardens, kiosk, canteens, bank, hairdresser, library and access to roof gardens (Visual 3.8). It was also a room that was shared by patients, visitors and staff. The separation between the different places in the plan was loose and open. Partitions were made of glass walls or screens, which made it possible to look across - from one space to another. The visual and physical connectivity of *Vandrehallen* emphasized a communal feeling. As if the architecture was designed to suggest that it was possible for people to connect; either directly or through sight lines. The architects in diverse publications also emphasized its social connotation. In the words of the architects; Vandrehallen was a "pedestrian street in the hospital, where patients, relatives and staff can move around in a **living** environment" (i.a. Skitseforslaget, 1968: 26). The word 'living' indicates the social meaning. In the historical part I will address the urban terminology, and the word 'environment'. In terms of transitional spaces and accessibility it meant, that the space was 'open' for everyone.

From Vandrehallen there was access to the wards through two glass doors per unit separated by a block in-between (Visual 3.6). The corridor behind these glass doors was a half-private – half intimate space. From here there was access to the patient rooms as well as to the nurses' more intimate staff room and office areas. It was also possible to sit at small table arrangements in niche-like areas alongside the patios. These places were meant for patients – or patients with visitors – which could use them for a more private conversation, or a moment on their own. The patients did not have to stay in their beds or in the patient rooms, which they most often shared with other patients; on the contrary, in line with the social agenda of the hospital, the patients were free to move around in the hospital's semi-private spaces. In fact, they had a whole range of rooms that they could make use of from the patient room, seating areas in the hospital corridor, the recreational areas in *Vandrehallen* to the roof garden. There was thus a high degree of freedom in the plan proposal seen from the perspective of the patient. The possibility for patients to choose for themselves where they wanted to be, with whom, and when, could be seen as an expression of humanistic values; that patients were seen as people, not only as a body being sick. What is more, the accessibility was good as everything was on the same floor.

The freedom to move around in the multifarious space of *Vandrehallen* was something new in the hospital sector. Historically, it is possible to ascribe it to several social significances, which I will come back to in Part 3 of the analysis. Despite the many positive qualities of *Vandrehallen*, it is important to keep in mind that you could not hide anywhere. In *Vandrehallen*, the hospitalized patients and their visitors were subject to the 'professional gaze' of the passing staff, and staff could keep an eye on each other's actions. This corresponded to the situation of the out-patient area in 'the expedition central', where the staff in the reception had a view of the entire waiting area. Thus, the other side of the visually connectivity in the private spaces was supervision and control. The patients did not have the possibility to be completely on their own. There was always the chance that someone looked from somewhere, whether in *Vandrehallen*, in the wards, or on the treatment floor. The task to supervise patients lay more of less with the nursing staff.

The small work stations (*skrivepladser*) on the ward corridors could thus also be used to monitor what was happening in the corridor, as well as who went in and out of the ward. The glass doors towards *Vandrehallen* were not only about light. The transparency was also about overview, control and contact. From this point of view, the roof gardens were perhaps the only place where one could 'disappear' for a while, which I will get back to in Analysis 5.

Finally, whereas the areas the patients used were always accessible to the staff, the opposite was not the case. Some canteens were reserved for the staff only. There were locked doors on the service floor, which you could only enter with a key card. And there was separate access and places to stay on the treatment floor for staff and out-patients. All of this points at the fact that, even though the hospital was concerned with equality, the staff had a superior position at the hospital – expressed in terms of accessibility.

1.4 THE BUILDING TODAY

As mentioned in the beginning of the dissertation, Hvidovre Hospital is currently undergoing major rebuilding and expansion. In relation to the aspects discussed above, it is interesting to mention a few things that I have been able to observe on my visits. One has, for example, chosen to stick to the section as the overriding distribution principle with the exception that an extra floor has been added onto the roof of the ward buildings. Here, offices and communal spaces have been made for staff members, who before were situated on the treatment floor (mainly doctors). The former office space area on the treatment floor will be used for the expansion of the out-patient clinic. The roof floor offices have an open character. The new interior might therefore improve the contact and collaboration between those who have an office space there. It does, however, not improve the contact with the people on the treatment floor. What is more, it is not all staff groups in the hospital that get a new and 'better' interior (meaning views to the outside, modern furniture, extra facilities and comfort). The roof floor offices therefore further enhance the hierarchy that the organization expresses does not exist.

Vandrehallen has furthermore undergone a large transformation. From being a lively and active area with patients, staff and visitors, it's almost empty today. This development is, in part, due to the medico-technological development, which has meant, that a large group of the patients can be treated in the out-patient clinics. These – and their adjoined waiting areas – are situated on the treatment floor, which means that the out-patients do not have a specific reason or need to enter *Vandrehallen*. Moreover, patients, who are hospitalized, are significantly more ill than previously, which means that they do not move around much in the hospital area. Another reason for the emptiness in *Vandrehallen* is that a lot of service facilities have been closed down for economic reasons. Therefore, the hospital management did not hold onto – and further develop – *Vandrehallen* as a space for social interaction and community building in the hospital, – neither for the patients nor for the hospital staff. In some wards the open-air patio spaces have been covered with a glass roof with the purpose of using it as a recreation room or extra sitting - waiting area[36]. The mother-child department has similarly furnished their own living accommodations within the ward building. In this way, some of the original 'social functions' of *Vandrehallen* have been moved into the more half-private areas inside the ward departments. This enforces the impression of a fragmented hospital, if you look at it as a community.

36 In the children's department, for example, they created a play area.

EXAMPLES OF THE 'WHO IS WHERE IN THE BUILDING?'

A

WARDS - 2nd LEVEL
- in-patients & their visitors
- ward nurses and visiting doctors

B

WARDS - 1 ST LEVEL,
- in-patients & their visitors
- ward nurses and visiting doctors

ROOF GARDEN, & 'VANDREHAL'
- in-patients & their visitors
- visiting staff - all categories
- service workers
(canteens, library, shops etc)

C

OUT PATIENT CLINIC
- out-patients & their relatives
- doctors, nurses
- secretaries

ACUTE CARE
- patients & their relatives
- doctors, nurses
- secretaries

DIAGNOSTIC AREA
- laboratory workers
- doctors
- secretaries

TREATMENT AREA
- in-patients
- doctors, nurses
- secretaries

ADMINISTRATION
- managers
- secretaries
- head nurses

CHAPEL
- patients and their relatives
- priest

D

PARKING GARAGE
- out-patients & their relatives
- visitors
- staff - all categories

SERVICE FLOOR :

DEPOTS
- depot workers

ARCHIVES
- archive workers

KITCHEN
- cooks and their assistants

CENTRAL SUPPLIES
- ware house workers
- cleaners

WORK SHOPS
- craftsmen

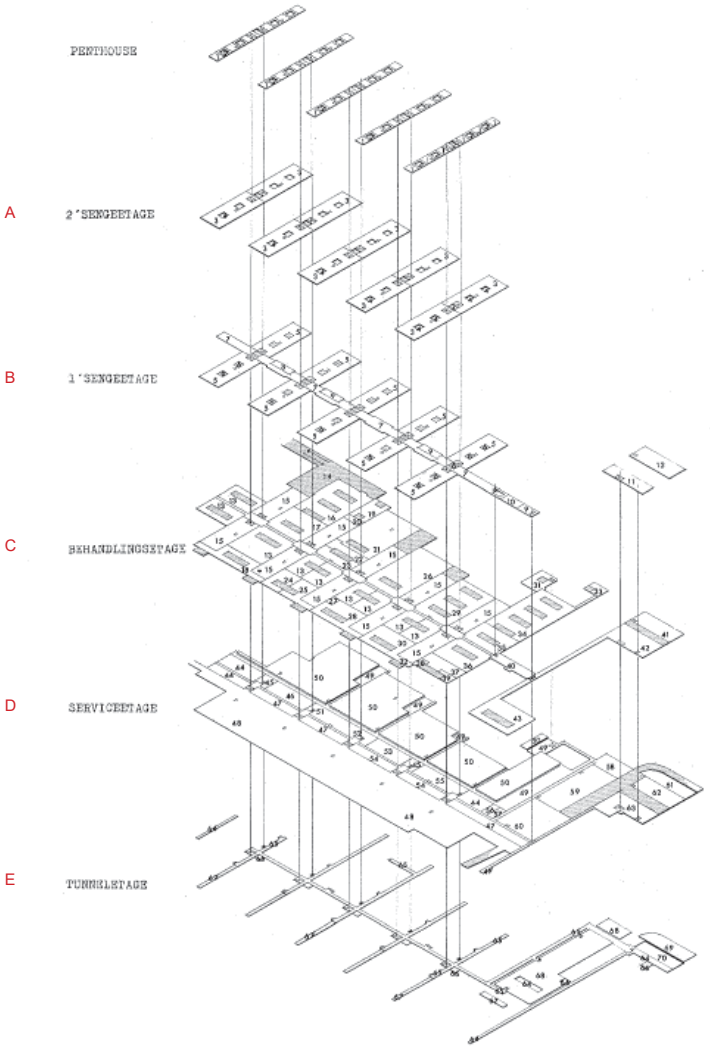
TECHNICAL CENTRAL
- technicians

PHARMACY
- pharmacists and their assistants

E

TUNNEL (CONVEYOR)
- technicians

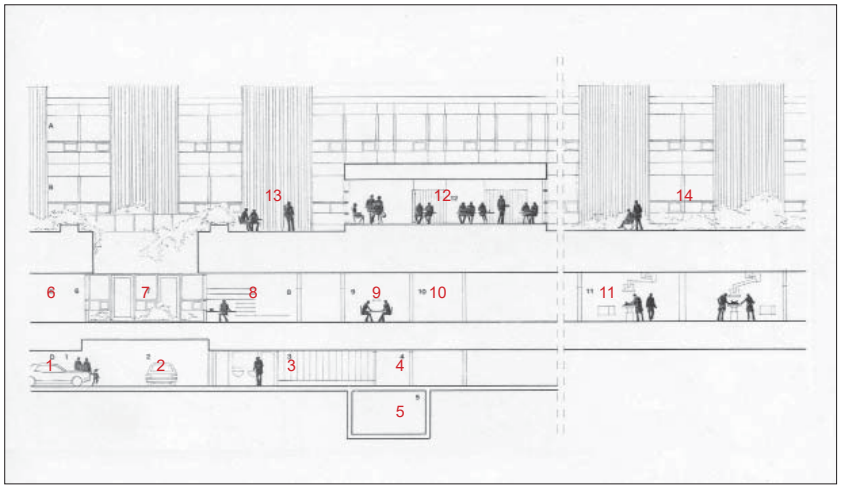
DISTRIBUTION OF SPACE



VISUAL 3.1

SUBJECT: Hvidovre Hospital - distribution of people (space)
SOURCE: *Tegninger, Skitseprojekt april 1968*
YEAR: 1968

1. parking garage
2. underground street
3. staff wardrobes
4. staff corridor
5. tunnel for conveyor
6. out-patient clinic
7. patio garden
8. doctors office
9. conference room
10. main corridor
11. surgery unit
12. canteen
13. terrace
14. roof garden



B: View through 'Vandrehallen'

To the left is a view into one of the canteens, to the right are the windows to the roof gardens

C: View through out patient clinic

Bedridden in-patients are placed in a niche on the corridor while waiting for the examination. These corridors were not used by out-patients. The doors to the left led to staff offices.

D: View through the parking garage

An ambulance is parked in front of entrance number 1 (the ambulances though also had their own entrance at the acute care)

E: View through the tunnel

A container is being transported by the conveyor belt in the tunnel

VISUAL 3.2

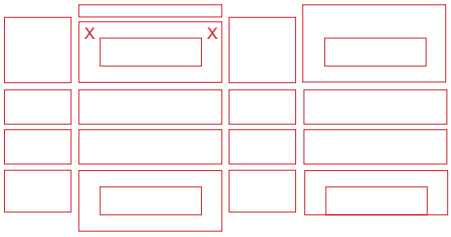
SUBJECT: Hvidovre Hospital - the section
SOURCE: *Tidsskrift for Danske Sygehuse* (særtryk),
YEAR: 1976

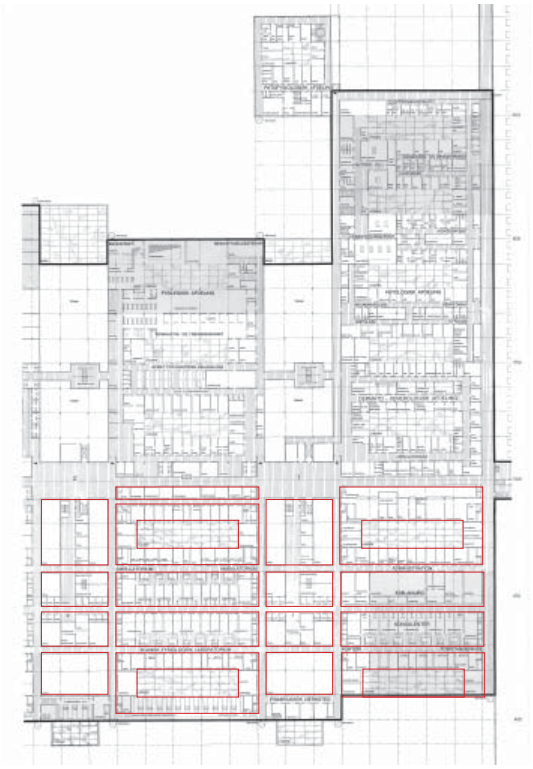
OUT PATIENT CLINIC - AREA

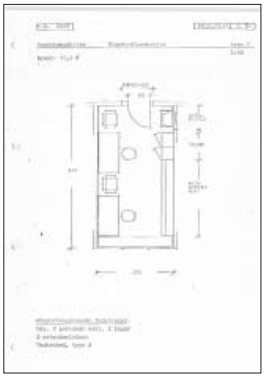
The arrangement of the treatment and examination floor into a network of streets and blocks have similarities with neighbourhoods in a city.

The joint secretariat (x) were placed around the corner of a block like you would place a cafe or a kiosk.

In some of the urban blocks you find a patio - like an urban court yard. These spaces were meant to give day light to the office spaces in the deep plan proposal, but they also provided visual contact - views - from one office room to another, as you could go outside for a break.







OUT PATIENT CLINIC - UNIT

The rooms within the blocks were as far as possible standardized. This meant, that most offices had the same measurements.

To the right are two principle interior plan drawings of an office space. They were both meant for doctors.

The room occupied by one person, having a sofa and private toilet, we must assume was for a chief physicians. We also see, that the entrance was at the side - as described in the text - leading into the secretary room next door.

Below is an office space shared by two doctors. These doctors without doubt had less status. The entrance to this room was directly from the corridor - thus less private.

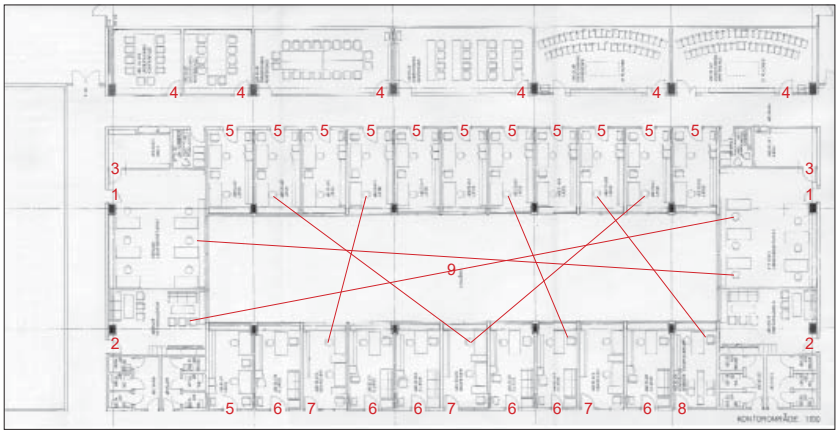
The two drawings illustrate how hierarchy and status was translated into the inhabitation of the plan.

OUT PATIENT CLINIC - BLOCK

1. the joint secretariat
2. staff room
3. archive
4. conference room and teaching
5. doctors office
6. office chief physicians
7. secretaries - chief physicians
8. office head nurse
9. patio garden - atrium

Red lines through the patio indicate sight lines between office spaces.

The table arrangement on this drawing in the joint secretariat (1) does not correspond with the arrangement, that you see on the image shown at Visual 3.5. On this drawing you do NOT see a meeting table at the door, nor do you see, that the table at the window sill is turned 90 degrees, so that the attention of the secretary is towards the people walking in the corridor. The image on Visual 3.5 thus demonstrates how the staff in the appropriation of the spaces made adjustments so that it would fit their need of social gatherings and interpersonal contact.



VISUAL 3.3

SUBJECT: Hvidovre Hospital - The treatment & examination floor
SOURCE: - plan drawing top to the left: *Tegninger, Skitseprojekt april 1968*, - plan drawings top to the right: *Københavns Kommunes Hospital i Hvidovre, Funktionsskitser for fælles og tværgående funktioner*, - plan drawing bottom: *Københavns Kommunes Hospital i Hvidovre, Funktionsanalyse vedr. Ambulatorier*
YEAR: respectively 1968, 1968, and 1969

TO THE LEFT:
PHOTOGRAPHS FROM
TREATMENT AREA

1. Nurse meeting in the corridor of the Department for Anaesthesiology

2. Awakening the patient in Department of Anaesthesiology

3. Empty operating theater

4. Preparing the transition zone in the area of anaesthesia

5. Nurses are awakening patient - Department for Anaesthesiology

6. Nurse and doctor meeting in the Department of Radiology

TO THE RIGHT
PHOTOGRAPHS FROM
THE OUT-PATIENT CLINIC

7. Staff meeting in office space

8. Secretaries in office space

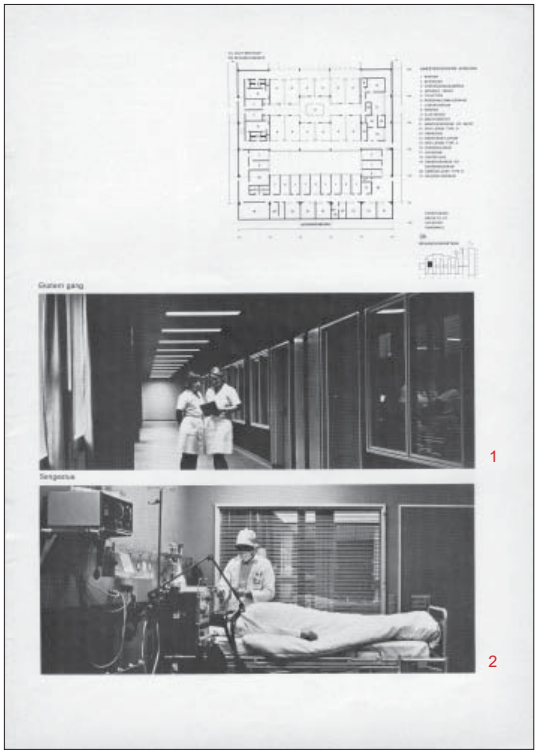
9. Doctor examining a patient

10. Alone in the office

11. Conversation through the windowsill in the joint secretariat

As described in the analysis, there were no physical 'centres' on the treatment floor. The 'local centres' were the consequence of people meeting each other by choice. Thus, the 'local centers' were social relations created by the distribution of people through space - a moment in time and space. A certain amount of co-awareness was needed.

Photographs taken in the treatment area and in the out-patient clinic confirm how the staff met in the corridors, by the actual treatment of a patient, in different office rooms, at the diagnosis as well at the secretaries. As architecture the centre idea was articulated in the way in which the departments were grouped in relation to each other, so that the staff could easily meet in-between their daily activities. But the differentiation in the layout of the corridors, the design of the office spaces, and the palette of different spaces of use (*brugsrum*) also had a significant role to play in the provision of formal and informal meetings, - social interactions.




7

8


9


10


11

VISUAL 3.4

SUBJECT: Hvidovre Hospital - The treatment & examination floor
SOURCE: - to the left: *Tidsskrift for Danske Sygehuse* (særtryk), - to the right photographs from Hvidovre archive
YEAR: respectively 1976, and unknown (probably around the inauguration 1976)

The article shown here is from the publication *Hospitals nyt* from 1976. It was written around the inauguration of Hvidovre Hospital.

The author (no-name) had made a tour around the treatment and examination floor at the hospital, where she / he also talked with different people about their work.

The photographs were from the surgery rooms, the joint secretaries, and the expedition central in the out-patient unit. People looked energetic and happy in their work. The article described how the staff in general were satisfied with their new work situation and the new hospital. One nurse though regret, that she had left the familiar settings. Another explained how it had been hard work getting accustomed to the new routines, as well as getting everything in place. The staff also received detailed information on the new technology.

The large photograph at the bottom of the page was from the joint secretariat at the department for radiology. As described in the analysis, the spaces at Hvidovre Hospital were standardised. We can therefore assume, that the other joint secretaries probably more or less looked the same. It is proposed in the text, that these joint secretaries functioned as sort of a center area - a communal room. Not only the location in the block configuration, but the dimensions of the space encouraged social interaction, as it was large enough to contain several activities at the same time like a small meeting, secretary activities and interpersonal communication with people in the passing corridor. The social interaction and sense of community was as such supported by the design of this particular space contrary to the surrounding semi-private offices that were closed of towards each other, although there was some kind of visual contact across the patio.

VISUAL 3.5

SUBJECT: Hvidovre Hospital - inhabitation of the treatment & examination floor
SOURCE: *Hospitals Nyt*, 3. årgang, marts 1976
YEAR: 1976

PHOTOGRAPHS FROM WARD FLOOR - PATIENT & NURSE AREA

1. bedridden patient in roof garden

2. view into four-patient bedroom

3. living and dining area on the ward corridor - next to the patio space

4. the living area in *Vandrehallen*

5. nurse and patient on the ward

6. nurse traffic and communication at the nurse station - ward area

7. office space - ward area - the orientation is towards the patio

As described in the analysis, the patients were free to move around in the hospital area. The photographs shown on this page depicted a range of spaces, that they could make use of from the patient bedroom, the living and dining area on the ward corridor, *Vandrehallen*, to the roof terrasse and gardens.

The possibility for patients to chose for them selves where they wanted to be, with whom, and when, mirrored the ideology of the time. Patients were seen as people - individual human beings. The visibility of their actions though also gave the possibility for supervision.

The two photographs below to the right were from the nurse area on the ward. As can be seen on the plan drawing below, patient rooms were positioned alongside the facade, and all nurse facilities were placed in the middle. The open nurse station and secretary (6) most probably had the same social and inter-communicative role as the joint secretaries on the treatment floor. And the staff rooms (7) were meant for a small retreat from the duties. The nurse area was thus of a more intime character than the rest of the ward - meaning that it was reserved for nurses - not a patient area.

1. 1,2, and 4 patient bedrooms
2. living and dining area - corridor
3. patio space - courtyard
4. winter garden - Vandrehallen
5. living area - Vandrehallen
6. nurse station and secretary
7. staff room
8. nurse station on corridor
9. examination room
10. sending station - containers

1

2

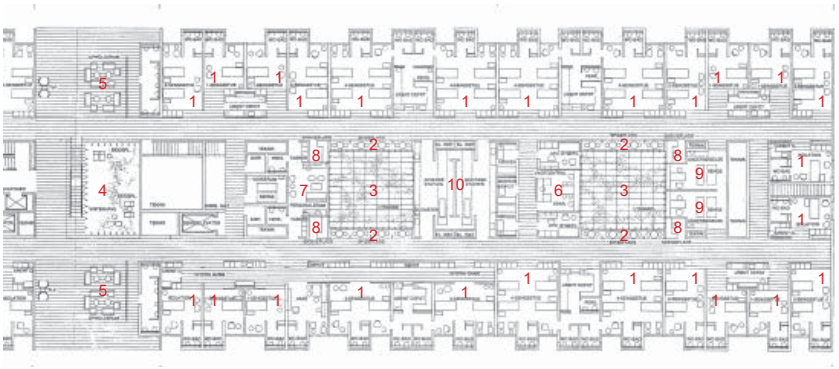
3

4

5

6

7



VISUAL 3.6

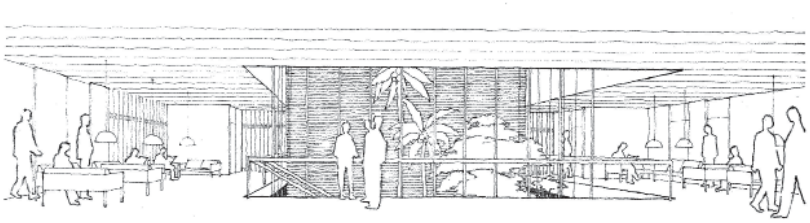
SUBJECT: Hvidovre Hospital - the ward area
SOURCE: - page top to the left: *Tidsskrift for Danske Sygehuse* (særtryk), - photographs top to the right: Hvidovre archive, - plan drawing bottom: Tegninger, Skitseprojekt april1968, page 18
YEAR: respectively 1976, unknown (probably around 1976), and 1968

The drawings on this and the opposite page are from the 1968 draft proposal. The plan drawings are off areas in *Vandrehallen*. The top perspective was of the lobby between two wards on the second floor, the second perspective depicted the living and dining area on a ward corridor, the third and fourth perspective showed how the architects envisioned respectively the visitors restaurant and the cantine for the staff in *Vandrehallen*.

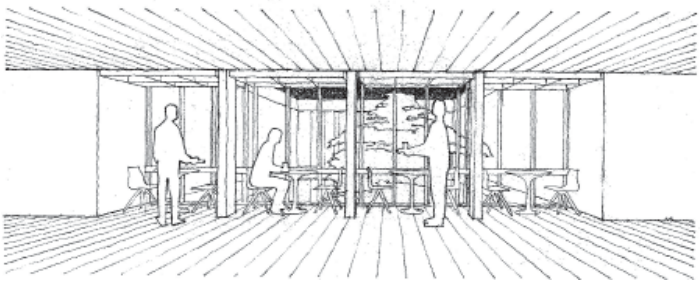
In the analysis it has been described how social relations like power and bonds were embedded into the relationship people had with each other. The analysis has also shown how the physical surrounding proposed to articulate and support these social relations. The plan drawings and perspectives illustrated how the architects consciously / unconsciously were thinking about these issues. In the analysis it is thus not the way the spaces look (in terms of representation or experience), that is in the center of attention, it is how the spaces depicted were supposed to support or hinder certain types of social (inter)actions and relations. What is it that these images tell us in terms of contact and communication, isolation or socialisation, communality or seperation .. eventually hierarchy? Did these spaces make people perform in a specific way towards each other - towards themselves?

The perspectives show large open spaces inhabited by several people. Furniture groups are placed along the facades with views to the outside roof gardens. Some people are sitting eating or reading the paper. Others are standing or on the move. The visual and physical connectivity of the spaces seems to communicate, that the hospital lobbies and *Vandrehallen* would be lively communal spaces. The low ceilings also provides a certain intimacy to the spaces. It looks as if the interiors were designed to suggest that people should feel at ease, also in the interaction with others. It was at least easy to connect; either directly or through sight lines. The perspectives does as such support the theory, that the architects had a tacit social agenda with their design. It is also possible, that the drawings refer to some sort of social convention - fashion or trend - within society, which I will return to later in the analysis.

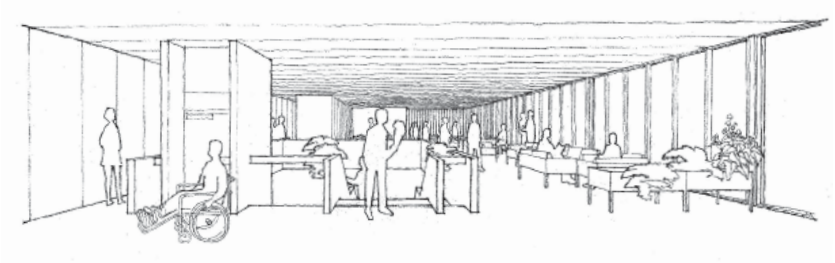
The plan drawings confirm, that the separation between the different places in *Vandrehallen* was loose and open. They also show that patients (and their visitors) did not use the same restaurant as the staff. As the partitions were made of glass it was possible to look across and be both apart and together. What is more the number of seats in Vandrehallen could be seen as an indication of the social ambition with which the space was programmed.



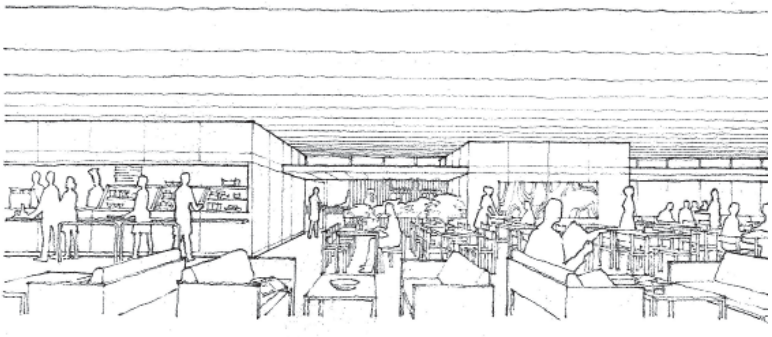
Lobby in between two wards on the second floor - the staircase in the middle leads to Vandrehallen below



Living and dining area on ward corridor - view towards patio garden



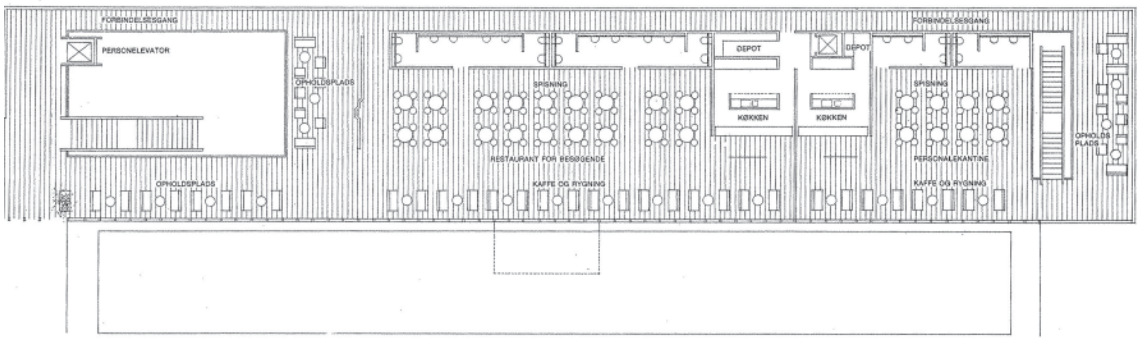
Vandrehallen - view into the visitors cafe and restaurant - in front staircase and lift leading to the entrance lobby



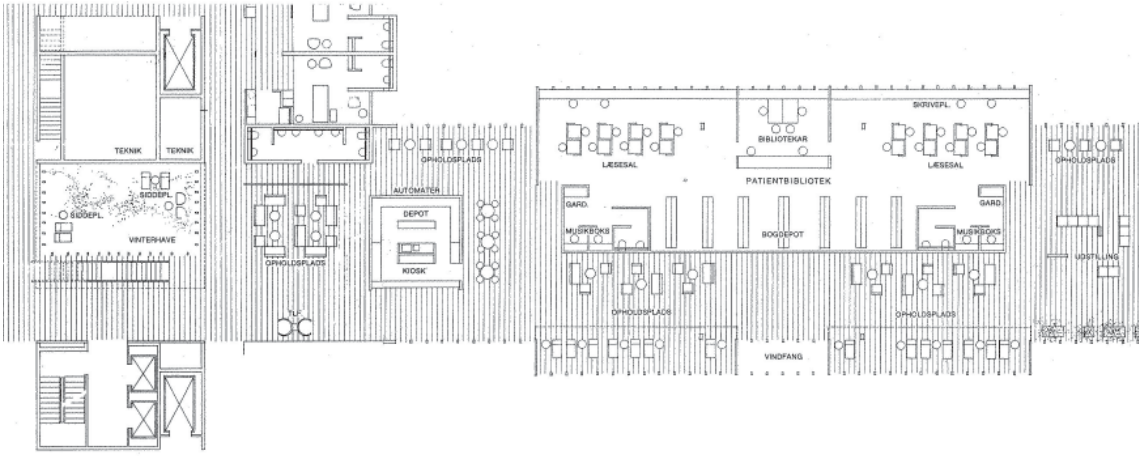
Vandrehallen - view into the visitors cafe and restaurant - in front staircase and lift leading to the entrance lobby

VISUAL 3.8

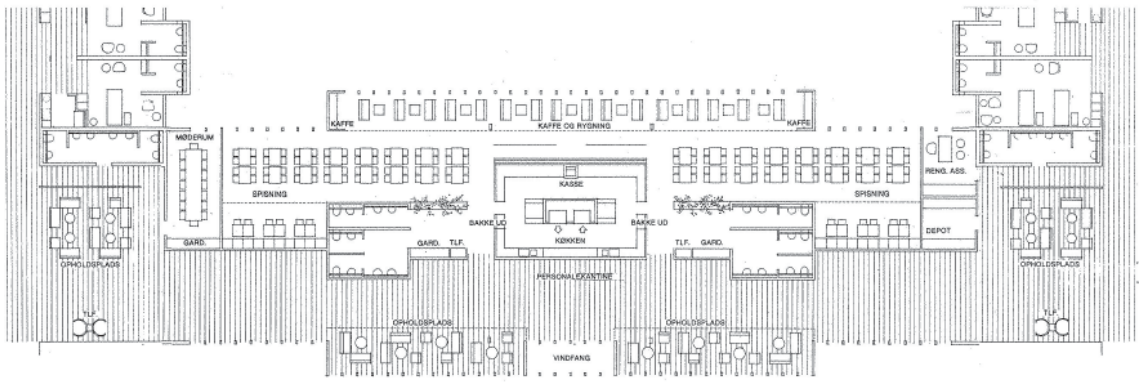
SUBJECT: Hvidovre Hospital - inhabitation
SOURCE: - perspectives: Tegninger, *Skitseprojekt april 1968*, page 17, 18, 22, and 23
YEAR: 1968



Vandrehallen - large cafe and restaurant for visitors to the left - small cafe and restaurant for the staff to the right - staircases leading to the entrance lobby below



Vandrehallen - winter garden (in front of a ward entrance and traffic centre), television lounge and kiosk to the left - patient library and sitting areas to the right



Vandrehallen - one of the two large decentralised staff canteens - sitting areas for patients and entrance to roof garden in front - television lounges on the sides

PART 2: DECISION PROCESS

In this part of the analysis I have compared: - statements from various architects who witnessed the development process[37], - statements from the film *Opførslen af Hvidovre Hospital* from 1973[38] , -*Tidsskrift for Danske Sygehuse* from 1973[39], - the book *Københavns Hospitalsvæsen 125 år* from 1988[40], - the anniversary film *Hvidovre Hospital 30 år, - bygget på pionerånd og entusiasme* from 2006[41],- the first staff magazine for Hvidovre Hospital from 1976, - reports prepared by the City of Copenhagen i 1954[42] og 1961[43], - as well as the competition program from 1962[44].

2.1 THE MAIN ACTORS IN THE DECISION PROCESS

Looking at the architectural discipline from the view point of 'the social' the decision-making process is essential. Architecture is fundamentally a social discipline; created for and with other people. The meeting between the different actors in the decision field is therefore of importance; whether these be clients, users, architects, collaborating landscapers, civil engineers, constructors, technicians or others. Analysis 2 has shown how the decision-making process was the instance, where the architects learned about what was going on in the hospital in terms of activities. In the interaction and communication with Copenhagen Hospital Services and the staff at Hvidovre Hospital, you would assume that the architects also became aware of the unwritten rules, habits and rituals of the hospital culture including how people related to each other socially. This could be seen as the socio-cultural aspect of the decision-making procedure. However, the social (and staff political) aspect of the organisational – and functional – discussion was, according to Peter Lohfert, not part of the discussions with the architects. The architects on their part did not address the issue directly either.

That the architects did not see it as their task to consciously act as agents for social change in the hospital organisation does not mean that they were not aware of what was going on in terms of hierarchy and power. As we have seen, they were not afraid of including other people into the decision-making process either, which shows that they had a certain sensitivity and openness towards the people for whom and with whom they were working. This in itself is a token of social behaviour. The former two analyses have shown, how the architects at Krohn & Hartvig Rasmussen were actively involved in the exchange with people from the City of Copenhagen and Copenhagen Hospital Services on the development of Hvidovre Hospital. In Analysis 1 it was described how architect Gunnar Gundersen had the main administrative responsibility for the construction, which meant communication and negotiation with i.a. the people from the Municipality of Copenhagen (the mayor, the city engineers, the city architects and other official parties), engineers, contractors etc. Architect Bent Nielsen was in charge of the work at the construction site together with the cooperating

37 I have spoken to the architects Gunnar Gundersen, Peter Lohfert, Flemming Skude, and Jørgen Gabriel, who all worked in the Hvidovre Hospital project. I have also spoken to landscape architect Knud Lund Sørensen, who got involved in the realisation of the gardens at Hvidovre Hospotal after his partner Morten Klint died.

38 The film was produced by Nordisk Film for the municipality of Copenhagen in 1973.

39 *Tidsskrift for Danske Sygehuse*, årg 49, august 1973

40 The book is published by Københavns Kommune, Magistratens 2. afdeling, september 1988

41 *Hvidovre Hospital 30 år,- bygget på pionerånd og entusiasme*, produced by Hvidovre Hospital, 2006

42 'Betænkning afgivet af det af Københavns magistrat under den 27.marts 1952 nedsatte udvalg vedrørende opførelse af et hospital I Hvidovre'. The report was printed in 1954.

43 'Betænkning vedrørende opførelse af et nyt hospital afgivet af Københavns hospitalsvæsens planlægningsudvalg den 6 juli 1961'.

44 The program was more or less put together by the same people who had written the municipal reports in 1952 and 1961. City architect Frode Jørgensen was one of tem. DAL send a secretary architect Erik Nilsson.

engineers, and architect Albert Jensen was responsible for the daily contact with the builders. In Analysis 2 it was furthermore described how architect Peter Lohfert was responsible for the function analyses together with people from Copenhagen Hospital Services and a large number of representatives for the staff at Hvidovre Hospital. These architects had each their own responsibility as actors in the decision-making process, but many other architects at Krohn & Hartvig Rasmussen were active participants in the decision-making process as well. In the following part of the analysis I will refer to architects Nils Schou and Flemming Skude's work on the colour scheme in collaboration with the doctors of the hospital, and I will refer to the landscape architect's small controversy with the nurses about planting in the hospital's patio gardens. Behind them all stood the main architect; Eigil Hartvig Rasmussen. He had the final responsibility and had chosen the people who came to embody and control the design and decision-making process – some of which describe him as their personal friend and mentor[45]. The open-minded attitude of Eigil Hartvig Rasmussen further informed the decision-making process in the sense that a large part of the responsibility in the development work on Hvidovre Hospital was handed over by him to his trusted employees. As a result, the decision-making process became decentralised – led and developed by many actors[46]. This inclusive way of operating an office affected not only himself and his influence on the project. It also nurtured a specific employee culture at the studio[47]. The project was characterized by participation (*medbestemmelse*) and democracy (*nærdemokrati*), which can be perceived as a weakness or as a strength[48]. It definitely made it easier to accept that others than the architects themselves could become part of the decision-making process. The openness could as such be seen as an indication of social flexibility.

2.2 FIELD OF INTERESTS

While, above, I discussed 'the social aspect' of the decision-making process, the decision-making process on the social aspect of the architectural design is something else. In the media analysis it was discussed how different architectural means could be put into place to achieve, support or hinder different types of social relations. As the Municipality of Copenhagen, Copenhagen Hospital Services and the architects at Krohn & Hartvig Rasmussen wrote very little about this specific perspective, it is difficult to prove how conscious they were of 'the social' implications of the

45 From my conversations with Gunnar Gundersen, Peter Lohfert and Flemming Skude I know that Eigil Hartvig Rasmussen was a man, who was not only concerned about the outcome of the project, he was socially involved in his employees. Their professional development, well-being and comfort were important to him. They were all very thankful for the way in which they had been treated by Eigil Hartvig Rasmussen professionally as well as privately. From the study of photographs, taken at the office celebrations, it can be seen that people were very fond of him.

46 As described in Analysis 1, the work at Krohn & Hartvig Rasmussen on the Hvidovre project was divided into work groups with each their group leader. These group leaders had thus each their own domain and responsibilities.

47 From listening to people talking about their time at Krohn & Hartvig Rasmussen in the 1960s - 1970s and looking at photographs, you sense that even though people might have been working hard - making long hours - they also felt cared for. It was not all work, there was good food, alcohol ad libitum, parties etc. There was also the possibility to develop your own interests in the form of literature studies in the library, on conferences, excursions as well as in competition projects of your own initiative. The expenses that Knud Holscher had on the Odense University competition was thus covered completely by the office. Eigil Hartvig Rasmussen lent Peter Lohfert a large amount of money from his own personal account for Lohfert to start his own office (Institut), and Gunnar Gundersen could make use of his private summer house on the island of Mallorca, whenever he wanted. Furthermore, the diversity of people in terms of background - as well as political viewpoints - was high, which is an indication that the partners did not discriminate or exclude opposite opinions. And people from all over the world were working at the office. All in all, it was an inclusive work environment, where the staff had the opportunity to influence the way things were done.

48 In the different interviews I had with former employees at Krohn & Hartvig Rasmussen, it became clear to me, that they themselves were not completely satisfied with the design of Hvidovre Hospital - that is the way the hospital looked. In their opinion to many compromises had been made. From the view point of the analysis of social relations - and the implications of having a democratic equalitarian decision-making process - it is interesting that the consequence of the 'horizontal' approach might not have been the 'best' result. On the other hand; what is most important - a good process or the end result? From the view point of a participatory process it might be the first.

architectural design. The 'mute' approach might here have been contra productive, as language – and the articulation of one's thoughts – can lead to awareness, criticality, possible innovation and new ideas. On the other hand, as I will unfold in the historical part of the analysis, the social aspect of the architecture might not have been an area for much speculation or doubt, as what the architects intuitively thought was, for a large part, in line with the 'spirit of the time' and the priorities of their client; The City of Copenhagen and its hospital services. In the film *Opførslen af Hvidovre Hospital* from 1973[49], Eigil Hartvig Rasmussen, for example, stated that '**operation economics**' (*driftsøkonomi*), - '**flexibility**' (*fleksibilitet*), - and '**humanity**' (*medmenneskelighed*) are the three main issues that should be taken into account in the main outline of a large hospital like that in Hvidovre. Gunnar Gundersen also emphasized in an article in the journal *Tidsskrift for Danske Sygehuse* from 1973[50] that it was important to create '**a good environmen**t' (*miljø*) in the hospital. Environment was defined here as "something with people, their relationship to each other and their relationship with the surroundings" (Gundersen, 1973: 156). The notions 'humanity' and 'human relationships' were thus fundamental to the architects' thought field. The language use confirms that their architecture was envisioned from the view point that it should support people in their interactions with others. This fitted the interests of the City of Copenhagen. As an illustration, the mayor of the municipal second department, Edel Saunte, had in 1964 given Copenhagen Hospital Services the task of setting up a cooperation committee (*samarbejdsudvalg*) for staffing measures[51]. She wanted to improve communication between the municipality and its staff, stimulate the use of modern technology, co-influence and participation.

The municipal initiative to stimulate collaboration was met with satisfaction by the hospital staff, where the workers on the floor had longed for clear guide lines for a long time. In the course of the 1960s -1970s, several large conferences were initiated to discuss the issue and its consequences for hospital organisation. In 1974, this led to a report (*betænkning*) concerning the Copenhagen Municipal Hospital's organizational structure (Visual 3.9 depicts it in a schematic form). The main points of the report were the objectives and policies of the hospitals. The idea was that the hospital departments should be self-governing as far as possible. A decentralization should be made, so that the municipality and Copenhagen Hospital Services could transfer as many tasks as possible to the hospitals. The way to do this was that the employees should be involved in the decision-making process. This fits exactly with the impression we get from looking into Hvidovre Hospital's organizational structure. The thoughts at Hvidovre Hospital were thus part of a major local government policy. In a jubilee film about Hvidovre Hospital from 2006, a group of the first hospital employees talks about how it was to start at Hvidovre Hospital in the 1970s[52]. They describe how they were supposed to have a democratic attitude towards each other's staff groups (Visual 3.10). The word 'democratic' was used more than once and described as essential to the way people were thinking. The expectation was that it would be possible to create a different culture than in the old hospitals, where professors alone made the decisions. The doctors in the film moreover confirmed that there was a special commitment among

49 The film is produced by Nordisk Film for *Københavns Kommune* (Municipality of Copenhagen) in 1973

50 *Tidsskrift for Danske Sygehuse*, årg 49, august 1973

51 The information is based upon an article written by Harry Chr. Orup for the book *Københavns Hospitalsvæsen 125 år ... i stadig udvikling* from 1988. The book is published by Københavns Kommune, Magistratens 2.afdeling. The article is named 'Samarbejdsregler har det som skilsmisseregler - de ligger bedst i skuffen', page 176-179.

52 *Hvidovre Hospital 30 år, - bygget på pionerånd og entusiasme*, produced by Hvidovre Hospital, 2006

the doctors at Hvidovre Hospital – a combination beyond the usual and a willingness to make things work. At the same time, the field of nursing changed significantly. The autonomous (self-governing) nurse groups at the ward departments were an example of this. The care takers (nurses and nurse assistants) no longer wanted to be perceived as inferior to the doctors. They wanted recognition for their area of work as an expertise in itself – like the doctors. This led to conflicts between doctors and nurses. As no one was prepared to compromise, the care takers at some point initiated strikes. Contrary to this, the cooperation between the medical specialties went a lot easier, and it is described in the film, how the doctors saw each other as one large community with common facilities. That this collaboration went smoothly was partly due to the fact that their position was secured. What is more, they were young and ambitious. The new Hvidovre Hospital gave them the opportunity to create a modern hospital in touch with their time. All of which had little to do with the building, even if it did support communication.

2.3 EXAMPLE OF THE DECISION PROCESS

The decision-making process that the architects at Krohn & Hartvig Rasmussen were involved in had – as pointed out above – a staff political dimension. The governing idea was that everyone at the hospital should be able to influence how things were designed in the hospital; both the organisation of the work and the space itself. As described in Analysis 2, each department appointed representatives for the users, so that all relevant professional groups at the department concerned were represented. Together they helped formulate guidelines for the hospital's development.

The first staff magazine at Hvidovre Hospital from the 1970's demonstrate, how the magazine's articles should not only cover the views of the hospital management. There should be "good and comprehensive information of what is happening in the hospital" (Personalebladet, 1976)[53]. To secure this, it required "an active and positive contribution from all employees at Hvidovre Hospital" (Personalebladet, 1976). The 'cooperation committee' (*samarbejdsudvalget*) at the hospital was the formal publisher. The day-to-day administration was carried out by a 'staff council magazine selective' (*personalebladsudvalg*) consisting of four employees from different areas of work. 'A staff magazine committee' (*personalebladskomitee*) consisting of another six employees of different kinds was furthermore responsible for collecting material from 14 group editors from the major 'disciplinary areas' (*fagområder*) in the hospital (Visual 3.11). It was therefore a comprehensive organisational task to realise the magazine. When mentioned here, it is because it is a good example of the politically informed field that the architects entered, as they met the hospital staff in the decision-making process. It was a matter of diplomacy, the ability to listen and to communicate. It was also about perseverance, as the architects were involved in the development work with other actors in the field from 1963 to 1976; more than 13 years. That it was a politically sensitive situation cannot be doubted. There are thus also examples of how the staff felt, that it was in their right to intervene in the work of the architects[54]. One example is landscape architect Knud Lund Sørensen, who continued the work of Morten Klint after he died. He was contacted by the hospital director at some

53 The first staff magazine had no name - it was therefore called '?'. The main editor in charge was G.V. Pedersen, and it was publisghed by "the collaborating committee" (*samarbejdsudvalget*) on Hvidovre Hospital, 1976

54 In Analysis 1 I have also described how the municipal wanted to influence the project. And Analysis 2 described who the programing procedure was under the influence of Copenhagen Hospital Services.

point after the inauguration, as a problem had arisen with the planting in the patio gardens. The situation was that the nursing staff had started to appropriate the garden rooms and added plants that were not suitable for the conditions. They had, in one instance, planted birch trees in one of the patios and attached labels to it reading that they wanted more variety[55]. It is an example, that the staff challenged the (landscape) architects' authority, even though it was beyond their professional specialty. That they wanted to be involved in the selection procedure – the decision-making process.

Another example is the colour scheme of the hospital; hereby, particularly the chief physicians (*overlæger*) were involved in the decision-making process. According to architect Flemming Skude, who assisted colour consulant architect Niels Schou in this area of work, Copenhagen Hospital Services found it appropriate to "tailor the hospital so that the staff was satisfied" (Flemming Skude, 2010)[56]. It was a staff political action. Viewed from that perspective, a good participatory decision-making process was probably more important than the outcome. The architects were to make sure that they included the staff in the decisions they took – that their views were heard[57]. Flemming Skude's job was to interview the doctors. Only asking them – and not others – indicates a certain hierarchy in the organisation. Peter Lohfert also expressed in the conversations I had with him, that even though the decision-making process was thought of as democratic, and that the work flows at the hospital were organised around cooperation and contact between the professional groups, there still was a hierarchical culture at the hospital[58]. According to him, it was not something that they had an influence on as an architect either. It was inherent to the organisation; about organisational principles and valuation[59].

Looking at the reports that preceded the architectural competition in 1963, they confirm that higher-ranking hospital employees had more importance. Thus, it was hospital directors, chief physicians, head nurses and heads of office who were invited into the discussion on the hospital program. In addition to the social aspect of architecture, it is interesting to note that they did not make any effort to describe the more 'soft values'. Their focus was on the use – functional values – not on social relations like creating spaces for communality. And even though Peter Lohfert's work groups challenged prior programming work, none of their reports documented the social hierarchies of the organisation and the challenges that the organisation faced if they were ever to be able to realise their democratic ambitions. Despite the fact, that the City of Copenhagen expressed their wish to strengthen cooperation and communication with their staff, there was a limit to how much the established power structure and approach was altered. All in all, it appears as if the decision-making process was an area filled with social conflicts and confrontations, some of which were pronounced, others concealed.

55 The patio gardens were (are) roof gardens. Birch trees are not suitable for such a condition, as their roots would destroy the roof membrane. What is more, birch trees would become too big for the small spaces.

56 In Danish: *skræddersy hospitalet, så personalet var tilfredse*, Flemming Skude, 2010

57 In Analysis 2 I have described how Peter Lohfert, in the decision-making process, was dependent on the thoughts and ideas of the doctors in the function analyses. At the same time, he had to help them think 'out of the box'.

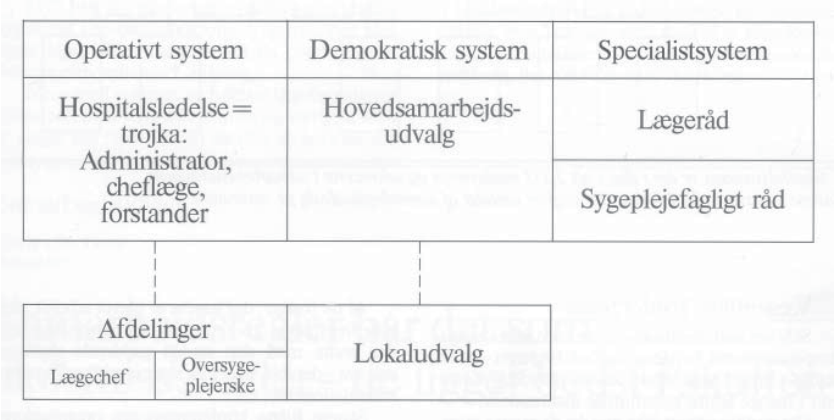
58 Peter Lohfert has a profound knowledge about the organisational culture at Hvidovre Hospital, as he was not only involved in the function analyses as an architect. He later, in his training as a doctor, worked there as a doctor

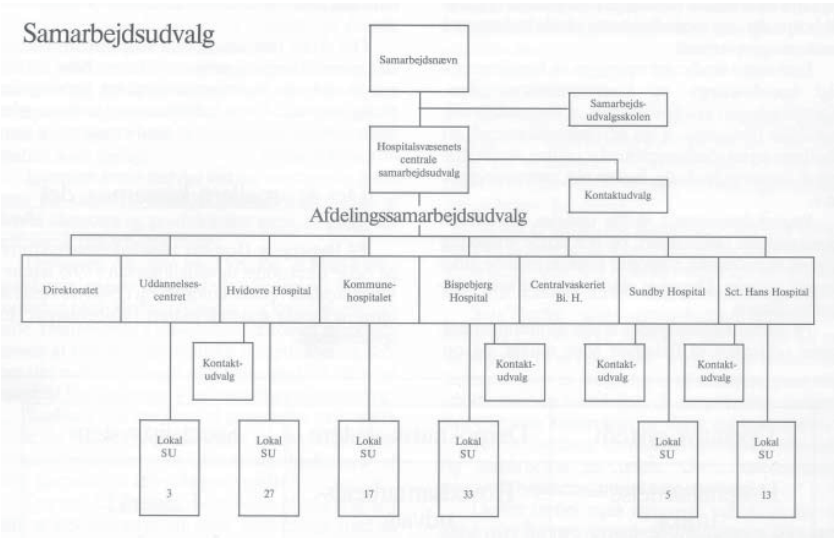
59 I base this view on the conversations I have had with Peter Lohfert.

The 1974 report on collaboration, cooperation and communication described an organisational structure which looked more or less like the scheme at the top of this page. .

We see here three columns: The first column had to do with the hospital management - here called the 'operative system'. The idea was, that this would be done by an administrator, a chief physician and a head nurse together - thus a collaborating unit of three people from each their profession. The second column had to do with the main cooperation committee - here called 'the democratic system'. The third column had to do with the Medical Council and the Nursing Council - here called the 'specialist system'. The operative system was connected to the departments - the head nurse and the chief doctor. The cooperation committee was connected to local committees. The idea behind the structure was, that everybody - on all levels - would have the opportunity to practice co-determination and co-influence within the organisation.

The scheme below depicted the organisational structure of the co-operation committees (*samarbejds-udvalg)* in Copenhagen Hospital Service. The principle of the above scheme was here translated into a main structure for the coordination between the different hospitals within the hospital services. Point was that the hospitals should give space for participatory processes, - and democracy (*nærdemokrati*).





VISUAL 3.9

SUBJECT: Structures for collaboration and communication - Copenhagen Hospital services
SOURCE: *Københavns Hospitalsvæsen 125 år .. i stadig udvikling',* page 176-179
YEAR: 1988

QUOTES:

1. “The expectation was that it would be exciting to help open a place where you would have to create a culture that might be a bit different from the old hospitals.’’

2. “At Hvidovre we should have a more democratic attitude to each other - that is, the staff groups in-between. Our name - but not our title - could be on the door signs. You were not allowed to brag about being a dr. med. It was simply forbidden. .. And a secretary, it was gradually taken from you, because we got a secretariat.’’

3. “I was at a place, where we - as the professor said himself - were very democratic. This meant, that he said ‘du’ (you) to us, as we said ‘de’ (You) to him. ... But the entire structure at Hvidovre was from the beginning flatter. You got something on what you could, but not much on the title anymore - not so much on the classic hierarchy. I think that Hvidovre was one of the first places where that went through.’’

4. “When the dermatologist moved in with Perdrup, who was a very powerful doctor, and who was one I never could say ‘du’ (you) to ... then he would get up and wait for you as a head nurse to come and pull up the uniform on his shoulder .. and that was what nobody did. And I think that was a shock for him to experience. But he took it nicely. .. But it’s just such a small thing to say that, you should not - like in the old hospitals - expect that the chief physician had a firm place at the table, and that his coffee cup was ready with enough milk and sugar .. It was not just what you found here. Here one had to service himself.’’

5. “The spirit of Hvidovre became, that we got common facilities - common operations - community ... The other departments were from old times enemies .. between the different surgical departments, between surgery and medicine .. while at Hvidovre we should be a big family’’

6. “But it was not easy all of it. There was some marking of territories between the different staff groups. Ten years earlier, nobody was in doubt about who was the head of a department. That was the professor. But now different staff groups like the care takers and nurses got an independent identity.’’

7. “What one wanted with nursing at Hvidovre Hospital was a very professional approach to nursing. Doctors should not think, that we were there only to service them. No, we had our area of work and they had their area of work. And as I said, there were some conflicts in the run-in phase. Here we soon got some nominees (tillidsmænd) for both care takers and nurses, which the management had to work together with both formally and in the cooperation committee .. but they were politically very leftist. ... And so, we experienced those strikes. That was something we had never experienced before.’’

1. Forventningen var, at det ville være spændende at være med til at åbne et sted, hvor man skulle til at skabe en kultur som måske var lidt anderledes end på de gamle hospitaler.
Kirsten Obel, oversygeplejerske, områdeforstander

2. Vi skulle på Hvidovre have en mere demokratisk indstilling til hinanden - altså personalegrupperne imellem ... Der måtte stå vores navn - men ikke vores titel - på skiltene på dørene. Man måtte ikke skilte med, at man var dr. med. Det var simpelthen forbudt. .. Og sekretær det blev efterhånden også taget fra en, fordi vi fik et sekretariat.
Hans Georg Iversen, professor i urologi

3. Nu var jeg et sted, hvor vi - som han selv sagde professoren - havde meget demokratiske omgangsformer. Og det bestod i, at han var dus med os, og vi var dis med ham .. Men hele strukturen på Hvidovre var fra starten af fladere. Man fik noget på det man kunne, men ikke så meget på sin titel mere, ikke så meget på det klassiske hieraki. Jeg tror, at Hvidovre var et af de første steder, hvor det slog igennem.
Jens Ole Nielsen, professor i infektionsmedicin

4. Da hudafdelingen flyttede ind med overlæge Perdrup - som var en meget magtfuld overlæge - og som også var een af dem jeg aldrig fik migselv til at sige du til, selvom vi i princippet var dus, ... ja men, han stillede sig jo op og ventede på, at du som oversygeplejerske kom og trak kitlen op på hans skulder, og det var der så ingen der gjorde, vel. Og det tror jeg da nok var et chok for ham at opleve. Men han tog det i øvrigt pænt. .. Men det er bare sådan et lille træk for at sige, at man skulle ikke som på de gamle hospitaler forvente, at overlægen havde fast plads og hans kaffetop stod parat med tilpas mælk og sukker i, og der var rørt rundt Det var ikke lige det man fandt herude. Her måtte man servicere sig selv.
Kirsten Obel, oversygeplejerske, områdeforstander

5. Ånden på Hvidovre den blev jo, at vi fik fælles faciliteter – fælles operationsgang - fællesskab ... De andre afdelinger var fra gammel tid mest fjendskab - mellem de forskellige kirugiske afdelinger, mellem kiruger og medicinere for eksempel, hvorimod på Hvidovre, der skulle vi være een stor familie.
Hans Georg Iversen, professor i urologi

6. Det var ikke rosenrødt det hele. Der var en vis afmærkning af territorier imellem de forskellige personalegrupper. Ti år tidligere var der jo ingen, der var i tvivl om, hvem der var chef på en afdeling. Det var professoren. Men nu fik de forskellige personalegrupper d.v.s. plejegrupperne, sygeplejerskerne en ny selvstændig identitet.
Jens Ole Nielsen, professor i infektionsmedicin

7. Altså det man gerne ville var med sygeplejen på Hvidovre Hospital, det var, at man gerne vill have en meget professionel faglig tilgang til sygepleje. Lægerne skulle ikke komme og tro, at vi bare var der for at servicere dem. Nej, vi havde vores arbejdsområde, og de havde deres arbejdsområde. Og som sagt, så gav det nogle konflikter i indkøringsfasen. Og herude der fik vi meget hurtigt nogle fællestillidsmænd for både sygehjælpere og sygeplejersker, som ledelsen skulle spille sammen med i et samarbejde både i det formelle og i samarbejdsudvalget .. men som var politisk meget venstreorienterede. ... Og derfor oplevede vi jo de der arbejdsnedlæggelser., som var noget, vi aldrig havde oplevet før.
Kirsten Obel, oversygeplejerske, områdeforstander

VISUAL 3.10

SUBJECT: Documentary about the first years at Hvidovre Hospital
SOURCE: *Hvidovre Hospital 30 år, bygget på piobneránd og entusiasme,* produced by Bastard Film
YEAR: 2006

EXAMPLE OF THE COOPERATION COMMITTEE CULTURE

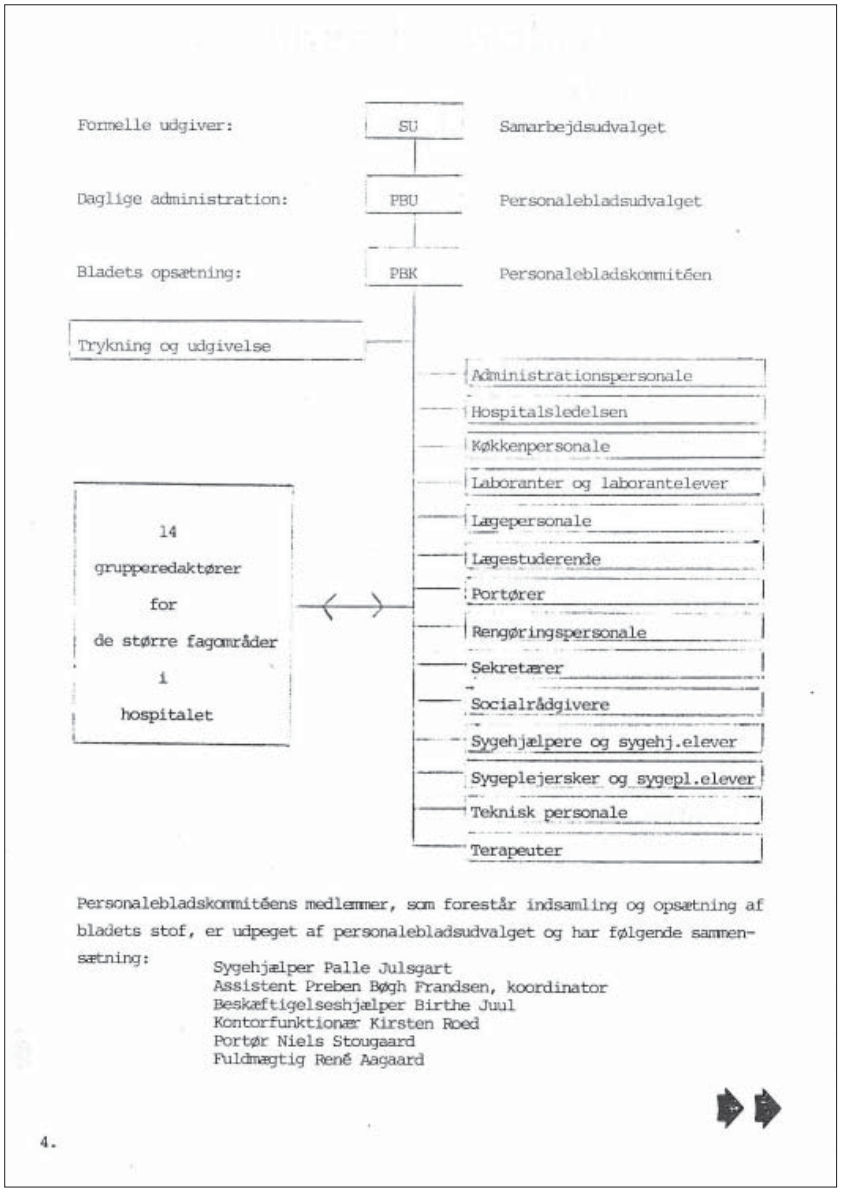
The scheme to the right depicted the organisational structure for the first staff magazine at Hvidovre Hospital. It was printed in 1968.

The formal publisher was the 'cooperation committee' *(samarbejdsudvalget*) - which was called the 'democratic structure' in the scheme on Visual 3.9. The magazine could be seen as a physical manifestation of the democratic values in that it should represent different voices - professions - at the hospital.

The day-to-day administration was carried out by a 'staff council magazine selective' (*personalebladsudvalg*) consisting of a health care instructor (*sygehjælperinstruktør*), a nurse assistant (*sygehjælper*), a cleaning manager (*rengøringschef)* and a development manager *(udviklingsleder*).

'A staff magazine committee' (*personalebladskomitee*) consisting of a nurse assistant (*sygehjælper*), an assistant, an employment assistant (*beskæftigelseshjælper)*, an offce worker (*kontorfunktionær*), a porter (*portør*) and a clerk (*fuldmægtig*) was furthermore responsible for collecting material from 14 group editors for the major professional areas in the hospital and compiling this into a lay out.

A complete decentralised selection procedure - and non-hierarchical - in compliance with the ideology of the time and the ambition of the municipality to have better contact and communication with its hospital employees. Indirectly also giving them the possibility to decentralise responsability and duties. A win win situation, it would seem.



VISUAL 3.11

SUBJECT: Hvidovre Hospital - inhabitation
SOURCE: - perspectives: *Tegninger, Skitseprojekt* april 1968, page 17, 18, 22, and 23
YEAR: 1968

PART 3: THE HISTORICAL PERSPECTIVE

In this part of the analysis, I refer to: - Tobias Faber's book *Dansk Arkitektur* from 1977[60], - Nils-Ole Lund's book *Teoridannelser i arkitekturen* from 1972[61], - Jørgen Sestoft's articles in *Arkitektur DK*, nr 7-8 from 1979, - as well as the publication *By Center Menneske* from 1965[62]. In the discussion of the Danish welfare state and the Danish Hospital Service, I make use of Kurt Jacobsen and Klaus Larsen's book *Ve og Velfærd, Læger, sundhed og samfund gennem 200 år* from 2007[63], as well as the book *Velfærd - dimensioner og betydninger* from 2007 af Per H. Jensen[64]. I moreover rely upon information from: *Københavns Hospitalsvæsen 1863-1963* by Sigurd Jensen[65], - *Københavns Hospitalsvæsen 125 år ... i stadig udvikling*[66], - the publication *25 år i udvikling - Glimt fra Hvidovre Hospitals historie*[67], - as well as the anniversary film *Hvidovre Hospital 30 år*[68]. In addition, I would like to refer to a number of articles about Krohn & Hartvig Rasmussen projects from the journal *Arkitekten*[69]. Finally, I would like to mention two books that have helped shape my view on the socio-cultural aspect of the Danish welfare architecture, and that is Karin Lützen's book *Byens Tæmmes*[70] , and Birgit Vorre's book[71].

3.1 THE PROJECTS OF KROHN & HARTVIG RASMUSSEN

From the 1940s, Krohn & Hartvig Rasmussen had been occupied with large scale assignments such as industrial buildings, market halls, department stores, shopping centers, hospitals, universities, sports complexes and swimming pools[72]. Buildings that – viewed in a historical perspective – could be seen as the physical manifestation of the Danish welfare society; a society of economic prosperity and growth, but also a society in which new ways of life and behaviour evolved. Many women received either full-time or part-time work, children and elderly were institutionalised, more young people took long-term education and the ever-increasing middle class[73] moved into the suburb in row houses, free-standing houses (*paracelhuse*) or smaller villas. The car also made it possible to separate residential, recreational and work areas in a way that had not been seen before. One should thus invent a whole new way of living with each other. (Visual 3.12)

Krohn & Hartvig Rasmussen's projects were placed in the periphery of the city. In Analysis 4 I will look at what that meant in terms of imagery. But the new suburban neighbourhoods also encouraged a different way of relating to each other as social human beings than that in the old and dense cities of the past. The architecture of Krohn & Hartvig Rasmussen helped define

60 Faber, Tobias, *Dansk Arkitektur,* Arkitektens forlag, København, first edition 1963

61 Lund, Nils-Ole, *Teoridannelser i arkitekturen,* Arkitektens Forlag, København, first edition 1970, second 1972

62 *By, Center, Menneske*, published by Institut for Center-planlægning, 1965

63 Jacobsen,Kurt and Klaus Larsen, *Ve og Velfærd, Læger, sundhed og samfund gennem 200 år,* Lindhardt og Ringhof, København, 2007 - published for Lægeforeningen

64 Jensen, Per, *Velfærd - dimensioner og betydninger*, Frydenlund, København, 2007
I refer primarily to chapter 13 by Tom Nielsen

65 Jensen, Sigurd, *Københavns Hospitalsvæsen 1863-1963*, published by Direktoratet for Københavns Hospitalsvæsen, in commission for Gads Forlag, København, 1963

66 *Københavns Hospitalsvæsen 125 år ... i stadig udvikling,* Published by Københavns Kommune, 1988

67 *25 år i udvikling - Glimt fra Hvidovre Hospitals historie,* editor: Annie Hagel, published by Hvidovre Hospital, 2001

68 *Hvidovre Hospital 30 år*, produced by Hvidovre Hospital in 2006

69 I have studied all the articles in Arkitekten about the work by Krohn & Hartvig Rasmussens from 1946 until 1976.

70 Lützen, Karin, *Byen tæmmes, Kernefamilier, sociale reformer og velgørenhed,* published by Hans Reitzels Forlag, København, 1998. Karin Lützen is mag art in folkemindevidenskab, and PhD

71 Vorre, Birgit, *Boligen i det 20.århundrede,* published by Nyt Nordisk Forlag Arnold Busck, København, 2008.

72 This list is at the same time chronological - it mirrors the types of program they were dealing with.

73 I use the notion 'middle class' here under reservation that Denmark was not a class society anymore. Ethnologist Birgit Vorre writes in *Boligen i det 20.århundrede*, Nyt Nordisk Forlag Arnold Busck, København, 2008, page 11, how '' increased revenue and rising consumption after 1960 have meant that no-one identifies with a particular class. Instead, designations are used that relate to social group divisions ..They all belong to the middle class''.

how the new life could unfold in the new towns outside Copenhagen. A place where people could meet were the new shopping malls. As mentioned in Analysis 2, Rødovre Centrum from the 1960s was named 'centre', as it was the new centre in Rødovre city built within a year[74]. The project as such had an urbanistic quality and character that extended far from being mere a building. Magasin Lyngby from the 1960s and Lyngby Storcenter from the 1970s also helped define a new shopping and visitor centre 10 km outside of Copenhagen's inner city. Hvidovre Hospital, similarly, was situated in a new residential area without much connection to either the inner City of Copenhagen or Hvidovre down town. That *Vandrehallen* in the hospital was referred to as "the hospital's **pedestrian street**" is no coincidence, seen in this context. The language use tells us that the architects referred to the discussions that took place within urbanism. *Vandrehallen* was the old town's commercial street (*handelsgade*) and a reference to the suburbs' shopping malls or pedestrian streets (*gågader*). The motive for *Vandrehallen* was – seen from the social perspective – thus obtained from the outside surrounding society. As there was no town immediately outside of Hvidovre Hospital that one could frequent, the 'pedestrian street' of *Vandrehallen* played a significant role in the hospital. Contrary to Rødovre Centrum or Lyngby Storcentre, Vandrehallen was not meant to facilitate people from outside the hospital though. It is another example of Hvidovre Hospital being considered an autonomous neighbourhood – a centre for the people who inhabited it. The urban life of the suburban city turned inwards into the building. Like several of the office's other projects, it had an indirect social agenda as a space for communality and socialising. (Visual 3.13 - 3.15)

3.2 THE SOCIETAL ASPECT OF THE ARCHITECTURE DISCUSSION

Around the same time as the democratically tinted staff magazine was developed at Hvidovre Hospital (1968), a staff association and staff magazine were developed at the office of Krohn & Hartvig Rasmussen (1972). The magazine covered everything from salary level, professional training, the company's architectural profile to environmental discussions, supergraphics and more[75]. Its content mirrored the employees at the office, who were, like the surrounding society, a mix of people of which some were primarily concerned with the pragmatics of everyday life, others were humanists or social idealists. The team for the Hvidovre Hospital was therefore diverse. With Eigil Hartvig Rasmussen at the centre, the overarching attitude was humanity (*medmenneskelighed*) and an open mind. The debate in Denmark, however, was significantly different in the 1970s than in the 1960s. The expansion of the public sector in the 1960s had not been free of charge, and the high tax burden contributed to dissatisfaction among some of the nation's citizens. Arguments were made for a slowdown in public spending including the healthcare sector. From a period of high employment and large construction activities in the 1960s, public efforts were to be limited in the 1970s. The happy sixties had been replaced by savings and criticism in the seventies. It was during this period that the previously described conflicts at Hvidovre Hospital escalated, and that architects at Krohn & Hartvig Rasmussen started to worry about their future – as described in Analysis 1[76].

However, it was not only right-wing liberalists who criticized the welfare

74 The centre was not only used for shopping. It was used for weddings, receptions, meetings, fashion shows, and exhibitions. The centre did as such not only have a mercantile significance, but also a social.

75 The magazine was called *khr* I have received a copy from the private archive of Flemming Skude.

76 The savings meant for Hvidovre Hospital, as described in Analysis 1, that the final phase 3 did not get built.

policy. There were also protests from the left wing having become tired of *statens overformynderi* (the state's paternalism), which was regarded as a disempowerment of the individual (Visual 3.16). From the mid-1960s, there was – as described in Analysis 2 – an increasing criticism of urban development as well, the suburban sleeping villages, and the large residential areas such as Høje Gladsaxe, Albertslund Syd and Gjellerup Plan, which were described as limiting instead of liberating people and their social life. The opposition therefore not only consisted of the 'red' and 'blue' political parties but also of 'environmentalists' who wanted a more humane environment. Common to the critique was that it questioned all forms of authority – including the architects'. In *Dansk Arkitektur*, Tobias Faber described how new notions like *beboer-demokrati* (residential democracy), *lokalsamfund* (local community) and *nær-miljø* (close environment) was introduced into the daily debate in papers as well as in architectural magazines[77]. The idea was that power should be decentralized and citizens involved in the decision-making process. The 'modus operandi' at Krohn & Hartvig Rasmussen (with decentralised work groups and leaders), as well as the decision-making procedure in the function analyses (with the use of user-representatives) therefore corresponded with the time spirit. The principle of equality, close democracy, co-responsibility and co-determination was, as previously pointed out, an important part of the decision-making process. It was about a certain form of awareness – and a coherent unifying factor – for all involved in the project; users as well as architects, the Municipality of Copenhagen and the Copenhagen Hospital Services.

Seen in the light of the political climate, the freedom to move around in the hospital at Hvidovre could be read as a political statement. Knowing that the architects (in their work) were not concerned about politics, the anti-authoritarian gesture – that individuals could decide for themselves where and with whom they wanted to be – is an indication how certain deeper societal attitudes tend to be taken as given or natural. The design was as such associatively – and intuitively – linked to the social aspect of the environmental discussion that took place in Denmark at that time, more than being a deliberate act. An example of this debate was the book *By Center Menneske* published in 1965 in which it was described how, in the modern fragmented suburban towns, there "is a need for oases ... where you can sit separately and just rest. Places to get a beer and look at other people. Places where you can meet a few and just talk." (*By Center Menneske*, 1965: 25). In other words, places for 'social interaction'. As described in the first part of the analysis, Hvidovre Hospital's architecture comprises several of such places – invitations to both patients, visitors and staff to meet each other. Most pronounced was the first floor (with the wards, *Vandrehallen* and the roof gardens). From a social point of view, the living and dining niches in the hospital corridor, *Vandrehallen*'s seating arrangements, restaurants, winter gardens and service facilities as well as the design of the roof gardens were architectural means to get people out of their intimate zone – be it the patient room, the office, the laboratory, the storage rooms, the kitchen or the technical centre – and out into a socially interactive space – a communal space – where they could connect with others. The architecture was thus after all an agent for social values and change, even though it was not articulated as such by the architects.

How strong a lead the architects in the Hvidovre team took in the discussion on the social aspect of their architecture is questionable. But the emphasis on 'the social aspect' in the environmental debate during the 1970s

77 Faber, Tobias, Dansk Arkitektur, Arkitektens Forlsag, København, 1963 and 1977, page 271

had definitely come to the attention of the architects at Krohn & Hartvig Rasmussen. Gunnar Gundersen, Jack Andersen and Niels Schou wrote an article together for *Tidsskrift for Danske Sygehuse* in 1973 in which they discuss the 'environmental design' at Hvidovre Hospital[78]. And even though their work and thought field was not directly related to the work of, for example, the Danish architect Jan Gehl (*Livet mellem husene*, 1971)[79], or the later Danish *tæt lav* (close low) movement exemplified in the work of Vandkunsten, it was informed by the same social objectives – to improve and support social interaction and connectedness (Visual 3.17). Abroad, architects such as French American Candilis, Josic, Woods, British architects Alison & Peter Smithson or Cedric Prize, or Dutch architects such as Aldo Van Eyck, Herman Hertzberger, Piet Bloom, John Habraken or Jaap Bakema represented the socially informed architecture of the 1960s / 1970s. Nils Ole Lund's book *Teoridannelser i arkitekturen* quoted Aldo Van Eyck and Jaap Bakema for saying respectively that "architecture needs only to help people home" (home being where the heart is – heart being family and friendship), and "architects must work for the creation of physical surroundings that will satisfy the emotional and material needs and stimulate its spiritual growth". If 'emotional needs' and 'spiritual growth' is seen in the perspective of the environmental discussion, it could very well mean social relations[80] – the profane and sacred aspects of the daily life and the corresponding social acts and rituals - leading us to Eigil Hartvig Rasmussen's 'humanity' (*medmenneskelighed*); being aware of your inner self in relation to others.

The language study shows how the thought field of Eigil Hartvig Rasmussen was shared by other architects in the time period. The need to address identity, growth and places in the city – in Denmark and abroad – should be seen in the relation to the development that society took. A development that the architects saw was good – but not all good – as some qualities were about to disappear. And even though Gunnar Gundersen was a factual man, he - in an article in *Tidsskrift for Danske Hospitaler* in 1976 - also emphasized the importance of the immaterial qualities of environmental design saying: "In a time period marked by the pursuit for progress, greater efficiency and new things, which better, faster and without the touch of human hands can achieve the desired results, there is a risk that **the human** (*det menneskelige*), **the emotional** (*det følelsesmæssige*), **a good environment** (*det gode miljø*) and **well-being** (*trivsel*) will be sacrificed and lost. **Hvidovre Hospital is designed to preserve or recreate these values** as far as possible without thereby violating a design that satisfies the requirements for efficiency and rational operation" (Gundersen, 1976: 125). Social ambition and emotional empathy was needed to balance rationality and pragmatics. All of which was present in one project – Hvidovre Hospital.[81] This shows, how the project was a correlation of several voices, values and ideas. Some of which were more concerned about building than human needs. However, when asked, none of the interviewed – and formerly involved – architects questioned, that it was strongly emphasized in the project for Hvidovre Hospital, that the project should not only comply with functional claims; it should accommodate social interaction, communality, and communication. The architecture was as such drawn and thought from human relationships amongst others the social.

78 *Tidsskrift for Danske Sygehuse*, årg 49, aug 1973, page 156-164

79 Gehl, Jan, *Livet mellem husene, Udeaktiviteter og udemiljøer*, Arkitektens forlag, København, 1971 - A debate book about urban public space - and its relation to the social life of people living in a city.

80 The words 'emotional' and 'spiritual' do not immediately refer to 'the social' domain unless you see it in the relation to the environmental discussion of the 1960s. The 'emotional needs' that Bakema talked about might very well be social - (as also discussed in *By Center Menneske*) - as humans were perceived as social beings.

81 In Analysis 5 I will deepen the emotional aspect of the environmental discussion.

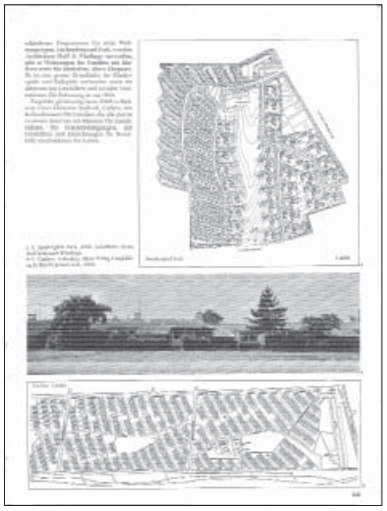
The economic boom had made it possible to expand the public sector in the 1960s. The expansion, among other things, was aimed at ensuring better living conditions for all Danish people - contributing to a greater degree of equality. The goal was 'security from cradle to grave'. As a result all kinds of social institutions were made from crèches, kindergartens, schools, hospitals to nursing homes. It was social democracy policy in build form. The images on this page illustrate how ‘the good life’ would look like seen from that perspective.

The image - top left - was a social democratic election poster. The slogan was ‘‘ family safety makes good times better ‘‘ .. We see here a stereotyped image of the ideal happy Danish ‘*kernefamilie*’ (core family) consisting of a father, a mother and two kids; a boy and a girl.

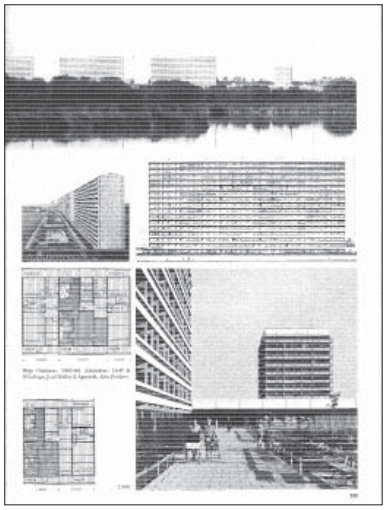
The image - top right - shows a row house residential area - one of the many that were build in the post war period. In the 1960s these areas were supplemented with ‘*paracelhuskvarterer*’ (free standing houses). The houses were grouped around ‘*villaveje*’ (villa roads). There were green meadows for the children to play outside, and a centre with shops and social institutions. The family on the election poster could have been living in this area.

The image - below left - showed images from Høje Gladsaxe - an area of high rise housing (blocks). The blocks were situated so that it would have a shared public space in front as there were large green recreational areas, sports facilities, schools etc. Life in Høje Gladsaxe was dependent on having a car - to go back and forth between home and work. But cars also meant possibilities: The image to the right depicted ‘the ideal family picnic - city life but never the less outside.

Even though Søndergård Park and Høje Gladsaxe were both build by housing associations, residents in Søndergård Park would probably be middle class, and the inhabitants of Høje Gladsaxe working class. Despite the differences, television was the unifying connector. Getting together in front of ‘the telly’ had in many ways replaced getting together outside in public space, which was discussed in the 1965 publication *By Center Menneske* (image below right) - and which also could be used to critique the election poster; as what kind of ‘passive’ family life is this ? What the poster seemed to say was, that a harmonious family life was derived from a man in work and a woman doing the house hold. The family would thus be ‘safe’, if there was work. The political message was, that the social democrats equals social security and employment - in the development of the welfare state - which i.a. also meant initiating large scale building projects.



Søndergård Park



Høje Gladsaxe

VISUAL 3.12

SUBJECT: Historical references - Poster, Søndergård Park, Høje Gladsaxe, Images
SOURCE: - Poster: *Dansk Design 1945-1975* by Lars Dybdahl, page 377, - Recidential overviews: Arkitektur DK, nr 7-8 fra 1979, page 343 and 353, - Image below right: *By Center Menneske*, page 14
YEAR: respectively 1960, 1950 and 1979, 1965, unknown

Vandrehallen - and the adjoining roof terrace and gardens - were some of the places were patients and their relatives, staff and other visitors could move around freely. It played an important role in the hospital environment, was 400 meter long, and contained several activities. The idea was, that there should be sitting areas for 900 people.

Vandrehallen was in the 1968 draft proposal described as follows: " *Vandrehallen* is the hospital's pedestrian street ('*strøggade*'), where patients, relatives and staff can move in one lively environment (*et levende miljø*). It is designed as a light glass building, from which there are views to the south and north to planted roof gardens, residential terraces, park and ramparts. *Vandrehallen* contains day-care and accommodation for upright patients, winter gardens, canteens for staff and visitors, kiosks, patient libraries, hairdressing salons and waiting rooms for children ... *Vandrehallen* should also be the place where contact with the outside is established, for example, it is thought that the *Vandrehal* should be able to accommodate changing exhibitions of art, photographs, etc. ".

The interior of *Vandrehallen* mirrored the pedestrian shopping areas and shopping centres, that the visitors in Hvidovre knew from their daily life outside the hospital.

The design of *Vandrehallen* corresponded with the recommendations in the publication *By Center Menneske from 1965* insinuating that shopping could be seen as a recreational activity in the sub-urbs .. thus relaxing.. also for a potentially troubled mind of a patient.

The two pages below are from the *By Center Menneske* publication. The first page (to the left) depicted the old commercial streets in Copenhagen, who joined together became the pedestrian area called *Strøget*. The draft proposal thus makes it clear, that *Strøget* was the model for *Vandrehallen.*

The second page (to the right) is from the same publication. It depicted examples of the new shopping centres (*butikscentre*). One principle was, that it should be designed around pedestrian traffic. Another principle was, that it should hold a variety of activities. The image - on the top - is a perspective of the main square at *Rødovre Centrum.* It was apparently by the authors seen as a fine example of the kind.

QUOTE

Vandrehallen er hospitalets 'strøggade', hvor patienter, pårørende og personale kan færdes i et levende miljø. Den er udformet som en let glasbygning, hvorfra der er udsigt mod syd og nord til beplantede taghaver, opholdsterrasser og park og voldanlæg. Vandrehallen indeholder dagrum og opholdspladser for oppegående patienter, vinterhaver, kantiner for personale og besøgende, kiosker, patientbibliotek, frisørsalon og venterum for børn ... Vandrehallen skulle også gerne blive det sted, hvor der skabes kontakt udadtil, idet der f.eks. er tænkt på, at vandrehallen skal kunne give plads for skiftende udstillinger af kunst, fotografier m.v."

The 1968 draft proposal

VISUAL 3.13

SUBJECT: *Vandrehallen* in Hvidovre Hospital, *Strøget* in Copenhagen, Examples of shopping streets and malls
SOURCE: - Quote: 1968 draft proposal, - top image: *Tidsskrift for Danske Sygehuse*, særtryk, 1976, - two pages below: *By Center Menneske,* page 33 and 42 (photographs Roald Pay)
YEAR: Respectively 1968, 1976 and 1965

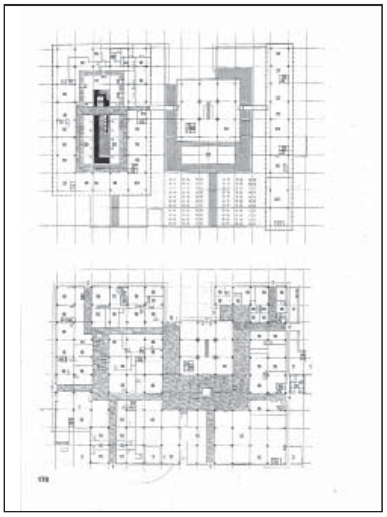
Rødovre Centrum opened in 1966. The intention was, that it should serve as the centre in Rødovre - thereby the name. The centre took part in an urban plan - a way in which the area should be vitalised. It was a site of social experimentation; a place where people in the suburb could use their free time. It would therefore be wrong to see Rødovre Centrum only as a shopping centre. It was more than that. People did not go there exclusively to buy things. They went there to be amused. The centre could be seen as a decor to facilitate and orchestrate the 'social theatre' of the daily life in the suburb. It was as such a performative space.

The article in *Arkitektur DK* concordantly emphasized the social quality of the plan. In here Rødovre Centrum was described as similar to the old towns 'square'. A place of activity, where there is something to look at or participate in - a place that unites people. The plan drawing (top right) furthermore showed how the building - with its 8 decentralised entrances, shopping arcades of different width and inner squares - almost looked like a small neighbourhood. As no people were living there, it was never the less no city. It was an interior of a very particular quality and scale. One which was new and exiting.

Besides a department store and a large number of shops, the centre contained several food stores and pastry, 7 restaurants and cafés, a bowling alley, a race model track, stalls and kiosk, health clinics, a post office, day care facilities, youth clubs, workshops for elderly etc. In the middle were two covered piazzas with each their specific character. One of which was called *festpladsen* ('the festive square'). Here larger events could take place. From the small piazza there was access to a restaurant with an open terrace with luxurious flower arrangements - also called *orchideterassen*. The restaurant also comprised large banqueting rooms. People could thus pursue free time activities, visit the local health physicians or the post office, meet people over a beer or a coffee in one of the cafes, celebrate birthdays and weddings in the cosy atrium restaurant, or hang around and socialize next to the water fountain on the piazza.

In the period after Rødovre Centrum opened it had between 10-15.000 visitors on an ordinary weekday. These were primarily housewives, elderly and children. In the weekends however, it was the site for family excursions and social gatherings of different kinds, and the visitor numbers would then rise to in-between 20-30.000 people, which equals 50 % of the pedestrian area *Strøget* in the inner city of Copenhagen on the same days. Rødovre Centrum had as such proven, that it could work as an alternative city centre for the people of Rødovre.

Rødovre Centrum



182

VISUAL3.14

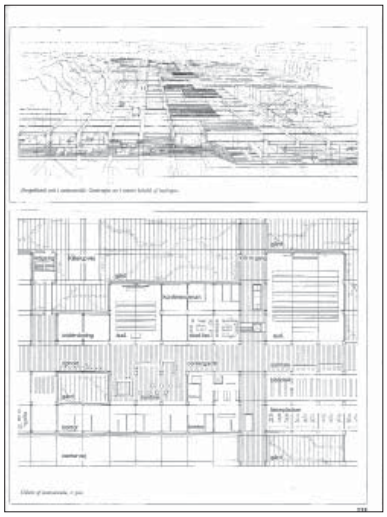
SUBJECT: Rødovre Centrum
SOURCE: *Arkitektur DK*, nr 4, 1967, page 175, 178, and 182
YEAR: 1967

While Rødovre Centrum was the first shopping centre in Denmark, others soon followed. They were a commercial success but equally social, as they accommodated a need in society for places of social gathering, entertainment and play.

The social incentive was not only present in *Vandrehallen* at Hvidovre Hospital or in Rødovre Centrums festive facilities, it was an essential element in another project drawn by Krohn & Hartvig Rasmussen from around the same time period; Odense University Centre. While it was Gunnar Krohn who was in charge of Rødovre Centrum, it was Knud Holscher who won the Odense competition in 1967. As mentioned in the analysis he had been working on the Hvidovre scheme for 4 years in the time before drawing the scheme. It is therefore no surprise, that some ideas are present in both projects.

Seen from the view point of social relations it is obvious, that Holschers *Centergader* (centre streets) share similarities with the ideas embedded into *Vandrehallen* in Hvidovre - as well as with the shopping arcades and squares in Rødovre. On the page below from *Arkitektur DK* in 1976, it is for example described how the 'streets' do not only serve as a communication link between the faculties, canteens, library and the administration, but as lounge areas and centres of activities. Contrary to V*andrehallen* did Odense though have a whole network of streets. In thought it is thus more of 'a city structure'. The street metaphor links it - like Rødovre Centrum - to an urban discussion and mind set.

None of the three mentioned buildings were of course urban structures. They were as pointed out large scale interiors in very large buildings. Seen from our time in history it is important to keep in mind, that what people saw in these spaces was an opportunity to socialize. The designs of the interior (shopping / lounge) streets - independently of whether they were situated in a shopping centre, a university of a hospital - was, that they were made to accommodate social ideas of communality, communication, togetherness and bonding. It was city life turned inwards into a building at the same time as it was private life (and ones privacy) becoming part of the public domain. Being new to their time, these types of interiors had a transformative character. They blurred the boundaries between inside and outside in a quite literal sense at the same time as they blurred the boundaries between the public, private and intimate zones, which again challenged peoples social behaviour.



VISUAL 3.15

SUBJECT: Odense University Centre
SOURCE: Top two pages: *Arkitekten*, nr 10, 1971, page 218 and 219,
Page below: *Arkitektur DK*, nr 7, 1976, page 307
YEAR: 1971 and 1976

POLITICAL ACTIVISM - THE 1970s

During the 1960s and 1970s different communities engaged themselves politically. Outside *Folketinget* (the parliament) and the political parties alternative forms of political actions developed. Areas of social life such as family life, children's welfare, gender and sexuality were increasingly subject to political activity, which should be seen in the context of the constantly more enclosing welfare state.

There were anti-imperialist demonstrations and freedom fighters. Demonstrations and happenings against nuclear power, Vietnam War, inequality, discrimination. The peace movement and women's movement was formed. University students wanted more influence on their education and protested against the regime of their professors. Squatters, hippies, and collectivists challenged the established order of society and home owners and experimented with new ways of living in collectives, in group homes or in alternative communities of which *Thylejren* and *Fristaden Christiania* in Copenhagen are the most well-known examples.

Contrary to the impression you get from the *kernefamilie* portrait on the election poster for the Social Democratic party in 1960, these people (who by the way were a minority and often young adults) were not silent and conventional. They were loud, anti-authoritarian, and revolutionary. The in the analysis suggested political socialist - leftist - climate at Hvidovre Hospital should be seen in this historical perspective: That a part of the Danish people were marching the streets for their individual freedom and rights. The hospitals nick name as 'the red hospital' is an indication, that authority and the distribution of power was as well questioned here.

The images are here as an illustration of the 1970s counter culture.

Left column:

A poster by *Røde Mor* (a group of socialist artist). The images on the poster depicts some of the 'fights' that they thought should be taken. The slogans of the poster are 'take what is yours' - and 'go left' - 1972

Womens movement (*Rødstrømpevægelsen*) demonstrating - slogan 'Women unite yourselves' - 1975

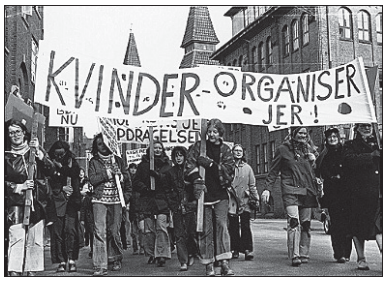
The Danish Nurse Organisation parading the streets of Copenhagen for their rights - 1970

Right column:

Squatting of Christiania - a former empty military terrain in Copenhagen, Christianshavn - 1972

Image from Christiania - after the inhabitation has taken place - It has now become a free state - 1973?

Page 368, *Arkitektur DK* 1979 - top image depicts the squatting of Sofiegården in 1969, which led to the later squatting of Christiania (below photo), in the middle a photo showing the accompanying police actions - Squatting was seen as a political action against house speculation.



VISUAL 3.16

SUBJECT: Historical references - Images about different protest movements, happening, demonstrations
SOURCE: Left column: - Poster: *Dansk Design 1945-1975* by Lars Dybdahl, page 380, - Kvindebevægelsen: danmarkshistorien.dk, - Photo Nurse Organisation: *The four leaf clover and the fiery souls* by Nete Balslev Wingender, page 51. - Right column: Christiania: *Forankring i forandring – Christiania og bevaring som ressource i byomdannelse* (internet), - Squatting of Sofiegården and Christiania: Page 368, *Arkitektur DK*, nr7 -8, 1979
YEAR: 1970, 1972, 1973, 1975, 1979

The article by Gunnar Gundersen, Jack Andersen and Niels Schou in *Tidsskrift for Danske Sygehuse*, 1973, was about the design of Hvidovre Hospital in relation to the prevailing *miljødiskussion* (environmental discussion). They describe how *miljø* (the environment) was one of the most popular subjects for disussion in newspaper articles and magazines. They start of by problematizing the word *miljø,* as it in their opinion was being used for almost anything from housing, office landscapes, to furniture design. Denmark had even gotten a Ministry of Environment. To them *miljø* was 'primarily something with people, their relation with each other, and their relation with the surroundings' 'The physical surroundings were secondary to them.

The environmental discussion was related to several fields. One of which had to do with the natural. The image top to the right is from a demonstration by the NOAH environmental movement. NOAH was (and still is) a flat structure of autonomous groups working on agriculture, sustainability. growth / countervailing, energy and climate. Another *miljø* discussion had to do with the build. As mentioned in the analysis a critique was developing of the large multi storey industrial housing areas like Brønby Strand. The book *bo-miljø* by psychologist Ingrid Gehl was a qualitative study of areas of living seen from a housing sociological and psychological view point. Her book was published in 1969. In 1971 followed the book *Livet mellen husene* by her husband architect Jan Gehl in which he gave concrete examples on the relationship between social everyday life and the physical (architectural) environment of public spaces.

Ingrid Gehl worked at SBI (the Danish Research Institute) who also had issued *By Center Menneske* in 1965. To stimulate interest in a new ideal for residential and urban planning, SBI launched an architect competition in 1971 on 'low dense building'. The winner was a group of young architects named *Vandkunsten.* The argumentation for their project came from the motivation for the contemporary counter culture. In *Arkitektur DK* from 1979 it was described how the architects had used notions such as 'consumers participation', 'taking part in decisions', 'collective responsibility', 'collectivity', 'ecological balance'.. 'collective consciousness'. Even though it was not argued as such, the social aspect of the decision-making process at Hvidovre Hospital was thus in harmony with the progressive youth movement.

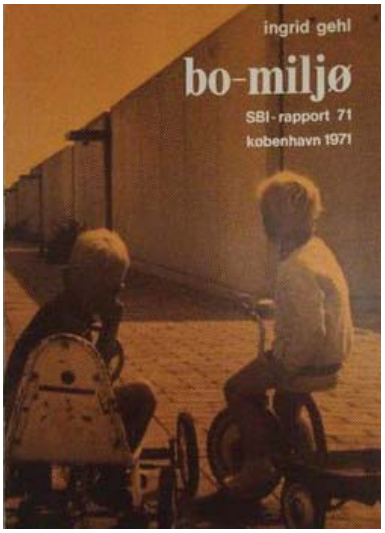
Architects working within the low dense housing movement had as its goal to create spaces for community building. Example is the photo below to the left from *Galgebakken*. The quality of these 'environmental' public spaces were though not only about 'the social' but also about well-being - 'the experiential' - yet another aspect of the environmental discussion, which I will analyse and discuss under Analysis 5.

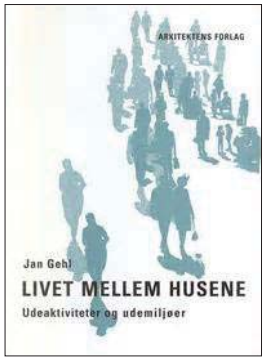
Begrebet »miljø« er »in« og et af tidens mest diskuterede emner. Den daglige avis og ethvert tidsskrift vil indeholde mindst en artikel om »miljø«.

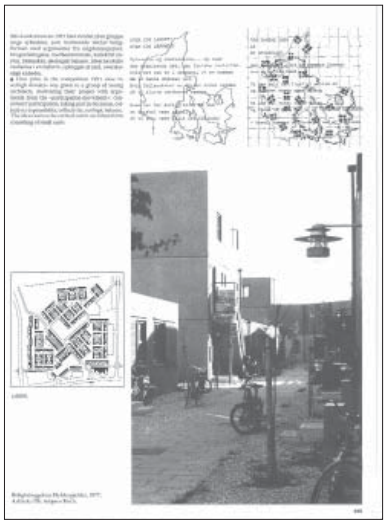
Samtidig er udtrykket blevet fortærsket og hæftet på snart enhver ting, der indgår i vore fysiske omgivelser – ja – vi har endda fået et særligt miljøministerium. Der tales om »miljøvenlige« boliger, »miljøvenlige« kontorlandskaber, »miljøvenlige« møbler, og få er i øvrigt i stand til at definere, hvad der kendetegner et »godt miljø«.

»Miljø« må primært være noget med mennesker, deres forhold til hinanden og deres forhold til omgivelserne. Man skaber ikke et '»et godt miljø« alene gennem en bestemt udformning af de fysiske omgivelser. Der forekommer mange eksempler, der bevidner, at mennesket endog i selvgroede omgivelser, magter at skabe et »godt miljø« De fysiske omgivelser må derfor betragtes som en sekundær – omend stadig betydningsfuld faktor for skabelsen af et »miljø«, hvor mennesker trives godt.

Gunnar Gundersen, Jack Andersen, Niels Schou
Tidsskrift for Danske Sygehuse, årg 40, 1973







VISUAL 3.17

SUBJECT: Historical references - the environmental discussion in Denmark
SOURCE: Left column: - Quote from Tidsskrift for Danske Sygehuse, årg 49, aug 1973, page 156, - Jan Gehl, *Livet mellem husene*, Arkitektens forlag, 1971, - Arkitektur DK, nr 7-8, 1979, page 374-375, - Right column: - photograph of NOAH demonstration: the internet, - Ingrid Gehl, *bo-miljø*, SBI, 1969
YEAR: 1969, 1971, 1973, 1979

ANALYSIS 4

PHOTO OPPOSITE PAGE

SUBJECT: Architects at work
SOURCE: *Opførelse af Københavns Kommunes Hospital i Hvidovre,* film by Nordisk Film
Year: 1973

THE NARRATIVE ASPECT OF ARCHITECTURE

INTRODUCTION

In the analysis and interpretation of the narrative aspect of the architects' work on Hvidovre Hospital I will be looking at the relationship between the images that the architects, the Municipality of Copenhagen and Copenhagen Hospital Services used to describe the work. The images can be either visual or verbal. The goal is to uncover the embedded literal and coded messages; meaning associative or symbolic. What was it that the architects wanted to communicate with their work? How did it relate to the 'reading' of their municipal client and the hospital organisation of users? In what way did the images of the architects help co-create the story of the City of Copenhagen's Hospital in Hvidovre and the identity of its users? While the signification of the architectural imagery of Hvidovre Hospital was related to the culture history of hospitals, it was, however, also tied to a larger referential communicative system of images of which some had to do with an inter-disciplinary architectural discourse, others with an external socio-cultural and/or political. In the distinction, I suggest, that the architectural images were taking part in different discourses at the same time[1].

Central to the analysis is, what anthropological studies point out, that humans are projecting values, norms and symbolic significance onto their surroundings, thereby creating a cultural narrative – a story – something which people can identify with. As a result, there is no culture without narratives[2]. In the Hvidovre Hospital 30 years jubilee DVD, the former staff also touched upon this, when they talked about their common history, and you sense the power of the story of the 'pioneering time'. They, as it were, talked themselves into a communality, a way of acting in the world, a sense of mind. By doing so, they recognized the importance of their common past. Former hospital director Torben Mogensen also pointed at the fact that knowing your own history is important, ''or else you do not understand why your work place looks the way it does". In a cultural context – and in a culture analysis – it is about the ability to recall and address history, the common values, and the collective memory. But this is also a creative process. One creates, an 'identity' by talking / writing about something[3]. It is not a matter of historical facts, an absolute reality, but a story that helps create an 'identity' people can connect with. Thus, the story only exists as long as it is part of the collective memory; that people remember it.

As this analysis is about architecture as a narrative means, I will – in contrast to Analyses 1, 2 and 3 – integrate the view and interpretation of the municipal client and the hospital organisation into the analysis and interpretation. I also refer to views by the larger public, architectural critics and writers. I thereby shift the attention from 'the means of the architects' to become a discussion about 'mediation' – architecture as a communicative

1 I make use of the word 'discourse' to suggest that I am informed by discourse analysis in literature. It is not the syntax (construction) of the image that purely interests me, but the embedded meaning. In a Foucault reading, the discourse analysis would be related to power. I broaden the scope to include other perspectives. The 'sender' – 'receiver' relationship is though fundamental to the analysis. The who, how and why questions.

2 In 'The Analytical Framework' (on my research methodology) I have described how my work is informed by Culture Studies / Cultural Anthropology. Though, the notion 'narrative' is also used within other knowledge fields / disciplines such as Language Studies and History. I discuss the notion under point 2.2 in the chapter; The Analytical Framework. The reason for my interest is that architecture – being a cultural construct – can be used as a narrative means to tell stories. The narrative brings agency to architecture; that it can represent people, their values, and ideas.

3 With the word 'identity' I do not mean something exact. It is relative. In this regard, the 'identity' of Hvidovre Hospital has changed over the years – how people identify and relate to it – the narratives that are embedded into it.

system[4]. This is in line with the way in which I define architecture as building, imagery and language in the methodological chapter. Architects do not only design buildings, they act within society and use different media in their work. The site of the architectural production is thus not only the material construction site but the immaterial site of publications, films, public talks and presentations; a view which is explained in The Analytical Framework[5].

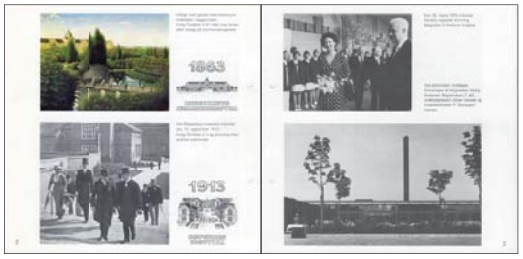
In the interpretive historical analysis of the role of the architects of Kommunehospitalet, Bispebjerg Hospital and Hvidovre Hospital, I proposed that the image of the hospital buildings were used as an agent to send a political and socio-cultural message. One which was related to the specific time and place in which the buildings were made. The architect of Kommunehospitalet (1863), Christian Hansen, and the architect of Bispebjerg Hospital (1913), Martin Nyrup, were both commissioned directly by the Municipality of Copenhagen. My thesis was that these architects were not only chosen because they were good architects. They were perceived as agents for certain values, and so was the reception of their work intertwined with the perception of who they were as people. The Municipality was as such not only concerned about the aesthetical value of the architectural imagery of the architects, they were concerned about the ethical reading of it. As the architect for Hvidovre Hospital was chosen through an architect competition, the selection procedure in this case was different, which is why the jury committee had an important role to play in the competition. I will discuss this in Part 2 of the analysis. Architect Eigil Hartvig Rasmussen and his team however soon gained an important position in the story of the new municipal hospital in Hvidovre. Thus, we see images of all three architects – and a comparison of their work on the municipal hospitals – in a publication Copenhagen Hospital Services made in the year of 1976, when Hvidovre Hospital was inaugurated[6]. The plot in the film made about the development of Copenhagen Hvidovre Hospital in 1973[7] was likewise carried by images of the architects at work. We sense that these people represented the values of the municipality and their wish to build a modern, effective, rational, and humane hospital. It confirms the role that the architects had as agents.

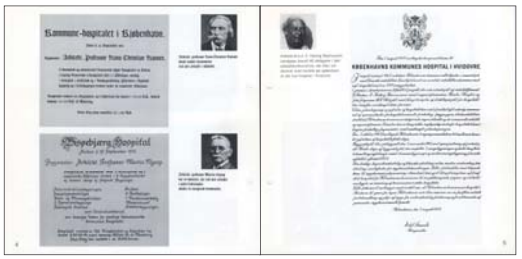
4 The integral approach is derived from the idea, that architecture is not an autonomous discipline. Architecture can only communicate through interpretation. It therefore makes sense to include views from outside the discipline.

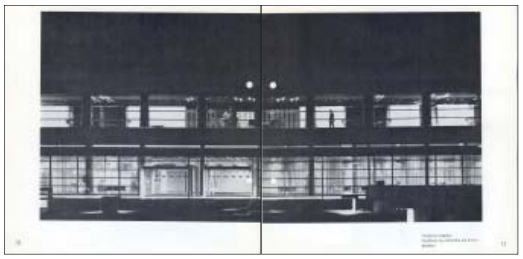
5 I refer here to my thought in 'The Analytical Framework' – point 2.2

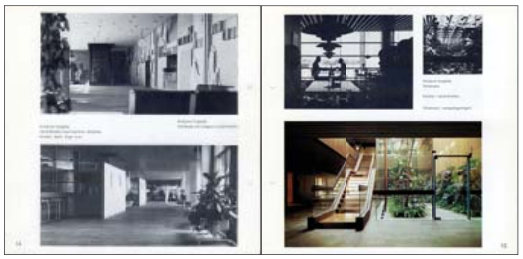
6 *Københavns Kommunes Hvidovre Hospital*, published by Københavns Hospitalsvæsen, 1976

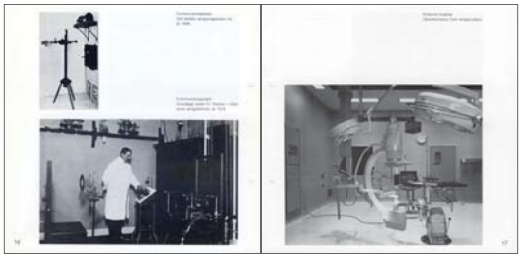
7 *Opførslen af Hvidovre Hospital*, produced by Nordisk Film for The Municipality of Copenhagen in 1973

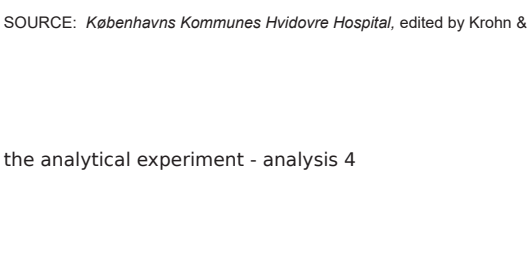


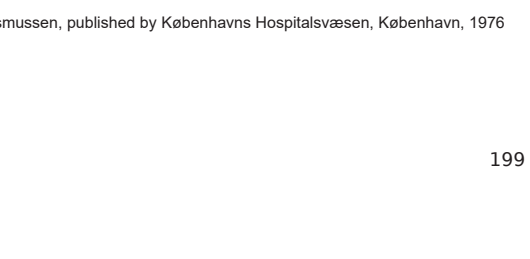












SOURCE: *Københavns Kommunes Hvidovre Hospital,* edited by Krohn & Hartvig Rasmussen, published by Københavns Hospitalsvæsen, København, 1976

PART 1: MEDIA ANALYSIS

PRESENTATION OF THE ARCHITECTURAL PROJECT

The following pages is a catalogue of the published visual imagery of the architectural project - the way in which it was presented to the public. The material is ordered in relation to three categories; - publications by the architects, - the municipal film from 1973, - published material.

In the category of publications by the architects are images from: - the 1963 architect competition, - the 1968 draft proposal, - a publication made by the office of Krohn & Hartvig Rasmussen from around 1973.

What is striking is that the project seems to be presented on two scales; - as an urban project and as the architecture of a series of interiors. This view is confirmed in the municipal film from 1973, and later in the publications.

In relation to the municipal film from 1973, I have only included a number of stills that were relevant for the particular discussion taken here. Thus, the overview contains images of the site model, aerial photographs of the construction site, images of the exterior and a number of perspective drawings of the garden. Other images have been used elsewhere in the analyses like: - images of the model and the construction site in Analysis 1, - and images of the architects at work in the introduction to the case study research.

The compilation of photographs are from diverse articles and books. They were taken around the inauguration of the hospital. Except for a small number of photographs, it is in general uncertain who the photographers were. From what I know Krohn & Hartvig Rasmussen had their own photographers. It is therefore possible, that the images reflected the views of the architects. In some cases - like Arkitektur DK - some of the images were taken by architecture photographer Jørgen Strüwing. The selection and ordering of the photographs is the result of a comparative visual analysis. The first principle in the lay out is that it reflects a number of narratives read in the material. The second principle is that some images are larger than others which corresponds with the exposure the photograph had as media. To demonstrate this, I have under each photograph included a reference list of publications.

The analysis of the visual imagery ran parallel with the analysis of the verbal, But the catalogue also has a value on its own. In fact, the ordering of the images was formative for the interpretations I made. In surfacing the narratives and studying the pictures I at some point also started to think about, what it would have been like to be there on site. In that sense the analysis of the imagery also prepared me for the experiential analysis in Analysis 5.

Københavns kommunes hospital i Hvidovre

Beskrivelse af det 1. præmierede konkurrenceprojekt

Arkitekter: G. Krohn & E. Hartvig Rasmussen

*Københavns kommunes hospital i Hvidovre. Modelfoto.

Sygehusbyggeriets aktuelle problemer.

I de sidste 20-30 år har sygehusbyggeriet været inde i en voldsom udvikling, som har affødt en række nye sygehustyper.

Baggrunden for dette må naturligvis søges i den stærkt internationaliserede lægevidenskab, som i disse år har kunnet anvise nye og forbedrede metoder inden for næsten alle diagnostiske og terapeutiske områder.

Men også andre problemer som sygehusvæsenets stadigt stigende udgifter, mangelen på arbejdskraft, behovet for rationalisering m. v. har frembragt de nye sygehustyper.

Udviklingen kan kort karakteriseres ved følgende to forhold:

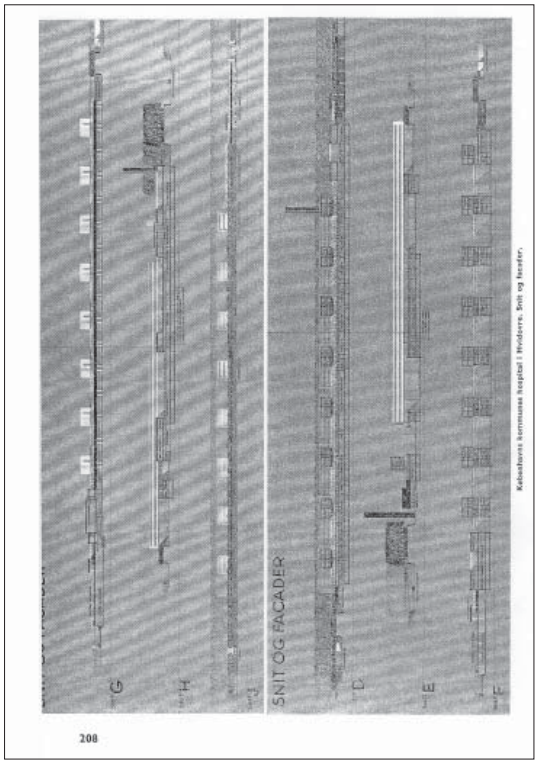
Den voksende lægevidenskabelige underspecialisering.

Behandlingens og plejens intensivering.

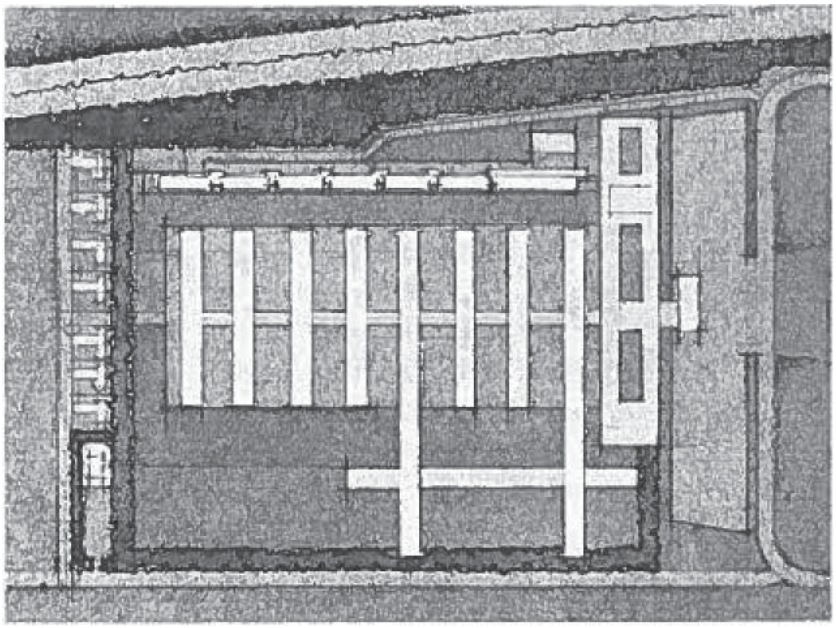
Bygningsmæssigt har disse forhold fundet udtryk i sygehusenes opdeling i hovedafsnittene for diagnostik og behandling, patientpleje, hjælpeafdelinger og administration. Inden for hvert af disse afsnit er der sket en stadig underopdeling efter lægevidenskabelige discipliner, patientmaterialets karakter o. s. v. Ambulatorier, intensivafdelinger og centraldepoter er enkelte resultater af den voksende specialisering og intensivering. Den nærmere fremtid vil sikkert bringe nyskabelser inden for den præventive sygdomsbekæmpelse, efterbehandlingen og den psykiske pleje. Stadigt vil der stilles nye krav til sygehusene, og udviklingen synes langt fra at have kulmineret.

Den stigende anvendelse af tekniske hjælpemidler i forbindelse med nye byggetekniske muligheder har medliggjort og fremskyndet den nævnte udvikling.

207



Presentation of the competition proposal - model and drawings:
- Tidsskrift for Danske Sygehuse, årg 40, 1964



Site plan - the 1963 competition proposal:
- Arkitekten, 1963, nr 18

BY KROHN & HARTVIG RASMUSSEN

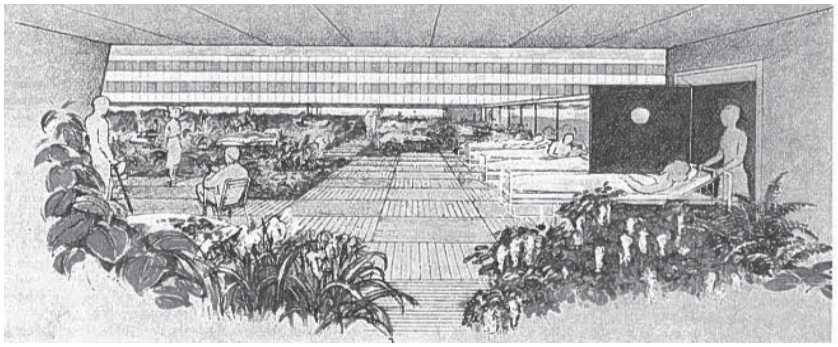
ROOF TERRASSE

Bedridden patients outside
Other people walking around

In nature / sun light
Accessibility and comfort

Modernistic ward facade
Horizontal curtain wall

Looking out from inside
Green framing the view



Roof garden perspective:
- Tidsskrift for Danske Sygehuse, årgang 39, 1963
- Arkitekten, 1963, nr 18

WINTER GARDEN

Views to the outside nature
while having nature inside

A cosy intimate interior
in a domestic arrangement

Wooden ceilings and walls
Modern furniture

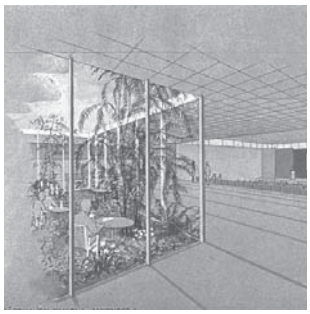
Interior perspectives
- From the private archive of Gunnar Gunnersen

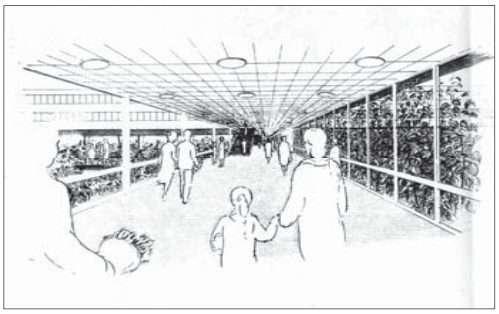
VANDREHAL

Blending inside and outside
Views to nature and sky

Access to patient terrasse
Consumption outside

Visitors enters the hospital
Transparent walkway





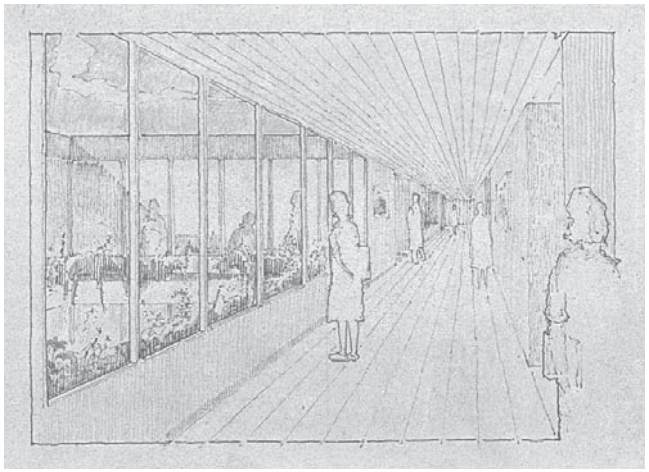
ATRIUM / PATIO

Intimate corridor
Views to the outside

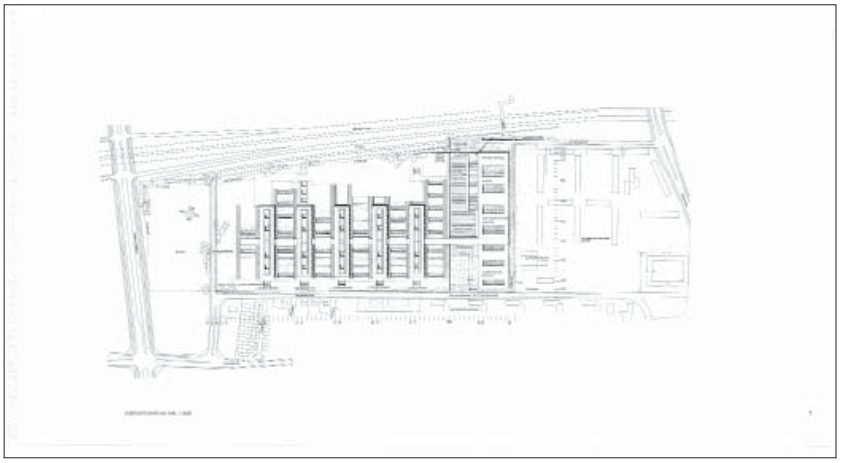
Atrium space with
plant containers in front

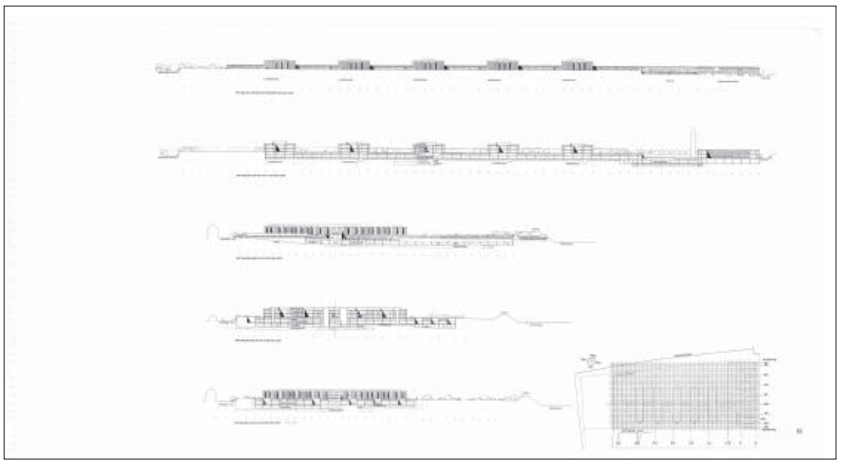
Low ceilings of wood
Maybe wood on floor

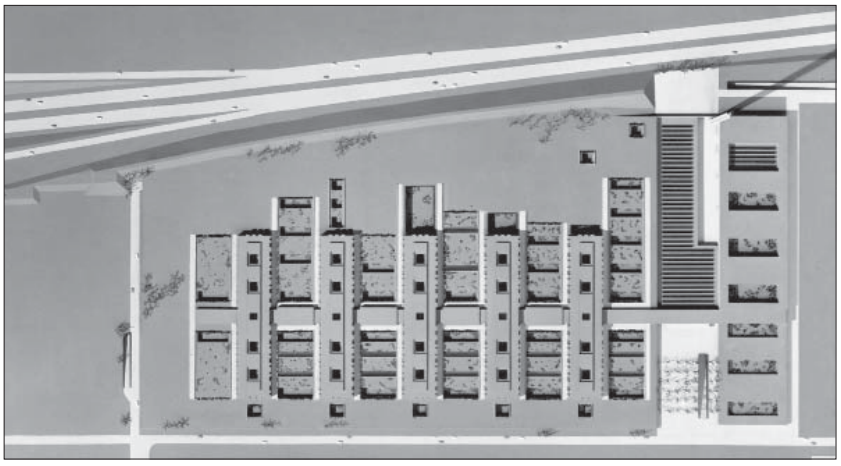
People are passing by
or looking out the window



IMAGERY - 1968 - DRAFT PROPOSAL



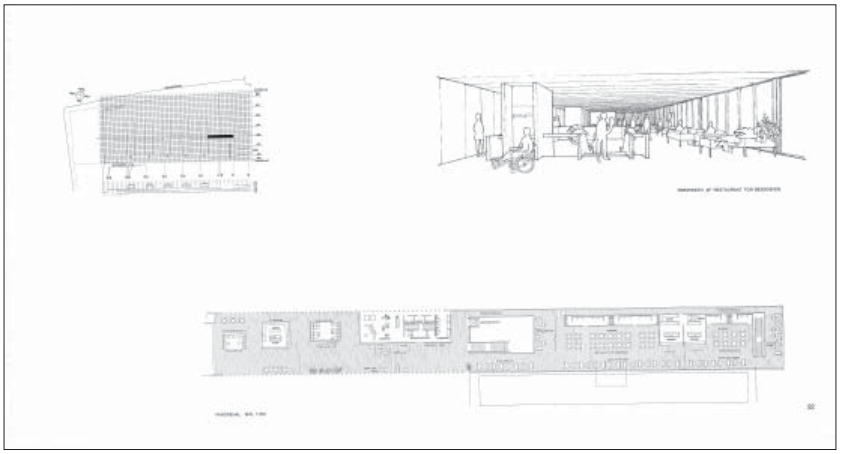


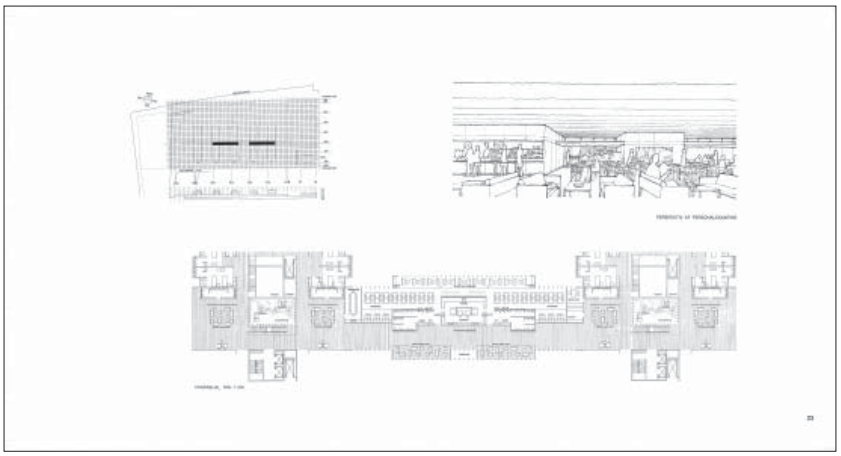


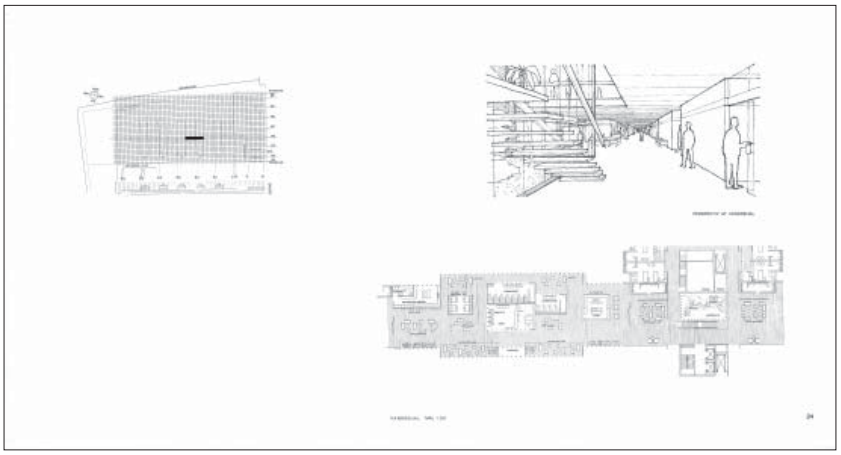
The 1968 draft proposal was in terms of scales presented the same way as the 1963 competition proposal. We see drawings of the site plan in 1:2000, floor plan drawings and facades in 1:1000, an image of the site plan model, images from a 1:1 model of the patient room, and pages with plan drawings in 1:200 with perspectives of the interiors. The exterior facades are not the dominant feature in the presentation. It confirms, that the architects saw it as an urban project and as the the architecture of interiors.

The plan drawings in 1:200 with perspectives of the interiors were primarly about *Vandrehallen*. The drawings on this page depict from top to bottom: - The patient restaurant, - The staff canteen, - *Vandrehallen* itself. The plandrawings and perspectives of the patient restaurant and the canteen are shown in a larger version in Analysis 3 - Visual 3.8 - where I also showed two perspectives depicting life on the patient wards as well as another plan drawing from *Vandrehallen*.

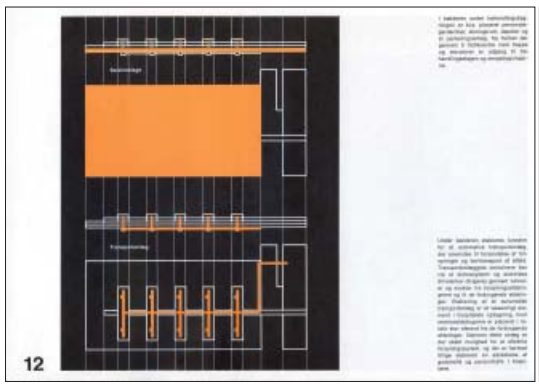
It is obvious from 'reading' the 1968 draft proposal, that *Vandrehallen* with its different types of recreational spaces was something the architects wanted to present to the public. It was as such a significant carrier of meaning. As is to be seen on the perspectives, the interior was an open and communal space here and there subdivided with thin walls - often in glass. Next to the canteens, the library, the shops, the hair dressers saloon, etc, there was the possibility to sit along side the window facade with views to the roof gardens. Outside the wards there were living room like furniture settings with televisions next to a large winter garden. In the restaurants and canteens modern furniture groups divide the large space into smaller compartments.

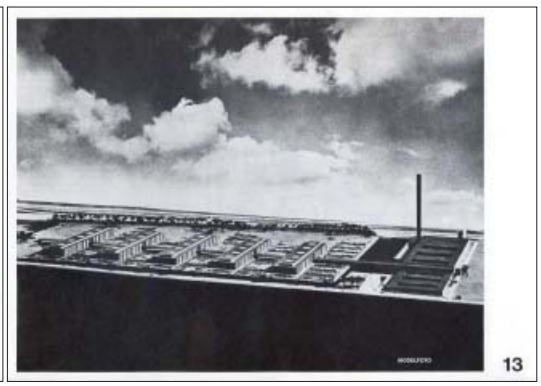


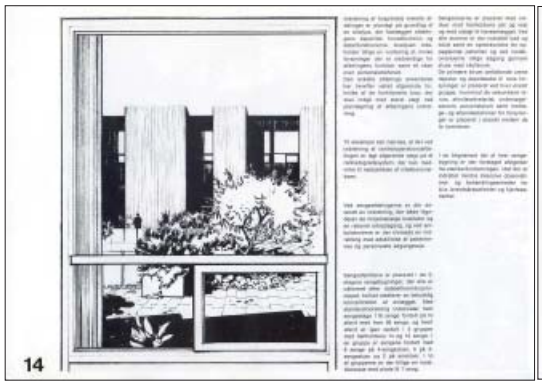


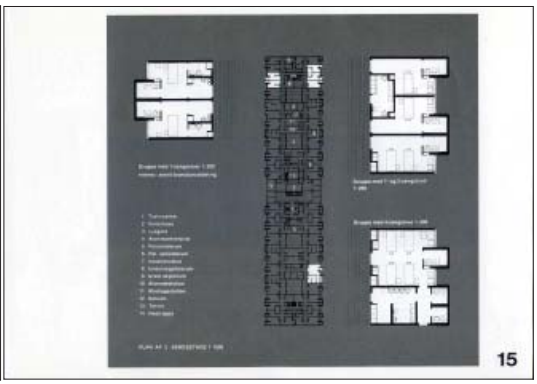


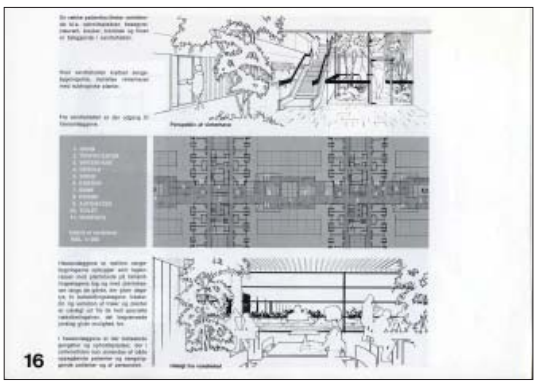
Presentation of the project - the concrete ward facade:
- Københavns Kommunes Hospital i Hvidovre, 1973
- 25 år i udvikling, Glimt fra Hvidovre Hospitals historie, 2001

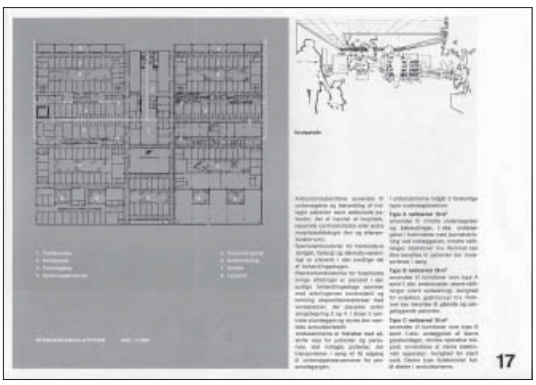












Between 1972-1975 Krohn & Hartvig Rasmussen made a publication about Hvidovre Hospital. The purpose is unknown, but it gives a good impression of what they - as office - thought were important aspects in the project.

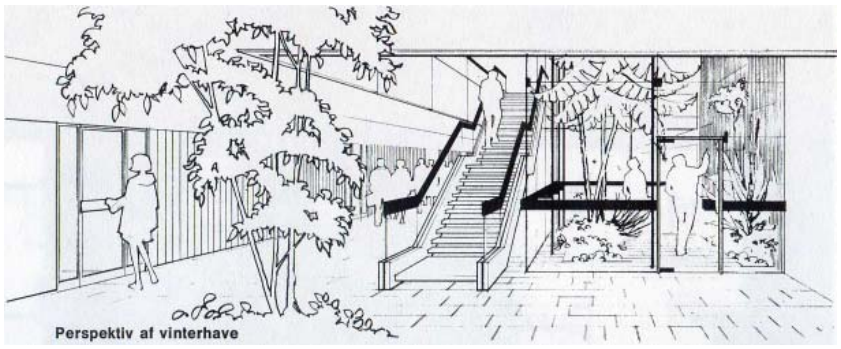
The publication gave a short overview of the history of the project. Besides it showed; - the site plan and site plan model, - a list with program in square meters, - diagrams of the distribution through the building, - plan drawings of a ward, patient rooms, *Vandrehallen*, and a part of the Out Patient Clinic, the Surgical Department and the Central Kitchen. The publication also included some vertical sections through the building and a couple of constructional drawings.

Striking is the cover - as shown top left. The pencil drawing in black and white demonstrate the iconography of the ward facade with its grooved concrete components. An issue which was also accentuated in several photographs, which are to be seen on the following pages.

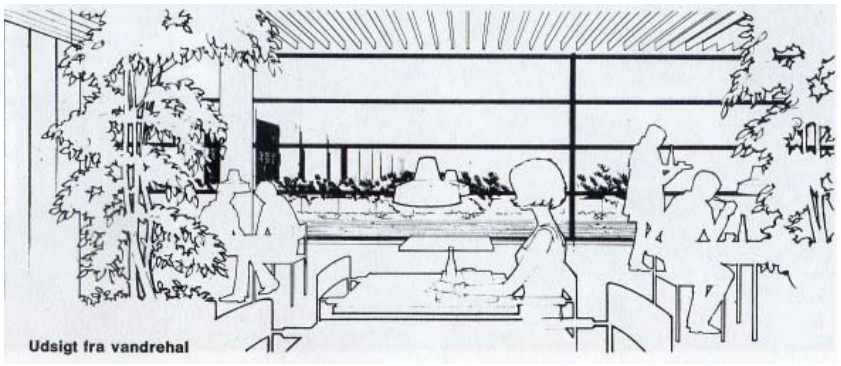
In concordance with the 1963 competiton proposal and the 1968 draft proposal you sense, that the architects saw the quality of the project in the urban form as well as in the architecture of the interiors.

The publication featured four perspective drawings of the interiors. These pages are shown to the left. The largest drawing depicted the view from the patient room into the roof garden. The two perspectives on page 16 showed views from *Vandrehallen*; - a view towards the winter garden, - and a view through the patient canteen where you see the roof gardens in the back. On page 17 is a perspective of a waiting area in the Outpatient Clinic.

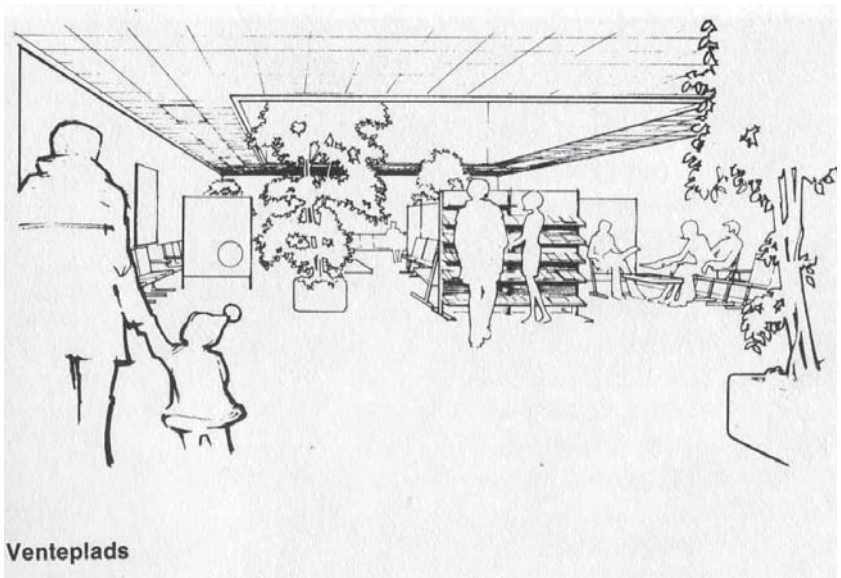
The perspectives portray a green, modern, open and light interior in natural materials with focus on views to the outside gardens or day light access from above. It is obvious, that this hospital should provide intimate spaces for peoples comfort and well-being. It was also a matter of life style, which I wil get back to in the analysis.



Perspektiv af vinterhave



Udsigt fra vandrehal



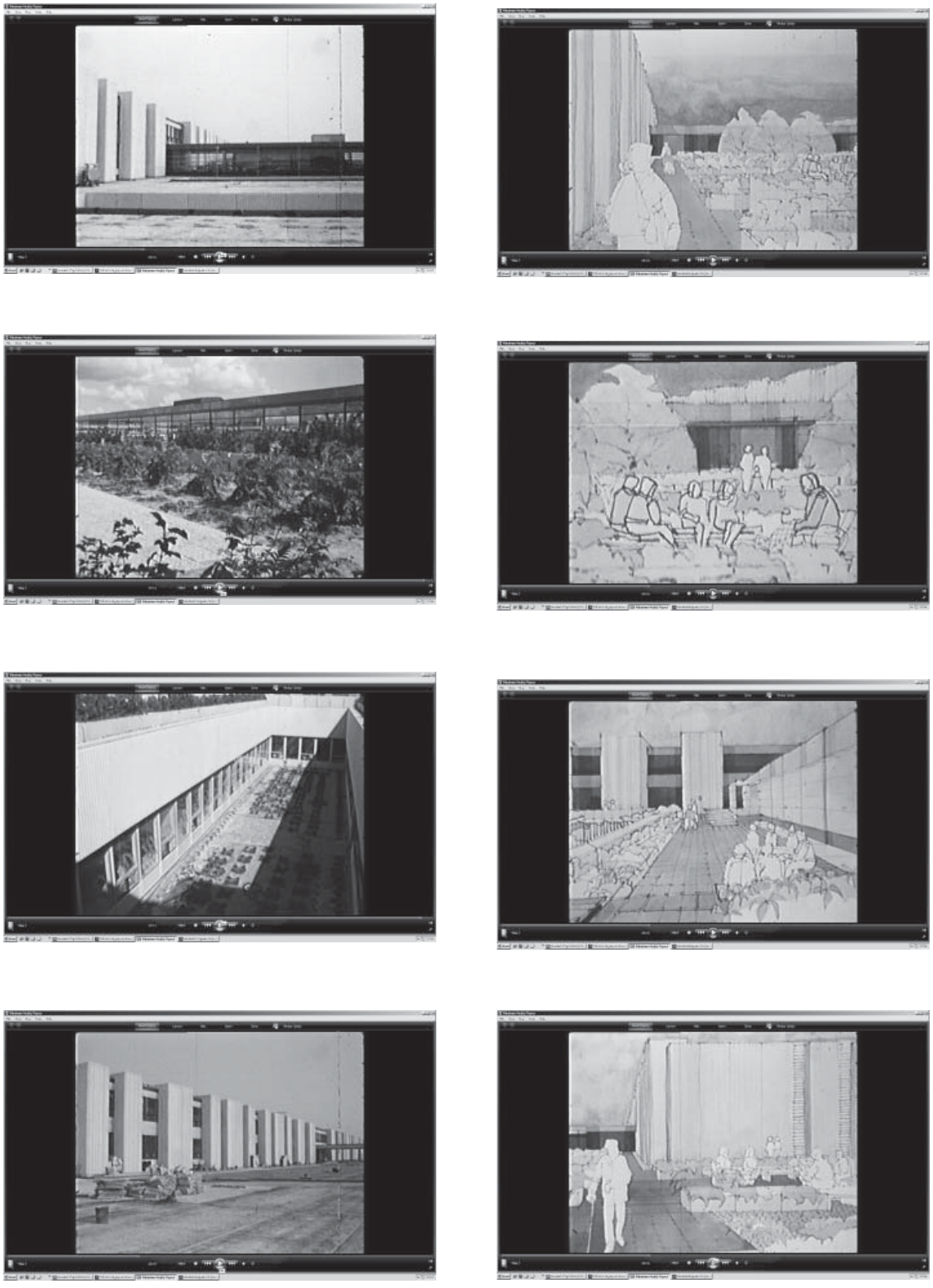
Venteplads



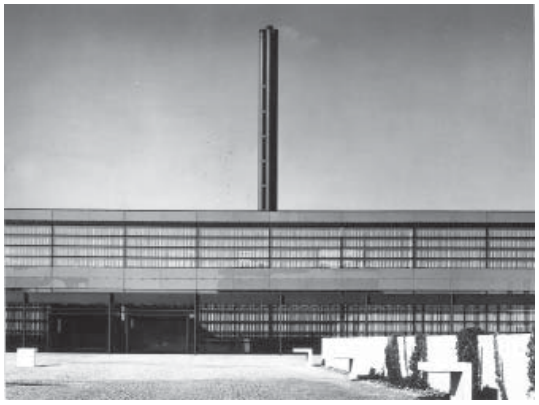




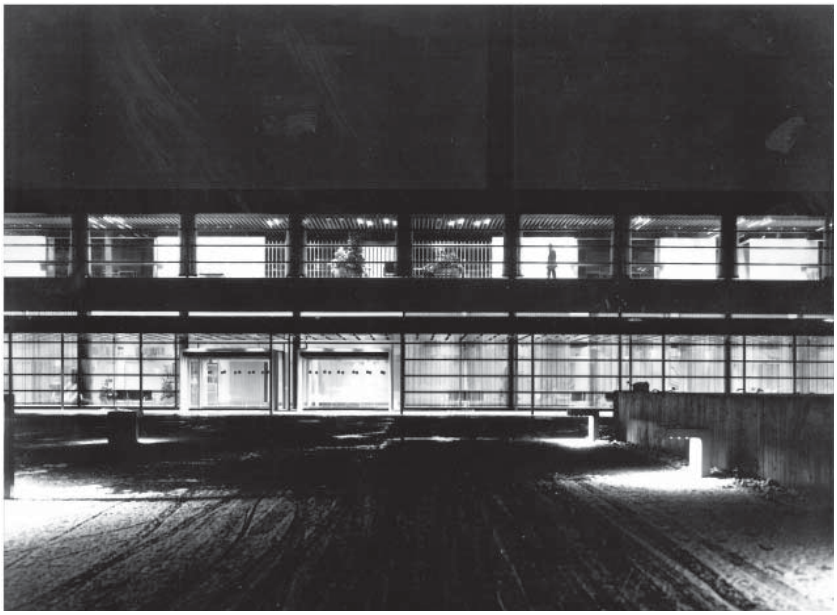

Opførelse af Københavns Kommunes Hospital i Hvidovre - produced by Nordisk Film for The City of Copenhagen, 1973



Opførelse af Københavns Kommunes Hospital i Hvidovre - produced by Nordisk Film for The City of Copenhagen, 1973



Documentation - Facade - Main entrance:
- Arkitektur DK, 1975, nr 8
- Guide til Dansk Arkitektur 1960-1995, Arkitektens Forlag, 1995



Documentation - Facade - Main entrance:
- Arkitektur DK, 1975, nr 8
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
- Københavns Kommunes Hvidovre Hospital, 1976
- LP Nyt, nr 41, 1977
- 25 år i udvikling, Glimt fra Hvidovre Hospitals historie, 2001

Documentation - Entrance foyer with staircase to Vandrehallen
- Arkitektur DK, 1975, nr 8
- Tidsskrift for Danske Sygehuse, april 1976
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk) - in colour
- Københavns Kommunes Hvidovre Hospital, 1976

Documentation - Vandrehal:
- Arkitektur DK, 1975, nr 8
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
- Københavns Kommunes Hvidovre Hospital, 1976
- Tidsskrift for Hospitalsvaskerier, nr 33, maj 1976

Another similar photo of Vandrehallen is to be found in:
- LP Nyt, nr 41, 1977

Documentation - View from Vandrehallen - The Canteen
- Arkitektur DK, 1975, nr 8
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
- Københavns Kommunes Hvidovre Hospital, 1976

Documentation - Visitors restaurant
- LP Nyt, nr 41, 1977

Documentation - Living area on Vandrehallen
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
Another similar photo of this area is to be found in:
- LP Nyt, nr 41, 1977

Documentation - Winter garden and stair to the second floor
- Arkitektur DK, 1975, nr 8
- Københavns Kommunes Hvidovre Hospital, 1976
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
- LP Nyt, nr 41, 1977
- Guide til Dansk Arkitektur 1960-1995, Arkitektens Forlag, 1995 - b/w

AND OUTSIDE LIFE ON THE ROOF TERRASSE

Documentation - Roof terrace:
- Arkitektur DK, 1975, nr 8
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
- Københavns Kommunes Hvidovre Hospital, 1976

Documentation - Roof terrace:
- Information film, produced by Nordisk Film, 1973

Documentation - Roof terrace - Furniture:
- Arkitektur DK, 1975, nr 8

Documentation - Concrete ward facades & Concrete railing:
- Arkitektur DK, 1975, nr 8
- Tidsskrift for Danske Sygehuse, april 1976
- Københavns Kommunes Hvidovre Hospital, 1976
- Tidsskrift for Hospitalsvaskerier, nr 33, maj 1976
- LP Nyt, nr 41, 1977

Documentation - Concrete ward facade:
- Københavns Kommunes Hvidovre Hospital, 1976
- Byggeindustrien, nr 11, 1976
- Københavns Hospitalsvæsen 125 år ..., 1988

Documentation - Concrete ward facade:
- Arkitektur DK, 1975, nr 8
Another similar view - but then in colour - is to be found in:
- Natur og Miljø, nr 1, januar 1979

Documentation - Roof terrace in front of Vandrehallen:
- Arkitektur DK, 1975, nr 8
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)

Documentation - Roof terrace in front of ward facade
- Hovedstaden, Foreningen til Hovedtsadens Forsønnelse 1978

Documentation - Roof terrace:
- Landskab, nr 6, 1984

Documentation - rood terrace in front of ward facade
- Natur og Miljø, nr 1, januar 1979

Documentation - Roof terrace:
- Landskab, nr 6, 1984

Other photos of the roof garden are to be found in:
- Natur og Miljø, nr 1, januar 1979
- Landskab, nr 6, 1984

Documentation - Patient room:
- Arkitektur DK, 1975, nr 8
- Tidsskrift for Danske Sygehuse, april 1976
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
- Københavns Kommunes Hvidovre Hospital, 1976

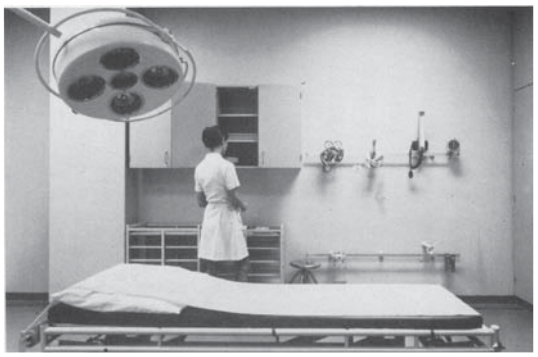
Documentation - Living area on ward corridor:
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)

Documentation - Living area on ward corridor:
- Københavns Kommunes Hvidovre Hospital, 1976

Documentation - Furniture on ward corridor:
- Arkitektur DK, 1975, nr 8

Documentation - The clinical-chemical section:
- Arkitektur DK, 1975, nr 8

Documentation - Laboratory with data-controlled machine:
- Arkitektur DK, 1975, nr 8

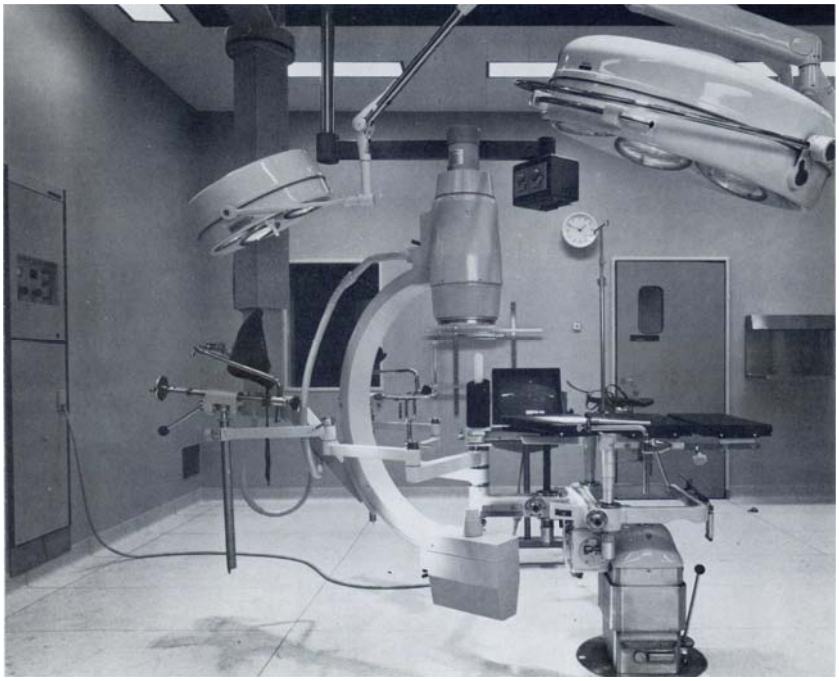


Documentation - Out-patient clinic:
- Arkitektur DK, 1975, nr 8

Documentation - X-Ray department: Photo to the left
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)

Documentation - Staff room on the treatment floot:
- LP Nyt, nr 41, 1977

Documentation - Patio garden on treatment floor:
- Natur og Miljø, nr 1, januar 1979
Another view of the patio garden is to be found in:
- Landskab, nr 6, 1984



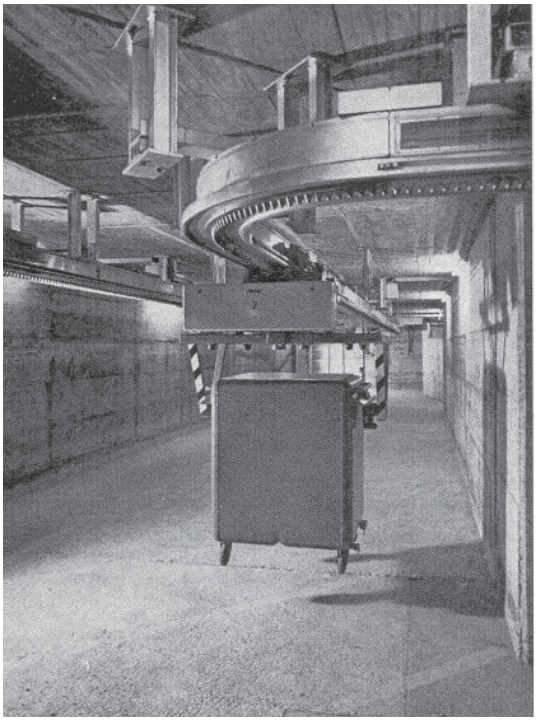
Documentation - Operating theatre with x-ray equipment:
- Tidsskrift for Danske Sygehuse, april 1976
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
- Københavns Kommunes Hvidovre Hospital, 1976

Documentation - Corridor in treatment area
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)

Documentation - Department of Anaesthesiology
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)

Documentation - Emergency room: Photo to the left
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)

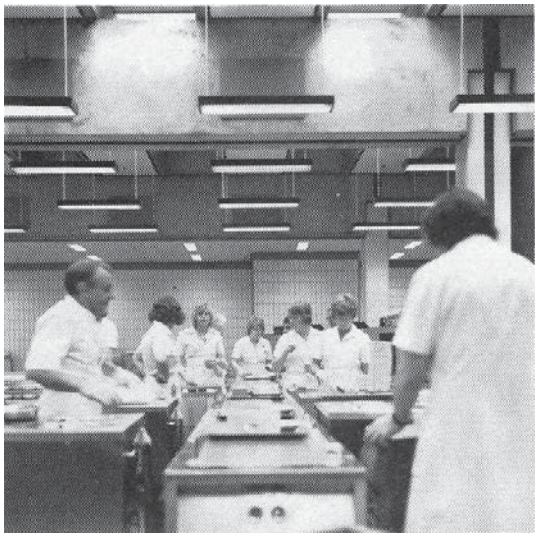
Documentation - Operating theater:
- Københavns Kommunes Hvidovre Hospital, 1976



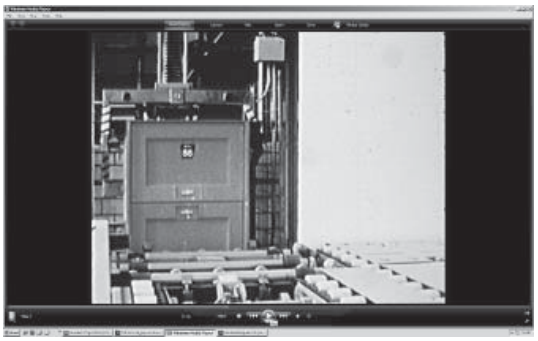
Documentation: Container in transport
- Tidsskrift for Danske Sygehuse, årg 49, maj 1973
Another similar photos of this view is to be found in:
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)

Documentation - The hot kitchen:
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
- Arkitektur DK, 1975, nr 8

Documentation - Conveyor belt - kitchen:
- Information film, produced by Nordisk Film, 1973



Documentation - Conveyor belt - kitchen:
- Tidsskrift for Danske Sygehuse, jul/aug 1976, (særtryk)
- Arkitektur DK, 1975, nr 8



Documentation - The underground transport system:
- Information film, produced by Nordisk Film, 1973

PART 1: MEDIA ANALYSIS

The primary sources in this analysis are: - the 1963 competition proposal published in *Tidsskrift for Danske Sygehuse*, årgang 40, 1964 and in *Arkitekten* nr 18, 1963, - the 1968 draft proposal, not published[8], - the article 'Københavns kommunes hospital i Hvidovre' by Gunnar Gundersen, Jack Andersen and Niels Schou published in *Tidsskrift for Danske Sygehuse*, årg. 49, august 1973, - the publication *Københavns Kommunes Hospital i Hvidovre*, made by Krohn & Hartvig Rasmussen in 1973, - the article 'Københavns Kommunes Hospital i Hvidovre' by Gunnar Gunnersen published in *Tidsskrift for Danske Sygehuse*, årg. 52, July, 1976, - the article 'Københavns Kommunes Hospital i Hvidovre' by Gunnar Gunnersen published in *LP Nyt*, nr 411, 1977, - the film *Opførslen af Hvidovre Hospital*, produced by Nordisk Film for the Municipal of Copenhagen in 1973, - the publication *Københavns Kommunes Hvidovre Hospital*, edited by Krohn & Hartvig Rasmussen and published by Copenhagen Hospital Services, 1976, - a press release by the municipality of Copenhagen from 1976, found in the archives of Hvidovre hospital, - speeches at the inauguration of the hospital march 1976 published in *Tidsskrift for Danske Sygehuse*, April, 1976, - the publication *25 år i udvikling, glimt fra Hvidovre Hospitals historie* published by Hvidovre Hospital, 2001, - the jubilee DVD *Hvidovre Hospital 30 år* made by Hvidovre Hospital in 2006.

In the analysis of the collected publications, film, talks, articles and reports I have come to understand that there was not one narrative – that is story – in the material. There were several at the same time. Equally important, I have come to understand that different types of 'languages' were being used in the imagery[9], which reflects that several positions were embedded into the project. This has also been discussed in the previous analyses[10]. In this analysis I will concentrate on the rhetorical quality of the different narratives embedded into the imagery, that was put forward in the presentation of the project. My idea is that each narrative served a purpose. They were not a goal in themselves but a means – representing certain beliefs, values and interest that were layered into the project of which some were like minded others diverging and opposites. The images and words used in the project were thus not neutral. They took part in a meaning making process – a social cultural and sometimes political discourse – defining the role that the architecture of Hvidovre Hospital played as imagery. I have ordered the narratives in relation to the positions and 'language' used.

1.1 A HUMANE HOSPITAL ENVIRONMENT

In Analyses 1 and Analysis 2 we have heard the architects argue, how a low decentralised hospital would ensure **flexibility** in the building structure and the possibility for **expansion**, as well as it would provide the possibility for a **close collaboration and contact** between the patient care in the wards and the diagnostic and cure activities in the treatment building underneath.

Another essential argument for the 1963 competition proposal was, according to Eigil Hartvig Rasmussen, that "The low decentralized building system allows for a more **humane** hospital **environment** (*humant sygehusmiljø*) than is the case with the usual highly centralized hospital facilities" (Hartvig Rasmussen, 1964: 212). Furthermore, he explained that through "the breakdown of the facility into smaller hospitals, it would be possible to get away from the big hospitals 'ant hill impression' (*myretuepræg*) and restore a part of the **intimacy** and **cosiness** (*hygge*) that is known from many small hospital facilities or larger **pavilion hospitals**" (Hartvig Rasmussen, 1964: 215). The so called 'humanisation of the hospital' was thus tied to ideas of 'intimacy' and 'cosiness' (*hygge*),

8 I have found a copy at Hvidovre Hospital archive.

9 That is if we understand the word 'imagery' as *billedsprog* in Danish meaning 'language' in a transferred meaning. By referring to something else, the image communicates like a metaphor or a symbol would – a mental image.

10 In the former analyses I have shown how different types of architects acted within the project with each their role. These analyses also demonstrated how the representational 'language' changed with the different perspectives. It reflected, what the architects were thinking about – their world view. Thus, representation concerns all analyses.

which according to Eigil Hartvig Rasmussen could be stimulated by dividing the hospital facility into smaller units. The notions 'intimacy' and 'cosiness' (*hygge*) were important socio-cultural carriers of meaning. They indicated a narrative that the hospital should be designed from the perspective of the everyday life of humans. It was an empathic view point – one which was compassionate and caring[11]. The vocabulary of Eigil Hartvig Rasmussen as such addressed ethical values in the Danish culture, and the word 'cosiness' (*hygge*) still appeals to the identity of many Danes today[12].

Equally significant in the language used by the architect, was the use of the word 'environment' (*miljø*) and the reference to the pavilion hospital. Each of them became, metaphorically speaking 'anchors' for the further development of the projects imagery. While the word 'environment' was new to the architectural discussion in the beginning of the 1960s, the pavilion hospital was old. As I will explain later, Eigil Hartvig Rasmussen used it to bring forward images of association – a message – about a place of human comfort, tranquillity and rest. From the 1963 architect competition onward, the environmental argument was enforced. Thus, in 1968 the architects wrote that they, in the re-drafted proposal, have "sought to **avoid an institutionalized** hospital environment". They did not see "any task in having the architecture mirror the specific hospital technological but sought **a humane and reconciliatory environment**" (Krohn & Hartvig Rasmussen, 1968: 166). Here, they explicitly stated that the imagery of 'the humane hospital environment' was in opposition to that of the 'institutional', which was associatively linked to hospital technology; instruments, computers, appliances and machines – the non-human – the clinical. It is an example of the architects taking a position – adding a value into their work – through the use of a narrative.

What an institutional imagery consisted of – except medical technology –, was further explained in an article written in 1973 in *Tidskrift for Danske Sygehuse*. It was written by the architects Gunnar Gundersen, Jack Andersen, and Niels Schou, who at that time were involved with the design of the interiors at Hvidovre Hospital. Here, they described the institutional imagery of a typical hospital as a dull, monotonously, mono colour, alienating interior with little comfort. An imagery which they, with their work, would like to counter-act. The position was almost political, when they argued that the principal value of the new hospital in Hvidovre was, that it was a "**reaction against** a nearly unilaterally prevailing view of a hospital as **a highly industrialised and effective cure factory**, which ignores the cure that may be found in the environmental qualities" (Gundersen, Andersen, Schou, 1973: 157). We must assume that the factory reference was a metaphor. What they seem to say was, that they opposed aesthetics that only reflects the mechanical rationality of a hospital institution's functionality and production form. The statement was embedded into a larger societal critique of an utilitarian – and economical driven – mind set, which was articulated in the same article as follows: "We are living in a time, in which the functional, the effective, the economical is so overwhelming, that there hardly is an opportunity to include **the aesthetical**, **the pleasurable** – in short, **the environmental enhancing** into the picture" (Gundersen, Andersen, Schou, 1973: 156-157). The environmental discussion was – as also discussed in Analysis 3 – not only addressing form but also social issues. The word

11 I will get back to this quality in the following analysis as well – in the discussion of the experiential.

12 I refer here to my knowledge as having been born, raised and educated in Denmark. But I also refer to the (international) acknowledgement and debate of 'hygge' being a Danish value. This has been expressed in different media over the last years. Diverse books have been written on the subject.

'pleasurable' might therefore very well have referred to the performative space in *Vandrehallen*, where people could stroll around and socialize. The 'humane hospital environment' was therefore not about life style, colour or furniture. It was about togetherness and bonding.

From the 1963 architect competition to the final discussions in magazines, the architects pointed at the fact, that "**the architectural efforts are concentrated in the hospitals inner environments**, in the wards and patient living areas, in the lively activities of *Vandrehallen* and in the many atrium spaces in the treatment building" (Krohn &Hartvig Rasmussen, 1968: 7). The point was that the hospital was thought from within. The facades were subordinated. *Vandrehallen* was as previously discussed public space turned inwards into a building, but then again, the interior also had domestic references. As described in Analysis 3, social conventions were challenged in the time period when Hvidovre Hospital was developed and built, and boundaries between the public and the private blurred. As a result the message of the interiors at Hvidovre Hospital were – if we look at it from the view point of communication – to a large extent 'communality'; the 'we are one big family' type of imagery[13]. This corresponded with the youth culture of the 1970s, but also with the ethical work ethos among the staff[14]. Thus, the architecture of the interiors had a significant role to play, which was also conveyed in the publications made about the hospital, where in specific the spacious entrance foyer with the large public art work, views through the open structure of *Vandrehallen* with its public facilities, winter gardens and canteens, as well as the patient room and living areas on the wards were a matter of attention for the eyes of the photographers. These pictures framed and defined what people were supposed to see: The coded and non-coded messages in the interiors. Together, they encapsulated the imagery of 'the humane hospital environment' that Krohn & Hartvig Rasmussen envisioned for Hvidovre Hospital, and as I will explain later, also other narratives which go beyond that of the hospital discussion.

Whereas the official program for the 1963 architect competition did not suggest 'a humane hospital environment', the ideals and architectural ideas of architect Eigil Hartvig Rasmussen and his fellow architects at Krohn & Hartvig Rasmussen were soon taken over by the Municipal of Copenhagen and the staff at Hvidovre Hospital. At the inauguration of the hospital on the 26th of March 1976 – in the presence of 500 guests and her Royal Highness Queen Margrethe of Denmark the II – architect Eigil Hartvig Rasmussen was praised as a visionary by hospital mayor Alsing Andersen, who in his speech mentioned that '**closeness**' (*nærhed*) and '**environment**' (*miljø*) were the words he himself would use to describe the hospital in Hvidovre. The Medical Council President, chief physician, Ebbe Kragelund in his speech also complimented the architecture of Krohn & Hartvig Rasmussen, which he called "**low and pretty**" but foremost "**a friendly climate for the patients**". The way he saw it, the architects had combined the complexity of a large hospitals with the **intimacy** of a small hospital, and he mentioned the winter gardens, *Vandrehallen*, the living areas, the shops, the canteens as "favourable prerequisites for the staff efforts to create a climate, which is an invaluable supplement to what is called the effectiveness of a mastodon hospital". It demonstrates the role the architects had had in the field – and the understanding their thought field had paved for another kind of hospital

13 I here quote one of the doctors saying this in the 30 years jubilee DVD about Hvidovre Hospital.

14 As described in Analysis 3, doctors worked in inter-disciplinary teams. See Analysis 3

imagery than the clinical.[15]

That the humanistic message sent by the architects was received not only by the municipal client and hospital staff but by a larger audience can be read from a statement by 'Foreningen til Hovedstadens Forskønnelse'. The association was founded in 1885 by noble citizens in Copenhagen for the beautification of the Capital[16]. In 1978, the municipality of Copenhagen received their honourable recognition for their project 'Hvidovre Hospital' accompanied with the following words: "The municipality of Copenhagen has, with the construction of the hospital in Hvidovre, given the citizens of the Capital a **humane**, **friendly and beautiful hospital** which, despite its size, does not seem to be a burden, but is well adapted to its adjacent residential neighbourhood. The horizontal solution chosen here has opened new perspectives for modern hospital construction, where the demand for **a good humane environment** must be considered as high as the requirement for rational operation and flexibility". This demonstrates how the hospital was positively received in its time by the people of Copenhagen, and that it did appeal the way Eigil Hartvig Rasmussen had hoped for.

1.2 THE NATURAL

Another significant aspect in the imagery of Hvidovre Hospital was the presence of nature both inside and outside; - winter gardens inside *Vandrehallen*, - atrium gardens on the treatment floor, - roof gardens on top of the treatment building in-between the wards. The gardens were designed by landscape architect Morten Klint in contact with Eigil Hartvig Rasmussen. Except for the winter gardens inside *Vandrehallen*, the garden design was scarcely published[17]. The magazines *Landskab* and *Natur & Miljø* each featured but one article with images of the roof gardens. An additional article was published in *Landskab* on Morten Klint's design for the earthwork alongside the high way. Included into most publications about Hvidovre Hospital was primarily a picture of the outside sitting areas - the terrace next to *Vandrehallen*, as well as images of the facades with some green in front.

Despite the lack of a visual representation in the publications, the gardens played a key role for the jury in the architect competition in the argumentation for the decentralised hospital. I will get back to this in Part 2 of the analysis. To make the jury aware that his proposal was equally landscape and building design, Eigil Hartvig Rasmussen had, as previously mentioned, made a comparison between his proposal and pavilion hospitals. The reference could be seen as a linguistic message – a metaphor. The connotation was that the hospital wards would be situated in a park-like setting. It suggested a differentiated reading of what a hospital could be like – the natural and built-in harmony –, a place where inside and outside could meet. The reason for doing so was founded in a nature-romantic and biased belief by Eigil Hartvig Rasmussen, that people in Denmark were accustomed

15 In an unpublished text written by Gunnar Gundersen, he described how Hvidovre Hospital became a role model for many other hospitals in Denmark as well as abroad. In architect competitions in the 1960s for large scale hospitals in Sweden (Södertälje, Jönköping, Varberg) and Germany (Regensburg, Berlin, Lübeck), they choose a design that was related to the design of Krohn & Hartvig Rasmussen in Hvidovre. In Denmark the new hospitals in Kolding, Frederikssund, Slagelse and Køge also shared similarities with the design of Hvidovre Hospital. What is more, people came to visit from all over the world. The two Dutch architecture historians Cor Wagenaar and Noor Mens confirm in their book *Architectuur voor de gezondheidszorg in Nederland*, Nai uitgevers, Rotterdam, 2010, the influence the design for Hvidovre Hospital had on the hospital debate of the 1960s / 1970s.

16 As part of its fulfilment the association has since its beginning promoted buildings of a high architectural and artistic level, as they have awarded plaques and diplomas to private or public initiatives.

17 Considering that the roof terraces at Hvidovre Hospital were an innovative constructional but also plant-related experiment, it is all the more surprising, that this part of the project did not get more publicity.

to nature, and should thus be close to nature in times of emotional need and physical distress. This view is supported by the conversations I have had with people who knew Eigil Hartvig Rasmussen[18]. His intentions are also to be read from the following quote from the 1963 competition proposal: "The division into smaller, low patient pavilions in good contact with the plants and birdlife of the terrain will emphasize **the intimate** (*det intime*) and '**the close**' (*det nære*), that most patients are accustomed to from **the domestic environment**" (Hartvig Rasmussen, 1964: 215). Eigil Hartvig Rasmussen was here talking about intimacy, the close, the domestic. Indirectly he was saying that a hospital should be a familiar place. A place that people can identify and connect with. Not a place of alienation. A hospital should remind people of their home surroundings. An essential element was the inclusion of nature; that is gardens. It is an example of how the work on Hvidovre Hospital was informed by Eigil Hartvig Rasmussen's personal views and values as well as his history, which I will get back into in the historical part of the analysis. Accordingly, the 1963 competition proposal showed several perspectives of the hospital interiors with people, who either look out into or are in contact with nature. One of these perspectives was printed in both *Arkitekten* and *Tidsskrift for Danske Sygehuse* in 1963 in relation to the announcement of the outcome of the architect competition. The image had a prominent position in both magazines in the reportage on the winning proposal. The perspective apparently was more appealing to the editors than the plan drawings. It portrayed a bedridden patient being driven onto the roof terrace garden by a nurse, where other patients and care takers were present as well. It was a poetic but also a powerful image as it symbolized the ancient idea of healing in daylight, fresh air, and nature translated into a modern language of form. In its likeness with the use of gardens at pavilion hospitals - or sanatoria - it confirmed that Hvidovre Hospital in his design would hold the same qualities as these places. Moreover, as natural environments had played an important role in the Danish culture as a place of reconciliation and rest, Eigil Hartvig Rasmussen with the image appealed to a significant collective memory, a cultural narrative, and core value.[19]

1.3 AMBIGUITY

The planned patient friendly environment at Hvidovre Hospital was one of the narratives in the film *Københavns Kommunes Hospital i Hvidovre*. The film was produced in 1973 by Nordisk Film for the Municipality of Copenhagen. A series of perspective drawings depicted in the film the qualities of the future roof gardens, while a voice-over explained, how the gardens would provide the new large hospital in Hvidovre with "the same friendly environment that was found in the old hospitals built after the pavilion system" (Københavns Kommunes Hospital i Hvidovre, 1973). We see here, how the municipality made use of the pavilion garden reference to trigger a pleasant memory in the public. This confirms that they considered the gardens at Hvidovre Hospital as important. The film also discussed how a large amount of work had been done to design pleasant surroundings in the wards as well as a lively *Vandrehal*, which emphasized the social agenda. Yet, independently of its appeal, the film also spoke of other narratives than the 'humane' and/ or the 'nature-romantic'. In Analysis 1 I have described how a

18 The daughters of Eigil Hartvig Rasmussen have told me, how he himself would find comfort in gardening. Being in nature / outside was important to him. They confirmed that the gardens at Hvidovre were essential to him.

19 In the introductory historical comparison of the architecture of Kommunehospitalet, Bispebjerg Hospital and Hvidovre Hospital I have described how gardens were a fundamental part of the designs supported by the view of the different hospital committees. In 'The Analytical Position' (point 1.3), I have also discussed how nature – natural environments – and its comforting (and perceived / believed healthy qualities) permeates for a large part the way people live in Denmark today, which is also to be seen in the present hospital debate.

relatively large part of the film was about the carefully staged industrialised building process and its coordination (Visual 1.18). And as mentioned there, one sense a certain pride in the imagery of the assembly systems effective and logical building culture. The soundscape accompanying the exterior images was a mix of clicking cranes, jazzy music, and bird song. This is in itself worthwhile noticing, as it is a rather precise representation of the ambiguous character of the messages in the film. No doubt that the architecture of the interior was appreciated for its humanistic qualities, but the rationality of the masterfully executed construction was also presented as something important in the film as was the quality of architectural engineering, planning procedures and experimentation in the field. What is more, the film explained very well how progress within medical science and changes in the patient population made demands on the capacity of the hospital operation. The new hospital in Hvidovre was therefore not build to increase the number of patients within the municipality but to improve the hospital services. "In a modern hospital, it is therefore necessary to **reconcile the need for space-intensive technology with regard to the well-being of patients and staff**" (Københavns Kommunes Hospital i Hvidovre, 1973). The clinical instruments, computers, appliances and machines that the architects wanted to out-balance visually in their work on the architecture of the interiors in fact occupied a large part of the hospital in Hvidovre. For the Municipality of Copenhagen, this very technical aspect of Hvidovre Hospital was of importance. It was, in fact, the very reason for Hvidovre Hospital being built, and therefore something to present to the public. In terms of technique, the film primarily focused on the automatic transportation system, though, which was crucial for the distribution of goods and food in the horizontal and dispersed Hvidovre Hospital, as well as on showing images from *Centralkøkkenet* (the kitchen), which resembled a factory with people in white uniforms arranging food on trays on a conveyor belt, while the voice-over explained how the kitchen had to produce 2200 individual meals a day. These images portrayed an aesthetic appeal that communicated mechanical regularity, efficiency, and control but also a functionalist – and modernistic – dream. The imagery of Hvidovre Hospital was thus not homogenous. It reflected diverging interests that were present at the same time – some of which opposed each other.

1.4 THE MEDICAL MACHINE

Considering the importance of the activities on the treatment floor, the areas situated there were highly underrepresented in the visual documentation to the broader public. In fact, the municipal film from 1973 about the development of Hvidovre Hospital only featured a very brief and indirect introduction to the consequences of technological progress along with a discussion and some images about physical rehabilitation. The municipal publication *Københavns Kommunes Hvidovre Hospital* from 1976 likewise only showed two images. Relevant for the analysis of the imagery in the publication is that it was edited by Krohn & Hartvig Rasmussen for Copenhagen Hospital Services, who published it. It was thus a collaborative responsibility. It was moreover most possibly made in relation to the inauguration of the hospital in the spring of 1976. What they showed – and did not show – in this promotional folder was thus of importance. A very short introductory text explained how the architecture at Hvidovre Hospital accommodated both functionality, scientific and technological progress and comfort. The two images included were both of an operation room from the Central Surgical Department. An issue of *Tidsskrift for Danske Sygehuse* –

published by the Association for Hospital Administrators in Denmark in July 1976 – on the contrary included a series of images from the treatment floor. Could it be that the municipality (possibly under the advice of the architects) did not consider it relevant to show images of the more utilitarian part of the project to people outside the organisation, whereas it was considered interesting for people inside? Or did they think that the two images shown actually were strong enough to convey a message about technological progress and facilitation? The fact is that despite the rather bright colouring of the operation room on one of the photos, it is the operating table and the technical equipment above that attracts the attention, which was even more magnified in the black and white photo. No matter the effort to create a pleasant interior with the use of colours, this is per definition a clinical imagery, which signifies hospital at its very core. Compared to the historical photographs from Kommunehospitalet and Bispebjerg Hospital, we intuitively understand the story being told, that Hvidovre Hospital in comparison with its predecessors was a highly modern hospital with the most possible modern technical equipment. Thus; message received.

The text for the article in *Tidskrift for Danske Sygehuse* from July / August 1976 was written by Gunnar Gundersen. The article is by far the most comprehensive description of the final building; in text as well as in images. It was later issued as a small publication, which could be used to present the project. The publication showed a broad range of photographs from the hospital. The images from the treatment floor were all black and white photos. What was in focus was not so much the architecture of the interiors. It was the interaction between the clinical staff, the technical equipment in the rooms and sometimes patients. All photographs were rather dark, and one sense that there was no daylight access on the treatment floor. But even though the interiors were more modern than those in the old hospitals like Kommunehospitalet and Bispebjerg Hospital, it would be wrong to say that the imagery on the treatment floor was less institutional. It rather supports the reading of the treatment floor as one big ‘medical machine’ – a site of medical experimentation and tests. Like the photographs, the text by Gunnar Gundersen portrayed how the architects at Krohn & Hartvig Rasmussen were not afraid of addressing the more technical and operational side of the project when the audience was hospital managers. It is evidence that the architects took part in different discourses.

From looking at the *Tidsskrift for Danske Sygehuse* publication, you see that there was a very strong contrast between the interiors on the treatment floor and those of the foyer, *Vandrehallen* with its different spaces of activity and winter gardens. The difference between the imagery of the recreational areas ‘upstairs’ and the diagnostic and treatment area ‘downstairs’ could be read as a means of communication. As pointed out in Analysis 3, the imagery emphasized how the hospital was divided into zones with each their own activities, code of behaviour and distribution of power. The architecture of the interiors told you when you were inside or outside ‘the clinical area’ of the hospital – ‘the house of medicine’ – the same way as you became aware, when you entered a hospital ward. That the visual code of these two areas was different followed a culture historical tradition. A tradition that the architects obviously did not see necessary to problematize in their work. An example is to be found in the article written by Gunnar Gundersen, Jack Andersen, and Niels Schou in *Tidskrift for Danske Sygehuse* in 1973 in which they spoke about counter-acting the institutionalisation of the hospital by, amongst others, the use of colour. They wrote here that the colours applied to the rooms in the hospital should **support a**

'feeling' of 'confidentiality' and 'homeliness'. But what is that like, if you are wearing a hospital uniform? They write: "In all offices, laboratories, examination rooms and similar rooms of **a clinical nature**, as well as in secondary corridors, there is worked **with grey tones on all walls after a determined grey scale**" (Gundersen, Andersen, Schou, 1973: 158). The hygienic 'white' typically associated with hospitals had here become colours of grey. Like the furniture had a more pragmatic look, the 'neutral' colours also mirrored the rational priorities of the clinic – to be of service to science. It was thus not questioned that a clinic should have a more earnest appearance. To contrast – and maybe compensate –, the architects described in the same article, how they worked with colours in the furnished rooms outside the clinical spaces. Besides 'a system of signal colours' was used to supplement and support the indicative signage, as was the very long corridor on the treatment floor decorated in a playful manner. Issues that will be addressed in the next analysis – Analysis 5 – about the experiential aspect of architecture. All efforts considered, the imagery of the treatment floor did communicate 'hospital institution' – as well as 'utilitarian', 'modern', and 'high technological'. While this could be seen as a somewhat alienating environment from the view point of the patients, it was from the view point of the staff possibly a quality and a reason to work at Hvidovre. It is an example of the way the quality of imagery depends on the viewer.

1.5 THE MODERN LOOK[20]

That the staff saw the hospital in Hvidovre as 'modern' and 'high-tech' is confirmed in a jubilee publication about Hvidovre Hospital made 25 years after its inauguration. While some needed time to get accustomed to the new and modern work environment, others were thrilled with enthusiasm and saw it as "the new brave world"[21]. Hvidovre Hospital was a place of prosperity and growth, and the technology gave people working there the opportunity to perform their work in a way, they had not been able to do before. The forward-looking and progressive attitude permeated, so to speak, through the hospital as a whole. There was 'a pioneering spirit', which former staff members addressed as interrelated with them working in new surroundings – in a new modern hospital – which stimulated them to look into the future and not stand still. This futuristic quality and search for purpose was quite literally supported by the presence of the mechanical transportation system, the electronic communication system and EDB terminal, and the medical technology. In terms of architectural imagery, the functionalistic style of the interiors in some parts of the hospital supported the idea of 'technologization' at the same time as concrete and plastic questioned the materiality of the construction suggesting a new industrialised world.

Besides signifying mechanical regularity, efficiency, and control, the simplicity and 'coolness' in the materialisation and spatiality of the interior architecture on the treatment floor – as well as in the service area like the kitchen – were informed by a specific sense of beauty. This is to be seen from photographs printed in the previously discussed *Tidsskrift for Danske*

20The word 'modern' can be read in more than one way. The first one is quite literal – that the 'look' of the interiors at Hvidovre Hospital were modern meaning 'new' to its time. The word modern was used in this specific meaning in several articles by the Municipality of Copenhagen as well as the hospital organisation. However, in architecture the word 'modern' often stands for 'Modern / Modernist Architecture' – a specific style. This connotation is also relevant for this analysis as there are references in the imagery of Hvidovre Hospital to this type of work with, amongst other, the way in which reinforced concrete, cast iron and plate glass was used.

21 The expression *den nye fagre verden* was used by a doctor in the jubilee DVD *Hvidovre Hospital 30 år*. It without doubt refers to the science fiction book 'Brave New world' by Aldous Huxley from 1932. However, while the book described a 'negative utopia', the doctor used the expression to insinuate a positive belief in the world of technique.

Sygehuse from 1976, but also in an issue of the architectural magazine *Arkitektur DK* from 1975. Here, we find several pages with images from the ward room, the out-patient clinic, the laboratories, the clinical chemical department and the kitchen showing people in white coats working in rationally ordered interiors. This demonstrates how not only the imagery of the recreational areas of the hospital was seen as architecture by the architectural press; equally so was the clinical areas with its rectilinear in-build furniture of colour-coated aluminium, steel and glass. A work environment, designed for Hvidovre Hospital by Krohn & Hartvig Rasmussen, which was bright, open and inviting – convenient and functional. Even though never explicitly mentioned, the clinical imagery was fuelled by a dream of 'a modern way of working' the same way as the imagery of *Vandrehallen* suggested 'a modern way of living': Collectively, yet steered by individual choice and freedom. It is an example of an implicit narrative which was formulated by the architects intuitively. Photographs of *Vandrehallen* (as well as the adjoining terrace and entrance foyer) published in various magazines show an imagery and a styling concept of modern furniture, cosy lighting, a natural stone floor, wooden ceilings and walls, winter gardens, glass panels from top to floor, views and access to outside gardens and terraces – all resonating the graceful, natural, Scandinavian 'Modern'. Like the boundary between public and private was blurred, was the building's boundary more or less dissolved in the transparent steel and glass construction of the facade, whereby inside and outside would meet. In contrast was the solidity of the wards' concrete facades, which, in turn, was balanced by the organic garden design. It was a counter point play of light and dark, open and closed, transparent and solid, the natural and the artificial, the smooth and the grooved, colourful and neutral, interior and exterior in one glance of the eye. All of which was characteristic for 'the modern look' at the time[22]. In that sense Hvidovre Hospital was much more than 'just another hospital interior'. Its imagery referred beyond clinical buildings into societal ideas and matters of public and private life. It was a place that associatively mixed what people knew from their own homes, films, life style and home magazines with something they had not seen before but maybe dreamt about[23]. In that sense it had achieved the domestic associative quality, that Eigil Hartvig Rasmussen had described in his competition proposal in 1963.

Seen from a political view point, the quality of the architecture of the hospital interiors was a tangible representation of a state willing to spend money on its public buildings[24]. And even though there was a limited budget for the execution of Hvidovre Hospital in comparison to Herlev Hospital, a large effort was made to make the most of it. This meant that everything was thought through in detail. The publication *25 år i udvikling, Glimt fra Hvidovre Hospitals historie* (25 years of development, glimpses from the history of Hvidovre Hospital) described how everything was designed. From the smallest scale of door frames with door hinges, in-built washbasins,

22 In my descriptions of 'the modern look' I refer to diverse types of historical overview literature and films. The full list is to be found under the heading of 'The historical perspective'. But I also refer to my experience as a Dane.

23 In terms of critique, it is the question, whether people in South-West Copenhagen would have had the money to furnish their homes in the same stylish manner as the hospital, and thus whether they could identify with the place as a home - see also footnote 25.

24 As my analysis is centred around the perspective of the architects I will not add a long socio-political discussion into my text. Though, I would like to include a few notes here. Seen from the positive side, the investment was a symptom of a rich and generous welfare state. Seen from the more critical side, the style and arrangements of people in the interiors confirm, how the welfare state was governed by certain values. It was not only giving people something. It was educating them to behave in a specific way. What is more, the interiors relate to the preferences of a specific group within society; those that identified with the functional, Scandinavian, and modern. This was not the style of everybody (I here refer to the book *Boligen i det 20 århundrede* by Birgit Vorre). In that sense, the interiors represented a specific view – which would be the more creative and well educated – what in the 19th century was known as the middle class. This fits the view of Karin Lützen, who in *Byen tæmmes* demonstrated how middle-class values from the mid-19th century influenced the development of the welfare state in Denmark and their view on 'the good life'. Seen from this view point, the interior style and gesture was not neutral. It was setting standards.

toilets and drains, cupboards with rails for the transport system's standard boxes and trays, to the very large scale of the standardized bathrooms on the wards, or the concrete elements of the facade. It was a total enterprise of architects, landscape architects, and engineers working together with interior architects, furniture designers and others in striving to create the visual identity of the new hospital in Hvidovre. The imagery of 'the modern look' was in modern media based on a sometimes ideologically driven – sometimes economic – development of products and new materials. This was also the case at Hvidovre, which I will get back to in the historical part of the analysis. So, the bathroom cubicle was made with the use of reinforced fiberglass, the winter gardens and glass on the facade were made with the new material 'hardened glass' (*hærdet glas*), and the large grooved concrete elements were the result of prefabrication and industrialisation.

While very little was written about the thoughts that were embedded into the architectural design of the facades, three views were dominant in presentations of the project, whether it be municipal, architectural or hospital magazines; - the entrance facade at night and day, - the roof terrace, - and the concrete ward facade. As the hospital in its totality was very large; on the scale of a neighbourhood, the photographs contained only a small part of the information needed to understand the character of the building. In some magazines, an aerial view was included to illustrate the facility in its full size. From looking at this you see that the hospital was placed in a residential area next to a highway. Seen from the view point of the urban context, an additional reason for the decentralised hospital was therefore its horizontality, as "The hospital facility can be better **adapted to** the neighbourhood's relatively low settlement" (Hartvig Rasmussen, 1964: 212). The 1968 draft proposal was more elaborate about design of the exterior facades: "**The architectural expression of the hospital is aimed at a quiet, anonymous external character – without dominance in relation to the surroundings**" (Krohn & Hartvig Rasmussen, 1968: 7). The images of the entrance facade complemented the words showing a horizontal minimalistic volume of repetitive elements of steel and glass. It was a facade reduced to its absolute minimum. The transparency – and openness – that the night photo suggested, furthermore corresponded with 'the modern look' people would have known from private houses but also from office buildings in a modern and international style. What we do not see on any photograph is, that the facade was partly composed of two thick bands of yellow-brown glass, which introduced an element of colour and playfulness into the otherwise rather neutral or rational look. The elimination of colour might suggest that a specific reading was preferred or asked for. One which was conventionally modernistic. [25]

While the images of the entrance facade accentuated the abstract character of the building, the images of the terrace outside *Vandrehallen* confirmed the recreational quality in the gardens discussed previously. We also sense the timeless beauty of the place through the interplay between light and shadow, the dark steel construction in the front and the white, bright and solid concrete facade in the back. And with the pine trees on the side, this space did indeed introduce another kind of imagery to the hospital than the clinical: One of rest. Moreover, there was an oppositeness between the advanced beauty of the light steel construction and the voluminous concrete elements. But the vertical grooves in the concrete elements elevated the otherwise 'neutral' or 'dead' material to a piece of artificial nature – a stratified formal

25 There is no indication why the municipality or the hospital organisation identified with this image of a modernistic entrance facade. Maybe it confirmed - to them - conventional practice within modern architecture.

language of lines – shadows and light. The rationality of the industrialised production form was, so to speak, contrasted by a consciousness of the potential in the detail and the construction of the material. A commonly used colour photo of the ward facade with a concrete railing in front accentuate the brutalist association. In terms of architectural references, it seems as if there were different architectural positions embedded into the composition and imagery of the facades. An issue I will get back to in the historical part of the analysis. It is also the question whether you would read these very large vertical concrete elements as 'quiet' or 'anonymous' as suggested by the architects in the 1968 draft proposal. Instead, they seem rather present and full of character. However, the historical context taken into account, the wards were only 2 floors and not 10 or 20 as in most hospital buildings at that time, which is why the hospital in Hvidovre could be seen as a horizontal proposal. And it was exactly the horizontal imagery that fitted 'the modern look' – and, specifically, modern life in a suburb like Hvidovre – the reciprocity between landscape (the terrain) and building – being close to the ground – to the outside – to nature.[26] In that sense, it was a contextual sensitive proposal, which is also what the photographs of the facades show.

PART 2: DECISION PROCESS

The primary sources in this analysis are: - the 1963 competition proposal published in *Tidsskrift for Danske Sygehuse*, årgang 40, 1964 and in *Arkitekten* nr 18, 1963, - the 1968 draft proposal, not published[27], - the article 'Københavns kommunes hospital i Hvidovre' by Gunnar Gundersen, Jack Andersen and Niels Schou published in *Tidsskrift for Danske Sygehuse*, årg. 49, august 1973, - the film *Opførslen af Hvidovre Hospital*, produced by Nordisk Film for the municipal of Copenhagen in 1973, - a press release by the municipal of Copenhagen from 1976, found in the archives of Hvidovre Hospital, - speeches at the inauguration of the hospital march 1976 published in *Tidsskrift for Danske Sygehuse*, April, 1976, - the jury report published in i.a. *Arkitekten*, nr 18, 1963, - unpublished drawings from the archive at Hvidovre Hospital, - an unpublished text by Gunnar Gundersen about the development of the hospital from1988, - interviews with Gunnar Gundersen, Flemming Skude, and Jørgen Gabriel.

2.1 THE MAIN ACTORS

The development of the project Hvidovre Hospital was stretched over a long period of time, starting with the architect competition in 1962 / 1963. From 1963 to 1968, the draft proposal was developed. In 1968, the construction began, ending in 1976. The detailed design took place at the same time as the production onsite, from around 1968 onward.

In the media analysis I have discussed different narratives in the imagery of the presentation of the project; - the humane, - the nature-romantic, - the machine, - the modern, as I also suggested that the former analyses touched upon narratives such as; - system thinking, - (mechanical) rationality, etc. These different narratives reflected, that there were several voices (positions) embedded into the project. The imagery presented to the public was thus an assemblage of positions tied together by the presence and personality of Eigil Hartvig Rasmussen. That he was able to think architecture in diverse ways and to embody all of these perspectives at the same time is particular for a specific kind of architect[28]. In 1963 – in the beginning of

26 I will get back to this in the historical part of the analysis

27 I have found a copy at Hvidovre Hospital archive.

28 I wil get bck to this discussion in conclusion - how there are specialists and generalists.

the project – Eigil Hartvig Rasmussen was 58 years old. He was a skilled and experienced architect, in spirit an artist, and by heart a humanist. What is more, he was passionate about gardens. Having drawn the architect competition on his own with the help of only one assistant (Egon Nissen), we can therefore be sure that the verbal and visual imagery in the competition proposal was authored by himself. Eigil Hartvig Rasmussen stood behind 'the humanistic' and 'nature-romantic' narratives. In Analysis 1 and Analysis 2 it was discussed, how the work of the office of Krohn & Hartvig Rasmussen was driven by a sense for architectural engineering; the integration of the fields architecture, civil engineering and installation technique. The functional rationality and sense for proportion, structure, order and detail which was embedded into the narrative of 'the medical machine' but also 'the modern look' was thus in line with the office policy, attitude and position in the field. On the other side there was in the office of Krohn & Hartvig Rasmussen a certain sensitivity for the interior qualities of the buildings they made. All in all, it would not be wrong to describe Eigil Hartvig Rasmussen as a functional modernist, if you look at his work from the view point of style. His values were to be found in a mix of pre-war and post-war ideologies; humble, honest, reliable and concerned that things should be made in a sensible manner with sensible materials but, at the same time, open for new suggestions of his younger employees. The ambiguous imagery described in the media analysis – informed as it were by different viewpoints, positions and readings – thus corresponded with Eigil Hartvig Rasmussen's view as a person, an architect and as an agent for diversity. The time also played an important factor, which I will discuss in the historical part of the analysis.

What happened exactly in the years that followed the architect competition is difficult to know. It is, however, certain that Eigil Hartvig Rasmussen invited other people into the re-drafting of the project between 1963 and 1968 - architects like Egon Nissen, Erik Brabrand, Aage Katborg and Knud Holscher. They were all of a younger generation and brought with them their own views into the project. Views which were related to what was going on in the architectural discipline. In this time period, the imagery of the site plan changed, which I will discuss later in this part of the analysis. The internal values and ideas of the imagery stayed the same, however. The detailed design which began around 1968 was split into categories – as partly described in Analysis 1 – and the work was performed by different teams with each their group leader: - Aage Katborg was in charge of the facades and the architecture of the interior of *Vandrehallen*, - Salli Kvetny was in charge of walls and the transport system, - Poul Ovesen was in charge of ceilings, ventilation and light, - Bjarne Jansen was in charge of technique, - Ove Henriksen was in charge of fixed furniture, - and Jack Andersen was in charge of loose furniture and textiles. These people were all employed by Krohn & Hartvig Rasmussen. Next to this, some exterior consultants were hired: - architect Niels Schou was in charge of the colour scheme[29], - landscape architect Morten Klint was in charge of the gardens[30], - and artist Palle Nielsen was in charge of the large art work in the entrance foyer[31]. Each of these people had a final say in the development of the imagery.

29 Niels Schou was a personal friend of Eigil Hartvig Rasmussen. They worked together on different occasions. Niels Schou did not only work with colours in architecture. Flemming Skude was assigned to assist him.

30 Morten Klint was a Danish landscape architect, son of Kåre Klint, grandson of P.V. Jensen Klint. He died before the gardens were finished. His partner Knud Lund Sørensen took over after his death and finished the work.

31 Palle Nielsen was a Danish artist. It is unclear whether Eigil Hartvig Rasmussen knew his work. It is also possible that he was chosen by an external partner like Statens Kunstfond. Like nowadays, there was a budget for art in public building projects. A budget that would cover the expenses for his participation.

2.2 FIELD OF INTERESTS

In the introduction of the analysis I defined how I explore and discuss architecture as a narrative means. What I wanted to understand was, what the architects communicated with their work. But more specifically how it related to the 'reading' of their municipal client. My thesis was that the architects were perceived as agents for certain values, and so the reception of their work was not only about the aesthetical value of their imagery but about the ethical interpretation of it. In the media analysis I have already given an indication of how the hospital mayor Alsing Andersen, at the inauguration in 1976, referred directly to the thought field and language of Eigil Hartvig Rasmussen. In the municipal press release from March 18th 1976, the municipality of Copenhagen equally described how the project for Hvidovre Hospital was developed from the ideas of the architects at Krohn & Hartvig Rasmussen, when they wrote: "There has been a strong desire among the planners to create a building with opportunities **to provide an environment in which patients and staff will thrive**. This wish is reflected in the low buildings linked to a long walk way (*Vandrehallen*) from which there is close contact with the gardens between the buildings" (The Municipal of Copenhagen, 1976). What is more, in the municipally produced film *Københavns Kommunes Hospital i Hvidovre* from 1973, the architectural ideas behind the hospital were explained by architect Eigil Hartvig Rasmussen saying: "When it comes to planning hospitals, there are numbers, yes, thousands of problems that you need to address. There are so many that it would be quite impossible to get into them here. However, when it comes to the main disposition, I think that you can identify three, namely **operating economy** (*driftsøkonomi*), **flexibility** (*fleksibilitet*) and **humanity** (*medmenneskelighed*)" (Eigil Hartvig Rasmussen, 1973). This was in line with what was also written in the municipal press release from 1976, which stated that "In the design of the project, efforts have been made to, as far as possible, reconcile operational requirements with regard to function and economics with the requirement to accommodate sufficient flexibility, as the continued medical and technical development will require" (The Municipal of Copenhagen, 1976). The architects and the client thus spoke the same 'language' and accentuated the same qualities in the project. The architect(s) had become the spokesperson for the municipality. It was no longer just about their work, but about them as 'public figures'. This is an interesting shift, as images of the architects in the film – also at work – were being used as a means to describe how 'modern', 'progressive' and 'innovative' the municipality was. The architects' authority was considered a guarantee that the municipal 'dream' would work.

Another document of particular interest – in the process of mediation, communication and representation – is the jury report from 1963. As mentioned in Analysis 2, the jury committee consisted of 3 people appointed by the Copenhagen municipal council, 3 people appointed by The Danish Association of Architects, 1 person appointed by The Nordic Countries Architect Federation, and a secretary. Besides, 7 hospital experts were designated to assist the jury committee. The jury report gave a thorough introductory explanation on the criteria upon which they had evaluated and judged the submitted proposals followed by an extensive critique of a range of projects. Of interest to this analysis, they made a series of statements about imagery, narrative and representation, in which they indirectly pointed at why they had chosen the work of Eigil Hartvig Rasmussen to become the new municipal hospital in Hvidovre. The first quote from the jury report concerns the view of the jury committee on whether the hospital

construction should be high or low. It said: “Under a general assessment of the issue of a high or low hospital construction the relationship should be involved, that **the Danish population** in general **is hardly prepared to accept very high houses for hospital purposes**, and thus **a building form that is removed from the everyday life surroundings of the majority of patients**” (the jury report, - in *Arkitekten,* nr 18, 1963: 334-335). Considering that most hospitals at that time period were developed as high-rises, this was a controversial critical statement. It most certainly also conflicted with the view of the majority of the external hospital experts, who – as described in Analysis 2 – had not envisioned a low-rise proposal. The point the jury tried to make, was cultural. It was not about efficiency or economy, it was about what they thought people brought up in Denmark (in that time period) would prefer in terms of imagery. Against the background that large high-rise residential settlements were developed around Copenhagen, the view point could also be seen as an argument in an urban discussion. In that sense, the statement was political. It was informed by a humanistic agenda to stimulate environmental and human friendly designs. It was also an argument for a cultural and contextual approach – taking as its departure point the everyday life and surroundings of ‘ordinary’ citizens – earthbound houses with gardens. An argument, which Eigil Hartvig Rasmussen himself used in his proposal. It was not about extravagance but about recognisability – ‘fitting in’.

That the values of the jury were humanistic can also be derived from the following quote: “The jury committee has found it important that a large hospital facility such as the present is designed in a way, which contributes to creating **a welcoming environment** (*et indbydende miljø*)” (the jury report, - in *Arkitekten,* nr 18, 1963: 209). What is more, the jury committee in the next quote showed, why they preferred the imagery in the proposal by Eigil Hartvig Rasmussen above other proposals: “There is hardly any doubt that **significant values are associated with the pavilion system** ... characterized by a decentralized facility consisting of low detached buildings and associated gardens. The possibility of **contact with the surrounding nature** may still be considered desirable, although most patients’ hospital stays are limited to 2-3 weeks. Not least, this moment is of importance to the staff, whose numbers now, in a modern hospital, far exceeds those of the patients. ... **A human reconciliatory environment** (*et humant forsonende miljø*) **greatly contributes to creating a favourable working environment** and must be assessed highly, especially in view of the technical perfection that is a necessity in modern hospital operations” (the jury report, - in *Arkitekten,* nr 18, 1963: 209). The analogy that Eigil Hartvig Rasmussen established between the landscaping of the pavilion hospital and his competition proposal now showed its purpose. The reference was culturally coded - it was cued by collective memory and the idea that people in Denmark - at least in the suburbs – were accustomed to gardens; being outside. There also was an associative link to the culture historical and nature-romantic idea of ‘healing in nature’ as discussed in the media analysis - gardens being a symbol of life. Equally important, the jury statement pointed at the fact that a ‘good humane hospital environment’ - with gardens - would benefit not only patients but also hospital staff. They were a means to balance the institutional and hospital like associations. That there was a profound wish in the jury to maintain the values of the pavilion hospital, is shown in the following quote: “The jury committee clearly states that returning to a decentralized hospital building with detached buildings is an operational impetus, but **one has wanted to point out the values threatened by the large-scale hospital facilities**, and emphasize the

merit of the competition proposals, that fulfils the law of necessity, which the concentration requirement contains, but which, however, has managed – in a certain compromise – **to maintain the values of an inspired and welcoming design, a friendly and understandable environment and some contact with nature**" (the jury report, - in *Arkitekten,* nr 18, 1963: 209). The proposal of Eigil Hartvig Rasmussen could therefore very well be seen as an opportunity to resurrect or re-invent the pavilion hospital – even though in a 'compromised form'.[32]

The decentralised hospital proposal by Eigil Hartvig Rasmussen – as well as the presence of the gardens – insinuated a hospitality, a friendliness, a humane attitude towards people. It reminded culture historical speaking of the pavilion hospital. As well as the imagery of the large, low building being architecturally interpreted as a '**simple**' (*enkel*) and '**modest**' (*beskeden*) **attitude** (*holdning*) by the jury committee. The words used indicate an ethical component in the reading of the project. One whose meaning can only be understood in the context of 'the modern', which I will get back to in Part 3 of the analysis. It was a view, that architecture was fundamentally about virtues. This also explains the reading by the jury of the composition of the facades as '**sober**' (*sober*), and the estimation that the facility in its specific and future form would appear with '**delicacy**' (*finhed*) and with a '**good adaptation to its surroundings**'. The horizontal proposal was essentially seen as a sympathetic and non-monumental imagery – social democracy in built form. In a surrounding like Hvidovre – the outer suburb of Copenhagen – this would have represented the majority of people.

2.3 EXAMPLES OF THE DECISION PROCESS

As described previously, little was written about the development of the imagery in the project – the who did what, when and why. The article in *Tidsskrift for Danske Sygehuse* in 1973 by Gunnar Gundersen, Niels Schou and Jack Andersen mentioned how everything was discussed during the planning process. This was confirmed in an interview with Gunnar Gundersen later. The groups working on the architecture – as well as the architecture of the interior – spent quite some time coordinating their work with each other. Others were in charge of the coordination with external consulting firms on loose furniture, lighting, textiles and other. And there is an indication that Eigil Hartvig Rasmussen coordinated the work with landscape architect Morten Klint on the gardens, the art work by Palle Nielsen, and the work of architect Niels Schou on the colour schemes. This work was not done by Gunnar Gundersen in charge of the construction management.

Niels Schou being a trusted and personal friend of Eigil Hartvig Rasmussen had, too a large degree a free hand to compose the colour palette, which became rather comprehensive. He was assisted in his work by architect Flemming Skude from Krohn & Hartvig Rasmussen, who had a passionate interest in colours in architecture. In Analysis 5, I will go deeper into how he added elements of pop art into the hospitals interior like Supergraphic in the underground parking garage. Being from two different generations, Niels Schou and Flemming Skude each had their own view on what would be the right colour scheme. According to Flemming Skude, the 'taste' of Niels Schou was classical 1940s-1950s post-war, which meant a composition of broken colours with a dark end wall contrasted by lighter pastel colours on

32 The historical overview in Appendix B shows the similarities with pavilion hospital.

the other 3 walls in the room. Flemming Skude, on the contrary, thought that it would be right to use brighter and purer colours. However, these were – as described previously – primarily used for signage. In relation to the analysis of representation and imagery, the views of Flemming Skude are interesting, as they were not only aesthetically informed, they were for a large part critical. He thus wrote several articles for the magazine *Arkitekten* on Supergraphics in which he criticized the monotony of the industrialized housing settlements in Denmark, as well as he executed several Supergraphic public artworks himself. His view was therefore related to the environmental debate taking place in Denmark. That a person like him was included into the team of Hvidovre Hospital could very well be seen as another example of the polyphony of the project and the open-minded mentality of Eigil Hartvig Rasmussen. The imagery at Hvidovre was an assemblage – not a closed sign system. In line with this – and as described in Analysis 3 – Flemming Skude and Niels Schou also integrated the views of the staff in the choices they made on the colour scheme. The exact choice of colours was thus a result of enacted user participation. It is yet another example that the intelligence of the architects work was also to be found in the way in which they would situatie themselves in the decision field.

In Analysis 1 it was explained, how it became more or less self-evident, that the large treatment building should be made in concrete. However, it was not obvious that the ward facades on top equally would be composed of concrete elements. In fact, the drawings on the panels for the 1963 competition proposal suggested a modernistic curtain wall facade of glass and aluminium frames. Hence Eigil Hartvig Rasmussen initially had a more open and transparent imagery in mind – much like the facades he had designed for the Atlas or Contex factories or Københavns Engros Grønttorv (Visual 1.14-1.16). During interviews with former employees, they pointed at the fact that brick had been brought up in the discussion about the ward facades, which is also to be seen on model photos found in the private archive of Gunnar Gundersen. More people suggested that it was Aage Katborg who was the originator of the concrete ward facade. He supposedly wanted to add 'character' and 'masculinity' to the project[33]. And it was indeed Aage Katborg who, together with his team, designed the facades[34]. At that point in the process, Eigil Hartvig Rasmussen did not act as a designer[35]. The appearance of the large concrete elements was also the outcome of a thorough research and design process. Architect Jørgen Gabriel, who worked in the team of Aage Katborg, explained in an interview how they compiled a large catalogue on concrete facades. The subject was 'materiality' (*stoflighed*). The samples were collected by the architects themselves, travelling around the country to study buildings performed in pre-cast concrete, which was new at that time. Through observation they concluded that the wet weather in Denmark apparently had an important impact on the concrete facades – its colouring – and deterioration. The vertical profiling in the concrete facade elements

33 Aage Katborg was known as a charismatic personality with outspoken opinions - a man of moods - much like Captain Haddock, a fictional character and a protagonist in the adventures of Tintin. Despite his temper and charm, he and his team of architects were also known as advocates for the aesthetical. It is worthwhile contemplating that the brutalist imagery of the concrete facades for a large part fitted the brute character and strength of Aage Katborg. It illustrates how there is a link between the identity of architects and the imagery of their work.

34 Some of the people I spoke to were rather critical of the facades, which, in their opinion, were too bombastic. One of these was Knud Holscher who thought that it would have been more appropriate to use brick for the facade of *Vandrehallen*. The view of Holscher was to a large part informed by his previous work for Arne Jacobsen, which Holscher described as "a straight / clean form world" (*en renlinjet formverden*). In my interview with him, Holscher also said that he thought, that "people at the Academy" (meaning the architecture school in Copenhagen) did not grasp the complexity of the 'vocabulary' at Hvidovre as it was not coherent. Instead they would 'read' the facades as messy and inconsequent, which is also why it never became popular among peers.

35 Which is why Knud Holscher, amongst others, called Hvidovre Hospital "an old man's project", as he thought Eigil Hartvig Rasmussen should have taken more control over what was designed instead of letting other people decide. While Knud Holscher in my interview criticised Arne Jacobsen for being a 'dictator', he on the other hand thought that Eigil Hartvig Rasmussen was too much of a group person.

at Hvidovre Hospital is a pragmatic solution to this problem, as the profiles would lead rain downwards like water in a channel. It is an example of architects thinking through making, and that climatic conditions were taken into consideration in the design of the building. But the grooves were also a formal language – a play with lines, contrast of light and dark. On a more philosophical level it could be seen as an example of architects questioning the very nature and non-materiality of concrete, which I will get back to in the historical part of the analysis. Thus, the story about the hospital facades is about diverging architectural opinions and ideas - about issues of style, climate, problem-solving, material philosophy and architectural reflection.

Another example given by architect Jørgen Gabriel is that of the large panels of glass used in the façade, and on top of the ward buildings as a screen. Similar to the study on concrete, the architects made a study in glass used on facades. One of the buildings they visited was the SAS hotel in Copenhagen from 1960 by Arne Jacobsen, which was known for its curtain wall facade of aluminium and transparent green and grey anodized glass. If you look at the black and white photographs of the entrance facade of Vandrehallen, you also sense a reference to the work of Arne Jacobsen in the large glass panels forming horizontal bands across the facades. Though, the yellow-brown colour of the glass transformed the imagery to become something different than the work of Arne Jacobsen. The colour was chosen by colour consultant Niels Schou and not the designers of the facade, who were not that fond of it. It is another example that there were discrepancies in the architectural positions within the project. This demonstrates that in an architectural office the design work itself can be a discussion field, where different intentionality's and ideas cannot always meet. The narrative of the glass screen on top of the ward buildings was more in line with the work of Arne Jacobsen. They were designed by architect Knud Holscher, who was asked to 'mask' the visibility of the technical installations on top of the ward buildings. It is interesting, why they would engage with such an operation. It might illustrate, how the work of an architect sometimes is intended to fix even minor visual 'problems' that become apparent on the construction site. What is equally interesting is that Knud Holscher was asked to design a solution. This became a sloping curtain wall screen with transparent light blue-green glass pulled back from the edge of the facade. The screen formed a horizontal band on top of the ward buildings[36]. The idea was that the colour and materiality of the glass would make it 'disappear' into the sky. This was a rather abstract but also a poetic solution, which had its likeness with the idea of Jacobsen for the SAS hotel and the minimalist art of reduction. That the glass worked differently than intended is another story.[37] The point is that the glass in the facades at Hvidovre Hospital is an example of how architects refer to the work of each other. If you see architecture as a communicative system – a material culture – the specific meaning of the work was established in the interdisciplinary dialogue (one colleague 'talking' to another) more than it was about the identity of the hospital and its users.

The last example is less explicit than the two above. It is derived from a study made of the development of the imagery of the site plan from the 1963 architect competition to its final composition as published in books and magazines[38]. While the drawing of the site plan in the 1963 competition proposal can be read as an abstract modernistic composition of horizontal

36 The construction is not to be seen at Hvidovre Hospital any more. As most photographs are black and white, it is not very present on them either, but you do see it, if you look carefully.

37 In reality though, the glass worked differently as it reflected light – and therefore was rather visible.

38 In Appendix C I have included material about the site plan. The material supports the reading I make here.

and vertical rectangular volumes, points and lines, shapes and layers, interplay between foreground and background, order and variation etc ... the drawing of the 1968 draft proposal was clearly an urban scheme. It is recognizable as a large facility such as a prison, a factory, or a residential settlement. What is more, the pavilion reference is quite visible even though the ward structure was standing on a perforated field of holes; the patios on the treatment floor. On the site plan drawing printed in *Tidsskrift for Danske Sygehuse* in 1973 or *Arkitektur DK* from 1975 amongst others, the roof gardens on top of the treatment floor were emphasized. We sense here that the hospital – from an aerial perspective – has become what the jury committee in 1963 had dreamed of – and what Eigil Hartvig Rasmussen had envisioned –; a decentralised pavilion hospital with associated gardens. This idea was even more visible on a drawing found in the Hvidovre Hospital archive of the landscape design. While there was not a large difference between the site plan drawings from 1968 and 1973, the site plan of 1963 and 1968 were not about the same. In my interpretation this has to do with a change in narrative, which is to be read from the analysis of other material like photographs of the site plan models, the sections and texts. In the comparison of the models it became clear that the decentralised ward buildings in the 1963 proposal were standing on columns on the garden side, while, in the 1968 proposal, they were standing directly on top of the treatment building. In the 1963 proposal the pavilion plan reference was thus less clear. In the 1963 proposal atriums were moreover only to be found on one side of the treatment building, where as the treatment building in the 1968 proposal looked like a deep plan building with smaller atrium spaces distributed evenly. The imagery of the treatment building in 1968 shared as such similarities with mat buildings[39]. This is even more emphasized if you compare plan drawings of the treatment building and the fact, that the access in 1968 had been decentralised with entrances from the underground parking garage instead of having parking next to the facility and one main entrance. From comparing sections, it furthermore became clear, how, at some point in the design process they had experimented with the position of the treatment building as being below ground. If that had been the case the impression of a pavilion plan would have been almost complete. In the 1968 draft proposal the terrain surrounding the one-storey treatment building was raised. Hence, the roof garden landscape could be extended towards the high way. The architects described their idea like this: "**By having the treatment building 'disappear' in the raised plateau, a calm and modest expression has been created in relation to the surroundings**. From Kettegårds Allé, you will experience the fully-developed hospital as **a low-rise bastion, bounded by retaining walls, locally blurred by groups of trees and climbing plants**" (Krohn & Hartvig Rasmussen, 1968: 166). The treatment building was so to speak transformed into a landscape by the use of a metaphor – that of the bastion. By doing so, they accentuated that they wanted to create the impression of a pavilion hospital placed in a park-like landscape. Within this narrative, the approximately 400-meter-long concrete wall towards Kettegårds Allé was seen as a retaining wall or maybe even a piece of artificial nature. The fact is that the concrete was coloured dark grey, as if they wanted to create an association of earth or stone – very

39 I have, in the previous analyses, discussed the issue of mat buildings – e.g. Analysis 2, point 3.3. The reason why I mention it here is that the site plan of Hvidovre Hospital in 1968 – if you read it as a sign – could be seen as a mat building. In Appendix B I show the project Venice Hospital by Le Corbusier as an example of a mat building. Another example would be the work of Candilis, Josic & Woods, who in the 1960s became well known for their mat building proposals. Timewise this fits with the development of the 1968 draft proposal. Knowing that Knud Holscher did look at their work while developing Odense University, we may assume that mat building ideas also informed the development of Hvidovre Hospital – at least indirectly. What should be taken into account historically is, that the large horizontal volume with patios was already established in the competition proposal from 1962 / 1963 before Venice Hospital by the office of Le Corbusier dating from 1964. The reference in the competition proposal is thus probably not a mat building. A more possible reference might have been the large flat ground scraper like school projects of the 1950s with big atrium spaces. An example of this type of design is Munkegaardsskolen by Arne Jacobsen.

much like the light blue-green glass screen had to disappear into the sky. All in all, the imagery of the site plan was, the way I see it, an example of how the architects – while struggling with the logistics of the facility and its infrastructure – were sensitive about different discussions taking place within urban architecture. The development of the site plan also shows the impact the jury report had on the project, and how their focus on the pavilion plan informed the project. Finally, it shows the rhetoric power of verbal narratives – and maybe also its limits, as the experience of the bastion's 400-meter 'retaining wall' was not that of nature. The point is that the architects in their arguments about the site plan – both visually and verbally – demonstrated how the border between city and building, building and landscape was blurred. It shows that the project was equally an urban proposal as well as an interior project, which will also be discussed in the following text.

PART 3: THE HISTORICAL PERSPECTIVE

In this part of the analysis, I refer to: - Tobias Faber's book *Dansk Arkitektur* from 1963[40], - Nils-Ole Lund's book *Nordisk Arkitektur* from 2008[41],- Nils-Ole Lund's article 'Arkitekturkritik og tradition' from 1994[42], - The following articles from *Dansk Arkitektur siden 1754*; - Christoffer Harlang; 'Det moderne gennembrud', - Kim Dirckinck-Holmfeld; 'Velfærdsfesten'[43], - Kay Fisker's article 'Den funktionelle tradition' from 1950[44], - Knud Millech & Kay Fisker's book *Danske arkitekturstrømninger 1850-1950* from 1951[45], - Jørgen Sestoft & Jørgen Hegner Christiansen's overview work *Guide til Dansk Arkitektur år 1000-1960* from 199146, - Marius Kjeldsen's book *Industrialised housing in Denmark from 1976*[47], - Lotte Marianne Bjerregaard's book *Forsegling & Symbiose* (in specific on nature-romantic modernism) from 2005[48], - Poul Bæk Pedersen's book *Arkitektur og Plan i den Danske velfærdsby 1950-1990* from 2005[49], - Birgit Vorre's book *Boligen i det 20. århundrede, Indretning og Brug* from 2008[50], - Lars Dybdahl's book *Dansk Design 1945-1975* from 2006[51], - Rick Prelinger's compilation of archival films about 'The American Dream' called *Our Secret Century* from 1996[52], - Adrian Forty's book *Concrete and Culture, A Material History* from 2012[53]. The text parts where I refer to the character of Eigil Hartvig Rasmussen are also informed by my conversations with people who knew him, like his daughters Karen and Elsbeth, Peter Lohfert, Gunnar Gundersen, and Flemming Skude (whose obituary in *Arkitekten* in 1980 I also refer to).

3.1 HORISONTALITY AS A MENTALITY

In the previous text on the decision process I have suggested that the project by Eigil Hartvig Rasmussen was chosen by the jury committee in 1963, because they saw in it certain values that they thought would be right for the hospital in Hvidovre. Values that were essentially humanistic. It was an issue of hospitality, friendliness, and a humane attitude towards people. In the interpretation of the project's imagery they made use of notions

40 Tobias Fabers, *Dansk Arkitektur*, Arkitektens Forlag, Københavns, first edition, 1963

41 Nils Ole Lund, *Nordisk Arkitektur*, 3. udgave, Arkitektens Forlag, 2008

42 Nils-Ole Lund, 'Arkitekturkritik og tradition', Nordisk Arkitekturforskning, 1994:2

43 Redaction: Martin Keiding, *Dansk Arkitektur side 1754*, Arkitektens Forlag, København, 2007

44 Kay Fisker, 'Den funktionelle tradition, Spredte indtryk af amerikansk arkitektur', printed in *Arkitekten*, 1950

45 Knud Millech & Kay Fisker's, *Danske arkitekturstrømninger 1850-1950*, Østifternes forening, København, 1951

46 Jørgen Sestoft & Jørgen Hegner Christiansens, *Guide til Dansk Arkitektur år 1000-1960*, Arkitektens Forlag, 1991

47 Marius Kjeldsen's book *Industrialised housing in Denmark*, Danish Building Centre, 1976

48 Lotte Marianne Bjerregaard, *Forsegling & Symbiose*, Arkitektskolens Forlag, 2005

49 Poul Bæk Pedersen's book *Arkitektur og Plan i den Danske velfærdsby 1950-1990*, Arkitektskolens Forlag, 2005

50 Birgit Vorre, *Boligen i det 20. århundrede, Indretning og Brug*, Nyt Nordisk Forlag Arnold Busck, København, 2008

51 Lars Dybdahl, *Dansk Design 1945-1975*, Borgen, København, 2006

52 Rick Prelinger, *Archival films from the darker side of the American dream - Our Secret Century*, The Voyager, 1996

53 Adrian Forty, *Concrete and Culture*, A Material History, Reaktion Books, London, 2012

such as ‘simple’, ‘modest’, and ‘sober’. Notions that just as well could have been used to describe Eigil Hartvig Rasmussen as a person. Eigil Hartvig Rasmussen was a simple, modest and sober man who lived a simple, modest and sober life in the suburb with his wife, two kids and a large garden, where he would spend time in the sun maintaining the plants, if he was not inside doing hand work, working in his home office or having friends or family over for a game of cards and a chat. While he did appreciate art, modern furniture, cars and beautiful surroundings he was not a man of luxury or extravagance. An ordinary life was good enough for him. In fact, he felt uncomfortable being around people who behaved superior[54]. And while he did see other architects as friends, it was often his wife who did the talking[55]. So was his ‘quiet’ architecture intertwined with his own personality. In the words of Flemming Skude: “Quiet was his move in the world of architects, where he, throughout life, remained a loner and modest, even self-effacing. ... This immaculate, white-haired gentleman, who, with few well-chosen words, always came closer to the deepest truths than many word equilibrists. His professional and moral incorruptibility made him a real giant, no one dared to speak unfavourable about. ... He lived and acted without flaws. ... a sensitive ideal of a great personality” (Skude, 1980: 128).[56]

Flemming Skude voiced, what other people in the interviews confirmed; that Eigil Hartvig Rasmussen was essentially an ethical person. An ethos that he translated into his work and his connection and collaboration with other people. Nonetheless, his values were as mentioned also informed by a mix of pre-war and post-war ideologies – to be sincerely occupied and respectfully engaged, which you could say about more architects of his generation. Basically, it was about ‘integrity’ – the way you acted as an architect and as a human being. Architecture historian Nils-Ole Lund in his book ‘Nordic Architecture’ refer to the mindset and working method of Arne Jacobsen as symptomatic for most of his contemporary colleague architects. The following quote can therefore be used to show, how architects in the post-war period were not only concerned about aesthetics but about virtues. When asked about the SAS hotel, Arne Jacobsen replied that: “Clarity (*klarhed*), purity (*renhed*) and truthfulness (*sandfærdighed*) in architecture are both others’ and my goals. Spontaneity in architecture – in my opinion – is risky; it must be reserved for geniuses. The rest of us, who with honest (*hæderligt*) work create proper and useful architecture, should try to restrain the urge for spontaneity, which we all most probably have” (Arne Jacobsen, 1960)[57]. “The design should be refined and general ... striving for the beauty of everyday life”, writes Nils-Ole Lund. That Eigil Hartvig Rasmussen thought the same can be seen in his early work, which was discussed in Analysis 1[58]. It can also to be seen in the work on Hvidovre Hospital as discussed under ‘The Medical Machine’ and ‘The Modern Look’. In the same way, the statement by Arne Jacobsen provides a historical context – and an explanation – to the verbal imagery of the description in the 1968 draft proposal by Krohn & Hartvig Rasmussen in which they wrote, that “The architectural expression of the hospital is aimed at **a quiet, anonymous external character** – without dominance in relation to the surroundings” (Krohn & Hartvig Rasmussen, 1968: 7). Being ‘quiet’ and ‘anonymous’ was

54 This is another reason why the match with Gunnar Krohn was not right. They had quite the opposite preferences. Gunnar Krohn had expensive cars, wore dandy clothes, and had his office decorated as if it was a luxury suite.

55 Eigil Hartvig Rasmussen was married to Rut Speyer, who also was an architect. She was a lively woman with a lot of character. It is their two daughters who told me about their private life, and the way their father behaved at home.

56 The quote is taken from Flemming Skudes obituary for Eigil Hartvig Rasmussen printed in *Arkitekten* in 1980

57 Nils Ole Lund, *Nordisk Arkitektur*, 3. udgave, Arkitektens Forlag, 2008 – page 65

58 In Analysis 1 – Visual 1.14-1.16 – I discuss some of the early projects like the Atlas, Contex and Grønttorvet.

by the older generation of post-war architects like Eigil Hartvig Rasmussen seen as a quality – a moral obligation – much like 'harmony', 'discreteness', and 'the capability to fit in' were seen as noble values worth striving for.[59]

3.2 THE IMAGERY OF MODERN ARCHITECTURE

The search for an ethically informed architecture, – a 'truthful' (*sand*) and 'authentic' (*ægte*) architecture – was according to Nils-Ole Lund fundamental for Nordic architects. Though, what 'authentic' or 'truthful' architecture is, is not that obvious. Architects like Christian Hansen (Kommunehospitalet, 1863) and Martin Nyrup (Bispebjerg Hospital, 1913) had, in their time, had the same aim. As shown in the interpretative historical analysis their work was not a reductionist imagery[60] like Arne Jacobsen's but full of historical narratives. This demonstrates that we are talking about a profound cultural value – a discourse – that can surpass societal changes in time and discussion in architecture about style and form. Nils-Ole Lund suggested in another text about 'The Danish Tradition', that "even if the architecture replaced old forms with new, then most of the values were retained: Danish architecture should always be healthy, simple and looking for wholeness. The architecture was a tool for achieving order in a chaotic world" (Lund, 1994: 42). Nevertheless, there have been discrepancies in the way in which these fundamental ideas would materialise. In the in-between war period this was to be seen in the discussion between the classical, craft-oriented and tradition-bound architects versus the more modern, industrial and functionalistic. According to Nils-Ole Lund, architects in the period after the war felt a need to contemplate the 'origin' of architecture – to redefine 'authenticity'. In an industrialised society this meant, they would have to accept and work with the methods and products of industry, but then go beyond that in the pursuit of a deeper meaning.

In Analysis 1 it was discussed how Gunnar Krohn in 1949 in an article in *Arkitekten* argued for industrialisation in architecture. In his eyes industrialisation was a means to make "cheap industrial product for the benefit of the entire community" (Gunnar Krohn, 1949). The idea was, that returning to a 'romantic' – retrospective – and historically informed architecture was not an option in a modern society. Something 'new' had to happen. But industrialisation itself did not hold the key to the solution. An article written by the Danish architect Kay Fisker[61] described the confusion that marked the field in the 1950s in the discussion on the imagery of modern architecture. This is of importance, if we would like to understand the work of Krohn & Hartvig Rasmussen on Hvidovre Hospital on a deeper socio-cultural level – in specific the thought field of Eigil Hartvig Rasmussen.[62] Kay Fisker wrote: "In the post-war years, the discussion of architecture's goals and shapes has grown to its limits. ... It is natural that after the unclear

59 Likewise, Arne Jacobsen perceived his design for the SAS hotel as a contextual design, that his house would 'fit into' the surroundings through the glass colouring and mirror play with the clouds and the nearby facades.

60 I do not use the word 'reductionist' in a negative meaning here – it should be seen in the context of minimalism – the art form of reductionism. Arne Jacobsen himself did by the way not see curtain wall architecture as simplistic. On the contrary, he thought, that the aesthetic design of different architects was highly varied. "Every artist has his own way of expressing himself, his own personal form of speech, best perceived through proportionality, which is essential for architecture as a work of art" (Arne Jacobsen, 1964) – Quote from Nils Ole Lund, *Nordisk Arkitektur*, 3. udgave, Arkitektens Forlag, 2008 – page 65

61 Kay Fisker was a practising architect and a professor at the Royal Academy in Copenhagen.

62 The article is an argument for what Kay Fisker called 'The Functional (Nordic) Tradition'. It is a plea against what he and Knud Millech in their book *Danske Arkitekturstrømninger 1850-1950* from 1951 called 'International Functionalism'; for example the work of Vilhelm Lauritzen, Arne Jacobsen but also the early work of Krohn & Hartvig Rasmussen. Instead he suggested that modern architecture in Denmark should draw upon Danish craft and tradition. That being brick work, it would become solid, tactile and whole in its form. This was also to be seen in his work as an architect. As his personal preferences are not important for the argument I leave this information in the foot note.

war years, where so many concepts and ideas were overthrown, one again seeks to get firm ground under the feet, but it does not seem as if the exchanges of opinions have led to any clarity. We discuss monumentality, functionalism's sterility, the new empiricism, Bay Region style and Marxist architecture without seemingly achieving much more than further confusion" (Fisker, 1950: 70). The article included a comprehensive description of the history of the American discourse on architecture. That this was relevant for architects in Denmark, should be seen in the light, that Denmark during the Second World War had been limited in its contact with the outside world. After the war, Danish architects naturally felt a need to become informed about what was going on internationally. This was done through travelling and by studying literature from abroad. The debate that took place in Denmark in the post-war period was as such related to what was going on outside Denmark, and in specific in the United States. Hence articles printed in magazines such as *Progressive Architecture* or *The Architectural Review* played a role in the discussion on Danish architecture. While some Danish architects like Arne Jacobsen found inspiration in German-born Mies van der Rohe's work in America, Kay Fisker in his article accentuated the qualities of architects working within the regionalist Bay Region style[63], which he compared with tendencies within Nordic architecture: "These houses are the expression of a living and lush architectural perception, free of formalism, evolved from healthy humanity and a strong and positive understanding" (Fisker, 1950: 100). To him this was 'honest' – 'authentic' – architecture.

Art Historian Lars Dybdahl described in his book *Danish Design 1945-1975*, how Danish Design has significant international interfaces[64]. The 'typical' Danish is, according to him, born in an interaction with abroad – in the 20th century with the rest of Europe, the United States and Japan. Characteristics are assimilation, temperate dialogue, and moderation. And he writes: "Already in the in-between war period lay formulated in the design position of Danish functionalist a distance to the contemporary international avant-garde's purist and machine-metaphorical concepts for the interior of the home. ... On this specific national background and with a distinguished Danish and Nordic tradition of '*lun*' (cosy / warm) interior culture, the optics of Danish designers after World War II were based on the production refinement of modern, simple and welcoming residential ideals. At different levels of socialization, this cultivation matched the simultaneous rebuilding around the core family (*kernefamilien*), the housewife and the safe home base (*hjemlighed*) as a haven of tranquility (*ro*), immersion (*fordybelse*) and close co-existence (*nært samvær*) beyond the constant acceleration in the outside world" (Dybdahl, 2006: 528). This is the link to the lifestyle of the Bay Region-type of architecture. These were houses, often in wood, placed into the landscape, with pergolas and terraces, a dissolved interior of living and dining in one, walls in redwood, the stove free standing, floors covered with straw mats, and Eames furniture. They were a symbol for a modern way of living. In Denmark, this imagery got its counterpart and likeness in the architecturally designed freestanding houses of the 1950s for the emancipated middle class with an open and differentiated plan solution, an intimate relationship between inside (house) and outside (garden or landscape), walls of brick and wooden panels in the living room and visible

63 In the work of Bay Region architects like Charles and Henry Greene or the younger Wurster, Bernardi & Emmons and/or Richard Neutra, Kay Fisker saw an example of how modern architecture could continue the ideas of Functionalism, and the use of modern techniques, but then extend the notion to include more emotionally and socially loaded functions and sensuous materiality (*stoflighed*). Besides the work related to the work of Scandinavian architects like Gunnar Asplund or Alvar Aalto, which he as an architect liked.

64 Lars Dybdahl, *Dansk Design 1945-1975*, Borgen, 2006

wooden beams and pillars[65]. However, references to the Bay region style of living is also to be found in the arch typical Danish '*paracelhuse*' (detached houses) of the 1960s and 1970s with its wooden carports and pergolas, garden terraces and inner courtyards and an interior build around a large living room with a fire place, wooden floors and ceilings. What is more, it is present in the recreational outside living areas of industrialized housing settlements of the 1970s like Albertslund. It was a trans-income-class way of living. Something that all Danes – no matter background or education – felt associated with. It confirms the narratives of Eigil Hartvig Rasmussen described under 'The Natural' and 'The Humane'. That he was right, when he argued that Danes are fond of being close to nature, having views to the outside, as well as preferring cosy, 'warm', and intimate interiors. The signification of the imagery of the architect competition went as such beyond that of pavilion hospital. The presence of gardens, views to the outside, winter gardens inside were symbolic. They resonated cultural values – 'the nature-romantic' need to be outside or in contact with nature.

3.3 IDENTITY MARKERS IN THE MATERIALISATION

Whereas photographs of the pergola construction on the terrace next to *Vandrehallen* could be read as if it was made of wood, it was in fact made of steel. It was a sign of the industrialized conditions under which the hospital was made, just as the prefabricated concrete elements of the ward facades, the fiberglass standardized bathroom cubicles, and the colour-coated aluminium and stainless steel stationary furniture in the cure, care and service areas. The concrete, steel, fiberglass and aluminium are historical artefacts - material culture - and in each their way important for the creation of the imagery of the hospital as 'a bright and beautiful new world'. The materialization was as such not only driven by economical consideration or pragmatic ideas about use, wear and tear. It was ideologically informed. The processing of the materials took part in a meaning making process, in which post-war architects - such as Krohn & Hartvig Rasmussen - were actors in making experiments to re-define authenticity in architecture with the use of new materials and production methods.

As described, the architects at Krohn & Hartvig Rasmussen spend quite some time researching concrete facades before they came up with the idea of pouring the concrete into a form, which would leave it with vertical grooves on the outside surface. Their concern about the disadvantages of exposed concrete were shared by a number of their contemporary colleagues – in Denmark as well as abroad. Architecture historian Adrian Forty wrote in *Concrete and Culture, A Material History*[66] the following: "Already by the late 1950s many architects had become worried about the disagreeable ageing of concrete and were increasingly taking the view that if they were to use the medium, they must find ways to control its weathering. The search for a time- and weather-resistant concrete took two distinct paths and absorbed an astonishingly large number of architects' time and attention in the early and mid-1960s" (Forty, 2012: 54). Adrian Forty described how there were two strategies in the field; - to develop the use of precast concrete, - or to concentrate upon the design of buildings and of their details so as to make them more resistant to the effects of weather. The last strategy being the one of Krohn & Hartvig Rasmussen. As an example of the second – and

65 Best practise examples are the private homes of Jørn Utzon, Halldor Gunnlogsons, or Erik Christian Sørensen. However, these houses were a mix of references to Bay Region style, Japanese architecture and Mies van der Rohe.

66 Adrian Forty, *Concrete and Culture, A Material History*, Reaktion Books, 2012

similar strategy as Krohn & Hartvig Rasmussen – Adrian Forty mentioned the 'corduroy' effect of the exposed concrete developed by the American architect Paul Rudolph, "where the concrete was cast with vertical ribs that were roughened by hammering away the surface to expose the aggregate" (Forty, 2012: 54). The irregular – almost organic – concrete surface by Paul Rudolph was more sensuous in its appearance than the stratified formal language of lines by Krohn & Hartvig Rasmussen, but the idea was the same. As Rudolph's 'ribbed' concrete facades were made in the mid and late 1960s – while they were developing the proposal for Hvidovre Hospital – we must assume that they knew about his work, as well as the work of other architects who were also experimenting with grooved facades[67]. The work of Rudolph related to the term 'Brutalist architecture' – meaning 'raw' – and was used to describe the work of modern architects who worked with exposed concrete[68]. Nils-Ole Lund quoted in *Nordic Architecture*[69] the two British architects Alison & Peter Smithson saying: "Brutalism tries to live up to the mass-producing society and to draw a powerful poetry out of the confused and strong forces that are in action" (The Smithsons, 1957)[70] . What they were saying was in fact, that they saw it as an ethical challenge as architects to deal with concrete; – 'to make a virtue out of the necessity'[71]. Modern architecture had presented concrete as one of its materials, and the growth society of the Danish well-fare state had normalized its use. But as Adrian Forty point at in his book, using concrete also meant erasing "evidence of craft and workmanship from the face of the building, those details and traces of work that conventionally bestowed meaning in architecture" (Forty, 2012: 286). The work of architects like Paul Rudolph – but also the work of Krohn & Hartvig Rasmussen – introduced the idea, that the moulding and processing of concrete is a design in itself. They showed how the surface and structure of concrete is an architectural means, not something to ignore. By acknowledging – and working with – the true nature of the material in their design – its substance, fluidity and porosity – they surpassed the idea of concretes otherwise assumed neutrality – giving it character, and a poetic authenticity. It was in its own way a re-definition of 'honest' architecture.[72]

Like concrete had a transformative effect on the materialization of architecture, plastic was equally significant in the post-war period even though on a different scale. Being fluid – like concrete – it was subject to many dreams and ideas and became instrumental not only in the development of house hold appliances but in industry as well as in building. Lars Dydahl described in *Danish Design 1945-1975*[73] the influence plastic had on building components, – especially in industrialized building. Amongst other things it "increased the level of bathroom sanitary equipment and other water and heat installations ... or it became part of the many prefabricated components and systems developed for floors, ceilings and

67 In the beginning of the 1970s structural concrete facades components with vertical grooves were also used in the industrialised housing in Denmark – examples are Avedøre Stationsby and Ishøjplanen, by Kooperativ Byggeindustri.

68 The discussion on Brutalist architecture took place between the 1950s and mid-1970s and is related to the discussion of modern architecture and the work of Le Corbusier. However, architects Alison and Peter Smithson are also strongly associated with the term. As a 'style' it was further acknowledged through the book *The New Brutalism* by British architectural critic Reyner Banham.

69 Nils Ole Lund, Nordisk Arkitektur, 3. udgave, Arkitektens Forlag, 2008

70 Alison & Peter Smithson, *Architectural Design*, nr 4, 1957

71 This is also a Danish saying; *At gøre en dyd ud af nødvendigheden* ... It is interesting to keep in mind, as this resonates through the project of Hvidovre Hospital – the thought field of Krohn & Hartvig Rasmussen.

72 There are, of course, a number of other architects that you could mention who has worked with concrete in ingenious ways like the American architect Louis Kahn, and in Denmark: Friis & Moltke, Kjær & Richter or Erik Christian Sørensen not to mention the more anonymous and mundane architects who worked in the industrialised housing sector like the before mentioned Kooperativ Byggeindustri.

73 Lars Dybdahl, Dansk Design 1945-1975, Borgen, København, 2006

roofs, walls and facades" (Dybdahl, 2006: 238). Like the fiberglass bathroom cubicle at Hvidovre Hospital, the new plasticized building components replaced older building habits "they now formed the interior spaces' surfaces and the transition between the interior and the exterior, also in the form of the window" (Dybdahl, 2006: 238). As an example, the walls in the surgical suits at Hvidovre Hospital were covered with vinyl. And the user had direct contact with smaller building components in plastic in the form of door handles, switches, sanitary fittings. Building components were – from the large scale to the very small scale of Hvidovre Hospital – designed by Krohn & Hartvig Rasmussen. As in many other industrialized building projects, plastic materials were an important part of the design solution. One very special design feature at Hvidovre Hospital was the standardized inventory item – the bathroom cubicles on the wards made in fiberglass. The nature of the material made it possible to design a space where floor, walls and ceiling would float into each other[74]. Having no joints, the idea was that it would be easier to clean the cabin – thus more hygienic than a bathroom with tiles. But there was more to the design than this rather pragmatic idea. The design was through its materialization associatively linked to the aero-dynamic spaces of the jet-age like airplanes, ship designs or modernistic furniture like the ergonomic reinforced fiberglass 'Kilta' chairs in the living area on the wards and on the patient terraces designed by the Finnish interior architect Olli Mannermaa. There was a narrative embedded into the design – a modernistic dream about a home in the future. What is more, the fiberglass bathrooms with their curved lines, smooth surfaces and plastic materiality stood out. They contrasted the rationality of the 'straight' formal 'language' of the patient rooms and offered another reality which was immaterial, abstract, and through the colouring also light. Much like the moulding of the concrete components on the outside, this interior suggested an almost craft like quality in its sophisticated and detailed materiality of fiberglass. The ability to contrast the modular aesthetic of the standardized, rational and systematic industrialized production apparatus with a sense for detailing, materiality and craft was, according to Lars Dybdahl, typical for Danish Design in the post-war period. The fiberglass bathroom cubicles had the same significant value as the Eames furniture in the Bay Region style houses, the Egg chair designed by Arne Jacobsen for the SAS hotel, or the furniture design at Hvidovre Hospital. Like the smooth and organic gardens outside, the grooves in the concrete, or the colouring of the walls, it was a symbolic means to balance the dispassionate look of industrialization, – and in the case of Hvidovre Hospital to go against an institutional imagery.

3.4 NEW MONUMENTALISM

The synthesis of the design disciplines – and the focus on the interior qualities of the architectural design – was, as described in the 1968 draft proposal, the intention of the architects. The project was driven by a profound wish to create a hospital environment, where things would work well and where people would feel comfortable. As described in the media analysis, the imagery of the interiors was related to a discussion about the institutional imagery of hospitals, as it was related to discussions within the architectural field about modern architecture, home and cultural issues.

If you look at the project from an urban view point you see, how it was not only an interior project but a discussion about life in the city. In that sense it was equally an urbanistic project, even if the architects did not emphasize

74 A plan drawing was shown in Analysis 1 - Visual 1.9.

this in their views. In their design – and the decisions they made – they implicitly reflected what was going on in the surrounding society. In fact, the site plan could be read as a sign, whose value was to be found in the life form, which characterized suburbs like Hvidovre.

As discussed in the previous analyses, the 'modern society' of the 1960s basically stood for 'modern technology'; - cars, - television, - telephones, - and house hold appliances. The increased consumption was encouraged by women, who started to work. Children and elderly were institutionalized. A youth culture developed, and more young people entered long-term education. Higher incomes also meant that more Danes moved into their own house in the suburbs, where shopping centres were built to facilitate equally mercantile, social and cultural interests. Broadly speaking; from being a working-class culture, Denmark had become a middle-class society. With the change of status came different preferences, needs and desires as well. The new public life was steered by individual choice and freedom, self-expression and even change. As discussed in Analysis 3, the public interiors of buildings like Rødovre Centrum, Odense University and Hvidovre Hospital were indicators of the new life in the suburb. In these buildings boundaries between public and private were blurred at the same time as boundaries between city and building, building and garden, were dissolved. *Vandrehallen* with its open spatial configuration, inside sitting areas and outside terraces had a domestic connotation as described previously, the same way as it referred to pedestrian streets and modern shopping arcades in suburbia. It was popular and commercial like Rødovre Centrum and at the same time almost as elegant and exclusive in its design like the work of Jørgen Bo and Vilhelm Wohlert at Louisiana Museum North of Copenhagen or the work of Karen and Ebbe Clemmensen at LO Skolen. If we look at the first perspective drawings of Eigil Hartvig Rasmussen – as well as the ones made later by other architects at Krohn & Hartvig Rasmussen – we also see how they mix domestic sceneries with fantasies about a new public domain. There is a narrative in the images, which tell us, that they saw a building - an interior - a garden - which would support the social and ceremonial life in the hospital. A hospital where intimacy, access to nature and social behaviour was the final goal, not form. The 'authenticity' – and 'truthfulness' – in the work was to be found in the way in which it combined modern techniques with conscious humanistic ideals, and an understanding of the social reality of its users – the ordinary life in the suburban landscape around. The large flat horizontally laid out Hvidovre Hospital was a symbol – a sign of the new times – a new type of monument – a monument of the Danish welfare state. Equalitarian in its idea and open for interpretation and use.[75]

Knud Millech and Kay Fisker wrote on one of the last pages in their book *Danske Arkitekturstrømninger 1850-1950*[76]: "As architecture in the Middle Ages served the glory of the church, under the monarchy the royal power, modern architecture increasingly serves society as a whole" (Millech & Fisker, 1951: 350). In his article from 1950, Kay Kisker similarly accentuated the Swedish art historian Gregor Paulsson[77]: "The monarchy has always

75 As pointed out in footnote 15, Hvidovre Hospital was influential in the international hospital debate. It terms of significance, it was therefore not only a new type of suburban monument – it was a new type of 'hospital monument'. In *Architectuur voor de gezondeheidszorg in Nederlan*d, Nai uitgevers, Rotterdam, 2010, Cor Wagenaar and Noor Mens discussed how the design of Hvidovre Hospital could be understood as symptomatic for a humanistic reaction within healthcare against hospitals as rational mechanistic totalitarian inhumane regimes. The horizontality of the project, its 'streets and squares' (as they describe it), smaller scale, cosiness, and intimacy were, the way they see it, about accentuating the human scale – designing from the view point of people. The view, that the project was humanistically informed, corresponds with my interpretation.

76 Knud Millech & Kay Fisker's, Danske arkitekturstrømninger 1850-1950, Østifternes forening, København, 1951

77 Gregor Paulsson was a Swedish Art Historian. Between 1934-1956 he was professor at the University of Uppsala. He was occupied with the relationship between art and society. He wrote *Den nya arkitekturen* (1916).

used monumentality in its service to strengthen its power over the people, while the democratic society in its nature is anti-monumental. Intimacy and non-monumentality should be the emotional goal of the new architecture" (Gregor Paulsson, 1948)[78]. The Second World War was over, but there was an echo in the minds of the people, who had witnessed it. Monumentality had for some an uncomfortable association[79], which is why the editor of *Progressive Architecture* the American architect Thomas H. Creighton[80] in 1948 wrote: "We must hope, that the monuments of our time become buildings like homes, hospitals and schools for the benefit of the whole society, and for all layers of the population" (Creighton, 1948)[81]. The historical connotation – and the debate on monumentality – shows how the thoughts by Eigil Hartvig Rasmussen on Hvidovre Hospital was embedded into a deep discussion on architectures purpose. The humanistic argument for an architecture that serves society and people within it – where intimacy, cosiness and closeness were goals worth striving for – was in retrospect not only ethical, it was essentially also a political discourse.

EPILOGUE

In the years after the inauguration of Hvidovre Hospital perceptions changed. The historical awareness of the projects humanistic credibility faded into the background of a developing welfare society, higher standards of living, new problems to solve and the pursuit of individual freedom and happiness. Critically speaking you could say that people – including architects in Denmark, architecture historians and critics – forgot, what the story of Hvidovre Hospital was about. What they saw was a form, which – seen from the view point of 'the aesthetically effective' – was not that impressive. The re-definition of architecture's intention and authenticity had begun.

78 Page 71, - in Kay Fisker, 'Den funktionelle tradition, printed in *Arkitekten*, 1950

79 Think of Fascist architecture – monuments made by Hitler and Mussolini.

80 Thomas H. Creighton was an American architect - from 1946-1963 editor of *Progressive Architecture*

81 Page 72, - in Kay Fisker, 'Den funktionelle tradition', printed in *Arkitekten*, 1950

ANALYSIS 5

PHOTO OPPOSITE PAGE

SUBJECT: Architects at work - The Supergraphic in the parking garage
SOURCE: The private archive of Flemming Skude
Year: Around 1975-1976

THE EXPERIENTIAL ASPECT OF ARCHITECTURE

INTRODUCTION

In the previous analytical experiments, I have looked at the material and tangible aspect of architecture, architecture as a means to support work processes and use, social relations of power and bonds, discourse and communication. In this analysis I will look at the most subjective and intangible aspect of architecture; the experiential.

A common interpretation of experience in architecture is to see it as the sensorial and perceptual space of for example sounds, smells, contrasts between light and dark, colours, rhythm, proportion and tactility[1]. Even more so, experience in architecture is often interpreted as something fantastic – the sublime, the beautiful, the poetic. While this view is included in my analysis, my approach towards the experiential aspect of architecture is fundamentally different, as I would like to include considerations about the synergy between 'spatial characters and effects' [2] and the 'conditions' [3] of the people experiencing the spaces[4]. How architecture in its own way can relate to the existential processes that people are going through in a hospital. In this analysis of the architecture of Hvidovre Hospital I have therefore been studying whether the architects incorporated thoughts about 'being' – in an existential sense – into the design of the building[5]. I thereby open a door to the knowledge field of anthropology and environmental psychology, but equally to the field of philosophy. The thought frame is moreover related to the thinking that takes place within performance art, literature and film in which human conditions and the sense of life often is used, described and explored as a narrative. As my work is centred in the discipline of architecture, I will in the analysis address – and reflect upon – the relationship between the architectural means of the architects and the potential lived – performative – experience of users in the building while contemplating the possible intentionality of the conceived space[6].

As the research concerns hospital architecture, there are certain criteria that have to be taken into account in relation to the incorporation of the parameter 'lived experience' in the analysis[7]. The first one is that different

1 One example is the book *Om at opleve Arkitektur* by the Danish architect Steen Eiler Rasmussen, GEC Gads Forlag, København, - Danish edition, 1957. The book was translated into English in 1959 *Experiencing Architecture*. Steen Eiler Rasmussen's book gave an account of how the experience of 'an architectural space' is defined by sensous qualities - in some cases relate to the use by people and things - boys bouncing a ball against a wall etc.

2 In Danish *rumkarakter* and *rumvirkninger*.

3 In Danish *tilstand*

4 By doing so I include into the analysis of 'the architectural space' the idea, that 'an experience' is relative depending on the user. The purpose of the analysis is not to define a set of rules or guide lines, which you see done in Environmental Psychology, in Evidence-based Research and in the Healing Environment discussion. I also do not define 'a user'. The purpose is to demonstrate that a hospital is a life world of its own, which I think should be taken into consideration when analysing hospital buildings and when designing them. It is about awareness building and understanding, more than it is about finding universal and deterministic answers. The word 'space' is therefore also a difficult term, as it naturally become the container for many different meanings. I use it here in the sense of 'physical space'. The analysis will demonstrate how people would probably have experienced it differently.

5 The idea of being in the world – an existential being – refers to the knowledge domain of philosophy (Heidegger).

6 By using the word 'potential' I would like to emphasize – as also mentioned under footnote 4 – that I am aware that the architects' intentions with the building was one thing, what people (users) actually experienced another. The point of the analysis is therefore not to describe one version of what 'the experience' could have been, but to offer a series of possibilities. As we are dealing with a historical situation, the analysis is interpretative in nature. I will not establish any facts or universal answers. I will describe and discuss the data I have found, and what I believe I can read from it.

7 The term 'lived experience' relates to qualitative research. As discussed In Chapter 2 - footnote 14 - Qualitative researcher study things in their natural settings, attempting to make sense of phenomena in terms of the meaning people bring to them. The book *The production of space* by the French philosopher Henri Lefebvre dealt with the issues of 'space' being 'produced' by the one perceiving – contrary to the conceived space of the architect. I accept that as a criterion in my research. My knowledge of his work is furthermore limited, and my approach equally informed by Culture Studies in which field studies are essential in understanding human behaviour and culture.

'realities' co-existed at the hospital. I also touched upon this in Analysis 4, when I discussed that there were different 'languages' in the source material. Secondly, the attention of users may have differed from being inwards to outwards oriented depending on strength, capability and need[8]. A matter which is related to the discussion in Analysis 3 on intimate, private and public spaces in the hospital. Thirdly, we must consider the influence of 'moods'[9] in the existential sense of self. Meaning that what a person experienced through their senses was 'tuned' by the way in which they would have been able to cope with their life situation, which was informed by cultural background, personal history and personality. Seen from an experiential view point there is also the possibility, that the ambiances[10] and spatial characters of architecture could resonate, amplify, elevate, support or disturb these embodied experiences of users thereby contributing to the existential sense of self[11]. The experiential view point is thus one of many layers and directions[12]. It is a complex situation, which the architects ideally were aware off when designing the hospital in Hvidovre. While it is impossible to describe exactly what people using Hvidovre Hospital may have experienced, I do think that it possible to talk about, how the architecture may have had an experiential – and existential – connotation through means of association, imagination and memory. The analysis is thus interpretative in character and not absolute in its descriptions of what took place.

Another important aspect in the analysis of the experiential aspect of the architecture of Hvidovre Hospital was that the hospital was not only a place for patients and their visitors. It was a place for the people who had taken it upon themselves to try to cure, aid, heal and care for the sick and physically impaired; the doctors, the therapist and the nurses, as there was a number of people who assisted them in their work. Other people were occupied with laboratory work, diagnostics, data management or administrative duties not to mention the cleaners, the people working in the kitchen, the storage rooms, and the technical department. For every patient that visited the hospital there therefore was a network of people at work to make the hospital up and running. The perception of the hospital varied accordingly from being something like; - 'an office' or 'a business' for the management, - 'a studio', 'a stage' or 'a laboratory' for the medical staff, - a 'service facility', 'a prison' or 'a 'refuge' for the patients. To be able to deal with these different 'experiential perspectives' I investigated and defined four 'types of perspectives' in setting up the analytical experiment. The perspectives were guidelines, which I used to explore, what I could write about in relation to the experiential aspect of the hospitals architecture. They also made it possible to shift between different views in the interpretations of the source material. A strategy which is known in architectural practice but also in the definitions

8 What I am trying to say here is that there are different types of attention. My view on this is informed by the work of professor Patrick Grahn at SLU in Zweden. His pyramid model described four types of attention: - inwards involvement (the individuals mental power is very weak, disturbances are disliked, privacy preferred), - emotional participation (the individual has a somewhat greater mental power, and begins to take interest in the social surroundings), - active participation (the individual is able to give and share, create things, participate), - outgoing involvement. (the individual is very strong and capable of undertaking activities on their own). Described in: Patrick Grahn, 'What makes a Healing Garden', *Journal of Therapeutic Horticulture*.

9 In Danish *sindsstemninger*. Holmfeld and Heslet calls it *sansestemthed* in their book *Sansernes Hospital*, page 261

10 I use here the word 'ambiance' as the word 'atmosphere' insinuates a specific discourse in architecture. Another word could be 'mood'. In Danish you say *stemning*, In German *Stimmung*, In Dutch *stemming*.

11 To give an example: Certain places have certain associations – thus positive or negative feedback on the person perceiving. Underneath lies the idea that sensing is a source for understanding, consciousness and awareness.

12 The complexity is the reason why I work from the assumption, that there is not one ideal 'healthy environment'.

of characters in role play, literature, theatre, film etc.[13] The four types – described below – are centred around people with a long-term stay in the hospital such as patients and staff, but the perspective of visitors will also be taken into account in the analysis. It is thus not an all-inclusive description. And with the reservation that Hvidovre Hospital was made more than 50 years ago, I will make use of the past and present tense in the description.

The first 'experiential perspective' is that of ill patients. While most people have been in contact with the idea of illness and disease, experiencing it yourself is different and people react unpredictably and differently from shock, panic, stress or chaos to acceptance or the will to fight for their life. Sociologist Deborah Lupton provided in her book *Medicine as Culture* an overview of the way medicine is experienced, perceived and socially constructed in western societies[14]. In relation to the 'illness experience' she writes: "The onset of illness, especially if severe, constitutes a threat to the integrity of the body and self-identity, and requires a status change from well person to patient … Being ill is therefore intimately related to notions of one's sense of self" (Lupton, 1994: 84). Hospitalization does not make the existential journey less intense, as hospitals are places that reminds people that they live through a physical body. A body which can break, become sick, ill, and which will eventually die. Deborah Lupton writes: "The hospital is a place fraught with competing meanings of anxiety, threat, despair, hope, fear and punishment. Most people, ill or well, feel uneasy in a hospital, yet the hospital promises salvation and remediation for those who are ill" (Lupton, 1994: 101). Lupton also describes, how the sometimes rigid rules and routines which are necessary for the hospital operation from the view point of patients can strengthen the feeling, that they have lost control and privacy, as well as that the treatment itself can expose feelings of vulnerability and alienation. Thus, from a patient's viewpoint, hospitals are places, which can lead to deep existential moments and life experiences.

The second 'experiential perspective' is that of physicians. Their 'existential sense' is tied to the role, they play in the hospital. A role which has been defined through history and with the help of hospitals. Seen from the medico-scientific perspective, hospitals are essentially a ritual place in which the human body is opened to exploration and learning. Anthropologist Byron J. Good writes in his book *Medicine, rationality and experience*: "Within the lifeworld of medicine, the body is newly constituted as a medical body, quite distinct from the bodies with which we interact in everyday life, and the intimacy with that body reflects a distinctive perspective, an organised set of perceptions and emotional responses that emerge with the emergence of the body as a site of medical knowledge" (Good, 1994: 72). To illustrate the experiential perspective of a physician working in an anatomy laboratory, I will make use of the following quote from the book of Good: "Emotionally a leg has such a different meaning after you get the skin off. It doesn't mean at all what it meant before. And now the skin, which is our way of relating to other people – I mean, touching skin is ... getting close to people – how that is such a tiny aspect of what's going on ... it's like the peel of an orange ... And as soon as you get that off, you're in this whole other world"[15]. While the

13 The purpose of this strategy was to be able to shift between different perspectives – like in a role play or a film. Some architects work with 'scenarios', which is kind of a similar technique. Klaske Havik in her text 'Lived Experience, Places Read: Towards an Urban Literacy', *Oase* 2006 gave another example when she described, how Rem Koolhaas in his book *Delirious New York* adopted the role of the reader in his exploration of New York. He thereby did not only describe the city, he 'wrote it' based on his personal impression. His approach was related with the Situationists 'derive' mentioned in footnote 6, in which the researcher investigates the psychogeographical effects of the city in a playful manner by moving through it – approaching it from unexpected angles.

14 Deborah Lupton, *Medicine as Culture*, Sage Publications, first published 1994, page 84

15 Quote from Byron J. Good, *Medicine, rationality and experience*, Cambridge University Press, 1994, page 72

body under ‘the medical gaze’ can indeed be seen as an ‘anatomical atlas’[16], it is also the task of the physician to re-construct the experience of standing in front of a person and not only a body or a case after ending the medical procedure. The competent physician can see both sides, which makes them vulnerable for their own short comings, failures and mistakes.

The third ‘experiential perspective’ is that of nurses. As described in Analysis 3, the 1970s were marked by a change in the hospital organisation. The re-organization was not only about new work routines but about democratization. Some nurses were politically active and self-aware, claiming more influence on the work floor. At Hvidovre Hospital this, for example, meant that the ward nurses became partially self-governing groups. What is more, the area of work changed. While the nurse-doctor relation was the major priority until the beginning of the 1970s, the nurse-patient relation henceforth became the main focus. In the book *Sygepleje i fortid og nutid*[17] nurse Kirsten Beedholm describes how nurse textbooks from the mid-1970s emphasized the importance of the way in which nurses interacted with patients, as it was the belief that it could have a significant effect on the patient’s attitude towards the disease, the treatment, the entire hospital environment. We see here a change in the focus in an existential sense – from the body to the psyche. According to Beedholm, the nurse-patient relationship should, on the one hand be a meeting between equal people, on the other hand acknowledging that it was a relationship between a weak and a strong person, which was compared with a ‘mother-child relationship›. “The word ‘care’ took from then on a central place as an expression of the nurse›s core or foundation, which was described as a genuine, human interest, close emotional contact and holistic thinking” (Beedholm, 2008: 167). From an experiential view point the link between motherhood and nursing is significant. Caring for the patient hereby achieves another meaning. One that is moreover connected to a specific view on being female. Despite the emancipation, being a nurse was in the 1970s still associatively linked with a specific gender like most physicians were men.

The fourth ‘experiential perspective’ is that of the people working in the hospitals service departments comprising the kitchen, the sterilization centre, the supplies, the workshops and the technical centre. Unlike the three previous perspectives, I have not been able to find much literature about the culture history, perception and experience of hospital service workers[18]. The only written material I have found is a staff magazine from 1976[19] and a short text about the start-up of the kitchen[20]. The impression I have of this group of people is thus primarily from my visits to Hvidovre Hospital, where I had the possibility to walk around in their domain and occasionally talk to some. Knowing that a large group of people actually spent almost their entire day or night in these areas hidden from the public, I felt the need to include

16 I refer here to the work of Foucault, who viewed medicine as an institution of power. In his book *The Birth of the Clinic* Foucault describes how the human body through the eyes of the medical gaze is seen as an ‘anatomical atlas’. While the work of Foucault has been in the back of my mind, I am also critical towards the rather one-dimensional way in which he looked at physicians. Having said this, I accept his point, that you from the view point of power can see the institutionalisation of hospitals as a way to manipulate, control, survey and monitor sick people – with the physician in charge. The de-humanisation of sick people – stripping them of their personality – making them a number, a case, an organ, a cadaver is part of this ritual. From this view the body is a medical body, which can be examined, tested, cut open and manipulated, without considering who is in front of you.

17 The English title is *Nursing in the past and the present, R*edaction Stinne Glasdam & Jens Bydam, *Sygepleje i fortid og nutid*, Nyt Nordisk Forlag Arnold Busck, København, 2008

18 Which makes you think that we are talking about some kind of discrimination as it concerns a large group of people. In comparison, there were in 1988 for example 392 physicians employed at Hvidovre Hospital, 1463 care takers, and 1600 other. What ‘other’ means is uncertain – but service workers are included here – meaning it might be a very large group we are talking about.

19 *Personaleblad*, nummer 1, 1976

20 *Københavns Hospitalsvæsen 125 år, I stadig udvikling*, published by Københvans Kommune, 1988, page 167-169

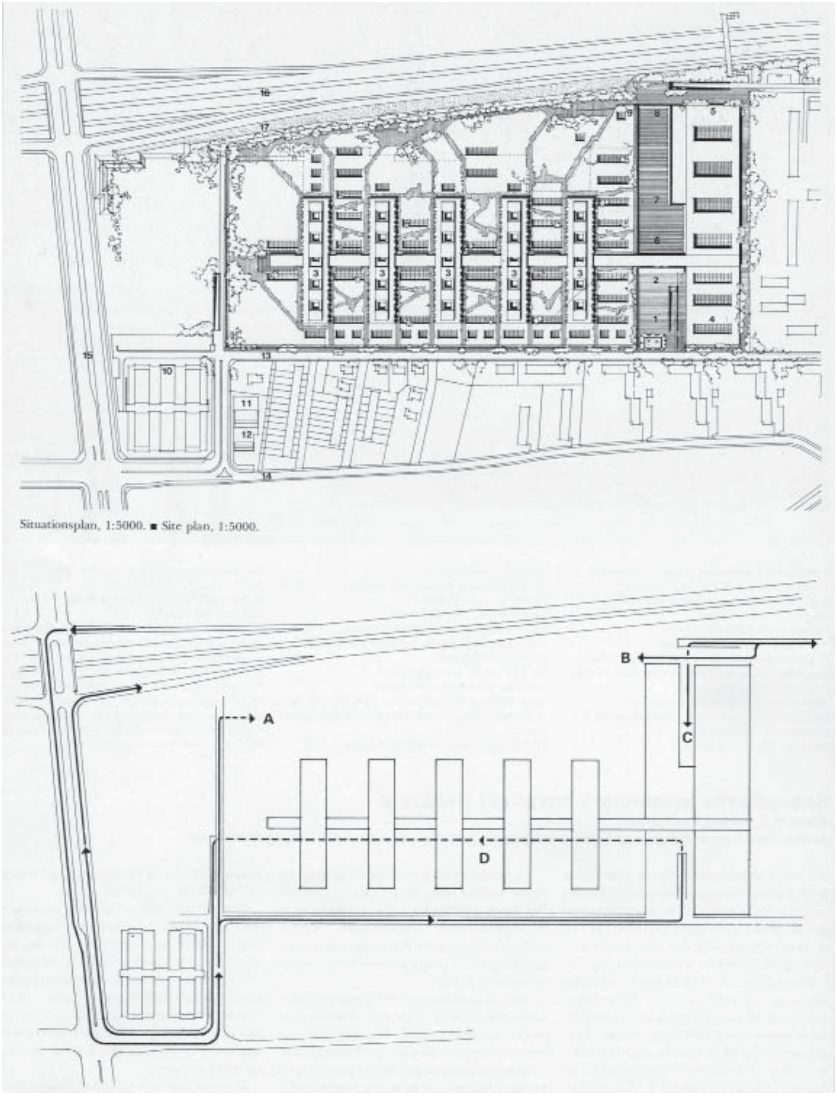
the invisible life and experiential view into the analysis. To contemplate what kind of ideas that were embedded into these ‘dark’ spaces if you look at it from an architectural view point – and in terms of an existential sense.

In the following text I will reflect upon the architectural means of the architects and contemplate what role the architecture possibly had.

PART 1: MEDIA ANALYSIS

MAPPING - PART 1

The primary sources in this part of the analysis are the verbal and visual evidence of the work of the architects of which the building (as it stands today) is one. My own visits to the site have played a role in understanding what the architects made. By doing so I draw upon the ‘derive’ of the French Situationist in relation to performative mapping. This means that I in my experiential journeys to Hvidovre Hospital have been able to map different types of aspects of the architecture through observations and simply by being there. These field trips were essential to the reflective thoughts I expose in the analyses - and in specific this analysis - as it made it possible to move beyond what the architects may have been aware of in designing the building and therefore also in their presentations. Having been to the hospital several times – watching people in their daily activities – and being together with them also made it possible for me to think about – and contemplate – their situation in a more direct way; to analyse from the view point of empathy. On the following pages is a mapping of my experiential journey through the building.



Source: Arkitektur DK, nr 8, 1975, page 308
Entrances: A: Ambulance, B: Chapel, C: Service Yard, D: Underground Parking Garage

BY PUBLIC TRANSPORT, THE MAIN ENTRANCE FOYER



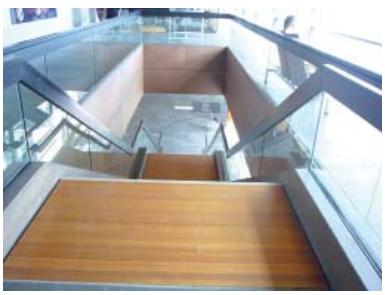










VANDREHALLEN









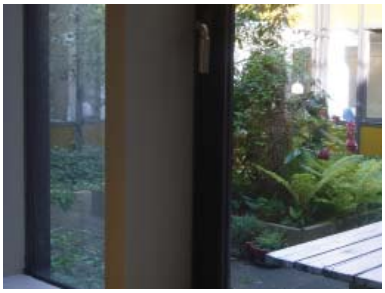




the analytical experiment - analysis 5

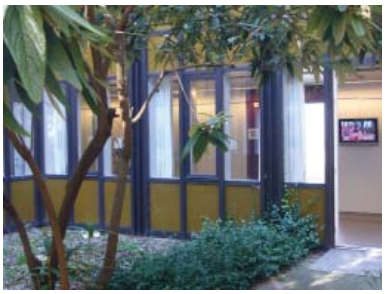
WARD AREA WITH PATIO SPACE









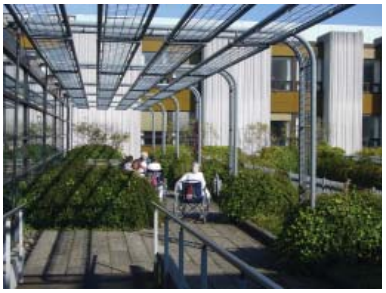






ROOF GARDEN AND TERRACE















BY CAR, INTO THE PARKING GARAGE AND THE TREATMENT AREA











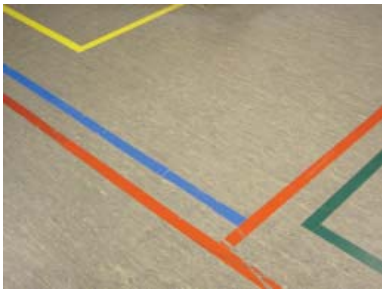




CORRIDORS IN THE OUT PATIENT CLINIC










OUT PATIENT CLINIC AND LABORATORIES














TREATMENT AREAS














ENTRANCE, AMBULANCE, ACUTE CARE



ENTRANCE CHAPEL





ENTRANCE SERVICE YARD















SERVICE AREA













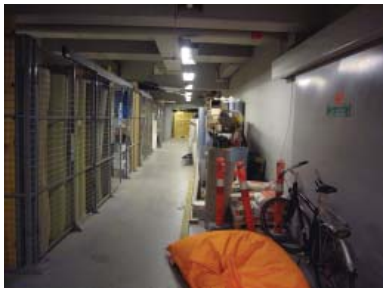

SERVICE AREA











MEDIA ANALYSIS

MAPPING - PART 2

On the following pages are a series of photographs I found in respectively the private archive of Gunnar Gundersen and in the archive of Hvidovre Hospital. The photos were taken around the inauguration of Hvidovre Hospital. At the end of the analysis I also include a number of photographs, that Eigil Hartvig Rasmussen took at some point in the 1970s.

As not much has been written about the experiential aspect of the architecture, the photographs are important evidence of what people wanted to record. They are cues to the collective memory of a time past. In that sense they are more than just documentation. They were interpretations. They tell us, what the viewer was experiencing, wanted to high light or address.

The photographs in Gunnar Gundersens archive might very well have been taken by him self, and as could be expected they portray an architect's view on the project. They also are related to the way in which the project was narrated in diverse media as discussed in Analysis 4. The photographs of Gunnar Gundersen are less stylistic, though. He, for example, included people in motion on a number of his photographs, which tell us, how he experienced the site as a place of the every day life, more than it was an abstract composition of space. In relation to this aspect, it should be mentioned, that my own photographs are quite empty for two reasons. First of all they were usually taken on Friday afternoons, when the hospital is more or less empty. For matters of privacy I was also asked by the hospital not to photograph people. Instead I included traces of their behaviour in the form of diverse arte facts.

It is unknown who took the photographs I found in the archive of Hvidovre Hospital - maybe some employer at the hospital. It is obvious that the person looking through the lens was occupied with the hospital staff. The photographs were possibly commissioned for some sort of publication in the 1970s. Some of the photographs have been used in the historical publication *25 år i udvikling, Glimt fra Hvidovre Hospitals historie* from 2001. I include the photographs as they emphasize how the hospital was a life world of its own. They also are evidence that the analysis of the experiential aspect of architecture should be made from different perspectives - not only patients.

Next to visiting the building, studying the old photographs has been important for this analysis - almost like a time journey - to get a sense of what it was like to be at the place in the past. The comparative visual analysis of the published photographs - depicted in Analysis 4 - naturally also have played a role in this analysis. Together, the compilation of collected - published and unpublished - photographs were used to compare - but also augment - what I had experienced and observed on site. It was as such a dialogue.

FROM THE ARCHIVE OF GUNNAR GUNDERSEN







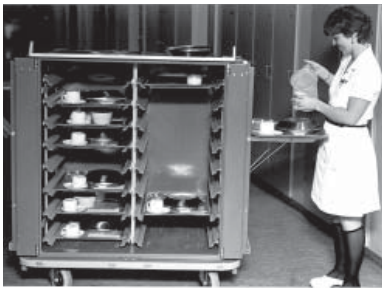


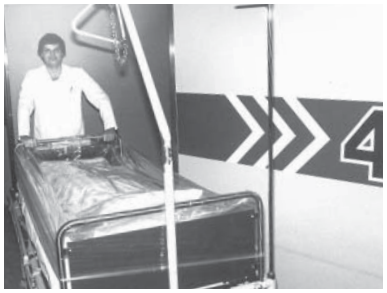


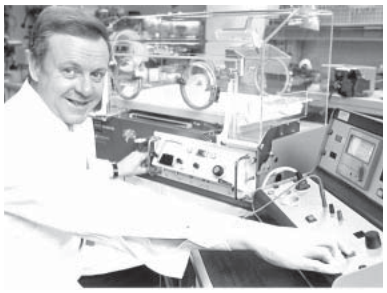
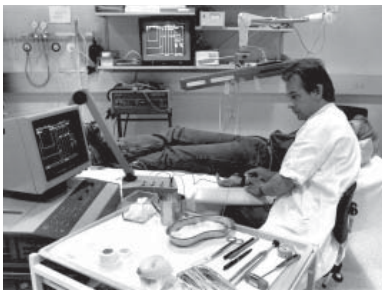


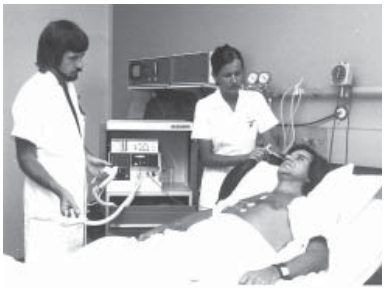

FROM THE ARCHIVE OF HVIDOVRE HOSPITAL







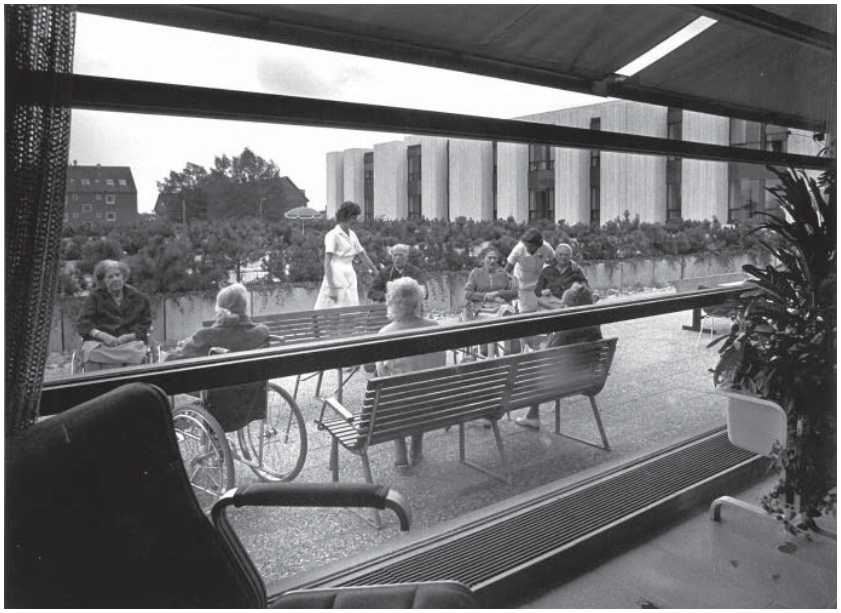




The Architecture of the Interior
at The Pathology Department

The Architecture of the Interior
of The Central Kitchen

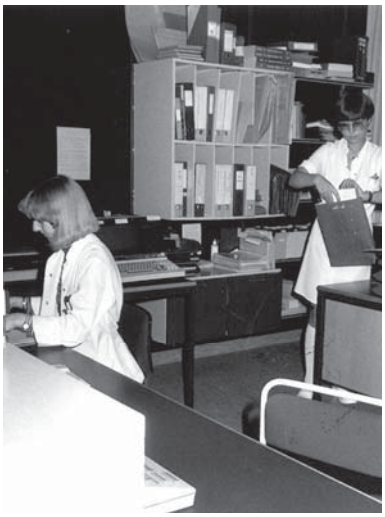
The Architecture of the Interior:
Inhabitation

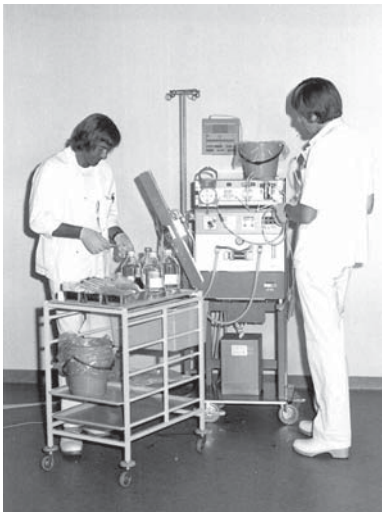
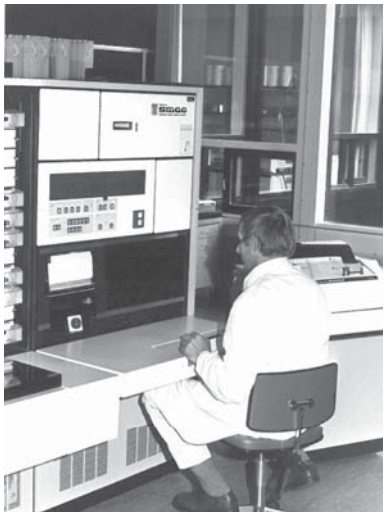
The Architecture of the Interior:
Inhabitation



FROM THE ARCHIVE OF HVIDOVRE HOSPITAL






PART 1: MEDIA ANALYSIS

THE ANALYSIS AND INTERPRETATION

The primary sources for this part of the analysis are as described on the previous pages the building on site, the photographs taken by Gunnar Gundersen, Eigil Hartvig Rasmussen and an unknown photographer in commission by Hvidovre Hospital. Besides I have made use of the overview of published images depicted in Analysis 4. I also refer to the 1963 competition proposal, the 1968 draft proposal, the municipal film from 1973, and the article written by Gunnar Gundersen, Jack Andersen and Niels Schou for *Tidsskrift for Danske Sygehuse*, årg. 49, august 1973.

In the media analysis I will discuss five experiential aspects in the architecture of Krohn & Hartvig Rasmussen for Hvidovre Hospital. Each represents a specific reading of the project. They moreover reflect the previously described experiential perspectives to gain understanding of how the architects' work may have related to the idea of the lived experiences of the users. Most of these ideas were not explicitly stated. They were tacit - embedded into the work - but nevertheless present.

As discussed in Analysis 4, Krohn & Hartvig Rasmussen in their verbal arguments made use of notions such as 'a humane hospital environment' implying that the architecture should be 'small scale', 'intimate', 'cosy', 'reconciliatory', and 'pleasurable'. They also argued for 'views' and 'access to nature' in the form of winter gardens, atria, a patient terrace and a roof garden. What is more, they spoke about the quality of 'recreational spaces' like that of *Vandrehallen*. If we read the competition proposal from 1963 closely, we can also read, how Eigil Hartvig Rasmussen wrote about eliminating 'noise', the value of 'daylight' and 'natural ventilation'. Environmental factors which you could say form the basis for a comfortable surrounding for the body and therefore also the mind. That Eigil Hartvig Rasmussen was thinking about the mental environment is literally to be seen in his argument for the humanisation of the hospital environment in which he refers to research showing, that 30 % of all patients are mentally stressed to such an extent that they need help[21]. "In this connection, **a humanization of the hospital environment will be of great importance**", writes Eigil Hartvig Rasmussen. As described in Analysis 4, the argument for the humane hospital environment was closely related to the idea of roof gardens, where patients were "in good contact with the terrains plant and bird life"[22]. Eigil Hartvig Rasmussen indirectly stated that being in nature could have a comforting effect on the mental health of people. The point that the humanisation of the hospital would have a positive influence on the patients, was later used by Gunnar Gundersen, Jack Andersen and Niels Schou in their article in *Tidsskrift for Danske Sygehuse* in 1973, where they argued against a rational view on hospitals in which environmental qualities, that might be healing, were excluded. A view which was informed by the environmental debate that took place in the 1970s, and which I will get back to in the historical part of the analysis. Eigil Hartvig Rasmussen himself did not use the word 'healing'. His argument was centred around the notion 'humanity' (*medmenneskelighed*), which, in the film from 1973, he described as follows: "**Humanity is about seeking to create human surroundings and create the physical basis for a good human atmosphere**" (Eigil Hartvig Rasmussen, 1973). The ingredients were as described above, but looking at the plan drawings, photographs, and visiting the building – with the experiential perspectives in mind – I realised that the architecture was about more than just this. Its humane character was, for example, to be found in

21 The 1963 competition proposal, point number 8

22 Quote Eigil Hartvig Rasmussen, competition proposal, 1963, page 13

the diversity of spaces, which I will discuss in the following text.

1.1 SPATIAL DIVERSITY: FROM INWARDS TO OUTGOING INVOLVEMENT[23]

In Analysis 3, I have described how there was a broad range of spaces between the intimate space of the patient room and the public entrance foyer or the underground parking garage. In Analysis 4, the character of the imagery of some of these spaces were described such as the entrance foyer, *Vandrehallen*, the terrace, and the clinical areas. By looking at these analyses and the source material again – but now from the view point of the experiential – it became obvious how; - the sequence of spaces from outside to inside to outside, - the interval of intimacy, privacy, publicness, - the changing ambiances and the quality of the interior settings, - the blending of a social, cultural, natural and a build environment, was more than a number of different interiors. My interpretation is that the architects had designed a scenery – a 'route architecturale'[24] – a series of places, situations and spatial invitations that people could interact with as they pleased. The architecture was meant to be experienced in a time-space relationship – moving the body and mind around – more than it was conceived as a building.

If we look at the diversity of the spatial characters and effects on the ward floor – from the experiential perspective of ill patients – we see, how it, to a large extent, might possibly have reflected and resonated with different mental conditions, moods, strengths and needs by creating e.g. enclosure, protection, separation, views and contact to the outside world, encouragement to interact or to move around. From that view point, the architecture could be understood as a staged frame around 'being', like:
- The intimate patient room for the emotionally vulnerable, inwards looking, shy, sad, or physical weak patient providing a peaceful, safe, silent and caring surrounding, a view to the outside, and at its best some privacy.
- The open but still protected sitting area in the semi-private space of the ward corridor for the patients who had regained a part of their physical and mental strength, and who were looking for some sensory stimulation, a shorter conversations of the lighter kind, playing cards, reading the newspaper, or just a safe place to be on your own for a little while.
- The active, lively and modern ambiance of *Vandrehallen* with its many facilities, visible and physical connectivity for the patients who were up and out-going, capable of moving around on their own, and who sought a space where they could be psychically, socially and mentally active, a place among other people, a place for contact, interaction with the world, self-affirmation, preparing yourself to go home, or spending time looking at passers-by.
- The common area of the semi-private roof garden terraces for patients who needed a moment outside, a place of recreation and rest, looking into the

23 The interpretation I make in this part of the analysis, is informed by the assumption, that it is possible to talk about a relationship between spatial characters and mental conditions in patients. This idea is informed by many different sources. The first one being the different qualitative studies I have either read about or guided as a teacher in which my students have performed field studies or discussed issues of experience in their work. My own empirical studies in the field are also a constant source for these types of reflections. In the analysis here I furthermore refer to Patrick Grahns work at the Institution for Landscape, Planning, Health & Recreation in Alnarp, Sweden, as also described in footnote 8. His theory is, that people's experiences are related to their life situation; how much the person is able to absorb and what the mental strength is. Roslyn Lindheim and Leonard Syme wrote in their text 'Environments, People and Health' (printed in *Ann. Rev. Public Health*, 1983, 4:335-59) that a 'Healthy Environment' "may not necessarily be one that fits an idealized architectural or planners image, but one that provides a range of opportunities for inhabitants to shape the conditions that effect their lives". Finally, I would also like to mention the book *Sansernes Hospital* by physician Lars Heslet and architect Kim Dirckinck-Holmfeld, who in the chapter 'Rummet og Kunstens metafysik' mentions that patients may have variable room quality requirements, depending on the development of the disease. They also describe how it is of importance, that patients in a stressed emotional state receive the opportunity to withdraw from everyday life. As they in their book map out how different spatial characters may have influence on the mental condition. Like me, neither Grahn, nor Heslet and Holmfeld, Lindheim and Syme claim that it is possible to define a universal answer, as people do not react the same way to the same stimuli. A certain suggestive – and open – categorisation is possible though, which is what I have tried to describe.

24 'Route Architecturale' is a notion within architecture which originates from architect le Corbusier. It basically stands for architecture that should be experienced by walking though it – experiencing it. Bernard Tschumi also talks about it.

garden, feeling the wind or the sun on the skin, listening to the quiet sounds of the city in the background or the birds sing, a place to smoke a cigarette, or having a private conversation with friends, family, another patient.
- The more intimate pocket spaces of organic green in the roof garden, a poetic place to withdraw, close the eyes, relax, a place to kiss, hold hands or cry, touch the ground, the leaves, contemplating the cycle of life.

The spatial diversity – and the possibility to move around freely – was in contrast to the rather strict and repetitious regime of the daily patient life on the hospital. Seen from the view point of the existential sense of self the possibility to have a certain amount of control over your self – when you are where – might even have restored some of the identity and dignity lost in the de-personalisation of becoming a patient[25]. The same way as the rich and detailed interiors, views and access to the gardens, *Vandrehallen* with its living areas of modern furniture, cosy lightning, natural stone floor, wooden ceiling and walls, winter gardens and terraces may have felt elevating - perhaps even life-confirming - through its imagery a place of cultural meaning and remembrance of the everyday life outside the hospital. In that sense the architecture of the interior was a dignified place – a place worthy of the description that it was a 'good atmosphere' to be in for human beings.

As discussed in Analysis 3, there was quite a lot of emphasis on social relationships in the time period when Hvidovre Hospital was developed and built. It was a time of democratisation, co-responsibility, user participation etc. Seen from the view point of the experiential, the manifestation of the social relationships in the architecture was not only about the social value of power and bonding but also about professional integrity, self-esteem and respect[26]. In Analysis 3 was given examples of the spatial diversity on the treatment floor – in the out-patient clinic – as well as it was mentioned that there were different kinds of formal and informal meeting places. The possibilities were limited though. What is more, the quality of the 'spatial characters' was less than on the ward floor, if you look at them from an experiential view point. All of the circulation spaces were without daylight and views. Office and examination spaces were small, and despite some having views into an atria space, there was no door to access. In comparison with how hospital architecture through history had been designed, so that physicians would be surrounded by a more private and luxurious environment, not much was done to continue that tradition at Hvidovre Hospital – on the contrary. Like the nurses, the patients, the technical staff, etc. they could make use of *Vandrehallen* and the roof gardens should they want to step out of their role as physicians. Seen from the existential sense of self, this was a change in culture, as it challenged their professional integrity and the feeling of superiority. For some most certainly also an issue. The spatial diversity on the ward was also a subject of investigation in Analysis 3, where it was described how different spaces would support the roles the nurses had. Seen from the experiential perspective of the nurses, there can be no doubt that the patients had received a more privileged position in the plan than them. In the discussion on the double corridor system, the architects thus also emphasized, how patio spaces would provide daylight to the nurse spaces in the middle of the ward. The architects were apparently aware that some kind of compensation had to be made for the lack in views to the outside. Even though these patios were not very

25 Within environmental psychology they operate with four parameters in what is called 'supportive design'; - movement and exercise, - social support, - natural distractions, - control (actual and perceived).

26 In the book *Buildings and Power* Thomas Markus describes social relationships as: I to I, I to other, and I to Others. Social relationships are thus also about a relationship with yourself as well as the idea / notion of an 'Other'.

large, they did provide the possibility to go outside during a small break. As the sitting areas for the patients were positioned alongside the patio space, maybe in the company of patients. On some wards the patios were also a place to cultivate eatable plants. What is more, the nurses could make use of the large roof gardens in their breaks, as they could eat in the private staff canteens on *Vandrehallen*, thereby giving them the opportunity to have a more private conversation with peers. The large number of nurse stations and the secretariat on the ward floor moreover are evidence of how the work of a nurse was not only to maintain the relationship with the patients but to do administrative tasks. The administrative duties could be seen as a more inwards oriented activity, which corresponds with the enclosed character of the spaces. The mother-child / nurse-patient relationship spoken off in nurse text books from the 1970s was primarily visible in the sense, that the nurses were not permanently present in the patient rooms. They were present – but from a distance. Like a parent would raise a child with care while leaving space for individual choice, initiative, self-employment and responsibility. The position of the nurse on the ward corridor was a means for that purpose.

1.2 ORIENTATION AND GUIDANCE

The analysis of traffic conditions in hospitals formed, as described in Analysis 2, the basis for the decentralised and horizontal proposal. Seen from the experiential view point, the important aspect in the distribution of people was the ability for them to orient themselves, in specific if they had not had any prior experiences of the building they were about to visit. In the case of patients and their relatives, interfering aspects such a limited sight, emotional stress, lack of focus needed to be considered, thereby making it a serious task to solve. That the architects were thinking about orientation and guidance is to be read from several documents. Eigil Hartvig Rasmussen already in the 1963 competition proposal wrote that “it has been considered important that all ‘foreign’ traffic is **clearly organized**, providing a good **overview**” (Hartvig Rasmussen, 1964: 214). In 1963, the architectural idea was that all people would arrive through one main entrance, where an information desk was placed. Essentially, it was hard to get lost, as the long walk way – later to receive the name *Vandrehallen* – would lead visitors straight to their destination through one of eight traffic centres placed alongside the corridor, as each traffic centre was the entrance to either a ward or a waiting area to an out-patient clinic. The simplicity of this distributional idea was in itself a wayfinding system[27]. In the infrastructural decentralisation of the project in the period between 1963-1968 the guiding idea of *Vandrehallen* was kept for the visitors, who would arrive with public transport. What is more, the idea of ‘traffic centres’ was continued, but we can now talk about two systems of orientation that work in each their own way. One being, that visitors would arrive in the entrance foyer, walk up the main staircase, where *Vandrehallen* would lead them to the ward or the traffic centre of the reception area in the out-patient clinic downstairs[28]. The other option would be, that visitors would arrive in the underground parking garage by car and use one of the decentralised traffic centres, which would lead them to either the out-patient clinic or the ward area.[29]

27 Today ‘Wayfinding’ is a discipline in itself

28 The visitors for the treatment floor would walk up to walk down again, as the treatment floor was above ground.

29 The principle of having visitors arriving by public transport to use *Vandrehallen* at some point in history started to fade away. Today, they are led directly into the treatment floor, which means that visitors walk in a long dark tunnel until they reach their destination – some waiting area. The shift in distribution has had a tremendous effect on the perception of the hospital building, and a lot of initiatives are now made to make the treatment floor more attractive. As a consequence, the winter gardens are demolished.

To guide the visitors in their search to find the right destination and back, the traffic centres were colour coded and numbered. In the parking garage, Entrance 1 would for example be marked by a very large black number 1 painted on an orange wall next to the entrance to the orange traffic centre. The same traffic centre would, in *Vandrehallen*, also be marked with a large number 1 on an orange wall, which was also the number of the ward. The scale of the numbers would make them easy to see, and the colour a means for orientation and memory. At the decentralised entrances in the parking garage, a ticket machine was placed, which could supply visitors with a short description of how to find their destination. As a means of communication, the tickets were also colour and number coded, meaning that visitors would see the colour and number of the section, where they wanted to go on the front side, and on the back the colour and number of the section, where they came from – the area of their parking lot.

In terms of experience, the two routes through the building were very different. Visitors arriving at the main entrance would be met by the large horizontal entrance facade made of steel and glass. In the front there was a lower canopy construction introducing a human scale into the welcoming situation and a cover against rain or sunlight for people waiting. The two entrances were marked as large gates in steel in the same yellow brown colour as the two horizontal bands of glass across the facade. Inside the spacious entrance foyer, visitors were led up the stairs to *Vandrehallen* by means of a very visible staircase, where each entrance area to the patient ward – and traffic centre – was marked by the previously mentioned colour, number and a large information board, but also by the presence of a winter garden and a living area with television. The repetitious location of these winter gardens and living areas were not only comforting to look at, they were focal points in the stretched out *Vandrehal* and provided a certain overview in terms of distance and orientation. The fact that most visitors would arrive through the underground parking garage was a situation which the architects became aware of during the realisation of the project. They also realised that something had to be done about the rather gloomy interior of the car park, which otherwise could have a negative impact on the visitors. Architect Flemming Skude working at Krohn & Hartvig Rasmussen was therefore asked to transform the ambiance by means of one of his Supergraphic installations[30]. Flemming Skude, in one of his articles on Supergraphics, wrote: "Supergraphic is probably the frustrated architect's attempt to dissolve or at least change a cubic reality in stone and concrete, which, judged from regular practice, could not realize our inner dreams of a better environment, neither physically nor mentally" (Skude, 1973: 129)[31]. The Supergraphic installation was painted on the 500-meter-long end wall in the parking garage. The stylized sun motive in lemon yellow on a wine-red background was painted in a way, as if the sun moved up and down between the decentralised entrances to the traffic centres. The scale of the work was adjusted to the situation, as was the movement of the sun a means of orientation, thereby supporting the signage in the parking garage.

30 Supergraphic was a total art form centred around spatial perception made with the use of graphical patterns – practised by artists as well as architects such as Flemming Skude in the 1970s. He wrote about it in *Arkitekten*.

31 Skude, Flemming, Supergrafik- oplevelsesrigdom eller oprør i arkitekturen?, *Arkitekten*, nr 7, 1973

1.3 DOORS OF PERCEPTION AND REALITY[32]

In the previous part about spatial diversity, it was discussed how the architecture of Hvidovre Hospital in the ward area could be seen as a scenery with which ill patients could interact in accordance with their mental and physical condition, mood and strength. The different spatial characters that the ill patients could move between was a way in which they could find comfort in the surroundings while maybe also testing their own borders in terms of interactivity with the outside world and with other people. As suggested this part of the analysis incorporated considerations of the 'social self' – the relation between the person experiencing and others as well as with the surroundings. The idea of people interacting with the surroundings was further explored in the part about orientation, where the analysis discussed the way the architects at Hvidovre Hospital thought about, how their architecture could guide people around in the building. This part of the analysis related to a 'deeper part' of the brain; – the level of perception. In the following part of the analysis, the research will continue into another aspect of the experiential; how the designed environment at Hvidovre Hospital might have supported the possibility for people to contemplate the inner self, find peace and/or slip away into the world of day dreaming. An inward-oriented activity which was already touched upon when talking about the potential qualities of the patient room and the garden. The question here is, whether – and in what way – the design supported the existential need that humans in a hospital can have to experience that they mentally disappear – to transcend the physical world – and enter the domain of poetic imagination[33], mindful presence[34], spiritual awareness[35] and connectivity[36]. Where architecture, landscapes and gardens, an interior or an artwork can serve as doors of perception and reality.

A written statement from 1978 documents how the designed environment at Hvidovre Hospital was experienced from an ill patient's perspective. It says: "I was delighted every time – although sickness cannot be perceived as a happy event – with the beautiful, cheerful, imaginative I saw in front of my eyes ... If you look out of the window from the patient room ... The fine white profiles change character following the sun's position. The buildings have human dimensions and are beautiful as the background of the delightful gardens, which are peaceful and lovely to stay in during the summer and pretty to look at in the winter ... When being treated, you meet another

32 The issue of perception and reality has been a subject of research for me since my early adulthood. It has led me to many different areas of research and disciplines like art, performance, and multimedia, but it has also led me to different knowledge fields and awarenesses. When I write 'doors of perception and reality' I refer to the idea, that different realities and/or interpretations of the world exist, depending on the person perceiving. One is pragmatic and real, another a matter of imagination, phantasy and sometimes belief. I use the word 'door' as it is an architectural term. If the space 'we' humans perceive has an internal mental connotation – and not only a physical distance – the door I think about here is an internal one, thus in the mind. I am aware of the book *Doors of Perception* by Aldous Huxley from 1954, in which he describes the 'surreal', 'magical' and 'spiritual'. Another reference would be the book *Art meets science and spirituality in a changing economy*, edited by Tisdal, Wijers & Kamphof, SDU Publishers, s'Gravenhage, 1990. Baroque architecture furthermore quite literally played with the idea of perception and reality.

33 When I write 'Poetic Imagination' I refer to the book *The Poetics of Space* by French philosopher Gaston Bachelard from 1958, in which he explored the philosophical significance of spaces that attracts the poetic imagination; a condition like day dreaming.

34 With the notion 'mindful presence' I refer to studies within healthcare showing that sensory stimulation can be used for relaxation. Lars Heslet and Kim Dirckinck-Holmfeld discuss this in their book *Sansernes Hospital*. What is more, they describe how patients can have the need to reconstitute their emotions in a wordless dialogue with for example an art work – alternatively this could be architecture. They as such address the interrelationship between physical and mental healing.

35 With 'spiritual awareness' I refer to the etymological definition of the word 'spiritual' meaning breath. While there might be disagreement about whether architecture can arouse spiritual feelings (of bonding with a bigger whole), there is evidence that some people believe this to be true. I am not suggestion one or the other. I am basically pointing at a need some people have to transcend themselves - to become part of a larger framework.

36 Lindheim and Syme wrote about 'connectivity' in 'Environment, People and Health' (1983). In it, they claim, that "people who get sick the most often and most seriously are in some way 'out of connection'". The connection was; - social connectedness, - connection to natural order, - connection to life cycle, - and connection to place.

hospital below. Here, the possibilities for gardens are more limited. Designed as atria with varied vegetation ... In the main corridor you meet penguins, pelicans and dancing children on the walls, and in the waiting room of the Out-Patient Clinic you are entertained by imaginative city motifs. Going home for the weekend, you will, on the lower floor, meet the festive yellow / red hopscotch and supergraphics in the parking garage ... A human, friendly and beautiful hol '' (Vibeke Flach Scavenius,1978).[37]

The testimony by Vibeke Flach Scavenius thus highlighted the following features; - the view from the patient room, - the roof gardens and atria, - the decorations on the walls. That Krohn & Hartvig Rasmussen were conscious of the importance of the view from the patient room is to be read from diverse publications. The view was as such integrated into the conception of the space; what the architects thought the patients would experience in the patient room. Despite the fact that it is questionable, how much a patient would perceive of the outside roof gardens when lying down in bed, the presence of the gardens and daylight, as well as the capability to open a window must be seen as architectural qualities providing valuable sensuous stimulation to the patient: How the acoustic space of the outside could enter the room by opening a window, a space of sounds, rhythm, distance like an abstract composition of music. The tactile sensation of the air's temperature and humidity entering the room would be a reminder of the season outside, or the time of the day. And the view of cloud patterns moving across the sky, the wind in a curtain, the play of light and shadow on the walls or the ceilings, light intensity and colour changing from bright daylight to dark evening blue would be like an impressionist painting or a film. All of this could have taken part in some kind of mindful activity for the patient – possibly to restore an emotional imbalance – possibly to dream away.[38] Experiential qualities that would not have been possible to achieve, had the patient room not been close to the ground and in the vicinity of gardens.[39]

As discussed in Analysis 4, Krohn & Hartvig Rasmussen like Vibeke Flach Scavenius furthermore pointed at the gardens as a fundamental asset in the environmental design. Starting with Eigil Hartvig Rasmussen's statement from 1963, in which he writes, that he wants to "emphasize that t**hese gardens should not only be for the eye**, **but should also be a place of stay** for as many patients as possible" (Hartvig Rasmussen, 1964: 215). It was thus considered important that the gardens were physically accessible for the patients. They should not only be something to look at – an image. Being in the gardens was essential. Eigil Hartvig Rasmussen evidently was referring to the experiential aspect of the gardens, which was doubtless informed by how he himself found comfort in gardens. The point is that he demonstrated an awareness of a tranquilizing effect of nature. As discussed in Analysis 4, this view was not based on evidence, but a cultural belief, which I will get back to in the historical part of the analysis. The roof gardens at Hvidovre Hospital were, through the design of landscape architect Morten Klint, a peaceful and poetic commemoration of nature, a series of open and enclosed spaces with benches to stay, abstract compositions of vistas and

37 Vibeke Flach Scavenius was hospitalised three times at Hvidovre Hospital. She was also a member of the presidency of 'Foreningen til Hovedstadens forskønnelse'. The text was most likely written as a speech in connection with the award of the diploma for the Copenhagen City Hospital in Hvidovre. I refer to a small part of the speech. Vibeke Flach Scavenius also wrote an article about the gardens in the magazine *Natur og Miljø* in 1979, published by Danmarks Naturfredningsforening (The Danish Nature Conservation Association). In the article she also praises the gardens for the great experiment it was – a distinctive piece of urban nature - and one of the first green roofs.

38 Lindheim and Syme explored in their article 'Environments, People and Health' – published in the *Annual Review Public Health*, 1983, 4:335-59 – the importance of living in harmony with biological laws and having a connection with a personal and historical past. Their text suggested that there is a relationship between the following concepts and disease: - biological rhythm, - artificial light, - connection to nature, - connection to the life cycle, connection to place.

39 In high-rise buildings you usually cannot open a window. Hvidovre Hospital being low-rise made that possible.

cushions of wilderness, strokes of colour in a palette of greens. A place which gave the visitor the possibility to enter a wordless dialogue with a world in which they could sit, walk, lie down – alone but nevertheless surrounded by life. The roof gardens, as well as the winter gardens and atria gardens were sensuous places for tactile experiences, a means to contemplate the here and now, as they were places for reconciliation and rest.

While the sensuous qualities of the gardens are indisputable, a cultural narrative was embedded into them as well. In the perception of Eigil Hartvig Rasmussen, the gardens would remind people of where they came from. The garden narrative was – seen from the view point of experience – a means of association and memory much like a door, but then in the imagination. In that sense, the gardens were not only a place for mindful presence, but a place where one could transcend reality, like the bed in the patient room could be a place for day dreaming. Some of the interiors had the same quality. Images from the entrance foyer communicate, how people in this open and airy space seem to float away in their thoughts or stare into the double high artwork in wood by artist Palle Nielsen, like other people sitting in the living area on Vandrehallen look into the winter gardens. Creating the possibility for moments like these, where the mind could wander without any further distraction or input, in the here and now, but maybe also far away, re-visiting old places of sentiment in the memory or creating new scenarios of hope for the future, could in the light of life-threatening disease or illness be seen as emphatic. The values of the narratives suggested in Analysis 4 was as such not only ideological but experiential. By adding stories into the interiors about human life people were invited to engage, to open themselves up for what was outside their emotional self. By doing so they might have experienced, how they for a moment could move beyond the body in pain and/or stress into another type of life; one which is timeless and free, without any physical limitations, where phantasy replaces reality. In this context, Vibeke Flach Scavenius also wrote about the pleasure she found in murals like the decorations on the treatment floor as well as in the parking garage, where the yellow-red pattern of the Supergraphic installation in combination with an orange-red ceiling in metal plates and bright white neon light not only blurred the fact that the visitors had entered a parking garage, it introduced another dimension into the space – the experience of being in an world of creativity, colour and play. In the same way as the abstract beauty in the entrance foyer, *Vandrehallen*, the previously described gardens may have sent people into another dimension or place. Seen from a an experiential perspective, the architecture thus here and there participated in the virtual act of letting people forget or suppress the fact that they were in a hospital, thereby giving them an opportunity to ‘escape’, even if it was just for a little while. An architecture of distraction and augmented reality.

While the above propositions are made from the existential perspective of the ill patient, you can wonder, whether the staff at the hospital did not sometimes have the same need to withdraw from a situation as the patients to be able to cope with what was happening or had happened. Considering the tasks and responsibilities of, for example, nurses and physicians, it is not hard to imagine that they may have felt stress, anger, sadness or guilt when making personal mistakes, when situations became emotionally complicated, or when a patient might have died. That there hardly were any evident intimate places in the hospital, where they could break away from their roles and routines without possibly being confronted with other colleagues and/or patients could from an existential sense of self be seen as reductionist – a blind spot in the hospital design; maybe even in-humane.

1.4 THE PERFORMATIVE ASPECT OF MEDICAL RITUALITY AND HAPPENINGS

In the previous parts it was described, how it seems as if the staff – due to the lack of intimate spaces – did not have the possibility to withdraw from their 'professional role'[40]. The medical staff was thus permanently either 'observed' by patients or by colleagues. As the Out-Patient Clinic separated patients (visitors) from staff (inhabitants) 'a front stage', and a 'back stage' was created contrary to the ward, where the nurses were 'on stage' more or less the whole time even though they could 'hide away' in some of the rooms in the centre like the sending station for containers. The idea of the hospital as a stage is, seen from an experiential perspective, interesting to contemplate, as it accentuates the performative aspect of the behaviour of the nurses and the medical staff. It also exposes a pressure – and maybe a demand. That they were not supposed to fall out of their part in the role play. The professionalism of the hospital depended on their participation at all times. Like the patients so did the medical staff go through a transformation by entering the hospital starting by changing their private clothes into a uniform. Besides being a hygienical issue, changing clothes and shoes, taking of jewellery, covering hair, washing hands etc., could be seen as a ritual act. Seen from an existential sense of self, the identification with a task / an assignment was essential. The physical preparation to become 'the nurse' or 'the physician' is what anthropologist call a 'rite of passage'. It was a ceremony marking that the individual leaves one group to enter another, where the clothes, tools as well as the hospital played a role in the transition[41]. By eliminating 'the civilian self' the person assumed 'a new professional identity'[42]. The hospital was, seen from that perspective, 'a ritual place' maybe even sacred. Nevertheless, the existential aspect was not mentioned in any report on Hvidovre Hospital; on the contrary. All the reports discussed in Analysis 2 on the 'functionality' of the hospital were one hundred percent rational. In the report on The Central Operating Department we sense the ritual aspect come forward though. The descriptions of the procedures remind of the script for a performance or a happening. We hear who entered and left when, where, how, what clothes they wore, what kind of accessories were present in the rooms, how they were being used by whom, when, how they entered and left, the separation of dirty and clean etc. There was an element of 'drama' in the description. Something was happening in these spaces. It asked for procedure, protocol and awareness. They even make use of the notion 'a magical line' in relation to the staff changing rooms[43]. All off which makes you think of a 'ritual theatre'.

The notion 'theatre' has, in the field of medicine, been used for 'the anatomical theatre'. A space where surgeons would share and exhibit their knowledge and expertise in the presence of an audience[44]. In the historical

40 Except for chief physicians and head nurses apparently no one had their own office in the hospital. However, it was mostly possible to look into these offices from the outside as the offices were placed around a narrow courtyard (the atrium gardens on the treatment floor). People situated across could therefore potentially look into the office. Some offices also had windows towards the corridor.

41 The term 'rite de passage' is derived from cultural anthropology. It has three stages; - separation, - transition, - incorporation. The first phase of separation is symbolic (removing hair, clothes etc). It signifies the detachment from the former self. The next phase is the threshold between two stages (having left one world but not entered the other yet). The last phase is re-entering into society / community as the new self. Culturally, the rites function by ritually marking transitions of someone's status in society. It is possible to differentiate between two kinds; - the secular (non-religious), - and the sacred (religious). There are many examples of 'rite of passages' like the marking of birth, manhood, womanhood, marriage etc., which all have to do with a status change. Another type are people who temporarily transform to perform a certain act like medicine men, shamans or soldiers, where the rite includes taking on a mask, painting the face, etc. The hospital staff belong to this category. The rite also has a psychological effect.

42 Becoming a nurse or a doctor was also followed by a vow – In Danish lægeløfte or Sygeplejeløfte.

43 They use the notion 'the magical line' in *Funktionsanalyse vedr. Centraloperationsafdelingen, niveau II*, oktober, 1968, page 48 in relation to dress code: *Påklædning til orange foregår på den anden side af den 'magiske linie*

44 The audience was most often other doctors or physicians in education.

comparison (Appendix B) it was shown, how there was such a space in both Kommunehospitalet from 1863 and Bispebjerg Hospital from 1913. The surgical suits in Hvidovre Hospital did not include the same possibility of having an audience. On the contrary, only people with purpose were allowed into the department, controlled by a telecom device. The architecture of the interior of The Central Operating Department was designed as a choreographed event – a route – where each space, corridor and doorway represented a specific moment in the journey of patients, staff and things, their moments of actions and interactions in time. Where the 'route architecturale' on the ward floor was designed around sensorial issues, care, the idea of spatial diversity and the freedom to move around, the 'route' in the Operating Department was a place of performance centred around 'entering into another world' – the interior of human bodies – and thus a completely different experience: 'The Art of Medicine'. When looking at it from an existential view point, leaving out any references to the everyday life the architecture had a ritual meaning[45]. The clinical and earnest appearance of the area was a way in which the staff was confirmed – in an experiential way – that they took part in a scientific and clinical experiment, where even daylight would be disturbing. Domestic associations were avoided. It is another example of how the imagery of the architecture had a profound ethical – and existential – connotation. Nevertheless, it also provided a stage for the execution of medical acts and experimentation without questioning what was going on. In that sense it was not a critical interior. Knowing how the hospital did not leave much space for the physicians to drop out of their role, you can wonder, what it meant for them to have to circulate between the non-human and technical interiors on the treatment floor – 'the medical machine'. Where did they go to re-construct their experience of the world of the living? Having the possibility to go upstairs – to have lunch with colleagues in *Vandrehallen* or sit outside in the garden – might for them therefore have had the same life-confirming qualities as for the patients – as a place to commemorate, that medical knowledge has its limits, and that there were other parameters of importance in being human.

1.5 MECHANICAL RATIONALITY AND CORRIDORS OF USE

The central operating department was not the only place on the treatment floor, where the medical staff was acting. Urgent situations took place everywhere such as in the Accident and Emergency Department, the Maternity Department, and the Intensive Therapy Unit. Investigations were made in the Out-patient Clinics, the Laboratories, the Diagnostic X-Ray Department, the Dermato-Venerology Department, and the Pathology Department. Just as treatment took place in the Physio Therapy Unit etc. The treatment floor was a place where things were happening – sometimes fast – and patients were expedited in a constant flux. In contrast to the life experience of the sometimes live threatening situations that took place inside the large numbers of cubicles on the treatment floor were the outstretched long monotonous corridors connecting the rooms. Rooms that had not been designed for anything but distribution. Seen from the view point of the experiential aspect of architecture, it seems as if no one had imagined – or at least sincerely thought about – what it would be like to spend most of the day in rooms that were lit by artificial light, without a view, and/ or walking around in something that resembled underground

45 It would actually be bizarre to do otherwise – like having surgeons perform operation in homely interiors. The book by Byron described how difficult it is for the brain to forget, what it has seen. In the light of this, the ritual clinical space is an indication of a code of behaviour. Also saying, that it is not sane to cut people open outside the hospital.

tunnels. As one physician pointed out, had it been a factory it would probably have been closed down by the labour inspectorate (*arbejdstilsynet*).[46] The treatment floor was as such an abstract and artificial world of its own. Unlike the measures taken in the underground parking garage to improve the atmosphere, the colouring of the corridors and the joyful decorations did not have the same effect. The 400-meter-long main corridor seemed like an endless string and nothing more. The consequence of the standardisation, rationalisation and system approach in the building project was to be experienced here. It was a relational scheme in built form: A grid.

On the floor underneath the treatment floor was the parking garage, the personnel cloakroom, air raid shelters, and next to it access to the hospitals service departments comprising the kitchen, sterilization centre, supplies, workshops and the technical centre. The ambiance of the long-stretched corridors on this floor were similar to that of the corridors on the treatment floor with the exception, that nothing had been done to make them look more agreeable. Instead they were open ended tunnel spaces flooded in artificial light with anonymous walls. The only decoration was the numbering on the doors and the signage. The up-lifting element was the traffic; people driving by on a bicycle, a truck, a step. The association was storage room, traffic centre, labour. Having said this, it should be added that people on this floor were hidden away from the eyes of the public. In terms of freedom, this might also have had its advantages. What is more, the architecture of the interior of the service building – in specific the kitchen, the sterilization room and the supplies – were, as mentioned in Analysis 4, just as modern in their design as the clinical areas on the treatment floor and in the wards. The kitchen, for example, was an open and airy space with daylight coming from above in combination with TL light, white tiles on the walls, concrete and tile floors, furniture in steel and aluminium, the newest technical facilities and accessories. With columns and beams in exposed concrete, pipes and conveyor belts running through the spaces, it was a combination of something raw, industrial and brute with something that was elegant and advanced. Seen from the experiential perspective of the people working here, it was comparable to the conditions in a modern factory. It was about producing food on the clock and on serial tracks. Their hands, bodies and minds were, from a mechanistic view point, equal to the conveyor belt in making the 'machinery' of the hospital work[47]. That their work was not considered less than the work of a physician can be read from the interior, as it looked very similar to that of the dissection room in the department for pathology. Despite the maybe bizarre comparison, we nevertheless can find the same similarity between the interior of the sterilisation room and the bathing section on the department for physio therapy, or the similarity between an examination room in the out-patient clinic stuffed with machinery and the orthopaedic workshop in the basement. Thus, the people in these areas were surrounded by a rational interior, as if the intuitive and human empathy for the ill-patients needed to be out-balanced by reason.[48]

46 Physician J.O. Nielsen and Physician I. Lorentzen talked about the poorly lit rooms on the *30 years jubilee DVD*.

47 The idea was that the around 800 patients could choose between 2-3 menus every day. The order was sent through the data communication centre. In the kitchen, they would prepare the meals on trays, which were sent to the container station in the ward, where the patients were situated. A ward nurse would then distribute the meals, and afterwards send the dirty dishes to the cleaning central for dish washing. The idea was, that the mechanics would help the staff so that they had more time for their work.

48 In the historical investigation I came across quite a lot of photographs. The older photographs were quite explicit in what was happening in the dissection room, in the treatments, on the wards etc. The change in the architecture of the interiors and in the uniforms seemed to communicate that people within the hospital organisation had experimented with finding ways to cope with the experiential aspect of the situation by creating a professional distance – a filter. The rationality of the interiors seemed to balance, a rather confronting situation, where one would need reason not to become emotional. Another interpretation could be, that hospitals essentially are clinics – hospital machines – or health factories made from the view point of rationality and economical reasoning.

PART 2: DECISION-MAKING PROCESS

The primary sources in this analysis are the different official reports (*betænkninger*) issued by the Municipal of Copenhagen in 1954, 1961, the brief (*program*) for the 1962 / 1963 architect competition, the 1968 draft proposal, the interviews I made with former employers at Krohn & Hartvig Rasmussen and with Knud Lund Sørensen.

2.1 THE MAIN ACTORS IN THE DECISION PROCESS

In the media analysis, while investigating the experiential aspect of the architecture of Krohn & Hartvig Rasmussen, it came to the fore that Eigil Hartvig Rasmussen of all the people working on the project for Hvidovre Hospital, had been the most explicit in addressing issues that related to the life situation of ill patients. He nevertheless did not write much about it. What he thought was thus tacit knowledge.

The analytical reports made under the supervision of Peter Lohfert and his work groups did not address the experiential and existential aspect of being a patient, a doctor, a nurse et cetera either, despite the fact that they were realised with the help of a wide variety of hospital staff, which must have been well aware of these issues. In hindsight, this can seem surprising. What should be kept in mind, when looking at the reports by Lohfert, is the rational and functionalistic world view from which they were developed and made. I will get back to this in the historical part of the analysis.

Gunnar Gundersen, being in charge of the project's administration, wrote most of the articles that were published in diverse media. In his articles he emphasized and described the positive experiential qualities, that the architecture would have – in the eyes of the architects. None of his texts addressed directly the issue of being a patient, a nurse or a physician. The articles were written on behalf of the office, and we must assume that Gunnar Gundersen – in the descriptions of for example *Vandrehallen* – referred to a common belief within the office of what the spatial character of this space would be like. He was as such not an actor in the decision process on the experiential aspect of the architecture, but an actor in the representation to the outside world. Whether he was the right man to represent the designers, who had conceived the ideas – people like Aage Katborg and his crew, but also Niels Schou, Jack Andersen and many others – is questionable. He was after all not the designer, but the projects manager. The designers on the other hand – except for one article co-authored with Niels Schou and Jack Andersen – apparently did not feel the need or have the time to write about their work. Flemming Skude was the only architect who wrote several articles on his Supergraphic installation, and as described he together with Niels Schou also played a part in the discussion process, when it came to matters of experience, in specific on colours and decorations.

Besides the architects, artist Palle Nielsen played a role in the decision process, but even more so did landscape architect Morten Klint, whose poetic roof garden design was one of the important aspects in the experiential aspect of the hospitals architecture as a place of reconciliation and rest: A Paradise Garden against all odds.[49] While Morten Klint was an inspired and dynamic personality, a virtuoso, and a man of many words, he did not write down his thoughts on the Hvidovre gardens. We therefore cannot know, what he exactly meant with the design. Working in the tradition of the

49 The growth conditions on the roof were harsh and demanding. As there was little knowledge about roof gardens, they were an experiment. That Morten Klint – based on his large knowledge on plants – managed to create a paradise-like garden out of it with trees, bushes and plants that would grow as it did, came as a positive surprise.

Danish landscape architect C.Th.Sørensen, we can be certain though, that the gardens were derived from ideas about place (context), human issues of use (in a social sense), experience (gardens as an art form), and the plant material (growth conditions etc.)[50]. According to his former colleague, landscape architect Knud Lund Sørensen, who took over the task of executing the gardens after Morten Klint died unexpectedly, the purpose was to create a lush garden as a contrast to the austere concrete architecture. A park-like place where people could sit in smaller pocket spaces protected by bushes and trees, or where they could stroll around while looking at the colour or patterns of leaves in green sometimes red, yellow or orange. Knud Lund Sørensen also mentioned that there was not a close contact with Krohn & Hartvig Rasmussen in the development of the garden project. The communication was intuitive and nonverbal. However, the combination of and contrast between the work of the architects and that of the landscapers was essentially what gave the project its unique character. The work of Morten Klint and his thought frame must therefore be seen as an actor.[51]

2.2 FIELDS OF INTEREST

As stated, the architects did not write much about the relationship between their work and that of 'being' – in an existential sense – in a hospital. As will be discussed in the historical part of the analysis, this had to do with the architectural discourse of the time period: How architects thought about architecture – what was articulated or not. In my opinion, however, it is important to consider, how they were addressed by the client – and what kind of information they had. The brief for the 1963 competition, for example, did not explicitly state anything that could be directly related to the experiential aspect of the architecture of Hvidovre Hospital. The life situation and mental conditions of patients, staff, visitors were not mentioned as something, the designers should take into their considerations when designing the building either. While close reading and interpreting the brief, you nevertheless implicitly sense that the detailed description of the program served the purpose of accentuation the complexity of the situation. Not only should the architects find a way to design a hospital comprising the demands of the different departments, they should understand how the different people, activities, clean and unclean stuff related to each other. What should be next to something else, or what should be kept apart. A large part of the program thus seemed to address the dynamical principle of activities, flows in and through the building. The potential life on the wards was only implicitly suggested by mentioning that there should be a living and a dining room, a hall way in which patients could lie outside or a balcony. As they, in relation to the psychiatric department, described, how disturbed patients should have access to 'discrete' gardens separated from other patients. Considering that the program had been written by some of Copenhagen Hospital Services most knowledgeable men and women, it is incomprehensible that they did not include a more detailed description of the experiential and existential side of the everyday life of a hospital. By leaving the social, cultural, and mental aspects out of the description,

50 In my study on the work of Morten Klint I have looked at the work of C.Th. Sørensen as well, as not much has been written about the work of Morten Klint. In the book *Med himlen som loft* by Malene Hauxner, Morten Klint is described as an apprentice of C.Th.Sørensen, for whom he worked almost 10 years. The qualities I mention are taken from the book *C.Th.Sørensen – en Havekunstner* by Sven-Ingvar Andersson & Steen Høyer. In my talk with Knud Lund Sørensen he talked about the same issues.

51 Due to the roof construction, the gardens had to be removed somewhere in the 1990s to make a new roof construction. The design was unfortunately never restored. In my view a mistake, as Morten Klint's work added a poetic quality to the project that the architecture in itself did not have. It is an example of the symbiosis between landscape and architecture – that it was one project.

the consequence could be that the architects would either not consider it in relation to their design, or they would have to make their own (field) research, use knowledge from already realised projects as well as deploy their imagination to envision, what the experience could be about.

The majority of the people who wrote the competition brief had been a part of the preparational committee work, which resulted in three reports; one in 1954, another in 1961 and a last one leading up to the competition in 1962. To make the 1954 report, the committee had held 46 meetings and visited hospitals in Denmark and abroad. The 55-page long report gave a comprehensive description of the different aspects, that were to be considered when building a new hospital in Hvidovre. Contrary to the competition brief, this report did include views on the experiential and existential aspect of hospitalisation and of working there. In the description – and discussion – of the patient wards they for example emphasized, how the design of the wards should be made from the view point of what was 'in the benefit of the patient' (*patientens tarv*), including issues of privacy / intimacy, comfortable furniture, and some sort of spatial diversity. They mentioned that it should be possible to separate dying patients in single bedrooms, not only in consideration of the patient but also for the relatives as well as for the fellow patients. Accessibility and the ability to orient yourself was emphasized. Noise, smells from the kitchen, bad air was to be avoided, the same way as natural daylight was preferred above artificial light. What is more, they described, for example, the mental impact the work on a ward had on the nurses, and how the design of the ward should take that into account. In relation to the psychiatric department they furthermore described, how it would be good to have activities that could prepare the patients for a life outside the hospital, like they also described the frustration the staff could have on certain issues like having to move patients around in the hospital. Included into the report were thus questions and critique but also suggestions. One of these was to create a department for rehabilitation. They also mentioned that it would be good to make a department, where the staff was trained in receiving patients, "as the first encounter with the hospital makes a strong impression" on the patients. As an example, they explained, how injured patients most often were mixed with other incoming patients, which according to them was bothering both staff and patients. Finally, it is interesting, how, in the discussion of the site, they drew a comparison between the large site in Hvidovre and the site of Bispebjerg Hospital, which in 1913 also had been placed far outside the inner city. They moreover explicitly stated their interest in that the new hospital would "provide sufficient air around the building facility, and create suitable garden and park areas for upright patients" ... "The patient gardens should be designed to give patients adequate freedom of movement and also be sufficiently large to provide planting for shelter, grass lawns, bushes and flower plantations, that will help give the hospital buildings a sense of harmony and tranquillity" (Hospital Committee, 1954: 5).

The report – seven years later – in 1961 was far less elaborate in its description of the experiential and existential aspects of the new hospital, while the functional and economical aspects were being reinforced. It is as if the sensitivity and awareness, with the years passing, slowly evaporated out of the descriptions ending with the very dry list in the 1962 competition brief. However, it might have been present in the minds of the committee members, as a large part of them stayed the same. The short report from 1962 in relation to the competition brief concluding said: "Moreover, the program is so detailed that the committee considers it unnecessary to attach

further comments to it" (The Hospital Committee, 1962: 6). Processing the information again and again might have had the result, that essential considerations were lost – as the thoughts were condensed into short sentences. There is also the possibility that priorities had changed in the hospital organisation between the 1950s and the 1960s. Or that it was not common practice to include experiential information into an architect competition brief. As mentioned earlier, the 'blue reports' by Lohfert's team were also primarily utilitarian – about the functional aspect of use. The jury committee – consisting of i.a. the architects Tobias Faber, William Groth and Frode Jørgensen – interestingly enough emphasized the importance of the experiential aspect of architecture, when they wrote in the jury report, for example: "**Hospital buildings show many examples of how large-scale hospital can seem sad and oppressive, and this may undoubtedly be a mental strain on patients, staff and visitors**" (Jury report, - printed in Arkitekten, nr 18, 1963: 335). The jury's interpretation of the project was based on the humanistic belief that it would be good to maintain "values that lie in **an inspired and inviting design, a friendly and understandable environment and some contact with nature**. It could be added, that **the modern hospital is both a house for healing, a school for young people and an institute for research, but also – in the context of the big city – the place, where most people end human life, and where it should be possible to meet death in calm and worthy surroundings**" (Jury report, - printed in Arkitekten, nr 18, 1963: 335). The statement confirmed, how the garden narrative addressed a profound experiential and existential issue; that being inside – or close to – garden spaces might not only feel comforting but also a good place to die. The pure presence of gardens was an actor in the experiential and existential debate. Something which the municipal report from 1954 had emphasized, but which was left out in the competition program.

2.3 EXAMPLE OF THE DECISION PROCESS

In the architects' 1968 draft report it was explicitly stated, how the jury report had inspired them in their work on the development of the project[52]. They even included a part of the jury report text into their own draft report to emphasize the connection. It primarily concerned the issue of the exterior and the gardens. As mentioned in Analysis 4, the architects worked with the idea, that the architecture should be modest and anonymous in its character, non-institutional, a humane and reconciliatory environment. These ideas were already present in the 1963 competition proposal and well received by the jury committee. The way in which the jury report informed – maybe even altered the perception of the work – was with their incentive, that the gardens were crucial to the experience of the hospital. A view which had been articulated briefly in the competition proposal, but which was now emphasized in the following statement from the 1968 draft report saying: "**In the low-rise building where patients, visitors and staff are in close contact with the surroundings, the gardens will be an important part of the architecture and strongly contributing as an environmental factor**" (Skitseforslaget, 1968: 166). The landscape architecture should not be subordinate to the architecture. They were together one project – a symbiosis. The gardens were not only a matter of imagery and representation; making the hospital look like a pavilion hospital. They had a key role to play in an existential sense – to create a profound and life confirming experience – and a place of reconciliation with the life

52 The 1968 draft proposal, page 164. The report was not published. I found a copy at Hvidovre Hospital archive.

situation. The change in narrative – as described in Analysis 4 – between the 1963 competition proposal and the 1968 draft proposal was thus informed by an experiential view point. It was not about imagery alone. It can as such serve as an example of the relationship between the narrative aspect of the architecture and the experiential. To create more room for the gardens, the parking areas next to the hospital became an underground parking garage. The terrain around the hospital was raised, so that the gardens could continue. The position of the ward buildings was lowered, so that there was a more direct relationship to the gardens through *Vandrehallen*. As well as the double corridor system in the wards meant more garden space in-between. "These new features in the facility have created more **peace and unity in the interaction between buildings and gardens**" (Skitseforslaget, 1968: 164). From being a building with a green roof, it had become a landscape scenery – an experience.

2.4 THOUGHTS ABOUT THE DECISION-MAKING PROCESS

The above discussion on the decision-making process shows, how the experiential and existential aspect of Hvidovre Hospital - and its architecture - was included and excluded in the discussion, description and development of the project through its history. It points at an important relationship and sometimes conflict of interests between; - empirical evidence / observations in the field by users, - the content, composition and redaction of information included into a competition brief, - the thereby possible interpretation of designers, - and the power of jury committees to introduce aspects that were not included into the brief, emphasize and/or leave out certain aspects in their evaluation. It moreover shows how different world views determined which aspects of 'being human' were included into the discussion of architecture, and whether or not the relationship was established at all. Finally, it also showed, how open the architects were towards suggestions coming from the outside world – here in specific the jury report.

In the following part of the analysis, I will be looking at how the architectural thought frame could be understood in relation to a historical interpretation.

PART 3: HISTORICAL PERSPECTIVE

The primary sources for this analysis were; - the portfolio of Krohn & Hartvig Rasmussen, - the 1968 draft proposal, - the article by Gunnar Gundersen, Jack Andersen, Niels Schou in *Tidsskrift for Danske Sygehuse*, årg 49, aug 1973, - Gunnar Gundersens article in *Tidsskrift for Danske Sygehuse*, årg 52, juli/august, 1976, - the article 'Farver som sprog' by Gunnar Krohn in *Arkitekten*, nr 5, 1950, - articles by Flemming Skude on Supergraphics in *Arkitekten*, - Poul Erik Skriver's article 'Københavns kommunes hospital i Hvidovre', *Arkitektur DK*, nr 8, 1975, - Tobias Faber's book *Dansk Arkitektur*, Arkitektens Forlag, København, 1977, - interviews with the daughters of Eigil Hartvig Rasmussen. In relation to the historical context I also refer to; - Niels-Ole Lund's bog *Teoridannelser i Arkitekturen*, Arkitektens Forlag, København, 1972, - Erik Nygaard's bog *Tag over hovedet*, Arkitektens Forlag, København, 1984, - the publication *By center menneske* by Institut for Center-planlægning, Arkitektens Forlag, Lyngby,1965, - James William Miller's article 'Wellness: The history and development of a concept', *Spektrum Freizeit*, 2005, - Margaret Campbell's article 'What Tuberculosis did for Modernism', *Medical History*, 2005, - Marcus & Barnes' book *Healing Gardens, Therapeutic Benefits and Design Recommendations*, John Wiley & Sons, Inc., New York, USA, 1999, - the article 'Environments, People and Health' by Lindheim and Syme, *Annual Revue Public Health*, 1983, 4:335-59, - Adrian Forty's book *Words and Buildings*, Thames & Hudson, 2000, - Heslet, Lars og Kim Dirckinck-Holmfeld, *Sansernes Hospital*, Lars Heslet og Arkitektens Forlag, København, DK, 2007. Other references are mentioned in the footnotes.

3.1 EXPERIENCE IN ARCHITECTURE[53]
IN RELATION TO THE WORK OF KROHN & HARTVIG RASMUSSEN

The media analysis made apparent, how an analysis of the experiential aspect of the architecture of Hvidovre Hospital inevitably led to a discussion of the architecture of the interior as well as the gardens. As the architects stated in the 1968 draft proposal that "**the architectural efforts are concentrated in the hospitals inner environments**" (Skitseforslaget, 1968: 7), we could assume that this analysis is close to the core of their work even though they themselves did not accentuate the relationship between their work and the lived experience of users – meaning they did describe 'an experience' but did not specify the perspective of the person seeing.

An essential issue in the investigation into the experiential aspect of architecture from a historical perspective is the fact, that the definition of architecture, and the terminology that architects use, change through history. They are not solid[54]. It therefore becomes relevant to include a reflection on the history of perceptions in architecture into the analysis of the work of Krohn & Hartvig Rasmussen – in specific on matters of experience – as it influenced what the architects were considering when designing. Seen from a historical view point, the idea that architects could or should include into their design the view point of 'a user's experience' is new, and therefore not self-evident. According to architecture historian Adrian Forty the notion of 'a user' was unknown to the discourse of architecture until the 1950s[55]. Before that, different architects had discussed 'use' in architecture, but this was not related to 'the user', as we understand it today. The architectural discourse was until recently primarily centred around the category of 'the aesthetic'. One of the views was that architecture was only 'beautiful', if it became independent of need: Architecture as an autonomous art form[56]. An article like 'Figures, Doors and Passages'[57] by the British architect Robin Evans demonstrated though, how the arrangement of domestic spaces

53 The experiential and existential aspects – described and discussed in the media analysis – are the result of my interpretation of the source material. They are informed by what I saw in the work – when looking at it from my present perspective – and through the specific lens. This inter-subjective interpretative layer was, of course, also present in the other analyses, but my way of looking at the world played a larger part in the interpretation of the experiential. This does not mean that, what I bring forward in the architect's work is the result of my imagination. I am just suggesting that the architects might have had another perception. The difference between what I see, and what they saw, also has to do with a historical development, which is why I mention it here.

54 A book like *Words and Buildings* by Adrian Forty describes this important point.

55 Adrian Forty, *Words and Buildings*, Thames & Hudson, 2000, page 312

56 A view which is present at many architecture schools and universities.

57 Evans, Robin, 'Figures, Doors and Passages', in: T*ranslation from Drawing to Building and other essays*, Architectural Association Publication, London, 1996

throughout history concealed stories about human relationships. He represented the argument that 'architectural plans' are evidence of ways of life. By studying them we can gain a cultural understanding of how ideas about human behaviour and interpersonal relationships were translated into architectural form. In this context, doors, windows, views, circulation, accessibility, separation etc. are architectural means embedded with socio-cultural meaning. They are cultural artefacts reflecting the values of the surrounding society. In that sense architecture has always been 'an agent' for use, even though it was not part of the curricula of architects. The same argument could be made for the architecture of Hvidovre Hospital.
In the book *Words and Building*[58], Adrian Forty described how the term 'user' became widespread in the 1950s and 1960s, followed by the discussion of 'the social aspect of architecture' in the 1960s and 1970s and 'the environmental' in the 1970s. Seen from an analytical view point, it is interesting to think about, how this happened during the conception, development and construction of Hvidovre Hospital. We can therefore not talk about one perception of the architecture. I believe the architects altered their opinion / awareness along the way, which would correspond with the development of the discourse within the discipline.

In the view of Adrian Forty, the term 'user' coincided with the introduction of welfare state programmes in Western European countries after 1945. "What the 'user' is meant to convey in architecture is clear enough: the person or persons expected to occupy the work" (Forty, 2000: 312). If we look at the projects by Krohn & Hartvig Rasmussen from the 1940s and the 1950s like the Atlas Factory and Grønttorvet, we also see a strong focus on work related activities. As described in Analysis 2, the arguments in these early projects were centred around the analysis of labour activities and patterns of movement. It was a systematic approach – based on research – which corresponded with the way in which other functional modernists architects were thinking in that time period. Architecture historian Nils-Ole Lund described the underlying thoughts in *Teoridannelser i Arkitekturen*[59] the following way: "Functionalism attempted to meet the fundamental needs ... the result was that the best solutions in functionalism were tailored to a stationary reality, and that they were shaped after a mechanistic approach ... The house was a machine to live in ... It was also 'a philosophy of objectivity' (*saglighedsfilosofi*), that there was one solution to a particular problem ..." (Lund, 1985: 136). The rational frame of mind, which was present in the early projects by Krohn & Hartvig Rasmussen, was continued in the development of Hvidovre Hospital in the infrastructural analysis of Eigil Hartvig Rasmussen in the 1963 competition proposal followed by the work of Peter Lohfert and his team in their function analyses. A research approach which referred to 'System Thinking' and 'Scientific Operational Research'[60]. The goal was – as discussed in Analysis 2 – to improve the design process by setting out 'rules of behaviour', which the designers could use when designing. That the reports did not include 'soft qualitative evidence' as 'the experiential' had to do with the fact that social, cultural and/or mental parameters were not considered relevant. It was not a matter of ignorance but of limiting the focus. 'The experience' they thought about was utilitarian and functionalist – that things would work well.

58 Adrian Forty, *Words and Buildings*, Thames & Hudson, 2000, page 312

59 Lund, Nils Ole, *Teoridannelser i arkitekturen*, Arkitektens Forlag, København, 1972

60 Scientific Operational Research was a management tool – about planning procedures – centred around collecting evidence about objectives, procedures, activities and decision-making processes.

Despite the concern for human behaviour, the rationality of the functionalists' way of working and thinking meant, that their architecture became reductionist as they did not consider qualitative parameters in designing. During the 1960s, criticism grew. As discussed in Analysis 3, the architecture of i.a. the new large scale residential areas in prefabricated concrete built in the periphery of the larger cities became a target for critique. Erik Nygaard described in his book *Tag over hovedet*[61], how people felt alienated in this type of modern architecture: "Have we forgotten man (*mennesket*) in the planning", was a question asked in 1966 in the Danish magazine *Byplan*. The new areas were 'too large', 'too monotonous', and 'too poor' in terms of experience. As also pointed at in the publication by Institut for Center-Planning *By Center Menneske*[62] (City-Centre-Human) from 1965, people became isolated from each other in the new towns outside the old city, as there were no places to meet and socialize. To investigate what was right and wrong about these theories, SBI[63] in the late 1960s in Denmark initiated and supported research into housing sociological and psychological studies. The work of psychologist Ingrid Gehl and architect Jan Gehl took part in this discussion, and their respective books *Bo-Miljø* and *Livet mellem husene* were published in 1969 and 1970[64]. The work was a plea to include the social aspect of architecture. A tendency which was shared by other architects – as also discussed in Analysis 3. Where Ingrid Gehl accentuated notions such as 'contact', 'isolation', 'experience', 'expression', 'aesthetics', 'structure / orientation' etc., Jan Gehl described how architecture could 'gather or spread' people, 'make spaces to move in' and 'places to be'. In the article by Gunnar Gundersen, Niels Schou and Jack Andersen from 1973 in which they discussed the 'environmental aspect' of Hvidovre Hospital, they were thus without doubt referring to the research of SBI and the surrounding architectural debate[65]. 'The user' had become 'a social individual', and so should the hospital stimulate 'the experience' of contact, collaboration and communality. It should also stimulate 'the experience' of individual freedom: The possibility to move around between places as you pleased. Seen from that view point it was not a building, but a series of places.

That the interpretation of the hospital as a 'route architecturale' corresponds with the architectural discourse of that time, can be derived from an article in *Arkitekten* in 1975[66], which said: "In the review of the competition in the journal *Arkitekten* in 1963 it was noted, that it was difficult on the basis of the competition project to assess the architectural solution of the assignment. A high-rise hospital can, at least from a distance, be perceived as a sculptural whole and therefore a tempting medium for a classical, architectural manifestation. The municipality of Copenhagen's hospital in Hvidovre is more of a structure that can be experienced as a route (*forløb*). At a distance, you hardly notice the hospital. When you are close, it is the textures and spatial effects, that you experience, not the outer sculpture. It is the entrance foyer with the large wall relief, it is *Vandrehallen* with the varying space and place formations, it is the winter garden and the terrace gardens. It is details and colours in the corridors and on the wards – and it is mainly the human behaviour determined by the building environment.

61 Nygaard, Erik, *Tag over hovedet*, Arkitektens Forlag, København, 1984

62 Institut for Center-planlægning, *By center menneske*, Arkitektens Forlag, Lyngby, Denmark, 1965

63 SBI is short for *Statens Byggeforskningsinstitut* – The State Building Research Institute.

64 While Ingrid Gehl's work mapped human behaviour in public spaces, Jan Gehl's work mapped the corresponding patterns in the physical environment. The two books could be read as kind of a dialogue. The Danish writer Niels Bjørns made an i-pod interview about that, which is to be found on the internet.

65 Gundersen, Gunnar and Jack Andersen, Niels Schou, 'Københavns kommunes hospital i Hvidovre', *Tidsskrift for Danske Sygehuse*, årg 49, aug 1973

66 Skriver, Poul Erik (ed),'Københavns kommunes hospital i Hvidovre', *Arkitektur DK*, nr 8, 1975

Judged this way, it is a nice piece of architecture, it is a humanistic and not a monumental solution" (*Arkitekten*, 1975: 311). Whereas the review in 1963 had been quite critical of the architecture of the competition proposal, the review in 1975 was thus altered towards the positive. As we are speaking of *Arkitekten*, the main architectural magazine for Danish architects, we may assume that this echoed a change of perspective in the profession of what was considered 'good architecture'. Where the architecture of Hvidovre Hospital in 1963 had been judged on its outer appearance (its form), in 1976 it was understood for its interior qualities. That it was about 'experience in architecture'. The experience we talk about here is though still not 'the experience of the user' like an ill patient. It is more like 'a poetic experience' or 'the experience of an architectural space' – informed by the cultural narratives described and discussed in Analysis 4.

3.2 A CURATIVE ENVIRONMENT

Physician Lars Heslet and architect Kim Dirckinck-Holmfeld argued in their book *Sansernes Hospital* from 2001[67] that while Jan Gehl in his work described, how architecture makes it possible to create socially stimulating, physical environments, his work did not include a study of the psychological effects[68]. The point they would like to forward was: "Basically, we know very little about the impact of architecture on the human psyche" (Heslet and Dirckinck-Holmfeld, 2001: 260). They were not proposing that some sort of list should be made. They argued for research into the relationship between the physical environment, the senses, cultural interpretations, and what they called the 'phenomenology of consciousness'. I mention it here, as I think it is relevant in relation to the interpretation I make on the work of Krohn & Hartvig Rasmussen when it comes to the experiential aspect of their architecture. Not that they conducted actual research on the subject, but in their argumentation, they referred to the experience of being a patient. The choice of words – as well as some of the images produced – brings witness that the architects incorporated thoughts about 'being' in an 'existential sense' into the design of the hospital building. They show 'empathy'. That they were contemplating, what the 'lived experience' could be about.

The emphatic perspective informed the use of the word 'healing'. It was also related to the environmental debate of the 1970s. In 1948, The World Health Organisation had already proposed a definition of the notion 'health' that reached beyond that of the mere absence of disease. Instead it linked health to 'well-being' in a physical, social and mental sense. It was about 'feeling well' – thus an experiential and existential issue. The pleasurable aspect in Krohn & Hartvig Rasmussen's work on Hvidovre Hospital might have been informed by this debate. The architecture of the interiors – the spatial characters, the materialisation, the furniture, the daylight and the lighting, the choice of colours, the SuperGraphics, the decorations, the gardens etc. – all of this may have been designed to make people 'feel well'. Like the signage and infrastructural principles were conceived with the idea of 'helping people' around. That Krohn & Hartvig Rasmussen were aware of 'perception in architecture' – at least when it came to colours – can be read from an article in *Arkitekten* from 1950 written by Gunnar Krohn, in which he wrote about 'colours as language'. He there described, how some colours had 'a calming effect', and how signal colours could be used

67 Red: Heslet and Dirckinck-Holmfeld, *Sansernes Hospital*, published by Arkitektens Forlag København, 2007

68 The objection to their argument would be, that the book of Ingrid Gehl should be read simultaneously

for orientation and safety reasons[69]. The idea that colours in architecture were elevating was also present in the work of Flemming Skude and Niels Schou in their work on Hvidovre Hospital[70]. Flemming Skude's Supergraphic installation[71] was like pop-artist Poul Gerne's work on the interiors of Herlev Hospital based on the idea that hospitals should be colourful places that stimulated optimism and the desire to live to those who were in it[72]. It was an ideological issue to make people 'feel well'. Along these lines, Gunnar Gundersen – as mentioned in Analysis 3 – in 1976 wrote in *Tidsskrift for Danske Sygehuse*: "**In a time period marked by the pursuit for progress, greater efficiency and new things,** which better, faster and without the touch of human hands can achieve the desired results, **there is a risk that the human, emotional, good environment and well-being will be sacrificed and lost**. **Hvidovre Hospital is designed to preserve or recreate these values** as far as possible **without thereby violating a design that satisfies the requirements for efficiency and rational operation**" (Gundersen, 1976: 125)[73].

Furthermore, the imperative for well-being was related to a growing 'wellness' movement in the 1970s, which focussed on health promotion through life style change[74]. This was associatively linked with pleasure and health resorts. In the fight against tuberculosis patients had since the 19th century gone to sanatoria set in natural surroundings, where good food, rest, gentle exercise, sun bathing and daylight was an obligatory part of the daily treatment. The architecture included deep verandas, balconies, covered corridors, gardens and garden shelters. In the 1950s, a cure was found against tuberculosis, but the symbolic association of healing light, air and sun remained a feature in modern architecture[75]. The garden perspectives in the 1963 competition proposal without doubt referred to such a curative environment – a sanatorium life style – being outside in the sun and the air, in nature – healing. As mentioned previously in the analyses, the concept of 'healing in nature' was nevertheless old. According to Clare Cooper Marcus and Marni Barnes: "The first flowering of restorative gardens in Europe occurred during the Middle Ages when hospitals and monasteries ministering for the sick, the insane, and the infirm often incorporated an arcaded courtyard where residents could find the degree of shelter, sun, or shade they desired in a human-scale, enclosed setting" (Cooper Marcus and Barnes, 1999: 10). The presence of hospital gardens continued up through history and into the 19th century, where nurses would wheel patients out onto sun porches and roofs as fresh air and sun was seen as part of the cure – like horticultural therapy started with hospital gardening. Next to hospital gardens, the idea of fresh air played an important part in the history of hospital architecture starting with the idea, that disease was

69 Gunnar Krohn, 'Farver som sprog', *Arkitektens Ugehæfte*, 1950, nr 5, page 21

70 Flemming Skude wrote, as mentioned, several articles for *Arkitekten* about SuperGraphic; - 'Supergrafik - oplevelsesrigdom eller oprør i arkitekturen?', *Arkitekten*, nr 7, 1973, - 'Flere brudstykker til belysning af begrebet supergrafik', *Arkitekten*, nr 19, 1973, - 'Den praktiske anvendelse af supergrafik', *Arkitekten*, nr 22, 1974, - 'Den dekorative anvendelse af supergrafik', *Arkitekten*, nr 23, 1976. Besides he wrote an article about planning against violence ('Planlægning mod vold'), printed in *Arkitekten*, nr3, 1974.

71 SuperGraphic was developed by the American artist Barbara Stauffacher and architect Charles Moore. Charles Moore was interested in 'experience in architecture'. Buildings should be a means to an experiential end, which led him to experiment with interior architecture. In the discussion of perceptions in architecture Charles Moore thus represented a subjective experience ... "Moore taught Yale students the art of supergraphics as a technique to tap the creativity of the material imagination, instead of the rational mind … (and) ... Progressive Architecture emphasized that the supergraphics movement was not simply a decorative style but rather a new architectural from of spatial experimentation" (quote from an article by Jorge Otero Pailos, 'LS design: Charles Moors and the Delirious Interior', published on *C-Lab, Columbia Laboratory for Architectural Broadcasting*).

72 I quote here - U. S. Gernes & P.M. Hornung, *Farvernes medicin*, published in Borgen, 2003, page 22

73 Gunnar Gundersen, *Tidsskrift for Danske Sygehuse*, årg 52, juli/august, 1976

74 James William Miller 'Wellness: The history and development of a concept', *Spektrum Freizeit*, 2005 / 1

75 Margaret Campbell, 'What Tuberculosis did for Modernism', *Medical History*, 2005

spread through the air by vapours. The hospitals' architecture was therefore made with special attention to fresh air and cross ventilation besides hygiene. A prominent person in the advocacy of what later developed into the movement for 'a healing environment' was the 19th century nurse and health reformer Florence Nightingale, who Clare Cooper Marcus and Marni Barnes quoted in their book 'Healing Gardens'[76] for saying: "Second only to fresh air ... I should be inclined to rank light in importance for the sick. Direct sunlight, not only daylight, is necessary for speedy recovery ... I mention from experience, as quite perceptible in promoting recovery, the being able to see out of a window, instead of looking into a dead wall; the bright colours of flowers; the being able to read in bed by the light of the window close to the bed-head. It is actually said the effect is upon the mind. Perhaps so, but it is no less so upon the body on that account" (Florence Nightingale, 1860) Ideas which – as discussed in the historical analysis (Appendix B) – were embedded into the design of Kommunehospitalet, in Bispebjerg Hospital, and later through means of association, collective memory and myth also in the architecture of Hvidovre Hospital.

In the discussion on 'curative environments' a link should also be made with city planning, as it – under the influence of the sanitation movement – had been a prime objective to bring fresh air, pure water, green open spaces, and sunlight into the cities since the early nineteenth century[77]. Industrialisation had had an unpleasant effect on the city, which had led to an unhealthy urban population. In the name of public health it became important to build 'healthy' housing areas for the working class – a development which continued into the 20th century – leading to free standing houses with gardens and garden cities. Hence, urban planning and the design of housing areas was related to health issues. All of which was something that Eigil Hartvig Rasmussen was aware off having worked with domestic architecture and urban planning in the 1930s and 1940s, before he entered the companionship with Gunnar Krohn in 1946.

3.3 SENSIBILITY AND THE SENSING SELF

The link back into history showed, how the garden narrative was equally informed by cultural values as the idea of 'healing gardens'. Sunlight had been proven scientifically to help against skin tuberculosis.[78] Besides that there was no hard evidence, that nature or being outside could heal. The mythical quality probably served just as much as evidence. In the Genesis story, human life has its beginning in a garden that God made, but Danish song writers have through centuries moreover written about the poetic sensuous experience of being in nature, from Grundtvigs 'Jeg gik mig ud en sommerdag at høre' from 1847, 'I sne står urt og busk i skjul' by Hartman from 1866, 'Det er hvidt derude' by Laub from 1914, 'Det er i dag et vejr' by Jeppesen from 1952 later reinterpreted by Kim Larsen in 1973, etc. These songs are evidence how nature was able to: - 'touch the heart', - 'give comfort', - 'speak about pain and delight', - remind you about 'being alive', 'present', and 'in time'. Poetic and existential qualities that the jury committee in 1963 had in mind when they referred to the pavilion hospital and garden in their report. The values they mentioned were thus culturally embedded. The Danish architecture historian Tobias Faber was part of the

76 Marcus, Claire Cooper. and Marni Barnes, *Healing Gardens, Therapeutic Benefits and Design Recommendations*, John Wiley & Sons, Inc., New York, USA, 1999 - Quote by Nightingale is on page 13

77 In 'Environments, People and Health' by Lindheim and Syme, *Annual Revue Public health*, 1983, 4:335-59

78 In 1903 physician Niels Rybjerg Finsen received the Nobel prize for his research into the healing effects of light.

committee. In his book on Danish architecture[79] from 1976 he accordingly accentuated the presence of the roof gardens in his description of Hvidovre Hospital, when he wrote: "... **the patients' ability to look out over trees and flowers and spend part of the hospital stay in gardens directly outside the wards endows the hospital with a human and friendly atmosphere, that gives the hospital some of the same qualities as found in Martin Nyrup's Bispebjerg Hospital**, and which will be all the more important where the expectations for shorter periods of hospitalization time fail" (Faber, 1977: 282).

By adding 'the existential' to the analysis of 'the experiential' aspect of architecture it became apparent, that designing architecture is also about awareness. The discussion on 'the experiential' aspect of Hvidovre Hospital was not only about what one can experience in architecture as, for example, described in a book like *Om at opleve arkitektur*[80] from 1957 by Danish architect Steen Eiler Rasmussen or in Gordon Cullens book *The Concise Townscape*[81] from 1961. It was neither about perception psychology as mapped in a book like *The Language of Architecture*[82] from 1969 by Swedish architect Sven Hesselgren, or Kevin Lynchs book on mental mapping *The Image of the City*[83] from 1960 or Jan Gehls book *Livet mellem husene*[84] from 1971. There was both a cultural and a philosophical connotation. Something that was respectively discussed in the same time period in for example a book like *The hidden dimension*[85] by the American anthropologist Edward T-Hall published in 1969, or the book *The Poetics of Space*[86] by the French philosopher Gaston Bachelard published in 1964. The discussion of an experience in architecture – seen from an existential sense of self – was related to what Heslet and Holmfeld called 'the phenomenology of consciousness'[87] . It was not a distanced perspective. Neither was it deterministic. Adding stories of life into the discussion of architecture was not common practise though. The same way as death was a subject not talked about in a hospital according to the book by physician Elisabeth Kübler Ross *On Death and Dying*[88] from 1969. With her book she tried to compensate for this neglect by pointing at the fact that conversations about deep subjects like death can actually be a relief – and thus soothing – for somebody, who is dying, at the same time as it gives acknowledgement to that, what this particular person is experiencing. Instead of being afraid of addressing issues that reach deep into the existential core, she suggested it should be addressed, thereby giving meaning to life itself. In the environmental debate of the 1970s and 1980s, architects like American Roselyn Lindheim continued this discussion in her work as an architect and professor at UC Berkley, School of Architecture[89]. In an article from 1983 written together

79 Faber, Tobias, *Dansk Arkitektur*, Arkitektens Forlag, København, 1977

80 Steen Eiler Rasmussen, *Om at opleve arkitektur*, GEC Gads Forlag, København, 1957

81 Gordon Cullens, *The Concise Townscape*, 1961

82 Sven Hesselgren, *The Language of Architecture*, Studentlitteratur, Kristianstad, 1969

83 Kevin Lynch, *The Image of the City,* MIT Press, Cambridge,1960

84 Jan Gehl, *Livet mellem husene,* Arkitektens Forlag, København, 1971

85 Edward T. Hall, *The Hidden dimension*, Anchor Books edition, 1969

86 Gaston Bachelard, *The Poetics of Space* (translated from French), The Orion Press, 1964

87 *Sansernes Hospital*, p 261. - A research approach about the relationship between space and human conditions.

88 Elisabeth Kübler Ross, *On Death and Dying*, 1969 – published by Touchstone Books, 1997

89 Roselyn Lindheim worked as an architect in the healthcare sector. Her ideas emanated from the idea that living environments should reflect a respect for human beings and enhance their quality of life. She worked i.a. with the patient group Planetree. Together with Leonard Syme she co-taught the course ' Environmental Design, Stress and Disease' at UC Berkley. She is also the author of books and articles, i.a. 'Birthing Centers and Hospices: Reclaiming Birth and Death', *An. Rev. Public Health*, 1981, 2:1-29

with epidemiologist Leonard Syme, they clarified that you cannot talk about ‘one environment’. People perceive the same environment differently. They following suggested that architects provide a range of opportunities for inhabitants to shape the conditions that affect their lives[90]. A theory which has also been applied to other places since then, and which you could say, is exactly what Hvidovre Hospital was offering.

In the light of the above, it is obvious that designing a hospital asked for another kind of sensibility than the other public building projects Krohn & Hartvig Rasmussen had made. From the lack of information about the experiential, you could reason that they did not give it much thought. The analysis of their work, though, shows something different. As suggested, the work was informed intuitively - tacit knowledge - driven by a natural instinct, humanistic values, cultural imperatives, and relationships with the debates that took place in the surrounding society. However, Eigil Hartvig Rasmussen might have had a natural disposition to understand, what it could feel like to be hospitalized, as he himself from time to time was suffering from depressions. You could argue, that this was a private matter, but looking at the interior perspectives for the 1963 architect competition from the view point of this information, the people we see could have been Eigil Hartvig Rasmussen himself[91]; - sitting in an armchair alone, smoking a cigar, while looking at an aquarium, - strolling around in a garden without purpose, or lying down on a stretcher listening to the birds sing, - staring into the air of an atrium, while turning his back to the life on a corridor, - sitting outside on a terrace in the sun with a drink. The point is that it is relevant to consider that Eigil Hartvig Rasmussen’s ability to respond to complex human relationships – to show empathy – might have been informed by the lay perspective of his own life situation. His existential struggles added a poetic sensitivity into the project – a presence – and a personal experience, that it makes sense to be outside – in a garden – in the dark hours of life.

“In the deep silence of the forest, where crowds of singers live, where the soul listened many times to the happy birds sing; there is idyllic tranquillity in the forest’s loneliness, the longing of the heart stops, in the presence of peace and rest” (F. Andersen, 1864).

The historical perspective has shown, how experience in architecture gradually became more central in the period in which Hvidovre Hospital was conceived, developed and built. It was suggested that the project for Hvidovre Hospital was informed by the changes in the perception of architecture, different societal ideas about well-being and health, cultural narratives about healing, as well as Eigil Hartvig Rasmussen’s sensitive way of knowing, next to his analytical way of knowing, gave him an experiential insight which was crucial for his understanding of what was going on in a hospital. His personal story can as such stand as an example that sensibility makes sense in architecture, if it is about humanity and the capability to show empathy. A quality and a condition which made it possible to establish an intuitive link between the architectural means of an architect and the existential processes that people are going through in a hospital.

90 ‘Environments, People and Health’ by Roslyn Lindheim and Leonard Syme, *Annual Revue Public Health*, 1983, 4:335-59. - The article described health improving parameters such as: - Social Connectedness, - Hierarchy, Self-esteem and Meaning (against; Stigmatization, Poor Living and Working Conditions, Hierarchical Status), - Participation and Control, - Connection to Natural Order (Biological Rythms, Light), - Contact with Nature, - Connection to Life Cycle, - Connection to Place.

91 The daughters of Eigil Hartvig Rasmussen have described his inward oriented condition to me. How he would spend time alone outside in the gardens – in the sun – as a kind of self-medication. His doctor also prescribed holidays in Spain during the Danish winters. They also shared private photos with me, on which I saw the similarity with the people he drew in his perspectives.

BY EIGIL HARTVIG RASMUSSEN

CHAPTER 4

THE ANALYTICAL GENERALISATION

4.1 INTRODUCTION

The purpose of this text is to reflect upon what has been learned in the course of the research. The departure point is a series of summaries, which repeat the most important observations made throughout the dissertation. These observations are following discussed in the light of the objectives for the research and the perspectives that were put forth in the chapter THE ANALYTICAL POSITION as well as in the chapter about THE ANALYTICAL FRAMEWORK. The text is divided into a number of parts: - an introduction, - a short summary of the analytical investigations, - a cross comparison and discussion of the results of the five analyses in the case study research, - and a series of conclusions in relation to the initial purpose of the research.

As described in the prologue, the research is developed from a practice perspective. This implies that I am occupied with the designer, the design and the decision-making process as a way of acting in the world actively, participating, critically: An awareness and curiosity which has made me look for the conscious / unconscious thoughts, values and ideas that informed the architects, whose work, actions and fields of thoughts I study. In THE ANALYTICAL FRAMEWORK it was discussed, how this meant that the research initially was context-led and not theoretically or methodologically motivated. Though, theory and method at some point became intertwined with the discussion of practice, which is why I in this text, where relevant, will make a cross comparison between the discussions and thoughts exposed in THE ANALYTICAL FRAMEWORK, - in specific in terms of positioning, - and the empirical findings in THE ANALYTICAL EXPERIMENT. Purpose is to demonstrate what type of knowledge that has been generated in the research, and how it relates to the present literature and research field.

The following summaries in the text 4.2 SHORT SUMMARY OF THE ANALYTICAL RESULTS might seem like an unnecessary repetition. I include them to demonstrate how the research, - despite its complexity, - represent one stream off thought, awareness building and accumulation of in-sights. Readers, who have a clear memory of what has already been stated and written about in the analyses, can skip this part and jump to 4.3 CROSS COMPARISON AND DISCUSSION OF THE CASE STUDY RESULTS.

4.2 SHORT SUMMARY OF THE ANALYTICAL RESULTS

With the title of the dissertation »Architectural Thinking in Practice« I communicate that I want to contribute to the architectural discourse in two ways; 1. By adding the perspective of practice, 2. By looking at architecture as a thought field rather than as a building. The position is that the thinking and doing of architects in the field of practice has not been seen as a valuable body of knowledge in projects, where large pragmatic, political and social factors are at work. The aim of the dissertation is to demonstrate this type of knowledge. It is the belief that the formalisation of practice as a knowledge platform will be of notable value to practising architects in the development of projects, in the education of students in architecture, and for people outside the architectural field, who seek a deeper understanding of the qualities of the profession, and what it is that architects have to offer, not least in the decision making process.

To address and articulate architecture as a thought field a comprehensive research was made into the work of architects in the hospital sector in

Copenhagen, Denmark. The interest was to uncover how the architects had been informed in their work, and to trace how they made meaning of the complex interdependent relationships they had in the decision making process with the surrounding society, the client, user groups, the architectural culture to which they belonged, the collaborating partners and builders, and themselves as individual people with bias and personal agendas. This practice-oriented perspective provoked methodological questions on how to approach the field of practice. As a result, a fundamental methodological investigation became embedded into the research. To this purpose a set of interpretive lenses was developed that made it possible to portray the complex world within which architects operate.

Next to the analysis of the present debate on hospital architecture, a historical enquiry was made to situate the contributions of Danish architects to the development of hospital architecture within the municipality of Copenhagen over a period of 100 years. A comparative analysis was made of the three hospitals: - Kommunehospitalet by architect Christian Hansen (1863), - Bispebjerg Hospital by architects Martin Nyrup (1913), - and Hvidovre Hospital by architects Krohn & Hartvig Rasmussen (1976) leading to a case study analysis of Hvidovre Hospital. The historical study accentuated how the thought field of architects throughout centuries has been intertwined with different ideas within society; some of which has to do with political ambition, technical progress, urban development, social and human ideals, others with the definition of the public domain, public behaviour, the hospital as an institution within society, the house of medicine, patient care and nursing. As a consequence of this observation, it was proposed, that the meaning of architecture as a thought field cannot be understood by looking at objects like buildings alone. The thought field and work of architects have to be situated within the historical and socio-cultural context within which the architects lived, acted and worked.

As a result of the research approach, the research field consisted of four interrelated areas; - the present hospital debate in Denmark, - the socio-cultural and historical development of hospitals in Copenhagen, - the case study research of the thought field and work of Krohn & Hartvig Rasmussen on Hvidovre Hospital, - and a methodological research. The objective of this is respectively: - to show how the limited view within the present hospital debate could benefit from a broader definition of architecture, - to discuss and possibly demonstrate why architecture analysis (and the perception of architecture) should include historical, societal and cultural parameters, - to unfold the complexity of practice and to give examples of how practice is a knowledge and thought field of its own, - and to develop and test tools of analysis and research.

Since it is the purpose of the research to investigate the active and multi-layered role of architects - more than it is to map historical developments in themselves, the work of the architects Krohn & Hartvig Rasmussen on Hvidovre hospital received a central place. The case was chosen as it is one of the contemporary Danish hospital construction projects and as such has a part to play in the present hospital debate. What is more, the hospital emerged within a humanistic, socially informed and democratic value system, which meant that its architecture was cued by collective memory of a specific time in Danish history. In the light of the present re-evaluation of welfare state values in Denmark, - as well as in other European countries and the accompanying role of architects, - it is relevant to look at, what it meant to be a welfare architect then to make it possible for people (in practice, in

the Hospital sector, in politics) to compare with, how it is now. The primary ambition is to demonstrate that architectural thinking is not neutral. The architects did not just legitimate a certain development in society as well as in architectural practice, they were part and parcel of these developments.

The case study research was divided into three categories; - the architectural means of the architects, - the role in the decision-making process, - and the historical connotation. In the following texts I will give a short summary of the analytical results. In relation to the analysis of the architectural means, it was investigated, if the architects had explicitly stated, what they were doing, or whether their knowledge and thought field was tacit; embedded into their work. As architects do not work on their own but in a relation to other actors in the decision field, the second part of the analysis was to explore this relationship and to see, what role the architects took, how they acted, and what their possibilities were. Finally, the work was studied from a socio-cultural perspective. Meaning that the thought field and actions of the architects were situated in the context of what was going on in society.

ANALYSIS 1: THE PHYSICAL ASPECT OF ARCHITECTURE

The first part of the analysis showed the conscious way in which the architects worked with the physical aspect of the building. It is obvious, how construction, detailing and choice of materials - as part and parcel of the discipline of architecture - were an integral part of the way in which they thought about their work. An essential issue was the attention for the innovative aspect of the building system, as it was not based on a standard but the result of an in-depth analysis and research.

In the second part of the analysis it was discussed how the building was developed in a close collaboration with two engineering firms. The developed ‘lingua franca’ is evidence how the two thoughts fields were intertwined initiated by the architect’s ambition to establish an integral mode of thinking and working. The municipal client also played a role in the decision-making process, for example, in insisting that the building was developed in phases and in promoting rationalisation and industrialisation which resulted in a modular system of prefabricated standardized types.

The historical part of the analysis showed how the technically oriented architecture of Krohn & Hartvig Rasmussen’s was fed by an idealistic belief that architecture could have a positive influence on society’s development; to build good quality for little money. The Danish State also added to this by promoting industrialized construction in Denmark with a special emphasis on pre-cast concrete. These factors demonstrate the relationship between state, market and architecture; it was not only about efficiency.

While Eigil Hartvig Rasmussen had a lead role in the design of the competition proposal, the further development was taken over by other architects at the firm. The rationalisation, standardisation and industrialisation had a transformative effect on practice. The building project required pragmatism, rigor, order, research and analysis, organisation and planning. Gunnar Gundersen was the kind of architect needed to lead a complex building project like Hvidovre Hospital. Bent Nielsen, as daily leader of the joint building management with the two engineering firms, was another important person in the construction of the building. Together architects and engineers served as the overall advisor for the client, and

they were in charge of the planning and execution on site.

However, the architects had not foreseen the consequences of industrialisation. Besides losing a part of the market to contractors, the process of industrialisation also meant that architects no longer were the closest advisor to the client. They had lost sovereignty. The outcome of the process of industrialisation was that practice changed during the 1960s - 1970s. As discussed in the analysis, this lead to discussions within the office of Krohn & Hartvig Rasmussen about what kind of architects they wanted to become. Industrialisation had created opportunities but also challenges and problems. It is an example of the conflict between following the development of the market and one's own professional ethics – between pragmatism and idealism. What had started out as a societal informed idea had ended up being a professional dilemma.

ANALYSIS 2: THE DYNAMIC (USE) ASPECT OF ARCHITECTURE

The first part of the analysis showed how the architects argued from the view-point of use – activities, processes and flows. The flexible open constructional system which they had envisioned – and which was described in Analysis 1 – was essentially about establishing a relationship between the construction of the building, potential users, and developing demands, criteria and needs of the hospital in terms of its functioning.

The discussion on horizontal decentralisation as an architectural means is an example of how reflection and research can lead to new ideas. The 28-page long argumentation in the competition proposal bears evidence that Eigil Hartvig Rasmussen was a reflective thinker. It is also a demonstration that he knew that architecture can become manifest through written as well as spoken language. The analytical strength and verbal quality was decisive for the jury committee. In that sense it was a rhetorical project.

To continue the work on the analysis of the use of the hospital, architect Peter Lohfert was asked to join the project. His work did not follow an already known procedure. It was based on systematically research and development work leading to a new way to practice as an architect – a 'modus operandi' - while establishing a link between the architects and the hospital staff at Copenhagen Hospital Services. New types of communication strategies and drawing techniques were developed. And a new type of decision making was introduced; one in which user groups were involved in the development of the scheme in the form of representatives. All of which led to a new disciplinary field; that of Function Analysis and Hospital Planning.

In the historical part of the analysis it was discussed how Eigil Hartvig Rasmussen and Peter Lohfert were informed by each their professional field and discussion. While Eigil Hartvig Rasmussen referred to Architecture and Urbanism, Peter Lohfert referred to System Thinking and Scientific Operational Research. Contrary to Peter Lohfert's detailed knowledge and profound in-sights into the working of hospitals, Eigil Hartvig Rasmussen was more of a generalist. His thoughts were founded in relation to other Krohn & Hartvig Rasmussen's projects like the factory buildings, shopping centres or market halls, which like Hvidovre Hospital were based on ideas about the dynamic aspect of architecture. Projects that could be placed in-between urban planning and architecture and whose ideas were informed by changes within society, in specific the development and planning of the suburb. Thus,

the proposal for Hvidovre Hospital related to urbanistic ideas as well as being a functionalist and system theoretical project.

In terms of history writing it was mentioned that the project never was acknowledged for its original contribution to the discussion of how architecture could be thought of as a dynamic system. Nor has the interdisciplinary user oriented approach been included into the history of Danish architecture as a unique experiment. This probably has to do with the way in which the project was communicated to the outside world by the architects, but it also is an example of a limited view on what constitutes architecture. In relation to what I wanted to show, it is evidence that practice is a knowledge field of its own. The analysis did not only show that significant work was done, but that practice led research can lead to people and knowledge who have been ignored.

ANALYSIS 3: THE SOCIAL ASPECT OF ARCHITECTURE

In the media analysis it was described how the architects wrote very little about the social aspect of their architecture – the social interactions. Plan drawings, perspectives and photographs never the less show how they did not address it explicitly but tacitly. Thus, the architects intuitively reflected social patterns in the hospital organisation as well as public social functions in society, which they translated into their architecture in the way in which it would support social encounter or hinder it. This remained like a mute but never the less important factor in the project.

In the second part of the analysis the notion ‘the social’ was addressed specifically. As discussed in the media analysis the notion ‘the social’ could be interpreted and discussed in terms of; - the social aspect of the building (the distribution of, in and through space), - and the way in which social ambition and relationships could be read from drawings, photographs and the language used. In terms of the decision-making process it got another meaning. Architecture being fundamentally a social discipline – created for and with other people – indicates that the decision process was essential.

Eigil Hartvig Rasmussen’s way of distributing responsibilities to his fellow colleagues at the office of Krohn & Hartvig Rasmussen was itself a token of social relationships. As a result, the decision-making process became decentralised – led by many actors – who each had an interactive relationship with other stakeholders in the field. This is fundamental to the way in which they worked as a team. It is also evidence that the architects had highly developed social skills. The decentralised decision process was as such an utterance of social intelligence. And that the architecture was conceived collectively – in a social interaction. It was not the result of numbers and calculations.

As also discussed in Analysis 1 and 2, the decision-making process was characterized by collaboration, cooperation and co-determination. An attitude which was in line with the directives of the municipality to stimulate decentralization and self-governing in the organisation. From a staff policy point of view, the involvement of users in the decision-making process was a social and political act and part of a major municipal effort. Despite the user participation in the research by the team of Peter Lohfert, the reports did not map social relationships within the organisation. There was thus a limit to how much the established social structure was questioned. The architects

apparently did not see it as their task to act as agents for social change. As a result, the operative view on the more intimate social relationships was left to tacit knowledge. That the decision-making process was an area filled with political ambition and ideals, but also social conflicts and confrontations mirrored what was going on in the surrounding society.

In the discussion of the social history it was stressed how the emphasis on decentralisation, communality, and closeness was based on a social political movement and debate that defined the welfare state Denmark. Co-determination and co-responsibility had become part of the Danish work culture of cooperation, and a coinciding factor for everyone who was part of the project, whether architects, municipal officials, or people from the hospital organisation or others. That social relationships were not addressed in the user groups could thus also be an indication of a ruling socio-cultural convention: that equality was taken for granted. The freedom to move around in the hospital was in line with this ideology, and that individuals should be allowed to choose for themselves, where they wanted to be. It was also an invitation for social interaction. The architecture was thus a statement and part of a value discussion about solidarity, collectivity and society. All of which should be understood in relation to the social political struggle for welfare ideals, democracy and equality.

ANALYSIS 4: THE NARRATIVE ASPECT OF ARCHITECTURE

In the first part of the analysis it was discussed how the architecture could be read as a referential communicative system of (verbal and visual) images, some of which had to do with an inter-disciplinary architectural discourse, others with a socio-cultural, a political and/or the hospitals culture history. Thus, the architectural imagery of Hvidovre Hospital was layered, reflecting matters of interest, identity and storytelling. As a result, the architecture became part of different platforms / fields and magazines.

The narratives addressed institutional imagery as well as discussions within the architectural field about modern architecture, home and cultural issues. While the architects were explicit and outspoken about their intentions of some of the narratives, others were tacit and implicitly present in the visual material. That the architects took an active part in the visual and verbal presentation of the project proves how the site of their architectural production was not only the material construction site but also the immaterial site of publications, films, public talks and presentations.

In the second part of the analysis it was discussed how the imagery of the project came from a joint effort between architects, landscapers, furniture designers, and others. The synthesis of the design disciplines – and the focus on interior qualities – was the intentions of the architects. Different architects at Krohn & Hartvig Rasmussen played a role in the visual identity of the hospital – architects like Aage Katborg, Jack Andersen, Niels Schou, Ove Henriksen, etc.. Thus, the imagery was an assemblage of different voices not a closed sign system defined by one mind alone. The design of the building and its materialisation was furthermore the result of test, investigations and field studies. It is an example that designing is a reflective process and a matter of research. That the architects in their design (indirectly) referred to the work of other architects is proof that it was material culture - created in an inter-disciplinary dialogue.

An essential issue about the field of interests was that the architects were perceived as agents for specific socio-cultural and collective values. The City of Copenhagen was as such not only concerned about the aesthetical value of the architectural imagery but about the ethical reading of it. At some point in the process the architects even became the spokesperson for the municipality. It was no longer about their work, but about their role as public figures. The architect's authority was seen as a guarantee to assure the public that the dream of the municipal hospital could be realised.

In the historical analysis it was discussed how the architectural imagery had significant international references. It was also discussed how the authenticity and truthfulness of the project was to be found in the way in which it combined modern techniques with conscious humanistic ideals, and an understanding of the life world and values of its users in the suburban landscape around. The large flat horizontally laid out hospital could as such be seen as a symbol – a sign of the new times – a new type of monument – a monument of the Danish welfare state; equalitarian in its idea and open for interpretation and use. The historical connotation demonstrates how the thought field of the architects was informed by a deep discussion on architecture's purpose.

ANALYSIS 5: THE EXPERIENTIAL ASPECT OF ARCHITECTURE

In the media analysis it became clear how an analysis of 'the experiential' inevitably led to a discussion of the architecture of the interior and the garden. While the architects in their texts occasionally did address 'an experience', they did not specify the perspective of the person experiencing in their descriptions. From the lack of information about the experiential, you could reason that the architects did not give it much thought. The analysis of their work though showed something else – suggesting that it remained implicit – intuitively informed by humanistic values, cultural imperatives, and relationships with the debates that took place in society.

In the second part of the analysis on the decision making process it was discussed how Eigil Hartvig Rasmussen was the most explicit in addressing issues related to the life situation of ill patients. Even though he did not write much about it, his perspectives of the interiors are evidence that he thought from the viewpoint of patients. Gunnar Gundersen wrote most of the articles that were published. Besides the architects, artist Palle Nielsen and landscape architect Morten Klint were prominent actors in the decision field as their work played a key role in the experiential aspect of the architecture. However, the development work was not done in a close collaboration with Krohn & Hartvig Rasmussen. It was more or less autonomous.

The discussion on the decision-making process also showed how the experiential aspect of hospitals and their architecture was included and excluded through history. It points at an important relationship and sometimes conflict of interest between the content, composition and redaction of information included into a competition brief, the possible interpretation of designers, and the power of jury committees to introduce aspects that were not included into the brief, emphasize and/or leave out certain aspects in their evaluation. It moreover shows how different world views determined which aspects of 'being human' that were included into the discussion of architecture, and whether or not the relationship was established at all. Finally, it also showed how the architects were open to

suggestions coming from the outside world, specifically the jury report. In the historical part of the analysis it was shown how the period in which Hvidovre Hospital was conceived, developed and build was marked by changes in the perception of architecture, and that experience in architecture gradually became more central. It was suggested that the project for Hvidovre Hospital was informed by the changes in these perceptions, different societal ideas about well-being and health, and cultural narratives about healing. Essential was Eigil Hartvig Rasmussen's social empathy, sensitivity and poetic character, which gave him an experiential insight that was crucial for his understanding of what was going on in a hospital. His personal story can as such stand as an example that sensibility makes sense in architecture, if it is about humanity and the capability to show empathy. A quality which made it possible for him to establish an intuitive link between the architectural means of an architect and the existential processes that people undergo in hospitals.

4.3 CROSS COMPARISON AND DISCUSSION OF THE CASE STUDY RESULTS

The cross comparison and discussion of the case study results are, similar to the structure of the analyses, divided into three parts; - the architectural means of the architects, - the role in the decision making process, - the historical connotation.

CONSCIOUS / UNCONSCIOUS PATTERNS AND THEMES IN THE ARCHITECTURAL MEANS OF THE ARCHITECTS

The media analyses showed how the architecture was not only embedded into the construction of Hvidovre Hospital. It was a means to support flows and activities, social relations of different kinds, the narrative aspect of the hospital, as well as the experiential and existential aspect of its life world. In the cross comparison of the analytical results it became clear that the architects were not explicit about all of these aspects of their architecture. While they were very out-spoken about how they thought about the construction as well as the analysis and distribution of the program (activities, processes and flows), they had a muter approach towards the intangible aspects of their architecture as discussed in Analysis 3, Analysis 4 and Analysis 5. Here information for the media analysis had to be drawn from drawings, photographs and by visiting the building. This observation corresponds with the statement by Donald Schön saying, that designer's knowledge are ordinarily ''tacit, implicit in out patterns of action and in our feel for the stuff with which we are dealing'' (Schön, 1983: 49). It has to do with the way in which designers are immersed in material culture and '' draw upon it in their thinking'' as Nigel Cross wrote. (Cross, 1982: 225), but also ''that the world of 'doing and making' is usually ahead of the world of understanding'' (Cross, 1982: 225). Cross validated that 'designerly ways of knowing' resides in objects by referring to the work of the two British anthropologists Mary Douglas and Baron Isherwood emphasizing the silent communication between people and 'the world of goods'. ''Forget that commodities are good for eating, clothing, and shelter', Douglas and Isherwood say, 'forget their usefulness and try instead the idea that commodities are good for thinking; treat them as a nonverbal medium for the human activity'' (Cross, 1982: 225).

Following the propositions of Schön, Cross, Douglas and Isherwood, the lack

of a verbal articulation and legitimation of the architectural means does as such not necessarily mean, that the architects were completely unaware of the social, narrative and/or experiential aspects of their architecture. Point is that certain norms and attention fields were implicit; embedded into the Danish culture. Examples of these were ideas of collectivity, closeness (nærdemokrati), and equality, which were considered normal and therefore not addressed explicitly in the documents by the architects; through means of language, but implicitly through their 'objects'; drawings and the building. Another reason for the architects not addressing certain values and ideas, which were layered into their work, was conventions in the architectural discourse; how architecture was perceived as a discipline, which explains what the architects would address or not. An example of this is the experiential - environmental - aspect of architecture, which became a conversation topic during the 1970s. This relates to the argument of Donald Schön saying that designers ''occupy institutional roles in interaction with one another. Hence, designing is a communicative activity'' (Schön, 1991: 5). That the less problem-oriented aspects of the architecture of Hvidovre Hospital primarily were intuitively and socio-culturally informed and not through deep thinking could therefore probably be said for more architects of that time period, in fact, for designers in general. It was (and is) a pattern in their attitude and thought field to leave a lot of things unspoken. As Dana Cuff wrote '' Architects find it difficult to explain'' (Cuff, 1991: 5). Architects 'just-do' things. This explains why the knowledge of the architects on the intangible aspects of architecture was tacit only be retrieved through interpretation and analysis.

Independent of whether or not the architects explicitly addressed all aspects of their work through language, the media analysis showed how the non-verbal aspects of their architecture – the building, drawings, models, photographs – were agents on their own. Seen from a cultural perspective, they were cultural artefacts and manifestations of values in society, in the hospital organisation, in the discipline, in the people the architects were; ideas about human relationships, behaviour and activities. This is in line with the argument for architecture being a five-part representational media-system. It also indicates that language in architecture might sometimes be limited, and that visual media may say more. That the architects took actively part in the presentation of the project proves Beatriz Colomina's point, that the site of architectural production no longer can be seen as the material construction site alone but also the immaterial site of publications, films, public talks and presentations.

Another essential point in the media analysis is that the architects in their craft demonstrated a certain creativity, which they used to alter, extend and change their 'modus operandi'. It is an example of John Dewey and Donald Schön's term 'reflective action', that ''the designer becomes a researcher in the practice context'' (Schön, 1983: 68). The flow charts, diagrams and schemes of the work group of Peter Lohfert, which were used as a communication device with the hospital user groups, or the detailed T-book drawing system which was developed as a tool for the detailed design, the construction, planning and budgeting are architects 'thinking in the making'. Through the development of and experimentation with media the architects actively took part in the perception and representation of architecture, which was subsequently disseminated into practice. It is evidence that architectural media has a history of its own, but also that models and drawings can have 'agency'. A sociologist and anthropological viewpoint also expressed in the work of Albena Yaneva. She articulated it the following way: ''A building

is not obtained in a double-click instant of creation or construction … to grasp architectural work required for our stories, it was essential to devote meticulous attention to the specific trajectories of models, to the minute movements of the foam, to the various ways a models compels its makers, to the series of dismissed projects, to the unfortunate moves of execution'' (Yaneva, 2009: 102). The cross comparison and discussion of the empirical results of the media analysis as such communicate that it was difficult to separate the analysis of how the thought field was informed; the 'thinking about making', from the process of 'thinking through making'.

PROMINENT ROLES, ACTIONS AND EVENTS IN THE DECISION FIELD

In the study of the decision-making process it came to the fore, how architect Eigil Hartvig Rasmussen had a prominent voice in the decision field. His verbal and visual argumentation in the competition proposal bears evidence that he was very aware of his role as an actor and as an agent for diverse architectural ideas. What is more, the conscious way in which he positioned himself in the debate on hospital architecture demonstrates how he saw architecture as a thought field, which could be made manifest as language, and which came into being in the decision-making process. The case indicates that architecture is not. – as it is commonly thought off, – a primarily visual discipline. It is also evidence of the theory that architecture is a five-part media system.

The decentralised decision-making process in the Hvidovre Hospital project is furthermore evidence of the a-hierarchical social relationships at the office. It points at a certain amount of social intelligence in the architects, but also that it was an office and process organisation in which various collaborators could take autonomous decisions. It confirms Donald Schön's theory that designing is primarily social. In terms of leadership, it is also proof of Eigil Hartvig Rasmussen's inclusive and horizontal way of thinking, which in itself could be seen as a unique and important point, as it was (and still is) un-conventional for a senior partner in an architectural office to not be involved in the major decisions taken in a large project. Maybe more importantly, it is an indication that large scale and complex projects cannot be solved by one architect alone. It is a collaboration between different architects with different qualifications. The common idea of 'an architect' designing 'the project' dissolved into a network – a team - of architects with each their responsibility working together towards one communal goal. This observation is in line with the argument of Dana Cuff in *Architecture. The Story of Practice*, in which she goes against the myth of the individual 'architect-hero' working in isolation, stating that ''architecture both relies upon and exceeds individual creativity'' (Cuff, 1991: 2-3). A central theme in her book is therefore also the discussion of the duality between 'the individual' and 'the collective' saying that there is a ''contrast between architecture's fundamental respect for the autonomous artist and its use of teams of professionals to do the actual work for any project (Cuff, 1991: 11).

Another important point in the cross comparison of the analyses is that it emphasizes how architecture is a multi-layered discipline. The different perspectives in the five analyses did not only portray different interpretations of what architecture is, they gave examples of different decision fields embedded into the project and the corresponding roles (tasks, challenges and tools) of the architects in the decision-making process. For each role specific qualifications were needed. The architects Gunnar Gundersen /

Bent Nielsen, Peter Lohfert, Aage Katborg / Jørgen Gabriel, Niels Schou / Flemming Skude, Jack Andersen are examples of different areas of expertise in the knowledge field. The five analyses as such demonstrated different ways of operating in the world as an architect. This is in line with the view of the French architect and urbanist Philippe Boudon, who in the article by Julia Wiliam Robinson in *The Discipline of Architecture* is quoted for saying that ''architecture is by nature not a discipline but a set of disciplines'' (Robinson, 2001: 63). Concluding, the role of an office is to be able to think and work as 'a collective'; a composition of different minds, attitudes, skills and knowledge fields: ''The need to address the many perspectives of the building requires the ability to layer divergent and sometimes apparently contradictory requirements so that their relationships can be understood and the design choices may be developed'' (Robinson, 2001; 63). The case study is an example of such a procedure.

While the five perspectives in the analyses exposed each their decision field (and type of architect), the five interpretations also showed how each decision field was connected with knowledge fields other than architecture. One example is the close collaboration with the engineers with whom the architects had day to day contact. Not only did they reside within the same compound, they shared a common language. The border between architecture and engineering seems to have faded away into 'architectural engineering'. Another example is the collaboration with external advisors like the landscape architect Morten Klint or artist Palle Nielsen, whose work played an integral part in the architecture. The knowledge field of Copenhagen Hospital Services (the hospital staff) also had an important role in the function analyses that Peter Lohfert was in charge of. Not to speak about the diverse disciplines that were integrated into the realisation of the project – from the construction of the building, its building services and technical installations to the architecture of the interior with its furniture, light installations etc. These observations support Julia William Robinson's argument in *The Discipline of Architecture* to broaden the notion of architecture and to acknowledge the relationship architecture has with other fields and disciplines. The inter-disciplinarity of the decision process also points at that the work of the architects was not only to design the hospital. It was to coordinate, plan, negotiate, guide, develop and alter their architecture in an interaction with other actors in the decision field. That the design was a materialisation of a relationship, a negotiation, and a real-life situation in which the architects participated, is also the reason why Dana Cuff pointed at architecture being a 'social construction' (Cuff, 1991: 4), or that Donald Schön stated that 'reflection-in-action' is central to the 'art' of being a practitioner (Schön, 1983: 50).

Finally, the cross comparison of the five analyses shows how the Municipality of Copenhagen, due to economic concerns, was actively involved in the way in which the hospital design was tested, analysed and realised - the same way as Copenhagen Hospital Services were actively involved in the programming part. As discussed in the analyses the work of the architects became to create a common platform of understanding – a language and a way of communicating - the same way as they sometimes should guide their client through the decision process. It is another example of the social – and rhetorical - aspect of the architects work in the decision field. Similar to the way in which analytical models, physical models, analytical drawings and sketches, fact finding, and field research were crucial for the development and testing of ideas, language was equally significant in the process of negotiation and the discussion of intentionality with the client

and the hospital users. It is an indication that the discipline of architecture, – and being an architect, – is also about the ability to act in relation to other people, to take responsibility and to establish relationships. Working in the context of other people asks for a specific skill described by Dana Cuff this way: ‘’There is a concomitant emphasis on decision making as the primary skill an individual needs in order to successfully give form to a project … the more accurate description of the necessary skill is not decision making but sense making .. The notion of sense making implies a collective context in which we must make sense of a situation, inherently social, interpret it, and make sense with others through conversation and action in order to reach agreements’’ (Cuff, 1991: 254). The case study gave examples of such behavioural qualities in the minds of several of the architects working on Hvidovre Hospital like Eigil Hartvig Rasmussen and Gunnar Gundersen.

THEMES IN THE HISTORICAL ANALYSIS

In the cross comparison of the historical part of the analyses it became apparent how the thought field of the architects was intertwined with societal and urban development, the developing industrialised building culture, organisational matters, cultural values, ideas and preferences within the Danish population and the international community of the outside world, socio-political ideals about communality, life style issues etc. In that sense it was a contextual proposal embedded into its time and place and culture. The case study confirms that ‘’designers are immersed in material culture, and draw upon it as the primary source of their thinking’’ (Cross, 1982: 225).

While the historical analyses indicate that the architects thought field and work for a large part was symptomatic for the time period, there were exceptions, where the architects positioned themselves critically in the field. So was the decentralised hospital based on a critical investigation of the criteria for which most hospitals in the time period were designed, which led to the definition of a new model for hospital designs. This demonstrates the importance of research before designing. Next to this they, as described in Analysis 4, introduced the idea of a humanistic and reconciliatory environment in hospital designs - a non-institutional imagery – as a reaction against an aesthetic that only reflects the mechanical rationality of a hospitals functionality and production form. This led to an architecture of sensuous interiors in contact with nature. The architects actively took part in the development of function analysis and hospital planning as a new field of knowledge, introduced user participation as a means in the architectural design process, while also facilitating social and democratic ideals about shared responsibility and co-determination. An exemplary constructional system, planning procedure and method of drawing classification was developed and used. They experimented with new materials and production methods in an attempt to re-define authenticity in architecture and in its imagery. And lastly, the interior quality of the architecture was thought through social relations, use, and the experience of users, thereby going against a formalist approach in architecture. All in all, evidence that the thought field of the architects was not only pragmatic, it was also innovative and idealistic. It is an example of the reflective practice perspective described by Donald Schön, where designers can have a ‘reflective conversation with the situation’ (Schön, 1991: 4) thereby creating the opportunity to become ‘’researchers in the practice context (Schön, 1983: 68). In concordance with the ambition of the case study analysis, the research indicates how the architects did not just legitimate a certain

development in society, they were part of creating it, which is supposedly also what Nigel Cross meant, when he wrote, that ''designers have the ability to both 'read' and 'write' in culture'' (Cross, 1982: 225). It proves that architectural thinking is not neutral, and that it can have a positive outcome, if architects are allowed to play an active role in the conception of a project and in the decision-making process. What is more their work can become part of a socio-cultural and collective meaning-making process. Seen from that viewpoint Hvidovre Hospital can be read as a cue to collective memory.

Despite the positive connotations of Hvidovre Hospital as a building project that radiated and affirmed modern and idealistic beliefs about the establishment of the Danish welfare state, the case study also gave examples of the conflicts that developed parallel to the development. So had the architects for example not foreseen the consequences of industrialisation, which was promoted by the Danish state wanting to build for example a large amount of buildings for the growing administration, fast and for little money. The supportive and confident belief of the architects in the beginning of the 1960s therefore changed to become more sceptical and concerned about their own role in society in the 1970s. It is an example of the possible conflict between following the wish and needs of the market or your own professional beliefs; pragmatism and idealism. Next to this, the governmental and organisational involvement with the project, did not only mean that there were strict rules for how much money could be spend, but that all major decision should be made in consensus with the authorities. As a result, the building project was for example phased against the advice of the architects, which had consequences for the realisation of the project. And while there were very innovative aspects in the inter-disciplinary work group arrangements around the function analyses, the discussion of the development of the hospital program, the architecture competition and also the project also demonstrated how conflicts of interests resided within the decision field. The architects were here one actor between many others. Seen from a more critical view point, it is therefore also true to say, that the architects were a vehicle for the political, socio-cultural and organisational viewpoints of their clients; The municipal of Copenhagen and Copenhagen Hospital Services. The view of the role of the architects thereby change. The potential - but also problems - of the political scenery in the post war period, and the consequences of state involvement for architecture and architects, has been the subject for a number of historiographic studies with the book *Architecture of the Welfare State* as one example[1]. The dissertation of Christoph Grafe[2] is another example in which he discusses the unclear role of architects in the development of two culture centres in London due to what he termed British ''post war administration and planning'' meaning bureaucracy. Contrary to this the architect of Kulturhuset in Stockholm supposedly managed to develop a position within the radical egalitarianism of the Swedish society without losing touch with a more deep, historical, urban (cultural) understanding of architecture. Hence, the Hvidovre Hospital case study, and the discussion of the contemporary hospital construction projects in Denmark, can be positioned between the other historical studies of institutional building projects under state supervision. All of which are examples of the relationship between state (politics), market (economy) and architecture (attitudes and positions). Together they confirm how motivations and values are - and have always been - embedded into buildings, and that buildings are 'born from a collective conception' (Dana Cuff: 4).

1 Avermaete, Van Den Heuvel and Swenarton, *Architecture of the Welfare State*, Routledge, London, 2014

2 Grafe, *People's Palaces, Architecture, culture and democracy in two European post-war cultural centres,* TU, 2010

4.4 CONCLUSIONS

The following conclusive paragraphs are ordered in relation to the four objectives for the dissertation summarized under point 4.2.

OPENING UP THE PRESENT DEBATE ON HOSPITAL ARCHITECTURE

The research into the Danish hospital debate showed how official documents do not specify the contribution that architecture can make to the development of hospitals if it is not accounted for in economic measures, safety, or in terms of efficiency. The conclusion was that the Danish hospital construction projects are primarily about politico-economic and managerial interests. Even the preferred sensuous effects of a 'healing environment' seemed to be informed by economic motivations and ideas. This is evidence that architecture is not perceived as a valuable knowledge field of its own.

In parallel, architects like Kirk Hamilton and Jan Søndergaard are warning that architects are losing territory in the decision field. In the light of this, architects working within the healthcare sector use notions such as 'Evidence-based Design' and 'Healing Environment' to position themselves in a field, where there is a lack of understanding of what architecture is. This way the architects make their clients think, that the architecture they design is based on scientific principles. The problem about this is that nobody is getting any wiser about the quality of the discipline of architecture by applying a mono-dimensional rhetoric on the quantitative aspects of architecture. Instead of being a multi-layered discipline, architecture is defined as a primarily data-driven and measurable matter.

The case study of Hvidovre Hospital – with its five interpretive lenses – rendered a different narrative. The five perspectives in the analyses exposed each their decision field – a specific type of knowledge, an area of expertise, and a way of operating in the world as an architect. It illustrated that – as an integrating discipline – architecture engages with many dimensions of the built environment, ranging from matters of construction and technique, use aspects and planning, to social, symbolic / narrative and experiential dimensions. What is more, the case study gave examples of how the architects had a key role and prominent voice in the decision-making process, guiding the municipal client and Copenhagen Hospital Services through the development work, coordinating, planning and supervising the construction, and making sure that all collaboration partners would know their role in the project.

Finally, the case study showed how the architectural thought field was not only normative and pragmatic, it was also innovative and idealistic. The architects played an active role in the conception and development of the project as well as in the building process. To use the words of Donald Schön, they were 'researchers in a practice context'. Being 'immersed into the material culture' (Cross) - reading and writing at the same time - they were agents for collective memory, thereby having an important role in the development of the project, as the ones that were able to have 'a reflective conversation with the situation' (Schön) not just making pragmatic solutions. Against the reductionist healthcare debate, the case study results can be used to revalue the 'encompassing nature' of architecture, a plea to widen the view, acknowledge architects for their 'reflection in action' capabilities, and to give architects a more prominent role in society amongst others in the development of hospitals in the health care sector.

Last but not least, the study does not go against the idea of research-informed design. It primarily suggests that if a reasonable evidence-based practice should be obtained within the architectural domain, the data should also be qualitative and derived from the everyday life of practitioners. The purpose of such an endeavour would be to surface and solidify the tacit knowledge embedded in practice and to make it available to others.

WHY ARCHITECTURE ANALYSIS – AND THE DISCUSSION OF ARCHITECTURE - SHOULD INCLUDE SOCIO-CULTURAL PARAMETERS

In the analysis of the Danish hospital debate it was discussed how the uncritical use of notions like a 'Healing Environment' or 'Healing Gardens' could be seen as an indication of a cultural and collective belief in Denmark, where fresh air, daylight, views to the outside, a natural and peaceful surrounding are environmental qualities which 'the Danish' live by and pass on to their children. The point was made that the idea of a 'Healing Environment' could have been argued differently as a socio-cultural and therefore qualitative parameter within designing.

The case study of Hvidovre Hospital confirmed that the architects were agents and advocates for different tacit norms and values in the Danish culture, which were recognized and appreciated by the jury committee, the municipal client and the larger public of the City of Copenhagen. The horizontality of the hospital and the style of its facades was also valued, by the jury committee in 1963, for its simple and modest attitude in harmony with the quiet character of suburban everyday life of residents in Hvidovre. It was not only about fitting into the low rise, anonymous residential context, but about matters of cultural history and identity making. The roof gardens were associated with values such as welcoming, reconciliation, and contact with nature. The interior architecture was seen as a friendly, intimate and a cosy climate for the patients, the same way as the interior layout and accessibility stimulated contact, social interaction, and ideas of communality. In the realm of Heidegger the imagery of the architects gained meaning by being associatively situated in the world as part of a larger order of things. All of which confirms the theory of Donald Schön saying that architecture is a 'communicative activity'. Through visual codes, their work can occupy roles in society, things to think along; 'a nonverbal medium for human activity', as Douglas & Isherwood wrote.

'Humane' (medmenneskelighed, humanistisk) was the symbolic language indicator for the humanistic values embedded in the project. A notion, and an idea, which was addressed explicitly not only by the architects but equally so by the municipality and hospital representatives, by public organisations and in diverse magazines in relation to the discussion of the architectural project. This is another evidence that architecture is material culture. It is a cue for collective memory, cultural identity and meaning making. Correspondingly, the historical analysis of the work of Christian Hansen, Martin Nyrup and Krohn & Hartvig Rasmussen showed how each of these hospital buildings was tied into its own socio-cultural history in time but also connected through time as each architect was perceived as an agent for values which related to the development of the Danish welfare society, public life and the ethics of its middle class citizens. Seen from the present it is also striking how there were hospital gardens in all three projects, which could be read as evidence of a profound cultural bond with nature, and that Danes for the same reason find it appropriate to include gardens in hospital designs. The

hospital gardens are reminiscences of something deep and meaningful in the Danish culture. That the architects included a garden into their designs is an example of what Nigel Cross termed ‘metaphoric appreciation’; that designers are particularly good in ‘’reading the world of goods, translating back from concrete objects to abstract requirements, through their design codes’’ (Cross, 1982: 225).

The above described factors have led to Hvidovre Hospital being conceived as cultural heritage, which exerted influence on the 2014 architect competition about the extension of the hospital. The winning architects confirmed that they read humanistic values into the project, for example in the human scale. They also pointed out that it was ‘the thinking’ embedded into the project, rather than the imagery, which (in their view) made Hvidovre Hospital an iconic project; a symbol for a societal development and a way of being in the world. This is yet another example of how architects are well aware of architecture’s socio-cultural connotation without necessarily addressing it actively in their own work or in the discussion of architecture. Should change take place in the debate and definition of architecture, it could very well start by architects situating their work within the world - amongst other things - instead of positioning it outside as an autonomous object of art, which has nothing to do with the everyday life of citizens.

Seen from the view-point of architecture analysis - and debate - all of these observations suggest that it would be legitimate and valuable to argue for architectural ideas from the view point of collective memory, cultural values and society. However, in a medical sector founded on hard statistical quantitative evidence, soft qualitative data seldom count as evidence, which illustrates the dilemma of working as an architect within the healthcare sector, and the conflict between quantitative and qualitative evidence. As a result, a case should be made for the cultural impact of architecture.

UNFOLDING THE COMPLEXITY AND QUALITY OF PRACTICE

The purpose of the case study was to unfold the complexity of architectural practice; to convey how architecture and architects can contribute to society and to the decision field in diverse ways. In the summaries of the analytical results and the cross comparison, the qualities of the thought field and work of Krohn & Hartvig Rasmussen have been discussed and described in detail. Each interpretive lens and analysis exposed a specific reading of the architectural project and the architectural means used.

Besides giving proof that architecture can be examined from multiple perspectives, the five analyses also exposed a diversity of areas of expertise in the architectural knowledge field. This goes against a singular interpretation of architecture. The case study suggested instead a reading of architecture as a complex and layered discipline consisting of different decision fields and corresponding qualifications and roles. As a consequence, ‘the architect’ is either a holistic generalist capable of shifting between different realities, understandings and architectural means, or a team (or a network) of specialized architects with each their responsibility (tasks, challenges and tools) working together in unity towards a common goal. Here, social intelligence would be one of the qualities needed confirmed by the study of Dana Cuff and Donald Schön.
The case study analyses also showed how each of the decision fields were connected with other knowledge fields than architecture. It revealed how

architecture is an inter-disciplinary field. The consequence was that the boundary of the architectural field sometimes was blurred. In the office of Krohn & Hartvig Rasmussen, a part of their practice became to create a common platform of understanding - a shared language, a communal approach, a way of interpreting and understanding the project, and a way of communicating - with e.g. engineers, user groups, and planners. These observations were in the cross comparison related to the argument of Julia William Robinsons to broaden the notion of architecture and to acknowledge the relationship architecture has with other fields and disciplines. It also is a plea for cross-disciplinary research.

An essential point in the media analysis is that the architects demonstrated a certain creativity and craft, which they used to alter, extend and change their modus operandi. Examples are the flow charts, diagrams and schemes of the work group of Peter Lohfert, which were used as a communication device with the hospital user groups, or the detailed T-book drawing system which was developed as a tool for the detailed design, the construction, planning and budgeting. Through these means the architects took an active part in the perception and representation of architecture, which was subsequently disseminated into their practice. It is an example of the social - and rhetorical - aspects of the work of architects in the decision field. But it is also an example of John Dewey and Donald Schön's term 'reflective action', that ''the designer becomes a researcher in the practice context''.

Besides demonstrating the capability of architects to situate themselves in the decision field as both craftsmen, spokespeople, mediators, communicators, negotiators, guides, and actors for diverse ideas and interest, the analyses of the decision process also showed how large projects like a hospital are the outcome of many forces. As a result, the architectural propositions of Hvidovre Hospital were creatively and productively re-interpreted by contributing landscape architects, artists, interior architects as well as engineers, technicians, contractors and builders. Thus, the project was conceived collectively. It was not the result of one mind alone. A view which in the cross comparison was compared with the writings of Dana Cuff, in which she goes against the myth of the autonomous 'architect-hero' working in isolation, stating that architecture is in fact a social construction; it both relies upon and exceeds individual creativity.

What is more, the research into the decision field depicted an important relationship - and sometimes conflict of interests - between the municipal client, the hospital organisation, the hospital staff, and the architects. This was to be seen in the development of the project, the definition of the program, and the interpretation of the architectural propositions. Consequently, the case study of Hvidovre Hospital illustrates how buildings are the result of an intense negotiation of various actors with each their own intentionality. In the negotiation between them a project emerges. This also renders the decision field as the place where architectural thinking is calibrated in relation to other actors in the field. Finally, Dana Cuff's term 'sense making' was forwarded in the discussion of the decision-making process as the social capability to, in a collective context, through conversation reach an agreement with others. That designers are able to create a 'reflective conversation with the situation' seems here crucial.

All in all, the research into Hvidovre Hospital gave different examples of the active role that architects can play in the conception and development of a project but also as agents and actors in society. It showed how the

analysis of architecture – and the work of architects – obviously needs to be situated within society as a socio-cultural, political and economically conditioned construct. Seen from a historical viewpoint, the deeper meaning of architecture therefore goes far beyond an architectural discourse.

Last but not least, the research portrayed a certain resilience, which you could assume is intrinsic to the discipline. It is evidence that imagination in practice can have many forms, and that there is more ways to practice.

TO DEVELOP AND TEST TOOLS OF ANALYSIS AND RESEARCH

On a methodological level, the purpose of the research was to explore how architecture can be analysed and discussed as a thought field and as an area of work. The methodological approach was initially informed by culture studies and grounded theory, which implied collecting all sorts of visual and verbal information which was needed to be read, sorted, ordered and coded. The idea of different interpretive lenses was a result of this work, as was the ordering of the material into three categories; - architectural media, - the decision process, - and the historical context (including cultural history). The three categories reflected three research traditions (ways of understanding design / designing) and therefore also three types of interpretations.

The presumption of the stratified analytical approach was that it would depict the architectural discipline as a complex field of many different areas, interests and relationships. The benefits of the analytical framework were diverse. First of all, each interpretive lens revealed a specific research field - a way of being in the world - a unique identifier of what architecture can be. Each lens pointed towards specific architectural means of the architects. And as discussed in the previous paragraphs each lens exposed different layers of expertise in the architectural discipline, which was related to different roles, tasks and challenges in the decision field. Next to this, the interpretive lenses showed the complexity of architecture, - that it covers different areas of interests simultaneously, - as well as the inter-disciplinarity and overlap with other knowledge fields. In the historical part of the analysis the lenses similarly brought forth different aspects of history and perceptions of architecture. It demonstrates how the five interpretive lenses, together, are a system of knowledge, a way of ordering architectural discourse, and a methodological tool box which can be used in diverse ways.

Seen from a methodological view point, – and in terms of research, - each lens stands for a specific research paradigm and an epistemological and philosophical discussion. The argument was therefore made that the classification system of the five interpretive lenses could be seen as something similar to Anselm Strauss ‘paradigm model’. It was a way to systematically think about data and to relate the data in complex ways. As each lens refers to a specific ‘research position’ and also ‘theory of the world’, they constitute the link between theory and method. Due to the fact that the definition of the five interpretive lenses rely on existing theories - in combination with new empirical findings from diverse forms of architecture analysis - , the originality of the analytical framework and procedure lies primarily in the inherent complexity of the multifarious perspectives in combination with the three ways to understand the design world.

In the course of the research four methodological dilemmas were observed:

1. While the structure of the analytical framework seemed simple, logical and clear, the outcome was surprising, as observations in, for example, the media analysis were not necessarily connected to observations about the decision field or the historical context. In fact, the five interpretative lenses, - in combination with the triple layered analytical approach, - meant that the research covered 15 different research areas at the same time.

2. The historical analysis introduced another dilemma. As it was the purpose to research and write from the view point of practice the aim was to collect and study empirical data from the field. However, including information from historical overview literature was the only way in which the view of architecture as a socio-cultural construct could be facilitated. As a result the research became both inductively and deductively informed.

3. Each of the five interpretive lenses asked for a profound understanding of central key notions in the architectural discourse such as ‘the social’ or ‘the experiential’, and what these could possibly mean for architectural research and analysis. Each interpretive lens led as such to deep intellectual inquiry and methodological considerations without closure. Here, the analytical work with students served as a valuable testing ground.

4. At some point in the research it became apparent that architectural notions are not static. They are related to the history of architectural discourse and awareness. This meant that there was a discrepancy between a present perspective (in the views implicitly present in my five interpretive lenses) and the perspectives of the past. Being sensitive to this became an integral part of the analyses, which meant that the interpretations embedded into the source material were forwarded in the analyses while carefully opening doors of possible other more contemporary interpretations.

The analytical framework illuminated that it is possible to obtain a qualitative perspective on architecture as a discipline, and to become precise about the roles that architects and architecture can play in the built environment, in society and within culture. The work process also generated an awareness that each lens was a frame of interpretation, which should be understood in relation to other frames of interpretation. It was not a closed system of understanding of architecture. New perspectives, understandings, in-sights and readings thus continuously developed, which meant that the research design and the interpretations had to be re-adjusted more than once. As a result the work encourages further research.

EPILOGUE

While the prologue was about motivations and ideas that informed the research, this epilogue is about possibilities for future research projects.

Having a practice perspective, one almost self-evident issue would be to investigate how the five interpretive lenses relate to the positions architects take in the field of practice. Question is, whether they would see the benefit of applying all five interpretive lenses equally to their work, or whether they would forward certain aspects as more important than others thereby adding a value discussion - or at least a prioritization - to the analytical system seen from their view point. The information would broaden – and deepen – the understanding of architecture analysis as an interpretive activity and provide examples for each lens from contemporary practice.

In relation to practice-related research, it would also be interesting to see, how practitioners identify with the idea of different definitions of the design world. How do practitioners comprehend the design field? What is architectural knowledge to them about? How would they describe their roles, attitudes and responsibilities? What qualifications and tools are part of their professionalism also in the decision-making process? How do they relate to the idea of architecture being a media system and not buildings alone? Would it be valid for them to argue from the view point of culture?

The four categories in the conclusion in chapter 4 also point at each their specific field, which could be the subject for further research in combination with the above research questions and/or with each other:

1. While descriptive material and short films about the contemporary Danish hospital construction project exists, the purpose of this research would be to map the architectural thought field and work from a reflective, experiential and critical view point by means of field studies and interviews. As my analysis has shown, a profound research of the contemporary hospital projects could make the involved actors more aware of the various architectural aspects of hospital buildings. If not done, important historical information will be lost. It would also be a missed opportunity for a societal debate. A relevant aspect is that the architects working on the hospital projects do not have the chance to coordinate their efforts or communicate about the knowledge gained, which has to do with the fact that all projects are developed simultaneously. The scale of the national experiment makes it important. As a result, the research project could also address the important relationship between state initiatives, economy, innovation and architecture. What is more, the mapping could potentially be used for a large-scale evaluation research project later, when the projects are finally realised.

2. As discussed in the dissertation I believe it is important for the comprehension of architecture to accentuate its societal and cultural value. This could lead to an enlarged appreciation of how architecture operates in society as a vehicle for collective memory and cultural narratives, but also offer a ground for disciplinary introspection to see how tacit socio-cultural values are present in the work of architects. The research would preside from field studies, where it would investigate in what way architects relate to the idea of their work being a socio-cultural enterprise. Related to this is the discussion on evidence, research informed design and tacit knowledge. How architects intuitively make use of diverse sorts of information – including

cultural references and societal observations - without articulating them in their presentations or arguments as evidence for their work. The purpose of the research would be to find out whether a qualitatively – and practice informed - argument could be made for the socio-cultural connotation. As discussed in the research, this is important for the way in which architecture is understood as a cultural product - and architects as public figures.

3. One of the conclusions made in the research was that architecture is related to many different professions and knowledge fields. The case study demonstrated how there is a diversity of expertise (roles) active in the architectural knowledge field with corresponding areas of qualities, responsibilities and tools. The purpose of this research would be to look deeper into the decision-making process; to study in which way architecture is made in relation to other fields of practice. The objective would be to address 'the disciplinarity of architecture' hereby also clarifying the integrative capacity and inter-disciplinary character of architecture. This type of research could be useful for practitioners in the creation of new projects, but also in the education of students in architecture, where there tends to be a mono-directional view of the discipline of architecture. Seen from a methodological view point the research could also be an opportunity to explore how other disciplines analyse their knowledge field and also their interaction with architecture. This could be of value for architecture analysis – and maybe even make way for some sort of cross-disciplinary research.

4. The analytical system of the five interpretive lenses was an attempt to demonstrate architecture as an encompassing and complex discipline in which architects simultaneously work with different aspects of the built environment ranging from building production to the experience of space. The definition of the five lenses was based on literature studies, comparative case study analyses and analytical workshops with students. While the approach has reached some solidity, it would improve by future explorations and development. The purpose of this research would be to sharpen the methodological approach and research strategy through the encounter with other case studies in which the application in practice would be explored, as well as a theoretical underpinning of the interpretive lenses. Thus, similar to the dissertation the research would bridge academia and practice. The aim of the research would be to offer architects, students in architecture, clients, officials, and people interested in architecture a frame of reference and a 'thinking tool' to conceive in a more nuanced way of the profession, of the role of architects and of the buildings that are designed.

None of the proposed research fields are closed academic settings. In all of them there would be a certain amount of interaction with design practice. The purpose of the projects is not be to provide methodological solutions or rules for design but to offer a critical and reflective frame of thought, systems of interpretations and examples of different attitudes and types in the discipline. It could be the starting point for a discussion of the relationship between practice and academia, between practice and education or the three of them. But it could also be about situating architecture within the world; in relation to i.a. society, building processes, peoples experiences and their culture. The study of 'ways to practice' could also help bring forth the more tacit qualities of the design discipline or expose its relationship with neighbouring disciplines. What is more, studying architecture from a practice perspective could be about adding the perspective of everyday practice into the architectural discourse; that it may become transparent, what it is to be an architect, and what it might mean.

BIBLIOGRAPHY: SOURCES

CHAPTER 1: THE ANALYTICAL POSITION
(Referenties for the historical part of the research is listed below)

PUBLIC DOCUMENTS
Hospitalsplan 2007, Region Hovedstaden, maj, 2007
Hospitals- og Psykiatriplan 2020, Region Hovedstaden, juni 2011
Kopi af sagsfremstilling brugt ved fremlæggelse for regionsrådet af Region Hovedstadens Kvalitet i byggeprojekter, April 2008
Nyt Hospital Hvidovre, Indbudt projektkonkurrence, Dommerbetænkning, Region Hovedstaden, juni 2013
Region Hovedstadens anbefalinger for Helende Arkitektur, Region Hovedstaden, maj, 2010

THE INTERNET
www.danishhospitalconstruction.com (the regions hospital construction projects)
www.godtsygehusbyggeri.dk (maal og styring - principper for godt sygehusbyggeri)
www.hvidovrehospital.dk (nyt hospital)
www.regionh.dk (sundhed-hospitaler, hospitaler-hospitalsplan for regionen, derfor bygger vi)
www.sum.dk (investering i en ny hospitalsinfrastruktur, de 16 projekter), - Ministeriet Sundhed Forebyggelse

INTERVIEWS
Interview with architect Kirk Hamilton, Rotterdam, 2008.01.09
Interview with architect Jan Søndergaard, KHR Architects AS, Copenhagen, 2010.01.19
Interview with architects Kim Holst Nielsen, Schmidt, Hammer & Lassen and Mette Dan-Weibel, Aarhus Arkitekterne, 2014.06.16

BOOKS AND ARTICLES
Hansen, Birgitte Louise, 'Why use research to inform design?', published in *The Berlage Papers*, No 31, 2009, – as well as in the book *All designers use evidence*, edited by Joram Nauta & Peter Michiel Schaap, published by Architecture in Health & Platform GRAS, Utrecht & Groningen, 2009
Søndergaard, Jan, 'Resurrection of the architect's profession', in *KHR ARCHITECTURE*, 2016
Master Class Evidence-Based Design for Critical Care, Berlage Institute, Rotterdam, NL, January 2008

CHAPTER 2: THE ANALYTICAL FRAMEWORK
(The discussion also relate to the literature mentioned on the literature list below)

BOOKS AND ARTICLES
Avermaete, Tom & Lara Schrijver, Hand out, 'AR3A160 Lecture Series, Research Methods and Design Practices', spring 2013
Bachelard, Gaston: *The Poetics of Space*, The Beacon Press, Boston, 1969
Barthes, Roland: 'The Rhetoric of the Image', in *Image–Music–Text*, Fontana Press, London, 1977, first print 1964
Bek, Lise, 'Arkitektur som rum og ramme', in Bek, Lise & Henrik Oxvig (ed), *Rumanalyser*, Fonden til udgivelse af arkitekturtidsskrift B, Århus C, 1997
Böhme, Gernot: 'Atmosphere as Mindful Physical Presence in Space', in: *Oase*, nr 91, nai010publishers, Rotterdam, 2013
Campbell, Margaret, 'What Tuberculosis did for Modernism', printed in *Medical History*, 2005, 49; 463-488
Columina, Beatriz (ed), 'Playboy Architecture 1953-79', in *Volume*, nr 33, Interiors, Stichting Archis, fall 2012
Columina, Beatriz, *Privacy and Publicity, Modern Architecture as Mass Media*, MIT Press, Cambridge, Massachusetts, 1996
Cross, Nigel, 'Designerly ways of knowing', printed in *Design Studies*, vol 3, no 4, october 1982
Cross, Nigel, 'Designing as reflective conversation with the materials of a design situation', Edinburgh Conference on Artificial Intelligence in Design, 25-06-1991
Cuff, Dana, *Architecture, The Story of Practice*, MIT Press, Massachusetts, 1991
Deplazes, Andrea, *Constructing Architecture, Materials, Processes, Structures*, Birkhäuser Publishers for Architecture, Basel-Boston-Berlin, 2005
Dewey, John, *How we think*, Heath & Co Publishers, Boston, New York, Chcago, 1910 (first publication)
Dorst, Kees, 'The Nature of Design Thinking', Design Thinking Research Symposium, 2010
Evans, Robin, 'Figures, Doors and Passages', in: *Translation from Drawing to Building and other essays*, Architectural Association Publication, London, 1996
Floet, Willemijn Wilms, 'Architectonische plananalyse', TU Delft, unpublished
Forty, Adrian, *Words and Buildings, A Vocabulary of Modern Architecture*, Thames & Hudson, London, 2000
Forty, Adrian: *Concrete and Culture, A Material History*, Reaktion Books, London, Great Britain, 2012
Foucault, Michiel, *The Order of Things*, Routledge, London and New York, 2005, - first published in French, 1966
Groat, Linda and David Wang, *Architectural Research Methods*, John Wiley & Sons Inc., New York, 2002
Hastrup, Kirsten and Cecilie Rubow, Tine Tjørnhøj-Thomsen, *Kulturanalyse, Kort fortalt*, Samfundslitteratur, Frederiksberg C, 2011
Havik, Klaske: 'Lived Experience, Places Read: Toward an Urban Literacy', in: *Oase*, nr 70, nai010publishers, Rotterdam, 2006
Kelle, Udo, '' 'Emergence' vs. 'Forcing' of Empirical data? A Crucial Problem of 'Grounded Theory' Reconsidered'', in *Forum: Qualitative Social Research*, Volume 6, No. 2, Art. 27, May 2005
Koch, Daniel: *Spatial Systems as Producers of Meaning*, Thesis, KTH - School of Architecture, Stockholm, 2004
Kristensen, Peter Thule (ed), Hand out, 'Teori og Metode 1. Arkitektonisk Værkanalyse. Kursus SA/2244', Kunstakademiets Arkitektskole , Institut 1, 2012
Kristensen, Peter Thule (ed), *Værkanalyse 2012, Opgavebesvarelser 2. studieår*, Kursus SA / 2244, Kunstakademiets Arkitektskole , Institut 1, 2012
Latour, Bruno, *Reassembling the Social: An introduction to Actor-Network Theory*, Oxford University Press, 2005
Leach, Neil (ed), *Rethinking Architecture, a reader in Cultural Theory*, Routledge, London and New York, 1997
Leupen, Bernard, *Design & Analysis*, 010 Publishers, Rotterdam, 1995
Lohfert, Peter: 'Anvendelse af Systematisk Funktionsanalyse' and 'Systematisk Funktionsanalyse', in: *Tidsskrift for Danske Sygehuse*, no 18 and no 19, 1969
Lucas, Ray, *Research Methods for Architecture*, Laurence King Publishing, London, 2016
Mare, Heidi de, T. Tummers, A. Vos, K. Wuertz, 'Inleiding', in: *Ruimtelijke rituelen*, Reader, TU Delft, Sector vrouwenstudie, vakgroep GTMI, november 1994
Markus, T. A. and D. Cameron, *The Words Between the Spaces, Buildings and Language*, Routledge, London and New York, 2002
Markus, Thomas A., *Buildings & Power,* Routledge, London and New York, 1993
Nilsson, Fredrik, 'Making, Thinking, Knowing Architecture. Notes on Architecture as a making Discpline and Material Practice', in Dehs, Jørgen (ed), *When Architects and Designers Write / Draw / Build / ? Essays on Architecture and Design Research*, Arkitektens Forlag, København, 2013
Rasmussen, Steen Eiler: *Om at opleve arkitektur,* (First edition, 1957), GEC Gads Forlag, København, 1975
Robinson, Julia William, 'The Form and Structure of Architectural Knowledge: From Practice to Discipline', in: Robinson, Julia William and Andrzej Piotrowski, *The Discipline of Architecture*, The University of Minnesota Press, Minneapolis, 2001
Robinson, Julia William: *Architecture of Institution & Home, Architecture as Cultural Medium*, Thesis, TU Delft, 2004
Schön, Donald, *The Reflective Practitioner, How Professionals think in action*, Basic Books Inc, London, 1983, 1991
Shanks, Michael, *Art & The Early Greek State, An Interpretive Archeology*, Cambridge University Press, Great Britain, 1999
Thau, Carsten, *Filosofi & Arkitektur*, Kunstakademiets Arkitektskole, København, 2006
Yaneva, Albena, *Made by the Office for Metropolitan Architecture: An Ethnography of Design*, 010 Publishers, Rotterdam, 2009
Yaneva, Albena, *The Making of a Building: A Pragmatist approach to Architecture,* Peter Lang Publishing Group, Bern, 2009
Yin, Robert K., *Case Study Research, Design and Methods*, Sage Publications Inc., Thousand Oaks, 2009

CHAPTER 3: THE ANALYTICAL EXPERIMENT

IN RELATION TO THE CASE STUDY RESEARCH: THE ARCHITECTURAL PROJECT

ARCHIVAL DRAWINGS AND PHOTOGRAPHS
The archive of Gunnar Gundersen – now dissolved
Hvidovre Hospital Archive
Københavns Stadsarkiv
The archive of Flemming Skude
Own archive - own photo registrations

HVIDOVRE HOSPITAL - REPORTS AND DRAWINGS
The competition proposal
Rasmussen, Eigil Hartvig, *Københavns Hvidovre Hospital, Beskrivelse af konkurrenceprojektet, 1963* – print, Gunnar Gundersen archive
Rasmussen, Eigil Hartvig, Københavns Hvidovre Hospital, competition panels (plans, sections, facades), 1963 – prints, Gunnar Gundersen archive
Rasmussen, Eigil Hartvig, Københavns Hvidovre Hospital, competition (plans), 1963 – slides, Gunnar Gundersen archive
Rasmussen, Eigil Hartvig, perspective drawings, competition proposal, 1963 – slides, Gunnar Gundersen archive
Rasmussen, Eigil Hartvig, 'Københavns kommunes hospital i Hvidovre', *Tidsskrift for Danske Sygehuse*, årg 40, 1964
The draft proposals
Krohn & Hartvig Rasmussen, Københavns Hvidovre Hospital, 1965 – from Hvidovre Hospital archive
Krohn & Hartvig Rasmussen, Københavns Hvidovre Hospital, 1966 – from Hvidovre Hospital archive
Krohn & Hartvig Rasmussen, *Københavns Kommunes Hospital i Hvidovre, Skitseprojekt april 1968, Tegninger* – from Hvidovre Hospital archive
Krohn & Hartvig Rasmussen, *Københavns Kommunes Hospital i Hvidovre, Skitseprojekt april 1968, Beskrivelse* – from Hvidovre Hospital archive
Krohn & Hartvig Rasmussen, perspective drawings, 1970s – from Hvidovre Hospital archive
Krohn & Hartvig Rasmussen, *Københavns Kommunes Hospital i Hvidovre, Skitseprojekt aug 1972*, Beskrivelse – from Hvidovre Hospital archive
Krohn & Hartvig Rasmussen, Københavns Kommunes Hospital i Hvidovre, (Plan drawings), 1976 – from Hvidovre Hospital archive
Description – historical text
Gundersen, Gunnar, Hvidovre Hospital, description of the development of the project, 1988 – from Gunnar Gundersen archive

HVIDOVRE HOSPITAL – FUNCTION ANALYSIS – ARTICLES AND REPORTS
Lohfert, Peter: 'Systematisk Funktionsanalyse som grundlag for hospitalsprojektering', in: *Tidsskrift for Danske Sygehuse*, nr 18, 1969
Lohfert, Peter: 'Anvendelse af Systematisk Funktionsanalyse ved hospitalsprojektering', in: *Tidsskrift for Danske Sygehuse*, nr 19, 1969
Lohfert, Peter, Institut for funktionsanalyse og hospitalsprojektering, *Information 73*, 1973 – from Stadsarkivet
Direktoratet for Københavns hospitalsvæsen, Krohn & Hartvig Rasmussen, Birch & Krogboe, *Københavns Kommunes Hospital i Hvidovre*:
Funktionsskitser for Fælles og Tværgående Funktioner, september 1968
Funktionsanalyse vedr. Centraloperationsafdelingen, Niveau II, oktober, 1968
Funktionsanalyse vedr. Patologisk Afdeling, Niveau II, marts, 1969
Funktionsanalyse vedr. Ambulatorier og Fælleslokaler, Niveau II, juni, 1969
Funktionsanalyse vedr. Centrallaboratorium, Niveau II, august, 1969
Funktionsanalyse vedr. Sengeafsnit, Niveau II, oktober 1969
Funktionsanalyse vedr. Fysiurgisk afdeling, Niveau II, november, 1969
Funktionsanalyse vedr. Administrationsområdet, Niveau II, december, 1969
Funktionsanalyse vedr. Røntgenafdeling, Niveau II, december, 1969
Retningslinjer for Funktionsanalyse I, Niveau III, dec 1969, område 16
Funktionsanalyse vedr. Vandrehal og Vestibule, Niveau II, december, 1970
Funktionsanalyse vedr. Akut Modtage- og Behandlingsafdeling, Niveau II, maj, 1972

HVIDOVRE HOSPITAL - PUBLICATIONS
Gundersen, Gunnar, 'Københavns Kommunes Hospital i Hvidovre', *Tidsskrift for Danske Sygehuse*, 1976 - Særtryk
Krohn & Hartvig Rasmussen (ed), *Københavns Kommunes Hospital i Hvidovre*, published by: Københavns Hospitalsvæsen, 1973
Krohn & Hartvig Rasmussen (ed), *Københavns Kommunes Hvidovre Hospital*, published by Københavns Hospitalsvæsen, 1976 - for the opening
Skriver, Poul Erik (ed),'Københavns kommunes hospital i Hvidovre', *Arkitektur DK*, nr 8, 1975 - Særtryk

HVIDOVRE HOSPITAL - ARTICLES
Tidsskrift for Danske Sygehuse
Gundersen, Gunnar, 'Københavns Kommunes Hospital i Hvidovre', *Tidsskrift for Danske Sygehuse*, årg 52, juli/aug 1976
Gundersen, Gunnar and Jack Andersen, Niels Schou, 'Københavns kommunes hospital i Hvidovre', *Tidsskrift for Danske Sygehuse*, årg 49, aug 1973
Thye-Petersen, A, 'Organisationen af den interne transport på Københavns Kommunes Hospital i Hvidovre', *Tidsskrift for Danske Sygehuse*, årg 49, maj 1973
Thye-Petersen, A., 'Transporter i Københavns kommunes Hvidovre hospital', *Tidsskrift for Danske Sygehuse*, årg 43, 1967
Arkitekten / Arkitektur DK
Skriver, Poul Erik (ed), 'Den nordiske konkurrence om hospital i Hvidovre', *Arkitekten*, nr 18, 1963
Skriver, Poul Erik (ed),'Københavns kommunes hospital i Hvidovre', *Arkitektur DK*, nr 8, 1975
Other magazines / news papers
Gundersen, Gunnar, 'Københavns Kommunes Hospital i Hvidovre', *LP Nyt*, nr 411, 1977
Harvig-Jensen, Ole, 'Hvidovre hospital', *Byggeindustrien*, nr 11, 1976
Unknown author, ''Rationelle transportsystemer giver ny hospital-design', *Transport*, nr 2, 1967
Waal, Allan de, 'I det lave og I det høje', *Information*, 18.juli 1963

INTERVIEWS ABOUT HVIDOVRE HOSPITAL
2016-09-21, Peter Lohfert, Lyngby
2016-03-13; Karen Gundersen and others
2016-03-10, Elsbeth and Karen Speyer, København
2016-03-01, Flemming Skude, København
2015-10-27, Jørgen Gabriel, Hvidovre
2012-06-29, Knud Lund Sørensen, København
2011-05-25, Abelone Dyrup, Hvidovre Hospital
2010-09-06, Peter Lohfert, Lyngby
2010-01-22, Asger Vincentzen, Birkerød
2010-01-19, Knud Holscher, København
2010-01-19, Jan Søndergaard, København
2010-01-18, Flemming Skude, København,
2010-01-18, Gunnar Gundersen, Allerød
2008-09-05, Abelone Dyrup, Hvidovre Hospital

FIELD VISITS HVIDOVRE HOSPITAL
2015-10-27
2014-05-24
2013-01-29
2012-07-02
2011-05-25
2010-09-20
2009-06-25
2009-06-22
2008-09-05

HVIDOVRE HOSPITAL – THE LANDSCAPE ARCHITECTURE
Articles
Andersen, Sven-Ingvar, 'Morten Klints slange', *Landskab*, nr 8, 1979
Lund, Anne-Marie, *Danmarks Havekunst 1945-2002*, bind 3, 2002, page 280-287
Scavenius, Vibeke Flach, 'Haver på beton', *Natur og Miljø*, 6. årg, nr 1, januar 1979
Scavenius, Vibeke Flach, 'Hvidovre Hospital', *Hovedstaden*, november, 1978
Sørensen, Knud-Lund, 'Hvidovre hospitals taghaver', *Landskab*, nr 6, 1984
Drawings and descriptions
Drawings and description, landscape design, Morten Klint & Knud Lund Sørensen - from Hvidovre Hospital archive
Drawings and descriptions, landscape design, Morten Klint & Knud Lund Sørensen - from Kunstbiblioteket
Photographs, landscape design – by Keld Helmer Petersen - from Hvidovre Hospital archive

IN RELATION TO THE CASE STUDY RESEARCH: THE HOSPITAL PROJECT

THE HISTORY OF HVIDOVRE HOSPITAL
Film
Opførelsen af Hvidovre Hospital, produced by Nordisk Film, for Københavns Kommune, 1973
Hvidovre Hospital 30 år, produced by Bastard Film Corporate A/S for Hovedstadens Sygehusfællesskab, 2006
Publications
Braavig,Allan & Helge Faber, Jørgen Funder (ed), *Københavns Hospitalsvæsen 125 år, i stadig udvikling*, Københavns Kommune, 1988
Hagel, Anie (ed), *25 år i udvikling, Glimt fra Hvidovre Hospitals historie*, published by:Hvidovre Hospital, 2001
Jensen, Sigurd, *Københavns Hospitalsvæsen 1863-1963*, Direktoratet for Københavns Hospitalsvæsen, Gads forlag, 1963
Articles
Kingod, Ove, 'Store ændringer for lægesekretærerne på Hvidovre Hospital', *Absalon*, årg 79, februar 1977
'Personaleblad for Københavns Kommunes Hospital i Hvidovre', marts 1976
Tengbom, Anders, 'Recent Developments in the Design of Hospitals in Scandinavia', *World Hospitals* vol 2, no 1, 1966
Paine, Leslie, 'Hospital study tour in Denmark', *World Hospitals* vol XII, no 4, 1976
Paine, Leslie, 'Health Services in Denmark', *World Hospitals* vol XII, no 2, 1976

HVIDOVRE HOSPITAL – OPENING 1976 - DIVERSE MATERIAL
Articles
Ben, 'Hvidovre Hospital, klar til indvielse 26 marts', *Hospitals Nyt*, 5 årg, marts 1976
Københavns Hospitalsvæsen, 'Hvidovre Hospital indviet', *Tidsskrift for Danske Sygehuse*, årg 50, maj/juni 1974
Winterø, Erik (ed), 'Københavns Kommunes Hvidovre Hospital indviet', *Tidsskrift for Danske Sygehuse*, årg 52, april 1976
Speaches and Press releases
'Borgmester Alsing Andersens tale ved indvielsen af Hvidovre Hospital den 26 marts 1976' – Hvidovre Hospital archive
'Pressemeddelelse', Københavns kommune, Hvidovre hospital, 1 februar 1974 – Hvidovre Hospital archive
'Pressemeddelelse', Københavns kommune, Hvidovre hospital, 18 marts 1976 – Hvidovre Hospital archive

HVIDOVRE HOSPITAL - OFFICIAL DOCUMENTS AND REPORTS
Prepatory reports on the program
Betænkning afgivet af det af Københavns magistrat under den 27.marts 1952 nedsatte udvalg vedrørende opførelse af et Hospital i Hvidovre, 16.juni, 1954
Betænkning vedrørende opførelse af et nyt hospital m.v. afgivet af Københavns hospitalsvæsens planlægningsudvalg den 6.juni 1961, 6.juli, 1961
Direktoratet for Københavns hospitalsvæsens redegørelse af 22. maj 1967 til magistraten og borgerrepræsentationen, Tidsskrift for Danske Sygehuse, 1967
About the architect competition
Betænkning afgivet af det af Københavns magistrat nedsatte udvalg til udarbejdelse af programmet for en arkitektkonkurrence om .. Hvidovre, 25.maj 1962
'Dommerbetænkning', 'Den nordiske konkurrence om hospital i Hvidovre', printed in: Tidsskrift for Danske Sygehuse, årg 39, 1963
Nielsen, Erik, sekretær Danske Arkitekters Landsforbund, 'Vedrørende arkitektkonkurrence om nyt hospital i Hvidovre', 2.februar 1962
Nielsen, Erik, sekretær Danske Arkitekters Landsforbund, udkast til 'Dommerbetænkning' samt andet materiale,
Danske Arkitekters Landsforbund 'Program for Nordisk projektkonkurrence om Københavns kommunes nye hospital i Hvidovre', august 1962

HVIDOVRE HOSPITAL - OTHER DOCUMENTS
Scavenius, Vibeke Flach, Foreningen til Hovedstadens Forskønnelse, (letter and speech), 1978
Gundersen, Gunnar, *Blok 374, Danmarks Forvaltningshøjskole, Forvaltningsfagligt diplomkursus for sygehusadministrativt personale*, del 2, 1980

IN RELATION TO THE CASE STUDY RESEARCH: ON KROHN & HARTVIG RASMUSSEN

BIBLIOGRAPHICAL TEXTS – THE ARCHITECTS
Lohfert & Lohfert, 20 jahre, *Institut für Funktionsanalyse*, Geschichte, Impressionen, 1990
Hartvig Rasmussen, Eigil, 'Eigil Hartvig Rasmussens erindringer' - unpublished material – from the private archive of Elsbeth Speyer
Møller, Ib, 'Mindeord', *Berlingske Tidende*, 25 november 2010 – about Gunnar Gundersen
Skude, Flemming, 'In memoriam', *Arkitekten*, 1980, page 128 – about Eigil Hartvig Rasmussen

KROHN & HARTVIG RASMUSSEN – PORTFOLIO
Konkurrencen om A/S Atlas maskinfabriks nybygninger, *Arkitekten Månedshæfte*, 1946, Nr. 11-12, side 167-182
Konkurrence om en udvidelse af Århus Idrætspark, *Arkitekten Ugehæfte*, 1947, Nr. 22-23, side 85-92
Resultatet af konkurrencen om udbygningen af Aarhus offentlige slagtehus, *Arkitekten Ugehæfte*, 1948, Nr. 33, side 134-136
Krohn, Gunnar, Fabriksbyggeri i U.S.A, *Arkitekten Månedshæfte*, 1949, Nr. 2-3, side 25-34
Krohn, Gunnar, Farver som sprog, *Arkitekten Ugehæfte*, 1950, Nr. 5, side 21
Salling, Århus, *Arkitekten Månedshæfte*, 1950, Nr. 9, side 153-156
Regnemaskinfabrik Contex, *Arkitekten Månedshæfte*, 1952, Nr. 7-8, side 120-122
Maskinfabriken Atlas. Seriefabrik i Lundtofte, *Arkitekten Månedshæfte*, 1952, Nr. 7-8, side 113-119
Idekonkurrence om eenfamiliehuse af gasbeton, *Arkitekten Ugehæfte*, 1955, Nr. 49, side 402-407
Nordisk konkurrence om udvidelse og ombygning af Rigshospitalet i København, *Arkitekten Ugehæfte*, 1955, Nr. 14-15, side 117-131
Nordisk konkurrence om udvidelse af Haukeland sygehus, *Arkitekten*, 1961, Nr. 4, side 60-65
Københavns Engros Grønttorv, *Arkitekten*, 1961, Nr. 2, side 21-35
Magasin i Kgs. Lyngby (Krohn), *Arkitektur DK*, 1962, Nr. 2, side 68-77
Konkurrencen om Københavns Kommunes nye hospital i Hvidovre (Rasmussen), *Arkitekten*, 1963, Nr. 18, side 336-339
Et Center for højere uddannelse og forskning i Odense (Holscher), *Arkitekten*, 1967, Nr. 4, side 73-86
Rødovre Centrum (Krohn), *Arkitektur DK*, 1967, Nr. 4, side 174-185
De store opgaver, (Knud Holscher), *Arkitekten*, 1968, nr 7, side 182
Odense Universitetscenter (Holscher), *Arkitekten*, 1971, Nr. 10, side 213-221
Københavns Kommunes Hospital i Hvidovre (Hartvig Rasmussen), *Arkitektur DK*, 1975, Nr. 8, side 307-322
Lyngby Storcenter (Krohn), *Arkitektur DK*, 1975, Nr. 2, side 62-73
Lyngby Svømmehal (Holscher), *Arkitektur DK*, 1978, Nr. 7
Odense Universitet (Holscher), *Arkitektur DK*, 1976, Nr. 8
Farum Svømmehal (Holscher), *Arkitektur*, 1981, Nr. 3-4, side 154-160
Administrationsbygning i Næstved (Holscher), *Arkitekten*, 1981, Nr. 22, side 517-519

IN RELATION TO THE STUDY OF THE HISTORICAL CONTEXT
(The information is also used for the timeline analysis mapped in Appendix A)

THE HISTORY OF COPENHAGEN
Københavns Bymuseum, *Københavns Historie, fra strandeng til storby*, Københavns Kommune, 1998
Lützen, Karin, *Byen Tæmmes*, Hans Reitzels Forlag, København, 1998
Plan og Arkitektur, Bygge og teknikforvaltningen, *Byskabatlas*, Københavns Kommune, 2003
Wiene, Inger, *Frihed, lighed og Broderskab*, Københavns Bymuseum, København, 2002

THE HISTORY OF COPENHAGEN HOSPITAL SERVICES
Braavig, Allan & Helge Faber, Jørgen Funder (ed), *Københavns Hospitalsvæsen 125 år, i stadig udvikling*, Københavns Kommune, 1988
Christensen,Villads, 'Københavns Hospitalsforhold i ældre tid', in *Københavns Hospitalsvæsen 1863-1913*, Direktoratet for Københavns Hospitalsvæsen, 1913
Jensen, Sigurd, *Københavns Hospitalsvæsen 1863-1963*, Direktoratet for Københavns Hospitalsvæsen, Gads forlag, 1963
Petersen, E., 'Københavns Kommunehospital', in *Fra opvarter til sygeplejerske*, Dansk Sygeplejeråd, 1988

THE HISTORY OF MEDICINE AND NURSING
Børgesen, Inger-Marie, *Dansk Sygeplejehistorisk Museum*, Dansk Sygeplejehistorisk Museum, 2002
Eilertsen, Mogens, *Sygeplejersken i kunsten*, Dansk Sygeplejeråd, 1999
Glasdam, Stinne & Jens Bydam, *Sygepleje i fortid og nutid*, Nyt Nordisk Forlag Arnold Busck, 2008
Gøtzsche, Inger & Karen Nygaard, *Sygeplejens udvikling og kulturhistoriske baggrund*, Nyt Nordisk Forlag Arnold Busck, 1993
Jacobsen, Kurt & Klaus Larsen, *Ve og Velfærd*, Lindhardt og Ringhof, 2007
Loudon, Irvine, *Western Medicine*, Oxford University Press, 1997
Porter, Roy, *Ve og Vel, medicinens historie fra oldtid til nutid*, Rosinante, 2000
Wingender, Nete Balslev, *The four-leaf Clover and the Fiery Souls*, The Danish Nurses Organisation, 1999

DANISH ARCHITECTURE HISTORY – BOOKS
Bjerregaard, Lotte Marianne, *Forsegling & Symbiose*, Arkitektskolens Forlag, Århus, 2005
Dirkinck-Holmfeld, Kim, *Dansk Arkitektur 1960-1995*, Arkitektens Forlag, København, 1995
Faber, Tobias, *Dansk Arkitektur*, Arkitektens Forlag, København, 1977
Gaardmand, Arne, *Dansk Byplanlægning 1938-1992*, Arkitektens Forlag, København, 1993
Haugsted, Ida, *Nye Tider, Historicisme i København*, Nyt Nordisk Forlag Arnold Busck, 2003
Keiding, Martin (ed), *dansk arkitektur siden 1754*, Arkitektens Forlag, København, 2007
Kjeldsen, Marius, *Industrialised housing in Denmark*, Danish Building Centre, Copenhagen, 1976
Institut for Center-planlægning, *By center menneske*, Arkitektens Forlag, Lyngby, Denmark, 1965
Lund, Nils Ole, *Teoridannelser i arkitekturen*, Arkitektens Forlag, København, 1972
Lund, Nils-Ole, *Nordisk Arkitektur,* Arkitektens Forlag, København, 2008
Millech, Knud & Kay Fisker, D*anske Arkitekturstrømninger 1850-1950*, Østifternes Kreditforening, 1951
Nygaard, Erik, *Tag over hovedet*, Arkitektens Forlag, København, 1984
Pedersen, Poul Bæk, **Arkitektur og plan i den danske velfærdsby 1950-1980**, Arkitektskolens Forlag, Århus, 2005
Sestoft, Jørgen & Jørgen Hegner Christiansen, *Guide til Dansk Arkitektur 1*, Arkitektens Forlag, 1991

DANISH ARCHITECTURE HISTORY – ARTICLES
Fisker, Kay, 'Den funktionelle tradition', *Arkitekten*, 1950
Sestoft, Jørgen & Poul Erik Skriver, 'Da arkitekterne blev organiseret', *Arkitektur DK*, nr 7-8, 1979
Skude, Flemming, 'Supergrafik - oplevelsesrigdom eller oprør i arkitekturen?', *Arkitekten*, nr 7, 1973
Skude, Flemming, 'Flere brudstykker til belysning af begrebet supergrafik', *Arkitekten*, nr 19, 1973
Skude, Flemming, 'Den praktiske anvendelse af supergrafik', *Arkitekten*, nr 22, 1974
Skude, Flemming, 'Den dekorative anvendelse af supergrafik', Arkitekten, nr 23, 1976.
Skude, Flemming, 'Planlægning mod vold', printed in *Arkitekten*, nr 3, 1974

DESIGN HISTORY
Vorre, Birgit, *Boligen i det 20. århundrede, Indretning og Brug*, Nyt Nordisk Forlag Arnold Busck, København, 2008
Dybdahl, Lars, *Dansk Design 1945-1975*, Borgen, København, 2006
Prelinger, Rick, compilation of films called *The American Dream, Our Secret Century*, 1996

INTERNET
www.akademiraadet.dk (Akademiets historie)
www.arbejdermuseet.dk (Fra baggård til beton' (om boligbevægelsen))
www.danmarkshistorien.dk
www.denstoredanske.dk
www.detmodernegennembrud.dk (Det moderne gennembrud; Byen, borgerne og samfundet)
www.historiefaget.dk
www.kk.dk / fakta om kommunen (København i tal og ord, Folketal i København)
www.starbas.dk (Københavns Stadsarkivs Arkivdatabase - Hospitalsdirektoratet)
www.wikipedia.com

ARCHITECTURE HISTORY – INTERNATIONAL
Campbell, Margaret, 'What Tuberculosis did for Modernism', *Medical History*, 2005
Forty, Adrian, *Concrete and Culture, A Material History*, Reaktion Books, London, 2012
Forty, Adrian, *Words and Buildings, A vocabulary of Modern Architecture*, Thames & Hudson, London, 2000
Pevsner, Nikolaus, *A History of Building Types*, Princeton University Press, 1976
Sarkis, Hashim, *Le Corbusier´s Venice Hospital and the Mat Building revival*, Harvard University, Prestel, New York, 2001

IN RELATION TO APPENDIX B – COMPARATIVE HOSPITAL ANALYSIS
(The following list is exclusively about Kommunehospitalet and Bispebjerg Hospital)

ARCHIVAL DRAWINGS AND PHOTOGRAPHS
Bispebjerg Hospital Archive - photographers are unknown
Det Kongelige Bibliotek - photographers are unknown
Københavns Stadsarkiv - photographers are unknown
Medicinsk Museion - Billedarkiv - photographers are unknown
Own archive - own photo registrations

INFORMATION ABOUT KOMMUNEHOSPITALET
Christiensen, J. G. & E. D.Pedersen & H. Permin, 'På hospitalsbesøg i 1863', *Siden Saxo* 3, 2002
Christiensen, J. G. & E. D. Pedersen & H. Permin, 'Oprettelsen af Københavns første egentlige syge-hospital', *Dansk Medicinskhistorisk Årbog*, 2001
Haugsted, Ida, *Arkitekten Christian Hansen*, Bogværket, 2009
Haugsted, Ida, *Nye Tider, Historicisme i København*, Nyt Nordisk Forlag Arnold Busck, 2003
Sestoft, Jørn, 'Kommunehospitalet og Preussen', *Arkitekten*, 1975, page 156-157
de Waal, Allan, 'Kommunehospitalet i København, et analyse eksempel', in *Arkitekturens Praksis, bidrag til en teori*, Borgen, 1974
Unknown author, 'Det nye Kommunehospital', *Illustreret Tidende*, nr 205, 1863
Program for opførelsen af et nyt Communehospital, found at Medicinsk Museion

INFORMATION ABOUT BISPEBJERG HOSPITAL
Faber, Arne, 'Bispebjerg Hospital i Billeder og tekst', *Illustreret Tidende*, nr 52, 1913
Funder, Lise, *Arkitekten Martin Nyrup*, Foreningen for gamle Bygningers Bevaring, 1979
Niebuhr, Mette, 'Et hjem for de syge, Etableringen af Bispebjerg Hospital 1900-1913', *Architectura 29*, 2007
Permin, Henrik & Peter Wagner, 'Baggrunden for opførelsen af Bispebjerg Hospital', *Dansk Medicinskhistorisk Årbog*, 2009
Rasmussen, Holger & Vilh. Clausen, 'Bispebjerg Hospital', *Architekten*, Bind XVI, 1913-1914

BIBLIOGRAPHY: LITERATURE

IN RELATION TO CHAPTER 1: THE ANALYTICAL POSITION

ARTICLES ABOUT HEALTHCARE DESIGN
- Hansen, Birgitte Louise, 'Is meten weten?, Notities over Evidence Based Design vanuit ontwerpperspectief', in *AU!, Bouwen aan de architectuur van de zorg*, College bouw zorginstellingen, Stimuleringsfonds voor Architectuur & Atelier Rijksbouwmester, Utrecht, Rotterdam, den Haag, 2007
- Hansen, Birgitte Louise (ed.), *Beyond Clinical Buildings*, published by Het Stimuleringsfonds voor Architectuur & The Technical University in Delft, Architectural Design-Interiors, Rotterdam & Delft, 2008
- Hansen, Birgitte Louise, 'Why use research to inform design?', published in *The Berlage Papers*, No 31, 2009, – as well as in the book *All designers use evidence*, edited by Joram Nauta & Peter Michiel Schaap, published by Architecture in Health & Platform GRAS, Utrecht & Groningen, 2009

HEALTH CARE ARCHITECTURE
Adams, Annemarie, *Medicine by Design, The architect and the modern hospital 1893-1943*, University of Minnesota Press, Minneapolis, 2008
Campbell, Margaret, 'What Tuberculosis did for Modernism...', *Medical History*, 2005, 49; 463-488
Forty, Adrian, the chapter 'The modern hospital in England and France...', printed in *Buildings and Society*, by Anthony King, Routledge, London, 1980
Gallup, Joan Whaley, *Wellness Centers*, John Wiley & Sons, Inc., New York, USA, 1999
Guenther, Robin and Gail Vittori, *Sustainable Healtcare Architecture*, John Wiley & Sons, Inc., New York, USA, 2008
Heslet, Lars og Kim Dirckinck-Holmfeld, *Sansernes Hospital*, Lars Heslet og Arkitektens Forlag, København, DK, 2007
Markus, Thomas, the chapter 'Reformation', printed in *Buildings & Power*, Routledge, London, 1993
Leun, Anneloes (end redaction), 'Het decentrale ziekenhuis', *Lay-out 06*, Stimuleringsfonds voor Architectuur, 2008
Leun, Anneloes (end redaction), 'Urban Hospitality', *Lay-out 07*, Stimuleringsfonds voor Architectuur, 2008
Leun, Anneloes (end redaction), 'Alternatieven voor zorg in de stad', *Lay-out 10*, Stimuleringsfonds voor Architectuur, 2010
Leun, Anneloes (end redaction), 'Architectuur als tweede lichaam', *Lay-out 11*, Stimuleringsfonds voor Architectuur, 2010
Melis, Liesbeth (ed), de Collectie, *25 jaar kunstprojecten in zorginstellingen 1985-2009*, SKOR, 2009 (including diverse articles on architecture)
Mens, Noor & Cor Wagenaar, *Architectuur voor de gezondheidszorg in Nederland*, Nai Uitgevers, Rotterdam, 2010
Mens, Noor & Cor Wagenaar, *De toekomst van de polikliniek*, Stagg, Amsterdam, NL, 2007
Mens, Noor, *Zorgboulevards, verkenningen in het zorglandschap van morgen*, Thoth, Bussum, NL, 2005
Mens, Noor, *De architectuur van het psychiatrisch ziekenhuis*, Immerc bv, Wormer, NL, 2003
Mens, Noor, *De architectuur van het ziekenhuis, transformaties in de naoorlogse ziekenhuisbouw in Nederland*, NAi Uitgevers, Rotterdam, NL, 1999
Oosten, J. and J. Rodermond, *Hedy d'Ancona Prijs voor excellente zorgarchitectuur*, Stimuleringsfonds Creatieve Industrie, Rotterdam, 2010, 2012, 2014, 2016
Schaap, Peter Michiel (editor), *AU!, Bouwen aan de architectuur van de zorg*, Platform Health, NL, 2007
Thompson, J.D. & Grace Goldin, *The Hospital, A social and Architectural History*, Yale University Press, Ltd, London, UK, 1975
Yanni, Carla, *The Architecture of Madness, Insane Asylums in the United States*, University of Minnesota Press, Minneapolis, 2007
Wagenaar, Cor, *The Architecture of Hospitals*, Nai Publishers, Rotterdam, NL, 2006
Worpole, Ken, the chapter 'Live Out of Doors as Much as You Can: The Architecture of Public Health', printed in *here comes the sun, Architecture and Public Space in twentieth-century European Culture*, Reaktion Books, London, 2000

EVIDENCE-BASED DESIGN
Hamilton, Kirk, 'Definition of Evidence Based Design', *Healthcare Design Magazine*, nov 2003
Master Class Evidence-Based Design for Critical Care, Berlage Institute, Rotterdam, NL, January 2008
Nauta, Joram & Peter Michiel Schaap, *All designers use evidence*, Architecture in Health & Platform GRAS, Utrecht & Groningen, 2009
Sackett, David L. et al., 'Evidence based medicine: What it is and what it isn't', **BMJ** 1996; 312: 71-72 (13 January)
Wagenaar, Cor (editor), *Evidence Based Design: Architecture as Medicine?*, 200 years University Hospital Groningen, Groningen, NL, 2005

HEALING ENVIRONMENTS
Berg, A.E. van den, *Health Impacts of Healing Environments*, Van Eck & Oosterink, Dodewaard, NL, 2005
Berg, A.E. van den and Magdalena van den Berg, 'Van buiten wordt je beter', *Jaarboek Alterra* 2001, Wageningen, NL, 2001
Berg, A.E. van den, M. van Windsum-Westra, 'Ontwerpen met groen voor gezondheid', *Alterra rapport 1371*, Wageningen, 2006
Engelbrecht, Martijn (BETER CONSORTIUM), *de kunst van gezondheid*, EGBG, 2013
Frandsen, Anne Katrine (ed) and others, *Helende Arkitektur*, Institut for Arkitektur og Design Skriftserie nr, 29, 2009
Gernes & P.M. Hornung, *Farvernes medicin*, Borgen, København, 2003
Jencks, Charles, *Can Architecture Affect Your Health?*, ArtEZ Press and Sikkens Foundation, Arnhem, 2012
Marcus, C. and M. Barnes, *Healing Gardens, Therapeutic Benefits and Design Recommendations*, John Wiley & Sons, Inc., New York, USA, 1999
Mens, Noor & Cor Wagenaar, *Healing Environments, Anders bouwen voor betere zorg*, Stagg, Uitgeverij THOTH, Bussum, 2009
Stigsdottir, Ulrika A. and Patrick Grahn, 'What makes a Garden a Healing Garden', *Journal of Therapeutic Horticulture*, AHTA,VXIII, 2002
Stigsdottir, Ulrika A. and Patrick Grahn, 'Experiencing a Garden: A Healing Garden ...', *Journal of Therapeutic Horticulture*, AHTA,XIV, 2003

SUPPORTIVE DESIGN
Lindheim, Roslyn and Leonard Syme, 'Environments, People and Health', *Annual Review Public Health*, 1983, 4: page 335-59
Lindheim, Roslyn, 'New Design Parameters for Healthy Places', Places, *Volume 2*, Number 4, page 17-27
Lindheim, Roslyn, 'Birthing Centers and Hospices: reclaiming Birth and Death', *Annual Review Public Health*, 1981, 2: page 1-29
Ulrich, Roger S., the chapter 'Effects of Healthcare Interior Design on Wellness: Theory and Recent Scientific Research', printed in Marberry, Sara O., *Innovations in Healthcare Design*, Van Nostrand Reinhold, New York, 1995

SOCIAL SCIENCES
Antonovsky, Aaron, *Helbredets Mysterium*, Hans Reitzels forlag, København, DK, 2000
Cieraad, Irene, 'Only a heartbeat away, the cultural dialectics of cardiographics', *Medische Antropologie* 14 (1), 2002
Foucault, Michel, Naissance de la Clinique (1963), translation in English; *The Birth of the Clinic*, Routledge, London, UK, 1973
Foucault, Michel, Maladie mentale et psychologie, translation in Danish; *Sindssygdom og psykologi*, Hans Reitzels forlag, København, DK, 2005
Geest, Sjaak van der & Arko Oderwald, 'Dichter bij ziekte: Ten geleide', *Medische Antropologie* 13 (1), 2001
Good, Byron J, *Medicine, rationality and experience, An antropological perspective*, Cambridge University Press, UK, 1994
Kübler-Ross, Elisabeth, *On Death and Dying*, Touchstone, New York, USA, 1969
Loudon, Irvine(editor), *Western Medicine, An illustrated history*, Oxford University Press, UK, 1997
Lupton, Deborah, *Medicine as Culture*, Sage Publications Ltd., London, UK, 1994
Miller, James William, 'Wellness: The History and Development of a Concept', *Spektrum Freizeit*, 2005 / 1
Mol, Annemarie, *The body multiple: ontology in medical practice*, Duke University Press, USA, 2002
Payer, Lynn, *Medicine & Culture*, An Owl Book, Henry Holt and Company, New York, 1988
Rey, Roselyne, Histoire de la Douleur, (1993), translation in english: *The history of Pain*, Harvard University Press, Cambridge, London, UK, 1995
Schmidt, Lars-Henrik & J.E. Kristensen, *Lys, luft og renlighed*, Den moderne socialhygiejnes fødsel, Akademisk Forlag AS, København, DK, 2004

SOCIAL SCIENCES - CONTINUED
Wolputte, Steven Van & Patrick Meurs, 'Lichaam, zorg, kwetsuur en verzorging', *Medische Antropologie* 14 (1), 2002

THE DANISH WELFARE (ARCHITECTURE) DISCUSSION
Bech-Danielsen, Claus et al (ed), *Urban lifescape*, Aalborg Universitetsforlag, 2004
Forstadens Bygningskultur 1945-1989, På sporet af Velfærdsforstadens bevaringsværdier, Realdania, November 2010
Jensen, Per, *Velfærd - dimensioner og betydninger,* Frydenlund, København, 2007
Nielsen, Tom, *Gode intentioner og uregerlige byer,* Arkitektskolens Forlag, 2008
På sporet af Forstadens Velfærdsdrømme, Kulturarvskommune Hvidovre, Kulturarvstyrelsen & Realdania, 2006
Velfærdssamfundets Bygninger, Bygningskulturens Dag, Kulturarvstyrelsen, 2008

LITERATURE IN RELATION TO THE POSITION I TAKE IN CHAPTER 2: THE ANALYTICAL FRAMEWORK
(Besides the literature mentioned under the heading of sources)

PRACTICE RELATED RESEARCH AND WRITINGS
Avermaete, Tom, 'The Architecture of the Common, Towards a New Definition of the Architectural project', *ArchiNed*, 2015
Avermaete Tom, 'The Architect and the Public: Empowering People in Postwar Architecture Culture, *Hunch*, no 14,
Avermaete, Tom, 'Architecture 'Talks Back': On the (Im)possibilities of Designing a Critical Architectural Project', in *Serbian Architectural Journal*, no. 3, 2011
Avermaete, Tom and Klaske Havik, Hans Teerds (ed), *Architectural Positions*, SUN Publishers, Amsterdam, 2009
Doucet, Isabelle and Kenny Cupers, 'Agency in Architecture: Rethinking Criticality in Theory and Practice', *FOOTPRINT*, no 04, spring 2009
Fretton, Tony, *Articles, Interviews, Essays and Out-takes*, Jap Sam Books, Heijningen, 2018
Schrijver, Lara, 'Whatever Happened to Projective Architecture: Rethinking the Expertise of the Architect', *FOOTPRINT*, no 04, spring 2009

ANALYTICAL TEXTS WRITTEN BY ARCHITECTS
Avermaete, Van Den Heuvel and Swenarton, *Architecture of the Welfare State*, Routledge, London, 2014
Columina, Beatriz: 'The Split Wall, Domestic Voyeurism', published in *Sexuality & Space*, Princeton Papers on Architecture, Princeton, 1992
Colquhoun, Alan, 'Historicism and the Limits of Semiology', In: *collected essays in architectural criticism*, black dog publishing, London, 2009
Cullens, Gordon, *The Concise Townscape*, 1961
Evans, Robin, 'Figures, Doors and Passages', in: *Translation from Drawing to Building and other essays*, Architectural Association Publication, London, 1996
Gehl, Jan, *Livet mellem husene, Udeaktiviteter og udemiljøer*, Arkitektens Forlag, København, 2003 – first published 1971
Grafe, Christoph and Franziska Bollerey, *Cafes and Bars, The Architecture of Public Display*, Interior Architecture, Routledge, London 2007
Grafe, Christoph, *People's Palaces, Architecture, culture and democracy in two European post-war cultural centres*, dissertation TU Delft, 2010
Hesselgren, Sven, *The Language of Architecture*, Studentlitteratur, Kristianstad, 1969
Kaminer, Tahl, 'Framing Colomina', *FOOTPRINT*, no 04, spring 2009
Lynch, Kevin, *The Image of the City*, MIT Press, Cambridge,1960
Pailos,Jorge Otero, 'LS design: Charles Moors and the Delirious Interior', published on *C-Lab, Columbia Laboratory for Architectural Broadcasting*
Pérez-Gómez, Alberto, *Architecture and the Crisis of Modern Science*, The MIT Press, Cambridge, Massachusetts, 1988 – first printed in 1983
Pimlott, Mark, *The Public Interior as Idea and Project*, Jap Sam Books, Heijningen, 2016
Rasmussen, Steen Eiler, *Om at opleve arkitektur*, GEC Gads Forlag, København, 1957
Rowe, Colin and Robert Slutzky, *Transparency,* Birkhäuser, Verlag, Basel, Boston, Berlin, 1997 – first published in 1955
Rowe, Colin, *The Mathematics of the Ideal Villa and Other Essays*, The MIT Press, Cabridge, Massachusetts, 1976
Venturi, Robert and Denise Scott Brown, Steven Izenour, *Learning from Las Vegas*, MIT, 2000, - first published 1977
Waal, Allan de, 'Kommunehospitalet i København – et analyse eksempel', in: *Arkitekturens Praksis, bidrag til en teori*, Borgen, København, 1994
Wigley, Mark, 'The Architecture of Atmosphere', *Daidalos*, no 68, 1998

SOCIO-CULTURAL STUDIES
King, Anthony D., *Buildings and Society, Essays on the social development of the built environment*, Routledge & Keagan Paul, London, 1980
Cieraad, Irene (ed), *At Home*, Syracuse University Press, New York, 1990
Cieraad, Irene, 'Slaapkamergeheimen', *Medische Antropologie*, 18 (1), 2006
Hall, Edward T., *The Hidden dimension*, Anchor Books edition, 1969
Hatch, Mary Jo, 'Organisational Culture', in: *Organization Theory*, Oxford University Press, new York, 1997
Hicks, Dan, 'The Material-Cultural Turn, Event and Effect', in: Hicks and Beaudry (ed), *The Oxford Handboek of Material Cultural Studies*, Oxford, 2010
Maile Petty, Margaret, 'Curtains and The Soft Architecture of The American Postwar Domestic Environment', in: *Home Cultures*, vol 9, issue 1, 2012
Mare, Heidi de, *Huiselijke taferelen, De veranderende rol van het beeld in de Gouden Eeuw*, Uitgeverij Vantilt, Nijmegen, 2012
Mare, Heidi de, 'The Domestic Boundary as Ritual Area in Seventeenth-Century Holland', in: Mare and Vos (ed), *Urban Rituals*, Van Gorcum, Assen, 1992
Mare, Heidi de, 'Gedisciplineerd kijken', *Kunstlicht*, jaargang 20 (1999), nr 3-4
Raahauge, Kirsten Marie and Peter Allingham, Robert Gassner, 'Rumperception mellem tid og uforudsigelighed', in: Merete Ahnfeldt Mollerup, and Nicolai Rostrup, *Percipio, II:praksis*, Det Kongelige Kunstakademis Skoler for Arkitektur, Design og Konservering, 2011
Olesen, Bodil Birkebæk, 'Etnic Objects in Domestic Interiors, Space, Atmosphere and The making of Home', in: *Home Cultures*, vol 7, issue 1, 2010

SUMMARY

THE AMBITION

The departure point for the research is the everyday life of practitioners. The position is that the thinking and crafts of architects in the field of practice has not been seen as a valuable body of knowledge in projects, where large pragmatic, political and social factors are at work. The aim of the dissertation is to demonstrate this type of knowledge. It is the belief that the formalisation of practice as a knowledge platform will be of notable value to practising architects in the development of projects, in the education of students in architecture, and for people outside the architectural field, who seek a deeper understanding of the qualities of the profession, and what it is that architects have to offer, not least in the decision-making process.

The purpose of the title »Architectural Thinking in Practice« is to communicate that the aim of the dissertation is to contribute to the architectural discourse in two ways; 1. - By adding the perspective of practice, 2. - By looking at architecture as a knowledge - and thought - field rather than as a building. It is related to a discussion of the architectural discipline and how practice is performed, and to the fact that there are different ways architects think in practice (from preparing, planning, testing and making to observing, reflecting, analysing, interpreting and evaluating but also presenting, debating, negotiating, communicating and collaborating), different practice forms (roles, responsibilities, areas of expertise), and different interpretations (attitudes and positions) in the field. The analytical work is a qualitative study of these variations in meaning.

THE APPROACH

To address and articulate architecture as a thought field a comprehensive research was made into the work of architects in the hospital sector in Copenhagen, Denmark. The interest was to uncover how architects think, and to trace how they make meaning of the complex interdependent relationships they have in the decision-making process with the surrounding society, the client, specific user groups, the architectural culture to which they belong, the collaborating partners and builders, and themselves as individual people with bias and personal agendas. This practice-oriented perspective provoked methodological questions on how to approach the field of practice and the interrelationship with other actors. As a result, a fundamental methodological investigation was embedded into the research. To this purpose a set of interpretive lenses was developed that made it possible to portray the complex world within which architects operate.

Different research traditions were combined such as cross media analysis, actor-network analysis, case study analysis, qualitative field studies, and interpretive historical research. The research approach has been developed through years of reflection, research, writing, teaching and testing. Interaction with the field as well as working with students on seminars in architecture analysis and architectural research has been an important part of the ‘methodological laboratory’. The methodological discussion does as such not only bridge practice and academia but also teaching and research. The five interpretive lenses describe five perspectives on the world from the material and tangible construction to the immaterial and

intangible social or experiential. Applied to architecture analysis they provide ways to understand the means of an architect. But the interpretive lenses also expose five different decision fields, areas of expertise and ways of being an architect. As such they can be used to discuss the disciplinarity of architecture. And as each area is connected to other disciplines also the inter-disciplinarity of the architectural profession. Together the five interpretive lenses are a system of knowledge and an analytical tool box, which can be used in diverse ways.

THE HISTORICAL ENQUIRY

Next to the analysis of the present debate on hospital architecture, a historical enquiry was made to situate the contributions of Danish architects in the development of hospital architecture within the municipality of Copenhagen over a period of 100 years. Next to this a comparative analysis was made of the three main municipal hospitals: - Kommunehospitalet by architect Christian Hansen (1863), - Bispebjerg Hospital by architects Martin Nyrup (1913), - and Hvidovre Hospital by architects Krohn & Hartvig Rasmussen (1976) leading to a case study analysis of Hvidovre Hospital. The historical study accentuated how the thought field of architects throughout centuries has been intertwined with different ideas within society; some of which has to do with political ambition, technical progress, urban development, social and human ideals, others with the definition of the public domain, public behaviour, the hospital as an institution within society, the house of medicine, patient care and nursing. As a consequence of this observation, it was proposed that the meaning of architecture as a thought field cannot be understood by looking at objects like buildings alone. The thought field and work of architects have to be situated within the historical and socio-cultural context within which the architects lived and worked, who they were, and what values, ideas and views they represented.

THE CASE STUDY RESEARCH

Since it is the purpose of the research to investigate the active and multi-layered role of the architects - more than it is to map historical developments in themselves - the work of the architects Krohn & Hartvig Rasmussen on Hvidovre hospital received a central place. The case was chosen as it is one of the Danish hospital construction projects, and as such it has a part to play in the present hospital debate. The hospital also emerged within a humanistic, socially informed and democratic value system, which means that its architecture is cued by collective memory of a specific time in history. In the light of the present re-evaluation of welfare state values in Denmark as well as in other European countries, and the accompanying role of architects, it is interesting to look at what it meant to be an architect then. The ambition is to demonstrate that architectural thinking is not neutral. The architects did not just legitimate a certain development in society as well as in architectural practice, they were part and parcel of these developments. The research was divided into three categories; - the architectural means of the architects, - the role in the decision-making process, - and the historical connotation. In relation to the analysis of the architectural means, it was questioned whether the architects had explicitly described their attention field, or whether their knowledge and thought field was tacit. As architects do not work on their own but in a relation to other actors in the decision field, the second part of the analysis was to explore this relationship and to see,

what role the architects took, how they acted, and what their possibilities were. The last part of the analyses was to analyse the work from a socio-cultural perspective; meaning situating the thought field and actions of the architects in the context of what was going on in society.

The five areas explored in the case study research were; - the physical, - the dynamic, - the social, - the narrative, - and the experiential aspect of architecture. In the cross comparison of the analytical results it became apparent that the architects were not explicit about all of these aspects of their architecture. Certain norms and attention fields were tacit and embedded into the Danish culture. The knowledge on areas such as the social or experiential had to be drawn from drawings, photographs and by visiting the building. This also had to do with the architectural discourse of the time period, which reflected what the architects would address in their work or not. An essential point in the analysis of the media that the architects used (language, drawings etc.) is that the architects demonstrated a certain creativity and craft, which they used to alter, extend and change their 'modus operandi'. Examples were the flow charts, diagrams and schemes that were used as a communication device with the hospital user groups, or the detailed T-book drawing system which was developed as a tool for the detailed design, the construction, planning and budgeting. Through these means the architects actively took part in the perception and representation of architecture, which was subsequently disseminated into practice. It is also evidence, that architectural media has a history of its own.

In the study of the decision-making process it became apparent, how the main architect was very aware of his role as an actor and as an agent for diverse architectural ideas. The way in which the work was organised at the office also point at a certain amount of social intelligence, as the design process was decentralised into a number of work group with each their group leader. It is also an indication that large scale and complex projects cannot be solved by one architect alone. It is a collaboration between different architects with different qualifications. The common idea of 'an architect' designing 'the project' dissolved into a network – a team - of architects with each their responsibility working together towards one communal goal. Another important point in the cross comparison of the analyses is that it emphasizes how architecture is a multi-layered discipline. The different perspectives in the five analyses gave examples of different decision fields embedded into the project and the corresponding roles (tasks, challenges and tools) of the architects in the decision-making process. The five analyses also showed how each of these decision fields was connected with knowledge fields other than architecture. They, as such, revealed the inter-disciplinarity of architecture. Finally, the cross comparison of the five analyses showed how the architects created a common platform of understanding – a language and a way of communicating – for the architects, the municipal client and the hospital organisation. The role of the architects was as such to guide the other actors through the decision process. It is an indication that being an architect is also about the ability to act in relation to other people, to take responsibility and to establish relationships.

In the cross comparison of the historical part of the analyses it became apparent how the thought field of the architects was intertwined with societal and urban development, the developing industrialised building culture, organisational matters, cultural values, ideas and preferences within the Danish population and the international community of the outside world, socio-political ideals about communality, life style issues etc. In that sense

it was a contextual proposal embedded into its time and place and culture. There also were exceptions, where the architects positioned themselves critically in the field. So was the decentralised hospital based on a critical investigation of the criteria for which most hospitals in the time period were designed, which led to the definition of a new model for hospital designs. This demonstrates the importance of research before designing. Next to this, they introduced the idea of a humanistic and reconciliatory environment in hospital designs – a non-institutional imagery – as a reaction against an aesthetic that only reflects the mechanical rationality of a hospitals functionality. They actively took part in the development of function analysis and hospital planning as a new field of knowledge, and introduced user participation as a means in the architectural design process. An exemplary constructional system, planning procedure and method of drawing classification was developed and used. They experimented with new materials and production methods in an attempt to re-define authenticity in architecture and in its imagery. And last but not least, the interior quality of the architecture was thought through social relations, use, and the experience of users, thereby going against a formalist approach in architecture. Concludingly, it can therefore be said that the research proved, how the architects did not just legitimate a certain development in society, they were part of creating it. This is in concordance with the ambition (and hypothesis) of the case study analysis. It proves that architectural thinking is not neutral, and that it can have a positive outcome, if architects are allowed to play an active role in the conception and development of a project and in the construction of a building.

CONCLUSIONS

The study was an attempt to revalue the ‘encompassing nature’ of the architectural discipline, a plea to widen the view in for example the health care sector, and to give architects a more prominent role in society as agents for material culture. The presumption of the stratified analytical approach was that it would depict the profession as a complex field of many different areas, interests and relationships. The benefits of the analytical framework were diverse. The analytical framework – the five interpretive lenses but also the three research strategies - illuminated that it is possible to obtain a qualitative perspective on architecture as a discipline, and to become precise about the roles that architects and architecture can play in the built environment, in society and within culture. The case study of Hvidovre Hospital also confirmed, how the architects were agents for different tacit norms and values in the Danish culture, which were recognized and appreciated by the jury committee, the municipal client and the larger public of the City of Copenhagen. As a result, a case could be made for the cultural impact of architecture. Seen from the view point of architecture analysis - and architectural debate - the observations made in the case study research suggested that it would be legitimate and valuable to argue for architectural ideas from the view point of collective memory, cultural values and society.

Besides demonstrating the capability of architects to situate themselves in the decision field as both craftsmens, spokespeople, mediators, communicators, negotiators, guides, and actors for diverse ideas and interest, the analyses of the decision process also showed how large projects like a hospital are the outcome of many forces. The architectural propositions of Hvidovre Hospital were creatively and productively re-interpreted by contributing landscape architects, artists, interior architects

as well as engineers, technicians, contractors and builders. What is more, the research into the decision field depicted an important relationship - and sometimes conflict of interests - between the municipal client, the hospital organisation, the hospital staff, and the architects . This was to be seen in the development of the project, and the interpretation of the architectural propositions. Consequently, the case study of Hvidovre Hospital illustrated how buildings are the result of an intense negotiation of various actors with each their own intentionality. In the negotiation between them a project emerges. This also renders the decision field as the place where architectural thinking is calibrated in relation to other actors in the field. Finally, the research demonstrated the active and creative role architects can play in the conception and development of projects and in the construction of a building. It portrayed a certain resilience, which you could assume is intrinsic to the discipline. It is evidence that imagination in practice can have many forms, and that there is more than one way to be a practitioner.

RECOMMENDATIONS

Last but not least, a number of recommendation were made for future research. As a continuation of the hospital debate, a proposal was made to explore contemporary hospital construction projects from the view point of a reflective, experiential and critical view point. The research could potentially be used for large scale evaluation research later, but it could also make the involved actors more aware of the various architectural aspects of hospital buildings. In relation to the argument made for a cultural reading of architecture, a second proposal was to find out whether a qualitatively and practice informed argument could be made for the social-cultural connotation of architecture. Related to this is the discussion on evidence, research-informed design and tacit knowledge. A third possibility for future research would be to further investigate the disciplinarity of architecture hereby also clarifying the integrative capacity and inter-disciplinary character of architecture. This type of research could be useful for practitioners in their understanding of the decision field as a place of integration and negotiation, but also in the education of students in architecture, where there tends to be a mono-directional or at least limited view of the discipline of architecture. Lastly, as a natural consequence of the methodological work done, it was suggested that it would be of significant value to further develop the analytical system of the interpretive lenses as a research methodology: To create a ‘thinking tool’ to conceive in a more nuanced way of the profession, of the role of architects and of the buildings that are designed.

CURRICULUM VITAE

Birgitte Louise Hansen was born in Glostrup / Copenhagen in Denmark. She graduated as an architect from The Royal Academy of Art in Copenhagen, School of Architecture in 1994 after having studied at The School of Architecture in Århus, The Danish Design School, Department for Stage Design and The Royal Academy of Art, The School of Architecture.

From 1990-1994 she worked as a freelance architect for the Danish performance group Hotel Pro Forma. From 1994-1996 she was the main architect and production leader of »Container 96« , a world exhibition of art, for Copenhagen 96, Cultural Capital of Europe, 1996. In 1997 she moved to The Netherlands, where she worked as an architect with different offices amongst others One Architecture and Atelier Joep van Lieshout. In 1999 she started her own office in Rotterdam, The Netherlands.

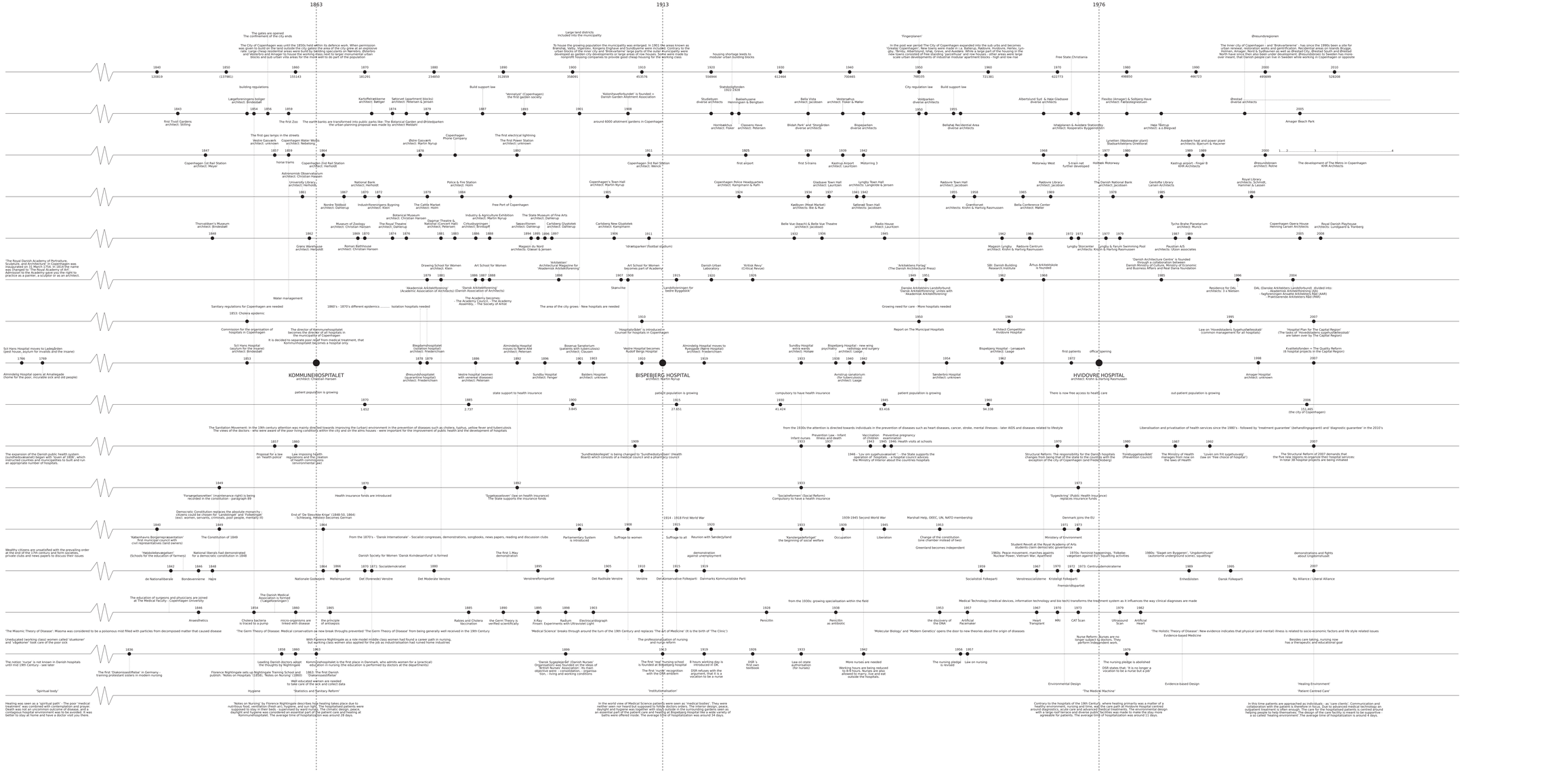
The office of Birgitte Louise Hansen has been involved with exhibition designs, site special spatial designs, idea and concept development, the organisations of events, educational activities and research. The work is characterized by being experimental and interdisciplinary. After a long period of having primarily worked as a designer she was lead more in the direction of research, teaching, knowledge translation, writing and speaking. She became what you could call a reflective practitioner. This view has informed the promotional research at the TU Delft, The Netherlands.

Birgitte Louise Hansen has taught, given lectures and worked as a project coordinator at different schools and universities in Denmark, in The Netherlands as well as in Belgium. She was the editor of the publication »Beyond Clinical Buildings« (2008), in charge of the symposium »Urban Paradise« at AMS (2014), has written for different publications and spoken at different conferences and symposia, amongst others on health care related architecture and architectural research. The main client in Academia has been Delft University of Technology, Faculty of Architecture, Chair of Interior, Buildings & Cites, where she has taught classes in architecture analysis and research since 2001. These classes have been fundamental for the methodological discussion embedded into the promotional research.

Areas of expertise are: Site Specific Spatial Design, Reflective Practice, Experiential Teaching, Architecture Analysis and Research Methods.

Member of Kunstnersamfundet, DK (The Society of Artists) since 2011,

APPENDIX A



'Notes on Nursing' by Florence Nightingale describes how healing takes place due to nutritious food, ventilation (fresh air), hygiene, and sun light. The hospitalised patients were not supposed to be bored, but should be entertained. The importance of fresh air, daylight and hygiene was considered an essential part of the patient care and healing at Kommunehospitalet. The average time of hospitalisation was around 28 days.

In the world view of Medical Science patients were seen as 'medical bodies'. They were neither seen nor heard but supposed to follow doctors orders. The interior design, peace, quiet and hygiene was considered an essential part of the patient care and healing at Bispebjerg Hospital like a wide variety of baths were offered inside. The average time of hospitalisation was around 34 days.

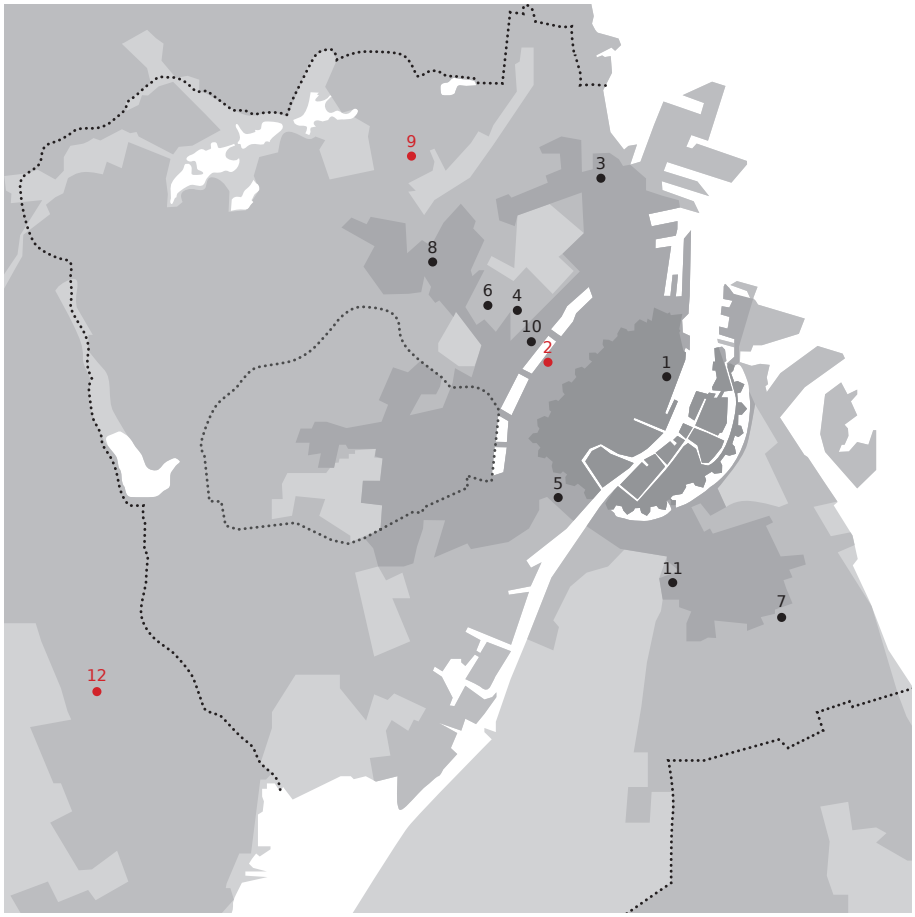
Contrary to the hospitals of the 19th Century, where healing primarily was a matter of a healthy environment, nursing and time, was the care path at Hvidovre Hospital centred around individuals. Each room in the hospital has a bed for a relative and is designed with a large roof terrace and diverse public facilities was made to make the stay more agreeable for patients. The average time of hospitalisation was around 11 days.

In this time patients are approached as individuals, as 'care clients'. Communication and collaboration with the patient is therefore in focus. Due to advanced medical technology an increasing number of patients are treated in their own homes and outpatient clinics, thereby helping people to help themselves. The design of the care facility is meant to be supportive - a so called 'healing environment'.The average time of hospitalization is around 4 days.

Healing was seen as a 'spiritual path' - The poor 'medical treatment' was combined with contemplation and prayer. Hygiene was not considered important as it was believed that contagious hospital environment was to be avoided. It was better to stay at home and have a doctor visit you there.

APPENDIX B

Hospitals built by the Municipal of Copenhagen



Map of the expansion of Copenhagen and the location of the Municipal hospitals 1850s - 1970s
Source: The information for the map is drawn from diverse overview literature

HOSPITALS BUILT BY THE MUNICIPAL OF COPENHAGEN:		
1	1769	Almindelig Hospital
2	1863	Kommunehospitalet
3	1878	Øresundshospitalet
4	1879	Blegdamshospitalet
5	1886	Vestre Hospital (later known as Rudolf Bergs Hospital)
6	1892	Almindelig Hospital at Nørre Alle (later part of De Gamles By)
7	1896	Sundby Hospital
8	1903	Balders Hospital
9	1913	Bispebjerg Hospital
10	1919	Almindelig Hospital at Ryesgade (later known as Nørre Hospital)
11	1954	Sønderbro Hospital
12	1976	Hvidovre Hospital

URBAN SITUATION

Around 1850

Around 1910

Around 1970

Recreative area, parks and nature

Municipal border from 1908

Water

Hospitals built by the Municipal of Copenhagen

The three largest municipal hospitals

1863 - KOMMUNEHOSPITALET

Date: Kommunehospitalet was inaugurated on 19 September 1863

Construction period: 1859-1863

Site: Sortedamsagrene - at Øster Farimagsvej - between the city defense work and the lakes (Søerne)

Architect: Hans Christian Hansen, professor at the Academy

Program: The hospital was divided into four departments namely: - 1 surgical, - 2 medical, - and 1 skin department. It also had an epidemic building and a building for patients with mental diseases.

Numbers: The hospital had 844 beds. The price for the building execution was around 2,8 million kr.

The decision process: It was a bound task. Municipal reports (betænkninger) and the program clearly described what requirements the building needed to fulfil, and what activities and people to be placed where. The type was also determined beforehand. Christian Hansen drew the hospital in less than a year.

Special features: When Kommunehospitalet opened in 1863 it was one of the most well-equipped hospitals in Europe with a.o. running water, outlets, gas lighting, heating and automatic ventilation.

1913 - BISPEBJERG HOSPITAL

Date: Bispebjerg Hospital was inaugurated on 19 September 1913

Construction period: 1908-1913

Site: Bispebjerg Bakke (Bispebjerg Hills) - at Tagensvej

Architect: Martin Nyrup, professor at the Academy

Program: The hospital was divided into four departments namely: - 2 surgical, - and 2 medical

Numbers: The hospital had 700 beds. The price for the building execution was around 6,3 million kr.

The decision process: Nyrup replaced architect Fenger, who died in 1905. When Nyrup started, the commission’s work was almost over. It had been decided that it should be a pavillion hospital. The negotiating protocol described how the doctors had the final word regarding the site plan of the hospital

Special features: When Bispbjerg Hospital opened in 1913 it was a not only visionary but also a modern hospital with underground transportation tunnels, lifts, and a red alarm system replacing the bell system.

1976 - HVIDOVRE HOSPITAL

Date: Hvidovre Hospital was inaugurated on 26 March 1976

Construction period: 1968-1976

Site: A site in Hvidovre - at Kettegårds Alle, Avedøre Havnevej and Vestmotorvej

Architect: Krohn & Hartvig Rasmussen (by Eigil Hartvig Rasmussen)

Program: The hospital was divided into around forty departments
Numbers: The hospital had 800 beds. The price for the building execution was around 602 million kr.

The decision process: Architect competition. It was the architect who suggested the type. The program did only describe functions. The work process was different from the two previous hospitals. The architect was involved in a larger decision-making process with the client and users over a period of 12 years.

Special features: When Hvidovre Hospital opened in 1976 it was a modern and high technological hospital with an automatic conveyor system, electronic data communication, and diverse medico-technology.

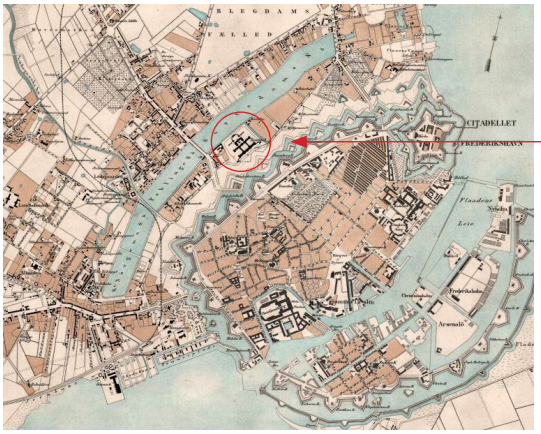
PROPOSITION ABOUT THE ROLE OF THE ARCHITECT IN THE DECISION-MAKING PROCESS

The three hospitals were placed in the periphery of the expanding city at each their moment in time. In all three cases the architects were chosen by Municipal representatives. The appearance of these new public buildings were as such related to the values and ideas of people in power.
As time went by, people and society changed and with that the image of the public domain. From Palace to Garden City to Suburban Ground Scraper, the hospitals brought agency to architecure, that architecture can contribute to the making of a new society. The choice of the architects, and their style of architecture, represented the development of society, the political scenery and did as such confirm a time specific mind set. The decision-making process on the narrative aspect of architecture was therefore primarily about the representational value of the imagery. The image of the hospital buildings was used as an agent to send a political and socio-cultural message. Whether the architects had a passive or an active role in this is a matter of discussion.

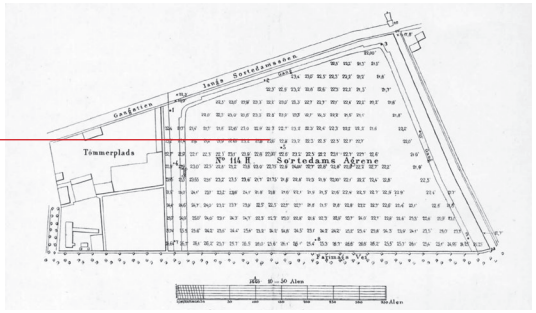
THEMATIC CATEGORY:

THE PUBLIC BUILDING

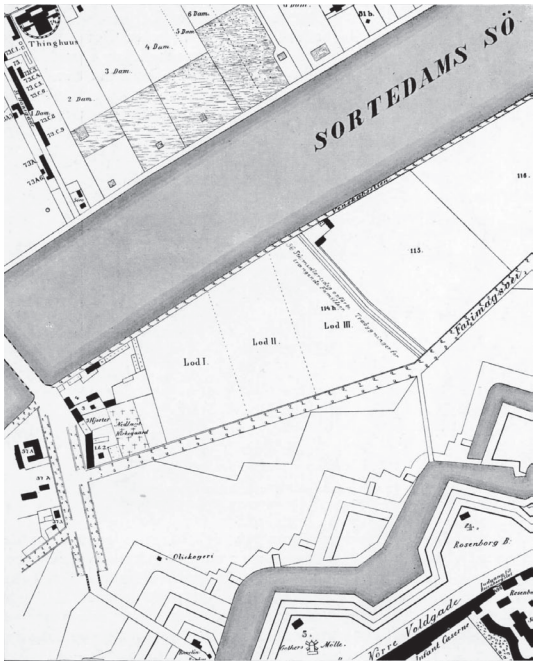
REPRESENTATION & IMAGERY



Map of Copenhagen, 1863
Source: Det Kongelige Bibliotek



Leveling of Sortedamsagrene, Map 1857
Source: 'Københavns Hospitalsforhold i ældre tid'



Terrain between Nørrevold and Sortedamssø, Map 1854
Source: 'Københavns Hospitalsforhold i ældre tid'

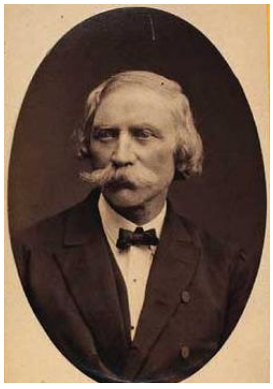
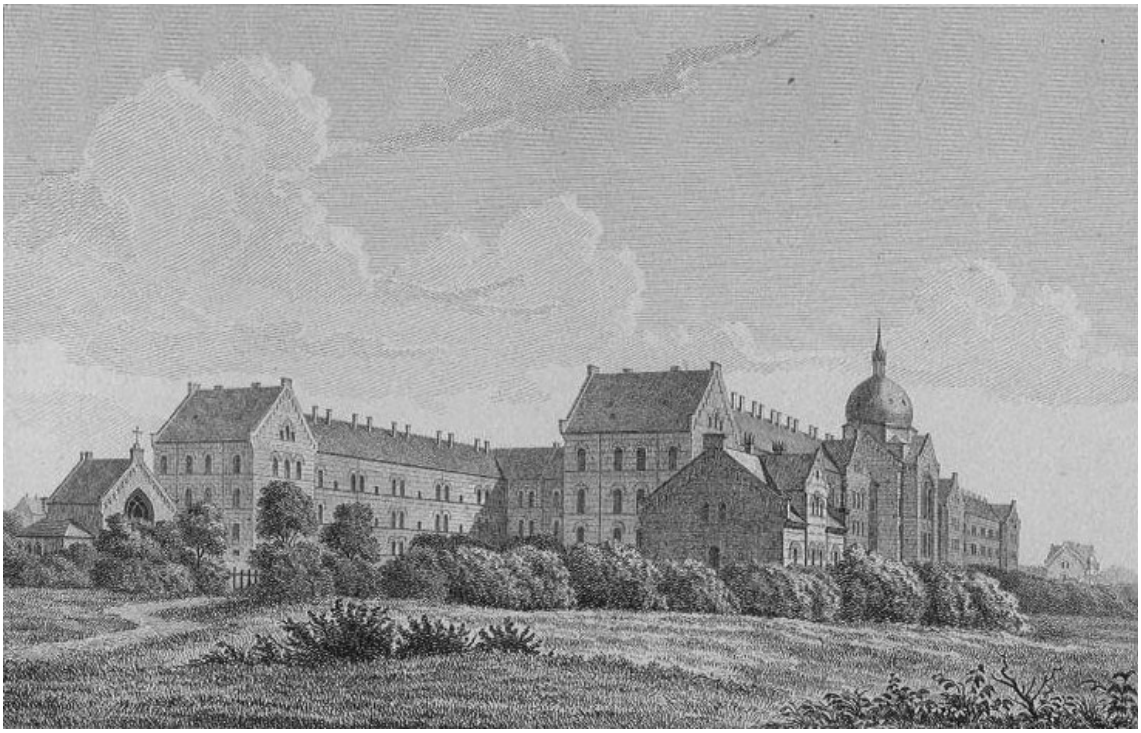
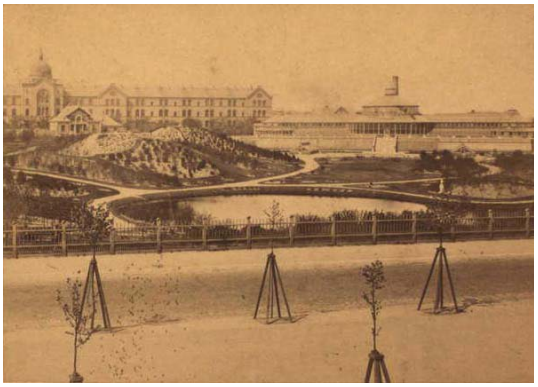


Photo of Christian Hansen
Source: Det Kongelige Bibliotek

University in Athens, Water color by Christian Hansen, 1842
Source: 'Arkitekten Christian Hansen' (Original at Danmarks Kunstbibliotek)



Kommunehospitalet, Drawing by P. Lund, 1862 (one year before the hospital was opened)
Source: 'Københavns Hospitalsvæsen 1863-1963' (Original at Bymuseet)



Kommunehospitalet seen from Øster Voldgade, Photo 1878
Source: Det Kongelige Bibliotek

Kommunehospitalet was placed at the former demarcation terrain just outside the old city of Copenhagen. Industrialisation had had a transformative effect on society. As a consequence, people were migrating from the countryside into the city to work in factories that were placed around it. Due to the fact that the city until the 1850s had been held within its defence work this had meant overcrowding, lack of fresh air, foul water, spreading of diseases and, in 1853, a cholera epidemic followed by other epidemics. When permission was given to build on the land outside the city gates, the area of the city grew at an explosive rate. The cholera epidemic furthermore made the municipality realise that they had to organise their hospital services in a better way. It was the beginning of what later should be known as 'Københavns Hospitalsvæsen'. With Kommunehospitalet, poor relief and health care was separated, and the director was in charge of all hospitals in Copenhagen. Kommunehospitalet was as such a new institution within society. That its architecture resembled a palace, a convent, or a bastion can be seen as an indication that it was uncertain what a public building - and social institution - like a hospital should look like. Its imagery could also be read as a sign of political progress and a democratisation of society. Through trade, fabrication, industrialisation, the liberal middle class had developed a certain wealth. Informed by revolutionary and national political discussions Copenhagen got its first municipal council with civil representatives in 1840. It was these people who choose architect Christian Hansen to represent them. They were obviously able to identify with the sensitive seriousity of his work.

Map of Copenhagen, 1914
Source: Det Kongelige Bibliotek

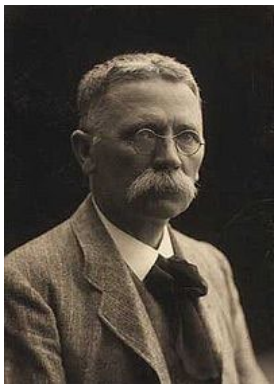
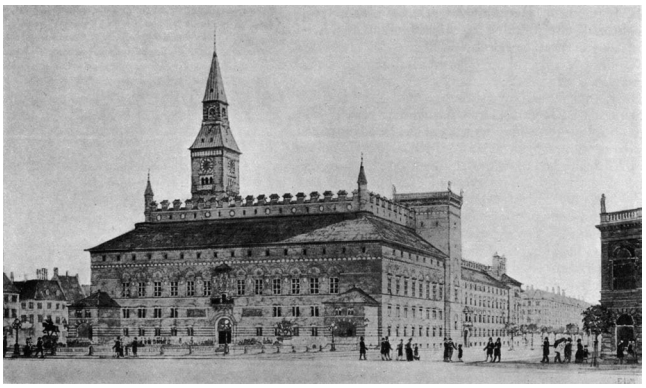


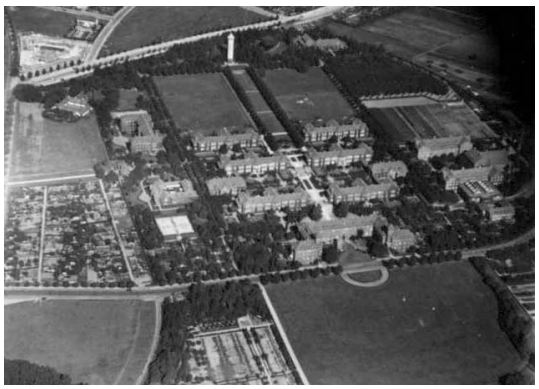
Photo Martin Nyrup
Source: Wikipedia



Copenhagen City Hall, Drawing by Martin Nyrup for the competition, 1888
Source: Danske Arkitekturstrømninger 1850-1950

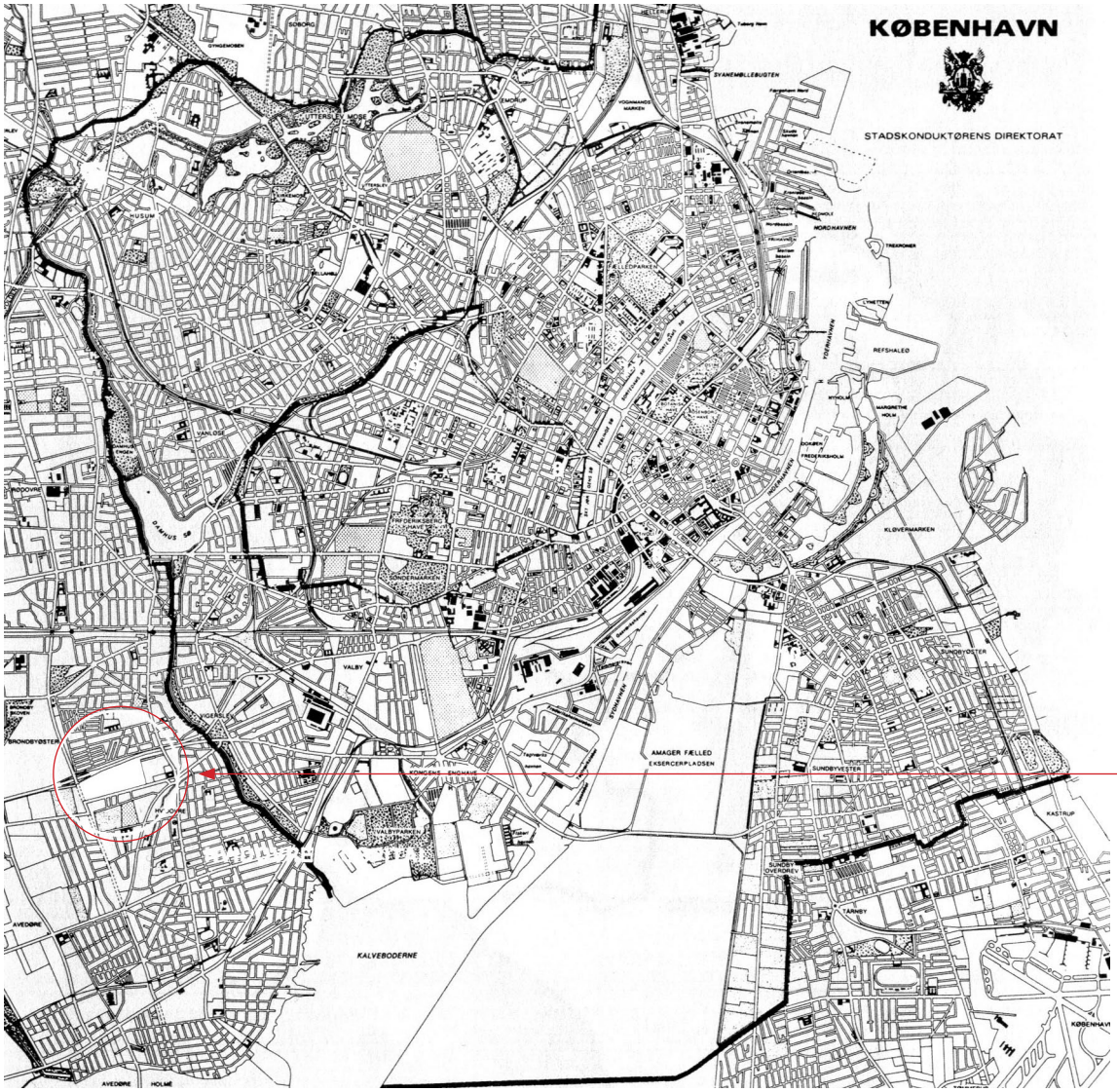
Bispebjerg Hospital, 1925
Source: Det Kongelige Bibliotek

Bispebjerg Hospital, 1913
Source: Medicinsk Museion



Bispebjerg Hospital
Source: Det Kongelige Bibliotek

Bispebjerg Hospital was built on the hills of Bispebjerg - in what was then the countryside. At the inauguration of the hospital in 1913 the municipality had grown to become a population of approximately 500,000 people. It was by far the largest city in Scandinavia - a metropolis. Like other large European cities such as Berlin, Vienna, or Paris, large parks, squares, boulevards and monumental buildings had been realised in and around the city for public purposes, and buildings for leisure, culture, and shopping gave way for a new public behaviour and identity. What is more, 'Københavns Hospitalsvæsen' now consisted of more than 10 hospital institutions of which Bispebjerg - in size and facilities - was to become equally modern as Kommunehospitalet. Contrary to the urban blocks of the inner city and Brokvartererne, large parts of the outer city's residential areas were garden city developments or neighbourhoods of row and double houses. The brief for Bispebjerg Hospital was concordant with these preferences, that it should be a pavilion hospital, where its rural setting was turned into landscaping and parks. Thus, in many ways, the image of the hospital was a given, when architect Martin Nyrup entered the project in 1905. However, he added a layer of interpretation into the project, which made the hospital a unique example of the beauty, poetry and artistry of his work. Referring to regional Danish architecture, history, folklore and myth, his architecture was representative of an attitude within architecture in which honesty played a part (*ny saglighed)*. He was a man of the people and his work a celebration of humanistic ideas corresponding with democratic tendencies in the surrounding society.



Map of Copenhagen, 1973
Source: 'Københavns Kommunes Hospital i Hvidovre'

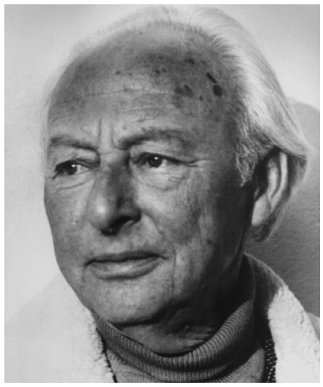
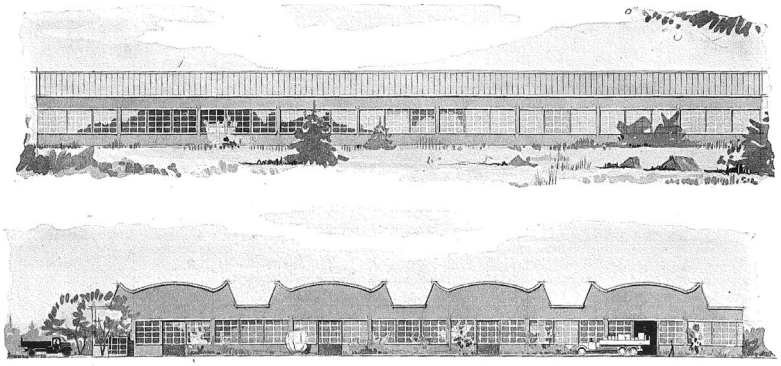


Photo: Eigil Hartvig Rasmussen
Source: KHR Archive



Machine Factory Atlas, Drawing by Krohn & Hartvig Rasmussen, 1946
Source: Arkitekten, nr 7-8, 1952

Hvidovre Hospital, Entrance Area, 1970s
Source: Hvidovre Hospital Archive

Map of the Site in Hvidovre, 1962
Source: Københavns Stadsarkiv

Hvidovre Hospital, 1976
Source: Gunnar Gundersens Archive

Hvidovre Hospital was built in the period between 1968-1976 on a site in the municipality of Hvidovre. A site that the municipality of Copenhagen had bought in 1933. In the post war period the City of Copenhagen had expanded into the suburbs in what was called 'Greater Copenhagen' (*Storkøbenhavn*). New towns were created in e.g. Ballerup, Rødovre, Hvidovre, Herlev, Albertslund, Tårbæk, and Avedøre. While a large part of the housing in the new towns consisted of free standing houses (*paracelhuse*) and row houses, other areas were large scale high-rise urban developments of industrial modular apartment blocks. Motorways and s-trains connected the suburban citizens with the inner city, but new centres also grew outside the old city centres. The suburban landscape was diverse and fragmented between areas of home, work, public facilities and recreation. Hvidovre Hospital was supposed to serve as a corner stone in the revised and extended hospital services of the City of Copenhagen by serving people living in the western and south-western area of the municipality. Contrary to Kommunehospitalet and Bispebjerg Hospital, the architect for Hvidovre Hospital was chosen through an architect competition. Unlike other contemporary modern hospitals, the image of Hvidovre Hospital was not a vertical high-rise but horizontal as a ground scraper. The imagery of Hvidovre Hospital did as such not correspond with conventional expectations. Its seems as if it was derived from the surrounding horizontal suburban landscape, the life of the anonymous collective, and the egalitarian principles of the Danish welfare state which now provided free access to e.g. health care and hospitalisation.

PROPOSITION ABOUT THE ROLE OF THE ARCHITECT IN THE DECISION-MAKING PROCESS

With the growth and alteration of the Danish welfare society in the century from Kommunehospitalet to Hvidovre Hospital, new ways of working were introduced in the building culture to meet the changing societal demands. This had an impact on how architects thought, and the role they had in the building process. Next to this, all three hospitals were large-scale constructions. The budget for their execution was a matter of concern for the municipality. They therefore had a say in the decison-making process on what was possible or not. They might even have given directives. From the comparison it becomes clear, how all three architects, each in their own way thought creatively by making a diversity of constructional spaces, but also in the way in which the buildings were articulated as craft. This would have been a decison the architects took - probably in a dialogue with the constructor. The decision-making process on the matter of materialisation and construction were as such economically influenced by the authorities as it was equally influenced by the surrounding building culture and its craftsmen.

THEMATIC CATEGORY:

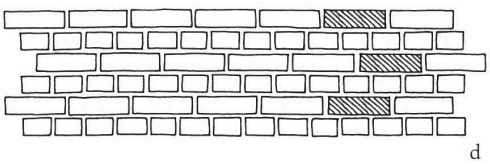
BUILDING CULTURE

MATERIALISATION & SPACES OF CONSTRUCTION

Kommunehospitalet seen from Øster Farimagsgade, Print in Illustreret Tidende, 1863
Source: Det Kongelige Bibliotek

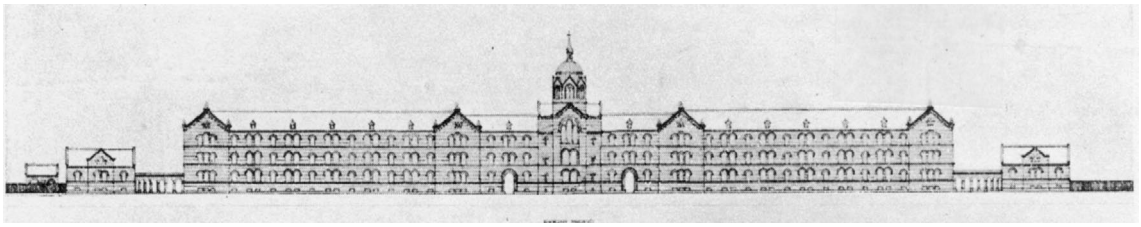
Kommunehospitalet, Brick facade, 2014
Source: Own Archive

Maison and Bricklayers at work - mid 18th Century
Source: Bildarchiv Preußischer Kulturbesitz

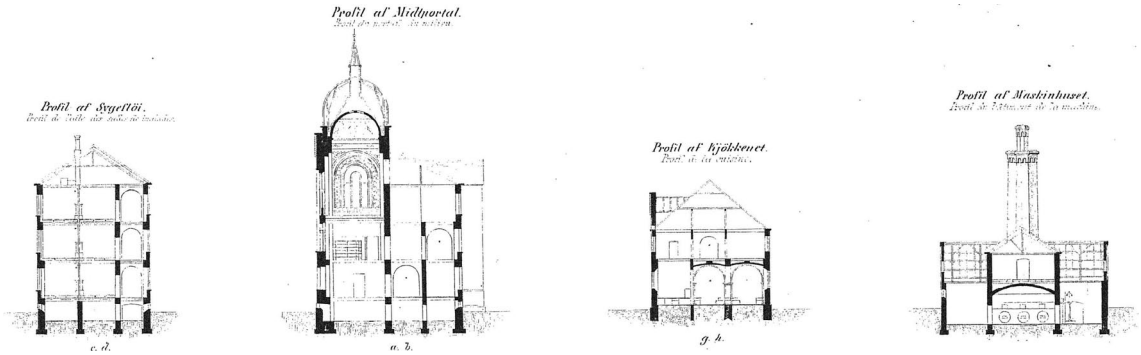


Krydsforbandt - English Cross Bond - used at Kommunhospitalet
Source: Wikipedia

The masonry at Kommunehospitalet was made of yellow burned brick with stripes of red burned brick and rhythmically placed round arch windows. Primarily English cross bond was used. The staircase hallways were supported by cast iron columns, which is an indication that not only traditional building techniques were used. The large 10 bed wards were equally supported by iron cast colums in the middle of the space next to the oven for the heating and ventilation system. The hospital was equipped with all modern facilities. It made use of running fresh water from the newly opened Water Works and gas lightning with gas from the new Gas Works. A sewage system for the hospital's wastewater was built, which made it possible to install toilets in the hospital. All of which was out of the ordinary. The heating and ventilation system was



Kommunehospitalet, Main facade Øster Farimagsgade, Drawing by Christian Hansen between 1859-1863
Source: 'Danske Arkitekturstrømninger 1850-1950'



Kommunehospitalet, Sections of Sick Building, Main Building, Kitchen Buiding, Machine Building, drawing by Christian Hansen, 1853-63
Source: Det Kongelige Bibliotek

Kommunehospitalet, Corridor, 2014
Source: Own Archive

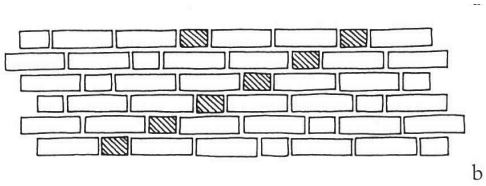
Kommunehospitalet, Staircase, 2014
Source: Own Archive

an achievement as well. It was a combination of an automatic system driven by a ventilation machine during the day and a manual ventilation system during the night. The system was developed by engineer C.G. Hummel in collaboration with Christian Hansen. The construction and technical installations were as such coordinated and integrated with each other. In terms of constructional spaces, the question is, whether Christian Hansen in his work referred to his stay in Greece or not. In the cross vaulted spaces in the kitchen and laundry room, the arch windows, door ways and gates Christian Hansen may also have drawn upon an older building tradition and culture which he knew from churches, medieval castles, and convents in Denmark. There seems to be a certain time and place-lessness in the language of his simple constructions.

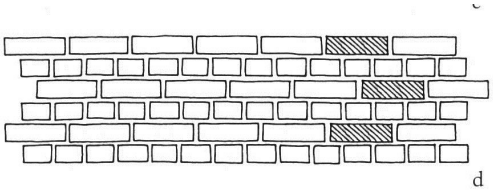
Kommunehospitalet, The Kitchen, 1897
Source: Medicinsk Museion

Bispebjerg Hospital, Brick facade, 2014
Source: Own Archive

Bispebjerg Hospital, Construction Site, 1910s
Source: Det Kongelige Bibliotek

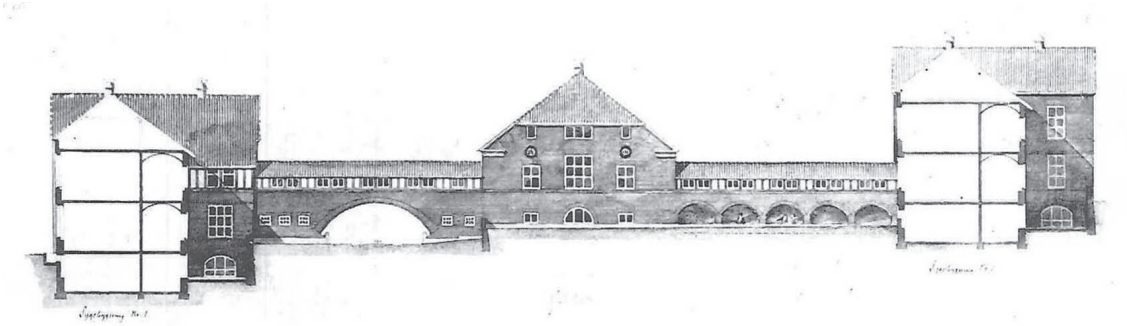


Munkeforbandt - Monk Bond - used for a.o. Surgery Building
Source: Wikipedia

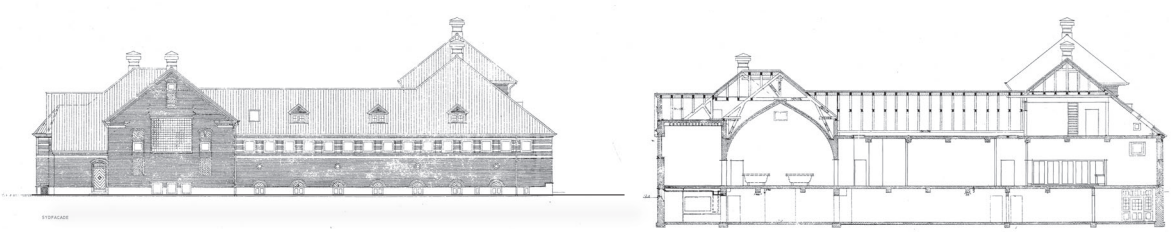


Krydsforbandt - English Cross Bond - used for a.o. the Pavillions
Source: Wikipedia

The buildings at Bispebjerg Hospital were made as red masonry on a concrete base, red roof tiles, and entrance areas in granite. Lighter parts of the buildings like verandas, corridor spaces, and the bay windows in the surgery rooms were made as half-timbered buildings. Different types of bonds were used for different type of buildings, and each building had its own details. The interiors were decorated with friezes. The choice of materials and detailing was related to Martin Nyrups fascination with the Nordic building culture. It was thus only the kitchen, the machine building and the laundry room which was built with the help of more modern construction techniques such as cast iron columns. Even though all buildings were made of brick, the diversity in the constructional spaces was very high. For example, while the ward buildings were simple

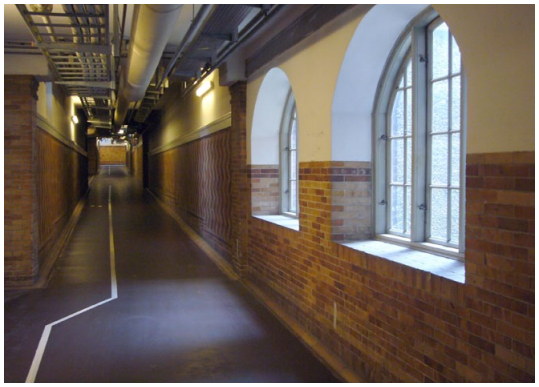


Bispebjerg Hospital, Elevation Operation Building & Corridors, and Section Pavillion Buildings, 1913
Source: Arkitektur DK, 1979, nr 7-8



Bispebjerg Hospital, Elevation and section of Bath House, 1913
Source: Bispebjerg Hospital Archive

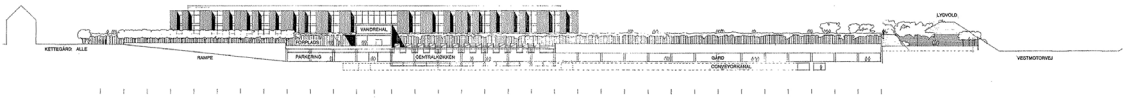
Bispebjerg Hospital, Admission Ward. around 1913
Source: Publication found at Medicinsk Museion



Transport Corridor - Underground Connection, 2014
Source: Own Archive

in their basic construction, they had connecting underground corridors and raised walkways to the surgery rooms. In the administration building Nyrup made use of towers, bay windows, and outdoor niches in the facade. The surgery rooms were constructed with a double glas bay window (for spectators) and an arched vault ceiling (to avoid the bad effects of condensation). And the chapel and the bathing building were each in their own right spatial artistry. Furthermore, Martin Nyrup was personally in charge of ordering the materials and supervised the construction of the hospital together with his men. The city engineer A.C. Karsten was responsible for the technical part of the construction and landscape architect Glæsel stood behind the landscaping. Due to the complexity and richness of the building project, the final result became a costly affair.

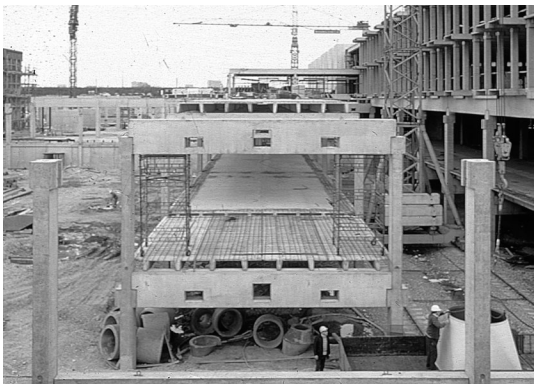
Bispebjerg Hospital, The Kitchen, around 1913
Source: Publication found at Medicinsk Museion



Hvidovre Hospital, West Elevation and Section, 1968
Source: 'Skitseprojekt april 1968'

Hvidovre Hospital, Facade on the roof terrasse, 1978
Source: Hvidovre Hospital Archive

Hvidovre Hospital, facade at Kettegårds Alle, 2008
Source: Own Archive

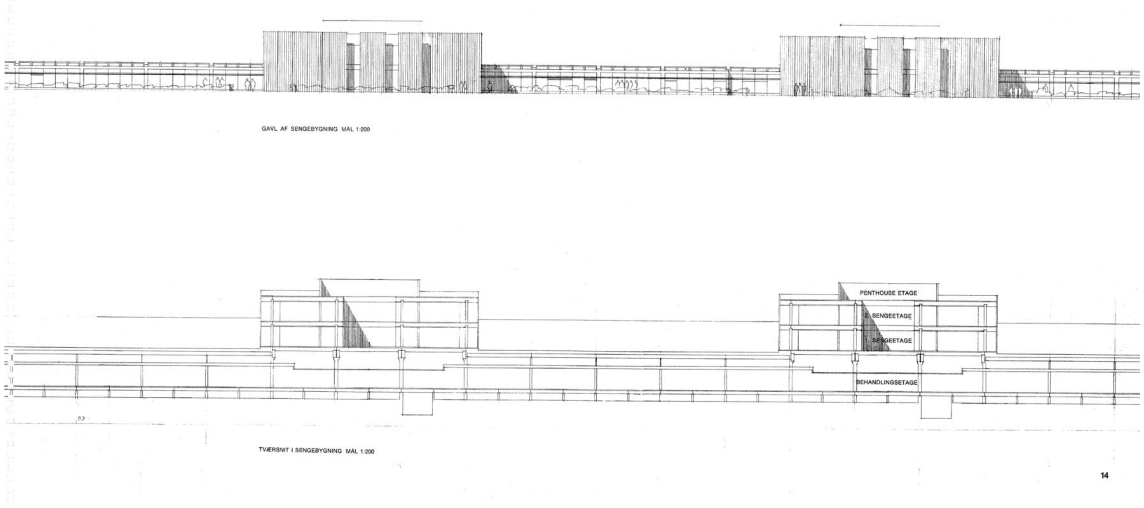


Hvidovre Hospital, Construction Site, around 1968-1970
Source: Gunnar Gundersens Archive

Hvidovre Hospital, Entrance parking garage, 2009
Source: Own Archive

Hvidovre Hospital, Profile, 2012
Source: Own Archive

Contrary to Kommunehospitalet and Bispebjerg Hospital, which were both made by skilled craftsmen and by hand, the construction of Hvidovre introduced another type of building culture, - that of industrialisation and mechanisation. While Christian Hansen in his work referred to buildings made within an international building culture, Martin Nyrup in his choice of materials and constructional spaces drew on a long tradition of what he thought of as Danish national heritage. The work of Krohn & Hartvig Rasmussen on the other hand was not about resisting but following the developments in the prevailing building culture. The construction of Hvidovre Hospital was defined by the same economic conditions and restrictions that influenced other large-scale developments in society. And like most of these projects - in Denmark as else-



Hvidovre Hospital, Elevation Patient Floor, and Section Ward and Treatment Building, 1968
Source: 'Skitseprojekt april 1968'

Hvidovre Hospital, Laboratory, 2012
Source: Own Archive

Hvidovre Hospital, Corridor on Treatment floor, 2011
Source: Own Archive

---

where - it was made with the use of concrete. Broadly speaking, Hvidovre Hospital consisted of two structures; a primary that was fixed, and a secondary that was flexible. The flexibility issue was a criterion which in a way was already present in the large open spaces in the kitchen and laundry of Kommunehospitalet as well as at Bispebjerg. The rapid development of medico technology had made the demand that hospital constructions should be open for future alterations. Technology had entered the world and was now changing patient treatment, hospital routines and daily work, hospital equipment etc. which had consequences for the way in which hospitals should be constructed. As a result, the hospital in Hvidovre was envisioned in a close collaboration with two engineering firms; that of Birch & Krogboe and that of Johannes Jørgensen.

Hvidovre Hospital, The Kitchen, 1970s
Source: Hvidovre Hospital Archive

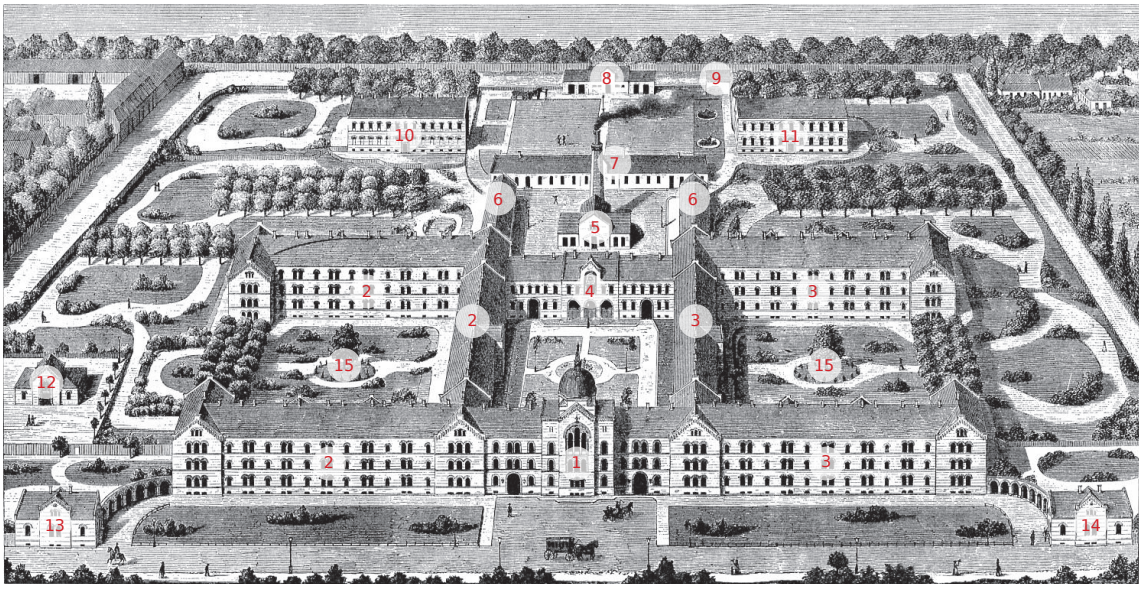
PROPOSITION ABOUT THE ROLE OF THE ARCHITECT IN THE DECISION-MAKING PROCESS

By comparing the program for the three hospitals and, specifically, their treatment section it became obvious how the historical development of medical specialisation and medical technology had an impact on the complexity of the hospital designs. These two factors played an important part in the decision-making process if you look at the architecture as an organisational issue. The medical classification of patients, patterns of work, and the seperation of facilities also played a part in the layout of the scheme, which was translated into territories, geographical distances and interconnections. This confirms what I have read about the decision process on all three hospitals, namely that the medical actors had a strong idea about the spatial layout, which they would voice in their committee work. This was not always about what would work well, but what they preferred. The role of the architects were to accomodate these views while trying to develop an architectural solution. The international references were therefore just as much the choice of the medical actors as it was the architects'.

THEMATIC CATEGORY:

USE

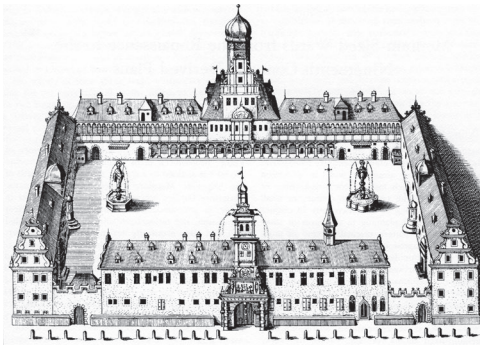
ORGANISATION & DISTRIBUTION OF ACTIVITIES



Kommunehospitalet in bird's eye perspective, Print in Illustreret Tidende, 1863
Source: 'Københavns Hospitalsvæsen 1863-1963'

1. administration / operating theatre / church
2. wards for female patients and staff rooms
3. wards for male patients and staff rooms
4. kitchen building and staff rooms
5. machine building with steam boiler
6. bath building (showers and Russian baths)
7. laundry building and staff rooms
8. stable building and staff rooms
9. ice building
10. cell building (for the mental sick)
11. epidemic building
12. mortuary and chapel
13. house for the upper surgeon
14. house for the hospital director
15. garden area

COMPARATIVE ANALYSIS:

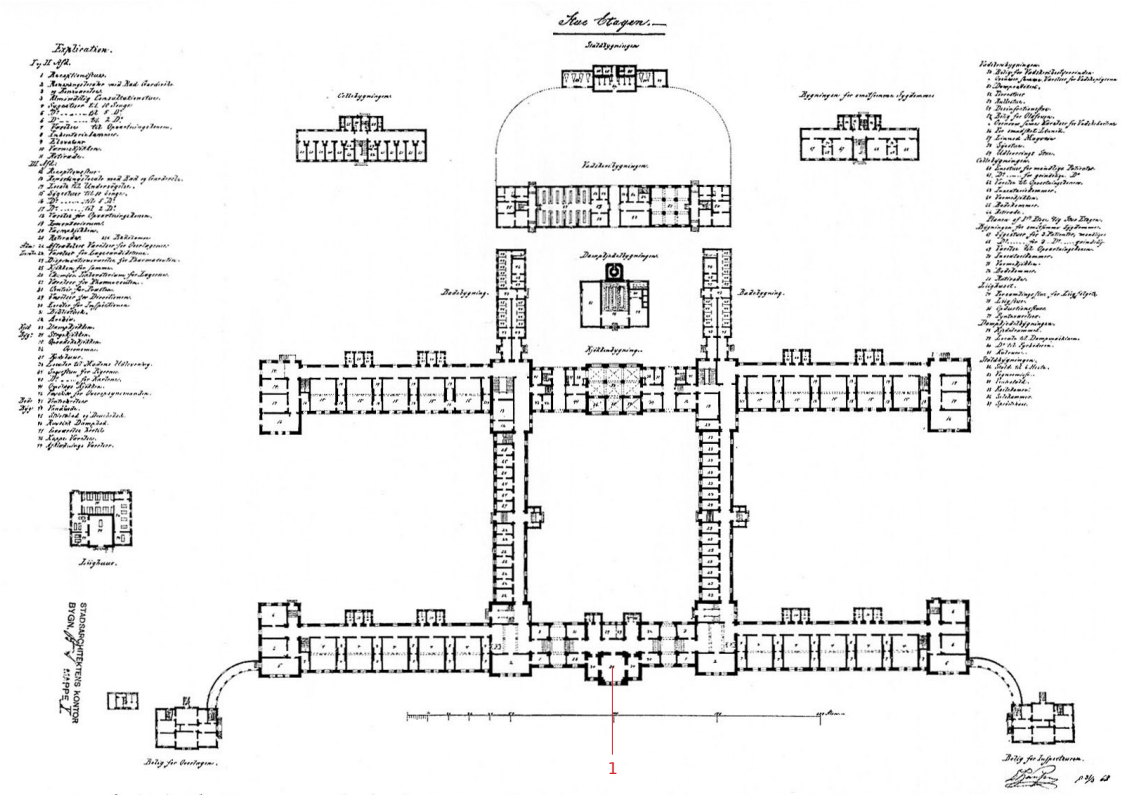


The first Julius Hospital, Wurtsburg, Germany (1576-85)
Source: 'The Hospital: A Social and Archiectural History'

The symmetrical main building was divided into two parts; one for women and one for men. It had a total of approximately 800 beds; 60 rooms with 10 beds, 24 rooms with 5 beds, 9 rooms with 2-3 beds and 36 single bedrooms. Rooms were oriented towards the same side - towards the sunlight. Access was through a corridor. On the other side of the corridor there were toilets and service facilities. In the two main wings, smaller rooms for the personnel were placed inbetween the larger 10 bed wards.

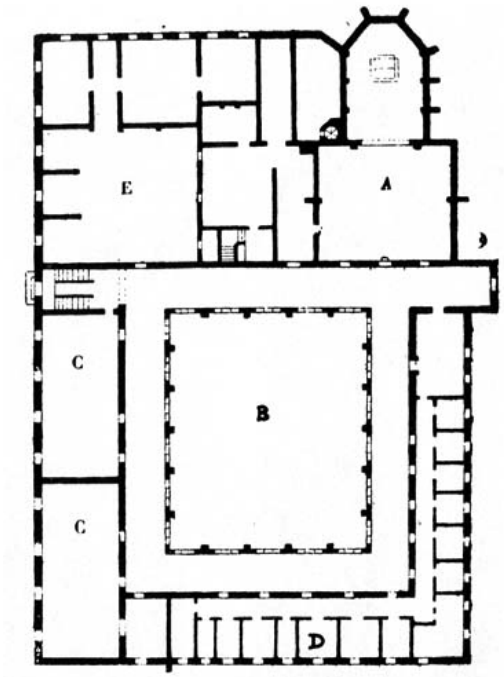
The hospital had three departments; medical, surgical and one for venereal diseases and skin diseases. Administration, the operation theater and the hospital church were to be found in the middle of the main building. Kitchen, laundry, bathing facilities and machinery were placed in the smaller buildings in continuation of the main building. Opposite the main building (on the lake side) were the stables. The two smaller separate buildings at the back were for patients with infectious diseases and insane patients and/or epileptics. The two small buildings at the front were for the hospital director and the chief surgeon. The only building not part of the symmetrical plan was the morgue – to the left. In the middle of the complex was a garden.

The organisation and distribution of the activities was determined by the hospital committee, who in a report from 1855 also made it clear, that they were looking for a hospital like those built in Germany. They probably meant Bethanien in Berlin (1847). The architect's work was thus subject to the ideas of the hospital committee.

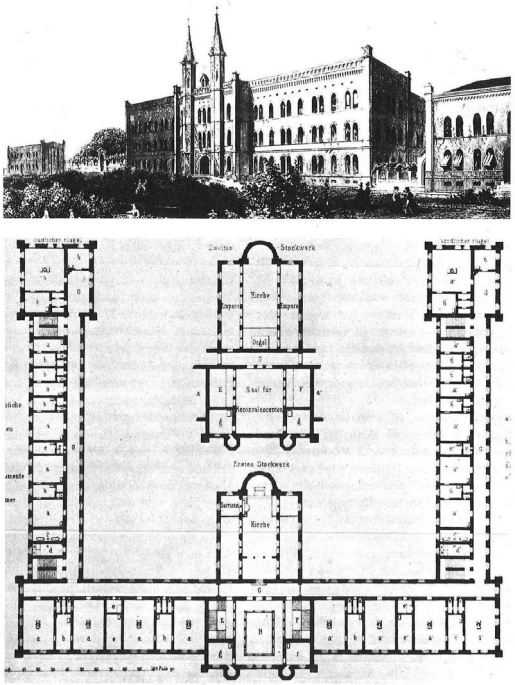


Kommunehospitalet, Ground Floor, Drawing by Christian Hansen, 1862
Source: ‘Københavns Hospitalsvæsen 1863-1963’ (Original at Stadsarkitektens Direktorat)

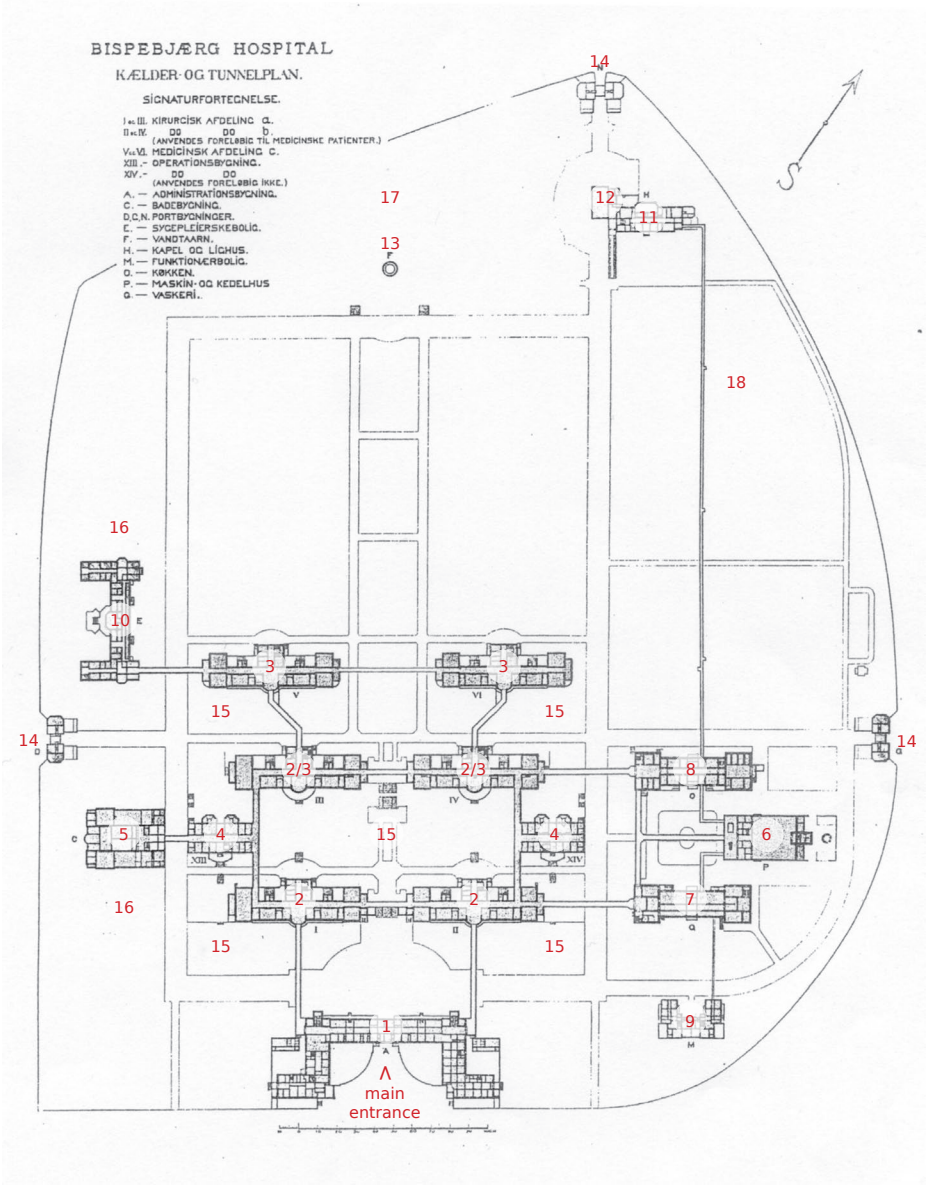
COMPARATIVE ANALYSIS:



Kuës, Hospital, 1447
Source: ‘A History of Building Types’



Bethanien Hospital, Berlin, 1847, by Persius & Theodor Stein
Source: ‘Kommunehospitalet og Preussen’, Arkitekten



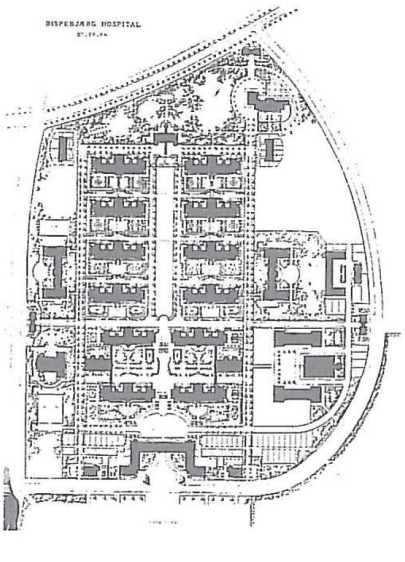
Bispebjerg Hospital, Drawing of Basement and Underground Transport Corridor, 1913
Source: Architekten, Bind XVI, 1913-1914

1. admission, administration and staff rooms
2. pavillion - wards for surgical patients
3. pavillion - wards for medical patients
4. operation building
5. bath building (i.a. baths, light treatment)
6. machine building with steam boiler
7. kitchen building
8. laundry building
9. house for administrative staff
10. nurse building (housing area for nurses)
11. pathological institute and mortuary
12. chapel
13. water tower
14. gate building
15. garden area
16. tennis courts
17. recreative landscape park area
18. nursery (i.a fruit trees)

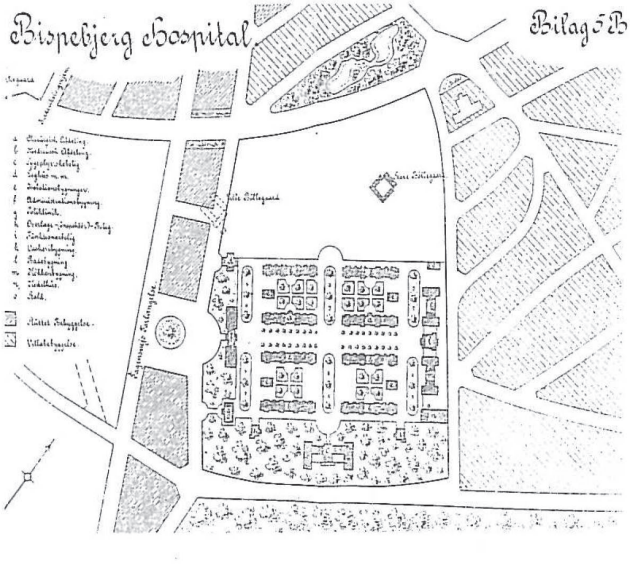
The pavilions were placed in a park-like setting. The green surroundings together with open-air shelters and verandas were not only used for recreation, they were part of the treatment.

When the hospital opened it had 6 ward pavilions with a total of 624 beds. The intention was, that 6 extra ward pavilions could be added when desired. Each pavilion had two stories. And each story had 52 beds spread across 2 rooms with 16 beds, 2 rooms with 6 beds, 2 rooms with 3 beds and 2 rooms with 1 bed. On each floor there was a patient living room and a veranda.

The hospital had three departments; two medical and one surgical. Administration, kitchen, laundry, bathing facilities, machinery, and facilities for the personnel were placed in separate build-



Bispebjerg Hospital, Drawing by Martin Nyrup, 1907
Source: 'Et hjem for de syge' (Københavns Stadsarkiv)



Bispebjerg Hospital, Drawing by Ludvig Fenger, 1903
Source: 'Et hjem for de syge' (Københavns Stadsarkiv)

ings situated around the ward pavilions. Where before nurses had lived either amongst patients (as was the case at Kommunehospitalet) - or in separate rooms under the attic - the nurses at Bispebjerg hospital had their own private building for the first time in history.

The choice for a pavilion plan was - like in the case of Kommunehospitalet - made by the hospital committee. The corridor system used at Kommunehospitalet was considered impractical. In the pavilion plan underground tunnels were used for the transportation of i.a. patients. Since the 1870s, the pavilion plan had also been applied to other municipal hospitals. It was thus well known to the hospital committee. The difference between the site plan of Fenger and that of Martin Nyrup was primarily their respective orientation.

COMPARATIVE ANALYSIS:

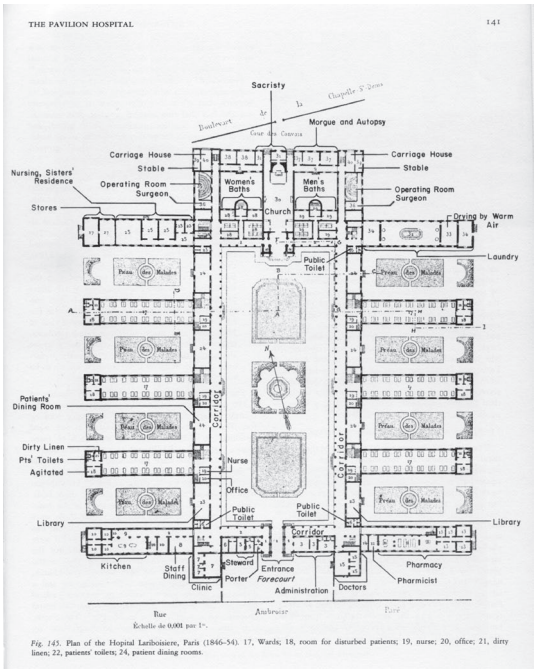
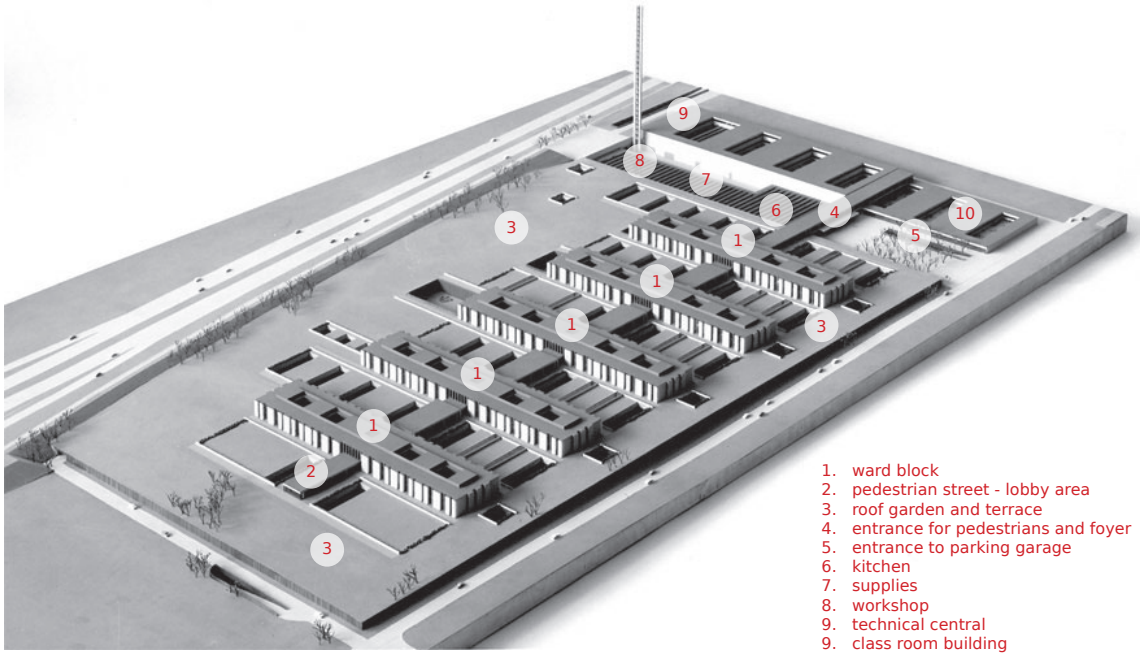


Fig. 145. Plan of the Hopital Lariboisiere, Paris (1846-54). 17, Wards; 18, room for disturbed patients; 19, nurse; 20, office; 21, dirty linen; 22, patients' toilets; 24, patient dining rooms.

Hospital Lariboisiere, Paris (1846-54)
Source: 'The Hospital: A Social and Archiectural History'

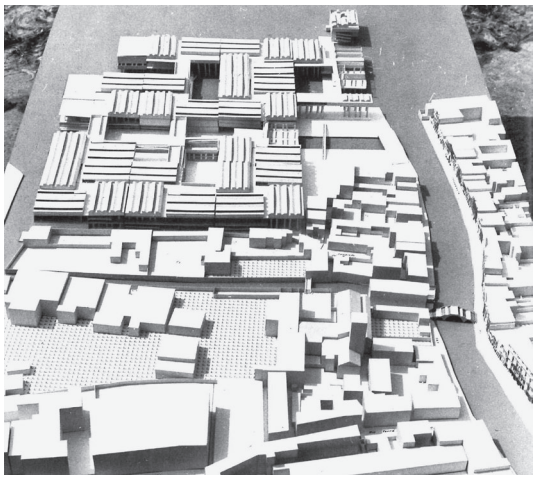


1. ward block
2. pedestrian street - lobby area
3. roof garden and terrace
4. entrance for pedestrians and foyer
5. entrance to parking garage
6. kitchen
7. supplies
8. workshop
9. technical central
9. class room building

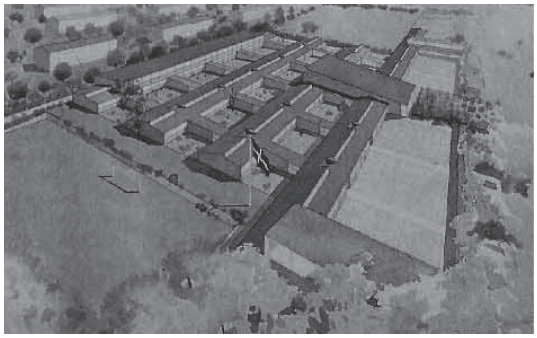
Hvidovre Hospital, Model, 1968
Source: Hvidovre Hospital Archive

COMPARATIVE ANALYSIS:

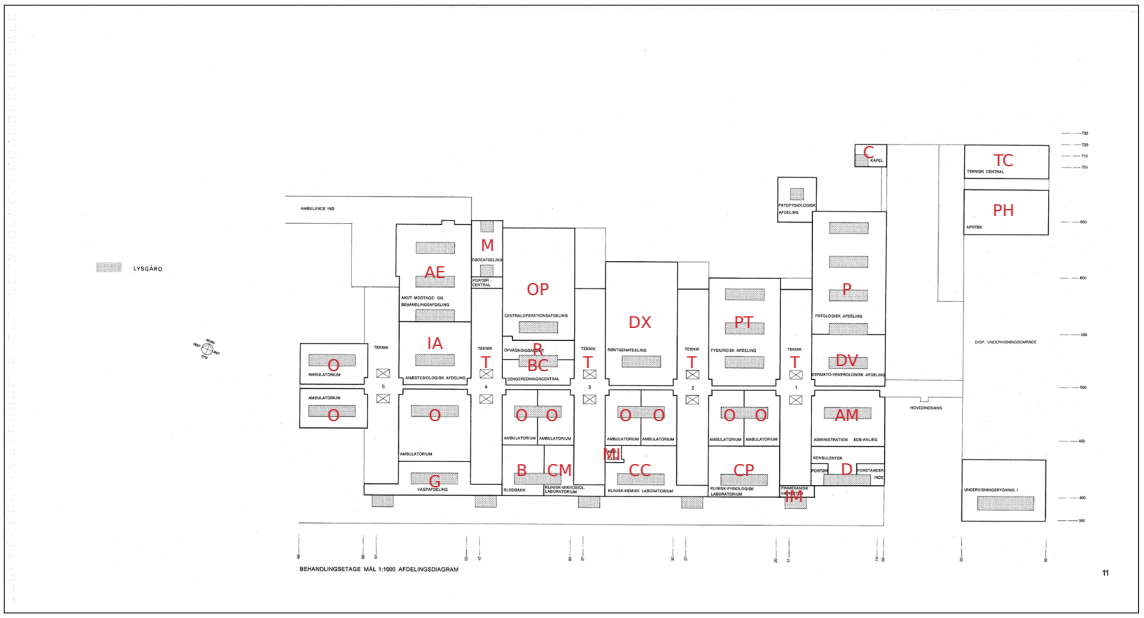
Bispebjerg Hospital, Plan Drawing, 1907
Source: 'Københavns Hospitalsvæsen 1863-1963'



Venice Hospital by Le Corbusier, 1964
Source: 'Le Corbusier´s Venice Hospital and the Mat Building ..'



Munkegårdsskolen by Arne Jacobsen, 1948
Source: The Internet



Hvidovre Hospital, diagram of the distribution of facilities on the treatment floor
Source: 'Skitseprojekt april 1968'

AE accident and emergency department
AM administration, management and EDB
B blodbank
BC bed cleaning department
C chapel
CC clinical chemestry department
CM clinical microbiology department
CP clinical physiology department
D offices for consulting doctors
DV dermato-venerology clinic
DX diagnostic X-ray department
G guards
IA intensive therapy unit & anaesthesiology department
IM instruments makers workshop
M maternity department
MI department of medical illustration
O out patients clinic
OP central operating department
P pathology department
PH pharmacy
PT physio-therapy clinic
R recovery rooms - anaesthesiology unit
T technique
TC technical central

While the architect's work on the distribution and organisation of activities at Kommunehospitalet and Bispebjerg Hospital had been subject to the ideas of the hospital committee, this was not the case for Hvidovre Hospital. Due to the fact, that the scheme was the result of an architect competition, the architect had had the possibility to suggest a type that was new to the hospital committee and the official representatives in the jury.

The design aimed at a close geographical connection between the various ward units and the related examination and treatment departments. The ward units were located in five 2-storey ward blocks, each containing about 220 beds spread across 1, 2 and 4-bed rooms. These were situated on top of a single-storey treatment building. Underneath this was a service floor and underground parking garage. Each examination and treatment department was, as far as possible, located below the particular ward, thereby forming a chain of functionally related units, which together constituted the hospital departments. The lower ward floors were linked with a lobby, which contained a number of facilities for patients and personnel, and access to a roof garden. Urbanistic ideas which related to a number of projects.

With the development of the diagnostic apparatus of the 20th century the planning of Hvidovre Hospital became far more complex than Bispe-bjerg Hospital or Kommunehospitalet. The development of the scheme was therefore done in a close cooperation between architects, technicians, hospital planners, and hospital user groups formed by 'Københavns Hospitalsvæsen'.

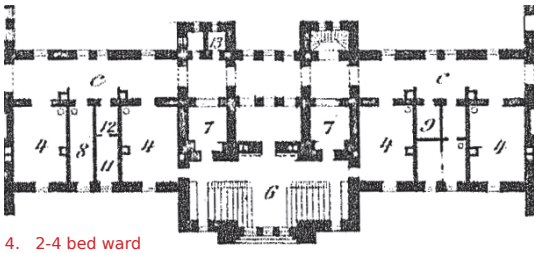
PROPOSITION ABOUT THE ROLE OF THE ARCHITECT IN THE DECISION-MAKING PROCESS

The historical study of the patient areas show how hierarchies and class issues have been translated into the hospital domain in e.g. the seperation of rich and poor people. The position of the nurse within the hospital scheme was in the same way related to economic and political developments within society but also to gender issues; female emancipation, the development of the nurse profession and their struggle to gain power within the institutional system. The staff hierarchy which is to be read from all of the plan drawings and sections extended beyond that of the doctor-nurse relationship. Another issue was the position and identity of the patients who historically went through a transformation from being perceived as ‘material’ to ‘patient’ (and medical case) to finally an equal ‘human being’. While all these social relationships might be easy to read from the drawings, seems as if none of it was addressed specifically by the architects or the clients. Whether the social aspect of the architectural scheme was up for discussion in the decision making process is therefore uncertain.

THEMATIC CATEGORY:

SOCIAL RELATIONS

HIERARCHY, POWER & BONDING



4. 2-4 bed ward
6. operating theatre
7. bandage & instruments
8. bureau
9. visitation room
11. nurse bedroom
12. inventory room for nurses

Kommunehospitalet, Main Building, First floor, 1862
Source: Det Kongelige Bibliotek

Presentation of a 'hysterical case', 19th Century
Source: Københavns Stadsarkiv - 'udstillingsmateriale'

Kommunehospitalet, Operating Theatre, First floor, 1863
Source: 'Københavns Kommunehospital 1863-1913'

'Theodor Billroth Operating', by A.F.Seligmann, Austria, 1899
Source: The History of Medicine Topographical Database

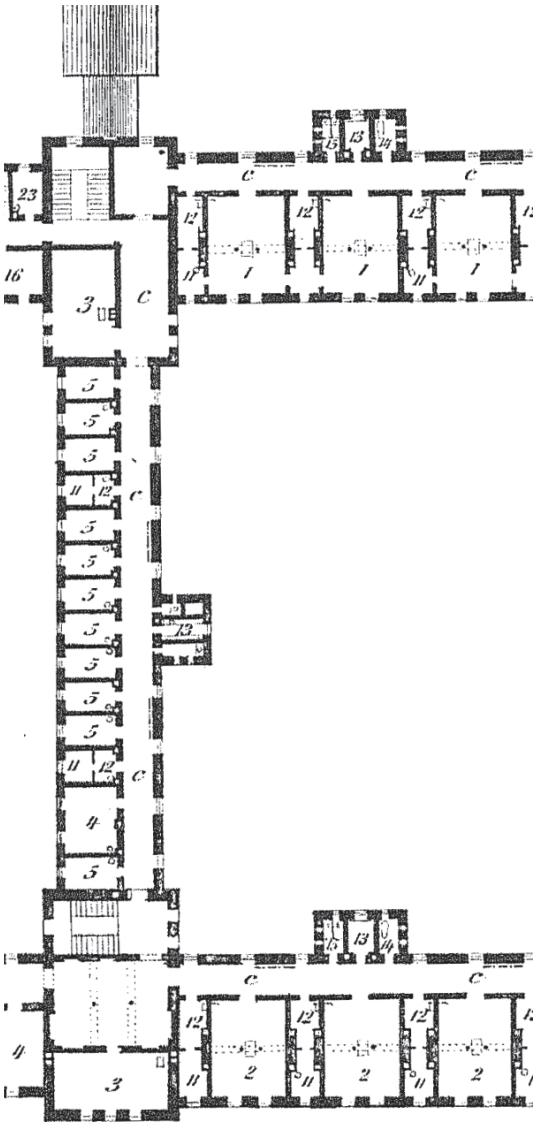
The time within which Kommunehospitalet was built was marked by social anxieties. Home industries and small-scale farming were threatened by mechanisation and industrialisation. Work could be found in factories in the city, but there was no social security should one become unemployed, handicapped or sick. In addition, the migration of people moving from the countryside to the city meant that families could not help each other. Homeless people, orphan children, prostitutes, beggars, thieves and human degradation was thus part of the daily life in the city. This was of great concern for many people, which led to social initiatives, rules and regulations. If you look at Kommunehospitalet from the perspective of these social relationships you suddenly see how it - in its spatial distribution – was governed by the need for control and supervision. Hierarchy and class issues were also expressed in the segregation of people. So was the hospital a gated community which could only be accessed during visiting hours. Men and women were kept apart. The staff was distributed in accordance with rank and seniority. Patients were grouped in relation to how much they could pay for their visit, which in reality meant that richer people could get more privacy and care. And while the patients were there, they would be supervised by nurses, if they were not subject to the medical observation by the doctors. But where did this leave the architect? Could the spacious kitchen and laundry room with its beautiful cross vaults and daylight, for example, be seen as a social gesture? A token of awareness that these people were seen and appreciated - at least by the architect? It is a possibility.

Kommunehospitalet, Consultation in single bed room, 19th C
Source: Det Kongelige Bibliotek

Kommunehospitalet, Ward nurses in hospital corridor, 19th C
Source: Medicinsk Museion

Kommunehospitalet, 10-bed ward, 1897
Source: Medicinsk Museion

Kommunehospitalet, 6-bed ward, 19th Century
Source: Medicinsk Museion



Kommunehospitalet, First florr, 1862
Source: Det Kongelige Bibliotek

1. 20-bed ward
2. 10-bed ward
3. 5-6 bed ward
4. 2-4 bed ward
5. single room

---

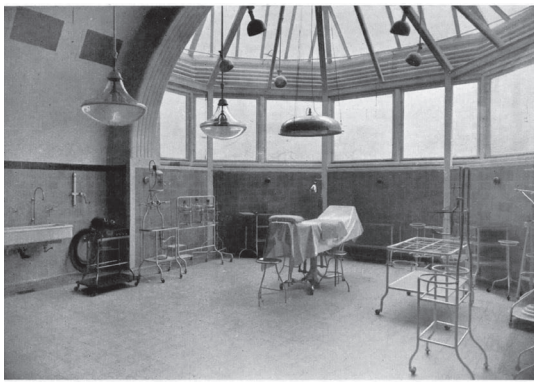
11. nurse bed room
12. nurse inventory room
13. small kitchen
14. bath room
15. pissoir and toilet

---

c. corridor

ground level:
1. photographer
2. examination room
3. waiting room
4. room for the doctor
5. archive
6. toilets
7. bath
8. stock
9. wardrobe
10. staircase
11. service
12. loggia
13. thoroughfare
c. corridor

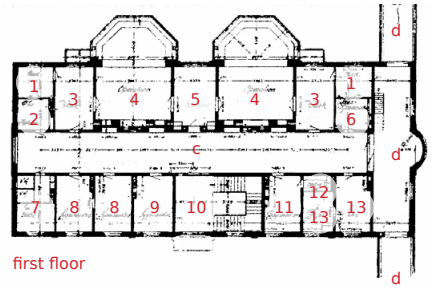
first floor:
1. bath
2. tea kitchen
3. sanitation room
4. operating theatre
5. narcosis
6. wardrobe
7. toilets
8. patient room
9. chief physician
10. staircase
11. preparation room
12. stock
13. nurse room
c. corridor
d. connecting corridor

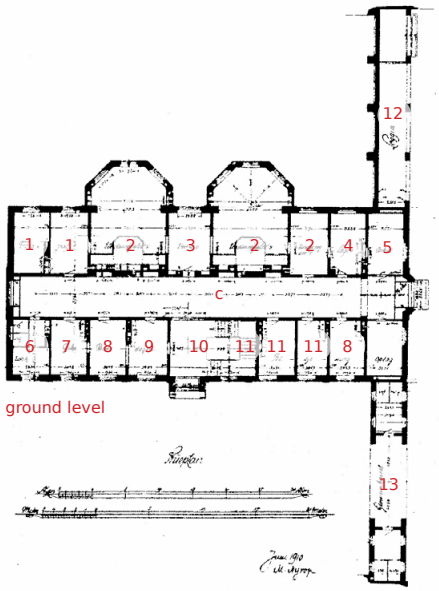


Bispebjerg Hospital, Operating Theatre, around 1913
Source: Publication found at Medicinsk Museion

Bispebjerg Hospital, Operating Theatre, 1914
Source: Medicinsk Museion

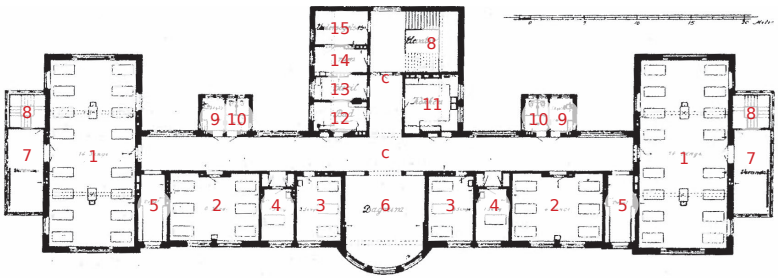
Bispebjerg Hospital, Bed Trolley, around 1913
Source: Publication found at Medicinsk Museion





Bispebjerg Hospital, Plan Operation Building, 1913
Source: Architekten, Bind XVI, 1913-1914

While Kommunehospitalet was the first place to admit women for a practical education in nursing, the first 'real' nursing school was founded at Bispebjerg Hospital in 1913. These nurses were all women. With Florence Nightingale as a role model women of all backgrounds found a career path in nursing. Their primary task was to support the (male) doctors in their work, to govern the execution of the treatment, but nursing was also a discipline in its own right, where a certain amount of skills were required. The struggle for recognition within the hospital organisation had led to the formation of the Danish Nurses Organisation in 1899, which was informed by the Danish Society for Women addressing females' right to vote and work on the same terms as men. The doctor - nurse relationship was thus informed by politics and gender issues. But nursing was



pavillion plan:
1. 16-bed ward
2. 6-bed ward
3. 3-bed ward
4. single room
5. depot
6. living room for patients
7. porch
8. staircase
9. rinsing room
10. toilets
11. kitchen
12. bath room
13. room for sterialisation
14. meeting room
15. nurse room
c. corridor

Bispebjerg Hospital, Pavillion, Ground Floor, 1913
Source: Architekten, Bind XVI, 1913-1914

Bispebjerg Hospital, Food delivery Car, around 1913
Source: Publication found at Medicinsk Museion

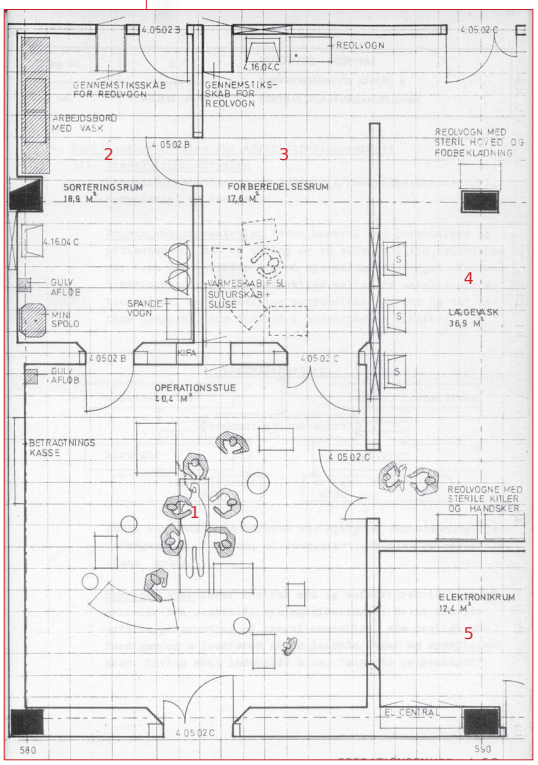
Bispebjerg Hospital, Living Room for Patients, around 1913
Source: Publication found at Medicinsk Museion

Bispebjerg Hospital, Post Card of Hospital Ward, 1920
Source: Medicinsk Museion

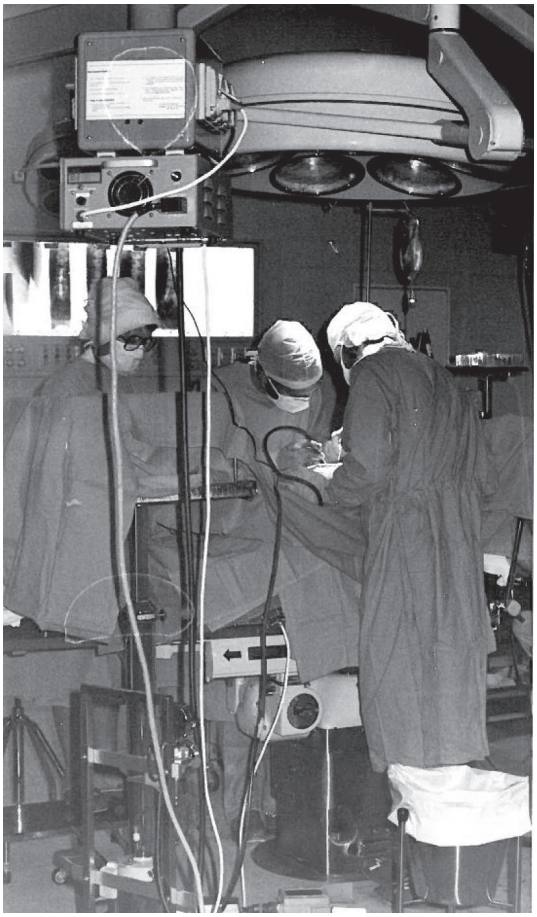
Bispebjerg Hospital, Hospital Ward, 1920s
Source: Det Kongelige Bibliotek

not only a job, it was a vocation. As a token of status the nurses at Bispebjerg Hospital got their own recidence instead of having to sleep on the wards. However, highest in the hospital hierarchy were the doctors. The pavilion structure made it possible that each speciality could cultivate their own territory. Lowest in the hierarchy were the patients, who in the world view of the newly established ‘Medical Science’ were seen as ‘medical bodies’. Their lack of individuality found a counterbalance in the architecture, as there was a living room, verandas, and a garden, which was accessible from the wards. That the living room was communal to all patients could be read as an indication of the democratic tendencies in society, which had led to a parliamentary system in 1901. The veranda next to the 10-bed ward might have been informed by the same social ideas.

Hvidovre Hospital, Central Surgical Department, 1968
Source: 'Skitseprojekt april 1968'



Hvidovre Hospital, Operating Theatre, 1968
Source: 'Funktionsanalyse vedr. Centraloperationsafdelingen'

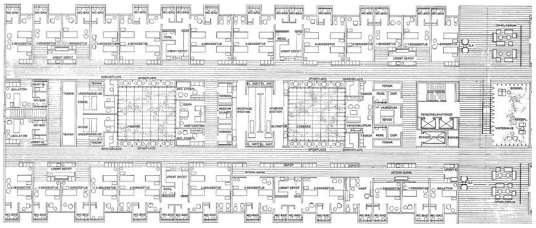


Hvidovre Hospital, Operating Theatre, 1970s
Source: Hvidovre Hospital Archive

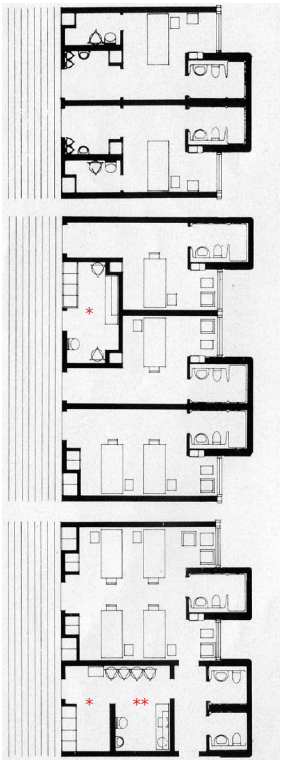
1. operating theatre
2. sorting room
3. preparation room
4. sanitation room for doctors
5. electronic equipment

Hvidovre Hospital, Recovery Room,1970s
Source: Hvidovre Hospital Archive

The social reforms that started in the mid-19th century with the incorporation of Paragraph 89 into the constitution - the maintenance right - continued into the 20th century. While health insurance funds had been introduced in 1870, 'Socialreformen' in 1933 made health insurance compulsory, and in 1973 Denmark got public health insurance, which meant that people - no matter their background, income or class - were to be taken care of. That the patient population in the municipality of Copenhagen grew rapidly from 1863 to 1976, when Hvidovre Hospital was inaugurated, was thus not only due to advances in medical treatment, it was also the result of social politics. People suddenly had the possibility to be treated on government money. Having a large turnover and the need for a certain efficiency, hospitals like Hvidovre Hospital were

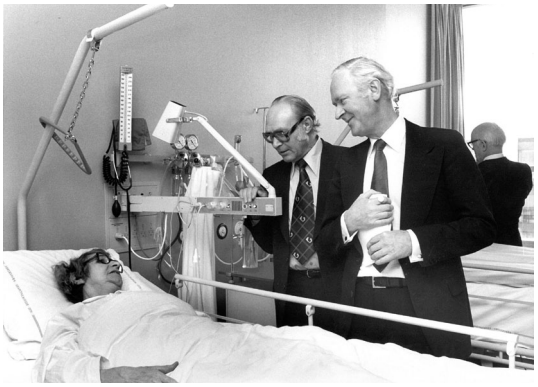


Hvidovre Hospital, Hospital Ward, First floor, 1968
Source: 'Skitseprojekt april 1968'



Hvidovre Hospital, Groups of beds, Hospital Ward
Source: Special Issue, Tidsskrift for Danske Sygehuse

Hvidovre Hospital, Patient Room, 1970s
Source: Hvidovre Hospital Archive



Hvidovre Hospital, Patient Room, 1970s
Source: Hvidovre Hospital Archive

necessarily approached as if they were large social constructions comparable with neighbourhoods in a city. At the same time, the hospital should work as a 'medical machine'. The values of the prevailing social democratic party dictated that social structures should be invented, which guaranteed the individual a fair share of the control of all institutions that impacted their life - including hospitals. Patients were no longer patients, medical bodies, material or data, they were human beings with equal rights. There would thus be a medical reason to put somebody in a single bedroom and not in a shared. Contrary to Bispebjerg Hospital whose site plan can be seen as a territorial social classification system, the principle at Hvidovre was communality and communication; social democracy in practice.

Hvidovre Hospital, Niche at the Ward Corridor, 1970s
Source: Special Issue, Tidsskrift for Danske Sygehuse

PROPOSITION ABOUT THE ROLE OF THE ARCHITECT IN THE DECISION-MAKING PROCESS

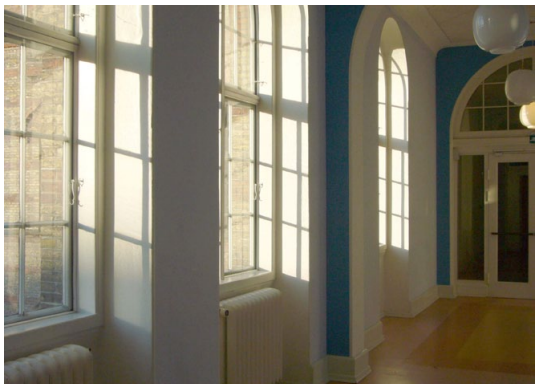
All three hospitals were, at the moment of their inauguration, perceived as something advanced and very modern. The environmental qualities (daylight, fresh water, ventilation, heating), the technical equipment (lifts, gas / electricity, and later modern media), and the service facilities were outstanding. What is more, the architecture of the interior had a certain grandeur and beauty which must have made people (patients, visitors and staff) feel cared for. In all three hospitals, the view towards and access to the exterior gardens were fundamental to the designs. They added a certain poetry and peace to the places. There furthermore is evidence, that they were seen as important - not only by the architects but also by the committee members involved - which confirms that landscape, gardens and parks played an important role in the Danish culture as a place of reconciliation and rest. Besides this, there is no indication that the municipality or the medical professionals interfered in the more experiential side of the architects work in the decision process. On the contrary, it seems, as if they saw this as the architect’s territory.

THEMATIC CATEGORY:

EXPERIENCE

IMAGINATION & MEMORY

Kommunehospitalet, Corridor in the Postnatal Ward, 19th Century
Source: Medicinsk Museion



Kommunehospitalet, Light study, 2014
Source: Own Archive

Kommunehospitalet was built at the time of the great epidemics. It was a means to stabilize the health of the population in the city - to control the unhealthy effects of the industrialised society, and its unhealthy cities. However, what helped people heal at the hospital was not only the medical treatment, - which in the middle of the 19th Century was only at the beginning of its evolutionary phase, - it was as much the hospital environment itself being completely different than the living conditions the patients came from. Kommunehospitalet gave patients access to daylight and green, clean rooms, pure water, outlets, heating, fresh air through an ingenious ventilation system, etc. This was something that not even people from the middle class regularly had access to. In that sense people from all income classes must have experienced it as quite

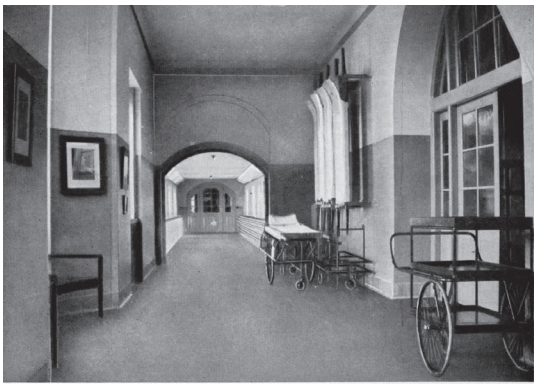
Kommunehospitalet, Inner Courtyard, 2014
Source: Own Archive

Kommunehospitalet, Patient Garden, 19th Century
Source: Det Kongelige Bibliotek

Kommunehospitalet, View from the Inside, 1894
Source: Det Kongelige Bibliotek

extraordinary to come to this palace of care. That it should be pleasant to go to a hospital was not self-evident. Death was not an uncommon outcome of disease, and a contagious hospital environment was to be avoided. It was better to stay at home - and if possible have a doctor visit you there. The ambiance Christian Hansen created with his design for the hospital could be seen as a way to overcome the predisposition in people's imagination - and maybe memory - of hospitals being bad and unpleasant places. From reading Illustreret Tidende printed in 1863 it seems as if he succeeded: "The various rooms are laid out with discretion with regard to their use. The interior is grand and friendly, the exterior simple and serious, the characters that are most suitable for a large hospital". It was "the most beautiful and appropriate hospital in Europe".

Bispebjerg Hospital, Pavilion Corridor, around 1913
Source: Publication found at Medicinsk Museion



Bispebjerg Hospital, Connecting Corridor, around 1913
Source: Publication found at Medicinsk Museion

Bispebjerg Hospital, Pavillion Corridor, 1920s
Source: Det Kongelige Bibliotek

That the Bispebjerg Hospital committee was in favour of a pavilion hospital should be seen from the perspective that doctor Niels Rybjerg Finsen in 1903 had received the Nobel prize for his research into the healing effects of light. The primary reason for a pavilion hospital was thus not the isolation of patients but air and light, something that mattered in a dark and cold climate as the Danish. In her book ‘Notes on Nursing’ from 1860 Florence Nightingale had already described how healing according to her observations and research took place through nutricious food, ventilation, hygiene and sunlight. Ideas which had been incorporated into the design of Kommunehospitalet. The principles for the climatic design at Bispebjerg were not that different. Peace, sunlight, hygiene were seen as an essential part of the patient care. Nyrup added comfort to this

Bispebjerg Hospital, Hospital Garden, 2014
Source: Own Archive

Bispebjerg Hospital, View of the hospital's terrain, around 1913
Source: Publication found at Medicinsk Museion

Bispebjerg Hospital, Nurses in Hospital Park, 1920s
Source: Det Kongelige Bibliotek

list through his hospital furniture design. Another reason to choose for a pavillion hospital was the gardens. Hospital gardens had played a role in many a municipal hospital not only to grow food but as recreational areas. At Bispebjerg hospital the gardens were used by the staff but also by patients. Stays outside were even prescribed as treatment. To Nyrup, the gardens were essential for the well being of all residents to create what he called 'a superior and appealing whole'. Not only should they be beautiful, it should be possible to use them for play, orientation and for promenade. And so did landscape architecture, architecture, and interior design create an artistic and harmonious unity which made people feel at home. As was written in Ugeskrift for Læger in 1913 ''a fine culture and cosy Danish evenness meets the eye both inside and outside".

Hvidovre Hospital, Winter Garden and Staircase in Hospital Lobby, 1975
Source: Hvidovre Hospital Archive

Hvidovre Hospital, Hospital Lobby - Pedestrian Street, 1970s
Source: Hvidovre Hospital Archive

Hvidovre Hospital, View from the Lobby, 1974
Source: Hvidovre Hospital Archive

In the 19th century public attention was mainly directed towards improving the urban environment in the prevention of diseases such as cholera, typhus, yellow fever etc. Doctors, who knew the poor living conditions within the city, played a crucial role in this sanitiation movement. From the 1930s onward the attention was directed towards individuals in the prevention of diseases such as heart diseases, cancer, mental illness, and later AIDS, obesitas etc. The views - and experiences - of the hospitals were thus differently informed. In the time of the inauguration of Kommunehospitalet it was for example still believed, that Miasma - a poisonous mist filled with particles from decomposed matter - caused disease. This also explains the focus on ventilation. In the times of Bispebjerg, ‘the miasmatic theory’ had been fully replaced by ‘the germ

Hvidovre Hospital, The Roof Garden, 1978
Source: Hvidovre Hospital Archive

Hvidovre Hospital, The Roof Garden, 1978
Source: Hvidovre Hospital Archive

Hvidovre Hospital, View into The Patio Garden, 1978
Source: Hvidovre Hospital Archive

theory' of disease. The hospital had become 'a clinic', which also created certain expectations of what it should be like. It also meant that 'the art of medicine' was taken over by 'medical science' which - with the help of modern technology - changed the hospital environment completely. Molecular biology and modern genetics (the discovery of DNA) opened new doors to theories about 'the origin' of disease. There was MRI and CAT scans, artificial pacemakers etc. The importance of a 'natural hospital environment' no longer seemed self-evident in the time of the inauguration of Hvidovre Hospital. The social environment was more the center of attention. However, the prescence of the gardens was very much appreciated. They added a poetry and peace to the 'medical machine' and thereby took part in the humanisation of the hospital.

Drawings and photographs from the following archives:

Bispebjerg Hospital Archive - photographers are unknown
Det Kongelige Bibliotek - photographers are unknown
Gunnar Gundersens personal archive - Gunnar Gundersen probably took some of the photos
Hvidovre Hospital Archive - photographers are mostly unknown, some by Struwing or K. Helmer Petersen
Københavns Stadsarkiv
Medicinsk Museion - Billedarkiv - photographers are unknown
Own archive - own photo registrations

Illustrations and information from the following books, magazines and articles:

‘A History of Building Types’
Author: Nikolaus Pevsner
Published by: Princeton University Press, 1976

‘Arkitekten Christian Hansen’
Author: Ida Haugsted
Published by: Bogværket, 2009

'Arkitekten Martin Nyrup'
Author: Lise Funder
Published by: Foreningen for gamle Bygningers Bevaring, 1979

'Baggrunden for opførelsen af Bispebjerg Hospital'
Autors: Henrik Permin & Peter Wagner
Published in: Dansk Medicinskhistorisk Årbog, 2009

'Bispebjerg Hospital'
Redaction: Holger Rasmussen & Vilh. Clausen
Published in: Architekten, Bind XVI, 1913-1914

'Bispebjerg Hospital i Billeder og tekst'
Author: Arne Faber
Published in: Illustreret Tidende, nr 52, 1913

'Dansk Arkitektur'
Author: Tobias Faber
Published by: Arkitektens Forlag, 1963 and 1977

‘Danske Arkitekturstrømninger 1850-1950’
Author: Knud Millech / Redaction Kay Fisker
Published by: Østifternes Kreditforening, 1951

'Det nye Kommunehospital'
Published in: Illustreret Tidende, nr 205, 1863

'Et hjem for de syge, Etableringen af Bispebjerg Hospital 1900-1913'
Author: Mette Niebuhr
Published in: Architectura 29, 2007

‘Funktionsanalyse vedr. Centraloperationsafdelingen’, 1968
by Krohn & Hartvig Rasmussen
Not published - found at Hvidovre Hospital Archive

'Guide til Dansk Arkitektur, 1'
Author: Jørgen Sestoft & Jørgen hegner Christiensen
Published by: Arkitektens Forlag, 1991

'Hvidovre Hospital'
Author: Gunnar Gundersen
Tidsskrift for Danske Sygehuse, July/August, 1976

‘Kommunehospitalet og Preussen’
Author: Jørn Sestoft
Published in: Arkitekten, 1975, page 156-157

'Kommunehospitalet i København, et analyse eksempel'
Author: Allan de Waal
Published in: 'Arkitekturens Praksis, bidrag til en teori', Borgen, 1974

'København Kommunes Hospital i Hvidovre' (Skitseprojekt april 1968)
Made by: Krohn & Hartvig Rasmussen
Not published - found at Hvidovre Hospital Archive

'Københavns Kommunes Hvidovre Hospital'
Edited by: Krohn & Hartvig Rasmussen
Published by: Københavns Hospitalsvæsen, 1976

'Københavns Kommunes Hospital i Hvidovre'
Edited by: Krohn & Hartvig Rasmussen
Published by: Københavns Hospitalsvæsen, 1973

'Københavns Kommunehospital'
Author: E. Petersen
Published in: 'Fra opvarter til sygeplejerske', Dansk Sygeplejeråd, 1988

'Københavns Hospitalsvæsen 1863-1963'
Author: dr. phil. Sigurd Jensen, stadsarkivar
Published by: Direktoratet for Københavns Hospitalsvæsen, 1963

'Københavns Kommunehospital 1863-1913' / 'Københavns Hospitalsforhold i ældre tid'
Author: a.o. dr. Villads Christensen
Published by: Direktoratet for Københavns Hospitalsvæsen, 1913

'Københavns Hospitalsvæsen 125 år ... i stadig udvikling'
Redaction: a.o. Edith Andersen, Allan Braarvig og Helge Faber
Published by: Københavns Kommune, 1988

'Le Corbusier´s Venice Hospital and the Mat Building revival'
Redaction: Sarkis, Hashim
Published by: Harvard University, Prestel, New York, 2001

'Maskinfabrikken Atlas'
Author: unknown
Arkitekten, nr 7-8, 1952

'Nye Tider, Historicisme i København'
Author: Ida Haugsted
Published by: Nyt Nordisk Forlag Arnold Busck, 2003

'Opførelsen af Hvidovre Hospital'
Film by: Københavns Kommune, 1973

'Oprettelsen af Københavns første egentlige syge-hospital'
Author: Jeanne G. Christiensen, Erik Dauv-Pedersen & Henrik Permin
Published in: Dansk Medicinskhistorisk Årbog, 2001

'Program for opførelsen af et nyt Communehospital'
Found at: Medicinsk Museion

'På hospitalsbesøg i 1863'
Author: Jeanne G. Christiensen, Erik Dauv-Pedersen & Henrik Permin
Published in: Siden Saxo 3, 2002

'The Hospital: A Social and Archiectural History'
Author: John D. Thompson and Grace Golding
Published by: Yale University Press, 1975

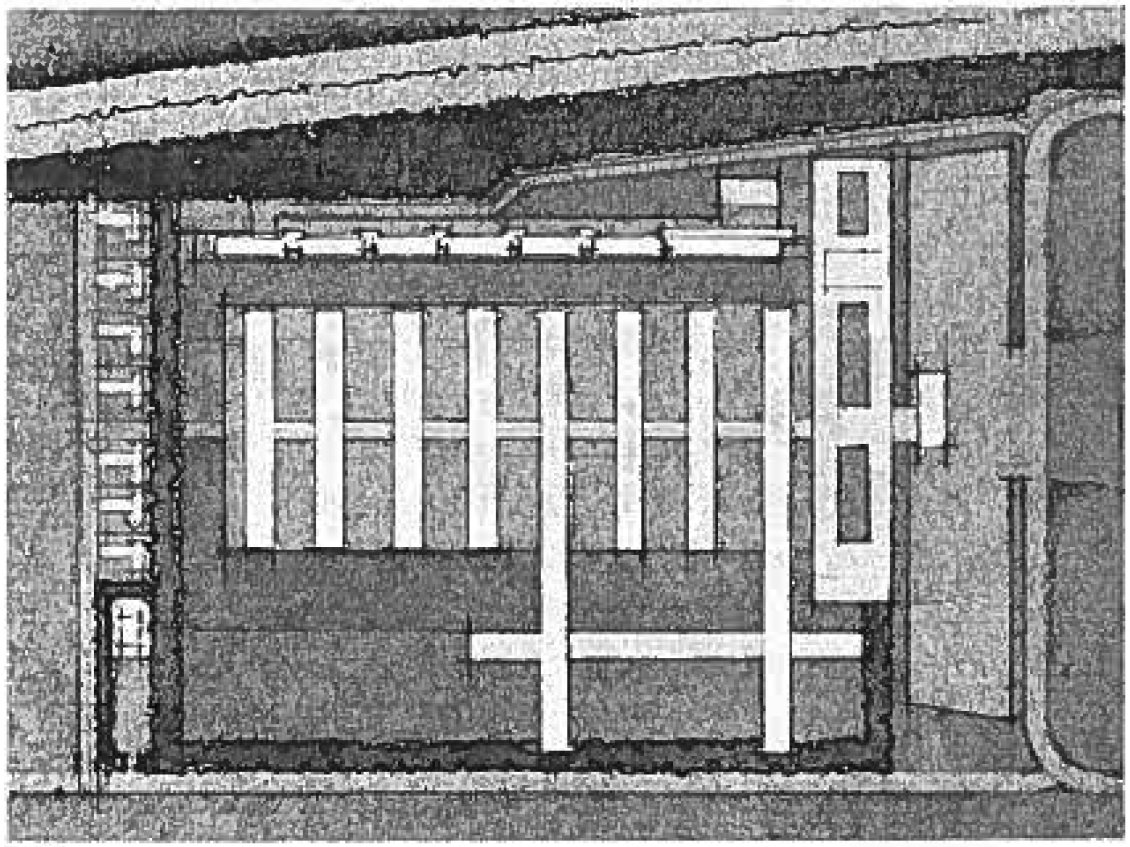
An extended bibliography about Hvidovre Hospital is futhermore to be found in the main text document.
In the above list I only mention where I found the illustrations I use in Appendix B for Hvidovre Hospital

APPENDIX C

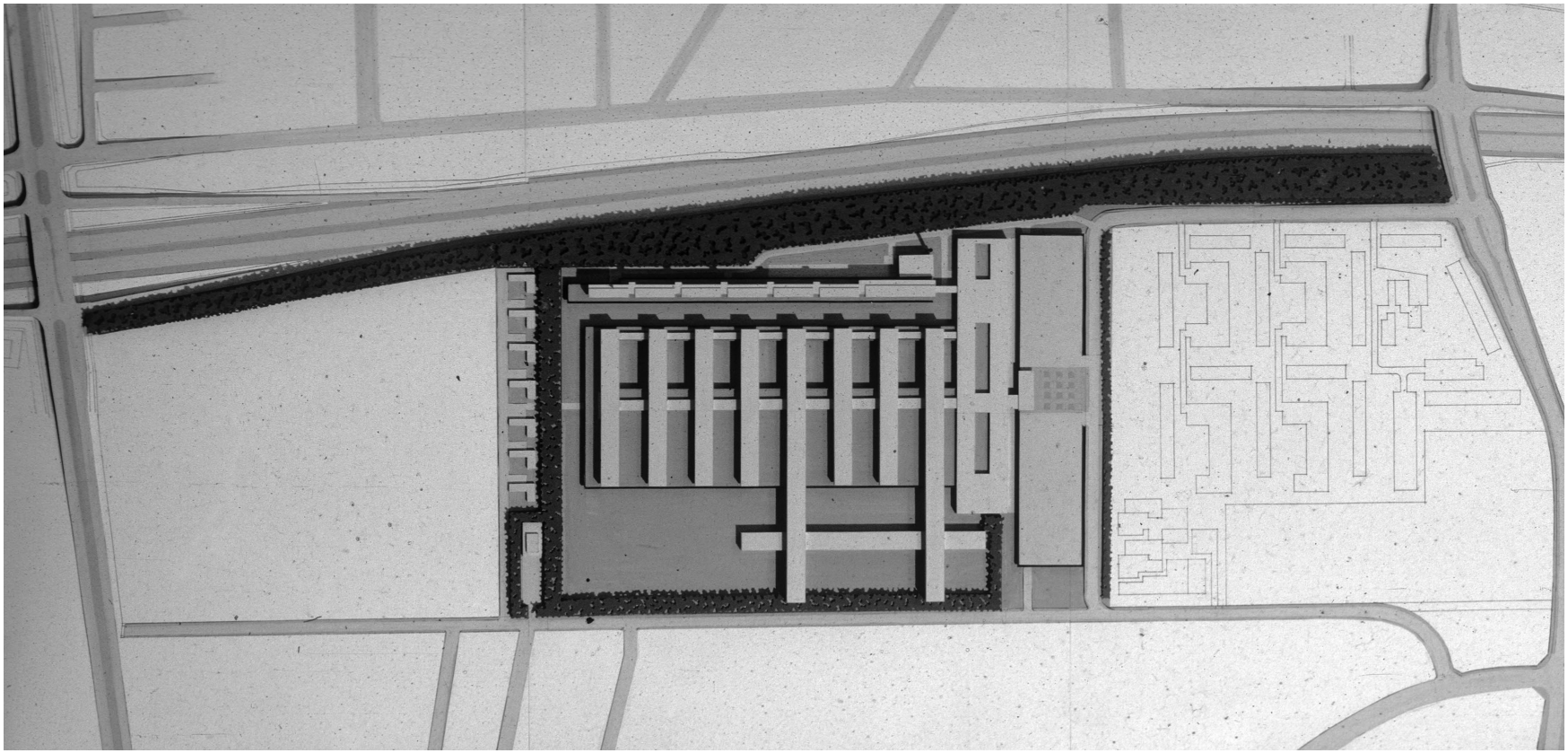
Hvidovre Hospital - 1962 - The Site

Aerial view - Source: The City Archive in Copenhagen

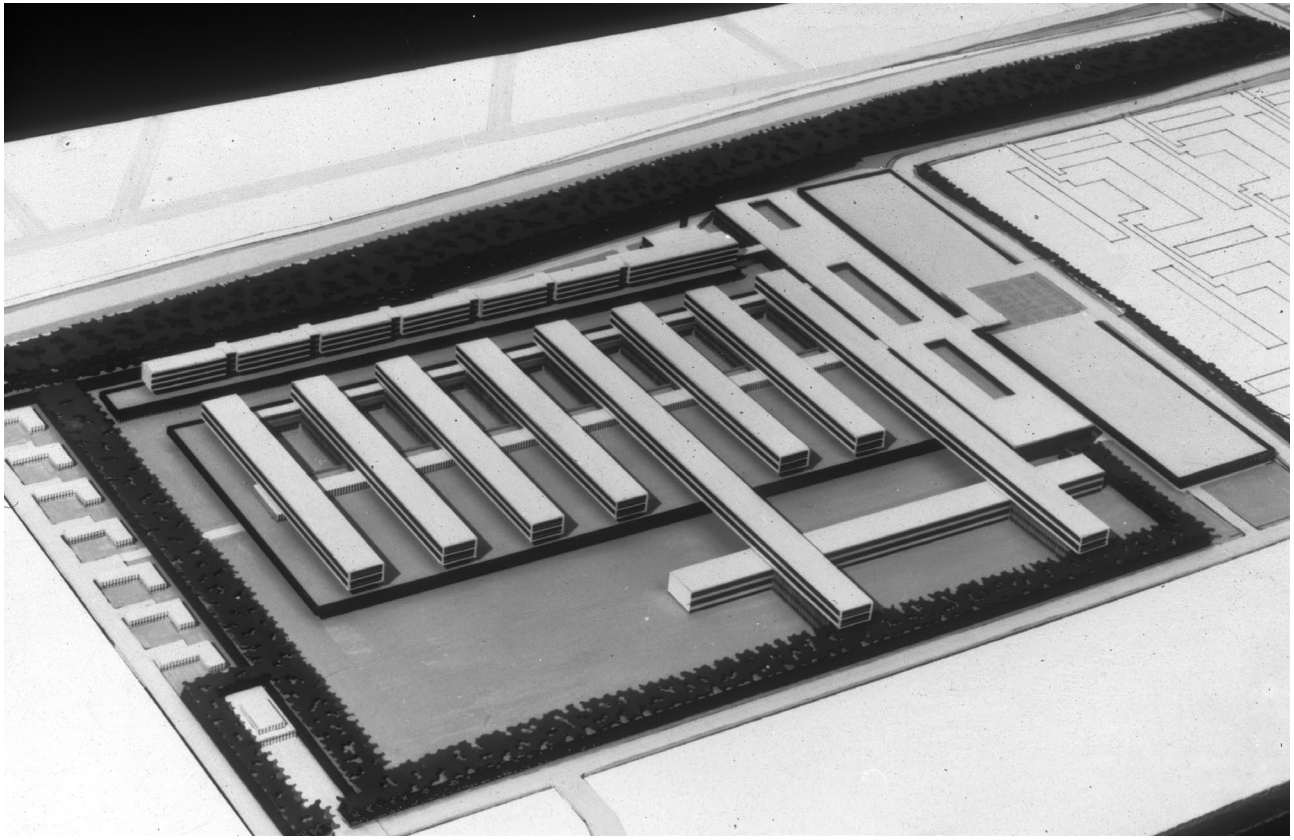
1963
THE COMPETITION PROPOSAL



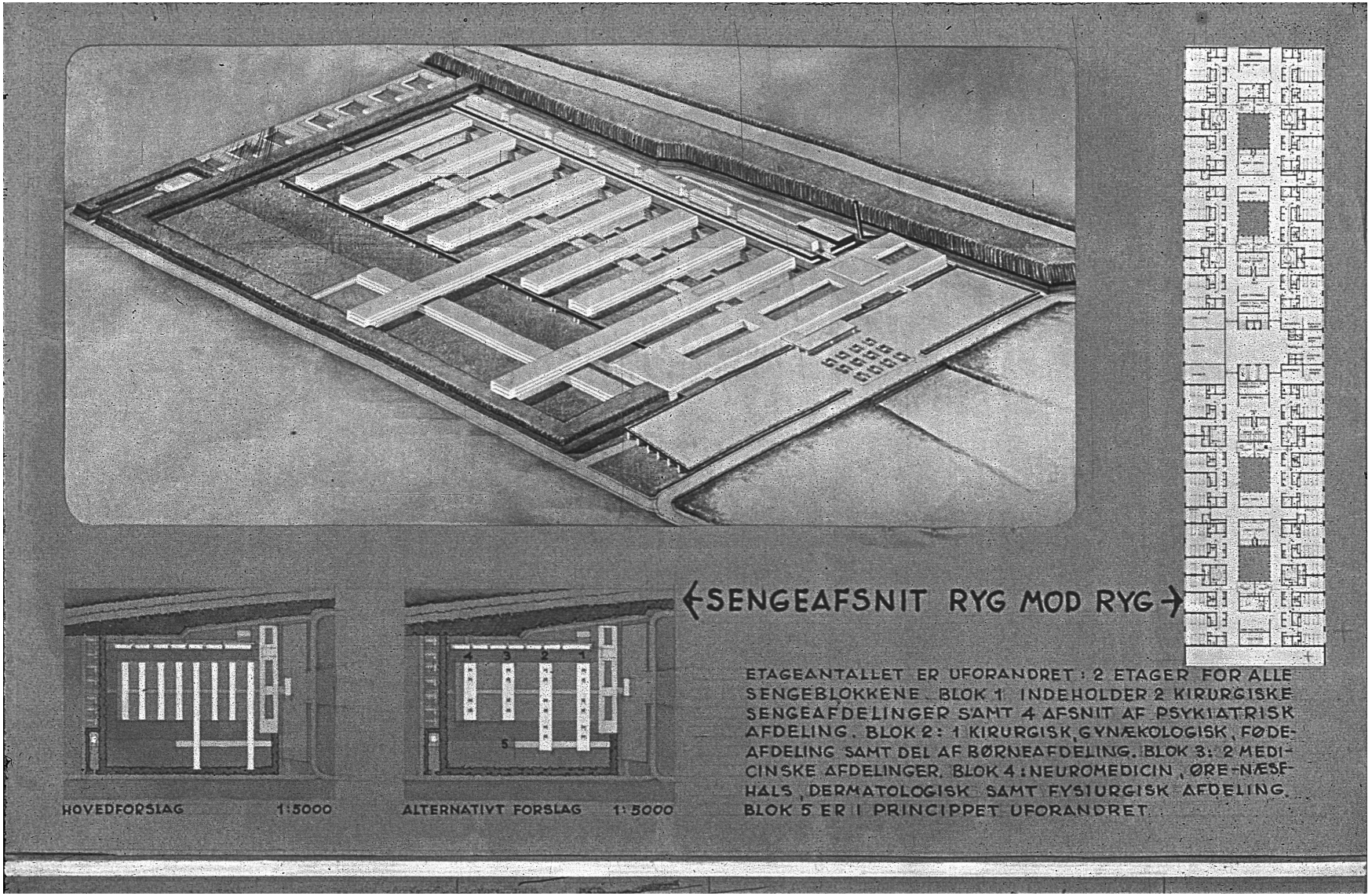
Site plan - Source: Arkitekten, nr 18, 1963, page 337



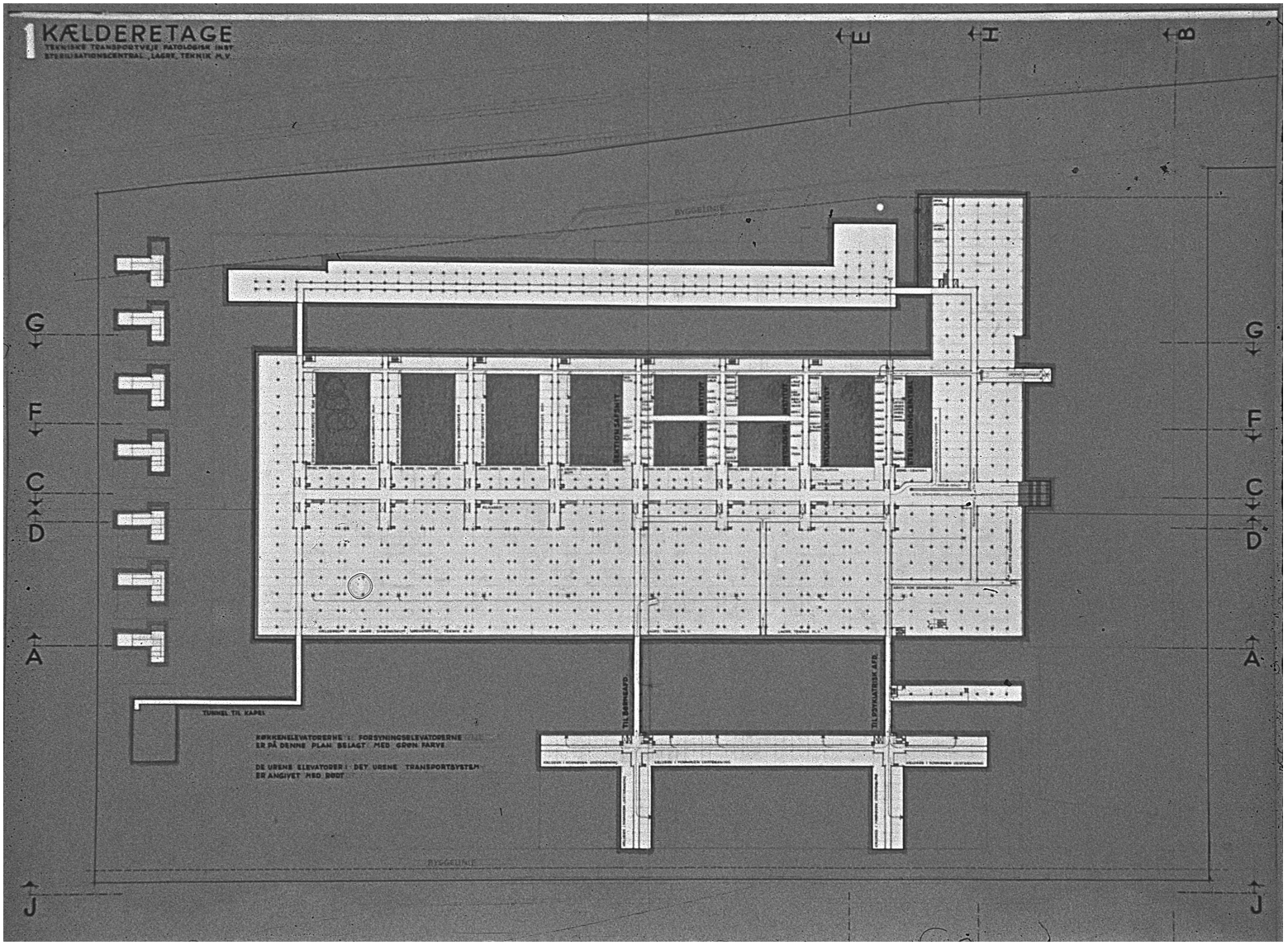
Site model - Source: The private archive of Gunnar Gundersen



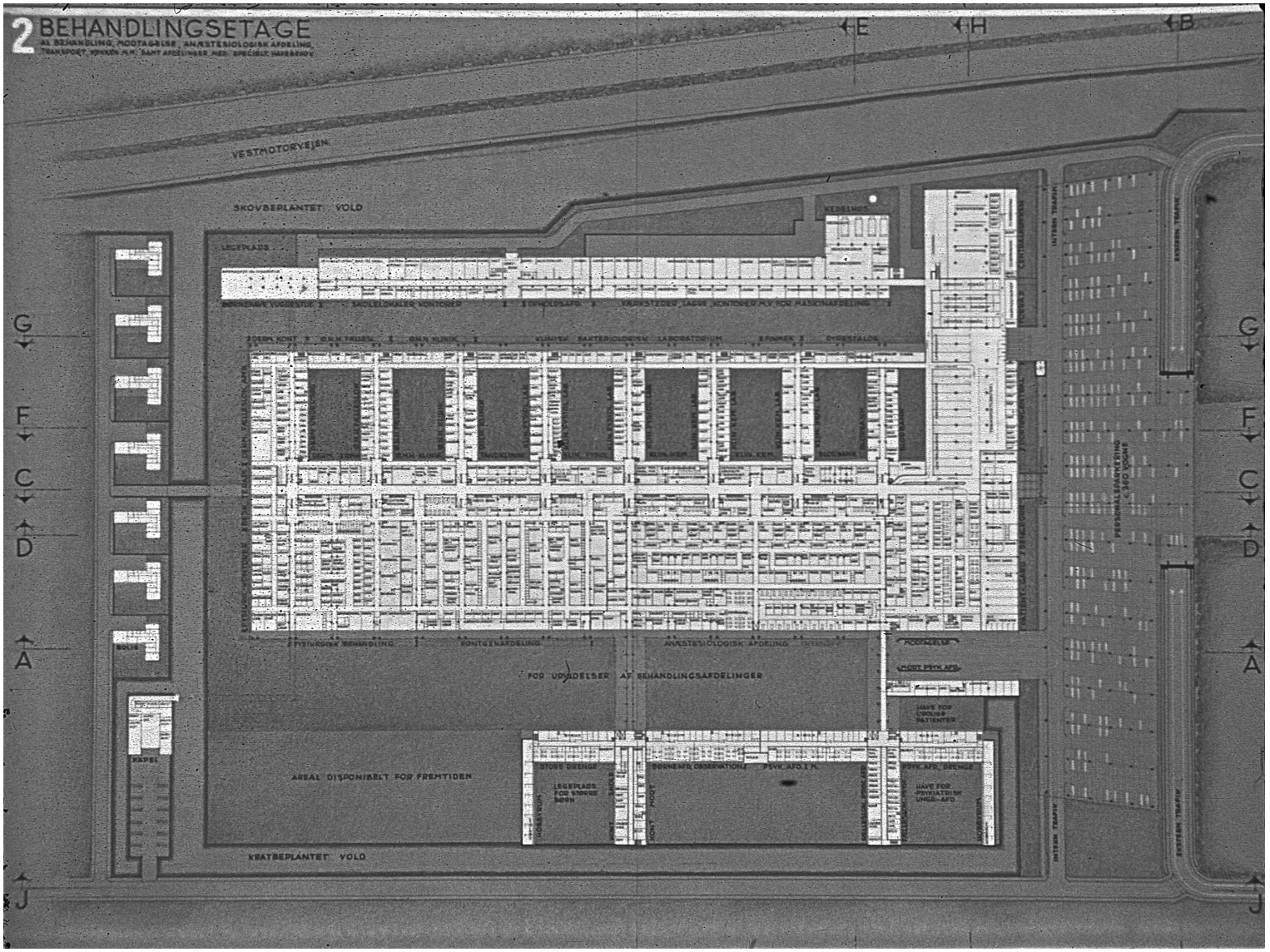
Site model - Source: The private archive of Gunnar Gundersen



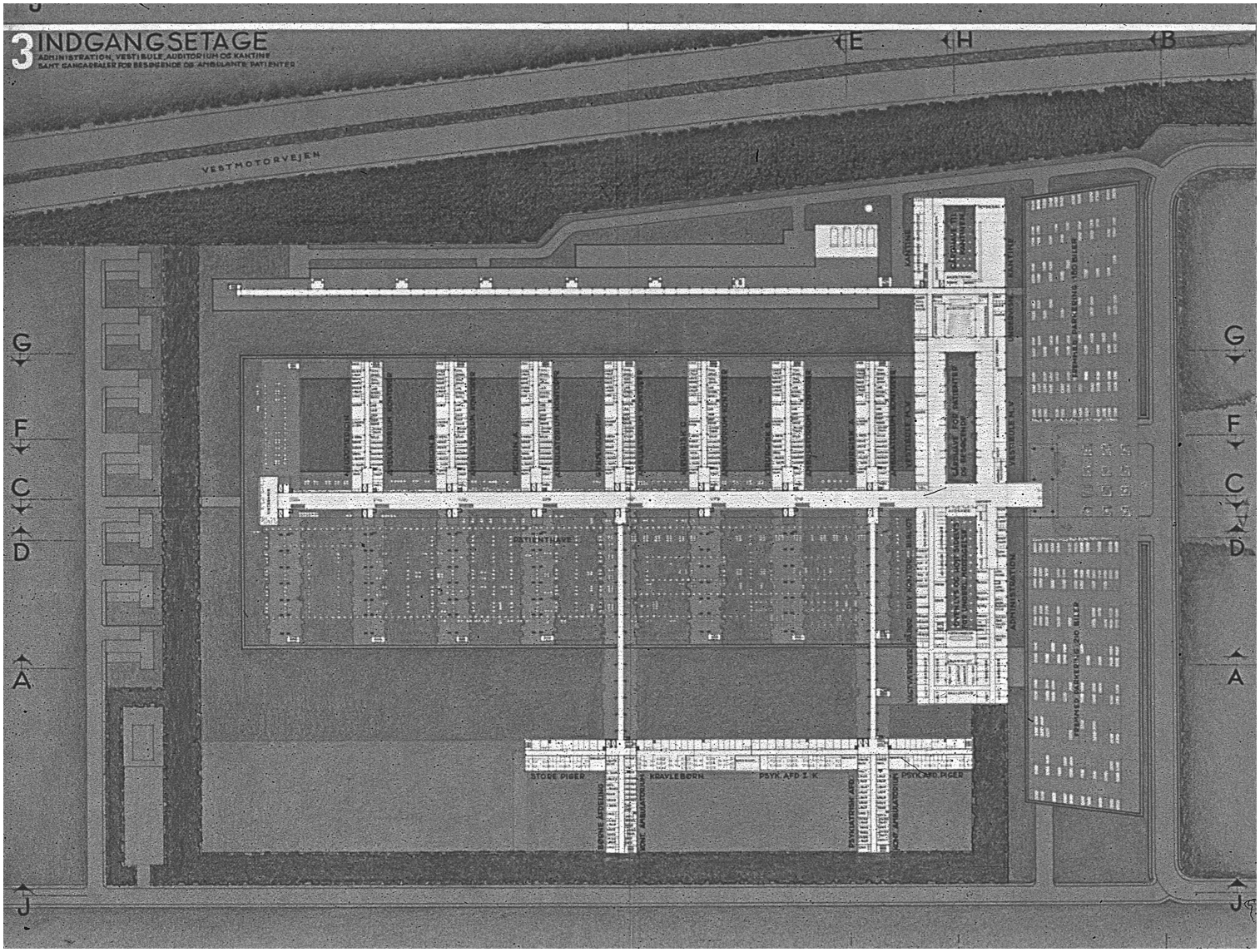
Axonometric - Single corridor & double corridor proposal - Source: The private archive of Gunnar Gundersen



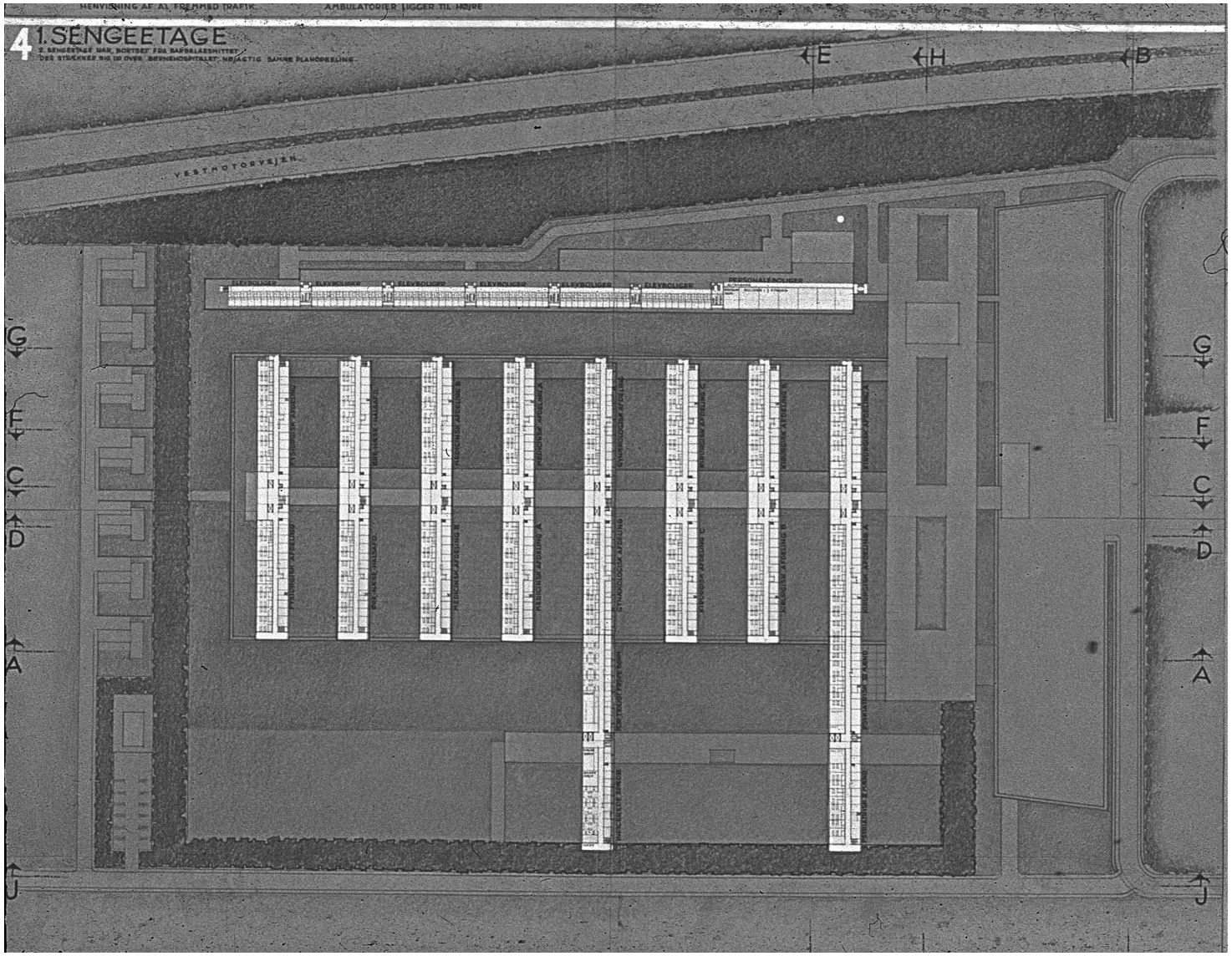
The basement floor - Source: The private archive of Gunnar Gundersen



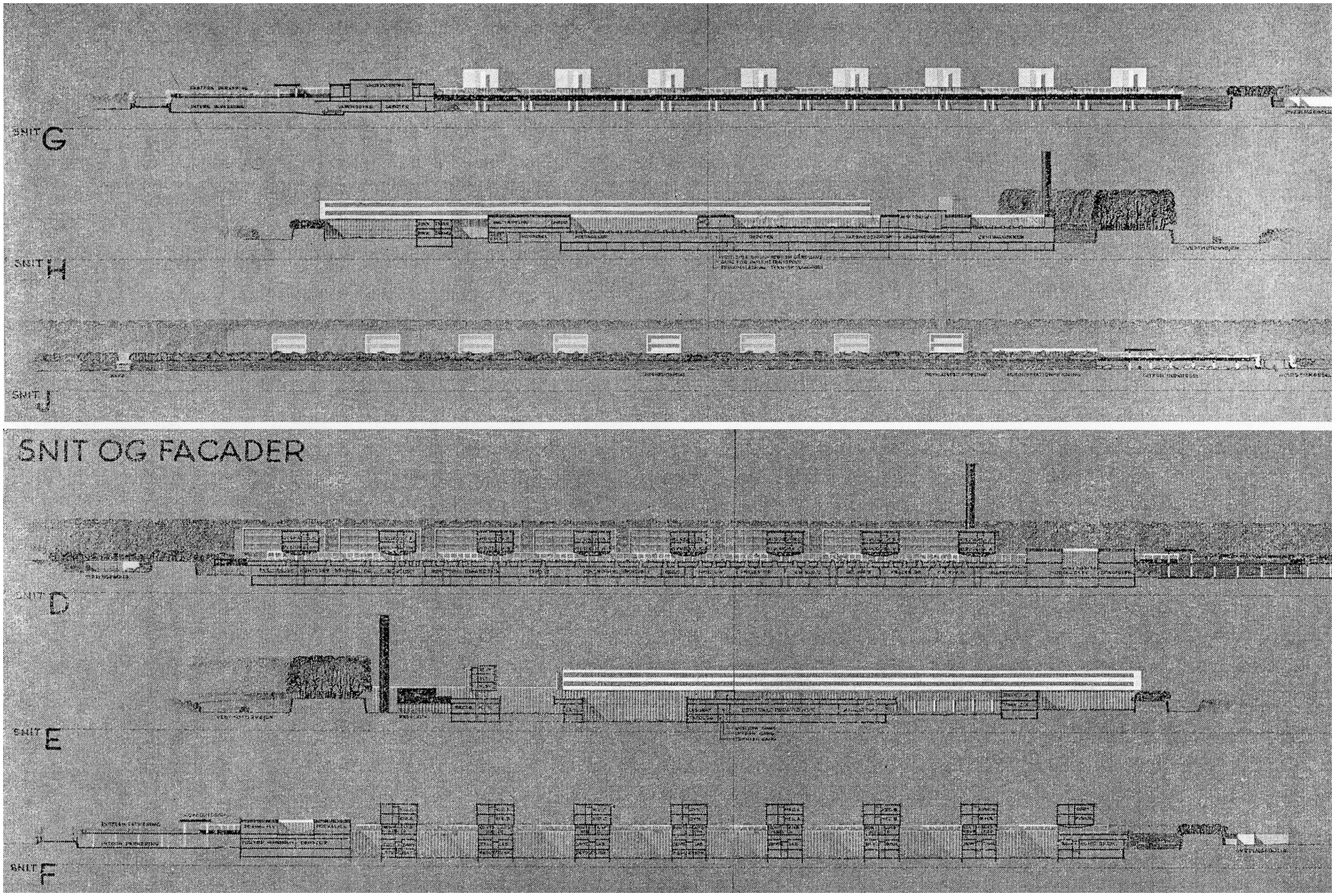
The treatment floor - Source: The private archive of Gunnar Gundersen



The entrance floor - Source: The private archive of Gunnar Gundersen

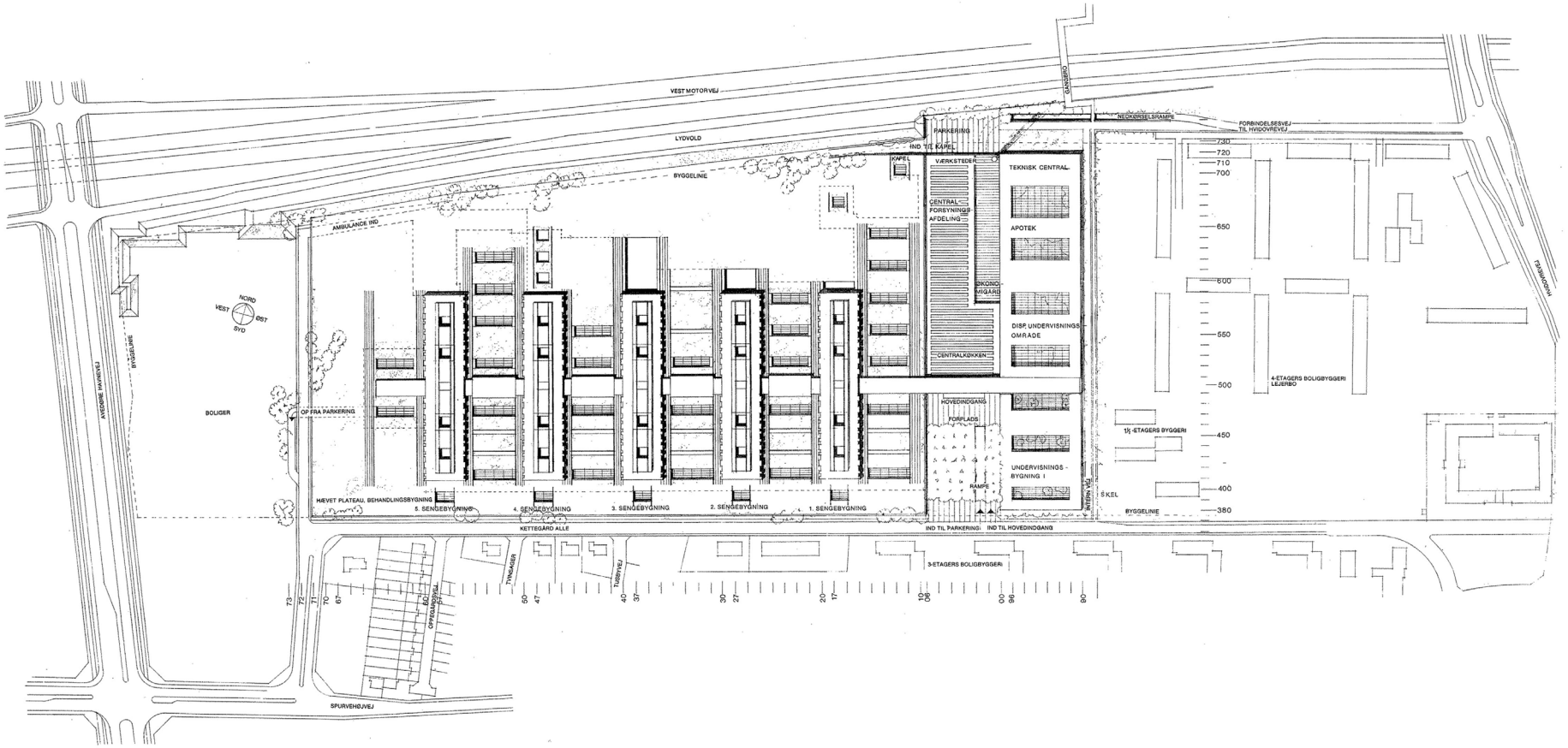


The ward first floor - Source: The private archive of Gunnar Gundersen



Facades & Sections - Source: Tidsskrift for Danske Sygehuse, årg 40, 1964, page 207

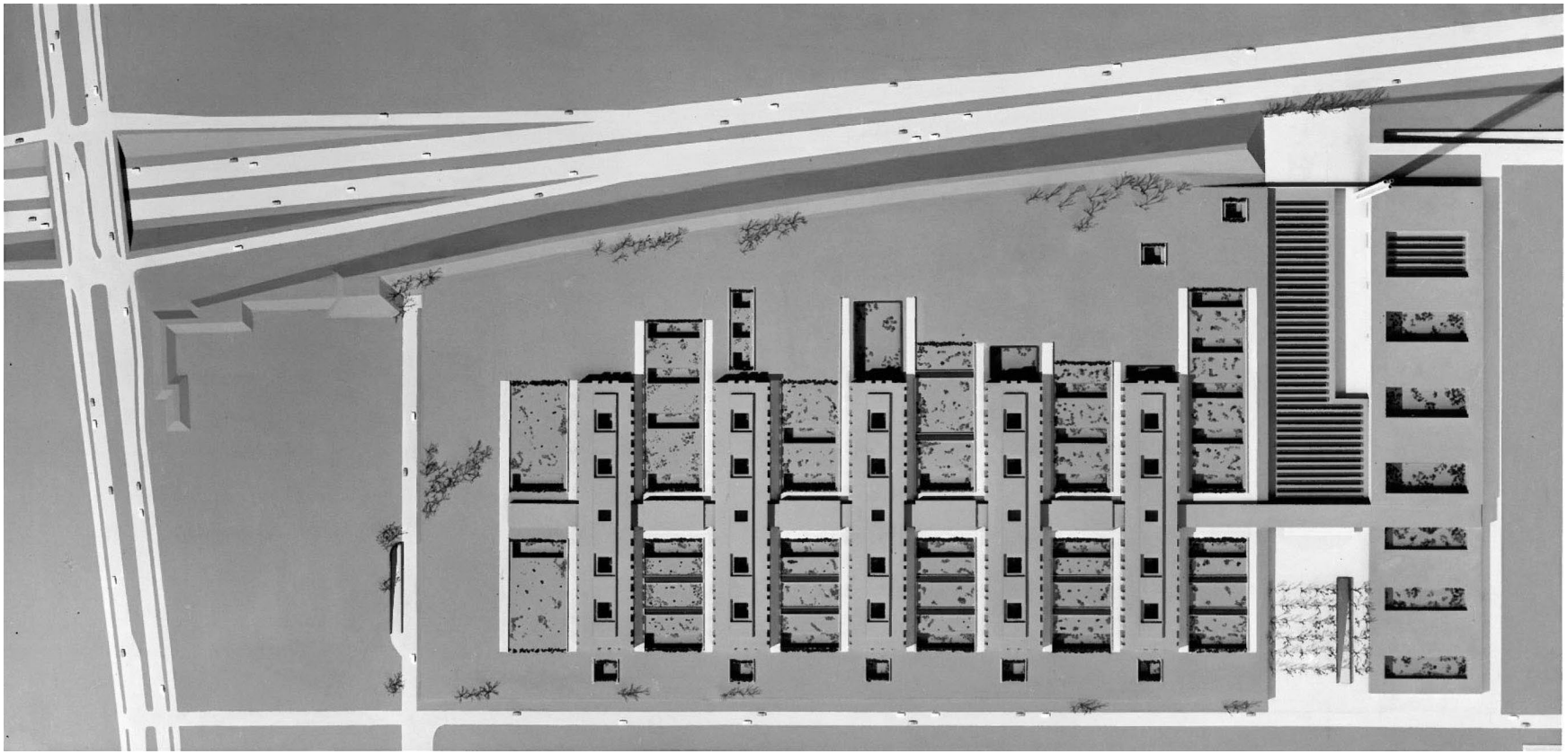
1968
THE DRAFT PROPOSAL



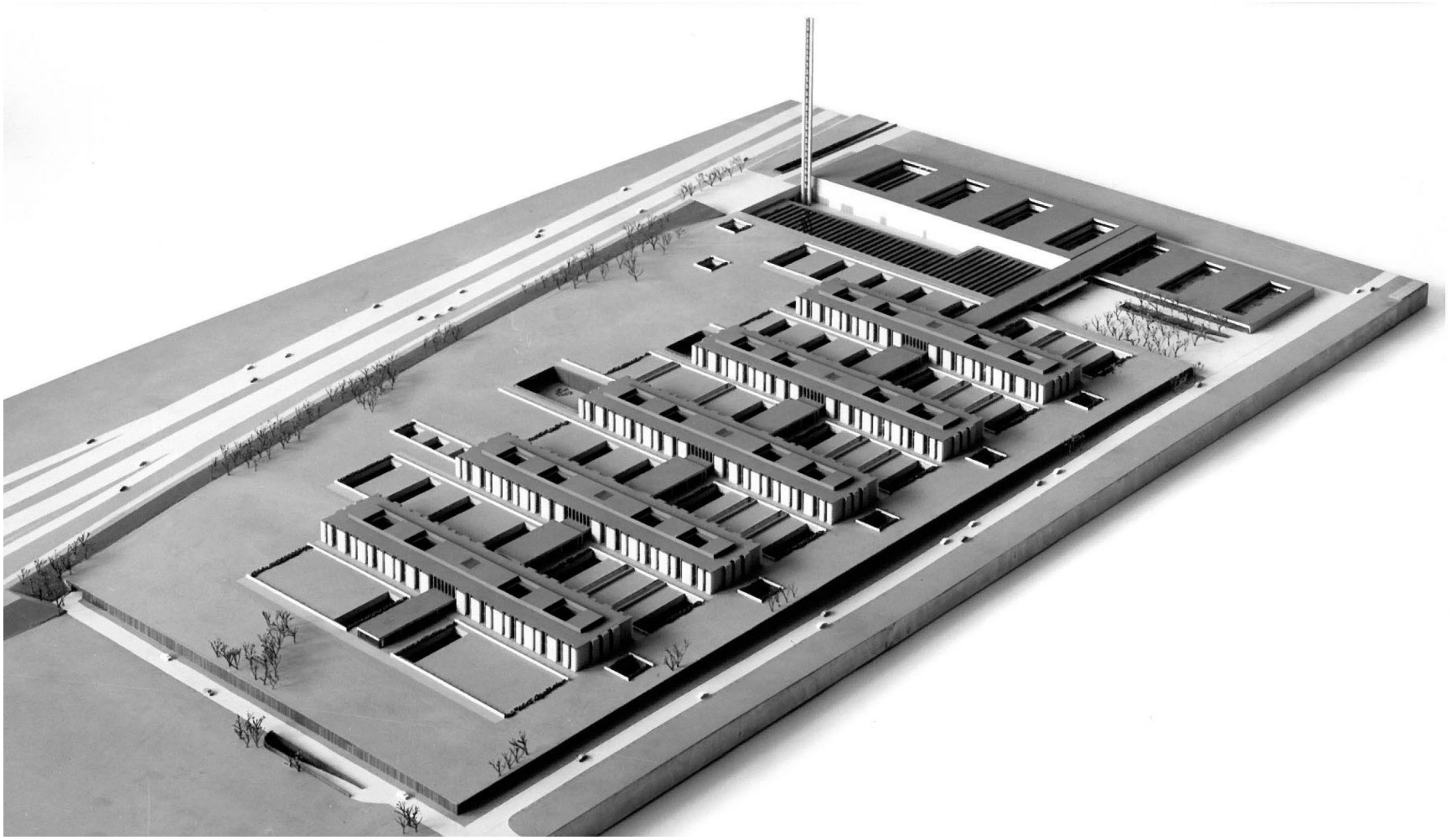
DISPOSITIONSPLAN MÅL 1:2000

Site plan - Source: Skitseprojekt, april 1968, Tegninger, page 1

Hvidovre Hospital - 1968 - The Draft Proposal

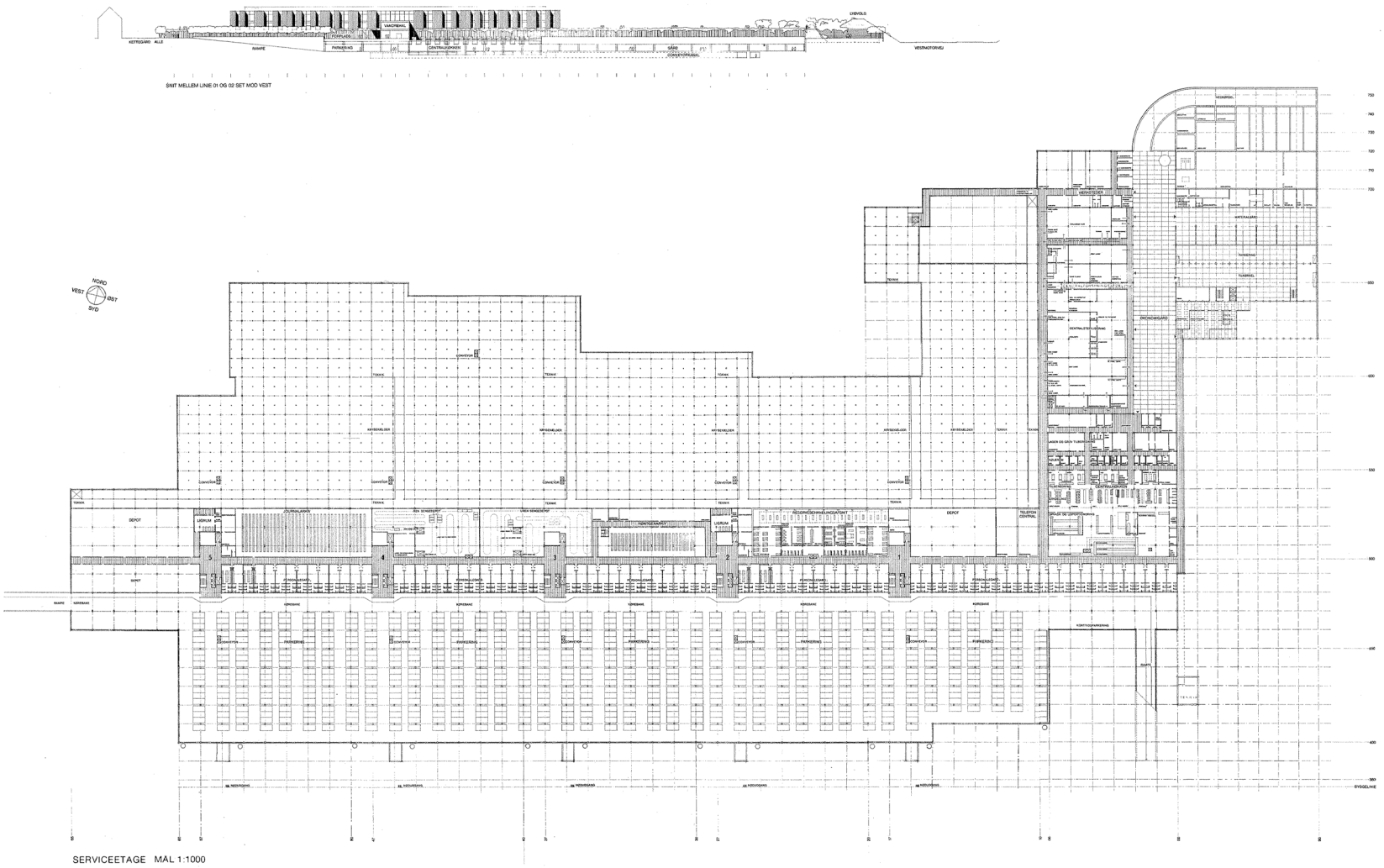


Site model - Source: Hvidovre Hospital archive

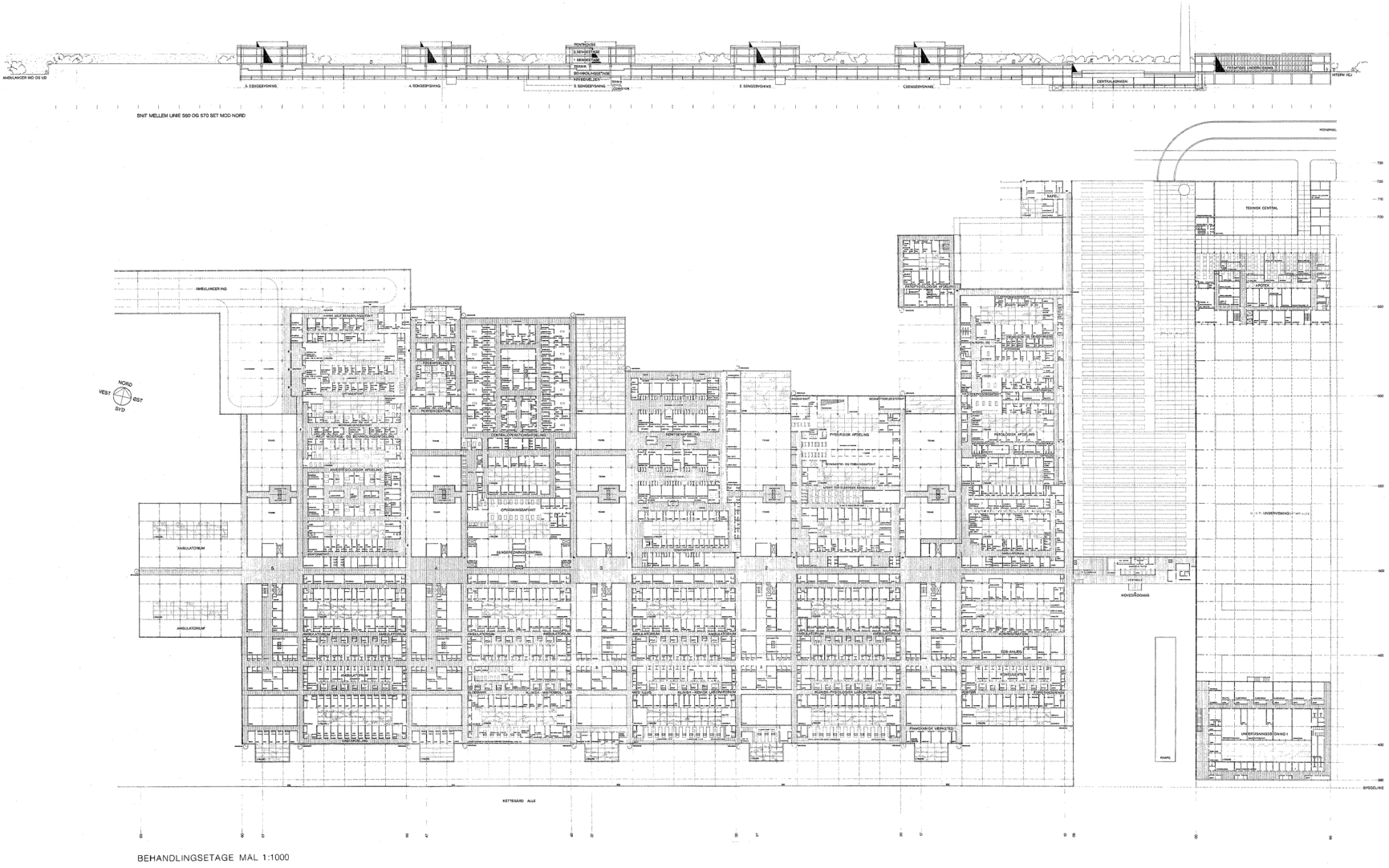


Site model - Source: Hvidovre Hospital archive

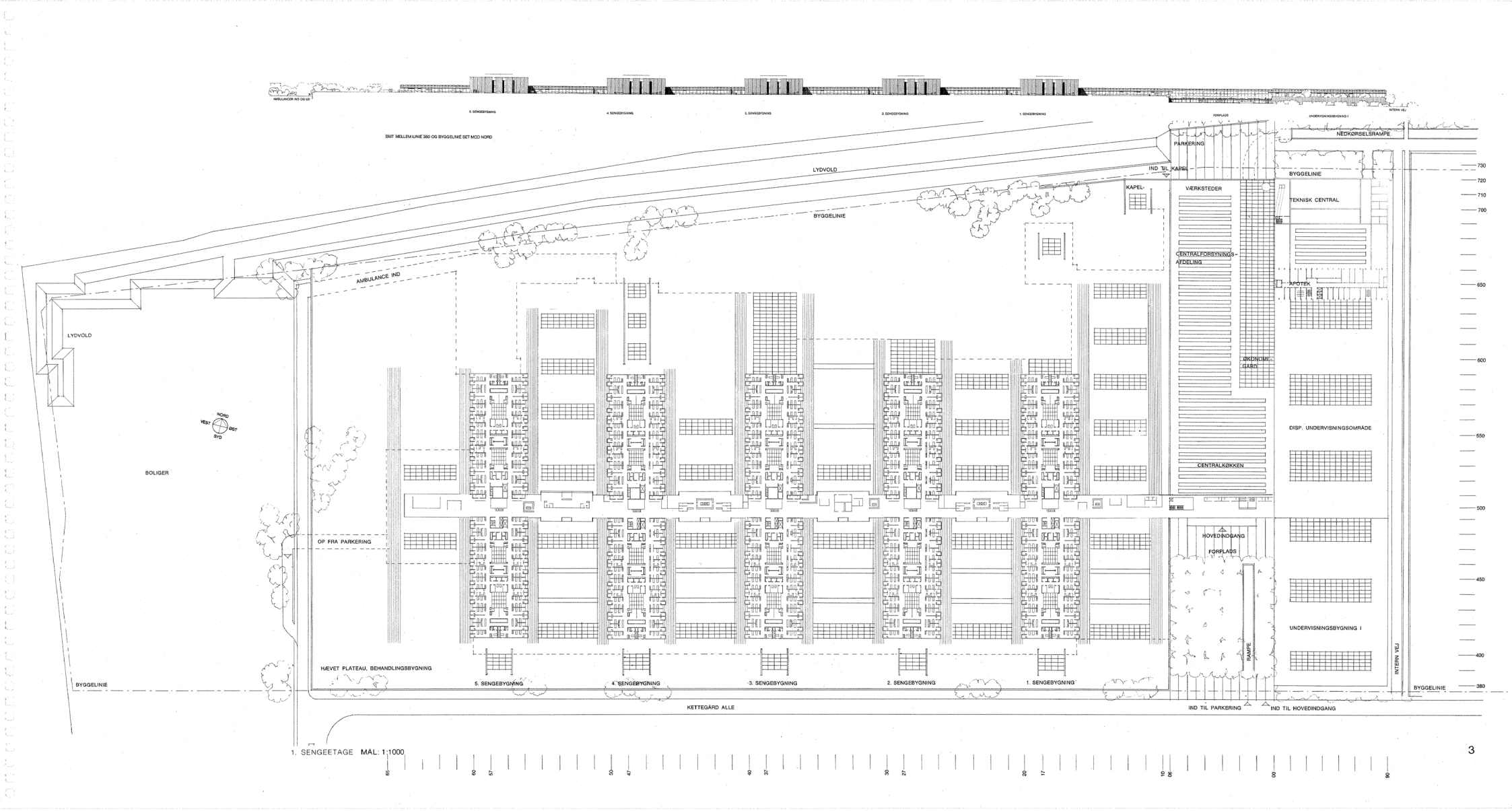
Entrance Area - Source: Hvidovre Hospital archive



The basement floor - Source: Skitseprojekt, april 1968, Tegninger, page 5

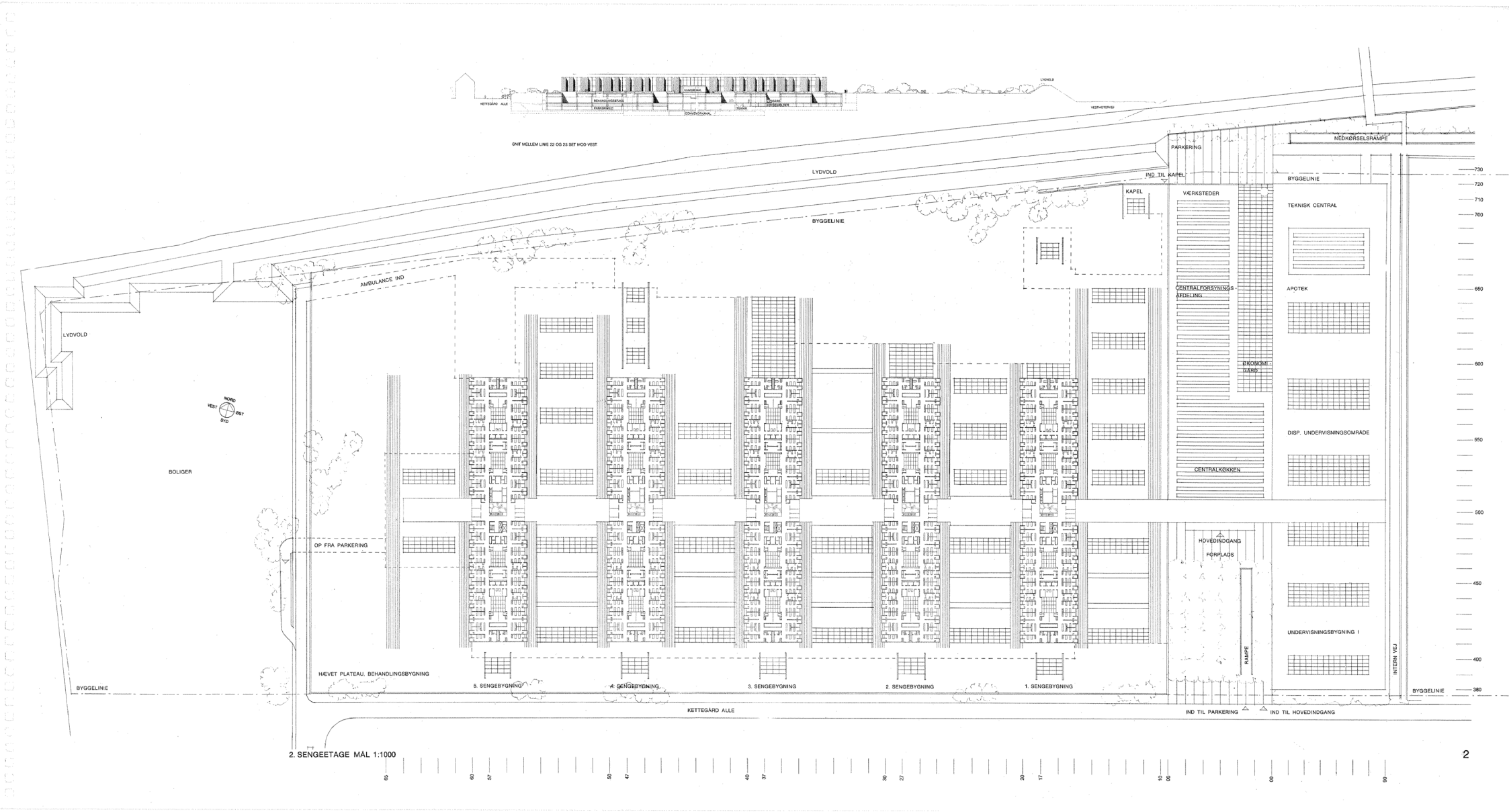


The treatment floor - Source: Skitseprojekt, april 1968, Tegninger, page 4

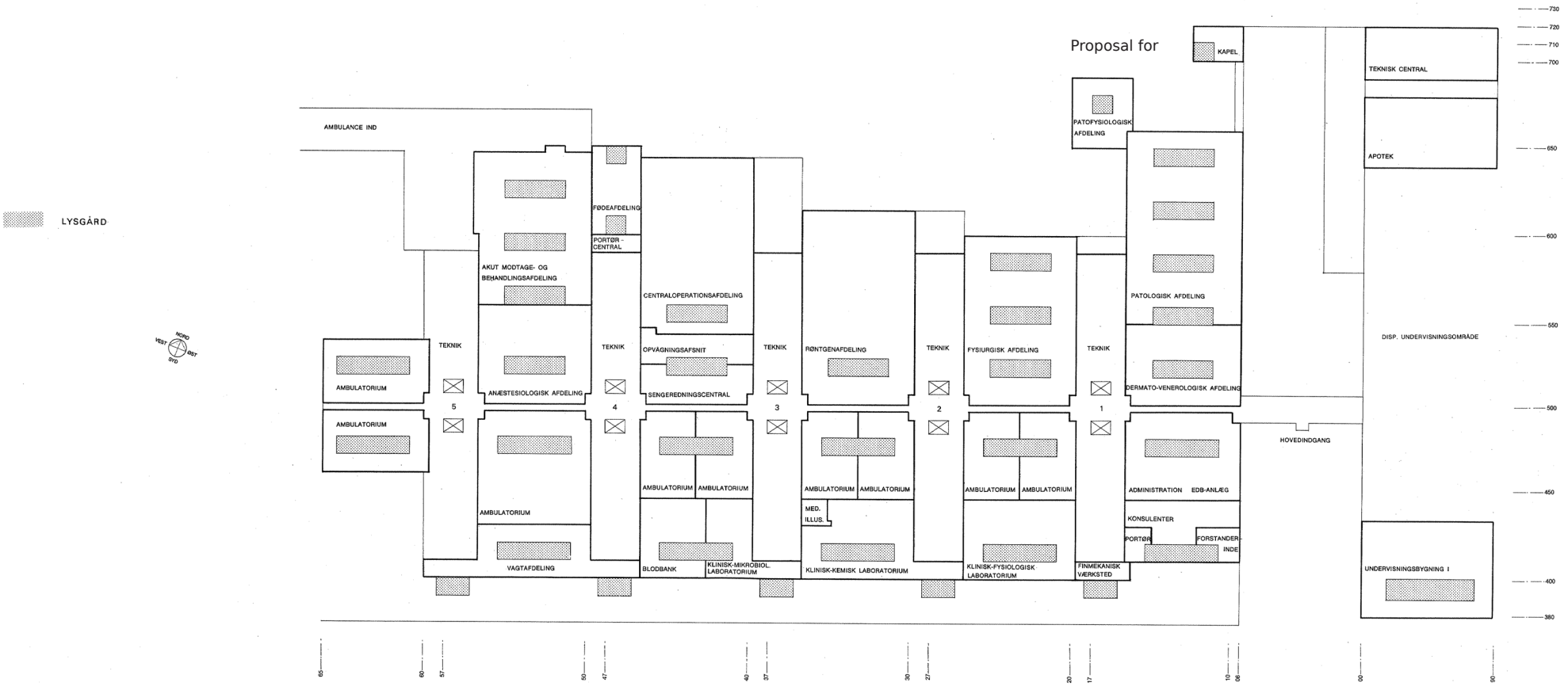


The entrance floor - Source: Skitseprojekt, april 1968, Tegninger, page 3

Hvidovre Hospital - 1968 - The Draft Proposal



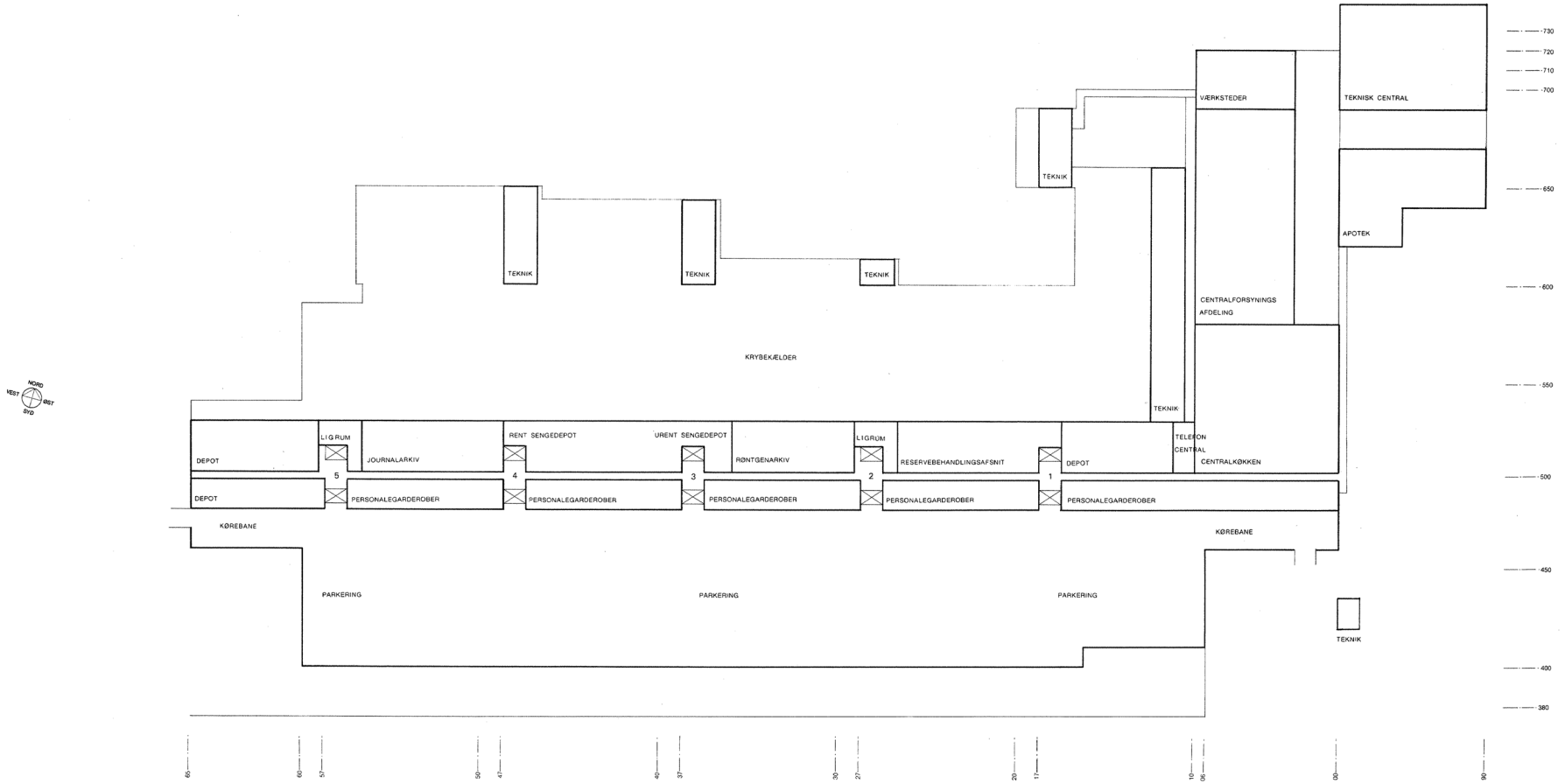
The ward first floor - Source: Skitseprojekt, april 1968, Tegninger, page 2



BEHANDLINGSETAGE MÅL 1:1000 AFDELINGSDIAGRAM

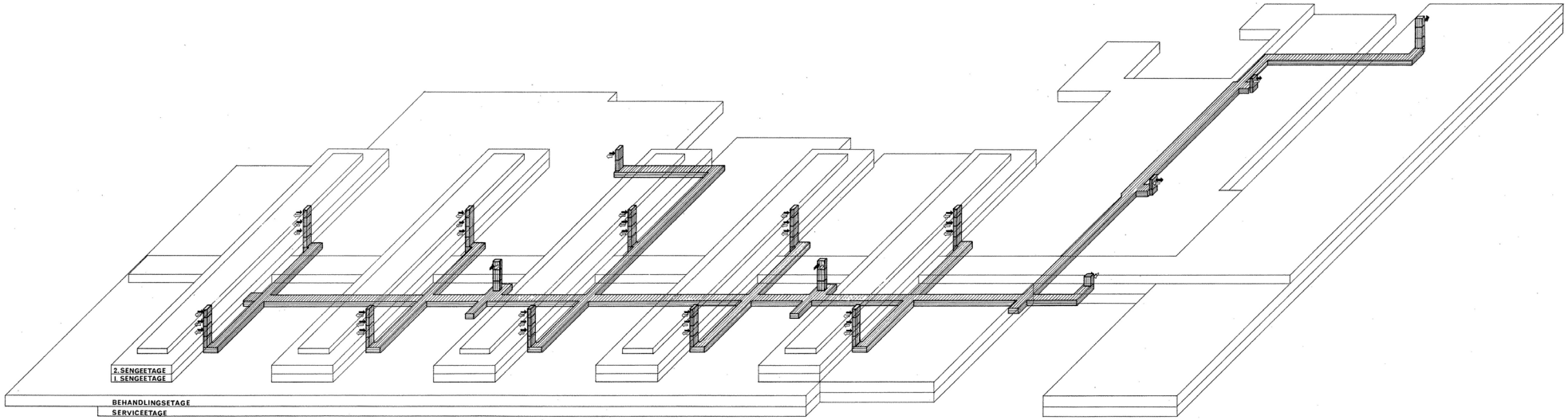
11

Diagram - Distribution of departments on the treatment floor - Source: Skitseprojekt, april 1968, Tegninger, page 11



SERVICEETAGE MAL 1:1000 AFDELINGSDIAGRAM

Diagram - Distribition of departments on the basement floor - Source: Skitseprojekt, april 1968, Tegninger, page 12



AKSONOMETRISK AFBILDNING AF AUTOMATISK TRANSPORTANLÆG MÅL 1:1000

Diagram - Automatic conveyor system - Source: Skitseprojekt, april 1968, Tegninger, page 36

1976
THE BUILT

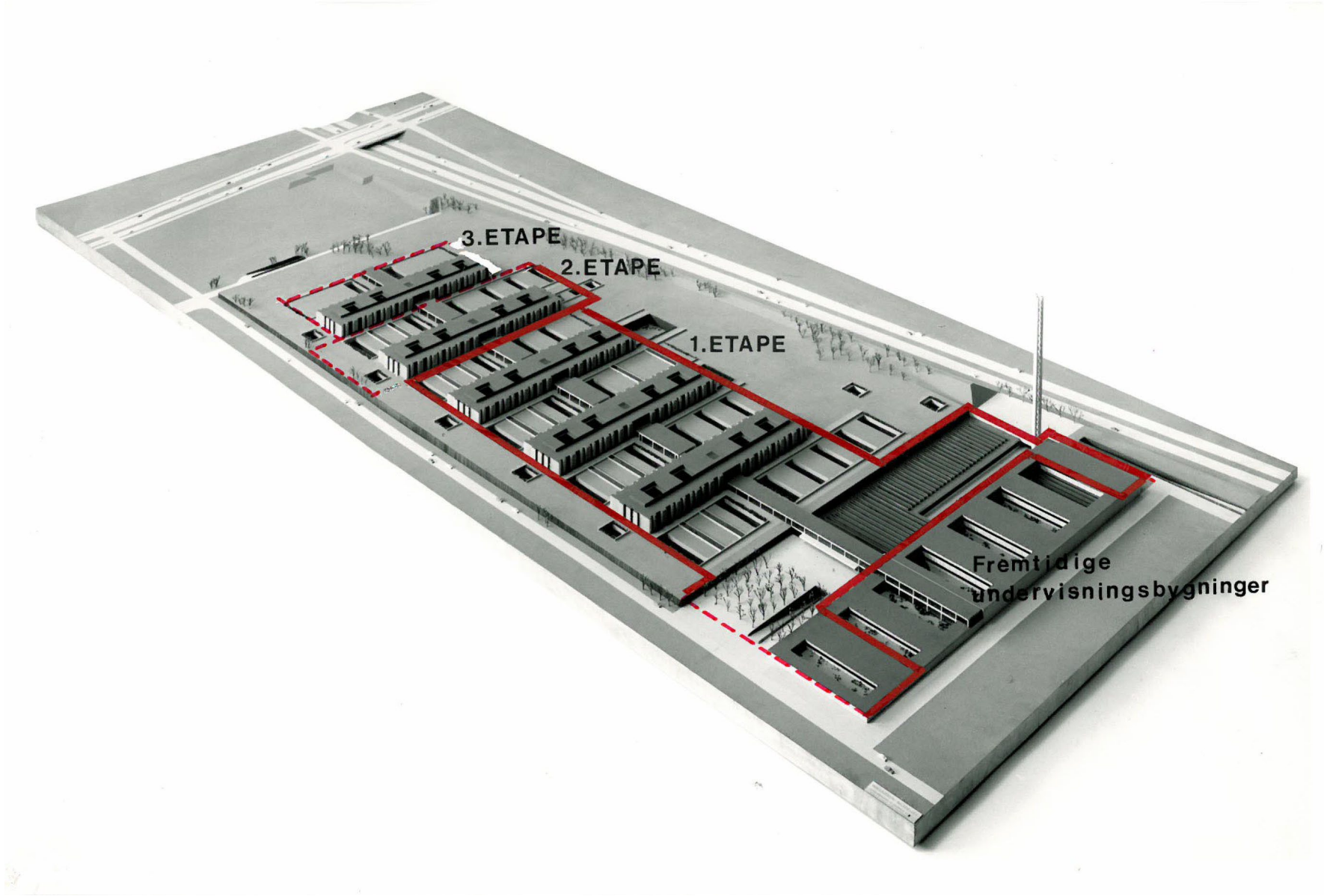
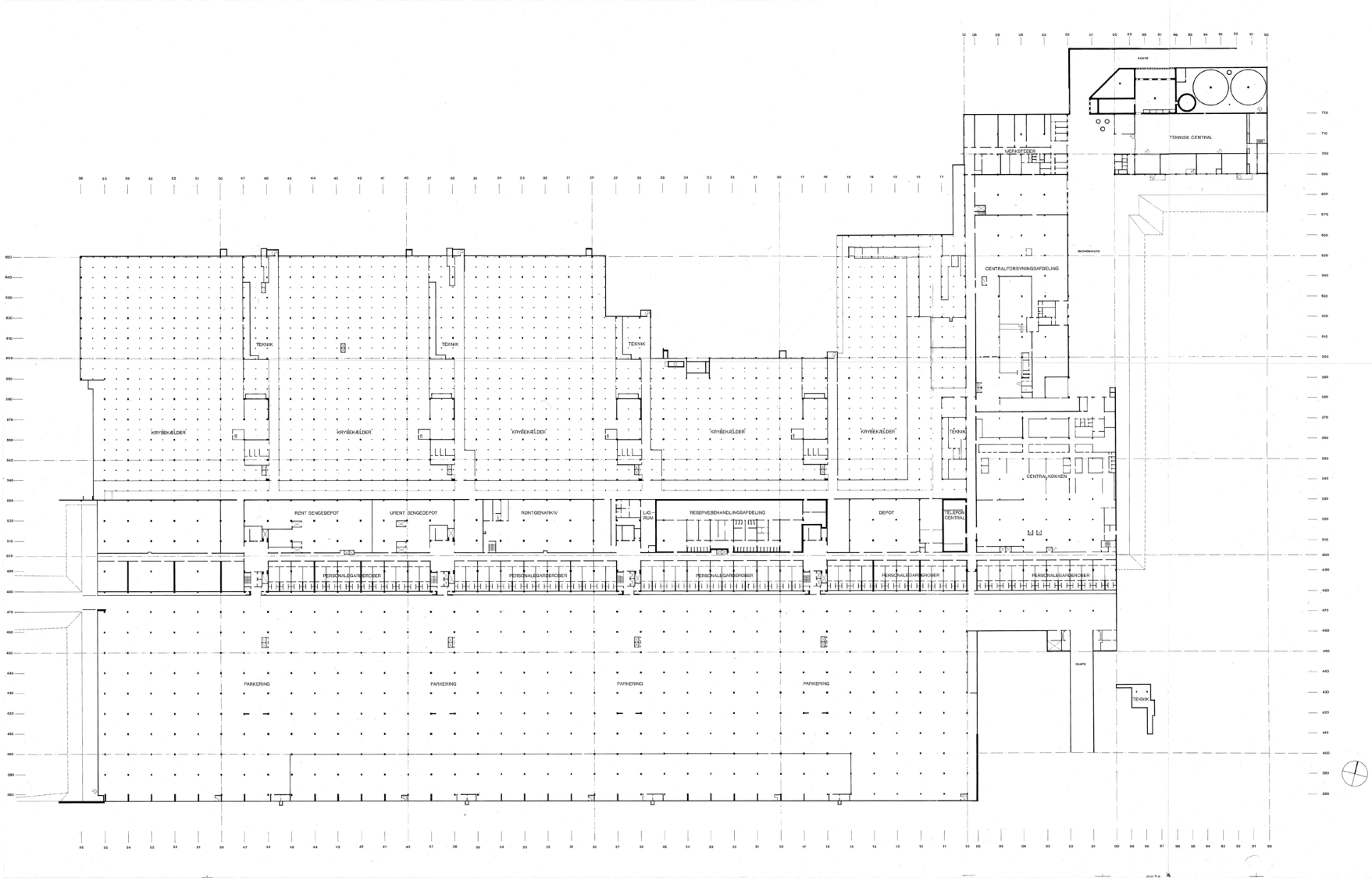
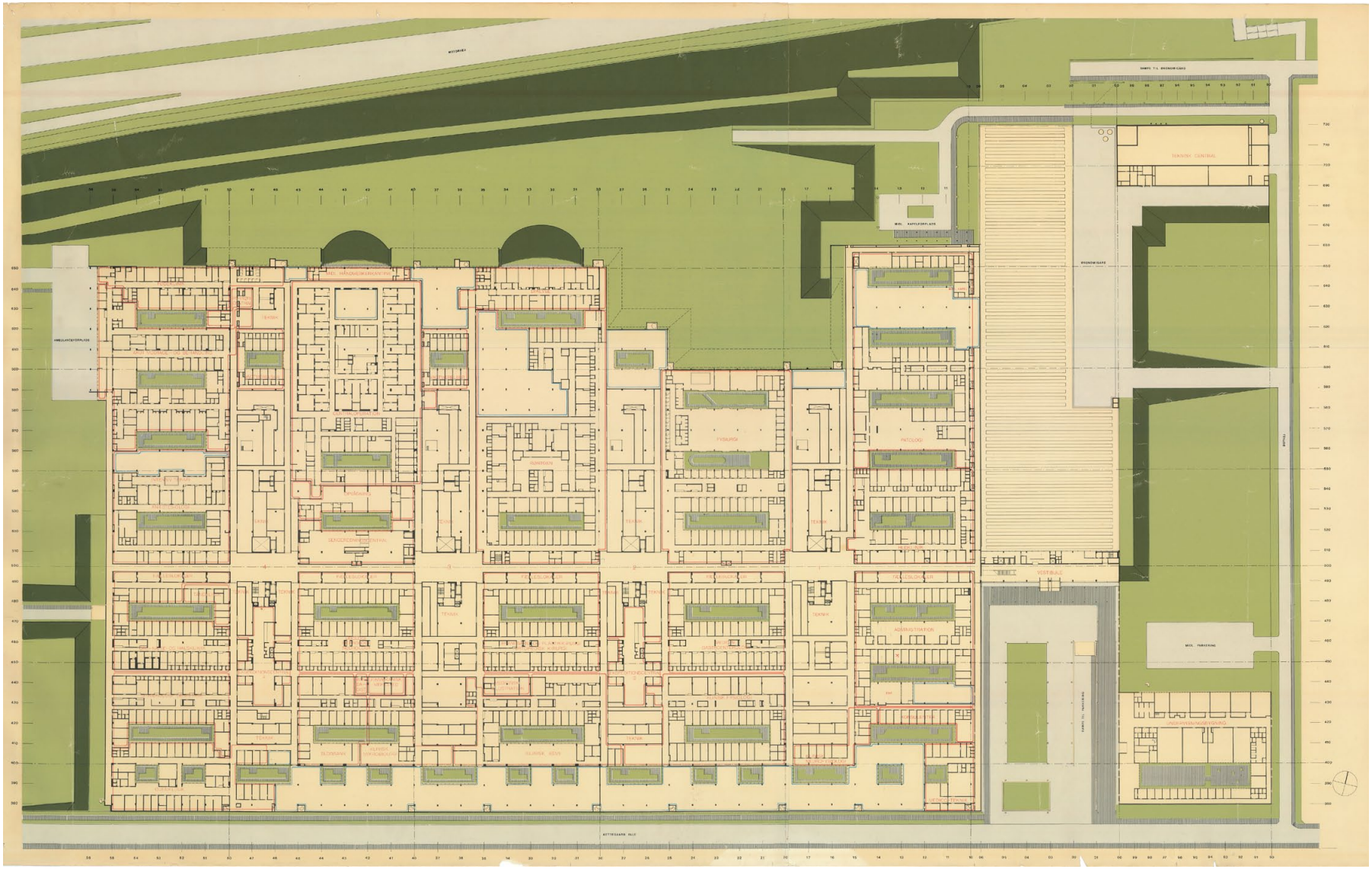


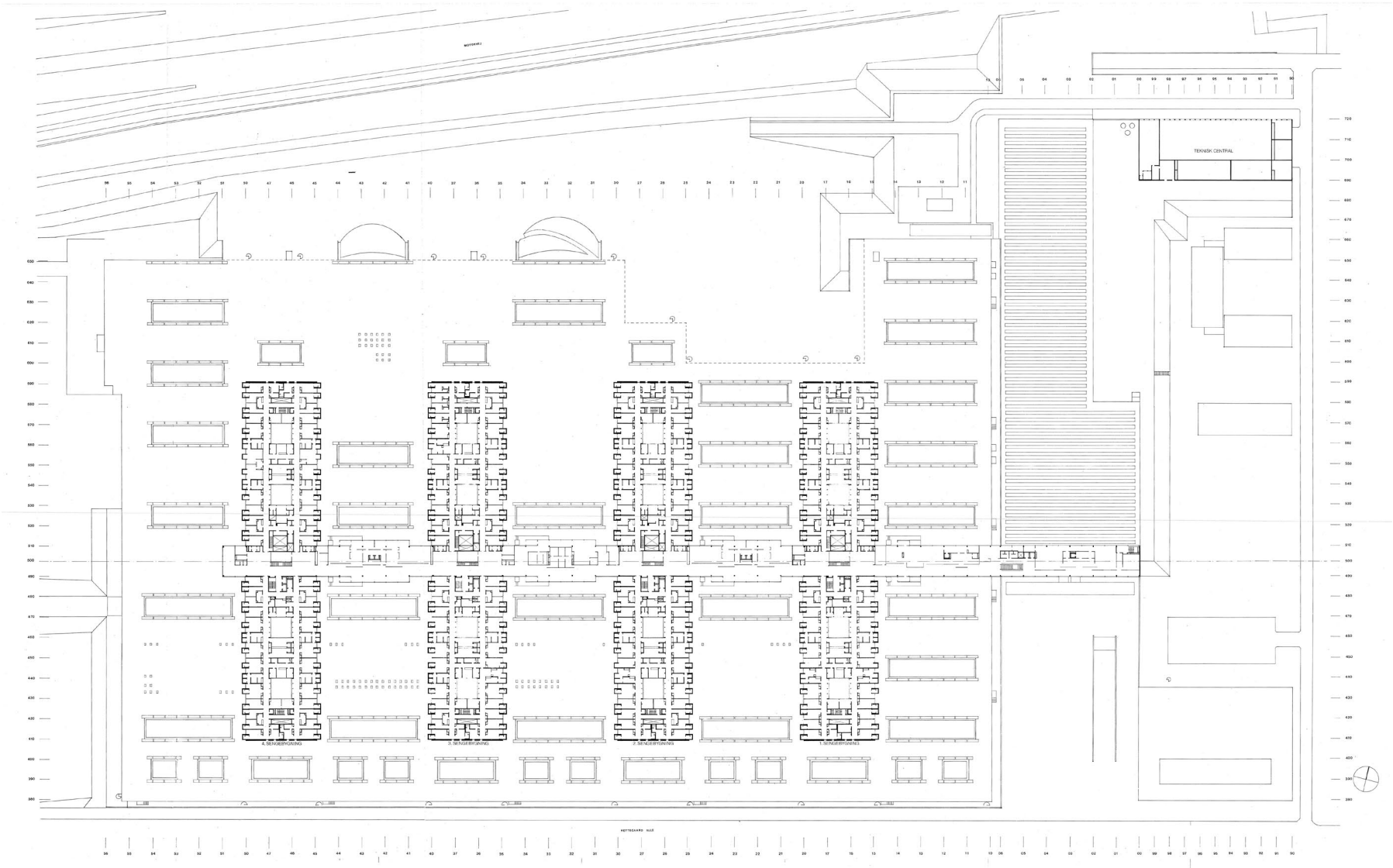
Illustration - The phasing of the building project - Source: Hvidovre Hospital archive



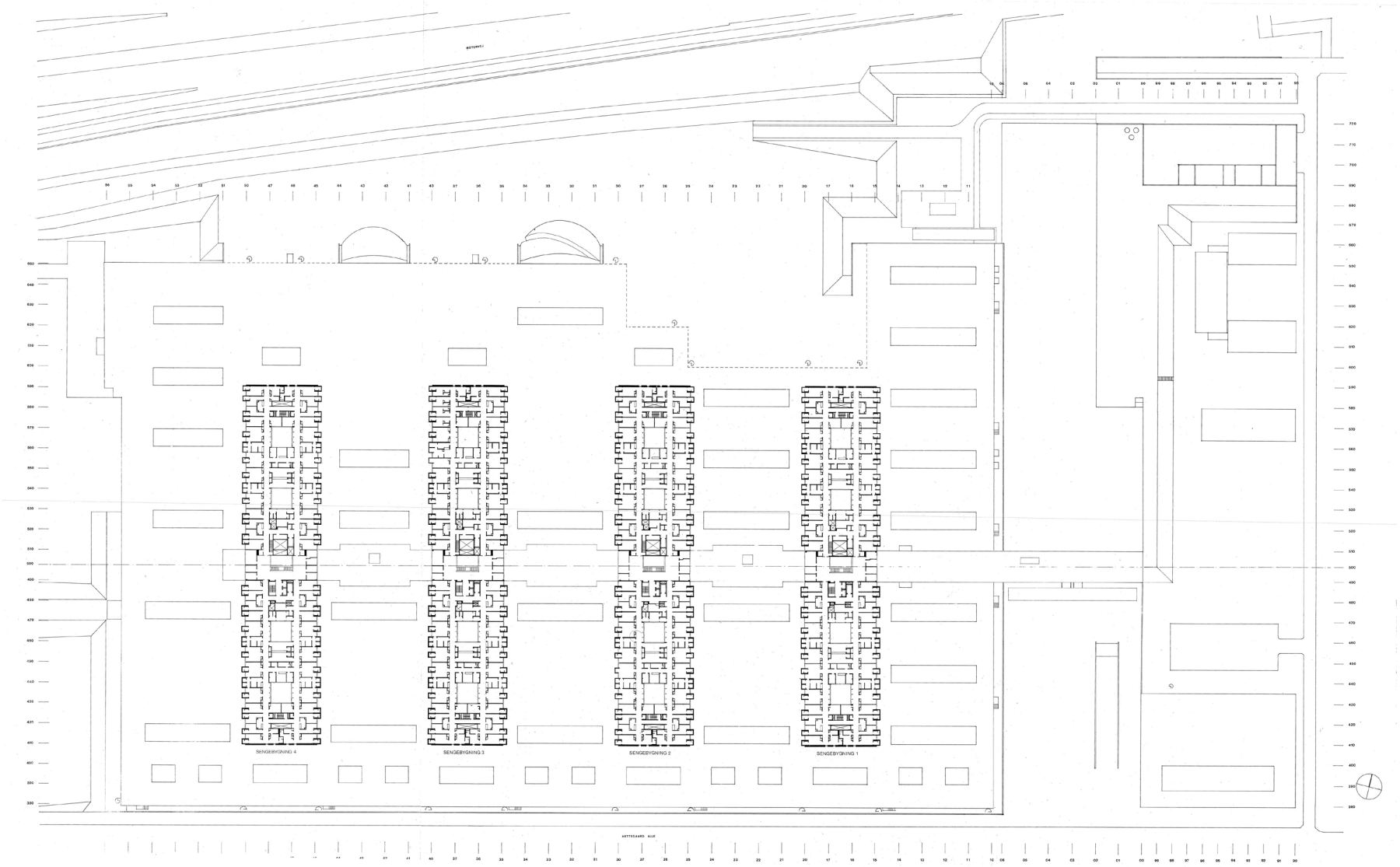
The basement floor - Source: Hvidovre Hospital archive



The treatment floor - Source: Hvidovre Hospital archive



The entrance area - Source: Hvidovre Hospital archive



The ward first floor - Source: Hvidovre Hospital archive

Hvidovre Hospital - 1969 - The Site

Aerial View - Source: The private archive of Gunnar Gundersen

Hvidovre Hospital - 1976 - The Site

Aerial view - Source: The private archive of Gunnar Gundersen

APPENDIX D

Birgitte Louise Hansen

IS METEN WETEN?

Notities over Evidence Based Design vanuit ontwerpperspectief

Binnen de gezondheidszorg wordt in toenemende mate gesproken over de invloed van de omgeving op het genezingsproces. Dit vraagt om een herdefinitie van de rol die architectuur binnen de medische omgeving kan spelen; een rol die gaandeweg is gemarginaliseerd door de ontwikkeling van de moderne medische wetenschap. Die laatste ging het altijd vooral om de utiliteit van een gebouw; architectuur als gereedschap in dienst van geneeskunde, ontworpen door een kleine specialistische groep van architecten die hier affiniteit mee heeft. Dat er momenteel een omwenteling plaatsvindt in deze zienswijze, heeft te maken met de reorganisatie van de zorg, maar ook met een internationale verschuiving in de perceptie van ziekte en het bijbehorende proces van herstel. Het gaat tegenwoordig niet alleen meer om het repareren van (een onderdeel van) het menselijk lichaam, maar ook om de verhouding tussen de mens en zijn omgeving. Daarbij wordt de vraag gesteld hoe, waarom en op welke manier die omgeving van invloed kan zijn op het genezingsproces; iets dat overigens moeilijk eenduidig te definiëren is in een heterogene samenleving.
Over de relatie tussen zorg en architectuur zijn de laatste jaren diverse projecten geïnitieerd; van internationale architectuurprijsvragen (*Future Hospitals en Healthcare 2025*) en congressen (*The Architecture of Hospitals*) tot publicaties (*Zorgboulevards*, *The Architecture of Hospitals*). We zouden daardoor haast vergeten dat interesse in de gezondheidszorg vanuit de architectuurdiscipline geen nieuw fenomeen is in Nederland. Al sinds de jaren zeventig van de vorige eeuw worden op dit vlak onderzoeksprojecten geïnitieerd, bijvoorbeeld vanuit het College bouw zorginstellingen en de STAGG. Wel zijn pas in de jaren negentig van de vorige eeuw - geïnspireerd door voorbeelden uit de Verenigde Staten - begrippen als *Evidence Based Design* en *Healing Environments* geïntroduceerd, onder andere in verband met de nieuwbouw van het Universitair Medisch Centrum in Groningen in de jaren negentig van de vorige eeuw en de oprichting van Stichting Welbevinden Interieur Zorginstellingen (ZWIZ) in 2001.
Maar wat is *Evidence Based Design* en wat is een *Healing Environment*? Zijn het ontwerpbenaderingen, (quasi) wetenschappelijke methodes of lege containerbegrippen die gevuld kunnen worden met alles wat met welzijn te maken heeft? Dit artikel is een poging om vanuit een ontwerpperspectief het begrip *Evidence Based Design* te plaatsen. Wat is de zin en wat is de onzin van *Evidence Based Design* en een hiermee in verband gebracht begrip als *Healing Environment*?

Evidence Based Design als metafoor

Evidence Based Design is geënt op *Evidence Based Medicine*, een onderzoeksmethode uit de medische wetenschap die het best omschreven kan worden als "het consciëntieus, expliciet en oordeelkundig gebruik van het best beschikbare bewijs bij het maken van keuzes voor de behandeling van individuele patiënten."[1] Dat *Evidence Based Design* associatief wordt verbonden met *Evidence Based Medicine* is niet toevallig. Door de druk om zowel medisch als financieel effectiever te handelen, heeft resultaatgericht onderzoek volgens Roger S. Ulrich, de meest geciteerde wetenschapper op het gebied van

Evidence Based Design, een steeds grotere invloed binnen het zorgstelsel, die ook doorwerkt in de beslissingen over ontwerp en budget van faciliteiten.[2] Een ontwerper in de gezondheidszorg in de Verenigde Staten dient daarom niet alleen een 'mooi' ontwerp te maken: het dient ook een positief effect te hebben op het genezingsproces van de patiënt en daardoor kosten te besparen. De ontwerper moet kunnen bewijzen dat zijn ontwerp 'werkt' – vooral tegenover artsen en ziekenhuisbestuurders. Doordat *Evidence Based Design* verbonden is met *Evidence Based Medicine*, krijgt *Evidence Based Design* een vertrouwde uitstraling voor professionals uit de medische wereld. De naam *Evidence Based Design* werkt als een metafoor die niet politiek neutraal is, maar juist wordt gebruikt in een ideologisch gevecht om opdrachtgevers in ontwerpkwaliteiten te doen geloven en ervan te overtuigen dat het zin heeft om in een 'goed' ontworpen omgeving te investeren.

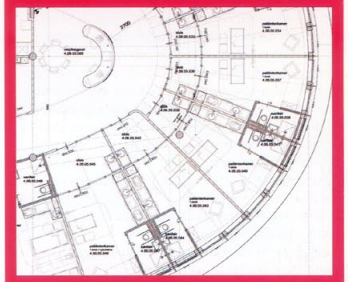
De reden dat de medische wereld in de Verenigde Staten *hard facts* nodig heeft om overtuigd te worden, heeft deels te maken met de Amerikaanse 'claimcultuur' waarbinnen iedereen zich tegen ongeveer alles kan en moet verzekeren. Daarnaast heeft het van doen met de behandelcultuur in de medische sector zelf. Medisch journalist Lynn Payer verklaart dit in haar boek *Medicine & Culture* vanuit het Amerikaanse karakter, ontstaan bij de kolonisatie van Noord-Amerika: "Het ogenschijnlijk onbegrensde land bevorderde een houding dat alles mogelijk was als de natuurlijke omgeving maar overwonnen kon worden. Ziekte kon ook overwonnen worden, maar alleen door een agressieve diagnose en een even agressieve behandeling."[3] Volgens Lynn Payer doen Amerikaanse artsen meer diagnostische tests, opereren ze meer en schrijven ze meer medicijnen voor dan artsen in bijvoorbeeld Frankrijk, Engeland en Duitsland. In een cultuur als deze is er geen ruimte voor twijfel. Twijfel betekent zwakte, en zwakte kun je niet vertrouwen. Ook een ontwerper of onderzoeker moet dus zeker zijn van zijn zaak.

Waar *Evidence Based Design* in Amerika als een positieve metafoor kan werken in de wereld van ontwerpers die werkzaam zijn voor de zorgsector, roept het bij veel Nederlandse ontwerpers juist twijfel en negatieve associaties op. Gevolg is dat velen zich niet wensen te verbinden met de term *Evidence Based Design*. Mogelijk is de (Amerikaanse) zelfverzekerdheid die uit *Evidence Based Design* spreekt een culturele drempel voor ontwerpers in Nederland. Bovendien kan de koppeling tussen ontwerp en wetenschappelijke bewijsvoering bij Nederlandse ontwerpers negatieve herinneringen oproepen aan het functionalistische gedachtegoed, waarbij een goed ontwerp enkel en alleen gebaseerd mocht zijn op beredenering en feitelijke kennis zoals beschreven in Peter Neuferts boek *Architect's Data*. Maar wat

EVIDENCE BASED DESIGN IN NEDERLAND

Harry Abels, partner IAA Architecten

IAA Architecten werkt in principe wel met *Evidence Based Design*, maar niet alleen met literatuurstudie. De ervaring van de gebruikers zoals medici en mensen uit het facilitaire bedrijf ziet IAA ook als evidence (bewijs). "Architecten zijn geen wetenschappers. Ze kunnen niet alleen op basis van literatuurstudies gaan ontwerpen", aldus partner Harry Abels. Een ontwerper moet volgens hem vooral goed kunnen luisteren - naar de gebruiker - en kijken - naar de cultuur van de maatschappij, van de lokale omgeving en van de ziekenhuisorganisatie - en daarna zijn eigen conclusies trekken. Deze kwalitatieve data, 'opgeslagen in architecten', kan leiden tot hypotheses die een ontwerp beïnvloeden en bepalen. De theorie kan hierbij helpen, maar dat geldt niet voor alle situaties. Volgens Harry Abels is de benadering van IAA Architecten pragmatisch. Omdat ieder ziekenhuis zijn eigen protocol heeft, is zijn ervaring dat je als architect het beste met de betrokkenen kunt gaan praten over de manier waarop ze het daar doen. Bepaalde aspecten van kwantitatief onderzoek zijn nuttig, zoals microbiologisch onderzoek, maar het mooiste dat je kunt maken is een 'gebouw in eigen cultuur'.



Plattegrond Vrouw en Kind Centrum, Medisch Spectrum Twente

Als voorbeeld van een *Evidence Based Design* noemt Harry Abels het ontwerp van IAA voor een Vrouw en Kind Centrum waarin poli's van Gynaecologie en Kindergeneeskunde zijn opgenomen, voor Medisch Spectrum Twente in Enschede. Hierin zijn kwantitatieve onderzoeksresultaten uit de literatuur in combinatie met kwalitatieve wensen van de gebruikers toegepast om werkprocessen te optimaliseren, infectiegevaar te verlagen, besmettingen te voorkomen en het welzijn en het herstel van de patiënt

te bevorderen. Harry Abels legt uit hoe IAA zich hier heeft verdiept in het verschil tussen de beleving en reactie van een ziek kind en van een volwassen vrouw en dit heeft gekoppeld aan de werkprocessen van het personeel. Volgens microbiologen is het bijvoorbeeld het beste om een sluis met twee deuren tussen kamers en gang te hebben. Maar volgens de artsen voelen kinderen zich niet goed achter gesloten deuren en is dat niet bevorderlijk voor hun herstel. "Een ziek kind ligt liever niet alleen op een kamer, terwijl een volwassen vrouw misschien juist wel een aparte kamer wil hebben". Op basis van dergelijke praktijkervaring zijn de wanden tussen de kamers voor de kinderen en de gang inclusief alle deuren van glas, zodat er visueel contact is tussen de kinderen in hun kamer en het verplegend personeel achter de balie.

de exacte verklaring ook is, zeker is dat weinig ontwerpers in Nederland beweren dat ze 'aan *Evidence Based Design* doen'. De vraag is vervolgens of dat verstandig is, of dat ontwerpers, zich afkerend van de associaties die aan *Evidence Based Design* kleven, kansen laten liggen.

Evidence Based Design als methode

Evidence Based Design staat bekend als de welbewuste poging om ontwerpbeslissingen te baseren op het best beschikbare bewijs uit onderzoek. Maar wat betekent *Evidence Based Design* in de praktijk en hoe ga je daar als ontwerper of opdrachtgever mee om? Om wat voor onderzoeksbewijs gaat het? Wat moet er worden bewezen en met welke middelen? Zijn er niet al genoeg regels in de zorg: van bouwmaatstaven en brandveiligheidseisen tot hygiënevoorschriften? Kunnen we niet gewoon een mooi gebouw maken en het daarbij houden? Dergelijke vragen en overwegingen worden regelmatig gesteld in relatie tot *Evidence Based Design* en komen grotendeels voort uit de moeizame duiding van het begrip.
Uit frustratie over de manier waarop met het begrip *Evidence Based Design* wordt omgegaan, besloot architect Kirk Hamilton niet langer te speculeren over wat *Evidence Based Design* is - en wat het niet is – maar na te gaan wat EBD ontwerpers, of zij die zich daar voor uitgeven, nu eigenlijk doen.[4] Dit heeft geleid tot een model dat vier verschillende niveaus van betrokkenheid onderscheidt. Het model geeft ook inzicht in de methoden waarop onderzoek door ontwerpers wordt gebruikt ten behoeve van opdrachtgevers:

Niveau 1: Deze ontwerpers doen hun best om hun ontwerp op onderzoek te baseren, ze zijn op de hoogte van relevante onderzoeksresultaten op hun gebied, interpreteren bewijs in relatie tot het project waarmee ze bezig zijn en beoordelen wat het beste ontwerp is voor deze specifieke situatie.

Niveau 2: Gebaseerd op literatuurstudie komen deze ontwerpers tot een hypothese over het te verwachten resultaat van hun ontwerpinterventie en meten vervolgens het resultaat. Dit niveau van werken maakt het ontwerp minder subjectief en vereist aandacht voor nieuwe manieren van ontwerpen.

Niveau 3: Naast de vereisten van niveau 1 en 2 maken deze ontwerpers een verslag van hun onderzoeksresultaten openbaar door bijvoorbeeld hun teksten uit te geven in populaire media of door als spreker op te treden tijdens congressen.
Ze genieten vaak een aanvullende opleiding om de resultaten van hun onderzoek zorgvuldiger te kunnen documenteren.

Niveau 4: Deze ontwerpers publiceren - eventueel samen met wetenschappers uit andere disciplines - in vaktijdschriften, onderworpen aan het kritisch oordeel van gekwalificeerde collega's terwijl ze ook ontwerpen en bouwen. Ze werken zowel praktisch als theoretisch en proberen zo de kennis en bewijsvoering die er bestaat op een bepaald gebied te bevorderen.

Ten slotte definieert Hamilton ook een Niveau 0. Deze ontwerpers, hoewel ze het misschien goed bedoelen, gebruiken vaak geïsoleerde opmerkingen uit een artikel of een congrespresentatie, interpreteren dat op een manier die bij hun ontwerp past, en beweren vervolgens dat het ontwerp *evidence based* is.

Ondanks zijn aanstekelijke praktijkgerichtheid roept de analyse van Hamilton ook vragen op. Want over wat voor onderzoek praat hij? Waar haal je als ontwerper je bewijs vandaan; uit welke disciplines? En op wiens zienswijze is dat bewijs gebaseerd? Gaat het om informatie die uit de architectuurdiscipline zelf komt of van disciplines gerelateerd aan de architectuur? Of gaat het om informatie uit bijvoorbeeld de (medische) wetenschap? En wat betekent het voor de ontwerpdiscipline wanneer een methode uit een andere discipline - zoals de medische wetenschap - binnen de eigen discipline wordt toegepast?
Hamilton gaat in zijn analyse niet op deze vragen in, maar benadrukt de vrijheid om de methode op een creatieve manier in te vullen. Bovendien bepleit hij dat niet alle beslissingen in een ontwerpproces *evidence based* hoeven te zijn.[5] *Evidence Based Design* is volgens Kirk Hamilton dan ook geen *cookbook architecture*. Volgens Hamilton staat de wereld van *Evidence Based Design* dicht bij de echte wereld van het wetenschappelijk onderzoek, gekenmerkt door zijn onophoudelijke zoektocht naar het verifieerbare. EBD is dan ook niet statisch en leent zich dus niet gemakkelijk voor het formuleren van vaste voorschriften.[6]
Opmerkelijk genoeg wordt de term *Evidence Based Design* wel vaak gebruikt alsof het iets specifieks is; een vaste verzameling regels die je in kaart kunt brengen of een checklist voor ontwerpers om mee te kunnen ontwerpen. In plaats van *Evidence Based Design* te zien als de naam van een benadering wordt het gebruikt als een synoniem voor de onderzoeksresultaten van, bijvoorbeeld, Roger S. Ulrich. Deze manier van ontwerpen valt onder wat Kirk Hamilton niveau 0 noemt. Voor een serieuze EBD ontwerper gaat het er volgens Kirk Hamilton niet om *short cuts* te maken of om een architectuurrecept te verzinnen dat je vervolgens eindeloos van gebouw tot gebouw kunt repeteren. Het gaat er om *Evidence Based Design* te zien en te gebruiken als een dynamisch model dat je als ontwerper inhoudelijk kunt invullen, waarbij het resultaat van het proces niet noodzakelijk het gebouw of het ontwerp is, maar de beoordeling en evaluatie ervan.
In relatie tot de term *evidence* is het verder belangrijk een onderscheid te maken tussen twee manieren van bewijsvoering, namelijk het kwantitatieve en kwalitatieve bewijs, waarbij kwantitatieve bewijsvoering gebaseerd is op statistiek en kwalitatieve bewijsvoering op beleving. Generaliserend gesteld gaat kwantitatief onderzoek om harde feiten en kwalitatief onderzoek om zachte waarden. Omdat zachte waarden veelal als subjectief worden gezien, wordt binnen de medische wetenschap ter discussie gesteld of deze onderzoeksvorm wel wetenschappelijk is.[7] Ook bij hen die *Evidence Based Design* praktiseren, bestaat deze houding, en dat terwijl de zachte waarde van de beleving juist belangrijk is voor het ontwerp. Deze subjectiviteit betekent echter niet dat je als ontwerper geen onderzoek kan doen op dit vlak, in tegendeel zelfs. Wel moet je zorgvuldig de methode en bewijsvoering kiezen, opdat de onderzoeksmethode uiteindelijk niet het onderwerp gaat bepalen. Kwantitatief onderzoek, bijvoorbeeld vanuit de architectuur, leidt namelijk snel tot een gefragmenteerde discussie over harde feiten in plaats van een discussie over het ruimtelijk geheel. Deze fragmentatie vertoont gelijkenis met de ontleding van het lichaam in losse onderdelen in het 'mechanische mensbeeld'; de metafoor waarop de westerse medische wereld is gebaseerd. In haar boek *Medicine as Culture* schrijft socioloog Deborah Lupton hierover: "De metafoor leidt tot een scheiding van lichaam en geest, een hogere waardering van medische technieken die zich richten op het lokaliseren van een bepaald probleem in een deel van het lichaam en behandeling van dit deel alleen, en een lagere waardering van genezende verbanden gebaseerd op spiritualiteit, persoonlijk contact, intimiteit en vertrouwen."[8]
Patient Safety is een voorbeeld van een kwantitatief onder-

EVIDENCE BASED DESIGN IN NEDERLAND

Bas Molenaar, partner EGM Architecten

EGM Architecten werkt niet met *Evidence Based Design* volgens de definities van Kirk Hamilton en Roger S. Ulrich, aldus Bas Molenaar. EGM hanteert een meer 'opportunistische' aanpak: afhankelijk van het project kijkt het bureau welke thema's centraal staan in de opgave en of er kansen zijn voor onderzoek. Er is dan ook geen autonome onderzoeksafdeling bij EGM. Bij het begin van een project wordt in samenwerking met alle betrokken partijen gekeken wat er op dat gebied is geschreven en gedaan. Veel informatie komt uit congressen en internationale onderzoeksnetwerken. Daarnaast wordt gebruik gemaakt van databases met informatie uit de Verenigde Staten en Europa. Samen met de opdrachtgever wordt bepaald welke factoren een rol spelen. Zijn er bijvoorbeeld specialistische vragen die beantwoord moeten worden; vragen waarover nog geen informatie bestaat? Als er in zo'n geval echt wetenschappelijk onderzoek moet worden gedaan, wordt dit uitbesteed aan andere partijen - een universitaire instelling bijvoorbeeld. Wat in het algemeen niet gebeurt, is de verzameling en publicatie van informatie en onderzoek. Molenaar: "Er is geen algemeen bruikbaar format, niet bij EGM, niet in Nederland en ook niet op universitair niveau."

Pilotproject ideale eenbedskamer, Erasmus MC Rotterdam

Een voorbeeld van *Evidence Based Design* waaraan EGM meewerkt is een pilotproject geïnitieerd door het Erasmus MC in Rotterdam, waarin een *mock-up* (proefopstelling) van de 'ideale eenbedskamer' wordt getest met betrekking tot inrichting (materiaalgebruik, kastruimte, meubilair), afmetingen (plafondhoogte, deurbreedte, *lay-out*), hygiëne, veiligheid, verlichting, ergonomie en comfort. Tegelijkertijd wordt op een speciaal voor dit doel verbouwde en ingerichte beddenafdeling door iBMG (Instituut voor Beleid en Management in de Gezondheidszorg),

onderdeel van het Erasmus MC, onderzoek gedaan naar de consequenties van eenbedkamers voor de organisatie en bedrijfsvoering, de infectie(preventie) en de patiënttevredenheid. Aannames zijn dat eenbedskamers niet alleen meer privacy bieden voor de patiënt, maar ook een betere nachtrust, een verkorte ligduur en een kleinere kans op ziekenhuisinfecties. Een project zoals dit wordt volgens Bas Molenaar bediscussieerd met wetenschappers uit het internationale netwerk van EGM, die aan vergelijkbare onderzoeksprojecten werken in de Vrenigde Staten, Noorwegen en Engeland. Het eerste concept, bestaande uit een verblijfsruimte en een sanitaire unit, is in samenwerking tussen de architect en een werkgroep met toekomstige gebruikers tot stand gekomen. De *mock-up* is een schaalmodel op ware grootte van de ideale verpleegkamer, die mag worden bezichtigd en uitgeprobeerd. Rondom de zomer van 2007 worden de onderzoeksresultaten gepubliceerd, onder andere op de website van het Erasmus MC.

zoeksgebied dat zich onder meer bezig houdt met het controleren en voorkomen van luchtgedragen infecties en het reduceren van contactinfecties, bijvoorbeeld door de toepassing van eenpersoonskamers met schone lucht en de zorgvuldige plaatsing van sanitair.[8] *Patient Safety* gaat over de ziekenhuisomgeving en de verbetering van het genezingsproces van de patiënt. Als consequentie van de kwantitatieve benadering leidt het vooral tot uitspraken over microbiologische en organisatorische aspecten; aspecten die slechts een klein deel uitmaken van de overwegingen die een rol spelen bij het architectonisch ontwerp. De intentie achter *Patient Safety* is om een beter gebouw te maken - beter voor de gezondheid van de patiënt voor zover dit in meetbare data te vertalen is. Door de kwantitatieve benadering verschuift de focus van de patiënt en zijn beleving naar hoe je kunt voorkomen dat deze persoon niet verder ziek wordt op het moment dat hij of zij in het ziekenhuis ligt. Op zich een belangrijk doel, maar ook een weerspiegeling van een samenleving waar het steeds meer om veiligheid gaat en waar patiënten garanties willen. Geen ziekenhuis wil immers onnodige risico's nemen met als gevolg dat de aandacht voor de ontworpen omgeving wordt toegespitst op negatieve aspecten - zoals het voorkomen van ongelukken en besmettingen - ten koste van de positieve aspecten. Het streven om een goed gebouw te maken, kan zodoende leiden tot regels die eerder benauwend dan opbeurend zijn voor mensen.

Evidence Based Design en de omgeving

Van oorsprong was *Evidence Based Design* verbonden met de omgevingspsychologie. De link tussen beide is Roger S. Ulrich, opgeleid als omgevingspsycholoog. Ulrich is niet alleen de 'vader' van *Evidence Based Design*. In bepaalde kringen is hij vooral bekend van zijn *Supportive Design* theorie, gebaseerd op de stelling dat ontwerp meer zou moeten doen dan het produceren van gezondheidsfaciliteiten die voldoen in termen van effectiviteit, marketing, prijs en wet- en regelgeving. Een ander uiterst belangrijk doel voor ontwerpers zou de bevordering van welzijn moeten zijn, bijvoorbeeld door fysieke omgevingen te maken die 'psychologisch ondersteunend' zijn.[10] Uit hetzelfde hout is ook *Evidence Based Design* gesneden. Het zoeken naar bewijs had in eerste instantie namelijk tot doel het belang van *Supportive Designs* te onderbouwen.

Omdat stress een slechte invloed heeft op het genezingsproces en ook ongezond is voor zowel bezoeker, personeel als patiënt, is het volgens Ulrich belangrijk een ziekenhuisomgeving te creëren die stressreducerend is voor iedereen. Deze moet voldoen aan: gevoel van controle met betrekking tot de fysieke en sociale omgeving, sociale ondersteuning en toegang tot positieve afleiding in de fysieke omgeving.[11] Ulrich houdt met zijn *Supportive Design* theorie een pleidooi richting ontwerpers om 'ondersteunende omgevingen' te maken; omgevingen die een positief effect kunnen hebben op het genezingsproces van de patiënt. Dit is niet hetzelfde als een *Healing Environment* zoals datin Nederland vaak op een kwantitatieve manier wordt gedefinieerd in termen van daglicht, frisse lucht, stilte, tuinen en natuur.[12] Een ondersteunende omgeving gaat niet alleen om de fysieke ruimte, maar net zozeer om de mentale en sociale ruimte. Een ondersteunende omgeving moet mogelijkheden bieden en creëren voor verschillende patiëntengroepen; voor verschillende mensen met verschillende behoeften. Het gaat om de begeleiding, behandeling en beleving van de patiënt en de relatie patiënt - bezoeker - behandelaar en niet alleen om de esthetiek.

Traditioneel gezien was de *Healing Environment* meer gebaseerd op praktische ervaring en filosofische overwegingen dan op wetenschappelijk bewijs.[13] Door de kwantitatieve introductie van de *Healing Environment* in Nederland wordt de benadering rationeel geïnstrumentaliseerd alsof het *Evidence Based Design* is. Dat *Healing Environments* in Nederland *evidence based* moeten zijn en niet worden gepresenteerd als een zorgfilosofie, heeft waarschijnlijk te maken met pragmatiek: werkt het, dan is het goed. Daarnaast lijkt er een cultureel voorbehoud te zijn dat in bijvoorbeeld Scandinavië of de Verenigde Staten ontbreekt. Zo verricht men in Zweden[14] en in de Verenigde Staten[15] vanuit de landschapsarchitectuur in *Healing Gardens* wetenschappelijk onderzoek, waarin observaties en overwegingen uit de zogenaamde *Healing Garden School* worden gecombineerd met theorieën uit *Supportive Design* en onderzoeksresultaten uit *Evidence Based Design*.

Wat *Supportive Design* en *Healing Environments* gemeenschappelijk hebben, is de idee dat de mens verbonden is met zijn omgeving, en *the concept of healing* (genezing). Dit sluit aan op de ontwikkeling van het moderne ziektebeeld van pathogeen, gericht op ziekteverwekkers van biologisch oorsprong, naar salutogeen, ofwel 'de oorsprong van gezondheid' zoals dat onder meer is beschreven door architect Alan Dilani. De toenemende interesse voor *Evidence Based Design* binnen de gezondheidssector kan niet los gezien worden van deze ontwikkeling. Volgens Dilani is het moderne beeld van ziekte niet langer slechts pathogeen, maar is ziekte veelzijdiger en zodoende het gevolg van een veelheid aan oorzaken of onderdelen die niet per definitie pathogeen hoeven te zijn. De salutogene zienswijze, die zich richt op processen die de gezondheid bevorderen, heeft een steeds prominentere plaats gekregen in de overwegingen over wat zorg is en in de totstandkoming van nieuwe zorgfaciliteiten. In dit nieuwe paradigma staat de patiënt centraal.[16]

Interessant in het salutogene perspectief is de verschuiving van de discussie over ziekte naar de discussie over gezondheid. Want wat is gezond? Hoe ziekte, pijn, lichamelijke degeneratie en dood worden beleefd, is heel persoonlijk en heeft ook te maken met de cultuur waarin de persoon is geboren en opgevoed. Ziek zijn, ziekte beleven, zieken behandelen gaat niet alleen om het fysieke (biologische) lichaam maar ook om het sociaal-culturele lichaam. Studies van medische behandelingen binnen verschillende culturen laten dan ook zien dat de medische (objectieve) wereld onder invloed staat van andere percepties dan de puur wetenschappelijke. Sterker nog, de behandeling weerspiegelt vaak de cultuur waarin de behandeling plaatsvindt.[17] Arts Kerr L. White, voormalig directeur van Health Sciences Rockefeller Foundation schrijft hierover in het voorwoord van het boek *Medicine & Culture* het volgende: "Internationale vergelijkingen die de nadruk leggen op waarden, onderliggende paradigma's en resultaten van zorg bieden wellicht meer inzicht in de optimale manieren om gezondheid te verbeteren en ziekte te verminderen dan traditionele vergelijkingen die zich beperken tot het meten van faciliteiten, mankracht, gebruik en kosten."[18] Dit is iets om over na te denken in een tijd, waarin kwantitatief onderzoek de voorkeur heeft boven kwalitatief onderzoek; waarin harde feiten meer tellen dan zachte waarden. Als niet ieder mens hetzelfde is - afhankelijk van mentale kracht, sociale bagage, financiële draagkracht en culturele achtergrond - wordt het ontwerpen van de gezondheidssector een complexe opgave die niet alleen met kwantitatieve onderzoeksmethoden op te lossen is. Een interdisciplinaire manier van werken zou een oplossing kunnen bieden voor deze problematiek door kwalitatief architectuuronderzoek te combineren met onderzoek uit verschillende

EVIDENCE BASED DESIGN IN NEDERLAND

Don Murphy, partner VMX Architects

VMX werkt volgens Don Murphy niet met *Evidence Based Design*. Toch blijkt uit het gesprek over het werk van VMX in de zorgsector dat het bureau op een intuïtieve en creatieve manier de eerste drie stappen van de EBD-methode volgt, zoals gedefinieerd door Kirk Hamilton: eerst onderzoek doen, daarna een hypothese formuleren waaruit het ontwerp wordt gegenereerd om uiteindelijk het gerealiseerde project (het gebouw) te evalueren met als doel het resultaat openbaar te maken. Alleen zijn deze stappen niet gebaseerd op wetenschappelijk (kwantitatief) bewijs.

Ontwerp VMX Willem Arnts Huis, Utrecht

Don Murphy houdt niet van het woord theorie. Bij VMX wordt kennis verzameld om nieuwe concepten te ontwikkelen. VMX stelt vragen en maakt analytische studies van gebouwtypologieën, architectuurhistorische en sociaal-culturele ontwikkelingen, literatuur, film en kunstprojecten, persoonlijke ervaringen en gesprekken met het personeel. Het gaat erom uit alle mogelijke bronnen relevante informatie te verzamelen, om 'creativiteit en gekte' en om 'empathie voor de patiënten' - niet om regels volgen of maken. Als voorbeeld noemt Murphy het ontwerp dat VMX in opdracht van de Stichting Altrecht maakte voor het Willem Arnts Huis in Utrecht: een nieuwbouwproject voor een psychiatrische inrichting die opgeleverd wordt in 2007. Het idee was om het psychiatrische ziekenhuis te de-stigmatiseren door het abnormale te normaliseren. Het ging erom architectonische antwoorden te vinden op psychologische problemen zoals je opgesloten voelen in je kamer of gevangen zijn in een gebouw. Het ontwerp is te beschouwen als serie strategieën die gezamenlijk de kwaliteit van de leefomgeving van de patienten verhogen.

Een van deze strategieën ging om de perceptie van het gebouw van binnenuit en van buitenaf, opdat het gebouw

niet zou worden ervaren als een gesloten blok. Door de openbare programmaonderdelen beneden in het gebouw te plaatsen en de gesloten afdelingen boven, wordt het gebouw een onderdeel van het stedelijk interieur. Voor iedere patiëntenafdeling is er verder een buitenruimte op het dak. En: bij een dak hoort een hek. Het hek is er in de eerste plaats niet om de patiënten op te sluiten, maar om er voor te zorgen dat ze niet van het dak vallen. Aan de hand van gesprekken met patiënten en personeel gaat VMX dit jaar (kwalitatief) onderzoeken of de strategieën echt werken, dit in samenwerking met een psychiater.

andere disciplines zoals b.v. cultuurfilosofie, sociologie, antropologie en psychologie. Dit zou de toekomst van *Evidence Based Design* kunnen zijn.

Epiloog

Evidence Based Design heeft voor ontwerpers potentie als ontwerpbenadering en als onderzoeksmethode; een methode die uitnodigt om te luisteren en om te leren. Het vraagt om een *bottom up* ontwerpvisie. Ontwerpers moeten zelf het lef hebben om zich *Evidence Based Design* eigen te maken, om het in te vullen, om het te definiëren en het niet over te laten aan anderen. Om af te komen van de onduidelijkheid die rond het begrip hangt, is het misschien zelfs verstandig een andere naam voor *Evidence Based Design* te verzinnen, een naam die beter past bij de Europese of zelfs de Nederlandse context. Daarbij is het goed te bedenken dat ontwerpen geen natuurwetenschappelijke discipline is, maar wel gebaseerd moet zijn op analytisch, kritisch en zelfstandig denken. Evaluatie van het eigen ontwerp zou een natuurlijk onderdeel van de praktijk moeten zijn. Om verder te kunnen komen met de ontwikkeling van de zorg en met onze maatschappij als verzorgingsstaat zijn visies nodig. Deze visies zullen waarschijnlijk niet uit kwantitatief onderzoek komen maar veeleer uit kwalitatieve maatschappelijke infiltratie, interactie en participatie opdat een zorgvuldig onderbouwd ontwerp kan ontstaan.
De eerste twee niveaus van de methode van Kirk Hamilton gaan over het verzamelen en ontwikkelen van gedachtegoed in een multidisciplinaire setting, het realiseren van het ontwerp en het evalueren daarvan. De laatste twee niveaus betreffen de transparantie en validiteit van het werk. Maar waar moeten we in Nederland naartoe om te discussiëren en te publiceren? Het ontbreekt momenteel aan een centrale kennisontwikkeling, ook op universitair niveau. En 'projectdrukte' is het antwoord dat je krijgt wanneer ontwerpers wordt gevraagd waarom ze geen tijd hebben om onderzoek te doen. De verantwoordelijkheid ligt ook op het niveau van de samenleving en de politiek. Er is onvoldoende - financiële - ruimte om kritisch na te denken en om gemeenschappelijk gedachtegoed te ontwikkelen. Het gaat hier niet alleen om het vinden van oplossingen voor de zorgsector, maar om een andere manier van denken. Met de toenemende vergrijzing zal de opgave niet alleen bestaan uit de behandeling van zieken; net zo belangrijk is de vraag hoe de bevolking zo lang mogelijk gezond blijft. Het salutogene perspectief reikt verder dan de zorgsector alleen en betreft de hele leefomgeving. Ziekte behandelen is belangrijk, maar voorkomen is beter. Onderzoek hiernaar is van groot maatschappelijk belang en *Evidence Based Design* kan daar, mits goed uitgevoerd, een wezenlijke bijdrage aan leveren.+

1 Sackett, David L. et al., *Evidence based medicine: What it is and what it isn't*, BMJ 1996; 312: 71-72 (13 January).
2 Marcus, Clare Cooper and Marni Barnes, *Healing Gardens, Therapeutic Benefits and Design Recommendations*, Wiley, New York, 1999, Chapter 2: Ulrich, Roger S., *Effects of Gardens on Health Outcomes: Theory and Research*, pagina 31.
3 Payer, Lynn, *Medicine & Culture : Varieties of Treatment in the United States, England, West Germany, and France*, Henry Holt and Company, New York, 1988, Chapter: 'United States: The Virus in the Machine', pagina 127.
4 Hamilton, Kirk, FAIA, FACHA, *Definition of Evidence Based Design*, Healthcare Design Magazine, www.healthcaredesignmagazine.com, nov 2003.
5 Hamilton, Kirk, FAIA, FACHA, *Definition of Evidence Based Design*, Healthcare Design Magazine, www.healthcaredesignmagazine.com, nov 2003.
6 Hamilton, Kirk, FAIA, FACHA, *Definition of Evidence Based Design*, Healthcare Design Magazine, www.healthcaredesignmagazine.com, nov 2003.
7 Interview met Lars Jørgen Hansen, GP, PhD. The Research Unit for General Practice in Copenhagen, DK over de methodiek achter 'Evidence Based Medicine'
8 Lupton, Deborah, *Medicine as Culture : Illness, Disease and the Body in Western Societies*, Sage Publications, London, 1994, Chapter 3: Representations of Medicine, Illness and Disease in Elite and Popular Culture, pagina 59-60.
9 Wagenaar, Cor, *The Architecture of Hospitals*, Nai Publishers, NL, 2006, Chapter 5: Ulrich, Roger S., Evidence Based Healthcare Design, pagina 281-289
10 Marberry, *Sara O., Innovations in Healthcare Design*, Van Nostrand Reinhold, New York, 1995, Chapter 4: Design Impact, Ulrich, Roger S., Effects of Healthcare Interior Design on Wellness: Theory and Recent Scientific Research, pagina 88-104.
11 Marberry, Sara O., *Innovations in Healthcare Design*, Van Nostrand Reinhold, New York, 1995, Chapter 4: Design Impact, Ulrich, Roger S., Effects of healthcare Interior design on Wellness: Theory and Recent Scientific Research, pagina 88-104.
12 Berg van den, Agnes E., *Health Impacts of Healing Environments; A Review of evidence for benefits of nature, daylight, fresh air, and quiet in healthcare settings*, Van Eck & Oosterink, Dodewaard, 2005, Chapter 4: The Review, pagina 18-19
13 Berg van den, Agnes E., *Health Impacts of Healing Environments; A Review of evidence for benefits of nature, daylight, fresh air, and quiet in healthcare settings*, Van Eck & Oosterink, Dodewaard, 2005, Chapter 3: Evidence-based Design, pag 13
14 Grahn, Patrick, *What makes a Garden a Healing Garden*, Journal of Therapeutic Horticulture, AHTA, Volume XIII, 2002 – Patrick Grahn is professor in landscape architecture, Institution of Landscape Planning, Health and Recreation, SLU, S
15 Marcus, Clare Cooper and Marni Barnes, *Healing Gardens, Therapeutic Benefits and Design Recommendations*, Wiley, New York, 1999 – Clare Cooper Marcus is professor Emerita, Departments of Architecture and Landscape Architecture, University of California, Berkley, USA
16 Dilani, Alan, *Psychosocially supportive design – Scandinavian health care design*, World Hospital Health Service, 2001; 37 (1) – Abstract: www.pubmed.gov.
17 Marcus, Clare Cooper and Marni Barnes, *Healing Gardens, Therapeutic Benefits and Design Recommendations*, Wiley, New York, 1999, Chapter 1: Introduction: Historical and Cultural Perspective on Healing Gardens, part; Cultural differences in the practice of medicine, pagina 17 – 22
18 Payer, Lynn, Medicine & Culture: Varieties of Treatment in the United States, England, West Germany, and France, *Henry Holt and Company. New York. 1988, Foreword, pagina 10.*

Organizer: ‘Beyond Clinical Buldings’ symposium, TU Delft, 2007

Beyond Clinical Buildings

Architectonisch Ontwerpen-Interieur
Technische Universiteit Delft
Faculteit Bouwkunde, NL

22 maart 2007
Faculteit Bouwkunde, Delft, Berlageweg 1, NL

In het kader van het Master of Science onderzoeks- en ontwerpatelier ‘Beyond Clinical Buildings’ organiseerde de leerstoel Architectonisch Ontwerpen-Interieur in samenwerking met Het Stimuleringsfonds voor Architectuur een studiemiddag met het thema; architectuur - medische wetenschap - cultuur. Mensen zijn uit verschillende disciplines uitgenodigd om vanuit hun vak een presentatie te geven van observaties, overwegingen en eigen (werk)ervaringen over de volgende onderwerpen:

- De sociaal-culturele context van gezondheidszorg
- De relatie tussen patiënt en behandelaar
- Ziekenhuisarchitectuur versus gezondheidsconcepten

Sprekers waren: Peter Michiel Schaap, (architectuurhistoricus), Ton Venhoeven, (architect), Sjaak van der Geest, (antropoloog), Joachim Robbrecht & Sarah Moeremans, (theaterregisseurs), Arnoud Holleman, (kunstenaar en voormalig curator voor de Stichting Kunst en Openbare Ruimte) en Mark Maurer (architect).

De studiemiddag werd ingeleid door Christoph Grafe (Associate professor Architectural Design-Interiors), Tony Fretton (Professor Architectural Design-Interiors) en Janny Rodermond (directeur van Het Stimuleringsfonds voor Architectuur). Het programma was opgebouwd uit drie blokken van ieder twee lezingen met aansluitend vragen door een co-referent. Co-referenten waren: Nikolaas Vande Keere (UR Architects), Irene Cieraad (antropoloog) en Leon Teunissen (architect en partner VMX). Dagvoorzitter was Christoph Grafe. Het slotdebat werd geleid door Wytze Patijn (architect en decaan faculteit Bouwkunde).

Editor: Beyond Clinical Building’s publication, Stimuleringsfonds voor Architectuur & TU Delft, 2008

Organizer: ‘Beyond Clinical Buldings’ symposium, TU Delft, 2007

Lezing 1

Peter-Michiel Schaap — De gesloten wereld van de zorgarchitectuur

“Voor de aard van ons werk hoef je helemaal niet zo’n mooi huis te hebben.”

“Als we dan gaan rekenen komen we uit bij wat we altijd al maken: een betonnen gebouw met gemetselde buitenkant.”

“Je moet ook zorgen dat het niet te duur wordt, dat mensen niet denken dat ze voor het gebouw moeten betalen.”

In de periode november 2005 – juni 2006 is Peter-Michiel Schaap aanwezig bij 7 sessies over zorgarchitectuur van de stuurgroep Architecture in Health. Op basis van uitspraken van opdrachtgevers in de zorg uit deze sessies constateert hij dat architectuur een geringe rol speelt in de wereld van de zorg. Opdrachtgevers zijn vooral bezig met getallen en zien architectuur vaak als niet meer dan esthetische slagroom op de taart. De meerwaarde van architectuur wordt niet erkend. Hierdoor worden kansen gemist om de kwaliteit van de zorg te verbeteren. De snelle ontwikkeling van de medische technologie staat in scherp contrast tot de productie van steeds dezelfde traditionele gebouwen waarin zij gehuisvest wordt. Peter Michiel Schaap houdt daarom een pleidooi om architecten vroeger - zo vroeg mogelijk - bij het bouwproces van zorginstellingen te betrekken.

Als reden om de rol van de architect en mensen van buiten de zorgsector in het algemeen beperkt te houden noemen opdrachtgevers vaak de complexiteit van ziekenhuisgebouwen. Maar dit idee wordt juist in stand gehouden door de opdrachtgevers zelf en hun focus op het specialistische karakter van zorggebouwen, terwijl een groot deel van het ziekenhuis qua complexiteit en typologie niet wezenlijk verschilt van luchthavens of grote treinstations. De complexiteit ligt meer in de organisatie van het ziekenhuis, dat bestaat uit een conglomeraat van machtsverhoudingen waarin architecten nauwelijks aan bod komen, dan in het gebouw.

Volgens Peter-Michiel Schaap hebben opdrachtgevers in de zorg door de omvang van de bouwopgaves die zij beheren en door de collectieve functie van het ziekenhuis een bijzondere verantwoordelijkheid voor de kwaliteit van de gebouwde omgeving. Als ‘intelligente ruimtemaker en een intelligente vertaler van een programma’ kan de architect volgens Peter Michiel Schaap op structureel niveau en vanaf het begin meedenken over de kwaliteit van het ziekenhuisgebouw. Architectuur omvat de logica, gebruikswaarde, beleving en representatieve waarde van het gebouw en haar kwaliteit als werkplek, en niet alleen maar de afwerking met een tapijtje en een kleurtje op de wand zoals veel opdrachtgevers denken. Het probeert antwoorden te vinden op vragen als: ‘Wat doet de gebouw met de bezoekers, de medewerkers. Wat doet het met de patient? Bent je uitnodigend, gastvrij? Wat voor signaal zend je uit als organisatie? Voelt de patient zich op zijn gemak, kan die zijn weg vinden?’.

De investering in een goed architectonisch ontwerp is relatief klein ten opzichte van het totale ziekenhuisbudget en kan bovendien worden terugverdiend in de exploitatie van het gebouw, in de marketing van de instelling (niet onbelangrijk in een tijd van toenemende commercialisering met bijbehorende concurrentie) en in de primaire functie van het ziekenhuis: het verlenen van zorg en het genezen van patienten.

Architecture in Health Sessies (2005-2006)

Als vervolg op de manifestatie The Architecture of Hospitals en het gelijknamige slotcongres in het UMCG in april 2005 werd de Stuurgroep Architecture in Health opgericht. De stuurgroep, bestaande uit vertegenwoordigers van het Centrum Zorg en Bouw, TNO (opvolger van het Bouwcollege), het Stimuleringsfonds voor Architectuur, de STAGG, het Atelier Rijksbouwmeester en het UMCG, stelde zich tot doel de aangewakkerde interesse rond zorg en architectuur verder te bevorderen en de landelijke discussie te stimuleren over thema’s als Evidence Based Design, zorgmodellen, technologie, stedelijke inpassing en opdrachtgeverschap.

Architecture in Health diende nadrukkelijk een gezamenlijk platform te worden voor architecten, wetenschappers en zorg- en overheidsorganisaties. In de periode november 2005 – juni 2006 werden in dit kader zeven sessies georganiseerd rond de thema’s zorgconcepten, technologie, opdrachtgeverschap, Evidence Based Design en architectuur en stedelijke inpassing.

Peter-Michiel Schaap inventariseerde uitspraken van ziekenhuisbestuurders uit die sessies, waarvan hier een kleine selectie. Gezamenlijk geven ze een beeld van hoe er binnen de zorgsector (nu nog) over architectuur wordt gedacht.

Lezing 2

Ton Venhoeven — Core Hospital

Ton Venhoeven plaatst de discussie over zorgarchitectuur in een bredere maatschappelijk-culturele context. De opkomst van de netwerksamenleving en toenemende milieuproblematiek stellen andere eisen aan de plaats van het ziekenhuis in de samenleving. Hij schetst de snelle ontwikkelingen in de medische zorg, zoals voortschrijdend inzicht in de relatie tussen lichaam en geest, miniaturisatie van technologie en daarmee samenhangend de kortere behandeltijd in ziekenhuizen en constateert dat de ziekenhuiswereld niet adequaat reageert op deze ontwikkelingen. De huidige ziekenhuizen zijn volgens hem ‘veel te groot en representeren alleen de macht en prestige van de medische stand’. Waar vroeger de ziekenhuisarchitectuur de belangrijkste factor was in genezing is door steeds betere en efficientere behandelmethoden deze rol tegenwoordig veel kleiner en wordt het gebouw meer een werkplaats voor de (dag)behandeling dan een plek om meerdere dagen te verblijven. Tegelijkertijd is er een toenemende behoefte aan een wellness-achtige omgeving voor de periode van herstel na het ziekenhuisbezoek.

Het door Ton Venhoeven CS voorgestelde ‘core hospital’ is een efficiente, compacte machine centraal gelegen in de stad die zich voornamelijk richt op ingrepen in dagbehandeling en acute behandelingen. Naar analogie met de auto- en luchtvaartindustrie richt dit ziekenhuis zich op zijn ‘core business’ en de marketing van deze kernactiviteiten. De macht van de specialisten wordt gereduceerd en ondergeschikt gemaakt aan een commercieel winstoogmerk. Dit zal volgens Ton Venhoeven de prijs en kwaliteit van de zorg en de zorgarchitectuur ten goede komen, met name in aspecten die goed via het internet te communiceren zijn, zoals hospitality en liefdevolle bejegening door het personeel, architectonische kwaliteit e.d.
In vergelijking met het huidige ziekenhuis is het ‘core hospital’ in omvang gehalveerd. Functies als kantoren, fysiotherapie, onderdelen polikliniek worden extern gehuisvest. Door deze splitsing van activiteiten is het mogelijk om de gezondheidszorg beter te organiseren in en als onderdeel van de stad. Afgesplitste functies zijn als satellieten verbonden met het kernziekenhuis maar kunnen geografisch gezien op grote afstand liggen. Voor de stad betekent dit dat deze functies decentraal in de wijk geplaatst kunnen worden. In combinatie met wellness-achtige functies als zorghotels kunnen zij daar bijdragen aan het voorzieningenniveau, dichter bij de dagelijks leefomgeving. Het afgeslankte ‘kernziekenhuis’ biedt een kwalitatief hoogwaardige omgeving om de psychologische effecten tijdens de (dag)behandeling direct na de ingreep op te vangen. Hiertoe wordt in de visie van Ton Venhoeven een deel van het door halvering bespaarde geld geinvesteerd in een mooie materialisering van de architectuur en de patio’s. Daarnaast worden op de begane grond openbare, stedelijke functies als winkels en een cinema aan het core hospital toegevoegd. Een naastgelegen (wellness-)hotel biedt extra beddencapaciteit voor herstel van dagbehandelingen en acute behandelingen.

Het ontwerpen van een ziekenhuis is een culturele opgave. Als we niet veel fundamenteler nadenken over de relatie interieur, stedenbouw, cultuur en architectuur missen we kansen zowel voor de gezondheidszorg als voor een duurzame stedenbouw voor de toekomst. De eigenlijke complexiteit van de ziekenhuis ligt in de cultuur waarin het tot stand komt.

Temidden van het stadsleven is het Core Hospital een oase van rust. De sfeer doet denken aan die van de oude kloosters die met hun kerk, keuken, bibliotheek, logementen en kruidentuinen de voorlopers waren van onze hedendaagse ziekenhuizen.
Core Hospital concentreert zich op hoogwaardige hightech gezondheidszorg. Het huisvest alleen de hoogstnoodzakelijke functies, ongeveer 50% van het standaard ziekenhuis programma, terwijl alle overige functies extern worden gehuisvest. Dit afgeslankte ziekenhuis past in vrijwel elke stad.

Een hotel met een interne verbinding biedt low-care verpleging naast optimaal comfort aan patiënten, maar biedt ook accommodatie aan familieleden van patiënten, artsen, toeristen en zakenlieden. Op de begane grond bevinden zich winkels die zowel van de straat als vanuit het ziekenhuis bereikbaar zijn. De patiënt wordt een efficiënte ziekenhuisaccommodatie geboden, in de directe nabijheid van markten, winkels, restaurants en een bruisend stadsleven.

Het ziekenhuis is een healing environment gericht op diagnose en behandeling. De patio zorgt voor daglicht en uitzicht ongeacht de locatie. Het licht wordt langs tuinen en terrassen tot diep in het gebouw geleid. Semi-transparante witte wanden reflecteren en filteren het licht en patronen op de wand zorgen voor zowel privacy als transparantie.

Editor: Beyond Clinical Building’s publication, Stimuleringsfonds voor Architectuur & TU Delft, 2008

Organizer: ‘Beyond Clinical Buldings’ symposium, TU Delft, 2007

Lezing 3

A woman anxiously waits for her husband to be seen by a doctor

Beds are full and additional patients are placed on the floor of the ward

Doctors routinely checking a patient as part of their daily round

Alle foto’s zijn gemaakt door Ibrahim Mahammad Iqbal voor het boek van Shahaduz Zaman getiteld ‘Broken limbs, broken lives. Ethnography of a hospital ward in Bangladesh’. Amsterdam: Het Spinhuis, 2005.

Sjaak van der Geest — Het ziekenhuis als sociale ruimte: Medisch-antropologische notities

Als antropoloog is Sjaak van der Geest geinteresseerd in de mens in zijn context, in de subjectieve ervaring, in verschillende culturele perspectieven. De antropoloog probeert door eigen ervaring (intersubjectiviteit) en introspectie - zonder oordeel – de ‘ander’ te begrijpen door deel te nemen in het ‘object’ van studie (‘participant observation’). Hij laat ons met de onbevangen blik van zijn vakgebied naar de werkelijkheid van het ziekenhuis kijken. Deelnemen in het dagelijks leven van een ziekenhuis is als antropologisch onderzoeker niet eenvoudig, omdat men niet zomaar patient of dokter wordt, maar het is een belangrijke sociale en culturele ruimte, die als antropologisch studieobject te vergelijken is met een dorp. Volgens een collega die een ziekenhuis in Amsterdam onderzocht is het zelfs veel ingewikkelder en exotischer dan een dorp in Afrika. Behalve ‘dorp’ kan het ziekenhuis ook een toevluchtsoord zijn, of een middel om mensen te bekeren (in Afrika), een wapen om mensen er onder te houden, een fabriek, een ‘business centre’, een ‘tempel’, een afdeling van de universiteit, een gevangenis, een tijdelijke of permanente woonplek. Maar al deze omschrijvingen en metaforen dragen het gevaar in zich dat ze het ziekenhuis isoleren van zijn context.

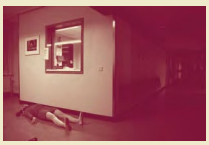
Om het belang van en de nauwe verbinding met de context te laten zien presenteert Sjaak van der Geest een onderzoek van de antropoloog Shahaduz Zaman op de orthopedische afdeling van een van de grootste universiteitsziekenhuizen in Bangladesh. Dat onderzoek laat zien dat een ziekenhuis weliswaar een andere wereld is met eigen regels maar dat zij ook de samenleving weerspiegelt waar zij deel van uitmaakt. Het beschrijft de verschillende bewoners van het ziekenhuis en hun onderlinge machtsverhoudingen. De patiënten die op een zaal met 100 bedden worden verzorgd door hun familie terwijl de verpleegkundigen zich vooral bezig houden met papieren. De dokters die de patiënten haast als objecten behandelen maar wel klagen over het gebrek aan waardering voor hun werk. De familie die moet slapen naast of onder het bed van de patiënt, wat voor veel vrouwen eigenlijk not-done is omdat ze zich vanwege hun geloof en cultuur niet vrijelijk in de openbare ruimte behoren te bewegen. En de ‘wardboys’, tussenpersonen die onderaan in de hiërarchie staan maar zonder wie je niets gedaan krijgt. Aspecten van de maatschappij van Bangladesh als armoede, extreme hiërarchie, geweld, belang van familiebanden, onzichtbaarheid van vrouwen en inventiviteit bij gebrek aan middelen zijn allemaal terug te vinden in dit ziekenhuis.

Vanuit dit perspectief is de Nederlandse gezondheidszorg een toonbeeld van luxe, efficientie en respect voor de patiënt. Tegelijkertijd laat het onderzoek ook zien dat een ziekenhuis veel verschillende bewoners heeft die bovendien vaak tegengestelde belangen hebben. Dit roept de vraag op, op wiens bewijs ‘evidence based design’ zich baseert? Op wiens woon- en leefbehoeften baseer je je ontwerp voor een ziekenhuis? En door welke belangen laten architect en ziekenhuisdirectie zich leiden?

“Abdul Khaleque is an elderly man, he broke both his right hand and leg in a car accident. While he was crossing the high way near his village, a car ran over him. He hardly comes to this city, but now he is trapped in this big city hospital bed with plastered limbs. This is harvest time, so his two sons are busy in the field in the village. His wife is accompanying him in the hospital. She has just finished feeding him the breakfast and is preparing to give a dressing to one of Abdul Khaleques wounds. One junior doctor gives her instruction how to do it. But she finds it very difficult to catch a gauge with the forceps, which she has never seen before. After a while it is time for the professor’s round. The nurse, ward boy, cleaners all start to shout at the relatives of the patients, telling them to get out of the ward. Some patients have several attendants. They take time to move. The staff start scolding and at a certain point push them by their neck. Abdul Khaleque’s wife usually goes out and sits along with others in the corridor in front of the operation theatre on another floor till the round is over, but she is feeling sick today and can not walk to the corridor. She crawls under the bed of her husband. Luckily the bed is in a corner, which is good enough to hide her during the round. Once the professor has left, she comes out with a sigh of relief.”

Uit: Poverty and violence, frustration and inventiveness: Life in a hospital ward in Bangladesh’, door Shahaduz Zaman

Lezing 4



Sarah Moeremans en Joachim Robbrecht — Een theatrale tocht door het ziekenhuis

Sarah Moeremans en Joachim hebben voor hun voorstelling ‘Zieke zielen’ het ziekenhuis als onderwerp en als locatie gebruikt. Uitgangspunt zijn de taboes die aan ‘ziek-zijn’ kleven. Daarbij speelde de vraag een rol of kunst een plaats mag innemen of een functie kan vervullen op een dergelijke locatie. Ter voorbereiding hebben zij 3 maanden onderzoek gedaan en als onderdeel daarvan 3 weken stage gelopen in het Leids Diaconessenhuis. Daarnaast hielden zij een aantal ‘Veenproeven’: een serie bijeenkomsten met deskundigen of betrokkenen uit de medische wereld en een aantal performances, concerten en installaties op verschillende locaties in het ziekenhuis.

Omdat de beleving van ziek zijn individueel is – “elke patient is expert in zijn eigen ziekte” - hebben zij zich gericht op de ervaring van verplegend personeel en dit gecombineerd met een persoonlijke filosofische invulling van het begrip ziekte (o.a. geïnspireerd door de figuur van Herman Boerhaave, interviews met artsen en verplegers, en de filosofische analyse van de emoties door Spinoza). Zij wilden zich nadrukkelijk niet als een soort cliniclown opdringen aan patienten. Door het ziekenhuis onbevangen te bestuderen op een onconventionele manier – bijvoorbeeld door het ziekenhuis te doorkruisen aan de hand van verschillende ‘kaarten’ (van een kaart van de Efteling tot een partituur van John Cage) – hebben zij geprobeerd haar psyche bloot te leggen.

Het duo schetst het ziekenhuis als een plek van tegenstellingen. Tussen deze tegenstellingen bestaat een frictie die problematisch is en talloze praktische en ethische dilemma’s oproept. Het gebouw is een vreemde mengeling van de openheid van een hotel met moderne transparante architectuur en de geslotenheid van een fort met een ophaalbrug als entree. Het is door een opeenvolging van uitbreidingen een labyrinth geworden waarin een systeem van looproutes het geheel verbindt, maar waar iedereen in verdwaalt. Daarnaast is er de tegenstelling tussen de ‘materialiteit’ en professionaliteit van artsen en personeel enerzijds en anderzijds een “emotionele stroom die door de gangen stroomt en die op bepaalde punten opgevangen moet worden”. De kapel is zo’n punt die dient als ontsnappingsruimte, “de enige ruimte die niet naar keuken ruikt”. Het conflict tussen ‘ongrijpbare ziel’ en ‘het tastbare lichaam’ stond centraal in de voorstelling.

De theatermakers weigeren een oordeel uit te spreken. De voorstelling is een vertaling van hun indrukken. Het ziekenhuis en het ziek-zijn werden drie keer anders belicht tijdens door personages begeleidde wandelingen. De personages zijn deels gebaseerd op mensen die zij hebben ontmoet, zoals een onderhoudsman, die fulltime bezig is om muren wit te schilderen en zo de sporen van gebruik van het ziekenhuis uit te wissen, en die praat over het gebouw zoals een dokter over zijn patient, en de gastvrouw, die als enige functie heeft de patienten te ontvangen en welkom te heten. Gezien door de ogen van de theatermakers wordt het ziekenhuis een theatrale ruimte met allerhande rituelen, nachtmerries en dromen rond het zieke lichaam.

Met de multidisciplinaire voorstelling ‘Zieke Zielen’ slaat de Veenfabriek een brug tussen de wereld van het ziekenhuis en de buitenwereld.

Acteurs, muzikanten en kunstenaars bestrijden de maatschappelijke smetvrees voor een onvermijdelijk aspect van het leven: ziek zijn. Ze verdiepten zich in de medische wetenschap en liepen gedurende enkele weken mee in de dagelijkse routine van het ziekenhuis. Bestaande angsten, taboes en humor rond het zieke lichaam werden in beeld, geluid en tekst gevat. Resultaat was een muziektheatervoorstelling als een narcosedroom die zieke en gezonde mensen, artsen en medewerkers samen beleven.

Aan de hand van een geestdriftige professor en een teergevoelige onderhoudsmonteur worden de toeschouwers meegenomen op een ontdekkingsreis naar de verborgen werkelijkheid van het ziekenhuis. Onderweg ontmoeten zij sprookjesachtige personages die de wereld van het ziekenhuis op een ongewone manier belichten. In een klinisch klimaat dat noodgedwongen wordt gekenmerkt door ernst, onderzoeken en uitslagen tonen zij de achterkant van de machine, de passie voor perfectie en de ruimte voor verwondering.

‘Zieke Zielen’, Muziektheaterensemble de Veenfabriek, Diaconessenziekenhuis, Leiden (2006)

Regie: Joachim Robbrecht en Sarah Moeremans.

Editor: Beyond Clinical Building’s publication, Stimuleringsfonds voor Architectuur & TU Delft, 2008

Organizer: ‘Beyond Clinical Buldings’ symposium, TU Delft, 2007

Lezing 5






Fotografie: Bas Princen

Arnoud Holleman — Dementie als ontwerpkwaliteit

Arnoud Holleman heeft als extern adviseur voor SKOR het ontwerp door beeldend kunstenaars Liesbeth Bik en Jos van der Pol en landschapsarchitect Thijs van Hees voor de tuin van verpleeghuis Lindestede te Wolvega begeleid. Het verpleeghuis onderscheidt zich van het ziekenhuis door de nadruk op langdurige zorg en verenigt twee heel verschillende patiëntengroepen: langdurig revaliderenden en dementerenden. In deze combinatie van verschillende patienten en in de beleving van met name gedementeerden, ‘in verschillende stadia van ont-lkking’, speelt het thema ‘overgangen en begrenzingen’ een grote, vaak negatieve rol. Men voelt zich in zijn vrijheid beknot bij een gesloten deur, of elke keer weer gedesoriënteerd als men van de eigen kamer de gang op gaat. Daarom kregen de kunstenaars dit als thema mee.

In zijn werk voor SKOR probeerde Holleman kunstenaars zo vroeg mogelijk in het ontwerpproces te betrekken. In dit geval was het gebouw al bijna opgeleverd, maar in de buitenruimte lagen nog kansen. Er was nog weinig over vastgelegd maar er waren wel allerlei wensen met name ten aanzien van integratie met de omgeving. Dit wensdenken is niet ongewoon, vooral vlak voor oplevering van het gebouw, omdat daar twee problemen aan het licht komen. Ten eerste zorgt de traagheid van het bouwproces ervoor dat gebouwen bij oplevering vaak al weer ingehaald zijn door nieuwe ontwikkelingen. Het tweede probleem behelst wat Jung noemt: “de niet bewustgemaakte innerlijke toestand die zich in de buitenwereld als noodlot voltrekt”. Met andere woorden: waar je bang voor bent, gebeurt juist doordat je er bang voor bent. Dit geldt volgens Hollemans ook voor het collectieve ontwerp- en bouwproces. Dit mechanisme kan verlammend werken, maar als je je er van bewust bent, biedt het een handvat om kritisch naar het eigen wensdenken te kijken.

De kunstenaars zijn door hun “extra bewustheid” in staat om het idee van grenzen en overgangen niet alleen in het ontwerp maar ook op het ontwerp- en besluitvormingsproces toe te passen. Hun inbreng biedt “filosofische feedback en contextverbreding” aan de landschapsarchitect en helpt om weerstand tegen ongewone oplossingen te overwinnen. Door verdubbeling en combinatie van functies worden overgangen en begrenzingen een meer vanzelfsprekend deel van de omgeving. Door b.v. de kinderboerderij te integreren op het terrein van het verpleegtehuis krijgt de begrenzing van het terrein; het hek, een natuurlijke functie om dieren binnen te houden en niet de mensen. Het restaurant wordt dubbel gebruikt door zowel patienten als kinderen en hun ouders. Een glazenwassersgang langs de gevel wordt ook een wandelpad. De parkeerplaats is ook een fruitgaard, etcetera.

Het aandeel van de kunst is niet meer herkenbaar als “kunstwerk voor de deur, die de ideologie van de zorginstelling nog een keer verbeeldt” maar lost op in het geheel. De kunstenaars blijven bij het project betrokken om te kijken of de idealen in de praktijk gerealiseerd worden en om adequaat te kunnen reageren als er problemen zijn in het gebruik.

Het ontwerp voor de tuin voorziet in de aanleg van drie verschillende delen rond het gebouw. Een weide voor enkele Friese paarden, een deel met tuinen en moestuinen en een boomgaard als kader voor entreeroute, parkeerruimte, terras en kinderboerderij.
De tuin refereert daarmee aan het landschap rond het verpleeghuis (Westellingerwerf) en de betekenis ervan voor de bewoners. De tuin creëert daarmee gemeenschappelijke ervaring en gesprekstof voor bezoekers en bewoners van Lindestede, terwijl men er wandelt, wat tuiniert in één van de moestuinen of rondkijkt bij de dieren.
Voor het wandelen zijn paden voorzien die de randen van het gebouwencomplex volgen. De paden zijn tevens functioneel voor de glasbewassing. Waar nodig kunnen ze worden afgesloten. Het afgesloten karakter is dan verhuld doordat de afsluiting logisch onderdeel is van paardenwei of moestuin. De paden refereren aan de manier waarop in ‘hofjes’ met gemeenschappelijke ruimte om wordt gegaan. Hofjes zijn een typisch Nederlands fenomeen en komen sinds de 14de eeuw voor. Ze zijn ontstaan uit de begijnhoven. De gemeenschappelijke ruimte van het hofje is een belangrijk aspect: het stimuleert communicatie, mensen komen elkaar tegen, maken een praatje, passeren elkaars raam, zwaaien.

Verpleeghuis Lindestede te Wolvega. (2006-2007)

Ontwerp: Bik van der Pol, Rotterdam, van Hees tuin- en landschapsarchitectuur, Gouda.

Lezing 6

Marc Maurer — MUA´s visie op de zorg

“De ontmoetingen, die in de zorg plaatsvinden, zijn zeer bijzonder: het gaat steeds om kennisuitwisseling. Het ziekenhuis is daarom een laagdrempelig leerinstituut, dat enerzijds de artsen en het personeel in staat moet stellen professioneel te werken, anderzijds de patiënten en bezoekers een sociale, toegankelijke en communicatieve omgeving moet bieden.
MUA is ervan overtuigd dat een significant verbeterde belevings- en gebruikskwaliteit van de gebouwde zorgomgevingen zal ontstaan, door ontwerpvraagstukken te benaderen vanuit het vakgebied interieurarchitectuur, waarin het thema zintuiglijkheid een belangrijke rol speelt. Door de creatieve sector (kunstenaars, ontwerpers, wetenschappers) integraal in het proces van programmeren en definiëren van de ontwerpopgave te betrekken is het mogelijk adequate omgevingsoplossingen of -toepassingen te vinden.
Deze zouden vervolgens ook de beschreven en gewenste leerprocessen moeten bevorderen”.

Maurer United Architects tonen een aantal projecten die de ontwikkeling van hun visie op zorg als een leerproces tonen. Tegelijkertijd laten deze projecten zowel de mogelijkheden als de beperkingen van de architectuur zien, mede afhankelijk van de opdracht.
Bij de renovatie van een ziekenhuisverdieping in Heerlen bood een slimme herordening van het programma b.v. nieuwe mogelijkheden. De onderliggende these was dat mensen ziek op bed in hun kamer het liefst privacy willen. Door douches en wc’s in de vierpersoonskamers te plaatsen ontstonden vier eenpersoonskamers waar ook een-op-een consults plaats konden vinden. Hierdoor kwam ruimte vrij op de verdieping voor lounges waar de patienten die het bed kunnen verlaten elkaar kunnen ontmoeten.

Bij het vinden van een nieuwe ruimtelijke oplossing voor de behandeling van kinderen met CF (een soort longziekte) was MUA al vanaf de formulering van het programma van eisen betrokken. Daardoor kon de bestaande gang van zaken op zijn kop worden gezet. Eerder moest het kind voor een jaarlijkse check-up een dag lang van de ene naar de andere specialist met vermoeidheid en mogelijkheid tot besmetting als gevolg. MUA stelde voor een ruimte te maken waar het kind de hele dag te gast is en waar de specialisten langskomen bij het kind. De privaat gefinancierde ruimte is met behulp van kunstenaars ingericht. De multimediakunstenaar ontwierp een interactieve installatie met een hygiënisch touch screen om mee te knippen en plakken en waarin ervaringen kunnen worden opgeschreven en achtergelaten. Een beeldend kunstenaar ontwierp een knuffelboom en een glas-in-lood raam.

In contrast met het engagement van de architectuur in het voorgaande project staat het ontwerp voor een station voor medisch-sociale zorg oftewel methadon- en heroineverstrekking. Tijd en budget voor dit project zijn beperkt, maar ook door de doelgroep is de invloed van architectuur hier beperkt tot het brengen van wat rust en een beschermende houten gevel die de verslaafden aan het oog onttrekt.

CF (Cystic Fibrosis ofwel taaislijmziekte) is een erfelijke en ongeneeslijke aandoening. Met de lounge staat de patiënt daadwerkelijk centraal. CF-patiënten moeten jaarlijks voor ‘groot onderzoek’ naar het ziekenhuis, waarbij zij verschillende specialisten moeten bezoeken en functieonderzoeken moeten ondergaan. Het groot onderzoek is belastend en vermoeiend. Bovendien zijn CF-patiënten erg gevoelig voor infecties. Het is essentieel dat zij zo min mogelijk contact hebben met andere patiënten. Betere planning en de CF-lounge maken het mogelijk, dat de patiënt en diens ouders of verzorgers op één - aangename - plek verblijven en daar worden bezocht door de specialisten. Voor het doen van röntgen of longfunctie onderzoek gaat de patiënt vanuit de lounge direct naar de ruimte waar het onderzoek plaatsvindt zonder wachtkamers. Voor elke patiënt is er een standaard programma.

De lounge is onder andere gefinancierd met de opbrengst van een benefietconcert van Golden Earring, die de lounge ook officieel heeft geopend.

CF Lounge, Erasmus MC – Sophia, (2006)

Ontwerp: Maurer United Architects, Hans van Bentem (sculptuur) en Geert Mul (interactieve installatie. Productie: Jeroen Eversaert (Mothership). Initiatiefnemer: dr. Harm Tiddens.

Editor: Beyond Clinical Building’s publication, Stimuleringsfonds voor Architectuur & TU Delft, 2008

Organizer: ‘Beyond Clinical Buldings’ symposium, TU Delft, 2007

Samenvatting discussie

Paul de Graaf & Birgitte Louise Hansen

De rol van cultuur en de ervaring van ziekte en ruimte zijn tot nu toe onderbelicht in het debat over architectuur in de zorg. De studiemiddag is een ontmoeting van de werelden van architectuur, medische wetenschap en cultuur waarin van gedachte wordt gewisseld over wat zij kunnen bijdragen aan de kwaliteit van zorgarchitectuur ‘voorbij het klinische gebouw’. Hierbij komt een aantal dilemma’s naar voren.

De kloof tussen architectuur en medische stand

In de eerste lezing wordt een fundamenteel onbegrip geconstateerd in de wereld van ziekenhuisbestuurders over wat architectuur is, en wat zij kan betekenen. De vraag is of dit onbegrip voortkomt uit onwetendheid, gebrek aan interesse of aan het ontbreken van een gemeenschappelijke taal. Hoe beschrijf je kwaliteit? In welke termen wordt kwaliteit beschreven, met welke doelstelling? Een methode als QIND (‘Quality-index’ of ‘kwaliteitsindex’ ontwikkeld in 2004 door het Bouwcollege) probeert aan de hand van een aantal criteria de kwaliteit van een gebouw te bepalen, maar volgens Peter-Michiel Schaap gaat het probleem verder dan een taalverschil en is kwaliteit het best in de praktijk aan te tonen; ‘zien is geloven’. De bijdragen van de architecten Ton Venhoeven en Marc Maurer laten zien dat nadenken over de ruimtelijke vormgeving wel degelijk een bijdrage kan leveren. Hoe je dingen ruimtelijk organiseert kan al een grote invloed hebben op de efficiëntie van het ziekenhuis, maar ook op de ervaring van de patiënt. Hoe toegankelijk is een ziekenhuis en wat representeert het? Hierbij speelt het interieur: de proportionering en inrichting van de ruimtes in het zorggebouw, een belangrijke rol.

Wiens ziekenhuis ontwerp je?

Voor een goed begrip van de complexiteit van het ziekenhuis als sociale en culturele ruimte blijken de bijdragen uit de wetenschap en de kunst een welkome aanvulling te bieden op het ‘Zweckoptimismus’ van architecten, d.w.z. op de neiging van de professie om in het oplossen van problemen te denken zonder ruimte te laten voor negatieve kanten van het leven.

Antropoloog Sjaak van der Geest laat zien hoe het ziekenhuis als sociale en culturele ruimte de samenleving weerspiegelt waar zij deel van uitmaakt. De voor de antropologie kenmerkende subjectieve benadering van het onderzoeksobject door middel van *participerende observatie* blijkt verrassende gelijkenissen te tonen met de methoden van theatermakers Sarah Moeremans en Joachim Robbrecht die het ziekenhuis onderzochten als locatie en inspiratie voor hun voorstelling ‘Zieke zielen’. Tijdens hun stage in het ziekenhuis zagen zij twee werelden naast elkaar staan: de professionele, materiële wereld van artsen en verplegend personeel en de emotionele, spirituele wereld van de patiënt. De spanning tussen die twee is een terugkerend thema gedurende de middag. Zoals Peter Michiel Schaap al in de eerste lezing schetste, is zorgarchitectuur vaak eenzijdig in dienst van de professionaliteit van de arts. Er is weinig ruimte voor vernieuwing en weinig aandacht voor de beleving van de patiënt.

De verleiding van de markt

Volgens verschillende sprekers is de huidige, strict medisch-wetenschappelijke benadering onder invloed van de markt nu al aan het veranderen. Ton Venhoeven ziet de markt als een emanciperende kracht die, net als in de auto- en luchtvaartindustrie, meer aandacht voor de wensen van de patiënt zal koppelen aan lagere prijzen. Janny Rodermond (Stimuleringsfonds voor Architectuur) verwacht dat nieuwe marktpartijen de vernieuwing zullen brengen die in de huidige organisatiestructuur en met de huidige partijen onmogelijk zijn. Ook zie je dat directies in antwoord op toenemende concurrentie een meer menselijke benadering kiezen boven het streven naar efficiëntie van de medische stand, met meer aandacht voor welbehagen en daarmee voor vormgeving.

Dit speelt behalve in de ‘cure’ (ziekenhuizen en klinieken e.d.) ook in de ‘care’ sector (b.v. verpleeghuizen, zorghotels) waar ‘wellness’ steeds belangrijker wordt. De ‘care’ sector vormt een belangrijk onderdeel van de zorgopgave en is in omvang veel groter. Ook hier komt de patiënt steeds meer centraal te staan.

Wie is de patiënt en wat heeft hij nodig?

Maar wat betekent het om tegemoet te komen aan de wensen van de patiënt? De beleving van ziekte is individueel en er zijn grote verschillen per doelgroep. Mag ziekte beleefd worden of moeten de bewoners van het ziekenhuis zo normaal mogelijk zijn, alsof er niets aan de hand is? En wat is normaal in een heterogene samenleving? Een ethische vraag die op deze studiemiddag geen eensluidend antwoord krijgt. Wel wordt er gepleit voor diversiteit om juist rekening te houden met verschillen in beleving. In regelgeving en planning wordt vaak in uniforme oplossingen gedacht, terwijl de praktijk per situatie en van moment tot moment verschillend kan zijn. Voor iemand die korte tijd in het ziekenhuis is voor een ingreep kan een volledige overgave aan het zorgsysteem geruststellend zijn terwijl dit voor iemand die er langere tijd moet verblijven associaties oproept met een gevangenis.

De opdeling in cure en care kan het beeld oproepen van een verdeling in behandeling met fysieke ingrepen en bijbehorende risico’s (het enge gedeelte) en het herstel in een prettige, ondersteunende omgeving (het leuke gedeelte). Volgens Venhoeven is dit behandelingsverloop van diagnose tot herstel veel vloeiender en heeft de patiënt in elke fase weer andere behoeftes. Om te voorzien in die behoeftes is het nodig in het ziekenhuis voldoende verschillende condities te creëren waar artsen mee kunnen werken in relatie tot verschillende patiënten. Daarnaast wordt deze diversiteit in belangrijke mate ook geboden door het gezondheidsnetwerk eromheen. Marktwerking maakt het ziekenhuis niet alleen efficiënter maar biedt naar Venhoevens verwachting ook die diversiteit omdat ook daar geld mee valt te verdienen. Vervolgens zal concurrentie dit ook betaalbaar maken voor een groot deel van de samenleving.

Onuitgesproken emoties

In het huidige ziekenhuis is volgens theatermakers Moeremans en Robbrecht van negatieve emoties als angst weinig te merken, hoewel ook dit individueel is. Er is weinig bloed, steeds minder pijn en de patiënt komt met positieve verwachtingen binnen. In de communicatie tussen patiënt en personeel ligt soms wel een wederzijdse angst. Vertelt de arts het hele verhaal? Geef ik als arts de patiënt valse hoop?

Vanuit een internationaal perspectief gezien doen we het in Nederland niet zo slecht volgens Van der Geest. Het Nederlandse zorgstelsel is een gerusstellingsfabriek en in het ziekenhuis doet men op recht moeite om in die sociale ruimte met respect voor patiënt en en familieleden een sfeer te kweken van optimisme die zou moeten leiden tot genezing.

Editor: Beyond Clinical Building’s publication, Stimuleringsfonds voor Architectuur & TU Delft, 2008

Organizer: ‘Beyond Clinical Buldings’ symposium, TU Delft, 2007

Eigen inzicht of wetenschappelijk onderzoek?

Deze definitie van Van der Geest klinkt als een alleszins redelijke doelstelling, maar welke middelen heeft de ontwerper tot zijn beschikking om een ruimtelijke kwaliteit te realiseren die daarop aansluit? Hoe doe je als ontwerper uitspraken? Baseer je je op bewijs, als in ‘evidence based design’, waar ontwerpbeslissingen zijn gebaseerd op ‘best possible evidence’; onderzoeksinformatie en projectevaluaties. En wat voor bewijs dan? En wiens bewijs?

Architecten kunnen een interessante inhoudelijke discussie voeren over de maatschappelijke voors en tegens van eenpersoonskamers, maar onderzoek van Roger S. Ulrich in de Verenigde Staten heeft aangetoond dat mensen sneller genezen op eenpersoonskamers. Hoe ga je om met dit soort informatie? Geldt het in alle gevallen en in elke cultuur of is het typisch voor het Amerikaanse ziekenhuis? Hoe weeg je maatschappelijk belang tegenover medisch belang? Hoe weeg je kwalitatief bewijs (b.v. onderzoek naar beleving van eenpersoonskamers gebaseerd op interviews) tegenover kwantitatief bewijs (b.v. microbiologisch onderzoek naar het voorkomen van besmetting als gevolg van fysiek contact). Hoe beoordeel je als architect dit soort wetenschappelijk onderzoek? En hoe vertaal je verkregen inzichten vervolgens in een ontwerp? Enerzijds zijn architecten bang om zich te laten binden door ‘kennis’ uit angst onderworpen te worden aan codes en regels die hun doel voorbij schieten. Anderszijds doen zij zelf soms uitspraken louter op basis van hun eigen intuïtie of ideologische overtuiging met het gevaar dat zij de plank geheel mis slaan.

Wie is het beste toegerust voor de ontwerpopgave?

De voorbeelden die op de studiemiddag voorbijkomen laten deze dilemma’s zien, maar ook suggesties voor andere benaderingen.
Het project dat kunstenaar/curator Arnoud Holleman presenteert laat zien hoe vanuit de kunst op onconventionele manier kan worden nagedacht over het ontwerp van een verpleeghuis, met een focus op het perspectief van de patiënt. Hij bepleit de inzet van kunstenaars als vrijdenkers binnen het bouwproces, aanvullend op en ter ondersteuning van de (landschaps)architect. Zij kunnen in het ontwerpproces zijwegen inslaan en door blikvernauwing bij betrokkenen voorkomen. Soms kunnen ze dingen voor elkaar krijgen die erg lastig zijn te realiseren in een ‘normaal’ bouwproces met al zijn begrenzingen in tijd, geld, regels en conventies. Interessant aan het project in Wolvega is dat kunstenaars Bik van der Pol het resultaat ook gaan evalueren om te achterhalen wat er van de beoogde doelstellingen terecht komt in de praktijk.
Het ‘core hospital’ van Venhoeven CS en de CF-Lounge van Maurer United laten zien hoe een slimme analyse van een bestaande situatie kan leiden tot een radicaal andere ruimtelijke oplossing. Door de basisvoorwaarden te veranderen waarop patiënt en arts elkaar ontmoeten wordt in beide ontwerpen op respectievelijk stedenbouwkundige en architectonische schaal een efficiënte, maar ook prettiger situatie gecreëerd. Volgens Venhoeven kom je alleen tot een goede analyse als je je intuïties en kennis achter je laat en via workshops en gesprekken probeert zoveel mogelijk informatie van specialisten te vergaren, waarbij de informatie die tussen de regels door *zijdelt* zeker ook belangrijk is. Hij pleit er voor om elke keer opnieuw te beginnen, om open te kunnen staan als ontwerper.

Kennis opbouwen of elke keer onbevangen beginnen?

De werkwijze van Venhoeven lijkt in tegenstelling te zijn met het voornemen kennis te verzamelen en op te bouwen bijvoorbeeld in een databank. Maar een centrale verzameling van kennis, sluit niet uit dat elke ontwerper op zijn eigen manier deze kennis verwerkt in zijn ontwerpproces. Vervolgens kan het resultaat van de in praktijk toegepaste kennis worden getoetst om hier weer van te leren. Evidence Based Design kan daarbij beschouwd worden als methode om informatie zorgvuldig te betrekken in het ontwerp. Het is daarbij niet mogelijk of wenselijk dat dit soort informatie het ontwerp dicteert. Juist de creativiteit en vindingrijkheid van de ontwerper in het vertalen van de kennis naar een ruimtelijk ontwerp gekoppeld aan inleving: het zich vanuit eigen ervaring verplaatsen in de ander, of dit nu patiënt, personeel of bezoeker is, biedt onverwachte perspectieven en nieuwe mogelijkheden voor architectuur- en interieurontwerp in de zorg.

Colofon

Deze publicatie verscheen op initiatief van het Stimuleringsfonds voor Architectuur en de leerstoel Architectonisch Ontwerpen-Interieur, TU Delft, Faculteit Bouwkunde naar aanleding van het Master of Science onderzoek, ontwerp-atelier en studiemiddag ‘Beyond Clinical Buildings’ op de TU Delft in het voorjaar van 2007.

Samenstelling en redactie
Birgitte Louise Hansen

Redactieraad
Birgitte Louise Hansen
Janny Rodermond
Christoph Grafe

Tekst- en beeldredactie studentenwerk
Birgitte Louise Hansen

Samenvatting lezingen studiemiddag
Paul de Graaf

Met dank aan
Like Bijlsma
Paul de Graaf

Ontwerp
Hans Gremmen

Druk
Drukkerij de Raddraaier

Uitgever
Stimuleringsfonds voor Architectuur & Architectonisch Ontwerpen-Interieur, TU Delft
www.archfonds.nl

ISBN
978 90 79936 01 4

Editor: Beyond Clinical Building’s publication, Stimuleringsfonds voor Architectuur & TU Delft, 2008

'For the average project thousands of decisions are made. It is literally impossible for an Evidence-based designer to make every decision

All designers use evidence [1]

'I believe that all architects are making hypotheses – it is just mental and you never state them – you never write them down'.

— Kirk Hamilton, At the Master Class 'Evidence-Based Design for Critical Care', Rotterdam, 2008

Architects, engineers, designers, and planners all use evidence to inform their design decisions, and they always have. If this is the case then why all the fuss over this apparent trend and new language of so called Evidence-based design? What is Evidence-based design (EBD) and how do we apply evidence in our designs? About what type of evidence are we talking? ¶ This special edition of the Berlage Papers will inform you about the Master Class which was held at the beginning of 2008 about Evidence-based design of an Intensive Care unit of a hospital. It will not only inform you about the outcomes of this Masterclass, but it will critically appraise the process of Evidence-based design. ¶ But we start with a word from our Master Kirk Hamilton: "I believe spread of EBD can lead to better design decisions, improved outcomes for the owner, provide new knowledge for the field, and increase credibility for design professionals who embrace it. I am delighted that the Berlage Institute (www.berlage-institute.nl) and the Dutch Center for Health Assets (part of TNO) (www.tno.nl/ducha) has given us an opportunity to further explore the topic and extend the dialogue to a larger audience. I sincerely hope you enjoy this magazine and that it may be of benefit to you in your professional work."

Innovative intensive care units through 'Evidence Based Design'

by Joram Nauta, Researcher, Dutch Centre for Health Assets

In what way would you like to design a new 24-bed Intensive Care Unit (ICU)? What are the key design issues you would like to use? Do you focus on the interests of the patient? Of the staff? What is the role of the family? What does an architect really know about the design and use of an ICU? How can you use information sources and experts to realize better designs for an ICU?

To answer these and other questions, a special mix of professionals met at the Berlage Institute in Rotterdam in the first week of January 2008 to take a Master Class on this subject. A group of architects, accompanied by an intensivist and a head ICU nurse, assisted by specialists in other disciplines, was faced with the challenge of designing a new Intensive Care unit for a university hospital.

The Master Class was led by Professor Kirk Hamilton, an experienced architect associated with the Center for Health Systems and Design, a division of the Texas A&M University. His process approach to applying insights from science and practice provided the architects with a method with which they can account for the design choices made, based on the best available information. This so-called Evidence-based design (EBD) approach, applied to the design process of buildings, is a variation of the Evidence-based Medicine method dominating the medical sector.

The first part of the week was spent on visits, lectures and training courses to offer the group of architects the same reference framework. Every new piece of information provided, both from literature and by the experts, was subjected to a critical review. Subsequently, the group was divided into three teams, each with the same assignment: to design an Intensive Care unit using the Evidence-based design method. The challenge for the architects are the (extra) steps from this EBD-method which are complementary to the usual design process, i.e.:

- converting design issues into research questions
- gathering information and interpreting it critically
- drawing up a hypothesis against which the design can be tested.

This may be business as usual for a trained researcher, but to the practically and creatively oriented architects this is a substantial challenge.

What was striking, was that, despite the fact that they received identical assignments, each group of architects defined a different research question and, hence, ended up with a different design. The first group mainly focused on the patient, the second on the relationship between the family and the patient, and the third group focused on the staff. The staffing-patients ratio was the same for all designs; one staff station oversees four patients.

[1] "Be aware that natural (e.g., organic, irregular, scripty) characteristics may be the most pleasing typefaces. Qualities of "harmony", "flourish," and "compressed" may also elicit positive responses." http://www.informedesign.umn.edu/Rs_detail.aspx?rsId=2479

Hansen, Birgitte Louise, 'Why use research to inform design?', Berlage Papers, nr 31, 2009
also printed in: *All designers use evidence*, Innovatieplatform Architecture in Health en Platform GRAS, 2009

on a project on the basis of serious investigation. You wish to find the important finds, were the data may be hard to find, or you are not

Evidence-Based Design – process in actual practice

by Sjoerd de Hoogh, Architect, Dutch Centre for Health Assets

How do we apply EBD in the actual design process? Here is a practical guide to the application of EBD. First of all, it contains a description of the steps in the process submitted by Kirk Hamilton to come to a design based on the best evidence available. Below, as an illustration, is a detailed description of a step-by-step plan drawn up by a team of architects and researchers during the master class. Subsequently, the lessons learned of the master class will be discussed. Finally, some conclusions on using EBD in actual practice will be addressed. [2]

Evidence-Based Design - Process

Nine steps are required for an architect to come to a design based on the best evidence available. The condition for going through the steps of the process is the creation of a chain of logic. This can be realized by letting each step logically follow from the previous one. In other words: each step builds on the previous one. Initially, the steps are followed chronologically. As the design process progresses, one may go back to previous steps to define them in further detail, so as to enable further to limit the research question (step 4) based on the information found (step 5), which is common in research circles.

Evidence-Based Medicine
'Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.'
– Sackett, DL, WMC Rosenberg, JA Muir Gray, RB Haynes & WS Richardson (1996), "Evidence-Based Medicine: What it is and what it isn't," British Medical Journal 312: 71-2.

Evidence-based design
'Evidence-based design is the conscientious, explicit and judicious use of current best evidence from research and practice in making critical decisions, together with an informed client, about the design of each individual and unique project.'
– Hamilton, DK (2007) "Evidence-based design Supports Evidence-Based Medicine in the ICU," ICU Management Journal (Belgium), Autumn, 6(3) 31

article starts here
V

Why use research to inform design?

An interview with Kirk Hamilton
by Birgitte Louise Hansen

Rotterdam, 9 January 2008 | Kirk Hamilton is the American Evidence-based design expert. He is trained as an architect, an associate professor of architecture at Texas A&M University, associate director of Center for Health Systems & Design and one of the two editors of the journal 'HERD' (Health Environments Research and Design) in which he writes the column 'Bridging Design and Research': 'The Bridging Design & Research column is devoted to building a bridge between practitioners and researchers, and providing a space for the open exploration of Evidence-based design as an evolving process'. I had the chance to talk with Kirk Hamilton about why he thinks Evidence-based design is important for architects, and what an Evidence-based design process is, while he was in Rotterdam for the Master Class 'Evidence-based design for Critical Care' at the Berlage Institute from 7-11 January 2008, at which I was a participant observer. The interview showed that Evidence-based design is not as rigorous as it might seem.

In 2007 I was asked to write an article for the Dutch book 'AU!, Bouwen aan de architectuur van de zorg' about Evidence-based design. The question

As stated above, the first group of architects focused mainly on the patient, and more specifically on reduction of the patient's stress. The key design issue chosen from literature was to prevent a patient's delirium in a critical condition. Preventing or limiting stress factors were identified from research and from practical experience such as: too much light (both during the day and at night), noise (contact noise, alarm signals, other patients, and conversations), but also, e.g., unpleasant smells. The design solution was found in a room with an oval leaning wall looking like a protective womb ('Womb Wall'). This wall protects the patient from the 'outside world' of too much light and noise. The wall contains connections for (part of) the necessary medical equipment, but also connections for music, (atmospheric) light points, aroma therapy and climate control. All the essential equipment can be read outside the patient room. The bed can be re-positioned according to the patient's condition. In a critical condition the patient is facing the nurses' station, and in a less critical condition he/she is facing the window. Behind the wall there is room for the family, to stay both during the day and at night, and to withdraw behind this wall. If a patient is nursed in isolation, the room next door will be used as an ante room (or sluice) and cannot be occupied by other patients. This is not a problem; the additional work for isolated nursing reduces the number of staff available for other patients (*figure 1*). The second group had sunk its teeth into the issue of accommodating the family. In literature they had found that proper involvement of the family could contribute to the patient's recovery and the deployment of the staff. Accommodating the family near the patient could thereby be an important condition. The architects had chosen an unconventional approach by positioning two rooms (one for the patient and one for the family) adjoining a patio to facilitate mutual vision and monitoring. The family could thereby also choose to sit on the patio and be even closer to the patient. The architects did, however, value the fact that the staff would like to 'see' who entered the patient's room. So the family could enter the patient's room through the ward, visually passing the nurses' station. In the room all equipment is connected to the patient's bed, which makes the bed freely movable

[2] "(…) faster reading is often achieved at the expense of understanding content. "
http://www.elupton.com/index.php?id=39

Hansen, Birgitte Louise, 'Why use research to inform design?', Berlage Papers, nr 31, 2009
also printed in: *All designers use evidence*, Innovatieplatform Architecture in Health en Platform GRAS, 2009

sure about an answer. Those are the ones you should use a rigorous process for. 99.9 % of the decisions that are made in designing, for ex-

The nine steps in the EBD process (Kirk Hamilton)

obtain of logic »	1	Identify the client's goals
	2	Identify the architect firm's goals
	3	Indentify the key design issue
	4	Convert the key design issue into research questions
	5	Gather information
	6	Critical interpretation of the evidence
	7	Create evidence based design concept
	8	Develop hypotheses
	9	Select measures

'The evidence-based model requires the designer to review the best available relevant evidence from credible research. The goal is to create an unbroken chain of logic from research to design concepts, and on to a hypothesis or prediction of an outcome that will result from implementation of the design concept'.

— Brief: Master Class 'Evidence-Based Design for Critical Care', Rotterdam, 2008

1 – Identify the client's goals

Determine the client's goals for which the design is to offer the solution. Convert the goals into the project and to the building, i.e. concretely indicate how the building will contribute to realizing the goals. This information is usually known but the challenge is to formulate it concisely.

2 – Identify the firm's goals

Identify the architect firm's goals and the goals to be realized for this specific project. Here, too, the information is deemed to be known but it is a good idea to indicate the experience gained and the expertise built in the project.

3 – Identify the key design issue

The strength is to find the key design issue with the most crucial contribution to realizing the goals. Finding that key design issue requires setting priorities. Often, more than one solution can be submitted to realize the goal, but the solution needed is the one that offers the best result. After the follow-up steps, it may be advisable to fine-tune the key design issue.

4 – Convert the key design issue into research questions

Converting the key design issue into research questions is necessary for the consultation of information sources. It is impracticable to study everything, so focus on high-impact subjects in respect of which little information is available. An example to illustrate this is the fact that several sources show that daylight has a positive effect on people's health. Raising the research question of the effect of daylight is unnecessary, as this question has already been answered. Ensuring that there is sufficient daylight will have a high impact on the design. Drawing up research questions is a challenge to architects, for this is uncommon to most of them. This is the first step on the road to Evidence Based Design.
[3]

that came with the assignment was: Does Evidence-based design make any sense? What is Evidence-based design, and what is it not? Talking to architects I realized that there is no consensus in the Netherlands about what Evidence-based design is, and that there are several definitions of what it means to base your design on evidence. Please tell me what the term means to you, and what the origin of it is?

The first time I heard Evidence-based design was at conferences that were organised by the Center for Health Design. A fundamental principle of the Center for Health Design was to be involved in research and to be supportive of having more research done. In the early days they funded one study a year. Evidence-based design was the language we used. It was about research that informed design, and recognizing that designers wished to have more research available to them. This was not: 'Let's change the way we practise'. It was: 'Let's have access to better information'.
The term Evidence-based design, as we used it, came from Evidence-Based Medicine. Evidence-Based Medicine probably dates from the work of Archie Cochrane in the 1960s. But the current definition (and most frequently used) in the medical literature dates from the 1990s. The Center for Health Design was founded in the 1980s, so the timing meant a lot. It became convenient in Healthcare architecture to describe Evidence-based design as an analogue and a partner with Evidence-Based Medicine. The language was convenient, the language was analogous, and the language was appealing to a particular client type.
Does Evidence-Based Medicine mean that there was no evidence before the term? Does Evidence-based design mean that there was no evidence before we used these words?
No, since early times architects have used many kinds of evidence, even if it was simple observation. It is a misnomer to declare that NOW our designs will be Evidence-based. That is not true. What I think is true is that architects are being asked to be more rigorous than we were taught to be when we graduated from our professional programs. We are going to use evidence in new ways, with more rigor, higher standards of measurement, and there are new domains of evidence to be searched. Those things are true.

Is it important to be able to call yourself an 'Evidence-based designer'?

Ultimately I don't think it is going to matter if architects describe themselves in that way. What is going to matter is that they can demonstrate results from their projects. Today almost no architect or firm measure their projects with serious rigor. In the future a nice picture of the project will not be enough. In the future the nice picture will have to have some data behind it.

Is Evidence-based design comparable with a marketing tool then?

Eventually. In the beginning it is not. But if you have been practising as an evidence-based practitioner measuring your results, at some point in the future it will become a competitive advantage, because you will have results about what you have accomplished.

Are you not afraid of how this idea of marketing might influence the perception and profession of Architecture? Architects could be forced to follow the rules of the

and free of the wire and tube 'spaghetti'. Furthermore, this makes it possible to clean the bed and the room separately. By conveniently positioning the two different rooms around a patio they can still be realized in separate building blocks and, according to the designers, the 'family block' will be suitable as a commercial or sponsoring object *(figure 2)*.

The third design team had pictured the university environment as an environment that, in addition to healthcare, should also facilitate education. Therefore, in addition to patient care the design should also offer sufficient possibilities for exchange of information among healthcare professionals. The hypothesis was that the healthcare process in an ICU is a team effort and that the team (and the information exchange among the team) should be optimally facilitated. Furthermore, it was tried to prevent interruption of team communication (noise, unexpected guests). The design of this ICU was characterized by a wide and high central atrium, with daylight coming in and a variety of workplaces to offer suitable locations for communication for various team sizes and compositions. To that end, the ICU was designed as a studio in which the central part was a screened area, with patient rooms along the sides. In the central part professionals can focus on their work with patients and gather information without interruption. In this setting the family visits the patient from an external entrance. The ward could, e.g., be realized on the top floor of a building *(figure 3)*.

All in all, three completely different conceptual designs were produced, none of which could beforehand be said to be better than the others. In the closing discussion between the design teams, the medical specialists and the audience, the way in which the design teams had tried to project the technically complex (healthcare) issues occurring in an ICU, met with enthusiasm. All design teams experienced a strong field of tension between the interests of the patient, the family and the healthcare professionals. In that field of tension not only professional but also cultural interests played a role, e.g. with respect to the positioning of the bed in the room, the possibilities of vision and monitoring, and limitation of stimuli (visual/auditive and smell) for the patient.

The way of working in the Master

[3] "Be aware that common, highly readable typefaces were highly reassuring but not engaging."
http://www.informedesign.umn.edu/Rs_detail.aspx?rsId=2479

ample, a hospital are going to be made on the basis of consensus best

5 – Gather information

The information sources can be consulted using literature, search engines, journals, expertise centres, etc. It is worthwhile to enter search terms and combinations thereof with several sources, as information can be found in various disciplines. Building-related studies can be found in medical sciences and social sciences. Furthermore, researchers with an architectural background are increasingly studying the relation between the medical process and the building. In addition to literature studies, expert opinions may also be used as information.

6 – Critical interpretation of the evidence

A critical review of the information found is necessary, for literature will usually not directly answer the research question. The key is to find the balance and creative interpretation of the information to come to a justified answer.

7 – Create evidence-based design concept

It is not until this step that the architect can pick up his pencil. The creative interpretation of the information found is the basis for development of a concept. As stated above, the design consists of numerous more choices, but it is possible that they are based on general findings or experience. This may be dealt with in a pragmatic way. The concept should be a conversion of the information found and contribute to realizing the goals formulated in steps 1 and 2.

8 – Develop hypotheses

Formulate the expected results of the design. These are connected with the goals. Submit a hypothesis that can be tested when the facility is put into operation. This evaluation will provide knowledge that can serve as information for future designs.

9 – Select measures

Make sure that the results are measurable, both quantitatively and qualitatively. Highly valuable are studies comparing the situations before and after, which provide an invaluable amount of information and can be conducted for new facilities to be built as well as for renovations.

> *'The fact that you use evidence, that you use it based on a critical interpretation, that you use it to develop your concept, that there was a chain of logic that ran through all of this leading you to a particular intended outcome, and that you measured it to determine whether the outcome happened or not – that's the essence of an evidence-based process. So in some ways the irony is that in order to claim that you used an evidence-based process, in some ways you had better be able to put some evidence on the table at the end. When you finish there should be some evidence that supports your use of evidence'.*
>
> — Kirk Hamilton, At the Master Class 'Evidence-based design for Critical Care', Rotterdam, 2008

Evidence-Based Design – Actual Practice

The participants, architects and researchers, in the master class embarked on the experiment of using EBD in actual practice by making a design for an intensive care unit for a university hospital in one week. The recipe for the master class was, first of all, to bring together professionals from various disciplines and, subsequently, to let them go through the EBD process together in an early stage of the design process. The experiment proved successful for these two reasons.

As stated above, the first reason for the success of the master class is the varied composition of the teams. Architects, engineers and users, working together under the supervision of experts for a whole week. The first two days of the intensive week programme were spent on visits to operational units, during which information was provided by directors, managers, medical specialists, nurses and microbiologists in lectures and tours. During these first two field trip days a common reference framework was created. Subsequently, three teams of three participants each went to work, assisted by the masters and always in the presence of the users. The last day was used to present the designs and evaluate the process. Experts were able to catch a glimpse

private market; to sell their architecture and prove its worth in quantifiable measures, instead of being evaluated upon the spatial quality that they create?

No, that is not my point. I am speaking directly as an architect observing a profession. When I entered the profession it had a certain amount of respect. In the 30 years that I have been practising, I have observed how the level of respect has diminished. Today architects have less control and power over projects than they did when I started. The role of the architect is squashed. The economists decide on the budget. The engineers decide on the systems. The contractors decide on the methods. The architect has a smaller and smaller role. I believe this is in part because we have not had good rigor. Someone says: 'Why did you do that?' 'Oh well, because I am convinced it will be better'. 'Do you have any data – any proof – any evidence? Do you have anything that will tell me that it is really better'? 'No, but I am sure it is better. Trust me.' That is not enough in today's world. People need more. If architects fail to increase their rigor, I believe they will continue to lose prominence. But if architect had superb data, if the architect could demonstrate that the last ten hospitals he or she designed out performed every other hospital in his country, then hospital clients would be begging him or her to be involved earlier in the process, and to have a greater role in the project's decisions. That's the potential of an Evidence-based design process for the profession. So ultimately, is Evidence-based design a strategy for competitive advantage? It is not! It is about evidence IN design, but the result is competitive advantage for an architect, an engineer, or a designer.

My impression is that the name Evidence-based design might be a hurdle for architects, as they are trained to be creative not scientific?

Yes, that is the first impression some architects have. The criticism I get from architects is: 'If I am required to use evidence, you will force me to standardize'. My answer is no. Every day there is new evidence. So no, I do not propose that you will have to live with standards. In fact, if you formalize a standard it is obsolete in the moment of design because new evidence will have been produced since the standard was developed. 'Well, if you make me use evidence I lose my opportunity to be creative'. No, the critical interpretation of what the research means to your project is a very creative process. It is not an easy process. You must use creativity to properly use good evidence in designs, and to recognize that each project is unique. So no, you will have plenty of opportunity for creativity. Perhaps the most terrifying idea for practitioners is: 'If Evidence-based design means that only architects specialized in narrow areas will be allowed to do certain projects, then this restricts my future. I believe that the best architects are not specialized'. Architects might cooperate with people who are specialized, but they do not have to be specialized themselves.

I don't think any of those typical objections are true, while I understand them. To me it seems like an ethical issue to use the best available knowledge. It is like saying, if you are sick: 'Please use the best available knowledge to deal with my illness'. So Evidence-based design for infection and for safety seems obvious. Evidence-based design for management decisions, for financial performance, or for business advantage is not about decisions of the same impact, but for me, the imperative to serve the client is an ethical issue.

Can you base your design decisions 100% on evidence?

It can never happen. As explained in the Master Class today, I asked them to identify the top 3 key design issues. The key design issues are very important for the project. We cannot expect to use a detailed evidence-basedprocess for every decision on a project. I currently feel that one should focus on a small number of very important questions on which to apply the evidence-based process. The remainder can be designed in a traditional and familiar process. Is the single room for example a key design issue about which a decision

Class with the EBD methodology clearly reflects the design choices made and the theories on which they are based. The key design issues in the early design phase (specification of requirements with respect to the unit) are usually leading and can result in a great variety of solutions. The working method forces the designers to be specific about the 'medical tenability' of the design. Furthermore, it creates a common shared conceptual framework. The question that remains is: What is good evidence? Do we find that in practice, or in literature, has there been any double-blind clinical study as to the effects of the environment on the patient in the ICU? It would be better to speak of Research-Informed Design, designing using the best available information at this time, both from literature and from experts.

The most important result of the Master Class is that architects and healthcare professionals can realize a design together, in which the knowledge and expertise of both parties, using this method, can lead to a result were basic (medical) principles can be respected by all participants. Both architects and healthcare professionals are challenged to increase their own knowledge domain and apply it actively to the design process. [4]

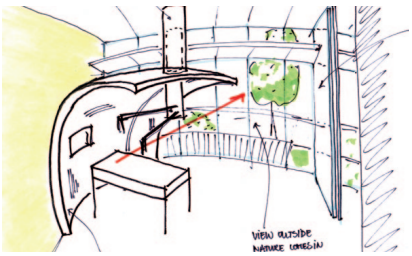


Figure 1: Womb Wall

[4] "Choose typefaces that suit the task as well as the subject"
Bringhurst, Robert. *The Elements of Typographic Style* ISBN 0-88179-205-5

of each other's work, which created mutual understanding. The design choices were well considered and based on information from literature and from the experts.

The second reason for the success is the fact that the future users of the building could offer their input at an early stage. The impact on the design is greatest in the development phase. In today's practice users are often heard when the preliminary design is complete. By then the design has been worked out to such a great extent of detail that implementing changes would delay the progress of the process. Often the preliminary design serves as a cost estimate for the project, which means that any changes will affect the budget adopted.

Conclusions

First of all, it may be concluded that Evidence-Based Design is much more than just a literature study to find evidence. It is about the entire process, the goal of which is to realize a logical substantiation for the design choices to be made. A crucial condition thereby is that the steps be recorded, as fine-tuning of key design issues is inherent in the process. The second conclusion is that EBD distinguishes from today's practice in two essential steps: conversion of a key design issue into a research question, and evaluation of the design after it has been put into operation. The final conclusion is that the EBD process forces those involved to bring the various disciplines together at an early stage to formulate the tasks. This reduces the implementation of often expensive changes at a later stage to a minimum. The creation of an Evidence-Based Design is a team effort.

1	The client's goal is to increase the satisfaction of the family (or loved ones of the patients) by reducing complaints
2	The architect's firm's goals is to design a meaningful environment for people
3	The key design issue is to create an environment where family satisfaction is increased
4	Is the family satisfaction increased by the environment?
5	One of the quotes found in the literature: "The study found that walls separating patient rooms, rather than curtains, provide more privacy and encourage the patient to speak more directly about important personal information. Private rooms are also more conducive to family involvement in patient care"
6	The literature is evident that the environment contributes to the involvement of the family so the assumption is made that single rooms increases the satisfaction of the family
7	The evidence based design concept is shown in the figure below
8	The amount of complaints of family is dropped to zero
9	The measure is the amount of complaints of family

A detailed description of the nine-step plan drawn up by a team of architects and researchers during the master class.

[5]

'A Healing Environment is the result of a design that has demonstrated measurable improvements in the physical and or psychological state of patients, staff, physicians, visitors, the people who use these settings. If this is true, then a Healing Environment is in fact a complementary treatment modality, which makes a therapeutic contribution to the course of care. But please don´t misinterpret me, I am not trying to tell you that this is a more important treatment modality than a surgical or a pharmacological intervention. I don´t even believe that it is as important as the touch of a caring nurse. However it is one of the many methods of people trying to create healing'.

— Kirk Hamilton, At the Master Class 'Evidence-based design for Critical Care', Rotterdam, 2008

sion must be made? Or are we talking to people from the critical care unit, who tell us, that they want it to be open? Okay, then forget the private room question. It might not be the key design issue. Instead it might be how to deal with the families. So for this client, for this day, for this project, these are the small number of key design issues that we will research.

Evidence-based design is often mistaken as a specific set of rules. Why is that?

The field of Evidence-based design has to some degree been dominated by people like Jain Malkin, who publicly and in writing limits Evidence-based design to a specific type of evidence about: 'The reduction of stress, access to physical distraction' etcetera. She and many others have focused on environmental psychology as the principal domain of knowledge required for an evidence-based project.
But if key design issue number one is how to deal with supplies and inventory and disposables, I need to control the costs of my material, I need to distribute it through the building, and I need to eliminate waste. Key design issue number one then can be logistics. It might have nothing to do with medical literature.
Jain Malkin's statements are based on the work of Roger S. Ulrich, who produced a Theory of Supportive Design, and the theory of supportive design offers certain response to stress reduction. Well, his theory is correct (until someone proves otherwise) for a particular subset of what an architect needs to deal with. But I am saying from further back: 'Yes, Roger has developed this theory, but if I am interested in organizational performance, the measures need to include (at least in healthcare) three categories; one is economic and financial, (and this is not covered by his theory), another is clinical and safety (which is well covered), and the third is (depending on where you read it) satisfaction/turnover/public support/commitment.' These are the categories that healthcare organizations use to measure their performance. Any outcome in any one of those categories can be related to the environment and some will be of very big impact, some will be of small impact, but the study of all of those is subject to using evidence-based process. So if your principal question is how to have a paperless hospital with a new electronic record convenient for the users, then your key question is going to be about computers and information transfer and electronics. It is not about infection or stress. And it means a search of a different base of domains.
It happens that healthcare architects are leading the path to a more evidence-based practice, but the Evidence-based design process is suitable for any architecture; for a church, for a shopping centre, a museum, a restaurant – not only healthcare.

Does Evidence-based design qualify architecturally?

The new book that is came out december 2008 was called: 'Evidence-based designing for Multiple Building Types'. Architecture will always be a mixture of art and science. There can be brilliantly beautiful, classic, and spectacular architecture that is evidence based. And there can be terrible architecture that is evidence based. The use of evidence does not guarantee beauty, grace, proportion, harmony, and pleasure.

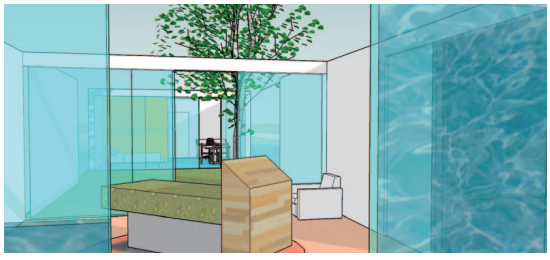


Figure 2: Patient-Family Relation

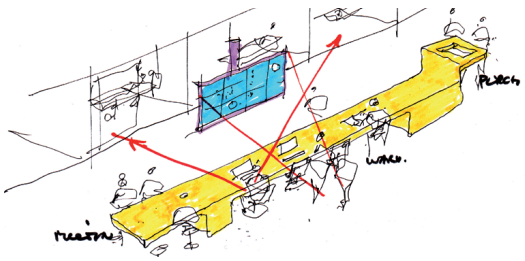


Figure 3: The Atrium IC

[5] "(...) It was once progressive to promote the use of "white space" in all things typographic. Perhaps it is time to reconsider the value of density, from page to screen to urban environment."
http://www.elupton.com/index.php?id=39

Hansen, Birgitte Louise, 'Why use research to inform design?', Berlage Papers, nr 31, 2009
also printed in: *All designers use evidence*, Innovatieplatform Architecture in Health en Platform GRAS, 2009

Design and Research

by Herma de Wijn, Architect, Dutch Centre for Health Assets

Design and research come together in architecture. But how do they influence the outcomes of the design process and where does Evidence-based design stand? Herma de Wijn (DucHA) explores the intricate relation between design and research.

Designing is a future-oriented activity exploring probable, possible, desirable and useful futures. First and foremost, the design plays a catalyzing role that, based on knowledge and skill, schedules what we can want, forms input and a frame of reference for discussion, and step by step creates support. The design makes conditions, solution directions and possibilities visible, and enables decision-makers to choose from alternatives and, at later stages, from variants.
Designs are useful in all phases of a process, because they can be used on every scale level and at any given time – in a first rough analysis, to explore the possibilities, impact and feasibility. They can lead to alternatives and inspire participants to think creatively and set conditions breaking new ground, making it possible to assess the pros and cons of alternatives. Designs are the cyclical elements of a development process. A design is created in a number of repeated steps of progress, analyzing, reviving, supplementing and fine-tuning.

Design and research
Finding inventive solutions, studying options, integrating different interests, visualizing a future perspective, formulating image quality criteria and, of course, designing what eventually will be built or installed, are elements of a spatial development process that requires substantial input from the designing disciplines.

Designing is a future-oriented activity exploring probable, possible, desirable and useful futures. [6]

In the AU! book architecture historian Peter Michiel Schaap describes how hospital managers think that architecture is nothing more than 'icing on the cake'.

This is one of the reasons why I also like Jain Malkin. She says: 'When I go to the administration and say: 'I want to make a beautiful building with features based on the creation of a healing environment', and they say: 'Prove it!' She says: 'You have a terrible, horrible building that is sucking the life out of everybody who is using it. You need to prove to me that this building is good for health'. So she turns the question around and says that the operators of contemporary health facilities should be required to show evidence that their building contributes to the positive performance of their nurses, their physicians, and the recovery of their patients.

Seems to me that the wish to prove - in a rigorous way - that the Environment matters neglects the intangible and symbolic nature of the designed environment including architecture, while it also ignores the studies within the Humanities showing that there is no universal subject.

Do not seek the universal. Use critical thinking to interpret the implications of the research to your unique situation.

But then how can you compare evidence? Let's say I build a hospital in Germany and I build another in France – two different clients, two different cultures.

You have to report on the culture so that the findings actually speak to the design. The culture is a French culture or the culture is Japanese. This becomes evidence that must be in the report, so that the reader can use it as a part in the interpretation.

If we talk about mapping cultural aspects, the next question would be what kind of evidence you would find and use – quantitative or qualitative information?

You have to use both.

And as we are talking about culture, people´s behaviour, I guess you would have to use evidence from disciplines such as anthropology or sociology?

Yes. But in the world of medicine they are accustomed to using quantitative research – hard statistical data. They have a very clear definition of the hierarchy of quality of research. The randomized controlled trial is standard, and if it is not randomized and not controlled, it is thought to be just observations and anecdotal information. There are grades of As, Bs, and Cs for evidence in the world of medicine. They know exactly where on the hierarchy of credibility or quality the research lies. We have nothing like that in the environmental world. And this is what I hope to develop over the next few years. I would like to see people begin to say: 'Okay, we need some formal experiments that include a control group'.

Colophon

The Masterclass on Evidence-based design was organized on the instruction of the Innovation Platform Architecture in Health in cooperation with the Berlage Institute in Rotterdam. The Masterclass used the knowledge and expertise of Masters Kirk Hamilton, Charles Cadenhead and Jaap Wiedenhoff, the Erasmus Medical Center Rotterdam and the University Medical Center Groningen (UMCG). All week Dr. Jaap Tulleken (intensivist) and Leo de Jong (head ICU nurse) of the University Medical Centre Groningen were available to provide the participants with information. Various professionals lectured about specific topics like microbiology and architecture of IC-units. It was their contribution that allowed the architects to realize a realistic design. The Masterclass was attended by nine architects from the Netherlands, Sweden, Canada and the United States.

About the Berlage Institute
Located in Rotterdam, the Berlage Institute is an international postgraduate laboratory for education, research and development in architecture, urbanism, and landscape. Bridging academic education and research with professional acuity, its program is devoted to producing innovative knowledge that is applicable to architectural practice as part of a transnational discourse.

The Berlage Institute provides the next generation of architects and urbanists with tools to better comprehend and intervene in the complexity of contemporary life. Working closely with third-party collaborators, participants directly engage with public authorities, research organizations,

[6] "(...) The results of that and other studies suggest that color is a vital factor in retention."
http://findarticles.com/p/articles/mi_m0MNT/is_2_58/ai_n6116729

is the basis for the vast majority of any project going forward. Depending on what the client wishes to know, the requirement may guide you

Over the past few decades the research phase, that precedes the design, has somewhat dropped out of use in physical planning, urban development as well as in architecture. Cooperation with researchers, use of study results and reserving sufficient time for analysis and preliminary research were no longer self-evident to principals and designers. That tide has turned over the past few years. Under the influence of, among other things, the Dutch national architectural policy, architecture has expanded to urban development, landscape, infrastructure and the cultural heritage. For newly started projects it turned out that a multidisciplinary approach and focus on the design in the early phases of a project have an enriching effect from which the spatial quality will benefit. Also on a building level experience has taught us that cooperation between parties that all impact the life cycle optimizes the quality level at a certain price.

Timely input of study results can provide an insight into the effect of environmental variables on areas and buildings. Various studies show that the physical living environment impacts the wellbeing and wellness of people and, indirectly, also performance in school, recovery from illness and work satisfaction.

Timely input of design creativity leads to reflection on the assignment and offers the possibility to represent various scenarios and solutions, to start the discussion about a new concept or typology, to make the spatial consequences of property concepts and scenarios transparent in as early a phase as possible, and so to come to an adequate result.

Therefore, interdisciplinary design and research have increasingly been linked over the past few years: government, educational institutions and market parties encourage design-based research and research-based design. The US promote evidence-based design and healing environment. The objectives and names prove to be confusing. "Evidence-based design" links research to design, which is enriching, but the word "evidence" is too limiting. "Healing environment" focuses on a well designed environment which, however, in itself, does not have any healing effect.

Design-based research (thinking)
Design-based research is doing research by making designs: the design is the study method. This enables us to study the spatial consequences of various locations, programmes or scenarios. Similarly, the design can be used as a means of research to study the spatial consequences of certain programmes and typologies. This is intended to make the effects of empirical studies transparent, as well as the possibilities that can be visualized by design-based research. Artistic means and new perspectives and lines of thinking will be used, based on constants and variables, to show what we could want.

Research-based design (doing)
Research-based design takes place within the regular design practice. Architects and consultants do research for the benefit of the design to be created. Examples are analysis of the programme, analysis of the location, analysis of typologies already applied, testing concepts and implications for construction and technology, linking the programme to concepts, testing against preconditions and testing the necessity of certain preconditions (performance versus means). This can help start up developments that will lead to rethinking preconditions set earlier, shifting limits and creating new possibilities.

Visualizing scenarios can help make decisions on the consequences and the added value of various options. Therefore, research-based design is a valuable planning and design prac-

Various studies show that the physical living environment impacts the wellbeing and wellness of people.

'It is quite possible, that you would not decide on your top 3–5 key design issues first and from there develop a hypothesis. You might want to decide on your hypothesis for the design outcome first, and from there identify the concept of design. It is also possible that after having explored the concept of design, that I might then revise my hypothesis. And all of this might lead me to go back and gather more information, more evidence in order to reach the correct hypothesis. Eventually I might find myself continually learning. An Evidence-based design process is not as pure as it looks.

— Kirk Hamilton, At The Master Class 'Evidence-based design for Critical Care', Rotterdam, 2008

But does the evidence fitting one control group mean that it fits all?

No. In the case of the work by Roger Ulrich on 'Views', the view of the desert in Chad might be as good as the view of the trees in a European setting. These are experiments that have not been done. And you might use that to criticize his paper. A true experiment is randomized, and there is a control group so it approaches what would be the 'A level' of research quality in medicine. But it can never really reach that level as there are more variables in the physical environment, and because we are dealing with human behaviour. The 1984 study by Ulrich had reports of nurses ('the patient is better today'), and this is a qualitative finding. So it is a mix. The fact that he has qualitative information as one of his findings means that a scientist might say: 'Puh, ignore that.' As you come down to simple observations, benchmarking tours and other things, there are levels of evidence or information upon which you would expect a different level of reliance. I think we need a clear description of a hierarchy of quality of evidence. That is going to be very important.

Based on what kind of information?

I believe it must be qualitative information. Architects are talking about human behaviour inside a building, and because of that – of course I may be wrong – the majority of the evidence to which we will ultimately be referring as architect will be qualitative. And it means we need to be better at making the case with qualitative evidence, so that people who are most acustomed to quantitative evidence don't ignore it. We need to make it clear how valid qualitative studies can be, so that our scientist and medical friends don't simply dismiss it.

Evidence-based design is sometimes mistaken for a Healing Environment and vice versa. Yesterday you gave us your definition of a Healing Environment.

That's my private bias. I have told that story and given the definition, but generally speaking people in North America use the term Healing Environment commonly, and they have no idea what it really means. They tend to believe that they are simply talking about an environment that has more characteristics that are pleasant for people to be in. The elements which together comprise Ulrich's Theory of Supportive Design are probably powerfully contributing to a Healing Environment (even though there is not clear evidence for it). But don't just throw the term on anything, please give me the data that says: 'We treated these patients before indoors and these are the results. We have now built the therapeutic garden and our therapist has begun to take people outside and work with them and these are the different results. These people are healing better than they did before'. I would much prefer if people said 'higher quality environment', or better environment, or some term other than 'healing' because healing implies an outcome. If I had my wish no one would ever say that it was a Healing Environment if it lacked evidence. They can say it is beautiful, they can say it is better, they can compare it to before, or they can say it is nice. But please don't claim it is a Healing Environment unless you have some evidence that someone has been healed.

corporations, real estate developers and municipal planners to develop new architectural and urban strategies through charged political and cultural debate. The broad scope of this work provides a critical global outlook while simultaneously producing locally informed knowledge (www.berlage-institute.nl).

About Architecture in Health
Architecture in Health: Innovation Platform for Architecture and Healthcare has actively addressed thematic issues in the field of architecture for healthcare. The purpose of the platform is to develop and facilitate the use of knowledge that can give an impulse to innovations in the design of health care facilities. The platform brings together science, policy and practice, and creates opportunities for collaborative development of innovative approaches to solutions in modern healthcare architecture (www.architectureinhealth.nl).

This publication has been made possible through funding from the Netherlands Board for Healthcare Institutions (www.bouwcollege.nl) and the Dutch Centre for Health Assets (DuCHA) (www.tno.nl/ducha).

Full publication will become available at request in spring 2009.
Please contact Joram Nauta (joram.nauta@tno.nl), Dutch Centre for Health Assets, Churchilllaan 11, 9th floor, 3527 GV, Utrecht, the Netherlands

tice that facilitates particularly administrative decisions based on input from the discipline in a contemporary way. Based on language, everyone visualizes the design, thus creating spatial pictures. The advantage of the visual approach is that various actors can jointly imagine the same outlined world and discuss it. This will lead to a process of mutual deliberation, in which participants will try to learn from each other and understand the issues, to connect aspects by going into the matter more thoroughly and using their expertise, and to convince each other.

From evidence-based design and healing environment to research-informed design

Evidence-based design, originating from healthcare in the USA and introduced by Kirk Hamilton, propagates the use of the best available study results in the design. This holds true not only for the design process of healthcare institutions, but also for other types of buildings and users. It is about the result of research but it could also be about the experience of the principal or users themselves. Evidence-based design also involves a certain working method, asking questions about the necessity and backgrounds of programme elements, using study results, using various concepts and models, but also evaluating buildings realized.

The link with research is also at the basis of healing environment. Study results have shown that the size and lay-out of rooms and the view play a role in people's wellbeing and wellness; the positive effect of single rooms, of a pleasant use of materials and colour and of plants and nature. In fact, it is about the careful positioning, lay-out and furnishing of buildings. It is a reaction to the practice in healthcare buildings over the past few decades, with large wards, insufficient privacy, and the use of not very inspiring materials and colour, and is now a necessary aspect of the design practice. Paying attention to the quality of the interior and exterior environment should form part of research-based design.

Kirk Hamilton admits that research-informed design would now be a better name. The point is that research is an inextricable element of the design practice and that each designer, at least in the key focus areas of his design, uses and promotes research and asks questions of various parties.

Each design assignment is unique

No two assignments have the same environment and the same programme. Each project is fitted into a specific environment, requires the spatial lay-out of that programme, has its own balance between public and private rooms, requires a custom-made structure with proper heights and daylight, and optimum living and working conditions.

The challenge is to use a designing method that best fits a certain assignment with ambitions for innovation. It doesn't matter whether that is realized by means of design-based research, research-based design or research-informed design. Research and design together can and should raise a project to a higher level. The key is for both principals and designers to promote and do research, and use it in the designing process to submit and make well considered choices. Because, according to the Dutch architectural policy, many people feel the need for a distinguished, recognizable living environment, and because the perceptional value of buildings and areas increases as their identity is more pronounced.

The challenge is to use a designing method that best fits a certain assignment with ambitions for innovation.

Before Kirk Hamilton leaves I ask him whether or not it would be right to call Evidence-based design 'Research Informed Design' if that is what it is. He answers that I should feel free to do that. At the same time as he started using the Evidence-based design language Roger S. Ulrich was using the term Research Informed, and he still uses it. The success of Evidence-based design has forced Kirk Hamilton to keep using the term, so when he wanted to call his new book something else than Evidence-based design his publisher said: 'No, because when people go to Google and they put in 'Evidence-based design', I want this book to come up'. Kirk Hamilton formulates it like this: 'I am being forced by the coincidence of how the market has adopted it to keep using a term that is slightly confusing. It is not really wrong but it leaves an impression of something that is not accurate'. This story stays with me as a warning of what can go wrong, when you want to do things right. And using research to inform design seems right. Could the quality of the Evidence-Based Design approach primarily be that it is questioning the assumptions, foundations and implications that are implicit in the designed environment? Collecting evidence about the quality and impact of the designed environment might help architects communicate the value of culture products (like architecture) in a world driven by politicians, bankers and project managers. But the lack of consensus about what kind of research we should do in the world of design seems to be a problem. Building a bridge between research and design is a metaphor and thus more about the symbolic; what values it represents than about construction; the physical reality. Might be that it is the intention behind certain research projects that we should question and not the evidence that they produce.

> *'To determine whether a project is an evidence-based project or not; can you tell me a hypothesis before the building was built about what the outcome will be? In the case of critical care a hypothesis could be that the clinicians working in this unit would wash their hands more frequently than they did before they moved into the new unit. And if that is my hypothesis, I have already come very close to defining the measurements to tell me whether or not my hypothesis was supported'.*
>
> — Kirk Hamilton, At The Master Class 'Evidence-based design for Critical Care', Rotterdam, 2008

Authors:
Joram Nauta *(DuCHA)*, Sjoerd de Hoogh *(DuCHA)*, Herma de Wijn *(DuCHA)*, Birgitte Louise Hansen *(University of Technology Delft)*, Bram Esser, Peter Michiel Schaap

Masters:
Kirk Hamilton
Texas A&M University, College Station, USA
Charles Cadenhead
WHR Architects, Houston, USA
Jaap Wiedenhoff
Arup, Amsterdam, The Netherlands

Interviewees:
Kirk Hamilton *(Texas A&M University, USA)*, Frans Jaspers *(University Medical Center Groningen)*, Bas Molenaar *(University of Technology Eindhoven)*, Harry Abels *(IAA Architecten)*

Graphic Design:
Maaike de Laat

Participants:
Don Monfils
WTS Architecten, Vlissingen, The Netherlands
Gerarda Nierman
Royal Haskoning, Rotterdam, The Netherlands
Harry Abels
IAA Architecten, Enschede, The Netherlands
Koen Kragting
White Architects, Stockholm, Sweden
Lynn Webster
Cohos Evamy, Calgary, Canada
Sandra Dijkstra
Wiegerinck Architecten, Arnhem, The Netherlands
Sjoerd de Hoogh
Dutch Centre for Health Assets, Utrecht, The Netherlands
Sabine Berndsen,
Sabine Berndsen Architect, Arnhem, The Netherlands

Sponsored by:
The Netherlands Foundation for Visual Arts, Design and Architecture (Fonds BKVB)

Reporter:
Birgitte Louise Hansen
University of Technology Delft, Faculty of Architecture, Delft, The Netherlands

This publication has been designed using the Evidence Based Design process. Read the footnotes for more information on the evidence used.

CONTENT