complex projects

BONE HOSPITAL

complex projects 2023

RESEARCH PLAN

BONE HOSPITAL

MEDICAL TOURIST CENTER IN THE INFORMATION SOCIETY

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Berlin studio

INDEX

INTRODUCTION

01

My fascination with architectural design in the Healthcare industry comes from my childhood experiences as a patient. The illnesses I experienced growing up have made hospital memories a vital part of my life. Whether it is the fear of the unknown, the frightening treatment process, or the long and challenging hospital stays, I have a deep sense of how hospital space can significantly impact a patient's physical and mental health, the highly professional medical staff, and others. I believe in the ability of architecture to influence one's emotions while helping a patient recover physically. As an undertrained architect, I have always considered my experience and insight valuable when combined with my profession. My curiosity about how space can inspire visitors with hope and perseverance during their difficult health journeys has led to this thesis research.

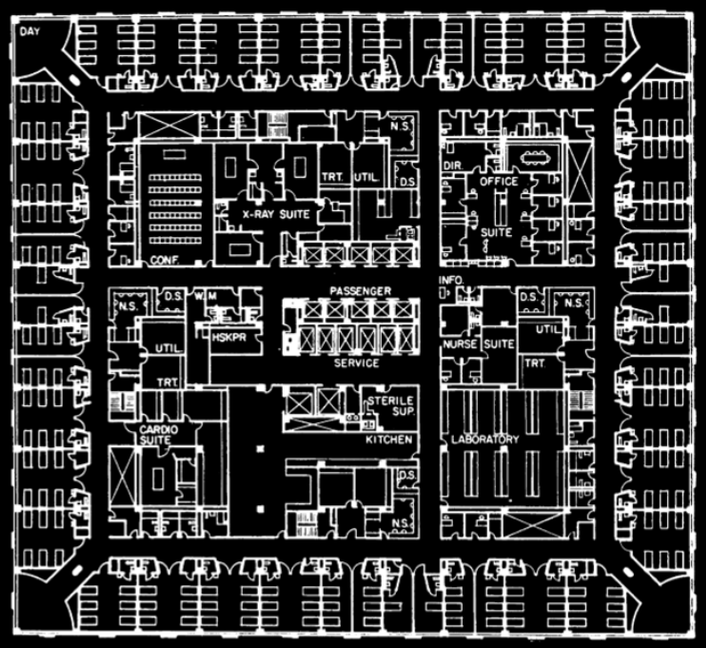


Figure X Floor plan, Bellevue Hospital. _©Pedro Guedes
Figure X Hallway, Bellevue Hospital. _©Bellevue Hospital

Thesis topic

1.1 Transformation of healthcare

Healing space delegates some of the most private and complex services are needed; personal information must be shared with strangers, which are the medical staff, during the treatment process. This is why tense and frightening situations often arise, where patients face crucial decisions, and the medical staff speaks a very different language. Therefore, the building should provide a way to reduce the anxiety of patients and their families and, of course, the medical staff caring for them. The hospital and rehabilitation environment is a healing environment for patients and their families, a work environment for the staff, a business environment for healthcare provision, and a cultural environment for the organization to fulfill its vision. The facility design must be linked to the organization's goal and objective(Kellert, 1993).

From a macro perspective, everyone only leaves the healthcare system at the end of their life. We are constantly engaged in activities that affect our health, whether under the direct care of a healthcare provider or not. The current understanding of space in healthcare facilities is somewhat frustrating, focusing most of the attention on illness when more needs to be preserved for well-being.

Medical facilities underwent significant changes in the 20th century due to the rapid development of medicine and technology. The hospital is designed as a healing machine that brings patients in, quick fixes and releases them. However, this type of architectural layout has a downside.As efficient medical machines treat the human being as a body only and are oriented towards the efficiency of treating physical problems while neglecting the patient's comfort and mental health, often causing stress and anxiety.

Nowadays, technology enhancement, digitization, and automation impact today's industry profoundly, and healthcare delivery is no exception. On the supply side, a vast array of new technologies integrate into the healthcare system, including artificial intelligence, robotics, precision medicine, and telemedicine, with current urgency (cost containment and efficiency) and long-term goals (more precision, fewer errors, and better outcomes) driving these changes. On the demand side, patients expect to be treated more efficiently, comfortably, accessibly, and in a near-normal environment. The hospital service model is transforming, with the traditional hospital as a center for medical services being forced to transform into a setting with leisure and entertainment elements.

Therefore, future medical facilities must consider patient-centered typologies. Furthermore, challenge the possibilities technology and a new perspective on architecture can offer.

1.2 Multisensory therapeutic environment

Human is visually dominant creatures; we all mostly tend to think, reason, and imagine visually.(Pallasmaa,1996) , our built environment is also dominant in the visual.[1]

Designers worldwide continuously highlight the great potential of multi-sensory design for curative spaces.

> 'Form can only stimulate the vision, yet the greater senses lie beyond our sight.' -Kengo Kuma, 2022

With this approach, the impact of architecture on occupants can be better tuned through sensory design for a healthier mind and body. Sensory design is the coordination of spatial stimuli in the built environment, tempered to enhance the quality of experience for the inhabitants it serves. By taking an occupant-centered approach, therapeutic architecture further explains how sensory design can better accommodate physically, cognitively, emotionally, behaviorally, and spiritually healthier mind-body connections.

When provided with a positive healing environment, the body follows and allows the mechanism of "self-healing." The terms healing and therapy are often misunderstood to be the same and, therefore, can be used alternately but have different meanings. Healing usually refers to gaining relief from the symptoms of an illness or condition. It can be achieved through proper medication, while healing refers to the process of rejuvenation and restoration of health. The aura of space alters one's perception.[2] The healing components of such facilities could reference the core concept of Maggie's Centers. The series Cancer Caring Centres are a charity that has become influential for its enlightened provision of uplifting environments for cancer care. (figure)

1.3 Medical tourism in Berlin

This article takes the issue of the high demand for medical tourism in Germany as a springboard, tracing the obstacles medical tourists might face during their healing process as well as the common gap in current medical facilities.

1.Juhani Pallasmaa.1996. The eyes of the skin: Architecture and the senses
2.Swara Ganatra. 2022. Sensory Design: Therapeutic Architecture:https://www.re-thinkingthefuture.com/2021/01/30/a3098-sensory-design-therapeutic-architecture/

Figure X Creative session at Norman Foster's Maggie's Centre, Manchester_©Philip Durrant

Problem statement

Medical institutions must always be more open to the human experience. The traditional medical institution serves humanity and the patient's medical condition but rarely at the same time, and the role of design is to manage this conflict. It softens the blow of patients' irrelevance to the systems around us, reminding us that we may still matter in the great institutions around us; the act can be quoted as the dignity construction. (Michael Murphy, 2021) Dignity construction refers to a create a patient-centered environment that improves psychological and physiological health. "Patients want to feel in control of their health, to make their own choices while in a health care facility, and not to feel so dependent on staff for help" (Cynthia Leibrock).

Medical tourism is a rapidly growing sector of economic growth and diversification. In medical tourism, the demand for high-quality healing experiences is even more vital. The concept of medical travel is as old as medicine itself. Globalization has popularized medical travel; Germany is a well-liked attraction for medical tourists. The country ranked 12th globally in the quality of facilities(figure X), services, and destination environment, while it ranked 36th out of 46 destinations in the medical tourism category in 2020. The number of patients who travel to Germany for treatment is around 150,000 to 250,000 annually. As the healthcare capital, Berlin hosts around 9000-100000 medical tourists annually. [3]

Medical tourists expect affordable, guaranteed quality treatment, convenience, and leisure activities. They face more barriers than general patients, such as language and communication barriers, transportation to and from treatment, waiting times, and post-treatment recovery. Also, engaged with more sectors, such as medical and travel agencies, the facilities medical tourists use must be better considered. At the same time, medical tourism-related facilities drive urban and economic development; therefore, for a more pleasing healthcare environment and a more sustainable economy, a well-integrated medical tourism industry is necessary for a city like Berlin.

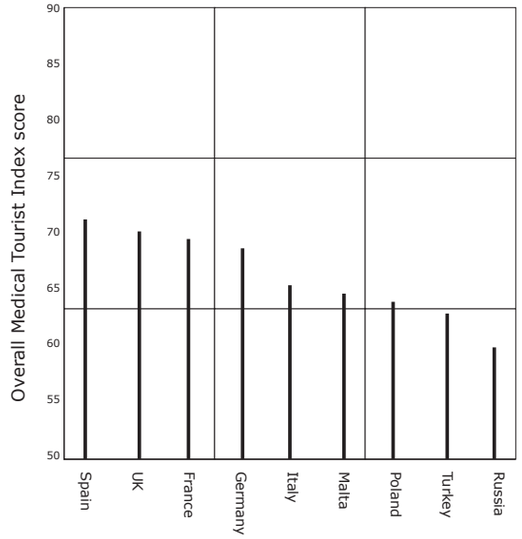


Figure X Medical tourist index of European countries, made by Author

Research Question

This research aims to synthesize a design brief for a medical center with treatment functions of an orthopedic surgical hospital, leisure, and supportive procedures aimed explicitly at medical tourists to provide users with comprehensive healing experiences while provoking their awareness of well-being. The research question is:

What is the role of architecture in the healing process? How can architecture facilitate human well-being and simultaneously serve humanity and medical needs to help achieve mental and physical health?

To be more precise:

1. How can healthcare facilities balance treatment and leisure to achieve the ultimate mental and physical healing?

2. How can architecture enhance patients' autonomy during their healing process?

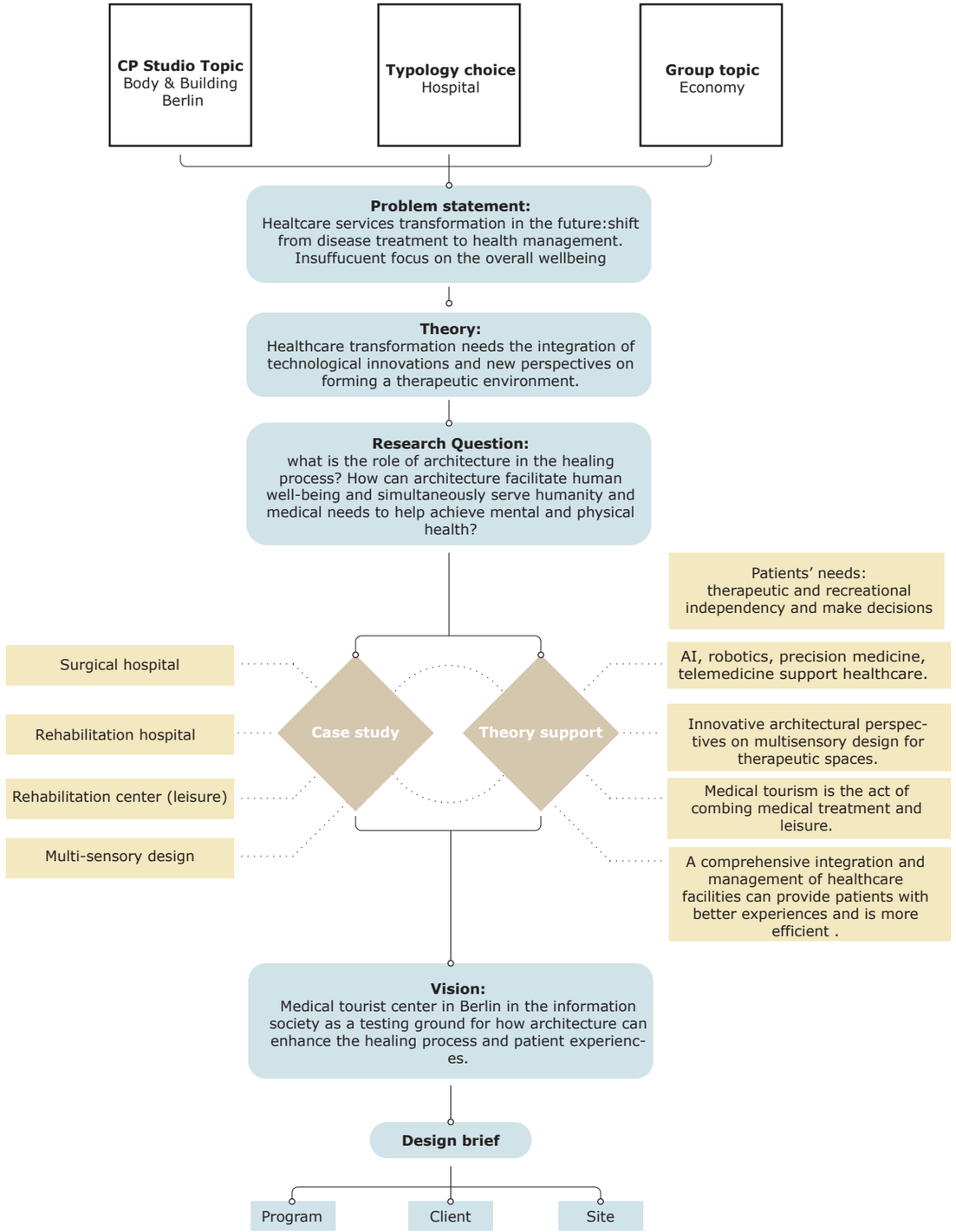
3. What is the role of technology in the medical field? How can medical facilities supplement technology to achieve the most efficient and quality service?

4. How can the atmosphere of space alter one's perception? How can multisensory design facilitate the healing process of the occupant?

RESEARCH FRAMEWORK

02

Research Framework



RESEARCH METHOD

03

Program

The framing of this project's goals for economic and functional performance provides the basis for the design and, therefore for the functioning of a building throughout its lifetime. The following part will seek to expand the boundaries of the architectural programming process to include a broader understanding of human factors, make an optimal environmental and social performance of the project goals and eventually compose a design brief for the medical tourist center. It is beneficial to study precedents and comprehensively understand the design strategies and philosophy concealed under the built results. The program analysis will select relevant case studies based on each sub-question.

Case study

Study cases of buildings for physical impairments, e.g. rehabilitation hospitals, care centers, architecture with a healing effect on the physical and mental, e.g. surgical hospitals, rehabilitation centers, and multisensory architecture.Establish the program and area of the functional capacity of the building, the area of the intrinsic capacity, and the stacking/sequencing logic. Moreover, identify key spaces and flows within the buildings.

Client

Internet research

Stakeholders involved in medical tourism hospitals are mainly hospitals, travel, and medical agencies. Three main types of hospital initiators can be distinguished: government-owned, non-profit organizations, and private for-profit organizations. Most of the travel and medical agencies are private organizations. Suitable client(s) will be selected by analyzing their prospect's strengths and weaknesses.

Site

Map study

Study Berlin's entire environment, public transport, economic trend, and demography. Selections of potential sites through analyzing the environmental quality, accessibility, public attributes, accessibility, and regional development potential. Requirements will be set for the group topic on the economy to achieve the common goal on the city scale. Criteria for hospital typology and the specific need for the program will also be set to locate the building.

Literature study

Read about the plans and visions of the Senate and the German government for Berlin and learn about and select sites with potential development.

Site visit

Acquire information through site visits; two site visits of approximately one week are expected to occur in May and September 2023.