

GRADUATION REFLECTION PAPER

MASTER ARCHITECTURE, URBANISM AND BUILDING SCIENCE

ROTTERDAM HARBOUR STUDIO

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INTRODUCTION

the graduation studio choice and reflection

From when I was only 5 years old I was already reconstructing the Notre-Dame de Paris in wooden blocks in school. The first paper I wrote was about the Romans and their architecture and the next one about the architecture of Rotterdam. I was and became fascinated by Architecture very early on. I really became convinced again of my passion for architecture when I went to Rome with a school trip when I was seventeen. It was all so beautiful and special even when some buildings were over 2000 years old. I had prepared myself for the trip and became a sort of tour guide for the group while students asked me how it had looked like wherever we were walking or visiting.

I walked over the Forum Romanum, the Pallatin and Circus Maximus and could not understand why these former magnificent and important structures and complexes were never reconstructed or rebuilt even when we know how it looked like. That was the moment I decided to study architecture; to somewhere in time reconstruct in any way these ancient structures, complexes and buildings. But by discussion and the studied years at Bouwkunde I came to the conclusion that there are very wide and different opinions about reconstructing these buildings or structures or even the way to handle or interact with them and other examples of heritage.

This handling and interacting with heritage has become more and more important through the years. In my opinion transformation, conservation and redevelopment of heritage or other existing structures is one of the main themes in architecture today. However redeveloping monuments and/or heritage is always tricky. Every decision, intervention or proposal has to be thought through and defendable with arguments and reason related to statements that flow from research and value assessments of the particular site(s) and built structure(s).

When I had to choose the graduation studio these reasons together with my interests, personal experiences and background in the academic field were determining my choice.

Several architectural studio's were dealing with heritage tasks but not as much and extensive as the graduation studio "Heritage & Design". This studio was and is mainly focused on dealing with a realistic and credible heritage assignment on different scale levels, such as: urbanism, culture, history, architecture and building technology. Furthermore the studio gave the freedom of figuring out a new utilization for a building influenced by its past and bounded by the current situation. In the end these were the main reasons why I chose this particular graduation studio.

This paper is part of the prescribed process of graduation at the Master field in the track of Urbanism, Architecture and Building Sciences at the Technical University of Delft. The content of this reflection should help the reader understand the design in itself and the process undertaken. The specific case of the earlier mentioned studio of Heritage and Design focus is set on the process of research and analysis of the history of the building and its tangible and intangible values grasped throughout the process; the understanding of those features is what should support the design in itself and its concept. Therefore in the following pages, the graduation process will be described in all its parts for the specific case study of the Katoenveem complex in Rotterdam, brought forward by myself starting from February 2016 in the graduation studio of "Heritage & Design".

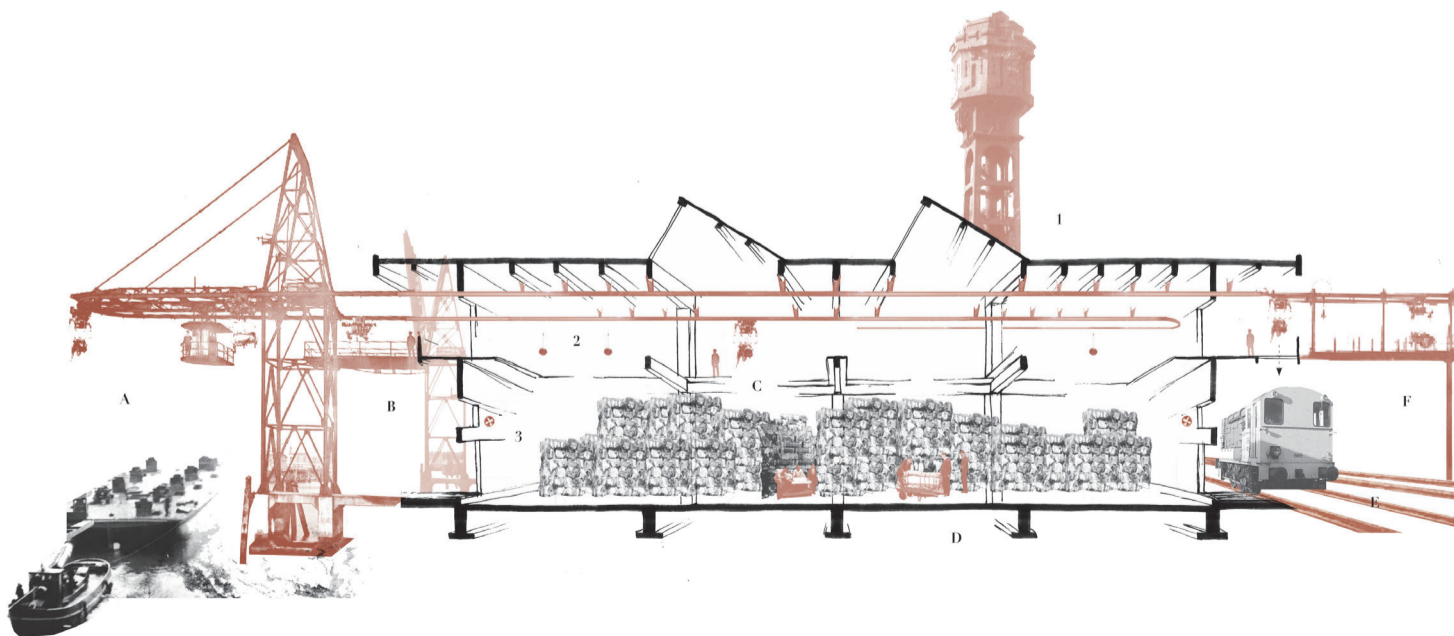


figure 1 - the Katoenveem section as it once was and functioned

RESEARCH AND DESIGN

the relationship between research and design

You can work with your building's surroundings, characteristics and features by repressing them, hiding from them, celebrating them, juxtaposing them, making fun of them, uplifting them, supporting them, replacing them, improving them, or even changing them. But to make a decision you have to look beyond your building's subjective beauty or ugliness and its immediate site, you have to analyze its history, everything that surrounds it and the building consists off to make the right judgement.

There are many factors that come into play regarding an architectural, cultural and technological research/analysis, but I think it may be important to understand (as you are coming up with solutions to your architectural design) what the perception is by yourself, the public and the municipality of what is currently on and in your building site (or what once was there). You should however not be limited by this with regard to the site and building awaiting your design and the design process, but I do think you will formulate a better design concept if you understand the different and sometimes intangible dimensions to the site where you will build and/or intervene. I used this as a springboard during the graduation studio to think outside of the box by still being true to our own design style, but still solve all the challenges, opportunities and needs this place, the building and the surroundings bring.

The research is very important for many reasons. And key among those is that it presents you with many clues and provides arguments which together add up to help you determine what design opportunities and challenges you can solve, leverage and build upon.

The relationship between research and design for me is quite clear; a good research gives you a peek into the underlying "personality" of where you will build/design – and that may just spark and/or justify your own best innovative design solution and approach.

In this particular studio we had the option of redeveloping one of five different industrial buildings. I chose to redevelop the Katoenveem building. The Katoenveem immediately for me was a fascinating building and site. This large oblong building maybe seems boring and ready for demolition for the untrained eye, but the eyes only see what the mind is prepared to comprehend.

The still standing structure, designed by J.J. Kanter, was built along one of the quays of the, at that moment, brand new and busy Vierhavens industrial and harbor area. In only two years; 1919-1920 the building was constructed together with several structures which together made the Katoenveem Complex (see fig. 2). The main building, the one still standing, was built for the storage and transshipment of cotton. In Rotterdam this was the first warehouse that was especially designed for storing and distributing cotton. Katoenveem and the complex functioned for the cotton industry for over 43 years until 1964 when the company quitted due to the rapid development of synthetic fabrics. After 1964 the building still functioned as a warehouse but not exclusively for cottonbales. Later Atelier van Lieshout had its offices here and even later an apartment was made on the roof.

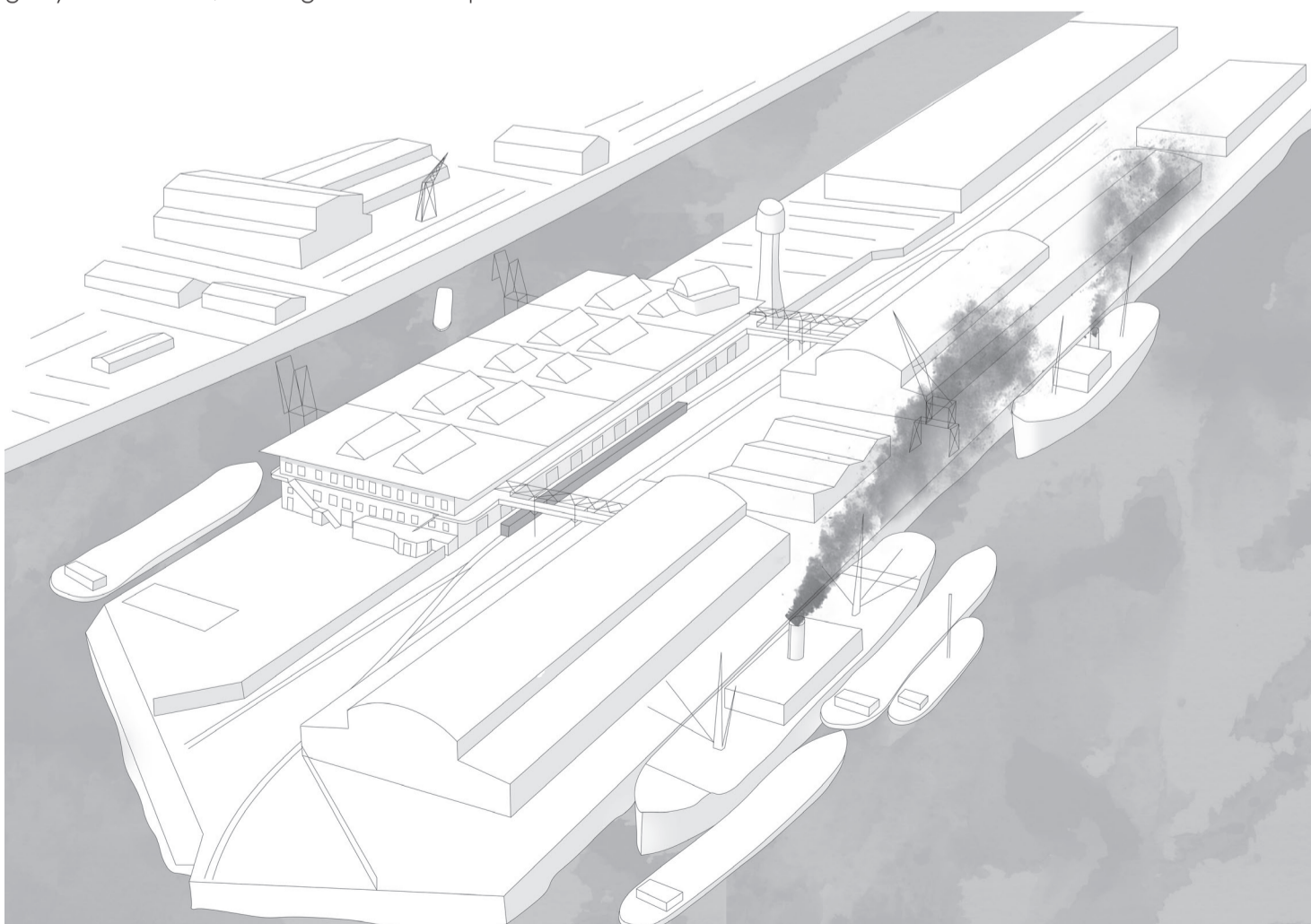


figure 2 - the Katoenveem complex

I chose for a programme that would fit the future urban neighbourhood proposed by the municipality of Rotterdam. Due to the grow in demand for flexible cultural facilities in the future for this neighbourhood and the position the site will take in future plans Katoenveem could be a social hub and missing link. A place where people come together at a crossroads of different area's and atmospheres in a building where all kinds of functions related to culture and leisure can be found that will serve the population of Rotterdam and this area of the city. Out of this statement flowed my Research Question: "How to redesign the Katoenveem into a cultural public center?"

In the proposed design a theater, café, restaurant, a music and dancing school, rentable and flexible workspaces and event hall can be found. This cultural center will be accompanied by large open and green spaces that flow into a park and harbor open for the hole Vierhaven area that connects the Dakpark with the parks at the end of the Keileharbor.

After extensive research I concluded it is possible to fit a cultural centre in Katoenveem but interventions have to be taken to make it work and functional. These interventions always lead to conflicts and disputes during the design process. For these occasions the research is

the defining factor.

Every intervention was reflected on the obligations and values we concluded from the research and value matrix of the site and building and the other way around. Value matrix? Obligations? We as a group formulated a statement and a list of obligations and opportunities that followed from the cultural value group report that summarizes and explains the value matrix. The value matrix is diagram which is usefull for comparing and defining the most and least valuable elements of the building and site (see fig. 3). Out of this matrix obligations emerged. These obligations are interventions or elements that we surely have to take into account and act upon during the design proposal. My own design process actually started with the obligations. I often asked myself the question: what am I going to do with this particular element that we valued high or for that matter low to enhance it's value and at the same use them in a proper way? And so forth.

So what is in my case the relationship between research and design? Simply put the research is the base of the design, because the design decisions are based on the research. The research influenced the architecture, building technology and functionality of the building.

RIEGL X BRAND	AGE	HISTORICAL	USE	ART	RARITY	BELEVINGS-WAARDE
SURROUNDING SETTING	 - Derelict industrial buildings in the area	 - Traces of train tracks - Loss of activity - Part of the harbour	X	X	X	 - Longitudinal pier - Lots of industrial activity - Industrial site
SITE	 - Traces of removed buildings	 - Traces suggest a complex - The two piers are old crane foundations, showing traces of an old infrastructure - Old partitions of the outside wall still remain	 - The pier is still used similarly, using tracks instead of trains and boats.	X	 - The only cotton storage in the Netherlands	 - Strong harbour feel - Free space on either sides - Far view over the water
SKIN	 - dated appearance - weatherworn skin and clear signs of erosion and rust	 - traces of formerly present steel bridges and holes on skin and gully's - still present original texts on walls and doors, which tell functionality and division - Skin is designed in order to create maximum usability for it's original function	X	 - Deliberate lining and suggestion of hardstone decoration around windows as a reference to dwelling	 - Traces of steel decorative Katoenveem sign on roof/skylight of the building	 - Repetition in skin is key factor in historic and contemporary experience the Katoenveem
STRUCTURE	 The abrasion on the free standing columns in the halls is the evidence of the operating years of the Katoenveem.	 The dilatation between any two adjacent compartments is a special design for the inflammable goods, cotton. The structure of the building is directly linked to the original use of the building	 The north oriented skylights provide indirect sunlight, which can avoid overheating of the cotton.	X	 Building in construction. The structure of the building is one of the earlier and rare examples of Hennebique reinforced concrete system used on a cotton warehouse.	 Structure is very striking and present in the building and largely determines the experience
SPACE PLAN	X	 The five parallel compartments are placed along the pier. The efficiency of waterway and railway transportation, and the storage of cotton was the primary reason of the space plan layout.	X	 With a little restoration, the huge, tall space of each compartment has the potential to be used for many purposes, such as warehouse, art studio, sports fields, church, etc.	X	 The five separated compartments for cotton (upper drawing) are interconnected by the walkways and outdoor galleries for workers (lower drawing). Without the piles of cotton bales that used to occupied the space each compartment is a huge, cold, static space with major light source from above, making the space solemn and silent.
SURFACES INTERIOR	 - dated appearance - damage of use and cottonbale movement - weatherworn surfaces and clear signs of erosion and rust on walls, structures, doors and windows	 - traces of wooden formwork and the way of construction and building	X	X	X	 - sacred atmosphere through color and materialisation (like bright white paint and texture as in some churches)
SERVICES	 Present original equipment and systems as the current state of conveyor, lights, fans, pulley, and travellers suggest traces of past life, a process of existence since the systems are not continuous anymore and the equipment is left behind in dust, rust and leakage.	 All original equipment and systems such as the total plan of serving as cranes, conveyor, lights, fans, bridges, travellers, waterwheels, pipes, sprinkler, cart and pulley are referring to the for its time advanced functionality of the building as cotton warehouse.	 Since present systems and equipment still have a potential of use, parts could be serving future programming of the building. Lights by electricity and armatures, natural ventilation by fans through wind, transport and carrying of stuff along the kept conveyor.	X	 The innovative firesystem along with water storage and keeping it on pressure to safeguard against fire through sprinklers of the gimmed type, inventive for its period an improvement for the service of its functionality	 By the present original equipment and systems suggest traces of past life and existence of a workers process, there is a chance and imagination of movements

figure 3 - the value matrix

GRADUATION THEME & THE PROJECT

the relationship between the theme of the graduation lab and the subject/case study chosen by the student within this framework

As mentioned earlier the studio theme is Heritage & Design. It mainly focuses on the redevelopment of industrial heritage and/or structures or in other words the dealing with the existing. In my eyes there are two discussions relevant within this theme; the first one is; the challenge of change in existing fabrics/structures and the second is the user and program.

Within this studio we were really free to explore and research. We had to formulate most of our own design assignment. No specific building or program was given, giving us as students a lot of freedom in doing our graduation project. However we did have five options; all existing and mostly monumental buildings and/or complexes in the (sometimes former) harbors of Rotterdam. They are examples of industrial buildings from the beginning of the 20th century. For this harbor studio we could choose for redeveloping the Katoenveem, Santos, Maassilo, Fenixloodsen or the Quarantine Area. I chose the first one; Katoenveem. Besides this choice of the project there was no program or plan given which means that you have to force yourself to really find out what the area needs and what kind of architectural solutions fit. This has a close relation to the theme of

'tolerance of change'. Especially within the context that is present I think my chosen themes of research and design fit the studio theme.

By fascination and observation, I chose to investigate the historic and present urban and architectural aspects, hoping to conclude principles that help me to design an intervention within this context. The tolerance of change in my case was very relevant because I decided to insert new building volumes between and over existing building parts (see figure 4). I also made internal changes to the building as I introduced a street through the building (see fig. 5), as well as the surroundings. Finally I also had to make a clear main entrance. This was one of the larger hurdles during the graduation as it became one of the main reasons I had to do a retake of the P2 presentation. Many times I changed the design proposal for this entrance (see fig. 6) and it took a lot of research and studies to come up with the, in my eyes, best solution.

These decisions are not easy, and forced me to formulate a position strong enough to take certain decisions together with the reasoning and argumentation that flowed from the research.

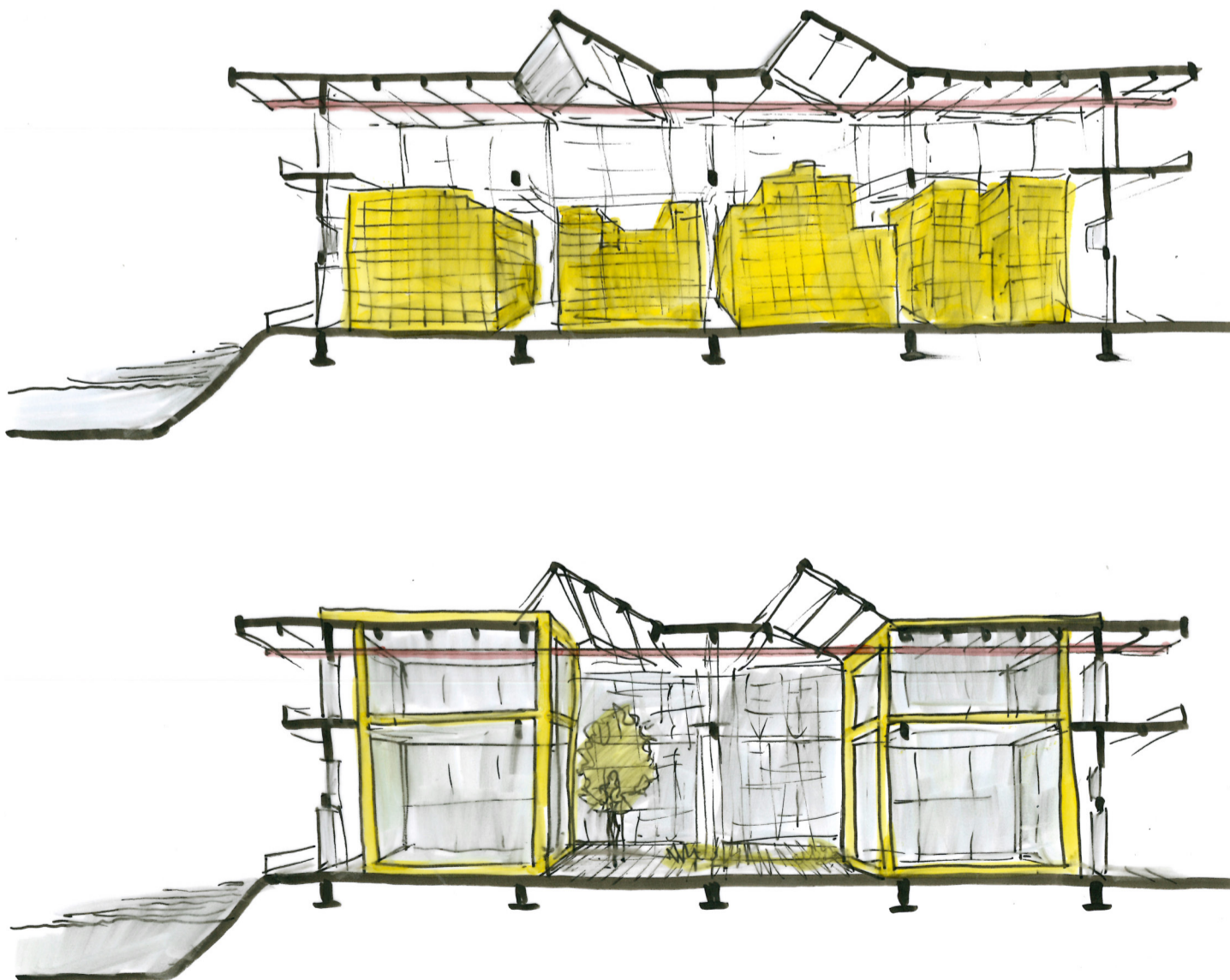


figure 4 -section of the original building and section of the intervention and additions of my design proposal

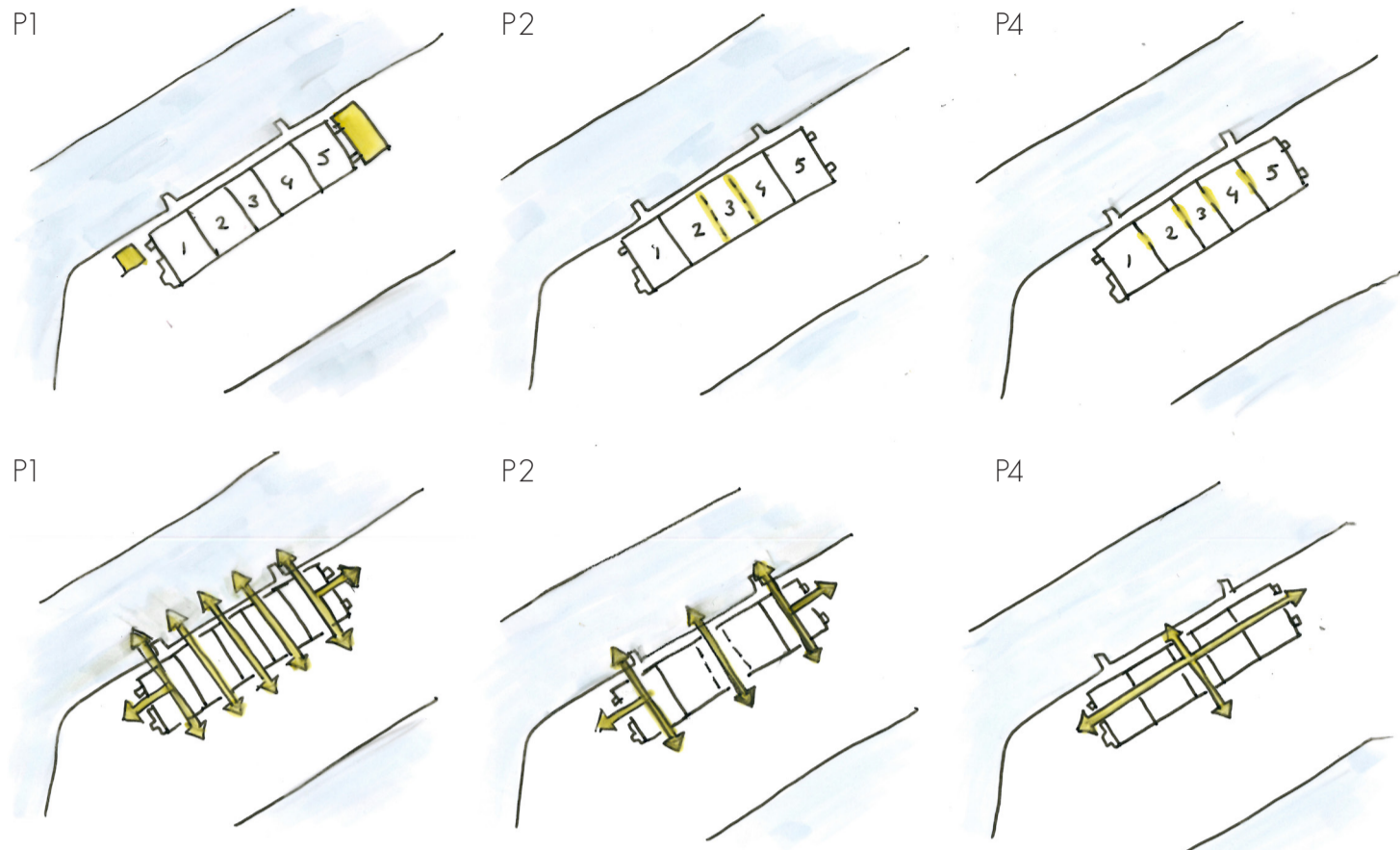


figure 5 - diagrams of changes to compartmentation and circulation of Katoenveem



figure 6 - entrance proposal at the P2 Retake and entrance proposal at the P4

METHODOLOGY

the relationship between the methodical line of approach of the graduation lab and the method chosen by the student in this framework

The method and approach of the graduation can be divided into the given method by the graduation studio, and my own method. Especially the method and structure of the first semester was quite fixed, however space for change was present if you had the right arguments.

In general, the first semester consisted of the analysis and research, divided into a list of subjects. The first part of the analysis was done with the group as a whole and the second part in a smaller group with students that chose the same project. As we grouped we divided each subject among each other, defining a relatively clear structure of what had to be done. However, the course of the analysis process changed depending on the matter. Some subjects needed more attention than others. Parallel to this relatively fixed analysis process, a thematic research was written. This research was personal, and everyone formulated their own subject depending on fascinations and observations. The early submission of the graduation plan forced me into thinking about the method and timeline I was going to use throughout the entire graduation period (see fig. 7). However in the past 4 years of studying architecture, I can say that my design process was different almost every project. It depends on the structure of the project and on your personal progression. Because the masters education has become more serious than the bachelor, I also planned to pay more attention to my design process as before I didn't show the process sufficiently. Generally my method and approach goes like this:

I start with the documentation and discovery.

I collect information about the assignment and visit the site to make sketches and have an idea what I am dealing with and which opportunities there are. After that I started with the analysis of the context, history and the current situation.

Together with the information I have gathered in the steps before I can make a value assessment of the place and by that decide which choices to make. After this I will look at the demands. This can be the PVE or the demands of the place and people. But especially the technology and necessities for a new function or functions are important because of its large impact on heritage.

Eventually together with all arguments and research data it is possible to make an intervention on a heritage site and make the design and heritage intertwine.

But looking back, the design process can't really be predicted perfectly like this. The process mainly consisted of a series of small research-design cycles, each reflected upon each other. Design options are assessed, before moving on to the next subject. The next subjects were defined during sessions with my tutors, that could push me in certain directions or show me a new path towards a design proposal. I think the references to other projects or architects were the most valuable to me. For instance the projection of a work method of a specific architect to a building part was quite interesting. What happens when you design or draw a Liebeskind or Zaha Hadid-esque floor plan in my project? These small exercises lets you see your project in a different way and make more weighed decisions.

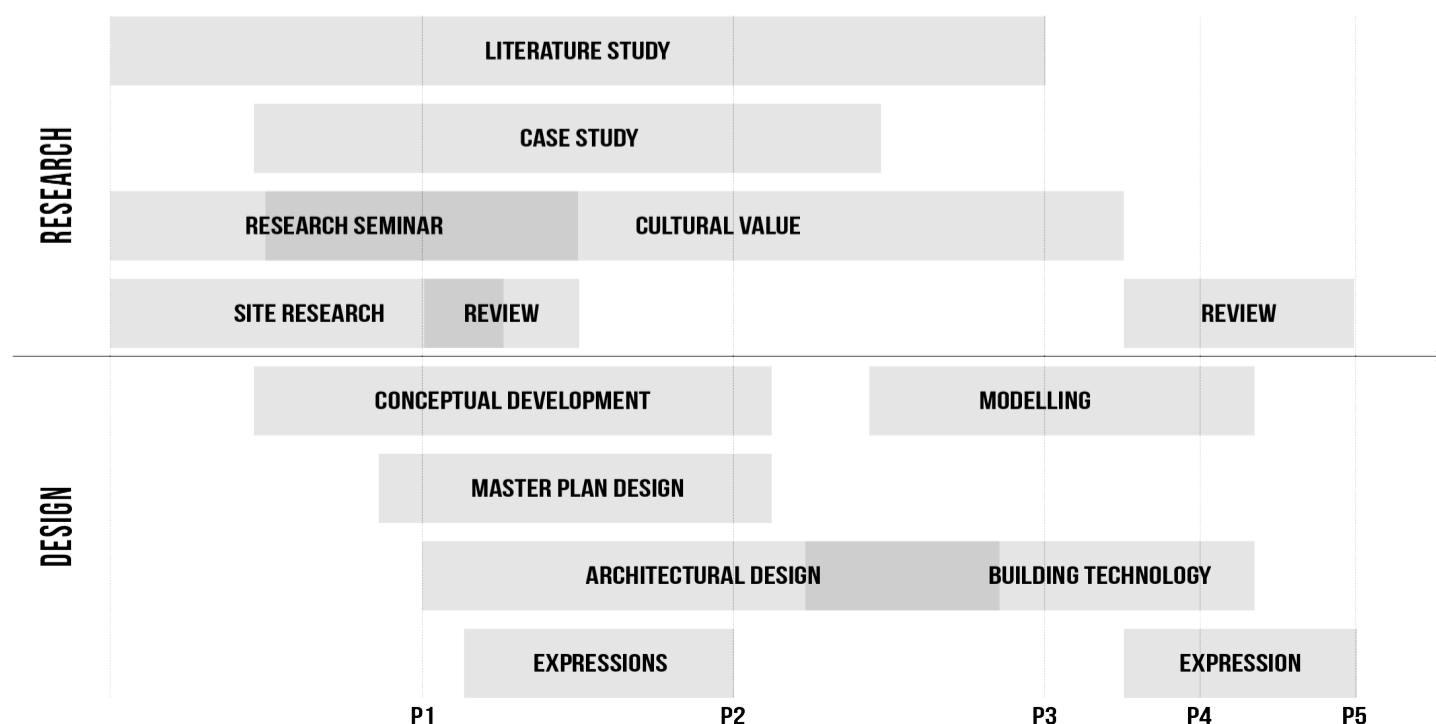


figure 6 - timeline of the graduation plan

SOCIAL RELEVANCE

the relationship between the project and the wider social context

This Heritage & Design studio is about dealing with the existing architecture and structure. It is about preservation through intervention but preservation encompasses so much more than the conservation of historic structures and/or heritage. There are many more things at stake; it is in my eyes not simply about saving them for preservation's sake. I think there are several reasons behind a decision to conserve, restore, re-use and safeguard our architectural heritage in my view and the relevancy of dealing with heritage & architecture.

I think the studio of Heritage & Architecture has a valid societal relevance. The graduation project can be relevant in several ways. First, the general assignment of transforming or redeveloping existing structures is a subject that has become more and more important through the years and will be even more in the future. Especially the Netherlands has an interesting reservoir of the knowledge on this subject, which is also highly valued internationally. Many existing buildings have become useless and empty like churches, offices and industrial buildings, like Katoenveem, which can be used for new functions or purposes. Especially in these times this is relevant as populations keep growing and these buildings are often placed in city's and important sites already which makes them easier to exploit. Next the demolition of a site and construct a new building isn't as environmentally responsible as historic preservation. When a structure is removed, the old materials are discarded and new ones need to be sourced and transported to the site - which is a huge waste of resources, energy and time in my opinion and isn't in line with the more sustainable and durable path we have chosen for the future as a society.

But next to functional and environmental significance this project as many others also has a historic, social and educational significance. Perhaps the most significant (but certainly not the only) reason behind heritage preservation and intervention is to acknowledge a buildings' historic importance and to keep it alive for future generations - especially for future students, who without it wouldn't have the tangible artefacts to 'bring alive' their studies and imagination. Out of this also flows the cultural relevancy as a building's cultural significance leads on from the historic interest, and preservation serves to keep communities together, to see them remain true to their past, identity and safeguard their future. In cases where historic preservation has been ignored, a community's connection to the past may be lost. Their foundation is removed and with it goes pride and a sense of belonging.

In the end the transformation of monuments and sites with much historical and cultural value like the Katoenveem is very complex. There is also no general consensus about how to approach these assignments. There is no right or wrong. This makes assessments of new additions or changes to a historic context quite difficult as it is in this project. My graduation project is another addition to the scope of transformation in a historical context. It shows another way, another example of how to approach the existing. Not in terms of uniqueness, my approach isn't especially unique as far as I know. It just adds to the general discourse of these transformation and redevelopment projects and the way of dealing with heritage and other existing structures.