

PERMANENT SPACE // CHANGEABLE USE

Adaptability without future architectural interventions

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Permanent Space // Changeable Use
Reflection

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REFLECTION

1. POSITIONING GRADUATION PROJECT WITHIN MASTER PROGRAM

The design challenge of the graduation studio focuses on vacant police estates in the Netherlands. Because of the formation of the National Dutch Police in 2013 and the digitalization of their work, a lot of the police buildings become obsolete or do not fit within the requirements needed. That is why approximately 700.000 square meters of real estate will be divested (Politie Bouwmeester, 2021). For this graduations studio specifically, a redesign proposal for the police office Koudenhorn in Haarlem was made. The Koudenhorn building, originally designed as a Diaconiehuis in 1771, was by far the largest building project in Haarlem at the time and changed in use over time. From 1810 onwards the building was

used by the French as barracks until the Napoleonic empire began to collapse. Afterwards, the Koudenhorn retained this function until 1960 by the police of Haarlem. Two centuries after it was build, a new volume was added on the side in 1971 when the whole ensemble was used by the police (Noord Hollands Archief, 2020) and the police headquarters was established in the old barracks. The total gross floor area of these two building volumes is 16.500 m². Currently the buildings are part of the protected city scape of Haarlem and the Koudenhorn building itself is a national monument.

To make these two different buildings more sustainable for the future, it would be interesting to design an architecture that is resilient in accommodating change in use over time to create



Figure 1: The Koudenhorn building in Haarlem (own image).

adaptable spaces. Designing from the permanent, in which the people that are using the building need to be more adaptable instead of designing a flexible building was the starting point for this graduation project. The graduation project itself is part of the Heritage & Architecture studio of Vacant Heritage in which the focus lies on the importance of adaptive re-use projects. Because there is a high vacancy rate of buildings, new uses need to be found to keep these buildings alive. We live in an environment where it is normality to buy or make something new once it is broken and we forgot how to give a new purpose to things. That is why we need to adjust to the time we are living in and focus on the existing building stock. With my individual focus on redesigning a space plan in such a way that it can accommodate changes in use over time, the durability of the building will be questioned and the sustainability point of transforming vacant heritage will be central.

In a greater context the redesign for this building will be related to the sustainable development goals (Sustainable Development, z.d.) to build in a resilient (9) and sustainable (11) way and to be responsible with the consumption and production of materials (12). This also relates to the goals of the Delft University of Technology in general.

2. RESEARCH METHOD

To redesign a building in such a way that it can be variously used and interpreted over time, was the starting point for this research. A redesign within the permanent in which the users need to become more adaptable, since the use of a building is never definitive and

will always be organic and changeable. Therefore the following research question has been formulated: How could the space plan of a monument like the Koudenhorn be redesigned to accommodate changes in use over time? To be able to formulate this research question, the main challenge at the start of this graduation project was to scale the research direction down. Starting on this project, the idea was to find a generic solution to be able to transform all vacant heritage, but soon I realized this was a very ambitious goal. Because at the same time, the values of every building differ and each building needs to have another approach during a redesign process. Therefore it was important to figure out what the main interest in redesigning vacant heritage was and how the research question could be change to an achievable and realistic research that could be implemented in the design.

As for finding an answer to the formulated research question, it was important to come up with a good methodology. Starting off with investigating into the Spatial Building Typology aspects of different police estates to get a clear understanding of the buildings. Besides by doing literature research, the initial idea was to investigate case studies to be able to figure out how certain principles were adapted in designing floorplans. However, these case studies did not help for this part of the research, it did gave an insight in distinguishing four different frameworks in which change can take place (figure 2). After having conducted literature research, case study research and interviews initial conclusions could be formulated. To be able to redesign a space plan taking the

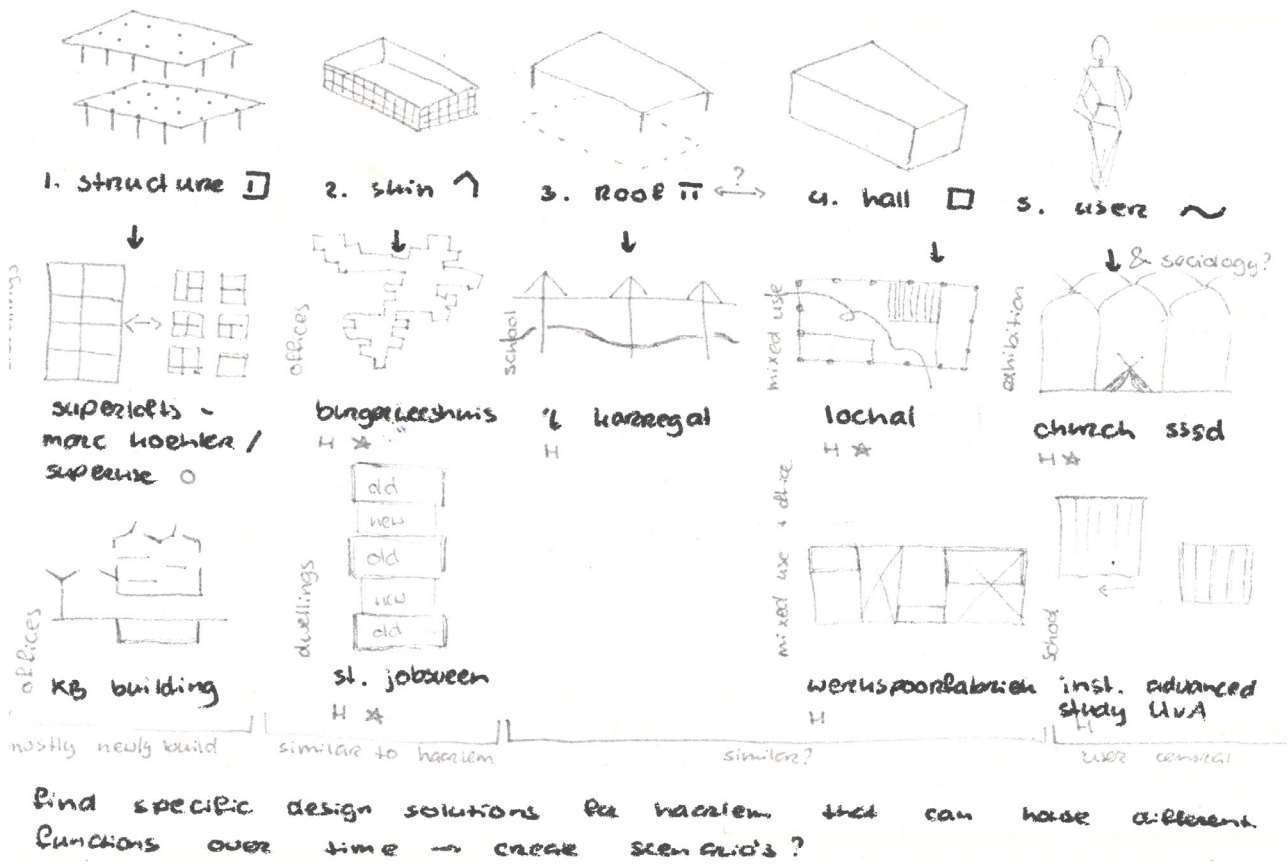


Figure 2: Different frameworks in which change can take place (own drawing).

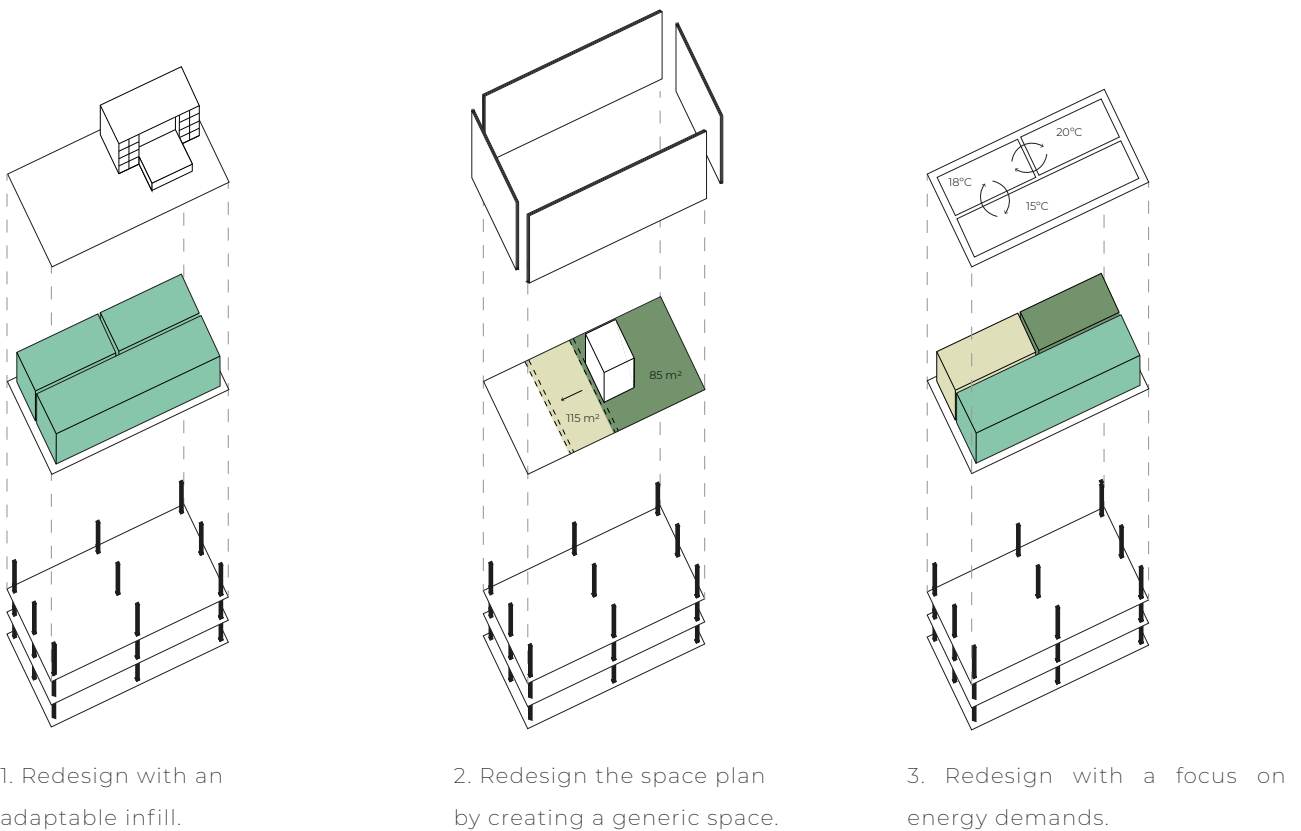


Figure 3: Three design approaches for the different frameworks (own image).

changeable into account, three different design approaches can be used within the four frameworks (figure 3). Having these initial conclusions, it soon became clear that the combined research was a good basis to focus on research by design. Because answers to the research question could only be formulated by implementing the initial conclusions from the research into the design process.

3. RESEARCH AND DESIGN

Since the methodology for this graduation project shifted to research by design, all challenges and limitations for redesigning the space plan of the Koudenhorn to accommodate changes in use over time were investigated up until P4. Starting with figuring out which framework and which design approach was best suitable for the Koudenhorn building. The research of adapting the user and not the subject was specifically challenging for the Koudenhorn, since the space plan of the building already has been changed many times over the years. While at the same time I had a personal interest in investigating the 2nd framework; redesign the space plan by creating a generic space focusing on the open building principles, because this has not been yet investigated in vacant heritage. At the same time it was also important to have an understanding of the loadbearing structure for this research and because this was hard to figure out the design process stagnated quite often. At the same time, questions arose whether the space plan should be able to be used in such a way that every function should be possible, or that the change could take place between functions that are similar or do have similar sizes.

Throughout the research and design process it was hard to formulate one clear answer to the research question. Starting with this research, it was the intention to formulate conclusions on how a building could be redesigned, creating permanent spaces that can be variously used over time. This because all buildings nowadays are built to serve a specific purpose, and if the requirements alter, new typologies emerge (Kuipers & Jonge, 2017). Which results in an architecture in which the function was defining the form of the building. However, working on the redesign it soon became clear that there are so many specific requirements for certain functions that it is nearly impossible to use the frameworks as a strict basis for redesign. Besides, different functions need different requirements, which means that all these requirements have to be taken into account to when redesigning a space that needs to be able to change in the future. Also the frameworks generated are closely related to the open building principles, which are currently only used on new constructed buildings using a structure with columns which already is more adaptable than a building consisting out of load bearing walls. At the same time the adaptability of the user is also a central aspect in this research, which is something that has not been looked into, but could have helped formulating a clearer answer to the research question.

The research by design approach has ensured that both aspects are deeply intertwined within the graduation project, however it was often quite challenging to be able to use the initial conclusions for the research within the design. It often looked like the research

outcome was quite contra dictionary with the design process, and looking back on the graduation project this research might be better applicable to other vacant police estates.

4. ETHICAL ISSUES AND DILEMAS

When designing a building for the future means giving definitive form to something for an unpredictable amount of time. While at the same time the task given to architects is to design buildings that are constantly subject to change. With this design proposal there is a focus on redesign in which the user needs to be adaptable and not the subject (Den Heijer, 2021). This is challenging for the Koudenhorn building, since the building has been changed many times already over the years. Why would this redesign proposal be better and more suitable for future changes in comparison to what is already there. Besides, how can users be influenced to use a building in an adaptable way and until what point can an architect control the outcome of their design intentions.

Furthermore, a lot of ethical questions arose for how the change of use can be regulated within a building like the Koudenhorn. The redesign proposal currently mainly consists out of dwellings, taken into account that these spaces can be transformed to offices for example. However, a clear businessplan, maintenance plan and rental plan should be written for a project like this. How to deal with the spaces if they are for rent or sale, who is in charge of the communal spaces if the project only consists out of offices and how do the dwellings relate to the offices if the functions are spread out over the whole building.

Applying the redesign proposal in real life will need some further investigation to be able to become a successful project.

5. TRANSFERABILITY OF THE RESULTS

Transforming vacant heritage because of a sustainability point of view is the reason why I have chosen this graduation studio. Specifically focussing on designing an architecture that is resilient in accommodating change in use over time, redesigning a building in which the user needs to become more adaptable. On the scale of the vacant heritage graduation studio the Koudenhorn in Haarlem, which consists of two buildings from different eras, was redesigned with the principles from the outcome of this research.

A way of designing buildings in which architectural interventions are not needed when a new use is required, is not a new concept. Research and designs have been made in this field, however it has never been used intentionally when redesigning vacant heritage, therefore researching into these principles and figuring out how they can be used when redesigning space plan is relevant.

The answers from this research could provide new insights into the principles architects are using when transforming vacant heritage. The three defined frameworks can be used as a starting point for a redesign project. Looking back, these frameworks will probably work best for buildings that have a loadbearing structure consisting out of columns and beams, or buildings that have an open façade. These two elements were lacking in the Koudenhorn building, which made it difficult in the end to implement all frameworks.

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