PERMANENT SPACE // CHANGEABLE USE

Flexibility without future architectural interventions

AR3AH105 I Vacant Heritage
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PREFACE

Growing up watching the news every day, it soon became clear to me that our generation needs to change the way we live. 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. When at the same time, climate change has become more present every year and we have been using more materials than are available on this planet (Global Footprint Network, 2021). We need to adjust to the time we are living in, and that is why we as architects need to focus on the existing building stock and find a second life for them.

When designing a building, it is the task of the architect to give a definite form to something for an unpredictable amount of time. These buildings are built in an ever-changing society and before we know it, the requirements of a building need to change. Designing in a flexible way is something most architects come up with, but to become more sustainable, we as the users of the building, need to become more flexible.

Of course, this is a very ambitious starting point for a research, and as a result there probably will not be one clear set of dogmatic rules. Nonetheless, that is not the aim of this research, it should rather provide a series of considerations to be used when redesigning vacant heritage.

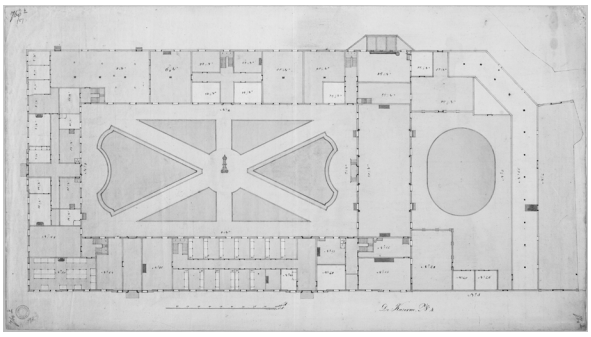
INTRODUCTION

Change. The only constant in our life, the only thing we could be sure of is change. Times are changing, the way we live together changes over time as well as the buildings we live in. All buildings are built to serve a purpose, and if the requirements alter, new typologies emerge (Kuipers & Jonge, 2017). Especially since the beginning of the twentieth century, a lot of the buildings we know today have been built, housing all sorts of new and specific functions. This resulted in an architecture in which the function was defining the form of the building. In comparison to the older typologies like churches, all these new functions have a limited lifespan. These buildings were not built for eternal durability, but for economical and dynamic changes (Henket, 1998). And once buildings become functionally, technically and economically obsolete no one wants to take care of them anymore.

The preservation of heritage is not, as it often looks, a recent phenomenon. From the sixth century onwards, Rome already preserved its own ancient monuments, but the growing popularity of preservation is something from the nineteenth century (Earl, 2003). Originally because of the beauty of a building, mere sentiment or for preserving the collective memory. And even though these motives are still applicable today, sustainability reasons are becoming more and more important. Only old and valuable buildings are always 'accepted' to be preserved, but since this is often around 1% of the building stock from a country, it only makes sense to start having a look at preserving all vacant heritage (Cultureel Erfgoed, 2021). Especially since 75% of the existing building stock is from the 20th century, so it is crucial to find a solution to be able to preserve all these buildings when it is needed (Henket, 1998). Or as Anne Lacaton and Jean-Philippe Vassal would say "Never demolish, always transform" (2007, p. 22).

Transforming vacant heritage because of a sustainability point of view is precisely the reason why this research here is conducted, as part of the vacant heritage graduation studio. The design challenge of the graduation studio focuses on vacant police estate in the Netherlands. Because of the formation of the National Dutch Police in 2013 and the digitalisation 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 research specifically, a redesign proposal for the police office Koudenhorn in Haarlem will be made. The Koudenhorn building, originally designed as a Diaconiehuis, was built in 1771 and changed in function over time. Two centuries later, in 1971 a new volume was added on the side when the whole ensemble was used by the police (Noord Hollands Archief, 2020). 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.

The research itself consists of two parts, the individual research on the topic of redesigning vacant heritage while taking the flexibility of the user in mind as a starting point. The second element



Floorplan Diaconiehuis (Smit, 1768).

Floorplan Koudenhorn police office (Spatial Building Typology collective research, 2021).

of the research is collective research on the Spatial Building Typology of several police estates throughout the Netherlands which will become vacant in the coming years. The combination of this research will provide a framework that will be used and reflected on during the design process.

PROBLEM STATEMENT

Designing a building for the future means giving definitive form to something for an unpredictable amount of time. Taking this into account, flexibility is one of the keywords coming to mind when facing the unpredictable. Many studies into flexibility focus on the changeable, movable elements and the variations in floorplans. Architecture that takes the changeable as a departure point when designing are for example the Rietveld-Schröderhuis, the Nakagin Capsule Tower and Le Corbusier's five points of architecture. Besides, there is also architecture that proceeds from the permanent space like the examples written down in the book *Frame and generic space* by Leupen (2006), or the open building concept principles developed by John Habraken. Within these designs, the permanent more durable components of the building, like the structure, functions as a frame in which the user can change its infill over time. Designing from the permanent, in which the people that are using the building need to be more flexible instead of designing a flexible building will be the starting point for this research.

The next question will be how this principle could be adapted to the existing building stock since the above-mentioned concepts are only used for designing new buildings. When looking at an existing building, one could always dissect the same layers as described in the concept of shearing layers by Brand (1995). In which the site, structure and skin of a building have a long lifespan, whereas services, space and stuff need to be more adaptable. To me it seems logical that stuff and services often change throughout the years, to be compliant with the global pressure to modernise. But why is the space within a building to exist for only 10 years? Would it not be possible to take the existing space as a starting point when redesigning, to change the way we use the building, that the people using the building need to be more flexible? How much and how often do we want to change a building, if the requirements of users change so fast, that it perhaps cannot be used anymore within a few years? Would it not be better to prevent future architectural interventions, by

redesigning an existing building in such a way that it can be variously used and interpreted over time.

Using the permanent as a starting point could create a different approach on redesigning vacant heritage. One could say that the task given to architects is to design buildings that are constantly subject to change. Buildings change over time, their requirements change, the way people use the buildings change. But as Leupen (2006) describes, the changeable could also occur within the permanent. A strict program will eventually lose its relevance over time and therefore is the use of a building never definitive, it will always be organic and changeable. Thus, the following research question is formulated:

How could the space plan of a monument like the Koudenhorn be redesigned to accommodate changes in use over time?

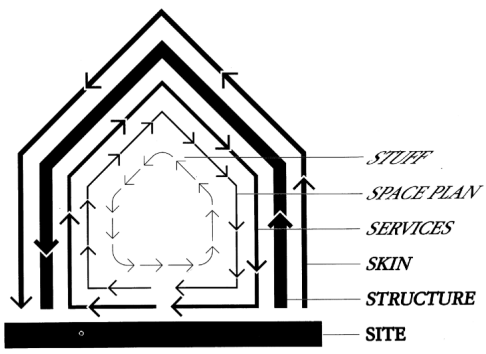
The outcome will not only be used for the design proposal but it will also be reflected on during the design process. The answers from this research could provide new insights into the principles architects are using when transforming vacant heritage. It should provide a series of considerations to be used when redesigning vacant heritage. However, there should also be room for chance, since the outcome of this research will change as well over time.

The following sub-questions are formulated for this research:

- *Which elements of a building are permanent and which elements offer room for change?*
- *Which basis needs to be provided in a space plan for users to be able to be flexible?*
- *How could the open building principles be used when redesigning vacant heritage?*

THEORETICAL FRAMEWORK

This research will use existing literature as a framework in order to be able to answer the research question. It starts from getting an understanding of the different elements of a building, taking the different layers of Brand into account (1995). As seen in the image, structure, site and skin have a long lifespan and services, space plans and stuff a relatively young lifespan.



Shearing Layers of Brand (1995).

These layers are then used in the book *Frame and generic space* by Leupen (2006) to explain which layers are the permanent, more durable components of a building and the layers in which change can take place. He also adds access as a layer, since it influences the way a permanent structure can be used. Leupen describes the frame of the buildings as the permanent components, within which change can take place. The generic space is the frame in which change can occur. The principles written down in this book will be used together with the open building

concepts (Habraken, 2003) to get a clear understanding of designing a space plan in which the user can be flexible.

This combination of literature will form the main theoretical framework for this research. The intended outcome is to provide a series of considerations to be used when redesigning the space plan of a monument to be able to accommodate changes in use over time.

METHODOLOGY

As mentioned before, this research will focus on the permanent elements of a building as a starting point for the redesign. To be able to define which permanent elements define a building and how they could influence the redesign process, literature research into the elements that define the space plan will be done to answer the sub-question: *Which elements of a building are permanent and which elements offer room for change?* For this literature research, the books *How Buildings Learn: What Happens After They're Built* (Brand, 1995), *Frame and generic space* (Leupen, 2006), *Architecture, form, space & order* (Ching, 1979) and *Designing from Heritage: Strategies for Conservation and Conversion* (Kuipers & Jonge, 2017) will be used.

The same literature will be utilized to formulate an answer to the sub-question: *Which basis needs to be provided in a space plan for users to be able to be flexible?* For this question, it is also interesting and relevant to research into the open building concept principles developed by John Habraken (2003), a way of designing buildings in which architectural interventions are not needed when a new use is required.

Besides literature research, case studies will be investigated to be able to answer the sub-question: *How could the open building principles be used when redesigning vacant heritage?* We often learn best from our predecessors, within redesigned heritage those buildings show that it is possible to keep vacant heritage 'alive'. To create a frame of reference, research into transformation projects will be done, in which there was a specific focus on the space plan when redesigning the original building.

The case studies selected for this part of the research do all have a monumental status like the Koudenhorn, are mainly transformed within the permanent components of a building like the shell and structure and do have characteristics that resemble open building principles. The case studies differ in their way of redesigning the space plan, something that is interesting to compare for this research.

Het Predikeren, Mechelen (ArchDaily, 2020b).

The formal monastery was built starting in 1650, it changed in function in the 19th and 20th century for military purposes and since the transformation in 2019 by Korteknie Stuhlmacher Architecten it is used as a library (ArchDaily, 2020b).

LocHal Library, Tilburg (ArchDaily, 2019).

Built in 1932, the building was made for maintenance and repair of railway locomotives. The transformation by CIVIC Architects and Braaksma & Roos Architecten in 2019 houses new functions like a library, co-working spaces and room for public events (ArchDaily, 2019).

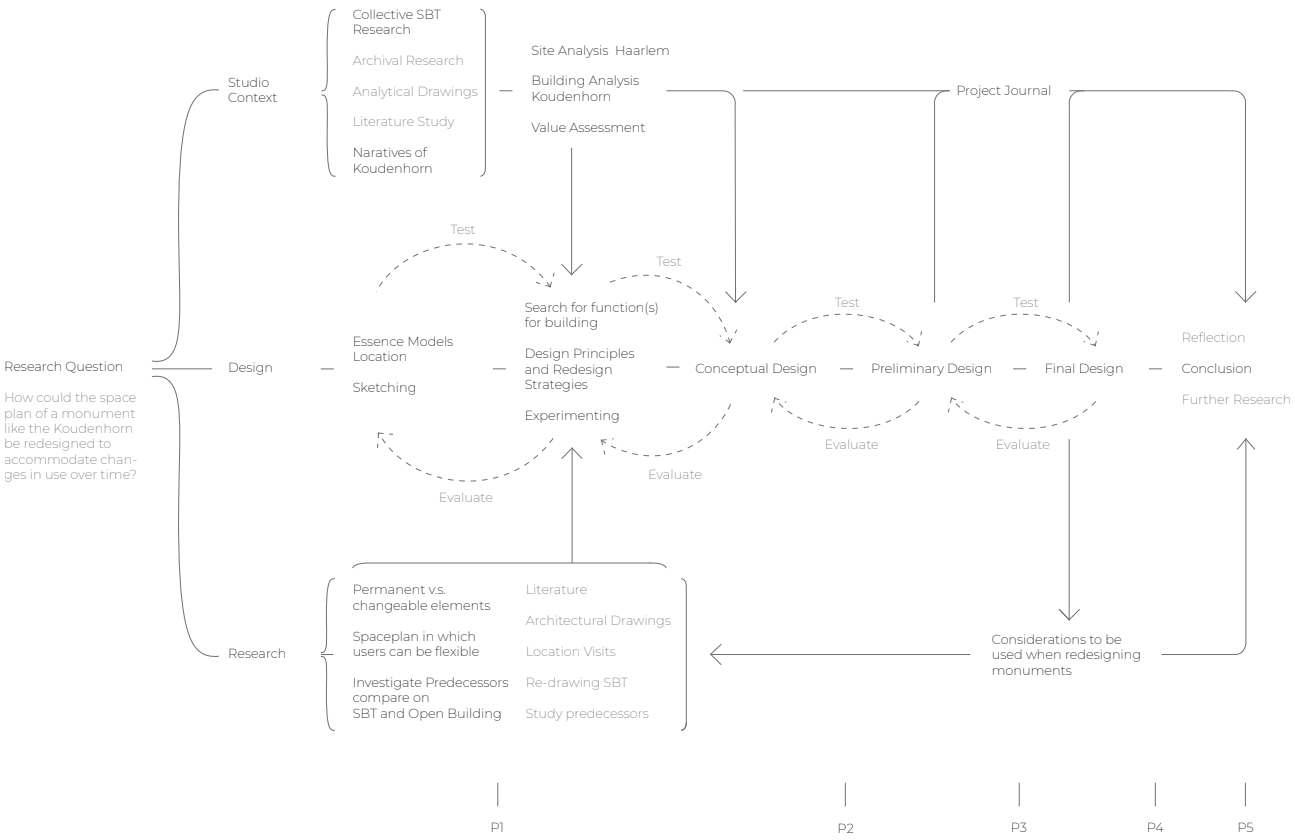
Central Library, Utrecht (ArchDaily, 2020a).

Originally built in 1919, the building served its purpose as a post office until 2011. Transformed by Rijnboutt Architecten it currently houses a library, restaurant and a few stores (ArchDaily, 2020a).

Each of the case studies will be researched based on a site visit and an analysis will be done focusing on the change in space plan during the redesign process. The drawing method of Hausmann (Jalon & Napolitano, 2017) introduced by the collective Spatial Building Typology research will be used to map the important features on the scale of the buildings themselves, to be able to compare the case studies with the Koudenhorn in Haarlem.

The outcome of this research will feed into the design process, and the findings within the design process will be reflected on and implemented in the research. The focus within the design process will be mostly on the scales of the building and its context, to figure out its spatial configuration and the permanent frame in which change in use can take place. During the design process, additional information will be gathered about the Koudenhorn building and a value assessment will be made. Floorplans, sections and interior impressions will be used to share the design visions throughout the project.

It is not sure that the methodologies used will provide a clear answer to the research question. However, the research conducted here should provide new insights and a series of considerations to be used when redesigning the Koudenhorn in Haarlem. Besides, there should also be room for chance, since the outcome of this research will change as well over time.



Research Diagram for the vacant heritage graduation studio

RELEVANCE

We live in an environment where it has become a normality once buildings become functionally, technically and economically obsolete that no one wants to take care of them anymore. Only old and valuable buildings are always 'accepted' to be preserved, but since this is often around 1% of the building stock from a country, it only makes sense to start having a look at preserving all vacant heritage, especially since 75% of the existing building stock is from the 20th century.

Transforming vacant heritage because of a sustainability point of view is precisely the reason why this research here is conducted. 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 flexible. On the scale of the vacant heritage graduation studio, the Koudenhorn in Haarlem, which consists of two buildings from different eras, will be redesigned with the principles from the outcome of this design. On a larger scale, a series of considerations could be provided to be used when redesigning vacant heritage.

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 intentionally be used when redesigning vacant heritage, therefore researching into these principles and figuring out how they can be used when redesigning space plan is relevant.

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