

A reflection on the revitalisation of the plinth by defining and redesigning the in-between spaces of the Harbour Police Station in Rotterdam.

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INTRODUCTION

This paper reflects on a graduation project of the studio Heritage & Architecture as a completion of the master programme Architecture, Urbanism and Building Sciences at the University of Technology in Delft. The graduation studio consists of a project for the Dutch Police, who owns and takes care of 78% of its own buildings (Algemene Rekenkamer, 2015). Due to a changed structure of resources and services, combined with a new way of organizing, a part of their real estate needs to be redeveloped (Weessies, 2017). However, these police buildings, located throughout the Netherlands, deal with unique elements such as cells, security fences and partially closed facades. This means that they cannot simply be regarded as ordinary real estate. Therefore, the graduation studio focuses on a collection of ten police buildings, whose heritage values and adaptability will be discussed in order to contribute to research into a sustainable future with regard to the role of vacant heritage (Heritage & Architecture, 2021). From these ten buildings, I have chosen the Harbour Police Station at the Sint-Jobsweg 6, in Rotterdam. This police building caught my attention as a result of the fact that it consists of a parcel with three brick buildings from different periods of time. The buildings are located on the quay adjacent to the Parkhaven. They are situated next to each other and two of them are even physically connected through a bridge. It intrigues me that they show some kind of coherence and harmony, although their appearances differ in shapes, sizes and (perceived) accessibility.

During my studies, I became fascinated about the way in which the distinction between the public and private is perceived. I experienced the fact that my personal perception of a building's facade is often related to the specific materiality. Whether the facade of a building consist of a solid dark wall or of a light transparent glass results in a different feeling. In such a situation, I feel respectively obstructed or invited, and this notion intrigues me. Therefore, I decided to increase my knowledge about the perception of the in-between space and how it is influenced by its materiality through this graduation project. Hence, the project is part of the Touch & Feel research line of the graduation studio, as it "focusses on the materiality of the

buildings, and aims at unveiling the hidden values of material attributes, and how they are perceived through the senses” (p. 5) as mentioned by Heritage & Architecture (2021). As a result, the overarching research question of the project was decided to be “What is the influence of the materiality on the perception of the in-between spaces of the Rotterdam Harbour Police Station and how can this be used as input for the redesign?”

This paper is a reflection on the relation between several aspects of the graduation project regarding different scales and contexts. More in-depth, this reflection is devoted to the relation with the wider framework; the relation with the studio, master track and program; the research methodology; the relation between research and design; and the dilemmas of the research and design.

1. RELATION BETWEEN THE GRADUATION PROJECT AND ITS WIDER CONTEXT

Within the field of Architecture, heritage plays an important role in the wider social framework. Namely, the Dutch housing shortage is larger than ever (Capital Value, 2022). One of the reasons is the increasing amount of households in general. Furthermore, there is a trend visible where people tend to live in smaller households than before. And to make matters worse, contractors are still struggling with legislation and regulations that slow down construction processes. Namely, it maintains difficult to get permits to build because of the nitrogen agreement (Capital Value, 2021). Therefore, the housing shortage will not decrease in the near future. On the contrary, the emerging trend of digitalization and flexible working means that large offices are less needed. This results in more and more vacant office buildings (Colliers, 2022). In the Graduation Studio of Heritage & Architecture at the TU Delft, the emphasis is on the adaptation of vacant police office buildings.

In the Graduation Project, the choice of program is based on a site analysis. As a result, the site turned out to be suitable to host several functions. These include a place to learn and meet, a social and living environment, and some space for hospitality and tourism. A building analysis regarding its structure and typology was used to fit in the program according to the 'function follows form' principle, since we deal with existing buildings. Furthermore, the project aims to revitalize the plinth, by allocating more public functions on the ground floor level and placing more private functions on the other floor levels.

As a result, the 1933 building will house several apartments that respond to the housing shortage. Thereby, it contributes to the upcoming neighborhood. A lot of houses in this area are currently devoted to young families, which is at the expense of the older adults and elderly. Therefore, these apartments are meant for this neglected target group, and it thus complements the inequality. Furthermore, there is an ongoing trend in digitalization, and the amount of loneliness increases. In combination with the establishment of the new neighborhood and the ensuing high cultural and educational variety, there is a lack of social cohesion. The 1940 building will therefore be used as a community center in order to bring people together, to create a space to meet and learn and to be able to host workshops and expositions. Finally, Rotterdam is aiming to become more and more of a service economy. Since the Harbour Police Station has a good accessibility and since it is located near city icons, like the Euromast, Museumpark and the River Maas, it has a high potential for hospitality functions. Thereby, it will contribute to the revitalization of the quay. As a result, the 1994 building will consist of a hotel.

Moreover, the ground floor of 1933 building will be given a public function as well, in order to revitalize the plinth. Therefore, the ideas of hospitality and livability will be brought together by means of a restaurant (including a wine shop and tasting experience). All in all, the qualities of the area will be used to such an extent that all elements are valued in relation to its wider context.

Since the main goal is to revitalize the plinth, attracting people will play an important part in the project. Therefore, the psychological aspects of materiality are taken into account. Namely, in the wider context, the users and passersby are often overlooked in the field of architecture, while the same people should actually be the one to be attracted to (or obstructed by) the building. Therefore, the research seeks to connect the human perception of the in-between space to the functional character. In other words, it investigates how materiality can accommodate an either public or private function. As a result, design guidelines can be extracted from the research in order to look for (im)possibilities for the redesign. All in all, the research forms an addition to the general architectural and technical analysis as it connects the field of architecture with the discipline of psychology. Subsequently, the knowledge obtained from the research on the perception of materiality is used to redesign the in-between spaces in such a way that they fit the functions of a public community center, restaurant, and hotel, and those of private apartments.

2. RELATIONSHIP WITH MASTER PROGRAMME, MASTER TRACK AND STUDIO TOPIC

The project is part of the Master Programme of Architecture, Urbanism and Building Sciences at the TU Delft. Accordingly, different parts of the project can be assigned to the topics of research, architectural design, building technology and climate concepts. Those four themes are, and have been, the common thread of the Master Programme, and therefore this graduation project touches upon these four themes as well. On a smaller scale, one of the important aspects of the design process is the site analysis that is executed at the beginning of the project. This is a common step in multiple courses of the Master Track of Architecture, and it maps the main characteristics of the site and surrounding on multiple scales. Furthermore, demographics and (future) strategic zoning plans were taken into account as well.

However, in the Master Studio of Heritage & Architecture: Adapting 20th Century Heritage this site analysis needs to be extended by an analysis on the building object and its architecture, as well as building technology, since the project is dealing with existing buildings. Subsequently, the values of the buildings in question were analyzed on the basis of the coding of

several objective texts in relation to the eight primary values of Pereira Roders (2012) and the (in)tangible attributes of Veldpaus (2014). This way of assessing the values and attributes was quite new to me and it was hard to find out what text were or were not suitable to code. However, I went to the Rotterdam City Archive and I found out that there was written a lot about the Harbour Police Station throughout the years. So, I photographed almost everything and (together with Diletta) I integrated all the data into one text on the chronological events of the Harbour Police and its site. The text was not paraphrased or adapted in order to maintain the objectivity. By coding this text - written by 11 different authors -, the values and (in)tangible attributes were identified and translated into an overarching mind map. Examples of valuable characteristics were the high steel window frames of the 1933 building and the central glass zone of the 1994 building. However, personally I felt like it was not complete as some aspects were overlooked. Therefore, I also did a value assessment according to the matrix including Brand's shearing layers and Rieglian values as mentioned by Kuipers and de Jonge (2017) which was mainly based on the building and site analysis. Altogether, this provided me with enough information to value the complete facades and floorplans. Aspects such as the use of rhythm and symmetry, the used brick, the recognizable staircases, and the central corridor became important. In line with this, I decided to design according to the principle of 'function follows form' to conserve such parts of the building. In this way the existing building is not only transformed in a sustainable manner, but it also maintains some of its key elements.

In relation to the Studio Track, the focal point of this particular project is on the revitalization of the plinth by redesigning the in-between spaces of the Rotterdam Harbour Police Station. Therefore, the perception of people needed to be taken into account to create input for future adaptive reuse. Literature research provided information on how to define in-between spaces on the one hand and on how to access the human perception on the other hand. Subsequently, I was able to setup a questionnaire, and for two days I addressed as many people as possible to obtain data in regard to the perception of users and passersby on the materiality of in-between spaces. The results from this more psychological part of the project contribute to the architectural design process as it brings another (non-professional and unbiased) perspective. Even though it takes some time and effort and even though not everyone is happy to help with questionnaires or interviews, I still think it was useful to analyze what people have to say about architecture, since we design for users and passersby instead of for other architects.

3. RESEARCH METHODOLOGY

The research has started with setting up a theoretical framework in relation to the most important topics, which included the perception, materiality and its experience, and the in-between spaces. This was useful to get acquainted with the subject and it made it easier to define the main question. Thereafter, a combination of methods is used to analyze and answer the different questions of the research.

First, archival research at the City Archive of Rotterdam and the Archive of Municipal Works is done. Here, the original drawings, indexes and pictures were analyzed to define the used materials and techniques. To support this, personal observations of the building were used to justify these findings. In addition, literature was found on Scopus and in the TU Delft library. As an example, the book of Mulder (2016) was useful to define the brick bonds, the pattern of joints and the contribution to the rhythm of the building. On a larger scale, the book of Hegger et al. (2020) was used to make a division (in characteristics and technical properties) of the materials of the Harbour Police Station. Nevertheless, I soon noted that this would be a whole study on itself. Furthermore, it was not directly related to the human perception of in-between spaces. Namely, the assumption was made that when passersby form their perception, the materials are viewed from a larger distance, so the specific brick bonds or colours would have little influence. Therefore, I decided to put the information in the site analysis booklet rather than use it for the research paper. As a result, I was still able to use it in the research if it turned out that the assumption was incorrect.

Subsequently, theoretical research exemplified the notions of the public, private and in-between spaces. Even though one might think of “the space between buildings”, the focus is on the ambiguous edge between polarities such as inside and outside, public and private, or building and space. As a result, the most evident in-between spaces can be defined as the façades, entrances, and windows of a building (Lang, 1985; Blaisse, 2009 & 2016; Shahlaei & Mohajeri, 2015; Jürgehake, 2016). These three in-between spaces were therefore chosen to use in an on-site case study analysis. However, in order to execute the case study, one should understand how people express their perception. Based on literature of Karana and Van Kesteren (2008), Fleming et al. (2013), and Picard et al. (2003), a list of 36 descriptive perceptive qualities was set up. This list can be useful for other case studies as well since it covers quite divergent adjectives.

In addition to the three buildings of the Harbour police Station, three other case studies were selected. They had to be brick buildings, that were somewhat comparable to the Harbour Police Station in terms of volume,

located in the Netherlands, secluded from other buildings, and transformed recently to be an inspiration for the adaptation of the Harbour Police Station. The buildings that are chosen include the Houtloods in Tilburg, Tuin van Noord in Rotterdam, and Villa Augustus in Dordrecht.

Thereafter, an interview was setup, which touches upon the six buildings and their in-between spaces. The buildings were discussed one by one, and this was done based on moving from a large scale to the smaller scales. First, an overview of the building is shown, and the accompanying questions related to the recognition of the building and the expectations concerning its accessibility and function. Thereafter, the passerby was asked how he or she experienced the facade of the building based on the 36 perceptive adjectives. In addition, the question 'why?' was raised. The same two questions were repeated for the entrance and the windows. Initially, I thought I would be able to ask one person about all six buildings, but it turned out that that would take too long. Therefore, the interview needed to be remodeled into a questionnaire and cut into six separate parts where one building per person was addressed. So, the second setup was quite different, but way better. After all, the answers of the perceptive qualities were combined into graphs that provide insight in the most present perception of the buildings, including the facade, entrance, and windows. The answers on the open "why?" questions resulted in a cloud of information, which was harder to analyze. For this question, the initially conceived interviews, would perhaps have provided more structure and even more in-depth and convenient answers. Namely, some respondents only answered with one single word or phrase that did not contain any useful aspects. So, in an interview I would have been able to ask a bit further. Yet I am still amazed and surprised that I was able to get so many respondents, so in that sense I would do it this way again.

Overall, I think that the results (as mentioned hereafter) are quite generally applicable, since they still provide some freedom. It can be used as a guideline or as a kind of inspiration when redesigning an entrance for example. In other words, to revitalize the plinth it is not required to tick all the boxes.

4. RELATION BETWEEN RESEARCH AND DESIGN

Concerning the transformation of the Rotterdam Harbour Police Station, the research of this project aims to define and redesign the in-between spaces based on the human perception. The design process, on its turn, aims at a revitalization of the plinth. These two go hand in hand since a revitalization means that there should be human activity. Likewise, in order to attract

people to this plinth, it is desirable to understand the human perception of the in-between spaces (on the plinth).

The first steps of the design process were aimed at doing an analysis of the context, site, and building. As a result, the main values and characteristics were determined and this was translated into the implementation of a new program, including a community center, a restaurant, a hotel, and housing. The current function of a Police Station means that the building is private and needs to be safe and secured, while the future function will be (partly) public and needs to be inviting rather than obstructing.

At the start of the research, it is made clear that this obstructing appearance is mostly created by the fences, which is one of the in-between spaces. But behind these fences, there are more in-between spaces. In the research the three buildings of the Rotterdam Harbour Police Station, as well as of three other case studies were analyzed. The results were mapped in figures, and the explanations are analyzed, and a layer of interpretation is added to find material attributes that lead to an inviting character. Concerning entrances, it should be evident that the building is publicly accessible. In line with this, the entrance should be visible from its surroundings and entering should be easy. Furthermore, the usage of warm materials and colours is desirable as it has a comforting effect. Moreover, good lighting and transparency of the façade make sure that the function and the atmosphere of the building can become clear, and this turns out to be attracting as well. These outcomes are translated in the redesign. Namely, the plinth of the 1940 and 1994 buildings are opened up by adding and enlarging building openings. Also, the public entrances are all relocated to the (perceived) front sides of the building. In other words, the entrances are at the sides where one walks by and where activities can take place. The entrances can be distinguished from the rest of the façade by a setback. This subtly leads one into the building. In addition, it provides a place where one can already shelter before entering. The brown bricks around the entrances are perceived as warm materials and warm lighting is added to create a comforting feeling. Furthermore, the glass in the entrances ensures that one can peek inside so that he or she is even more tempted to enter. All in all, the research and design went hand in hand in order to find a redesign solution that ensures a desirable human perception of the Rotterdam Harbour Police Station and its in-between spaces.

5. THE DILEMMA'S OF THE GRADUATION PROJECT

In the first weeks of the graduation project the aim of the research became clear quite soon. The literature studies turned out to be super interesting, as expected, and a lot was learned. However, since the research considers

the human perception, interviews had to be executed. Unfortunately, this research step turned out to be harder as expected. First, it was hard to setup a list of the right questions. Luckily, I was able to test the setup with my sister before going to the site. As a result, some pictures were adapted, the sequence of questions was interchanged, and the questions were translated in Dutch. Furthermore, the interviews were postponed as a result of both my doubts and the circumstances. Namely, the winter resulted in cold and rainy days, so it was not the ideal season to do on-site interviews. Nonetheless, the tutors encouraged me, so I gave it a try. However, there were less boats moving through the sluices than expected, so the bridge did not open, and the weather was bad. As a result, people were not willing to stop, they were in a hurry, or they were not interested at all. Furthermore, my shy character resulted in the fact that few people were convinced to participate in the interview. And as icing on the cake, the few interviews that I started turned out to take more time than expected, so people had to leave halfway. Therefore, the overall interview needed to be converted into six simple and less time-consuming questionnaires, which focuses on one building each. Also, I decided to make QR codes so that it would take less time and the threshold of answering the questions was lowered. So, in the end, people were asked if they wanted to join my graduation project by answering some simple questions. All in all, the new setup (that also included seducing passersby with chocolates) turned out to work much better and a total of 55 responses was achieved.

Concerning the design phase, the dilemma that is most present regards the availability of balconies. The presence of an outdoor space in the case of a residential function is somewhat mandatory. In new construction it is inevitable, but it is also desirable in renovations. Since the 1933 building will house several apartments, located next to the Parkhaven and at a popular location, the presence of an outdoor space would not only be desirable, but it would also offer added value. However, the East and West facades of the building are valued in terms of rhythm, symmetry, and the changing depth of the outline. Therefore, the external addition of a balcony is everything but desirable. The facades on the North and South side could be extended by balconies, but the North side is the least favorite site regarding the track of the sun. Therefore, this has resulted in an important dilemma as well, which is solved by loggias. In this way the outline of the façade is maintained, and at the same time the residents will have a nice outdoor space on the East and West side.

In line with this, the implementation of an elevator in the staircase is also a topic that needed to be handled. Namely, in terms of accessibility it is quite important to have an elevator towards the attic. Especially since the target group of these residencies will be adults and elderly. However, the space

(especially vertically) is not limited. In general, most elevators have a free passage height of 2,3 meters. If this is applied to the 1933 building, this will affect the roof, which is not desirable. This resulted in a little challenge. Therefore, I decided to implement a hydraulic elevator, since the machinery of these types takes no space below or on top of the elevator. Furthermore, Bouwbesluit (2012) does not mention a minimum height for elevators, so it is decided to have a free passage height of only 2,1 meters.

Regarding the revitalization of the plinth, the application of the design will result in a livelier area. At this moment, our view on the new functions leads to the demand for parking spaces. Nevertheless, this forms a dilemma. Namely, on the one hand parking spaces near the building block are desired, while on the other hand parking spaces can influence the public space negatively, especially when placing them on the street. Another option would be to add a parking garage underground, but this results in an expensive intervention. Nevertheless, in the design it is decided to add no parking spaces within the perimeter of real estate of the Harbour Police Station. This would be feasible because the mobility by car decreases over the next couple of years, as a result of the increased awareness on sustainability. Also, the cars we know now - especially within the cities - will be partially replaced by electric shared cars (Jorritsma et al., 2021). In line with this, it is assumed that the parking garage on the other side of the street will have more empty spaces. As a result, the residents of the future houses at the Sint-Jobsweg and the visitors of the other functions will be able to park their (shared) cars in this parking garage in the near future.

Last but not least, a more overarching challenge was the fact that the graduation project took a whole year and that this project was completely individual. I think the Covid-19 situation did not really help either, since working from home makes you feel a bit lonelier than when you are on the atelier with other students for example. But fortunately, we can now go back again to BK or any other faculty whenever we want, so the issues of loneliness and lack of discussions with others are a thing of the past. And hopefully it will stay that way!