"PLOTS IN THE WOOD"

REFLECTION OF THE GRADUATION PROJECT

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Introduction

By means of this paper, the analysis, result of the research and the design process is mainly reflected. The design leads to transform the "Plots in the wood" to a residential and commercial area which is combined with local farming.

First of all, the position in architecture and the way how I position myself in the graduation project is illustrated. Secondly, I will clarify the relationship between the research and design process and the approaching methods. Thirdly, the relationship between project topics and argumentation, issues and dilemmas is explained. Finally, I will look at the final part of the graduation and how I will continue and finish the project.

The design project, that is part of the Heritage & Architecture graduation studio, is dealing with the transformation of the ensemble area 'Plots in the wood'. This area lays in the center of the former military complex of Hembrug in Zaandam.

My position as an architect

At first I started with the question: how I could position myself in the field of Architecture & Heritage as a specialist? Contributing to building my interest and positioning in architecture is aligned with the chair of Heritage & Architecture. However, I am also fascinated by interior design and dwelling. But my role in heritage, can help me to be more specific in my vision as an architect.

From the start of the graduation studio I tried to tackle the challenges of dealing with protection and reuse of built heritage. In other words, the role of the architect in relation to heritage value assessment, with specific references to the conservation of Modern Movement monuments. During the graduation project, I was always looking at the connection between forms, function, material, economy and time. I was also looking to my role as an architect to take advantage of the specific qualities of materials, use of the existing qualities of a building and environment and pay attention to the landscape and the environment: In other words design should be more sustainable to reduce negative impacts on the environment. The basic objectives of sustainability are to reducing consumption of non-renewable resources, minimize waste, and create healthy, productive environments, furthermore build as lightly as possible, with a minimal use of material.

Circular Economy

In the near future, billions of people will move to global cities. One of the greatest opportunities and challenges for architects and designers is dealing with embracing circular economy principles and how to positioning themselves, in order to find a new sustainable way.

I believe creating environments with roots in circular design, can help spreading the concept of circular thinking, especially among the users of the project.

I would like to design buildings based on circular design values, such as reusing the existing structure In addition, all added materials, such as the concrete tiles, furniture and the insulation material, are recycled products and material, such as materials made from recycled textiles.

1. Research and Design

How did we the researches and which methods we had chosen for the design? What was the reason behind choosing this approach during the research?

In the beginning phase of this project, we were asked to start analysing the site of two precedents which were similar to our own studio project. We were asked to think about the method of analyzing our projects, in a manner in which we could compare

These two project, were the two projects, we chose to work on; Strijp-S in Eindhoven and Ceramique in Maastricht to Hembrug.

These two redesign projects are former factory and industrial areas share several similarities with the site of our project, in terms of design, history and character.

We should analyse these two project in terms of all of its different aspects, (historical value, architectural and technical aspect).

This method of thinking helped us to using similar projects as references and finding problems and on the other hands excellence of transformation methods.

Further during the design project, we were asked to make a 5-minute sketch at every morning meeting. These method of thinking helped us to redevelop the idea of design. This method helped us to share ideas, our visions and perspectives point of view. As a group, we chose the topology method (waar komt deze vandaan? Bronvermelding!) For analysis in the research phase which I will explain in the next chapter How we analyzed the Hembrug Area and why we chose the area "Plots in the wood" as a graduation project?

After the previous stage, we were asked to find out the general information of the Hembrug area, and also visit Hembrug. From the first visit of the Hembrug I realised that this area seemed to have a special quality to me. The location on the Zaan and the North Sea Canal area is seen as special quality. Moreover, the green appearance with the monumental forest, gives special value to the environment.

After gaining a general overview of the whole site, we had to choose one of the ensembles to be our specific zone. I chose 'Plots in the wood', and formed a group with other students with the same plot.

The zone was situated in the middle of the terrain. When we look at the 'Plots in the Wood', it has a unique landscape comparing to other areas in Hembrug terrain. We continued the analysis in more detail on this specific area. We researched different aspects of Architecture, Building Technology and Cultural Value. As a group, we chose the topology method for analysis in the research to develop our design process.

In the "Plots in the Wood" area, all the buildings are industrial and were built for a specific reason. Following the functional design approach by the 'Artillerie Inrichtingen'. The area is extraordinary and special, because of the existence of several contrasts in elements; Contrast between the buildings and greenery, or in other words, natural and industrial elements. The ditches and earthen walls make the plots in the woods more unique within its landscape. Overall, the area contains historical value which expresses the functionality reason behind it.

From my point of view, the whole area should be preserved due to the unique landscape and the buildings characteristics. These buildings require an important way of protection since they still preserve their historical functionalities. They might not have their old potentials which is in the field of military, in order to preserve their historical values based on functionality, however considering its spectacular identity and unique elements, we have to protect this area.

There are four different building typologies. The buildings are separated into the gable roof, shell roof, circular roof and low-sloped roof typology. The choice to divide the buildings based on their roof shape derives from two main reasons. First, there are four very clear, different roof shapes presented in the buildings of the 'Plots in the wood', so the building typologies are easily identified. Second, the roof shapes are strongly related to the former function of these buildings. This method of analysis is used to be able to objectively assess each building typology on an architectural, technical and cultural-historical level. These levels will return in the value assessment matrix of the analysis, linking research to the attributed values and the following opportunities and challenges.

These analyses takes different aspects such as: historical developments, identifications, current structure, and etc.

2. Research Topic: Circularity

After this analysis which took place till P1, an understood the value of the buildings and the area in between, I realized the current issues, with knowing the situation of this area and combining it with the general global needs and issues and my position in architecture. I came up with my concept, which is creating local farming. The concept is based on circularity in different human activities, and one of the elements of circularity is localization. Moreover, on which I focused in my project, I considered circularity in other aspects of the design, such as the new structures and the materials I suggested.

In order to build up the concept idea into a more detailed development plan, I took several steps. First of all, I specified the target group, who I named organic food lovers. They can come to the area from Amsterdam, Zaandam or even further locations. After that, I classified the several functions of the new development plan: The majority of the buildings are dedicated to residential units. Besides that, there is a restaurant serving organic food, in the center point, which is the gathering point of this neighborhood. In order to provide the vegetable for this, there is a huge block next to this restaurant, which was a production hall and belongs to the low-sloped roof typology, named as flat roof. I decided to transform this block into a greenhouse. Because of the valuable aged trees in this area, there are not enough empty lands to plant vegetables. Therefore, transforming this building to a greenhouse preserve this valuable elements while providing the needed vegetable for the restaurant. Another reason to choose greenhouse over outdoor farming is the weather conditions in the Netherlands, which makes it difficult to plant different kinds of vegetables in different times of the year. The other buildings with shell roofs are dedicated to the residential functions. The one building with the circular roof is planned to become a primary school, for the new families moving to the area. As mentioned before, the restaurant is the most important function in the area. Because of this importance, I started my design with this function. There are two gable roofed old buildings, named big farm and small farm. I decided to design the restaurant in this two buildings based on their location on the site and the valuable detailed facades.

3. Elaboration on research topic

How did I deal with the challenging during the design of buildings?

First of all, during the design of the restaurant which is the heart of the area, it was important to join these two building and make one building out of them. Besides that, it was important to decide if I should have preserved the valuable elements of these buildings or demolish them. Since I realized the facades of these building have high values, I decides to preserve them as they were. In comparison to that, the roofs seemed to have less value. Therefore, I decided to remove the roof structures and design a new and more functional type of structure for the roof. I should mention that before P2, after removing the roof structure, I added another roof structure on top of the building in order to create more space. However, I removed them since I noticed it doesn't fit the typology of the building, which was one of the most important method during analysis of the site. After P2 and considering building's design and typology, I designed the new roof structures, which followed the form of the buildings and the previous gable roof structure.

A good reference for design is the Adambräu Building in Innsbruck, serves as a small yet inspiring example of the transformation of a typology. Wherever a mismatch with a new functional use exists, the architect should have the capability to effectively intervene, as long as the historic qualities are sufficiently respected.



Figure 1 .Adambräu Building in Innsbruck

DasSudhaus nachder Transformation, 2005; Foto: Lukas Schaller https://aut.cc/en/what-is-aut/the-building



Figure 2 . San Fransesc in Santpedor

Cultural Architecture Santpedor, Spain Architects: David Closes Area: 950 m² 2011 photographs: Jordi Surroca

https://www.archdaily.com/251389/conventde-sant-francesc A successful example of this practice is the 2011 transformation of the former chapel of the Convent of San Fransesc in Santpedor. Another example is the CaixaForum museum and cultural centre in Madrid. This building used to be a power station. what all of these projects have in common is the remarkably sharp eye of the (re)designer, the ability to recognize and interpret the architectural qualities of existing structures, carving out the ground floor of the power station helped to solve this problem, at the expense of the original interior fabric that was completely replaced by a new structure.



Figure 1. CaixaForum museum and cultural centre in Madrid https://www.inexhibit.com/mymuseum/caixaforum-madrid-herzog-de-meuron/

These examples inspired me to come up with new ideas I used the existing building footprint, and in order to add extension on top of the buildings considering the typology which is shown in figure below, I added a glasshouse on top of the buildings which follows the form of the existing buildings.

The space between the buildings will be an atrium, which is an interior corridor to connect these two blocks. Furthermore, it can be concluded that typological thinking is essential during an architectural design process and there are different kinds of relationships between design and typology.



This new structure has some benefits: with this structure, the two buildings are combined as one. Also, the material I chose to for this building is manly glass, which creates a contrast between the old building parts and the new structure. It is creating spaces for the vertical farming. The structure is made out of wood. These parts are assembled in a way that is easy to disassemble and being reused, which also regards circularity.

The aim of the new building is to proving the possibility to design and construct according to the principles of the circular economy. The materials used in the construction of the new structure are complete re-introduction into pure and typesorted material streams for reuse and recycling. The load-bearing structure is made of wood, which have special connection and is reusable. The facades and roof will be made from recycled glass and industrial glass waste. I will design the buildings furniture considering recycling materials, for example, recycled HDPE plastic waste, and the chairs are 3D printed from household waste. Lastly, the floor will be made from recycled materials as well. This products will be made from mineral construction and demolition waste.

4. Relevance in a larger social, professional and scientifically framework

The research done during the first semester, inspired me designing the buildings in a circular way which were aimed to function as a restaurant, hostel, residential and school. After deepening into the context, it was clear to me that I wanted to create a building which served society and environment.

The research on the cultural and historical values, technical and architectural aspect helped, me to define the design requirements and an architectural language to create circular buildings.

During my graduation I had developed these buildings in different phases. The Restaurant building have been developed till definition phase while other buildings were developed till conceptual phase. My goal for the future designs is to continue considering circularity.

The whole project with its different phases, from the analysis to the design process, and the relations between these different phases was an instructive experience for me. I learned how I can find my position in architecture and knowing what are the possible issues in the process of redesigning of the existing, and how can I deal with them and solve these problem to create good design.

5. Ethical issues and dilemma's

I position myself in the field of Architecture & Heritage, therefor I tried to tackle the challenges of dealing with protection and reuse of built heritage. I did historical, architectural and technical analysis to understand the quality of existing buildings and urban areas. During the graduation project, I was looking at the relation between forms, function, material, economy and time in a circular way of thinking, in other words design should be more sustainable to reduce negative impacts on the environment. Take advantage of the specific qualities of materials, use of the existing qualities of a building and environment and pay attention to the landscape and the environment. I was always tried to design more sustainable for example to reducing consumption of non-renewable resources, minimize waste, and create healthy, productive environments.

The Green House"vertical farming" inside the restaurant was one of the adding function. It is part of the building which add to create more circular a sustainable building. I had to figure out how to make the vertical farming inside the building to create more circularity in my design. I had to deal with the problems such as climate and technical issues.

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