Reflection: The Art Factory

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Heritage & Architecture - Revitalizing Hembrug

Introduction
The Hembrug area is a former military production industry site where the buildings have become vacant over the years since the last industry left this terrain. The last few years people try to claim back and redevelop this terrain.

In my graduation project I try to transform two buildings of the Hembrug terrain that are located on Campus North into a cultural center and a décor workshop. For my concept I aimed to preserve as much as possible, reuse parts of what I demolish, and to create a comfortable living environment in a sustainable matter for its users. With the design I tried to create contrast between the departments and between existing and new. Next to that I wanted to show the different time-layers of the building.

The relationship between research and design
In the beginning of this graduation studio, we conducted a research as a group on Hembrug and Campus North to create a better understanding about the context where the buildings stand in.

The question we asked ourselves was: “How did the functional logic of the ´Artillerie Inrichtingen´ influence the character that Campus North has today?

At the end of our research we answered this question by using the research methods described in the book “Design by Heritage” written by Marieke Kuipers and Wessel de Jonge. In this book the following steps are described:

1. Chrono-mapping: aims at developing insight into the genesis of the heritage site, its evolution and status quo by ‘mapping’ how, when and where the building was constructed and has since evolved to its present state.
2. Value Mapping: implies a site-specific identification and classification of typical features that can be distinguished in and around the heritage site in terms of construction, architecture and socio-cultural history.
3. Mapping levels of significance: It aims at a substantiated differentiation in the levels of significance of both the general and the crucial heritage qualities as summarized in the previous steps of chrono-mapping and value mapping.

We collected all the information we could find about Hembrug, Campus North, the Machinehall, and the Weapon Depot. These aspects were all researched on historical, architectural, and technological aspects (Chrono-mapping).

Then we placed the aspects that were noticeable in a Cultural Value Matrix that was described in “Design by Heritage” (Value Mapping).

The last step was color code these values in 3 colors to determine what has a high significance, medium significance and low significance to us. We did this step (Mapping levels of significance) in two ways, first we color coded one as a group what resulted in a discussion about the different values. For our own design project it was important to know what each of us individually thought was significant. So separately I made a personal Cultural value Matrix in order to map my own levels of significance, and so did my fellow students.

The conclusion of this research was that the site and its buildings originates from the functional logic of the production line of the factories. Form follows function. But today the function has left and the form still remains.

This together with my personal cultural value matrix became the foundation on which my design stands on.

Another research method that was provided by the studio itself was to visit reference projects. With the studio we went on an excursion to Strijp S in Eindhoven and Ceramique in Maastricht. Here we looked at what the redesign strategy was and the relation between existing and new. I was particularly interested in how the designers made interventions to the existing building.
Within the master track Architecture I choose Heritage & Architecture as my graduation studio. I choose this subject because I think it is of great value that in architecture we learn to design with existing buildings. I believe it is important to reuse certain buildings, because of architectural, cultural and historic values, but also because of the environmental value.

Today, more buildings become vacant and we live in a society where we try to better ourselves and think about the planet. In order to do so, we as a society, try to reuse and recycle products, we choose green energy above fossil fuels and we think about our carbon footprint and think of a way to create a more sustainable environment. These subjects also play a massive role within Architecture, Urbanism & Building Science and are the main pillars that come back in every master track under the name of sustainability.

When thinking of sustainability, reusing an entire building is an environmentally friendly solution; fewer materials are needed so the emissions and carbon footprint within the production process are lower. In addition to this, I must say that I think a building is only suitable for reuse if it still has the potential to transform into a new function. So if all facets of the building have fallen into decay, and the building is not able to be transform into a new function, the building can better be demolished rather than reused.

With this thought of reusing a building from a sustainable point of view. I tried to think about how I could reuse the parts that I demolish what sustainable materials I could add and how to generate energy in a sustainable matter.

In order to transform the machinehall and weapon depot into a cultural center and a décor workshop. I read a lot about different subjects and I researched how a décor workshop & cultural center work and what it needs, such as acoustics, different types of theaters, dance studio’s, and relevant reference projects. With this I acquired the knowledge I needed to be able to design a cultural center and décor workshop and to determine the programm of requirements.

I also visited some reference projects to be able to see how buildings can be transformed. I was very interested to see how old and new meet and how different designers approached an existing building. This varied from different kinds of heritage projects that were transformed in public functions. I also visited Décor Workshops and Cultural Centers, not all were heritage projects, but in this way I could experience how such buildings with those functions work.

These researches I conducted with the same questions and curiosity: “How does a cultural center work? What is a décor workshop? What spaces do the users need? How can I transform these buildings? What are the possibilities? How did other designers approached transforming a building?”

The relationship between these researches and my design is that they create a toolbox with tools so that I was able to transform the machinehall and the weapon depot. Without this knowledge I would not be able to transform these buildings into their new functions. I also conducted a research through making. Here I tested the possibilities of the building. I could imagine how the users of this building will experience the building. It was also a safe space where I could just try different things out.

One of the conclusions of this research was that my concept is strongly based on how the users experience the existing building. With making models I could research different sightlines, see what atmosphere different heights in the building would give and also what the limits of the building were. I got new insights while doing this and came up with the concept of experiencing the machinehall from different perspectives and in different ways in each department of the cultural center.

With my design I respond on the question on how you can deal with existing buildings. When existing buildings that are left vacant get a new function there is often have a mismatch between the old and new function.
This mismatch gives room for interventions that have to be made, with the cultural value and history of that building in mind. As a way to give these buildings a new purpose and a new future.

When dealing with existing buildings its context is just as important as the building itself. Today Hembrug is searching for a way to give their buildings a new purpose and keeping its history alive. They made plans on making this a new neighbourhood with dwellings, offices, shops and museums. Next to these plans they seem to also tap in the creative sector and promote artists to settle and work here.

With the choice of placing a cultural center here I want to contribute to the revival of Hembrug and give its future residents and the people of Zaandam and Amsterdam an open and accessible place where they can be supported in their creativity. In the history of cultural centers it is often the case that they contribute to the revival of neighbourhoods. Although most independent cultural centers have buildings that are acquired more through accident or chance, than by design. I tried to design with the activities of the center in mind and design it in such a way that users can experience the atmosphere of existing building in different exciting and interesting ways.

My contribution to the academic world is that both topics are addressed this way and they compliment each other. It is one solution to the given problem. Giving a vacant building a new purpose and by doing so contribute to the revival of Hembrug. Sustainability plays also a big part in this. Reusing a building is a very sustainable method and therefore my interventions and design choices are also based on sustainability.

Dilemmas and difficulties during the design process
The dilemmas that I encountered in designing the cultural center with décor workshop was transforming the buildings into a comfortable living space without losing the authentic atmosphere of these buildings.

The problem lies in the fact that these buildings were built with a specific function in mind; a factory and a weapon depot. To transform these into a cultural center and décor workshop gave therefore its obstacles.

I tried to preserve the buildings as much as possible while making adjustments to make them future proof and try to match the new functions to the existing buildings. Making the building future proof is two folded in my design for the machinehall.

On one hand it means designing a comfortable indoor climate without losing the architectural strengths of the buildings. Here I had to make the most interventions. This meant that I had to post-insulate the walls, which was a plausible solution because the interior and exterior side of the facade would still look the same. But I also needed to replace the windowstrip, the roof and the concrete floor to be able to insulate this building. Replacing all these elements meant demolishing the old. I was conflicted by this idea because I wanted to preserve the building. But when I looked upon my cultural value, the roof and floor had a low value. Therefore I chose to renovate this part of the building, meaning the new better insulated elements were a replica of the original. This way the original building would still be honored. I also reuse the old windows as partician walls inside of the building, so that the old elements would get a new life too, just like the building.

On the other hand it means making the new added elements and spaces can be reversible and a different function can be placed inside of these buildings. Therefore the new spaces that I add inside the machinehall are from CLT elements so that they are lightweight and easy removeable. In addition to this I designed an indoor climate design that would keep the whole building at a constant temperature.

The climate design is a very ambitious design. The systems and techniques that I use for this design haven’t been tested on this scale. They are mostly used in dwellings. This is why I don’t know for sure if this works to give the building a constant indoor design or that other techniques should be implemented to achieve this goal or if this goal is even possible.

An other challenge that I faced was creating the architectural spaces within the machinehall. I designed with the idea that the building and its construction could be experienced in different ways. I had a lot of insecurities and trouble with accomplishing this goal. Especially with matching the programme to the different experiences within the building, I wanted for each department to have their own style and atmosphere. Next to that I always designed with the sightlines on the different levels in mind.
The concept for this design was to create a cultural center that gave space to the different facets of artistic practices such as: art, dance, theater, music and a place where they could perform. My starting point was to design 4 departments and that every department had to have its own atmosphere and characteristics. These departments must be placed inside the two main halls acting like a city within the building.

With this concept idea I thought of different ways on how the Machinehall could be experienced. I used different approaches to design spatially and architecturally interesting spaces within the possibilities of building technology. I looked into the tolerance of change and the boundaries that this building has to transform into its new function.

I noticed that I designed different experiences in the building. With creating new interesting and exciting spatial spaces throughout the building with keeping the sightlines in mind that look towards the existing building.

With my models I tested the limits and possibilities of the building and with giving each department a different experience. I tested different possibilities of what is possible within such a building.

I also noticed that I work a lot with contrast, high/low ceilings, open/closed spaces, narrow/wide spaces. Making contrasting transitions within departments and in between departments.

By doing this it gave each department their own atmosphere. This was a very challenging process and I’ll try to elaborate on each experience and what my difficulties and dilemmas were at designing this.

Experience 1

In the art department I placed the new spaces on the ground and first floor close to the sides around the steel structure in one of the two main halls and kept the center longitudinal axe free to create a path. I extended the atelier spaces beyond the steel structure of one of the two halls. By doing this the trussed beam of the crane track was pulled inside the department and runs through the artist atelier space. Making the connection between new and old.

On the top floor I designed the art classrooms. Here I did the opposite. I placed the classrooms in the middle of the mainhall and the path/hallway goes around the classrooms. Next to that there will be no ceiling on the classrooms. This way the user will experience the rooftrusses and the skylight being placed right underneath it.

The difficulties that I faced was to create multiple individual artist ateliers and keep interesting sight lines. But with the help from my tutor, by making models and to keep the experience of the user in mind the following design came to existence. Reflecting on it now I’m not sure if the open ceilings will be a problem with noise when the building would put into use. But I think this could only create a problem in the classrooms and the noise would be minimum.
Experience 2
In the music department I created a contrast relative to the art department. I placed the individual studio’s on the top floor to the sides of the main hall and the group studio’s on the ground floor.

This approach worked great for this department, the first floor, created by the volumes of the group studio’s on the ground floor, and the vide are a way of celebrating the longitudinal axe that is strengthened by the existing skylight and is framed by the timber columns.

The difference between the departments is also emphasized by the height differences in ceilings. Where the first floor in the art department has a low ceiling, it transitions to a high ceiling in the music department, creating a different atmosphere due to the different lighting and setup of this department.

This was an idea that was in my mind for a long time. It is what I saw before me when I thought about how the music department should look like. The only obstacle that I faced is how to shape it and how to fit the program in this spatial idea.

Experience 3
For the dance department I designed freely inside of the space of one of the mainhalls. By doing so I truly wanted to celebrate the space that I got and place the dance department free from the existing building.

I made three cubical volumes each with three different heights and placed them on an angle of 45 degrees in one of the mainhalls of the Machinehall. These volumes act on their own, and they don’t follow the grid of the steel structure or the longitudinal axes. It is an object in the space that is available, creating interesting leftover spaces. The dance department is strengthened as an object on itself. It defies the existing spatial rules, yet it compliments and celebrates the space that it is placed in.

In every dance hall there is a connection to the existing building, through windows that are placed there. On the dance hall on the top floor there is partially no ceiling, creating a direct connection to the rooftrusses. I created a overhang in this dance hall to keep the sound mostly inside the space, but I’m not sure if this will work. Although I found this in a reference project so it has been done before.

I struggled with how to place the dance halls and make them accessible within the shape that I choose. I made many options on how the cubes would be placed relative to each other.
Experience 4

In the performing part of the building I placed the theaters against the steel structure and existing façade. Within the theater you can see a part of the trussed beams and the brick interior facade of the skin. In between the two theaters sits the foyer with additional seating places on top of the two theaters.

I don’t know if this, within building technology, was the best solution to place theaters against the existing steel structure and brick façade. Theaters create a lot of noise so I don’t know if it acoustically would be air tight enough to significantly reduce the noise. On the other hand, is it really that important to practically hear no sound coming from the theater? When there is a performance in progress. Shouldn’t this cultural experience be celebrated, both in and around the building. Especially with the absence of residences within the direct surrounding.

I struggled the most in finding a place for the theater(s). My first initial thought was to place one big theater within the axis of the mainhall. The eureka moment came when my tutor said: “does it have to be one big theater? Can’t it be smaller?” Because of this I came to this solution of placing two smaller theaters. But it took a lot of time and effort to get to this.

Experience 5

The two smaller theaters are connected by a newly placed steel structure that acts as a bridge but also as an exposition space.

With this exposition space I want users to experience and educate about what the former function of this building was. Rather to let the history disappear I choose to celebrate its history of being a civil machine production factory.

People can walk through this exposition space where the machines of the machinehall are placed behind glass. Also other small trinkets and items from its former era can be exhibited here.

In the museum of Zaandam a lot of these machines and items are stored but not all are exhibited. So my intention is to bring these items back to Hembrug and put them up for display.

I had some trouble in finding space for this large steel structure that I had in mind. As you can see in my reference projects below, these structures are placed outside. I doubted if I should place the structure inside or outside.
Experience 6
In order to celebrate the big open halls of the machinehall I stripped the roof of the small side building in order to make the building more open to the public. But also to show a time-layer that would be forgotten by transforming this building.

Today, this building is in a form of heavy decay. Nature took over this building. I wanted to give nature some space by creating a ruin out of this part of the machinehall. A place where plants can grow and small animals like birds and bats can live. This timelayer from where nature took over should otherwise be forgotten and it is part of its history. This can now be used as a secluded outdoor space by its users. By doing this it also opens up the building, creating a more inviting character, yet still leaves the old façade intact. So that people who visit the building are still aware of what the building originally used to look like.

It was a dilemma choosing for this. On one hand I did not want to demolish a part of the building. But on the other hand, showing time-layers was part of my concept and I had a lot of trouble for finding a programm that I could place in this side building. Therefore I choose to give this part of the building back to nature.

The things I would like to improve would be that the performing department worked better and maybe dig deeper into the materialisation. Next to that I would like to design the weapon depot and the setting of campus north further but there was simply not enough time to do all of this.

During this project I learned to trust my own intuition, believe in myself and that my design process works in three ways: model making, sketching, and doing research. This happens simultaneously and I switch between those 3 all the time. I did not know that this would work for me until this graduation project and I will take this with me into the field. Even though I have learned a lot, my most important objective for this project was to once again enjoy architecture, and regain my passion for architectural designing. In this I succeeded.