

# A.R.C.

**Armed forces Rehabilitation Centre**



**Reflection paper**

Graduation studio 'Revitalising Heritage'

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28-01-2020

## **Introduction:**

In the 2019-2020 Graduation studio of the chair of Heritage and architecture named: 'Revitalising Heritage', a proposal has to be made for Hembrug. Hembrug is a former military artillery production site located between Amsterdam and Zaandam. Hembrug has many beautiful monuments and other buildings in its borders which are currently empty and due for redevelopment. The main focus of the studio is to design a culturally, architecturally and technically fitting redevelopment.

In the MSc 3 period, Hembrug itself and the context in which it is located were analysed. After this analysis, all student chose and ensemble within Hembrug to research and develop further in the MSc3. After the Msc3 research period, an initial concept was formed together with a design approach.

The MSc4 period elaborates on and makes use of the concept and design approach to design the new Hembrug.

The ensemble of my choosing for the graduation studio has been the so called "Changeover zone". A complex of multiple buildings grown together from 1910 to 2007. This ensemble was chosen as the buildings housed some amazing constructions and spaces which were very inspiring. In the Changeover zone I wish to establish an armed forces rehabilitation centre, primarily focussing on the second phase of rehabilitation, returning to an unfamiliar society. This concept came from a wish to return a military function to Hembrug as this was once its purpose. It will now serve a post-war production service by healing armed forces returning from war.

## **Reflection:**

### **Research methods**

To establish a solid base on which to design a redevelopment for the Changeover zone several studies were made through different methods. These

studies were to serve as both the starting point and as a guide for the design process.

As my main aim was to develop a rehabilitation facility focussed on the second phase rehabilitation into society for armed forces, my research was able to start out quite specific, looking into the needs of this select group. The research was done by the following methods:

### *Site visit*

As an introduction and during the design process, the Hembrug site was visited several times to gather data in a wide variety of aspects. During these site visits, photographic observations were made as well as sketches. These two combined helped in forming the understanding of the physical elements of Hembrug and documenting them for future reference.

The site visits also helped in establishing an emotional understanding of Hembrug. Being able to hear, smell and see the site helped in creating an idea of what type of redevelopment would be suitable there. On site was a strong sense of being secluded from the business of the nearby cities. It was quiet and green. Within this green were the impressive old buildings portraying the busy site it once was. This contrast between the calm settings and the buildings still there from a bygone era of business and industry already gave the site a direction of redevelopment for me. The new function needed to be something which needed both, the quietness of the site and the rough industrial look of the buildings.

My main fascination during the site visits were the construction method of the buildings. Especially once focussed on the Changeover zone ensemble, large steel skeletons were present in every building with beautiful riveted joints. The grids the steel constructions formed combined with their details in the joints and the buttresses in the walls were to become the main point of interest both during the research and the design phase of the project.



Due to the scheduling of the studio, many site visits were made in close proximity to each other at the beginning of the studio. This repetition made the site visits have less of an impact than spreading them out over the studio. The spreading of visits could have led to more on-site discussion about one's project with other students and the tutors in several different phases of design. This was now done off-site in the Cultural Value workshops. After the initial site visits, more visits were made but always in smaller groups or alone. While useful in understanding and getting a grip on my own insights into the site, it would have been nice to have a discussion about ideas while on location. These discussions now happened mostly in the studio.

#### *Literature studies*

The specificity of my target group allowed me to start with very targeted research papers. While these did return a lot of useful data, such as the fact that this group did not want the standard wood and white "hospital" style rehabilitation facility, there was surprisingly little information for the size of the veterans issue. Only the official government veterans society gave data on these numbers. In the reports by this society, it was said that 12% of veterans

experienced major psychological problems 6 months after leaving the Dutch armed forces each year. With around 6000 personnel leaving the armed forces each year, this would give a number of approximately 650 people each year. 10% of personnel reported major physical issues 6 months after leaving the armed forces. This means approximately 600 people each year. Statistics on overlap of these 2 numbers was not given.

I also found some great literature on the physical elements needed for rehabilitation from the Red Cross. An overview of equipment and its purpose was well documented and allowed me to gather information about the types of facilities needed. The most important of these being the requirement of a pool, which will aid greatly in physical rehabilitation.

#### *Case studies*

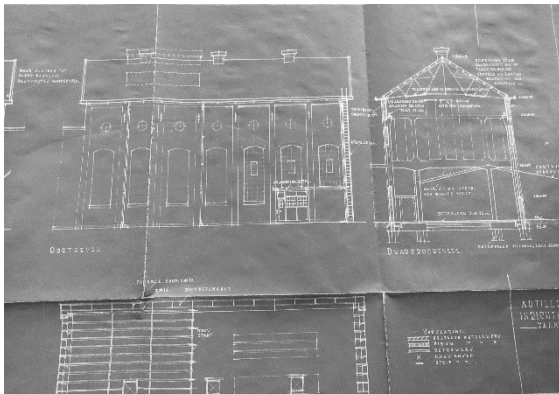
While making the case studies, a problem of cultural differences between the case studies and other research done became apparent. A lot of research for and on veterans was made in the USA and was therefore heavily USA focused. USA focused buildings on the military were full of hyperbole about the might of the armed forces and how "our" heroes deserved the best. Personally, I found this to be quite weird as the statistics showed the USA also had the largest problems with veterans becoming homeless, committing suicide and having severe physical and mental problems. This was an indicator to me that their approach, while good in intention, might not be the best approach. The researchers and rehabilitation centres took a very armed forces approach. Flags were everywhere, doctors were army personnel and armed guards were at the gates. It also showed in the architecture. Large, powerful buildings in classical style. Huge flags everywhere and bronze lettered quotes of important people.

This approach was in stark contrast to the rehabilitation centre focussed on a return to society I envisioned for Hembrug to become. The case studies were therefore studied but ultimately a different approach

was taken more in line with the literature research.

### *Archival research*

The archival research was mostly made to get a grip on the functional side of the Hembrug area. What was daily life like, how did the routes around the area go and what functions were housed where. Technical drawings were also found giving great insight in the technical design of the buildings and the elements which were focussed on during the design period.



#### - Cultural value assessment

By studying the cultural value of Hembrug on multiple levels, an assessment of its cultural values was made. These levels being the whole of Hembrug, ensemble specific, building specific and detail specific such as materials used, a clear base outline was made what could and what could not be done to the buildings to ensure the cultural value of them would not be harmed.

To guide us in this process was a tool called the Cultural Value Matrix (CV matrix). This CV matrix was made in collaboration with Neeladri Sarkar, who studied the same ensemble as I do.

The main element we valued highly on the ensemble scale were the facades of the buildings as these showed a great amount of diversity in brickwork style, colour and pattern. They were also a reflection of multiple decades of industrial buildings. The oldest buildings from around 1900 had highly ornamented facades, the buildings of the 1960's were much less decorated but still showed a great amount of architectural

style reflective of its period. Large impressive facades with grid layouts and ornaments all in the traditional brickwork of the era. The buildings of the 2000's were made with steel sheeting and not decorated and highly functional. Again, a reflection of the way people think of industrial buildings in the time frame of its build. All in all, we valued the oldest facades and its decorations the highest due to rarity.

We also placed a high value on the steel constructions on the interiors. The oldest building possessed cast iron columns, a rarity even for the period on unseen today. The other building from the 1930-1960's have huge riveted constructions, a building method also not seen today. The newer, less rare methods were valued much lower.

Of high value was also the privacy of the terrain and the quietness that brings with it. It used to be a high security area and is now a quiet haven between cities.

### **Research and design**

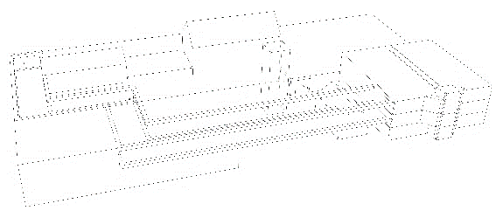
As noted, limited research was available on the exact needs and wants of veterans returning from society. Based on the data that was available, which was not extremely architecture focused, the formation of a personal design position and vision was to be made. After studying both the site and the needs of veterans, my position for the design of the changeover zone is as follows: "Create a quiet but stimulating second phase rehabilitation environment using the juxtaposition of the secluded, quiet area and its large industrial architecture. This with a focus on a return to society."

Taking this position before starting the design allowed for a focus. Use the stimulating architecture and its rough industrial look as a backdrop for rehabilitation facilities and the creation of a small scale, civilian style organised society of veterans allowing for an in-between spot between military and civilian society. This means housing the facilities in the current buildings focussing on organisation, functions and interactions.

A list of functions and how these would interact was drawn up. Based on the research stating that veterans felt “trapped” in hospitals with everything being in a single building, a decision was made to separate all functions in different buildings and remove interior joints between them. A large square was created in the centre of the complex to serve as a hub, allowing people and functions to meet and allowing/forcing people to leave their apartments introducing them to society while still in the protective environment of being surrounded by peers.

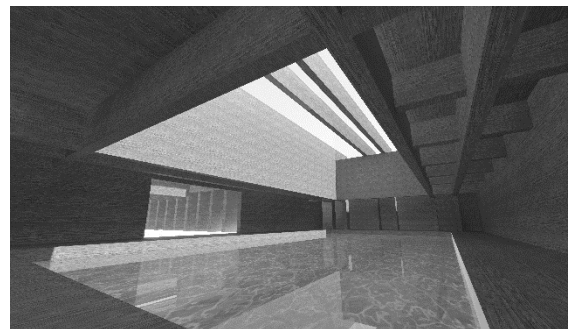
To create this square, some buildings had to be demolished. From the CV matrix, the least valuable buildings were the newest ones. These were therefore demolished and a new design was created. This design focussed on creating a corner, forming the interior square, and a wall, giving the square a more private atmosphere but still being accessible by everyone. On top of the building was to be a private garden, as a second level of privacy between the apartment and the public square.

The entrances to the square were made by a bridge/gate structure serving two functions. A gate to serve as a clear border and entrance and a bridge to allow for private movement between apartments and garden.



During the design process, several iterations were made of these ideas and designs. Some more outlandish and some more conventional. The impact of these approached was discussed and analysed, forming a new base for the next iteration.

For the new building, a search was done for a style reflective of the aim of combining the quiet and industrial aspects of the site. The new building would house the physical rehabilitation area which includes a pool and gym. They were therefore spaces in which physical rehabilitation was to be done. I therefore looked for an architectural style which would fit in with the industrial landscape of Hembrug, was visually stimulating outside but quiet once inside. As a reference Therme Vals by Pether Zumtor was used. This of course had a completely different setting to this building as it is in caves in the mountains, but the industrial look and private feel fit nicely with my goals. Combining the cave feeling of Therme Vals with a personal fascination for Brutalist architecture and a need for a modern building method led me to develop a building in cross laminated timber in brutalist style. Visually stimulating exterior, quiet indoors.



### **H&A and ARC in relation to Master education**

During the project, many aspects of architecture and design were studied. Doing so under guidance from tutors allowed for the creation of a more focussed design and keeping all aspects in play. The weekly focus on architecture and building physics combined with the cultural value, climate and construction consults allowed for many different inputs and opinions to be taken into consideration and the into the design. This balancing act of architecture, building physics and cultural value is, in my opinion, of great importance for heritage architects and has been a great learning opportunity.

### **ARC in a wider framework**

During the research phase, as stated previously, limited information on second phase armed forces rehabilitation was found. There was however a lot of information to be found about the problems with veterans returning from combat and reporting physical and/or psychological problems 6 months after returning from combat.

This issue of veterans returning to society with physical and/or psychological problems has come to be more present in the recent years. 100 years ago, one could be shot for cowardice when having severe shellshock, now known as PTSD. While this is now looked upon as cruel and unjust, the current armed forces returning from combat can still face a societal backlash. From still being labelled a coward when admitting to depression or physical handicaps limiting one in the job market. The current solution of the Dutch government, and most other governments, is helping people get help, which in most cases take place in hospital style environments. The literature research done has shown that this makes it uncomfortable for these veterans to seek help. By designing a building for a new type of healthcare aimed at the needs and wants of veterans, we can help these people return to society, lowering both costs and occupancy in hospitals or rehabilitation centres they do now wish to be in the first place.

Research has shown that in the Netherlands the problem of veterans reporting physical or psychological problems after 6 months of leaving the armed forces is around 10% for a total number of around 350 per year. This is in the Netherlands alone with a relatively small army, good healthcare and other facilities. Extrapolating these numbers Europe wide, there must be 1000s of veteran dealing with these issues afraid of being labelled a coward. I do think creating a specialised place, secluded from but still joined to the civilian society can make a huge impact on the lives of these mostly young veterans.

This disconnect in need from the veterans and societal solutions can be a topic for more in depth architectural research into the wants and needs of veterans, disconnect from being as site specific as this Hembrug topic was. It can also be studied from medical and psychological fields to gain insight into why the needs of this group differ from the current available facilities.

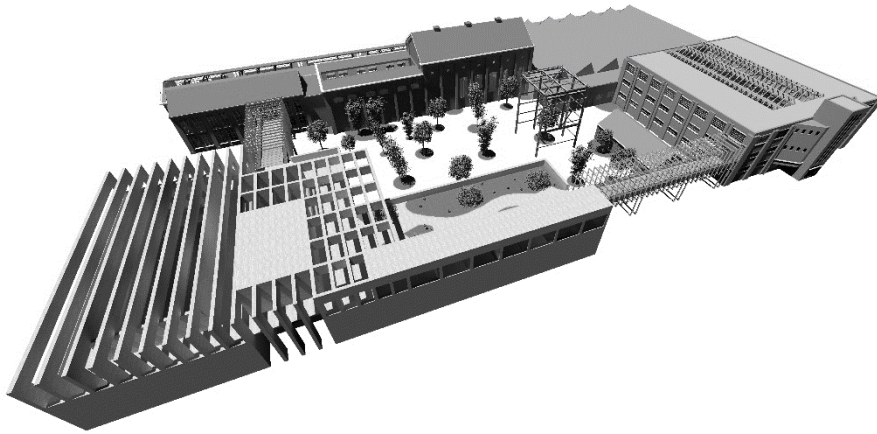
### **Issues and dilemmas**

In the CV matrix, it is noted that the arrangement of buildings and its representation of buildings methods and ideas about industrial architecture are of great value. However, to house the new function the newest buildings, which were valued low individually but important in the whole ensemble, had to be demolished. With this demolition and new construction, a timescale is removed from the ensemble and a new one added. This is industrial in look but has never been intended in industrial in function. The construction method and the industrial function are however present right next to the ensemble and are therefore still visible from the ensemble itself, maintaining the layered age representation from the 1900's to early 2000's. These buildings however have never been part of the functioning of the changeover zone ensemble, so a bit of history has been lost in favour of the new.

## Conclusion:

The creation of a new function in an existing building is always a balancing act of values, needs, wants, history and technical challenges. This studio was a great introduction to working within these boundaries and find the opportunity lying within them. Each aspects has introduced different elements to the final design, starting from the function based on the history of the site to the final detailing ensuring the visibility of old technical elements as reminders of the buildings past.

The creation of a second phase rehabilitation centre for the Armed forces was an idea formed by the site and a personal fascination. Unable to find a direct reference of such a concept allowed me to embark upon a research and design study into the wants and needs of veterans connecting me with many more professions such as psychology , medical care and rehabilitation care and placing this in an architectural and historical context providing new insights into both.



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Drawings on Hembrug from the Dutch National Archives

Drawings on Hembrug provided by current Hembrug curator

Drawings and historical photographs on Hembrug in the Zaanstad Archive