Contents

1.0 Reflection

2.0 Site Overview
   2.1 Inspiration
   2.2 Site Concept
   2.3 Site Plan

3.0 Design Strategies
   3.1 Walkway
   3.2 Main House - War Damages

4.0 Floor Plans
   4.1 Main House
   4.2 Farm House
   4.3 Rebuild Barn
   4.4 Greenhouse
   4.5 Pardenschuur
   4.6 Ankerschuur

5.0 Literature and References
Introduction

In 2017 HA started the KaDEr research project for the Province of Gelderland. The aim of the collaboration between the Delft University of Technology and the Province of Gelderland is to define an adjusted framework based on the way in which the province of Gelderland acts up to this point, with regard to the preservation of built monumental heritage to come up with innovative policy where scientific research must be carried out into whether and if a paradigm shift will take place in the future.

One part of this research framework is the Reuversweerd estate with its listed manor house. The manor of Reuversweerd is a national monument in the municipality of Brummen in the province of Gelderland. It is located on a visually significant location on the floodplain, hamlet Cortenoever, which is the left bank of the river Ijssel. Initially used as an administrative office for many hectares of land nearby, the manor formed an agricultural complex with the neighbouring houses and studs. They sit on a visually significant location on the floodplain, right next to the dike Brummense Bandijk. During the second world war the listed manor house has sustained significant damages. Especially the north east facade as well as some internal walls clearly show the damages even today since the house has been vacant since the end of the war until now. Finding the right approach to deal with these war damages as well as to make sense of all the different spaces and atmospheres on site (illustrated by the images on the left side) has been the main focus of my design.

The core site consists of the following buildings:

1. Main House - 1845
2. Farmhouse - 1800
3. Main Stable - 1952
4. Cubicle Stable - 1975
5. Ankerschuur - 1921
6. Horse Stable - 1921
7. Heifer - 1973

Reuversweerd Overview
Argumentation for the choice of the studio

The first reason why I chose this studio is because I believe that working with existing buildings is one of the most important tasks for architects today with regards to sustainability as well as social and cultural responsibility. Secondly I am very interested in investigating the qualities of existing buildings and study their history. In addition to that I like to go on site and survey buildings in order to gain insight in how people used to design and build. In order to translate these findings into a contemporary and comprehensive design I find it very important to focus on details and materials. The Reuversweerd estate project in my view offers a very tangible study project of a scale small enough to fully comprehend in the given timeframe and work out in detail. In addition to that, I am very intrigued by the buildings special character and history.

Methodology Summary

In order to come up with a meaningful and informed design approach I conducted research on the existing context. The research is structured in three main phases namely: 1. Data collection (observation), 2. Analysis and 3. Synthesis.

For the next steps in my design process I will undertake case study research in relation to my main design topics. I will also consult literature about architectural theory and practice to further refine my own architectural position towards designing in a heritage context.
Relation between own project, studio topic and master track (H) and program (MScA)

In the first lecture of the lecture series Research Methods, Mejia Hernandez, J. defined a master of science (in architecture) as someone: “[...] who is skilled in the acquisition of (architectural) knowledge.” (2018). He suggested that every (upcoming) architect should aim to further grow the architectural knowledge. When it comes to the field of Heritage and Architecture the connection between architectural practice and research becomes evident since a meaningful design intervention on an existing building is impossible without preliminary research into its context. The Reuversweerd estate as studio topic gives me the chance to apply the studios general approach of the research based design in practice. Through the methods of field research and subsequent analysis I was able to learn from the historic site and generate detailed knowledge about its architectural qualities, building techniques and future development potential. My own project will be based on the knowledge gained in the first research phase, however, it will also initiate a second research phase by posing a more specific research question. By asking the question: “How can the rich history (historic layers) of the site be preserved and made “experienceable”? I address a core issue in heritage design: the dilemma of use value vs. historic value (the historic layers vs. a new use of the site). Based on my research I will try to find a meaningful architectural solution to this problem which should contribute to the architectural debate and the growth of architectural knowledge.

Relevance of project in the larger social, professional and scientific framework

The big challenge today for architects in Europe is mainly to redesign/ redevelop existing buildings in order to make them sustainable and give them a new life. Country estates are a perfect example for a type of building that has been developed and built all over Europe for centuries. However, as the industrialisation started, the land (farm land) lost its former value and so did the country estates. These estates are a part of our history and therefore need to be preserved. The research on a design solution that is sensitive to the cultural values on the one hand but also considers sustainable aspects as well as feasibility aims to contribute to the broadening of knowledge in the field of heritage architecture. The project is therefore relevant on a scientific as well as social level.
In the book “Designing from Heritage - Strategies for Conservation and Conversion” Wessel de Jonge describes the underlying methodology for designing in heritage as “research based design”, meaning that in order to come up with a meaningful design solution the architect has to undertake research first. This approach is focused on the physical context of the heritage site and can be defined as context-led research.

What distinguishes the research in a heritage context from other research fields is the focus on the unique qualities of the property or more specifically, its cultural values. The goal of the research is therefore to identify, analyse and finally synthesize the findings on the cultural values. This process aims to provide the architect with a basis of knowledge about the given context in order to develop a design sensitive to the value assessment.

My research follows this process and is characterized by three main steps namely: data collection, analysis and synthesis/conclusions. I gathered data about the heritage property using the methods of field research and historical research. Using the gathered data I did a cultural value analysis by using the “four-step analysis method” employed at H&A introduced by Marieke Kuipers. Finally I drew conclusions and formulated starting points for the design by synthesizing the findings of the analysis. The research methodology I followed is based on the heritage value matrix approach developed by Clarke, Kuipers and Zijlstra. However, I extended this approach by using additional methods of research native to qualitative as well as quantitative research strategies.

**Research Methodology**

**Benefits:**
- Provides a solid base of knowledge
- Provides transparency on later design decisions
- Knowledge is generated in a scientific and replicable format (cultural value matrix)

**Issues:**
- Conflict of interest - architect as researcher and designer
- Many insights about the site are gained at a later stage - ongoing research
- Focus of the research might shift while the project develops
- Initial research phase informed some design starting points, however did not influence the whole design
- Focus on main house in initial research phase

Clarke and Kuipers’ approach is broad and purposefully constrained, which makes sense and is practical when faced with limited expertise and time. Despite this I still believe it is important to consider economic studies and add at least one quantitative research method to the methodology. Even an imperfect economical research can provide insights from a different perspective and enable the relativisation of the mainly historical and qualitative research.
Cultural values are defined by subjective opinions from those in the society involved in cultural debates. Previously, heritage properties were assessed based on how architects and art historians perceived certain values and how they linked them to a theoretical apparatus. In other words, the final conclusions depended on the selected methods which ultimately were based on the theoretical perspective held by the researcher. The chair of heritage and values at TU Delft is aiming to teach a more diversified strategy in the assessment of cultural values.

In my opinion, this approach takes into account the multi-faceted aspects of heritage values and hence is best suited for the gathering of knowledge for developing design starting points. I see it as a flexible foundation for cultural value research, which can be adapted and extended to suit one’s aims and purposes. Establishing a broad and common range of values for the initial basic research will also improve the quality of heritage research and design. However, the researchers must not think that this broadening of research approach will lead to an all encompassing result. In this sense, I find it to the point how Denzin and Lincoln described a (social) researcher as “bricoleur”. The research process on cultural values is well described as the deployment of different methods to generate the best composite answer. This reflects two topics within the heritage research that I find important: (1) a multitude of methods is needed to account for the varying qualities of heritage values, and (2) it is not possible to have complete knowledge about any given site. When formulating design starting points it was helpful to understand these two ideas and refer back to the notion of bricolage, or as Scalbert wrote in her book Never Modern: “[…] the making of things in the full and liberating awareness of how little we know”.

This broader research approach certainly requires more commitment in time and effort, but will provide the researcher with a more solid basis to build on. After accumulating knowledge in a structured and transparent way, the design starting points can then be developed more robustly and scientifically. On a different dimension, this approach may also give further inspiration during the design phase and enable the architect to create a unique narrative.

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5 N. K. Denzin & Y. S. Lincoln, Handbook of qualitative research (Sage publications, inc.,1994).
Research Phase Two

Theoretical Framework

After completing the initial research phase I decided to take a step back from the realities on site to develop a general design approach.

In order to find my own way I studied how other architects approach their projects, especially in a heritage context. The books that have influenced my design approach the most are: "How buildings learn" (Brand, 1995) and "Never modern" (Scalbert & 6a Architects, 2013). In Brand’s book I was especially interested in his theories about “low road buildings”, as he refers to mundane buildings which were mainly intended to be functional, however, are highly adaptable and often end up outliving their prestigious counterparts. I think that this is also the case for the farm buildings in Reuversweerd, which clearly show in their facades how they have been adapted over time. I recognized that these buildings and not only the main house have the potential to attract guests and tell the story of the estate. At the same time they allow for further adaptations, which will not only give the buildings new functions but make them more beautiful by continuing their story.

During the initial research phase I sometimes had the feeling that I was working on an impossible task. Especially on a huge site like Reuversweerd the amount of information can become overwhelming. Yet at the same time it feels that not enough information has been gathered. The theoretical approach of 6a architects described in the book never modern was very intriguing to me in this regard. Especially the explanation about their take on Bricolage helped me to set my own research into perspective. This idea is not just manifested in a multi tool approach to research as in the paper “Assessing the values of cultural heritage” (De la Torre & Throsby 2002) Scalbert compares the work on heritage projects of 6a to that of a Bricoleur, someone who makes use of what he finds in an opportunistic way. Finding things also means that some other things will not be found but that does not have to be a problem. It is simply a reality that some facts will remain undiscovered even after a thorough research phase.

I think that architectural designs reflect a lot more than the architects knowledge about the site. The design is created thorough a multitude of influences, some of which are based on the site research.

Case Study Research

To get some inspiration for my design apart from the existing buildings on site I undertook precedents or case study research. This research can be divided into two main categories:

1. Design Approach Precedents
2. Qualities Precedents (space, material)

Fig. 05 Site Section showing a series of spaces (ADReport, T.Bianchi, author)
Fig. 06 Section of Sir John Soane’s House, London (Sir John Soane)
Design Approach Precedents

In order to position my own approach towards designing in a heritage context I looked at two very different examples of conversions I had visited in the past. I took as an example the design of the staircase in the Neues Museum and in the Tate Britain. Here the architects chose a distinctly different way of approaching the design which for me represents the two ends of the spectrum. On the one hand we have Chipperfield’s stair design of the Neues Museum with its almost immaterial appearance. It references the design of the original staircase which has been destroyed during the war, however, clearly shows that it is modern.

On the other hand there is Caruso St John’s design for the central staircase in the Tate Britain. Here the architects chose to blur the line between the old and new. They introduced a new, however, historic looking pattern to the museum which covers the floor as well as the balustrade of the new stair. This design continues the historic architecture of the museum rather than contrasting it. However, even though it does not look clearly modern it can be identified as such by the contemporary curved concrete balustrade. Also the stair is positioned in the historic rotunda of the museum - a space that never includes a staircase in classic architecture.

The comparison of both approaches illustrate the field of tension between respecting the existing architecture on the one hand and highlighting the new addition on the other hand.

A third example which was very inspiring to me is the Raven Row Gallery conversion by 6a architects. The more familiar the architects became with the 18th century building in Spitalfields, London the more they noticed that the life history of it was invisible. Having undergone many conversions already the building only showed small traces of its original fabric. To resolve this issue of refurbishing a building that has lost its history the architects worked with whatever traces of history they could find to develop a narrative. Especially old drawings and photos of the interior inspired the new design, which carefully reflects the history of the building. Also part of this history where its inhabitants. In the 1970’s the building became vacant, however, one flat remained inhabited by two sisters who lived there since they were born. After their death the flat with its 1970’s interior was kept entirely and accommodates additional gallery spaces. The story of the two sisters became part of the building history which the architects decided to keep visible for visitors today.

Qualities Precedents

For my design I mainly looked at design approach precedents and with regards to spatial qualities and materials I took my inspiration from the existing buildings on site. However, to get a better understanding of how certain materials are used or how spaces (hotel, market) function exactly I undertook some qualities focused precedents research. Especially with regards to my redesign as a business case I looked at “Villa Augustus” in Doordrecht as a case study, which has a similar programme.
Architecture and Ethics

Important Questions:
For whom do I design? / Who are the shareholders?
• the owner - profitability
• the public - heritage site as part of shared culture and history
• the former owners - remembrance of tragic events during WW2

Who are going to be the users of my design?

How do I make the heritage site accessible to the public?

Fields of Tension:
• Private vs Public interest
• Functionality vs Memory

With which existing qualities does my design interfere?
• war damages
• as found aesthetic

Responsibilities towards Society
• Sustainability
• Memory

Programme

The main issue that arises when it comes to adaptive re-use concepts for an existing site is finding a balance between the new programme and the conservation of the building fabric. There is mostly the private business interest one one hand and the public interest on the other hand. There are cases, however, where the business concept can be based on the preservation rather than the demolition of heritage. Having been given the task to develop a new programme for the Reuversweerd estate I tried to find a synergy between the rich history of the site and the new function. By introducing the concept of an boutique hotel in combination with a restaurant and market I tried to achieve exactly that. In this case the preservation of most of the existing building fabric will be the attraction for visitors to come to site and experience the historic layers.

Preservation

The preservation of most of the original building fabric is important to me for two reasons. Firstly I find it important for a society to stay connected to their history to preserve identity and to learn from it. When deciding to demolish an existing building one has to be certain that neither we nor future generations can learn from it or that the particular building type is very common. If the building cannot be kept without amending it I prefer to preserve parts of it to enrich the new design and to remind people of its history.

Secondly it is preferable to maintain the existing buildings to save building material and money. In general it is simply more sustainable to keep existing buildings (building parts) than to demolish them and rebuild.
Conclusion

• Did the approach work?

Strength

• Consistent narrative - telling a story
• Site access - connection
• Keeping historic layers
• Low cost interventions - temporary
• Sustainability - materials

Through the initial research and the second research phase respectively, I identified the focus on the historic layers as my main design challenge. My main idea is to introduce a new connection through the whole site, walking along which, the visitors can experience the historic layers of Reuversweerd. This connection is materialised through a series of small, temporary interventions. These physical interventions, however, are meant to establish a connection, which will remain even after the life span of the material is reached. This new path will connect a series of very diverse spaces that reveal their history to the visitor and make the sites history experience-able.

Public vs Private

Even though the site is privately owned I find it necessary to keep at least parts open for the public. A monument in my opinion can be privately owned but will still remain the property of the society. As such it has to accessible to the public. In my design only the functions that have to be private like the hotel rooms are inaccessible to the public. The main part of the site is accessed by the walkway which leads the visitors from one building to the other, revealing the sites historic layers. This focus on accessibility is not merely an ethical decision but also an economical. Since Reuversweerd is very remote, it has to be a point of attraction for visitors who will be able to learn about the site but also make use of the offerings, such as the restaurant and market.

War Damages

Just like a time capsule the main house has remained almost entirely unchanged since the end of the second world war. The traces of the shells penetrating through the walls are still visible generating a unique atmosphere. The question arises how or if at all they can be kept. Keeping them would interfere with the original 1920’s interior design intention, however, removing them would erase an important part of history. Holding up the memory of the war and in relation to that the memory of the former owner and his family is for me the more important task. I think that the war damages should be kept as a reminder of the terrors of war and also as a part of the buildings history. These damages in combination with the grandeur of the interior represent very much the essence of the main house atmosphere.
2.0 Site Overview

2.1 Inspiration
The main inspiration for my design stems from the great variety of spaces, atmospheres and time layers on site. Preserving this unique quality for the public and making it experienceable as well as using it as a source of revenue is my main focus. I ask the question: "How can the historic layers of the site be preserved and made experienceable?" To answer this question I introduced the 3 following approaches:

1. Offer additional programme
2. Preserve the original building fabric
3. Establish new connections

Each approach is reflected in a concrete intervention on site.

The site is mainly transformed into a boutique hotel. To attract more visitors and therefore create more revenue as well as to make the site sustainable I introduce a restaurant and market hall in combination with a greenhouse. Located in the former functional post war stables it also functions as a new public entrance to the site.
3.0 Design Strategies
3.1 Walkway
Introducing a walkway which connects all buildings on site serves two functions. Firstly it makes the navigation for visitors much easier and leads them from one function to the other. More importantly, however, it serves as a tool to tell the history of Reuversweerd. Leading from one time cluster to the other it shows the visitor the different time layers and atmospheres. By making a connection that was never there before It also creates an entirely new context for the buildings which enables a focus shift towards their history and spatial qualities rather than their beauty.

The walkway pavilions are constructed from three elements:

1. 100x100 mm timber sections
2. weather proof timber planks (such as Accoya)
3. corrugated polycarbonate sheets

All construction timbers are connected with a simple bolt joint.
3.0 Design Strategies
3.1 Walkway
3.0 Design Strategies
3.2 Main House - War Damages
A big part of the atmosphere on site is characterised by the war damages in the main house. The core idea is to maintain the original atmosphere of the rooms with only a few “images” of the historic rooms while providing modern living standards. All serious damages to the brickwork are maintained and similar to a showcase, in a museum exhibited through a window pane. This is contrasted by the new plaster wall finish around the frames which is painted in a way that it matches the original colour scheme of the room.
In order to showcase the war damages and make them an experience able historic layer of the site I propose a series of frame details. Every type of war damage location requires a different detail solution, however, the appearance of the frame will be the same. Shown on the left are two exemplary details:

1. Frame around a war damage between two hotel rooms
2. Frame around a war damage on the north-east facade
100 - 150 mm cellulose (capillary insulation)
The ground floor is separated into two functions: a hotel function accessed via the main entrance and a museum accessed via the former office entrance coming of the new walkway. The hotel area offers a restaurant, bar and breakfast room with buffet to the guests. The guest rooms are located on the first floor. The former office rooms in the 1920’s extension are transformed into a museum which tells the story of the Reuversweerd estate. It also makes the historical centre of the estate - the main office and vault (centre of power - administration of the land) accessible to the public.
First Floor Rooms

The three rooms located on the west side of the main house as well as the room on south corner (former two rooms) will be the biggest and most luxurious hotel rooms on site. In order to maintain the existing internal elevations the bathroom boxes are located in the middle of the room.
The ground floor is divided into three areas: hotel apartments at the front and an office at the BoH. The middle part of the building - the former garage - is used as a bicycle rental and repair shop. Additional apartments are located on the first floor.
Farm House - Hotel, Office and Bike Shop

The ground floor is divided into three areas: hotel apartments at the front and an office at the BoH. The middle part of the building - the former garage - is used as a bicycle rental and repair shop. Additional apartments are located on the first floor.
The huge space of the former stable building is used to accommodate a market hall with food stands and a restaurant. Here visitors can buy and eat locally produced food sourced directly from the adjacent greenhouse or near by farms. The two stables at the back are transformed into a service area containing a storage space and a kitchen.
Cubicle Stable - Greenhouse and Shop:

The old (asbestos containing) roofing of the former cubicle stable is replaced with polycarbonate transforming it into a greenhouse. The new greenhouse is directly connected to the market/restaurant as well as the kitchen to keep distances short. The staff can enter the greenhouse directly from the kitchen and harvest vegetables and herbs. The visitors are also invited to walk along the new walkway through the greenhouse passing by the plants and the shop area.
The “Paardenschuur” is converted into an event space suitable for small conventions or artistic performances. It offers a main space with a stage and seating as well as a workshop area in the lower spaces at the south-east side. The second lower space of the building is separated from the event space through a glass facade. Between the new glass facade and the original facade runs the new walkway which offers visitors the possibility to experience this time layer without having to actually enter the building (event space).
The "Ankerschuur" is converted into an apartment hotel containing 10 apartments of 25 to 50 m². The existing structure is maintained and the apartment structure is aligned to the existing grid. Six apartments are located in the lower parts of the ground floor and 4 in the attic. The attic is accessed via two stairs located in atriums which provide the middle part of the ground floor with natural light. This middle part is used as circulation and communication space.
Ankerschuur - Apartment Hotel

The “Ankerschuur” is converted into an apartment hotel containing 10 apartments of 25 to 50 m². The existing structure is maintained and the apartment structure is aligned to the existing grid. Six apartments are located in the lower parts of the ground floor and 4 in the attic. The attic is accessed via two stairs located in atriums which provide the middle part of the ground floor with natural light. This middle part is used as circulation and communication space.
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