

# Research report and Reflection

MSc4 studio Heritage & Architecture  
Hembrug - Revitalising heritage

Chances to learn Heritage architecture during the postgraduate helps to gain more systematic and professional knowledge on the research and design methods in the practical project. The cultural value evaluation, building technology application and design strategies are all worthy to learn for China in the wave of urban renewal in recent years. A deeper understanding is that the value of heritage architecture is not to be a monument or symbol in the city, but to inherit the historic memory to the present life. The memories include historical events, social and technological background, which can be called as *genius loci*. People can read and feel the memory within the new use.

Besides learning design and construction, the master project asks more into the ability of research. There are many aspects to be researched for this design project. Social background, problems and needs are for the anthropology. New technology and clean energy consumptions are for the environment. Heritage architecture asks to look back and towards future, from design to construction and to climate as well. In this case, interdisciplinary research is required. Architect solves the urban problems by applying achievements from other disciplines, which dedicated to a better living. Besides, to a wider social framework, these applications also push the development on other disciplines.

This project looks into agriculture, sustainability, energy reuse techniques, well-certificate and recyclable materials. The book <Learning from heritage> and <Reduce, reuse, recycle> also give suggestions to the professional design. The literature research, observation and archival study helps to build a complete and landing project. These broad research makes the design more collaborate.

The graduation project is located in Hembrug which used to be the military complex for ammunition production. The redesign aims to give full play to the value of existing buildings and brings higher economic and social values in new use.

The P1 research was based on the archival study and observation. In the beginning, the results of observation and archival study are relatively conversed. Based on the archival study, “plots in

the wood” indicates a very practical attitude of the military. Functionality was always one of the key points on all scales and aspects. The organizations, construction and material selections all makes sure the productions are safe and efficient. However, functionality was not the impression when first visiting there. The photographs, sketches indicate a peaceful and romantic atmosphere (figure 1). In this case, combination of different research methods helps the research to be more convinced.

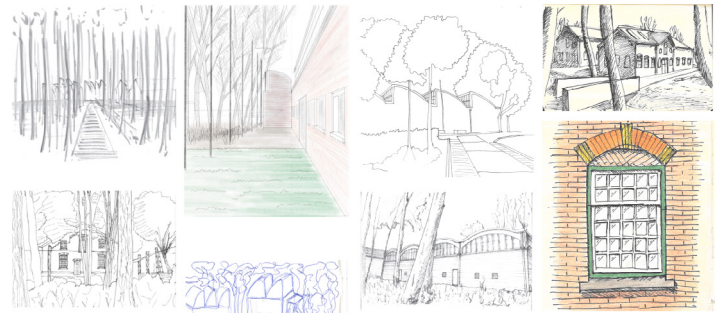


Figure 1. Sketches made by the group of the first impression. Mostly mentioned the small-scale buildings hidden in large amount of greenery.

Nevertheless, the impression after observation do gives inspiration for the programming. It is a manifestation of the status of nowadays and contains expectations for the future. Since aesthetic could be based on first-hand experience of the product in use (Petzet & Heilmeyer, 2012), “plots in the wood” could be a leisure place with a close relationship with nature (figure 2). Based on the urban research, future planning and social demands, the site is going to be an urban farm advocates for a well-being urban life under the circumstances of the urban sprawl. The conflict of preserving the old trace of labor and reversing to a leisure place increase diversity to the memory of the city here.

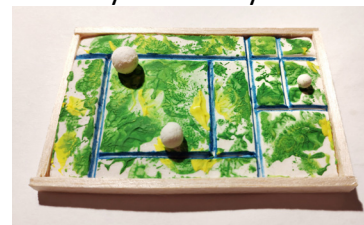


Figure 2  
Etude model in P1

During the design, the visit to the green house helps to know how it built, and the visit to the urban farm helps to realize how it runs, how it organized and how people likes to spend their times there. As a result, urban farm with activities that people can participate, for instance, eating and learning, are popular, which means that more and more people are looking

forward to a healthy lifestyle and want to make some effort to the environment issues. Eco-friendly lifestyle becomes a new fashion, which proves the project follows the social development and of commercial profit.

The value matrix (figure 3) made in P1 research concludes and evaluates the hierarchy after the complete culture value research on site and individual buildings. This matrix helps to make evident decision on remaining, reusing or removing.

Then, the redesign considering on three aspects:

- How people will use the space for new function?
- Which features are valuable in new use?
- What kind of spirit/genius loci can be inherited from past?

With these questions and the culture value research, the redesign keeps the existing structure largely intact, since they are strong enough for reuse. Facades have few interventions by only expand the openings, but still keep symmetrical and the impression of red bricks. These interventions try to follow the strategy of reduce and reuse, which avoid unnecessary changes by only updating the existing building to conform to technical and functional requirements, while leaving the appearance more or less unchanged (Petzet & Heilmeyer, 2012). The idea was from the book <Reduce, reuse, recycle>, which was recommended to read by tutor. The book helps to have a clearer understanding of redesign considering architectural, historical, functional, structural and social aspects. Besides, more accurate interpretation of different design strategies also helps with describing the project. These gains will accumulate for a better architect in the future.

In the mid to late stage, exact implementations need to be determined to make sure the design is applicable (figure 4). The whole research and design process shows that design, technology and cultural value are supporting each other for a good redesign.

(Figure 5)

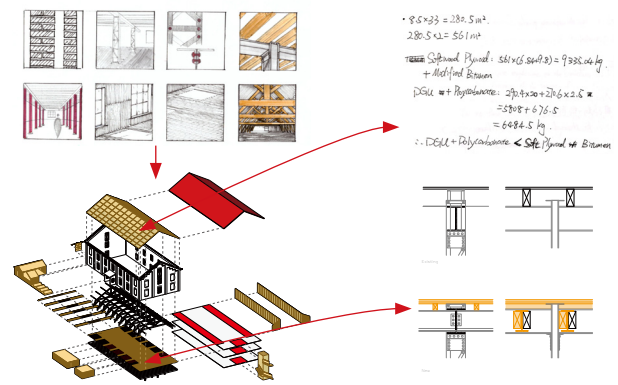


Figure 4. Research and design switches in the whole process. Value research give direction to the renovation. Renovation need further research to solve problems.

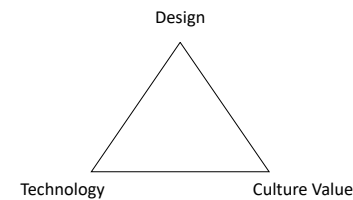


Figure 5

Furthermore, considering the sustainability on site, the project use a circular system in planting based on the principle of optimizing the use of all biomass. (figure 6) Many research on agriculture, energy recycle and operating modes were also been taken during design. However, still some ideas need more professional helps to make it realized, such as the biogas production field construction (figure 7). The project also has a vision of clean energy which transform this industrial area into an environmental friendly place in the future. This also need further support or progress of scientific framework.

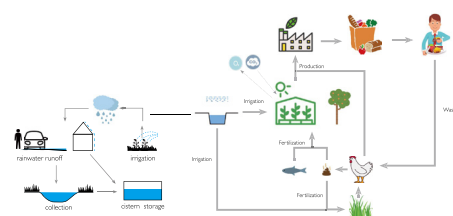


Figure 6

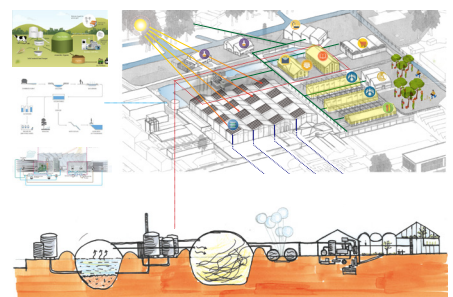


Figure 7

	ASIE VALUE	HISTORICAL VALUE	INTENTIONAL VALUE	NON INTENDED VALUE
FUNCTIONAL USE				
SITE				
SPIN				
STRUCTURE				
SPACE PLAN				
SURFACES				
SERVICES				
STAFF				
SPRIT				

Value matrix with significance. Images by everyone. Compiled by Valeria Auziz & Jan-Willem Spek. Significance mapping by Jan-Willem Spek.

Figure 3

When updating the building, much research on the building technologies are necessary to restyling the heritage architecture in contemporary fashion as well as the reinterpretation of historic archetype.