

THE CONTINUATION OF HISTORICAL VALUE IS ENDURING
Spirit of culture value is the regenerative power of heritage
architecture

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Thesis

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I INTRODUCTION

1.1 From research to design

Architecture, as a discipline, is never an unfounded design coming across in mind, but based on research in many fields. Architectural research provides the foundation to architecture design. It makes sure that the design process is logical and the design is reasonable, which provides the design with social and humanities values. In this case, architecture can be considered as an humanities discipline. However, it covers areas of study and architects should always think into different disciplines which can represent different professions and formalized viewpoints in different aspects (Lucas, 2016). During the design, it approaches to history, social and cultural background, and the theory of what it means to build and dwell (Lucas, 2016), these interdisciplinary researches might help to find better solutions or create better space for humanities. Architectural research always provides a solid foundation to design, while design practice based on the architectural research shows a contribution to the knowledge and makes the design convincing.

The research should be systematic. After setting up a research question that the continuation of historical value is enduring, a certain kind of method needs to be applied as a tool for the research. From the Lecture Series of the Research Methods, I have learnt many research methods. Some of them are quite abstract to me in the beginning. However, with the examples explained by the lecturers, they become clear to me about its process and meaning. What I felt impressed was that, every method talked in the lecture involved several disciplines, and the conclusions were always interrelated. Anthropology is always the most mentioned in the research methods lecture series. The reason is that anthropology considered so many aspects. Since we live in an artificial world, the built environments started from human intension. Anthropology can tell the reason of the existing and give guidance for future development. Architecture design should engage with the knowledge of the human, culture and society. It is the subject broken the boundary of the disciplines but also establish the relation between disciplines. Therefore, the lecture series inspired me with more comprehensive architectural research.

1.2 Value assessment in architecture research

	AGE VALUE	HISTORICAL VALUE	INTENTIONAL VALUE	NON INTENDED VALUE	USE VALUE	RARITY VALUE	OTHER VALUES
SURROUNDINGS		Important part of production process and history of Hemburg			Orientation towards forest creates unique use value of forest	Amount of green unique within Hemburg and surroundings	Soil borders of the ensemble (especially towards platform)
SITE	Earthen walls and some trees are original elements of first use of the area	Earthen walls and green essential part of the story of how the site was used		The of origin functional water ditches are now a memory of the history	Clarity of the paths due to clear sightlines	Low density of buildings (and small scale) and a lot of green space as a consequence	Relation between form and function Vertical textures of the forest as character
SKIN	Facade shows signs of its age, for example in cracks	Readability of the age of the building from the facade. Represents the style of that time	Butterfly ornamentation on the bridge. The name of the bridge refers to this ornamentation.				Unity in the use of brick as a material in the facades
STRUCTURE		Thin concrete shell is a technique of that time	Ships due to possible explosion explains story of the building		Structure allows for large spans to create an open floorplan	Thickness of the concrete roof is quite rare	Use of same modular structure in different configurations to create different buildings
SPACE PLAN					Indirect daylight Flexible floorplan		No front or back facade. Multi-directional Orientation towards the best building
SURFACES	Decay of surfaces show its age and give character	Color scheme within the buildings is original					Color schemes of the buildings capture both the 'warm' and the 'cold' aspects of the site
SERVICES		Pipelines and water reservoir are original and part of how the site functioned		The of origin functional pipelines are now a remembrance to the history of the site			
STUFF		Lightning rods are original and part of how the site functioned					
SPIRIT	Decay of surfaces show its age and this roughness gives the character to the site	The greenery that historically had a function now creates the atmosphere within the ensemble		Non-intentional growth of green gives current atmosphere of the ensemble			Contrast between inside and outside of buildings Natural light coming from above in interiors

FIG. 1 Value matrix with significance

THE CONTINUATION OF HISTORICAL VALUE IS ENDURING

In this thesis, it describes that spirit is the regenerative power in heritage design, and explained how it was inherited from past and still remain alive nowadays. A certain kind of method will be approached to help with the research on this topic. Since heritage design is the re-design based on the existing building, historical research places an important role during the architectural research. It shows the memory of the site. However, besides historical value and age value, other values such as use value, newness value and rarity value should also be considered in the value assessment, which makes decisions between demolishing, reserving or redesigning more convincing. Furthermore, the value assessment encourages architects reflect on history and find strategies for new design fit for the nowadays and look to the future. The value assessment can help find out the spirit of the heritage and the spirits of the can help to bring building into new life.

II RESEARCH-METHODOLOGICAL DISCUSSION

2.1 Selecting the research methods

The research should firstly base on an understanding of the history of the Hembrug terrain which is our site, located in Zaandam. In order to know the development of the terrain, many literature should be read in the first stage. During this process, site visit is important for understanding the terrain. A lot of photographs, videos, sketches and mapping has been done during the observation and documentation. These heuristic techniques help to understand the site and also raise research questions. Since the spirit of the building is important for the conservation, seeing provides more intuitive understanding of the past. The atmosphere nowadays can also help with the reading the site. However, what generate the feeling of the invisible spirit when walking on site? The words from Jacques Herzog (2005) might give an answer to the question, "the reality of architecture does not simply coincide with what is built, rather finds its manifestation in its materials." Materials expose their reality to our experience of architectural idea (Herzog and de Meuron, 2005) because of their certain properties and utilities. I chose to use the method of material culture to investigate and evaluate the values of the Hembrug terrain. This is a context-led research. It starts from the uniqueness I found in the plots of wood which is our site. And then seeking into understanding why it is specific considering to the history of Hembrug.

2.2 Epistemic frameworks and the challenge

Materials can be broadly defined into landscapes and artifacts (Ingold, 2007). Material is different from the materiality. It can be linked to anthropology, sociology, archeology and art history. Material has the quality to indicate a culture of making. With my observation on site, two characteristics impressed me the most. One is the unique landscape and the other is the shell roof. Different from other parts in Hembrug, on my site, the plots in the wood, land has been split into pieces by ditches and a few earthen walls standing upon the flat ground with a large amount of greenery covered. Buildings, made by bricks, are in small scales, mostly in single layer with shell roofs. Heuristically from British professor of social anthropology Tim Ingold's words, "An artefact is a materialization of a thought" (Schreurs, 2019), I think there must be some reasons led to the forms like these. Hembrug used to be Artillery Establishments, the military architects designed the buildings reflecting the practical use in production. For the landscape, earthen walls and ditches were used to avoid the fire spreading to other buildings once there was an explosion. Trees used to provide shading to the warehouses storing explosives, since technology is not that developed in that age. The greenery act as camouflage during war time. The very thin concrete shell roof is to reduce the damage to the building when there is an explosion. The properties of the context and the buildings shows an industrial age. Functionality is the most important thing to be considering in the built environment. The forms and materials should be practical and economical, manifest the need of the military. Heritage buildings represent the societal developments and everyday life of the past (Kuipers and de Jonge, 2017). Thus the artefact is formed through the imposition of mental realities upon material ones (Ingold, 2007). Those heritage values can be interpreted to present perceptions considering the contemporary society with political, economical background and also reveals the present value. For built heritage, all kinds of physical structures inherited from the past are publicly recognized as irreplaceable socio-cultural resources in

THE CONTINUATION OF HISTORICAL VALUE IS ENDURING

the present (Kuipers and de Jonge, 2017). With the help of new material and construction method, heritage architecture find opportunity to be preserved and find new life. However, the heritage architecture should always be a modest civic building represent social development instead of a monument, or it will lose its human relation and eventually be forgotten and abandoned.

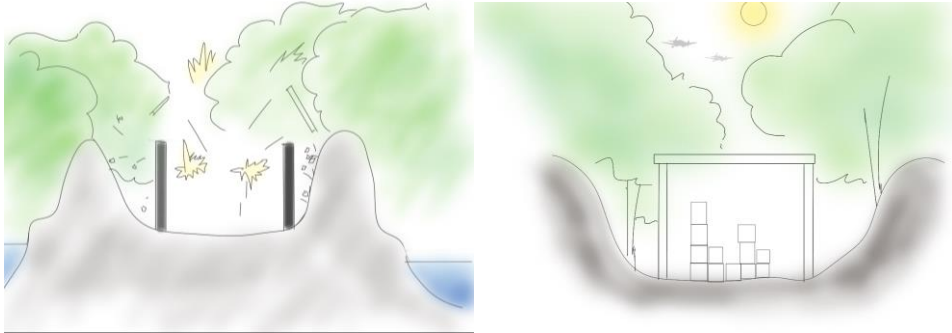


FIG. 2 Sketches to explain how the landscape worked in the past

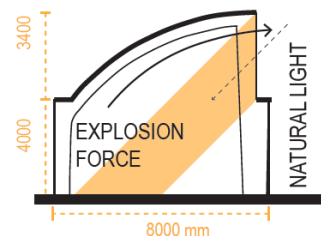


FIG. 3 Diagram to explain the practical use of shell roof

III RESEARCH-METHODOLOGICAL REFLECTION

3.1 Looking for the balanced contrast between old and new

There are two conflicting approaches to the re-use of architecture, one is conservation and the other is restoration. Conservation is to sustain the historic fabric as much as possible, while restoration is to reinstate the historic image of a stylistically coherent unity (Kuipers and de Jonge, 2017). The two approach show different attitude to the re-use of the building, which also lead to different manners towards the material culture. In the graduation project, we use the approach of restoration, which supposed to provide more open attitude to the selection of the material. However, this also asked for more convinced reasons. The property of the existing material, the structure durability, the historical value and also the economic issues should be taken into consideration when choosing a suitable material that working with the existing material. The new material might meet with the current aesthetic, while it should also meet the present ethics. For instance, in nowadays perception, the material should be sustainable and with low cost of environment. In the book *Designing from Heritage*, it illustrates that modern heritage should has minimum use of material and have optimal construction (Kuipers and de Jonge, 2017). In the case study, the re-design of Van Nelle Factory abide by the principle of utmost functionality. It followed out between load bearing structure and infill to allow for maximum functional flexibility over time (Kuipers and de Jonge, 2017). The new glass curtain wall enables enough natural light and good ventilation to the building. It not only manifest the current social value of sustainability but also response to the 20th century industrial building with its flexible use of open plan and the functional quality. New material works well with the existing ones.

In my graduation project, those industrial buildings are also very functional. Buildings are built by reinforced concrete frame with brick infills. Roofs were built light-weighted. Some use the cable structure with timber deck, while others use the 8cm reinforced concrete. The construction would not cost much if the building damaged from the explosion during the days they producing grenades. The

THE CONTINUATION OF HISTORICAL VALUE IS ENDURING

structures are still efficient which provide use value for the restoration. The decay on the surface also shows the age and the pass of time. Besides the historical value, the economic value also need to be considered. Not only meets the nowadays requirement of sustainability, but also responses to the old construction method to be efficient, practical, and low cost.

In nowadays re-design project, architects prefer to show the distinction between new and old. For instance, the SESC Pompeia by Lina bo Bardi, was painted red to the new connections on the existing steel trusses and the Caixa Forum by Herzog & de Meuron in Madrid used completely different modern material built on top. The intension to show the contrast between new material with the old is to reveal different time layer to the building. People notice the contrast and realize the building has been renovated and get to know the history of the building. The heritage building is never fixed to its original material. The application of the material considers on function, sustainability, technology, and broad social engagement such as aesthetics, economy and praxeology. There should be a balanced contrast between old and new.



FIG. 4 The SESC Pompeia Factory



FIG. 5 The Caixa Forum

3.2 Reflecting the cultural value in present day perception

Besides the tangible values, architects should also take care of the intangible values. The intangible value can be interpreted as the spirit of the heritage architecture. It shows the time background socially or individually, or living and working conditions in the past old days. It considers more on the cultural value of the heritage. In comparison, the intangible values have more difficulties to inherit and express in the restoration. In the book *Designing from Heritage* (Kuipers and de Jonge, 2017) it writes: "A clear visible age in ancient buildings with a general psychological human need to be in direct contact with the past in an attempt to situate oneself in time and place amid an ever-changing environment."

The spirit keeps the heritage building alive. The culture continues, mixes and mutates. Bring the heritage buildings into life means to restore them to the generative fluxes of the world of materials in which they came into being and continue to subsist (Ingold, 2007).

The idea applies in the re-use of the Hembrug terrain. In the research, besides the history context, we analyzed the present context of Hembrug and Zaandam, including the functions, demographics, biodiversity and future planning. This is to have a good understanding of the present social needs, which make sure the re-design has the significance of time. It can add another time layer into the culture value for the 21st century. On my site, buildings can be recognized into four typologies which are gable roof, shell roof, circular roof and low-slop roof. Different roof styles relate with their built time. The low-slope building is quite larger than the others. It reveals the technology in the 20th century developed which enables the use of long-span steel structure. Besides, also shows the more

THE CONTINUATION OF HISTORICAL VALUE IS ENDURING

economical need for the production which is the turning point from military use to civic use. Now, Hembrug is under a trend of deindustrialization. In the future, lands are planned for living, working and recreation. At the same time as adding new functions, how to reserve the socio-cultural of industry is a crucial question.

IV POSITIONING

4.1 Critical thinking toward the material culture

Different from other studios, heritage studio works on the existing buildings. It is a research-based design. Without the historical research, we cannot evaluate the values of heritage and take good conservation. Without the context research, we cannot ensure a good new use. Culture value is in the leading role in both the research and design. Material culture method starts the research from the properties of material and then goes into its social background.

However, a lot of essay talking about the material culture in architecture focus on the building material and the tectonic. In my opinion, the definition of material should be generalized. The definition 'landscape and artifacts' by Tim Ingold (2007) will be more comprehensive for heritage design research. For instance, the characteristic of the landscape is the material memory of the old day production. It reflects the human intelligence of using nature in the year lack of technology, which brings us inspiration of energy saving and the concern for nature. The coherent analysis links the past to present, and values the old use to new inspiration.

During the research, I consulted Charlotte van Emstede who is the cultural value tutor of our studio with her understanding of material culture. In her opinion, natural and cultural heritage in all forms of movable or immovable artifacts can be included in material culture. Besides, sensory qualities of these places and objects are also part of their material culture, such as sight, sound, taste, smell, and feel. I agree with her opinion. Material is the medium conducting human consciousness. The behavior and consciousness were inherited and then form the material culture. Therefore, the artifacts and landscape can all be seen as research objects in value assessment.

4.2 Material culture and culture value

The value assessment is quite important in the heritage design research. The application of material culture help to look in depth into the essential qualities in the past and present.

A question in the book *Designing from Heritage* caused my thinking of the significance of the cultural value, which is "What is its cultural carrying capacity for the future?". In the method of material culture, we find the relationship between the cultural background with praxeology. Therefore, the cultural carrying capacity not only recovers the memory, but also let us review and reflect on history and make progress for the future development. It is heuristic. Reflecting whether something can be improved or regretful to be abandoned.

Building technology research makes sure the building can be safely in use, while cultural value research makes sure the heritage building is still alive and active. The essential qualities comprise continue. They exist in material forms such as fabric, forms, finishing, facilities, furniture, and even the volumes, voids and views in the surrounding media, dissolving, animating and regenerating (Ingold, 2007). Spirit is the regenerative power for circulatory flows. In Hembrug, it used to be a closed and mysterious place, busy with production. While now, it opens to the public and the landscape on site provides peaceful and relaxing atmosphere. The time has given different interpretation to the built environment. Different spatial qualities point out the changing value of humanity and society which provide clues for the new design. It could be a more recreational place sharing by public.

THE CONTINUATION OF HISTORICAL VALUE IS ENDURING

CONCLUSION

In summary, the continuation of historical value of heritage architecture is enduring. In the observation and documentation, I focus on the form, fabric, colours and volumes. The historical research recovers the memory of the artifacts. Then, the information is interpreted relate on the social background. In the end, evaluations made the decision of removation to keep it functioning in an ever-changing environment. From the properties of the material to its social and cultural background, the value assessment provide better understanding of the existing building and give direction to the new design. Material culture links the past, present and future and provide better inherit to the heritage. The spirit refined from the cultural values regenerate the new life for heritage architecture.

THE CONTINUATION OF HISTORICAL VALUE IS ENDURING

LIST OF ILLUSTRATIONS

1. Image created by the author and Pol. L etc. 2019, Value matrix with significance in the plots in the wood group booklet of heritage studio
2. Image created by the author 2019, Sketches to explain how the landscape worked in the past in the plots in the wood group booklet of heritage studio, pp.26
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