

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information	
Name	Henrieke Joanne (Anne) Kikkert
Student number	4818288

Studio		
Name / Theme	AR3AH155	
Main mentor	Lidy Meijers	Architecture mentor
Second mentor	Koen Mulder	Building Technology mentor
Third mentor	Wido Quist	Research mentor
Argumentation of choice of the studio	Instead of focusing on the newly built, my interest existing built environment, the stories and craftsmanship through the ages. Rather than simply building new concrete structures, I would like contributing to the built environment by embracing what already exists and integrating new architecture into the existing. The fact that the studio maritime heritage often focuses on structures that have lost their function and are in need for a new purpose got to me. In this graduation project I want to show how 'old', 'vacant' and 'functional' structures can be an addition to the building stock.	

Graduation project	
Title of the graduation project	Beyond Buildings The future of maritime leftovers
Goal	
Location:	Dordrecht, Stadswerven
The posed problem	Literature gap about adapting non-building structures
research questions and	How can non-building structures that have lost their original function be valued, investigated and transformed for contemporary use?
design assignment in which these result.	Adapting the Kraanbaan in Dordrecht
Literature gab First of all I would like to introduce some terms I used to define my research. <ul style="list-style-type: none">- Building: a structure with walls and a roof, such as a house or a factory, to give protection to people, animals or things (<i>Cambridge Free English Dictionary And Thesaurus</i>, 2024)- Structure: something built, such as a building or a bridge (<i>Cambridge Free English Dictionary And Thesaurus</i>, 2024)- Non-building (structure): a structure that does not seem building like; no walls, no roof, not built to protect. (Own definition)	

Traditionally, adaptive reuse has focused on buildings. An often-overlooked aspect of industrial heritage are other structures, like cranes, bridges, and tracks that have defined maritime landscapes. These elements are integral to the maritime landscape and possess significant historical, cultural, and sometimes even technological value.

These non-building structures face numerous challenges once their original functions become obsolete. The loss of their utility can result in neglect or demolition, even though their presence provides an understanding of past industrial and/or maritime practices and how they shaped the urban landscape.

However I believe that when these structures are recontextualized within a modern framework, they not only preserve historical narratives but also contribute to the cultural identity and memory of a place and can be used as a base for architectural intervention.

Their preservation requires an approach that goes beyond standard building conservation, as they often lack interiors and traditional architectural features. This makes their adaptive reuse particularly complex, but also full of potential for innovative design and urban integration. At this point there is no literature written about how to adapt these non-building structures.

Research

The focus of this research plan and future research paper is about how maritime leftovers can be used as a base for design. In many port cities around the world, industrial constructions such as docks, cranes and quays have been abandoned or become obsolete due to technological advancements and the shift of the maritime industry. However the structures remain reminders of the past of the area and often hold significant historical or even cultural value.

Main question

How can non-building structures that have lost their original functions be valued, investigated and transformed for contemporary use?

Sub questions

- *What type of (industrial/maritime) non-building structure is valued and therefor suitable for transformation for contemporary use?*
- *What are the key values (historical, aesthetic, functional, technical) associated with maritime non-building structures that extend beyond their functional use and how can they be investigated considering historical preservation and modern needs?*
- *What are examples of transformation projects of industrial and maritime non-building structures, and what strategies have been employed in these cases?*

Design assignment

The province of South Holland has adopted the Cultural Heritage Policy Vision 2017-2020 (*Beleidsvisie Cultureel Erfgoed 2017-2020*). With as main focus to tell the broader story of South Holland history and make it more tangible. The so-called heritage lines are an important means of making the heritage tangible. Where in the previous policy vision 2013-2016 the tasks of protecting, making and using the heritage were the motto, the focus will now be on the further development of the heritage (Archadis, 2019).

The province has asked the Heritage and Architecture department of the Technical University of Delft to value the maritime collection and its potential for development in the region the 'Waterdriehoek'

for this graduation studio with focus on Kinderijk until Gorinchem (rivers De Noord and Beneden Merwede).

“Verkenning erfgoedlijn ijzeren eeuw” from Archadis (2019) shows the recognition in the Waterdriehoek. Were they list objects important for the maritime heritage site. Here you see 27 of the 173 listed objects are non-building like structures such as crane tracks, cranes and bridges, which is almost 16% of this list. Often they are used as a symbolic reference, nothing more.

One of these structures is the Kraanbaan in Dordrecht (see image below)

In the end the research I will do on this topic has to help me answer the question
How can non-building structures in the Waterdriehoek, in specific the Kraanbaan in Dordrecht, be used in a design?

This Kraanbaan is part of an plan for a transformation of an area close to the city center of Dordrecht; Stadswerven. This structure used to be an structure where cargo could be shifted from land to water and the other way around. The crane that once stood on top is removed in 1992 but the structure was kept. It is one of the only objects left on a former maritime landscape. This shows the significant value of this structure and its relation to the past. It has been declared a monument in 2015 and now is part of the plan for transformation.

In this plan they write they want to do something with the track. A viewpoint on top, a function or possibly something else. While the rest of the area is worked out completely this structure does not have a clear purpose yet.

Using the research as a base I am investigating the opportunities for this non-building structure.



Process

Method description

The methods used for this research on the transformation of maritime non-building structures will be literature review, document analysis and case study analysis.

Literature review

This review will provide essential context, placing the study within the broader academic conversation. It helps filling the gaps in existing knowledge, justify the need for the research and avoids duplicating work and therefore establishes a strong foundation. Additionally it enhances the credibility of the study and helps refine the research questions.

This literature review will be used to collect information on methods used in adapting maritime heritage for contemporary purposes by reading mainly secondary literature. As a base the books *Designing from Heritage* and *Heritage Based design* and different charters on how to deal with built hertiage will be used. This will be complemented by other literature, for example other charters, memorandums conventions and recommendations that have been drawn up.

Case study analysis

The case study analysis will deepen the understanding, providing insights and open up new directions for both theoretical and practical use. The case studies will examine projects that have repurposed maritime leftovers by looking at what design decisions have been made based on the values, such as historic value, structural integrity, aesthetic contribution and adaptability using different approaches. The method can be used to answer the questions 'why?', 'what?' and 'how?'.

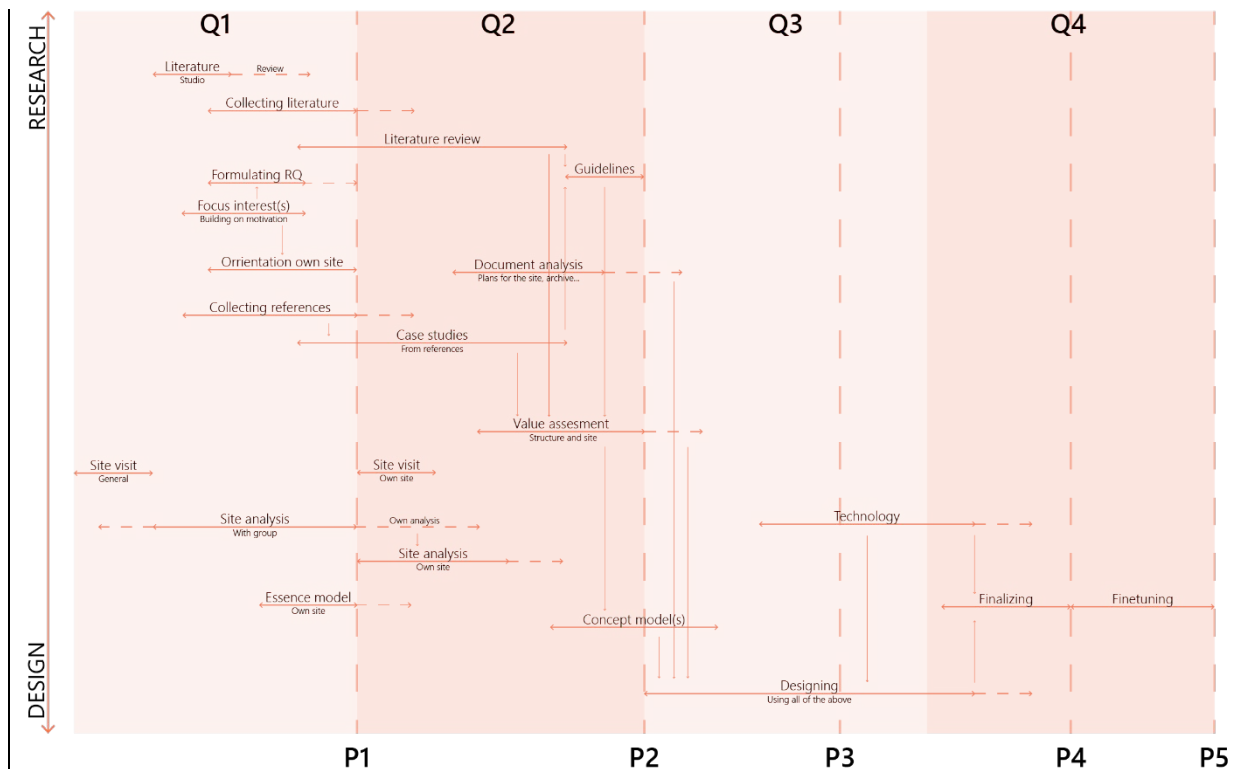
Some examples for the case studies are the Kraanspoor in Amsterdam, the Faralda Crane Hotel in Amsterdam, and the Long Museum West Bund in Shanghai. All maritime leftovers that have been repurposed in different ways.

The different approaches uses will be evaluated, identifying common and unique strategies.

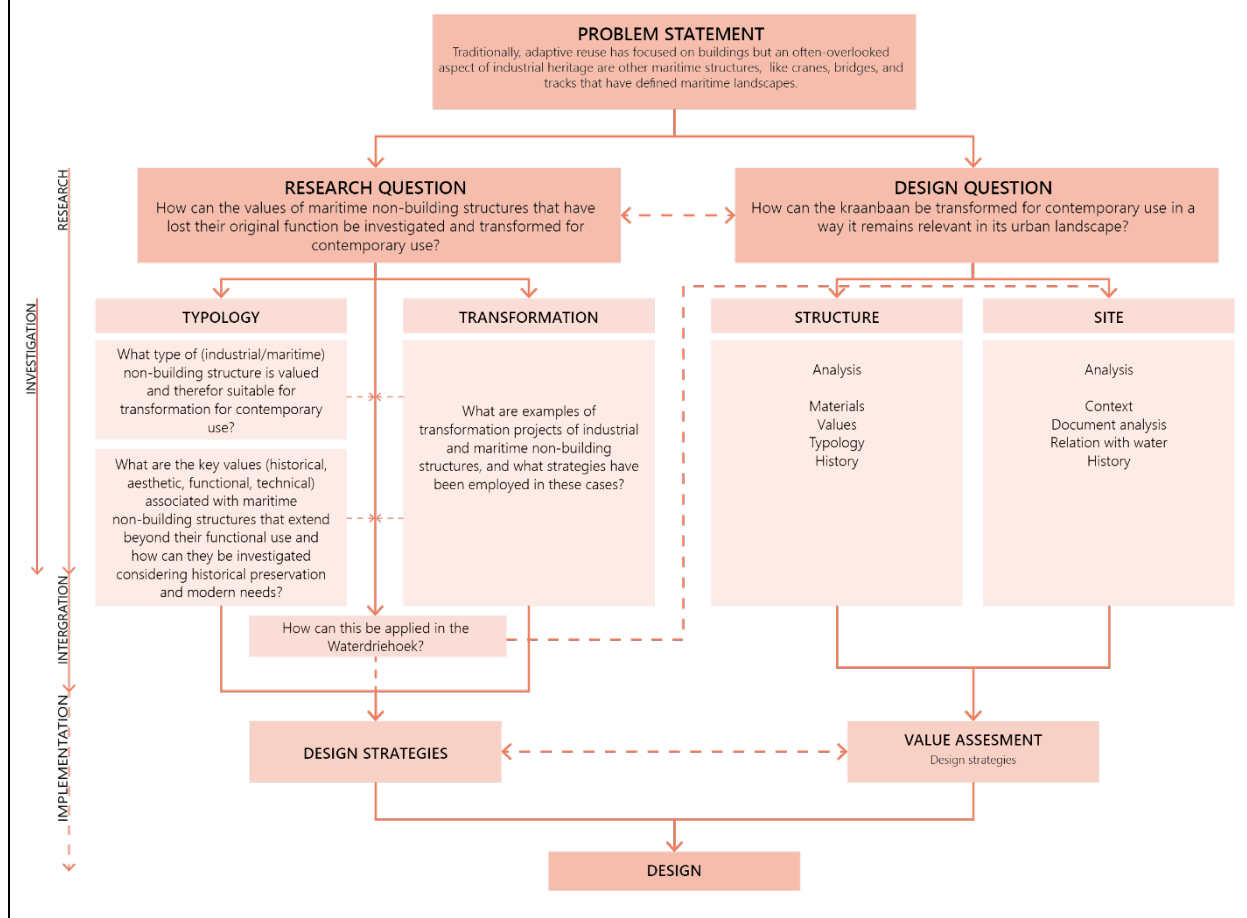
Document analysis

This review will mainly focus on administrative data and documents, mainly primary literature, as source. Often previous research from others is used. Analysing historical records, photographs, and planning documents related to the structures in the Waterdriehoek on the site will provide background on their original use and significance.

The province of South Holland has mentioned the importance of these kind of structures in for example the *Beleidsvisie Cultureel Erfgoed 2017-2020*. They also set up reports about the valuation of these structures. Such documents will provide a base to answer the last research question about how to adapt structures in the Waterdriehoek, in specific the Kraanbaan in Dordrecht.



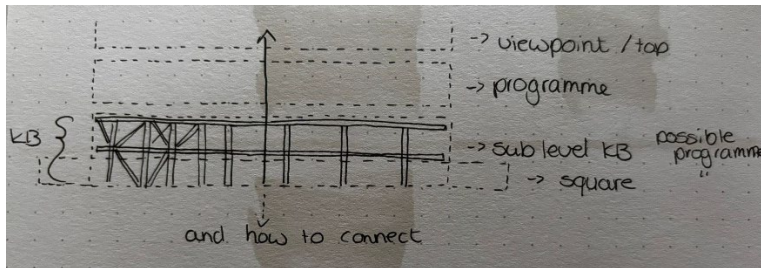
Design description



The values from the kraanbaan have been distracted from both the structure and site analysis.

Combining this with my research I started to create starting points for my design.

Based on these findings and the view of the Stadswerven I started to try different options.



Most important is that the design has three levels:

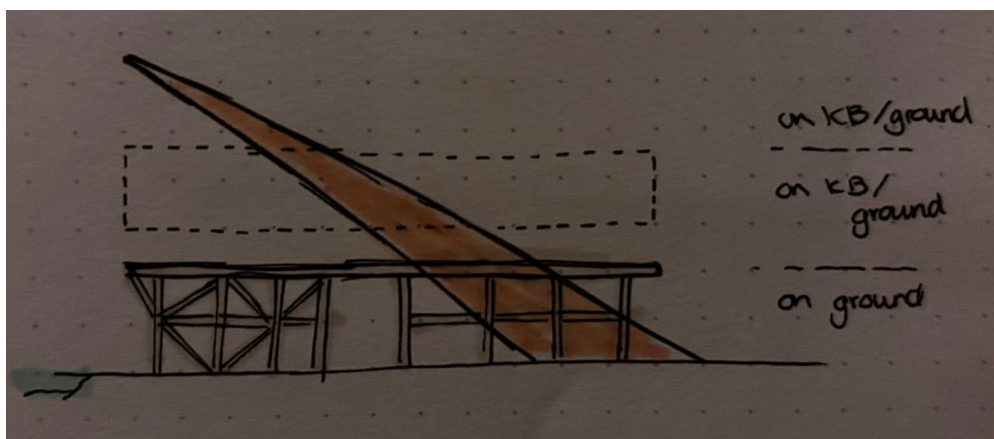
- The viewpoint on top
- The program on top of the kraanbaan
- The kraanbaan itself (and the site)

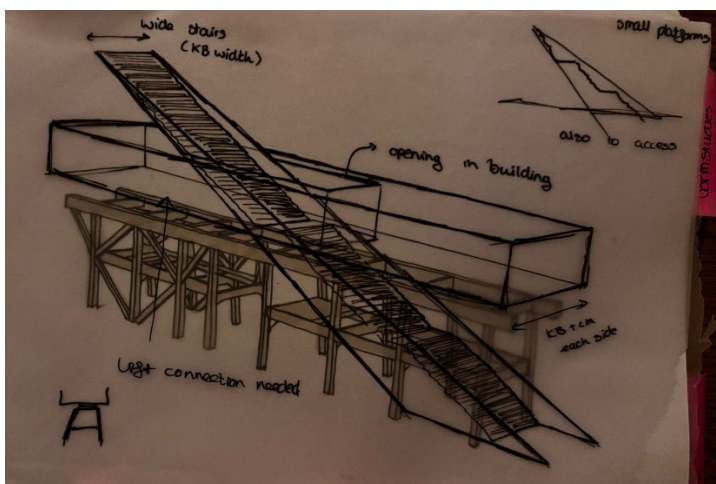
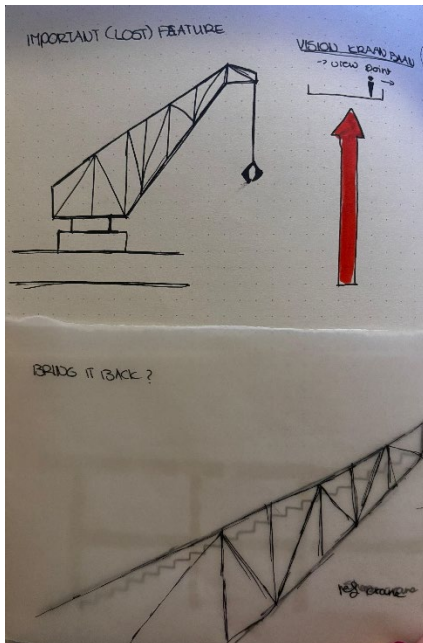
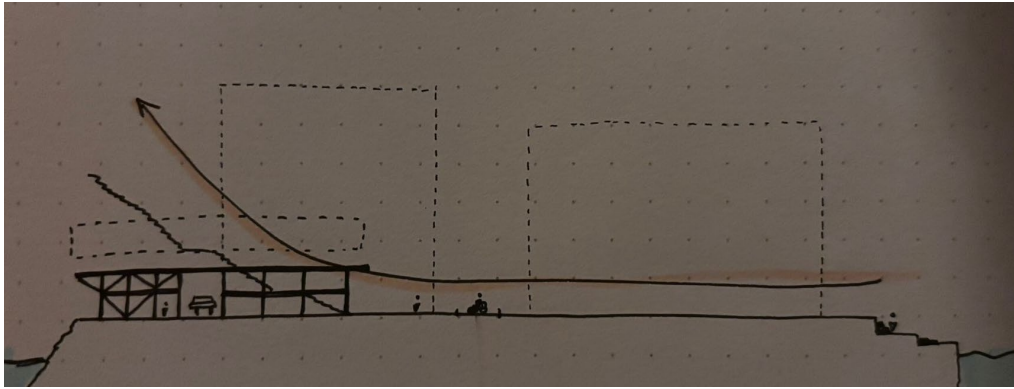
What is also really important is that both the program (restaurant/bar) and the viewpoint are connected to the ground.

The connection will be the most important part of the design. It will connect the surroundings with the structure, will be an extension of the square and will connect the addition and the Kraanbaan.

A grandstand stairs, a place to meet people or relax. Go to the top to look over the river or stay close by the ground to see what happens on the ground.

The looks of the stairs will be based on the former crane that used to be on top 'Kraan van Piet' (Piets crane).





Literature and general practical references

List of the most important literature for my research :

Archadis. (2019). Verkenning Erfgoedlijn IJzeren Eeuw: Maritime industrie van Hoek van Holland tot en met Gorinchem. In *Provincie Zuid-Holland* (083814320 E). https://www.zuid-holland.nl/publish/pages/24906/a1_bijlage_3_verkenning_erfgoedlijn_maritieme_industrie_incl_bijlagen.pdf

Brand, S. (1997). *How buildings Learn: What happens after they're built*.
<http://ci.nii.ac.jp/ncid/BA23638003>

First International Congress of Architects and Technicians of Historic Monuments. (1931). *The Athens Charter for the Restoration of Historic Monuments*. https://civvi.hicomos.org/wp-content/uploads/2022/03/The-Athens-Charter_1931.pdf

ICOMOS. (1964). The context of the Venice Charter (1964). *Conservation And Management Of Archaeological Sites*, 2(4), 229–233. <https://doi.org/10.1179/135050398793138762>

ICOMOS - TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes. In *ICOMOS*. ICOMOS XCII assemblée générale Paris 2011.

Kuipers, M., & De Jonge, W. (2017). *Designing from Heritage: Strategies for Conservation and Conversion*.

Meurs, P. (2016). *Heritage-based design*.
<https://books.bk.tudelft.nl/index.php/press/catalog/view/484/493/107-1>

Riegl, A. (1996). The modern cult of monuments: Its essence and its development (K. W. Forster & D. Ghirardo, Trans.). In N. S. Price, M. K. Talley Jr., & A. M. Vaccaro (Eds.), *Historical and philosophical issues in the conservation of cultural heritage* (pp. 69–83). Getty Conservation Institute.

Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?
2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

Reusing existing structures is more and more common current days. Not only architects but other people as well see the importance of using the current building stock.

When trying to find literature about how to adapt the maritime structure the Kraanbaan in Dordrecht I found it hard to find suiting information. There is a lot of research done about how to adapt buildings but how to adapt non-building structures is harder.

Those non-building structures are appreciated more because of their tangible and intangible heritage. Especially in industrial and maritime heritage. At this point projects like this have been done, but no guidelines of research are available yet. With my research I try to find methods that can be adapted on non-building like structures and create a base/starting point for people who want to work with such structures in (maritime and industrial) heritage.