

Reflection

In my graduation project, I explored how to expand the river in Zwijndrecht while preserving its industrial heritage to reduce flood risk.

The graduation studio started with a group typology research, in which we explored the industrial heritage of the Waterdriehoek and its connection with the river. During this period, I became aware of the water-related challenges faced by cities like Dordrecht, while noticing that industrial heritage sites located on outer dikes, often at higher elevations, did not encounter similar issues. Resulting in the following research question; How can the Oude Maes River in Zwijndrecht be expanded while preserving the region's industrial heritage sites?

My research began with analyzing the historical landscape and industrial heritage of the area. By studying previous "Room for the River" projects, which involved lowering outer dike areas and creating recreational water spaces, I developed a new urban strategy. I then applied this strategy to the N.V. Schokbeton site on Lindtsedijk 14, assessing three possible interventions to preserve its industrial heritage and evaluating their effectiveness.

The design phase also focused on the Schokbeton factory, where I implemented the urban strategy and integrated research findings into the architectural design through a "design by research" approach. Simultaneously, I tested the research framework within the design itself, using a "research by design" methodology. The final page illustrates my research plan.

Additionally, I examined the function of an urban farm inside the Schokbeton factory, which serves not only as a site for food production but also as an educational hub that teaches residents about food production processes and includes a lab focused on exploring future food production solutions.

While both the research and design assignments shared the same focus, the research-by-design process could have been executed more efficiently and incorporated further into my final paper, a missed opportunity. The project's broad scope meant that, although the studies provided valuable insights, they remained somewhat generic, and further research is needed for more specific applications. My final paper, although limited in academic theory, serves as a condition assessment and site analysis, which I believe is equally valuable.

What is the relation between your graduation project topic, your master track, and your master programme (MSc AUBS)?

My graduation project centers on repurposing the vacant N.V. Schokbeton factory through an urban strategy designed to mitigate flood risk. While developing this strategy aligns closely with studies in the Landscape or Urban master tracks, I focused on the architectural impacts on the Schokbeton site, tying it directly to my master in Architecture.

How did your research influence your design/recommendations and how did the design/recommendations influence your research?

My research and design were deeply intertwined, continuously influencing each other. Research insights directly shaped key design decisions, such as the innovative approach of constructing a new foundation beneath the Schokbeton factory to enable undisturbed river flow. This intervention not only introduced a unique spatial experience beneath the existing structure but also necessitated that the new foundation preserve and protect the industrial heritage, ensuring its

longevity. This requirement significantly influenced the choice of materials and the structural form.

The foundation was designed with a brutalist aesthetic, reflecting strength and permanence through its solid concrete appearance, symbolizing a robust base for the Schokbeton heritage. In contrast, the additional structures supporting the innovative farming function were designed to be lightweight, adaptable, and future-proof. This structural contrast enhances the visibility of the original Schokbeton site while introducing modern functionality, creating new opportunities for use without compromising the site's historical integrity.

Conversely, the design process played a crucial role in testing and refining the practical application of the research findings. Through iterative exploration, the design validated the feasibility of proposed interventions, ensuring that theoretical concepts translated effectively into tangible, impactful solutions.

How do you assess the value of your way of working (your approach, methods, and methodology)?

Practically, my process could be improved, as I sometimes struggle to finalize solid deliverables without strict deadlines. However, my conceptual approach provided a clear vision and strong argument for the necessity and feasibility of this intervention in the area. While technical aspects need further exploration, the research lays a solid foundation for future projects that address similar urban and environmental challenges.

The combination between the research and the design created a methodology in which I was able to study the area on multiple scales. The research question in general focuses on the whole area and creates a general understanding what will happen on a bigger scale, for example by the creation of multiple maps of the landscape and the built heritage of the whole site. On the other hand the design focus on the building level, and illustrates a clear example of how the connection with the water will change.

How do you assess the academic and societal value, scope, and implications of your graduation project, including ethical aspects?

My graduation project demonstrates significant societal value by presenting an innovative strategy that addresses flood risk mitigation while preserving industrial heritage. Although the proposed approach, lowering ground levels in a historically significant area might initially raise ethical concerns, careful research ensures that heritage preservation remains a priority, respecting the cultural significance of the site.

The accompanying research paper highlights the potential of the outer dike area in Zwijndrecht to accommodate up to 2.11 km² of river water. While this is only a small part of the broader solution needed to protect low-lying cities like Dordrecht, the research offers a viable model for similar interventions in other regions.

The design component of the project serves a dual purpose. First, it demonstrates the physical and architectural implications of ground-level reduction and controlled water ingress on the existing structures. Second, it explores the potential of innovative agricultural functions. By integrating advanced farming techniques, the site could transition from traditional farmland capable of sustaining seven people to a vertical farming system capable of producing 50 to 100 times more fruits or vegetables per square meter.

This dual focus mitigating flood risks and advancing sustainable agriculture offers a scalable model for addressing both environmental and societal challenges while fostering innovation and respecting heritage.

How do you assess the value of the transferability of your project results?

The research paper provides a transferable framework and vision for future development in similar contexts. While the specific design may not directly impact ongoing redevelopment at this site, since it is being led by a developer with an established vision, the design serves as a valuable conceptual example for future projects. However, this raises concerns that the proposed innovative farm hub might not be realized in future developments.

What are your thoughts on the long-term sustainability of the proposed design, and how do you believe it will impact the local community?

The urban strategy has been developed with the goal of creating a vibrant meeting space. At its core is a new recreational green park that allows river water to flow in, enhancing the natural environment. Central to this area is an innovative farm hub that doubles as an educational facility, where the local community can learn about food production. This initiative aims to integrate the previously isolated industrial area along the outer dike into the town of Zwijndrecht. Not only will this space serve as a park, but it will also include amenities that attract visitors over the long term.

While the farm hub's innovative practices may not remain cutting-edge indefinitely, the design anticipates this evolution. The components tailored for the hub are made to be detachable, ensuring that in 50 years, if new functions are needed, the industrial heritage can be preserved and adapted for future use.

What would be the next steps for executing the project?

While it may be unlikely that this project will proceed in the current area due to ongoing future developments, the next step after further refining the research would be to engage with stakeholders, particularly local authorities, community members, and potential investors. Gathering their input will be essential for building support and refining project objectives. However, it is crucial first primarily involve government and municipal officials, as the project would necessitate significant changes in policies and approaches. The impact of expanding the river would be minimal if limited to the studied area in Zwijndrecht; thus, a national strategy is required to modify the landscape across multiple regions in the Netherlands.

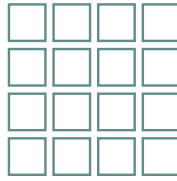
How can the Oude Maes River in Zwijndrecht be expanded while preserving the region's industrial heritage sites?

Mapping of historic landscape



Analyses by mapping of the landscape in 1850, 1900, 1950 and 2000

Catalogue of industrial heritage



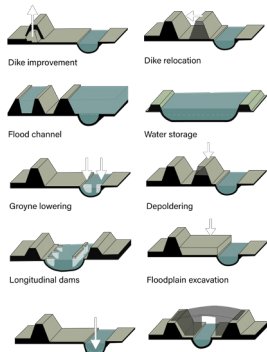
Creating a catalogue of all the existing industrial buildings

Mapping of industrial heritage



With help of the catalogue mapping all the industrial buildings constructed before, 1850, 1900, 1950, 2000 and 2024

P1 Studying previous landscape interventions



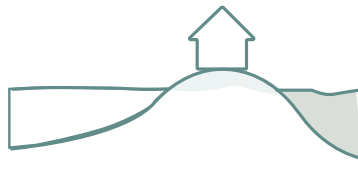
Studying literature about previous landscape interventions to come up with solutions for the outer dike area of Zwijndrecht

Proposing a new urban strategy

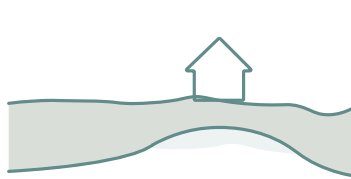


The historic landscape and industrial heritage analyses together with the literature of the previous landscape analyses will be the inspiration for a new urban strategy which will be implemented as a case study in the outer dike area of Zwijndrecht

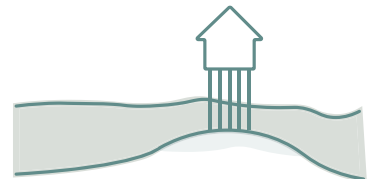
P2 Excavating around heritage



Floating heritage



New foundation below heritage



Three different design solutions that enable the preservation of industrial heritage within the new urban strategy proposal will be analysed.

Evaluation

Water level			
Accessibility			
Functionality			
Risk			
Cost			
Sustainability			

Finally, the three design solutions will be evaluated and compared to determine which option is most suitable for the Schokbeton site.

P3 Design

P4/P5