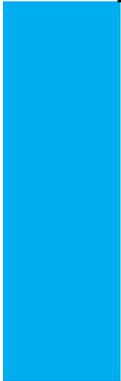


Graduation Plan

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	Valerie Heesakkers
Student number	4586395

Studio		
Name / Theme	Explore Lab	
Main mentor	Geert Coumans	Architecture (Form Studies)
Second mentor	Jan van de Voort	Building Technology
Argumentation of choice of the studio	This project deals with the floods in Limburg of July 2021, and the question of how safe residents feel in this (Dutch) river landscape. Explore Lab offers the opportunity to address a topic like this with a research mentor from other tracks than Architecture, in this case Saskia de Wit (Landscape Architecture). The reason I chose this topic is the recent flood events that are still fresh in memory, and my personal fascination for water systems as landscape/architectural elements.	

Graduation project	
Title of the graduation project	A sense of safety in Dutch river landscapes
Goal	
Location:	Zuid Limburg, Valkenburg
The posed problem,	After days of extreme precipitation in the Ardennes, Germany and Southern Limburg, the river Maas and its side streams flooded in July 2021, with catastrophic damages and many residents evacuated. The Dutch water management and defense mechanisms have developed over the centuries to be the main responsibility of centralized government and professionals, leaving residents less and less aware of their dependence on these defense systems. After the floods, the sense of safety that residents get from the landscape they live in is influenced. With the decreasing awareness of dependence on primary defense structures, people no longer gain a sense of safety from them.
research questions and	What is the role of architecture in perceiving a sense of safety in Dutch river landscapes?

<p>design assignment in which these result.</p>	<p>Increasing self-sufficiency of residents (and decreasing dependency on centralized government) is a way to increase a sense of safety. The design project aims to define a new relationship between man and river, so that flood dangers are seen in a different light and sense of safety is increased. The design brief will focus on a public building that involves both government and residents. The architecture aims to express this new relationship and reduces the distance between residents and flood defense mechanisms.</p>
-------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

[This should be formulated in such a way that the graduation project can answer these questions.
The definition of the problem has to be significant to a clearly defined area of research and design.]

Process

Method description

Research methods

A three-fold research strategy is constructed to answer the research questions:

- Literature research into the Limburg river landscape and water management and sense of safety is the starting point.
- Field work is carried out to explore the Maas and its landscape. This is done on a four days cycling trip along the Dutch trajectory of the Maas. Along the way, I performed site visits to take notes and make sketches to document my observations. Also, a series of five interviews with residents about their experiences of river floods and their perception of safety is conducted. In addition, an action camera on the steer of the bike took a timelapse series of photographs, resulting in a large series of photos displaying the changing landscape along the cycled route.
- Lastly, visual documentation synthesizes the findings of the prior two strategies in annotated drawings and immersive analyses. Annotated drawings are a technique to combine personal observations of the field work with background information and thoughts about the studied site. Immersive analyses are a way to give a (personal) voice to non-human elements. Through close observation, questions about what the element has 'witnessed' and experienced help to create a character for them. By means of descriptive writing (following the theory of Urban Literacy by Havik (2014)) the characters are given a voice, by imagining what they would have to say about their experiences and about future actions/events. The immersive analyses are a way to combine relatively objective information and observations with personal interpretations and possible imagined futures.

Design process

An important conclusion from the research project is that the current relationship between human and river can be seen as a power balance based on dominance and spatiality. By reducing the powers involved, this relationship can be changed to a

relation of equality. This means looking at water as a condition that changes its form over time, and not as water fixed in its fluid state fixed in a river bed. The vision of *river literacy* by Mathur and Dacunha (2014; 2019) serves as a main inspiration to define this new perspective on water. The design process then seeks to express this view on water in new ways of imaging and functions as a hypothesis for how this new relationship between man and river can be expressed.

Literature and general practical preference

References

Bobbink, I., & Loen, S. (2020). Visual Water Biography, Translating Stories in Space and Time. *SPOOL*, 7(2). <https://doi.org/10.7480/spool.2020.2.4859>

Da Cunha, D. (2019). *The Invention of Rivers*. University of Pennsylvania Press.

Havik, K. (2014). *Urban literacy* (1st edition). Macmillan Publishers.

Heemkundekring 'Op 't goede spoor' Waspik. (2011). *De Overdiepse Polder - 750 jaar geschiedenis van een polder in de Delta*. Drukkerij Damen.

Mathur, A., da Cunha, D., Meeks, R., & Wiener, M. B. (2014). *Design in the Terrain of Water*. Applied Research + Design Publishing.

Metz, T., & Van den Heuvel, M. (2012). *Sweet & Salt: Water and the Dutch* (1st edition). NAI Publishers.

De Maas & Waler. (2022, 12 maart). *Nieuwe bakenbomen geplant langs Maas*. Geraadpleegd op 12 mei 2022, van <https://www.demaasenwaler.nl/algemeen/algemeen/42404/nieuwe-bakenbomen-geplant-langs-maas>

NOS. (2021, 18 juli). *Deel Limburg "door het oog van de naald", maar nog niet iedereen gerustgesteld*. Geraadpleegd op 11 april 2022, van <https://nos.nl/collectie/13869/artikel/2389890-deel-limburg-door-het-oog-van-de-naald-maar-nog-niet-iedereen-gerustgesteld>

Renes, J. (1999). *Landschappen van Maas en Peel*. Eisma.

Task Force Fact Finding hoogwater 2021 (2021). *Hoogwater 2021: Feiten en Duiding*. Expertise Netwerk Waterveiligheid . <https://doi.org/10.4233/uuid:06b03772-ebe0-4949-9c4d-7c1593fb094e>

Vandersmissen, H., Bos, H., Burlage, A., Hoogers, M., & Nijland, N. (1995). *Watersnood 1995*. bv Kunst drukkerij Mercurius-Wormerveer.

De Wit, S. (2022). *Immersive Analysis*. Unpublished manuscript

General practises

Five interviews with residents, four day cycling trip along the river Maas as main method to get to know the river landscape and perform field work (annotated sketches, immersive analysis).

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)?

Explore lab offers the opportunity to dive deeply into a topic that comes from a personal fascination, for me that is water as a landscape and architectural element. I gladly took the opportunity to choose my tutors from different disciplines of this faculty: architecture and landscape architecture. This helps me to look with an interdisciplinary perspective on large-scale and complex topics such as flood safety. Applying practises from both disciplines (architecture and landscape architecture) provides interesting new combinations of research and design methods that help to integrate this multidisciplinary approach into one coherent research and design project.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

Architecture is not the obvious profession to address the floods of Limburg in 2021. However, because the relationship between man and river is manifested spatially, architecture and landscape architecture provide a meaningful view on how humans and water can relate to each other in the landscape. Architecture then can help shape a new (spatial) hypothesis for how humans can live with water, how to allow it in its different conditions in our buildings and to help position ourselves in a safe way in a changing climate.

The research methods draw information from a variety of sources, combining (objective) literature research with personal stories and narratives, personal observations and possible subjective imaginations for the studied sites. In this way, the project helps to provide insights in how to meaningfully combine and apply objective and subjective sources, in both architectural and landscape architectural practises.