

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	Heleen Spiertz
Student number	5882664

Studio		
Name / Theme	Design of the Urban Fabric	
Main mentor	Gerdy Verschuure-Stuip	Landscape Architecture
Second mentor	Fransje Hooimeijer	Urbanism
Argumentation of choice of the studio	Before this master I started the master Architectuurgeschiedenis en Monumentenzorg at the UU I wanted to combine my passion for (architecture/urban) history and landscape with this studio as Gerdy focusses on heritage, narratives, landscape biographies, etc. I felt that she would be the best choice for my first mentor.	

Graduation project	
Title of the graduation project	Flowing Through Time: Uncovering The Hague's Water Heritage for Awareness and Contemporary Resilience
Goal	
Location:	The Hague, Netherlands
The posed problem,	<p>This thesis approaches two themes: water and heritage. More specifically how heritage can be used to create more sustainable water systems. Dutch water management has gone through a transition. Early adaptations to water, interventions like dikes and terpen, were made in connection with the natural landscape. However, since roughly 1900, this relationship has gradually been lost (Grond et al., 2021). Smaller interventions that let humans live with water changed into bigger interventions that could actively control the water (RCE, n.d.).</p> <p>This water transition can be described as a change in the interplay between the physical water system (water, subsurface, infrastructure) and the socio-economic</p>

system (spatial functions that need protection and facilitation). Formerly, water management was organized to ensure predetermined functions within the socio-economic system. However new insights show that this is no longer sustainable. The prolonged and persistent application of this principle, such as the continuous lowering of the groundwater level for construction and intensive agriculture, has, in combination with climate change, now resulted in far-reaching consequences (Van Dokkum et al., 2020). Actions like these, alongside other climate related emergencies like the Maas floodings in 2021, highlight the lack of preparedness and low water awareness among the Dutch population, as identified by the OECD (2014).

Literature on the preservation of water management heritage has shown that water and heritage advocates want to turn this transition in the water section around. The most recent approach aims to merge heritage preservation with contemporary spatial developments through historically informed design. By incorporating both technological creativity and historic preservation, it allows for innovative solutions, such as reusing old hydraulic systems or creating new ones with historical influences (Hein et al, 2020). By adopting this approach, water management can return to being grounded in the physical water system.

Grond, V., Maas, G., Kosian, M., Vreenegoor, E., & Broks, K. (2021). *De stadsgenese*. Stowa and RCE. <https://grondrr.nl/downloads/De%20Stadsgenese.pdf>

Hein, C., Van Schaik, H., Six, D., Mager, T., Kolen, J., Ertsen, M. W., Nijhuis, S., & Verschuure, G. (2019). Introduction: Connecting Water and Heritage for the future. In *Adaptive Strategies for Water Heritage* (pp. 1–18). https://doi.org/10.1007/978-3-030-00268-8_1

OECD (2014), *Water Governance in the Netherlands: Fit for the Future?*, OECD Studies on Water, OECD

	<p>Publishing, Paris, https://doi.org/10.1787/9789264102637-en.</p> <p>RCE. (n.d.). <i>Tijdlĳjn Nederland Waterland</i>. https://www.cultureelerfgoed.info/tijdlĳjn/waterland/</p> <p>Van Dokkum, H., Nap, R., Duijn, M., & Grin, J. (2020). Transities en Water: Samen betekenis geven aan complexiteit. <i>Water Governance</i>. https://edepot.wur.nl/538711</p>
<p>research questions and</p>	<p>How can water heritage strengthen the future water management system and its surrounding public space to improve climate adaptation and awareness in The Hague?</p> <p>Sub questions:</p> <ol style="list-style-type: none"> 1. What is the water heritage of The Hague? 2. How does the water system of The Hague work? 3. How will climate change impact the water system in The Hague, and what changes are anticipated in the future? 4. How can landscape design raise awareness, through heritage, of both the challenges and opportunities associated with water?
<p>design assignment in which these result.</p>	<p>The aim of this design assignment is to propose and develop a strategic intervention to improve the current water system within the urban fabric of The Hague, based on the findings of the historical water system analysis. The historical analysis has revealed a significant departure from the original water network, impacting the city's drainage capacity. The proposed intervention seeks to address the existing challenges by strategically reinstating a waterway in a location identified through the analysis as a possible improvement for efficient drainage.</p> <p>The analysis has led to the conclusion that opening a part of the formerly partially filled in canal: the Loosduinsevaart can lead to improved drainage capacity. The design will focus on this location. Looking at how this waterway can fit in the current street and how heritage can be a part of this design, possibly through a route.</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

1. *What is the water heritage of The Hague?:*

Fieldwork

To find out what the most important water structures are for The Hague fieldwork will be executed. This will also necessary to find out what has changed.

Literature review

To explore the different narratives of the waterways in The Hague a literature review will be done.

Cartographic analysis

During the cartographic analysis, there will looked at the historical mapping of The Hague. The focus will be on the water structures.

Landscape Biography / micro stories

To organize the information collected with the methods above, the Landscape Biography will be used to show the changes over time and put these in different time periods and create a timeline.

2. *How does the water system of The Hague work?*

Literature review

Documents from the municipality of The Hague and the Hoogheemraadschap van Delfland will provide insights into the water system. This will also help to find the current problems in the water system.

System analysis

To explain how the current water system works (boezem system and ground water system) maps and illustrations/diagrams will be made.

3. *How will climate change impact the water system in The Hague, and what changes are anticipated in the future?*

Literature review

Documents from the government (Rijkswaterstaat, KNMI, municipality of The Hague, Hoogheemraadschap van Delfland) show how the climate is changing and what effects these have on the current water systems and what this will mean for the future.

4. *How can landscape design raise awareness, through heritage, of both the challenges and opportunities associated with water?*

Research by design

Research by design aims to combine all the findings of the previous methods and provide a design perspective as result.

Literature and general practical references

Bakels, J., & Bisschop, C. (2023). Intangible Heritage to Strengthen Local Water Management. *Blue Papers*, 2(2). <https://doi.org/10.58981/bluepapers.2023.2.04>

Corten, J.-P. (2023). Pondering the Past: Exploring the Synergy between Water Management and Heritage Management. *Blue Papers*, 2(2), 56–67. <https://doi.org/10.58981/bluepapers.2023.2.05>

Gemeente Den Haag & Hoogheemraadschap Delfland. (2015). *Toekomstbestendig Haags water!*

https://denhaag.raadsinformatie.nl/document/3326781/1/Waterbergingsvisie+Den+Haag_v9

Grond, V., Maas, G., Kosian, M., Vreenegoor, E., & Broks, K. (2021). *De Stadsgenese*. Stowa and RCE. <https://grondrr.nl/downloads/De%20Stadsgenese.pdf>

Hein, C., Van Schaik, H., Six, D., Mager, T., Kolen, J., Ertsen, M. W., Nijhuis, S., & Verschuure, G. (2019). Introduction: Connecting Water and Heritage for the future. In *Adaptive Strategies for Water Heritage* (pp. 1–18). https://doi.org/10.1007/978-3-030-00268-8_1

Hooimeijer, F. (2007). *More Urban Water: Design and Management of Dutch water cities*. <https://ci.nii.ac.jp/ncid/BB00386736?l=en>

Janssen, J., Luiten, E., Renes, J., & Stegmeijer, E. (2017). Heritage as sector, factor and vector: conceptualizing the shifting relationship between heritage management and spatial planning. *European Planning Studies*, 25(9), 1654–1672.

<https://doi.org/10.1080/09654313.2017.1329410>

OECD (2014), *Water Governance in the Netherlands: Fit for the Future?*, OECD Studies on Water, OECD Publishing, Paris, <https://doi.org/10.1787/9789264102637-en>.

RCE. (n.d.). *Tijdlijn Nederland Waterland*.

<https://www.cultureelerfgoed.info/tijdlijn/waterland/>

[The literature (theories or research data) and general practical experience/precedent you intend to consult.]

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)?

My thesis aligns with the studio's focus on urbanism, landscape architecture, landscape biography, cultural heritage, narratives and sustainability. The emphasis on heritage and the analysis on the water system over time relates with the DUF studio as it is concerned with the structural transformation of urban fabrics, urbanised structures, and landscape structures. The introduction of a waterway in The Hague contributes directly to the improvement of liveability by addressing critical infrastructural needs related to water. My method is also related to the studio topic as I study formal and informal systems from the past and the present, using landscape biographical approaches.

My thesis is connected to the Landscape Architecture track as it deals with making space inspired by nature, art, and technology. The transformation and creation of compositions 'through' scale, time, and as a process are integral to my thesis, especially in exploring the historical continuity of landscapes.

My graduation topic contributes to the diversity of directions available in the master program by exploring innovative ways to create more sustainable development. The

focus on the transformation of urbanized landscapes and the consideration of water heritage align with the interdisciplinary approach of the master's program.

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

In the societal context, the reintroduction of a waterway in The Hague is directly aligned with the well-being of its residents. By enhancing the city's drainage capacity, the proposed intervention addresses a critical infrastructural need, mitigating potential risks associated with waterlogging and flooding. Moreover, the incorporation of The Hague's water heritage ensures that the intervention becomes a cultural asset, reconnecting residents with their historical relationship with water and creating a larger awareness for the threats and opportunities related to water.

From a professional standpoint, the graduation work holds implications for urban planners, landscape architects, and water management professionals. The proposed design intervention offers a practical example of integrating historical context into contemporary urban planning. Professionals in these fields can draw insights from the methodology employed, the challenges encountered, and the solutions devised during the design process. The feasibility and implementation considerations also provide valuable lessons for professionals engaged in similar urban revitalization projects.

The scientific relevance of the graduation work contributes to the evolving discourse on sustainable urban water management and the heritage preservation of Dutch water management. The analysis of the historical water system and the strategic reintroduction of a waterway serve as a case study that can inform future research in the field. This can create new insights into the interplay between heritage, water management and awareness.