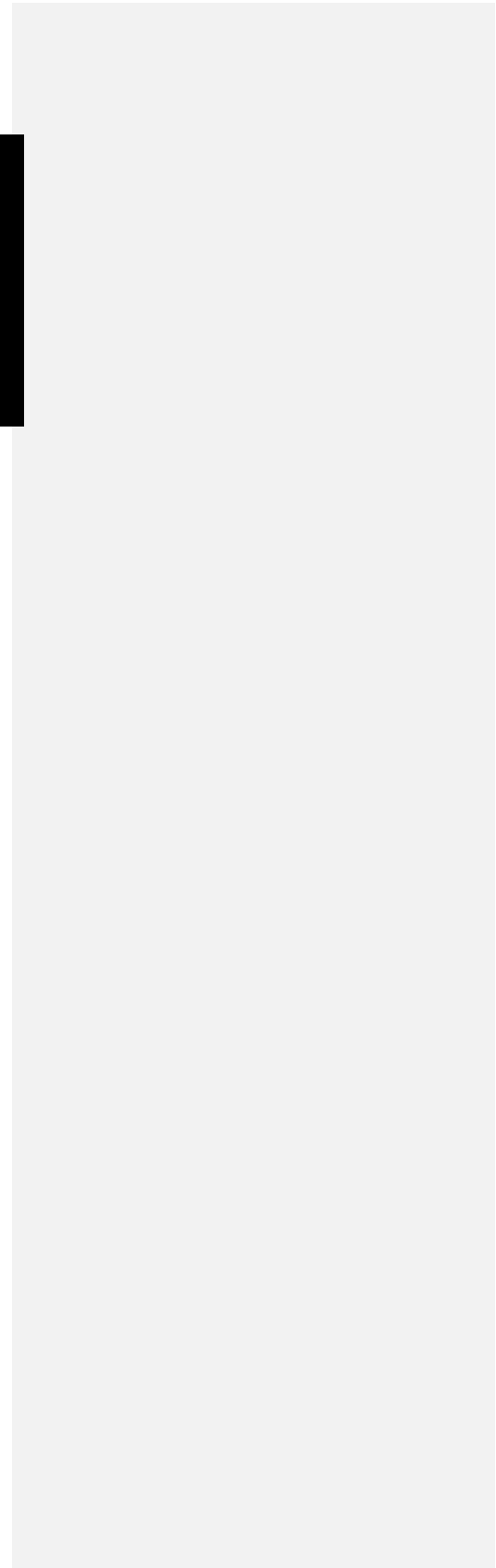


# Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



## Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners ([Examcommissie-BK@tudelft.nl](mailto:Examcommissie-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	Junjian Yu
Student number	5725038

Studio	
Name / Theme	Designing Resilient Coastal Landscape
Main mentor	Steffen Nijhuis
Second mentor	Marco Lub
Argumentation of choice of the studio	I would like further to study the leading topic, Landscape-based Urbanism in this studio to learn how to position perspective on a regional scale to tackle issues in the coastal cities facing growing challenges with climate change.

Graduation project	
Title of the graduation project	Designing MRDH Metropolitan Park Structure

Goal	
Location:	Metropolitan Region Rotterdam-The Hague (MRDH), the Netherlands
The posed problem,	<p>The Metropolitan Region Rotterdam-The Hague (MRDH) is a new geographic region and governance entity established in 2015. The institution focuses primarily on clean transportation and economic development to strengthen spatial agglomeration and metropolitan economies.</p> <p>Initially, MRDH was envisaged that its remit could include spatial planning and natural resource management, but the municipalities eventually failed to cooperate on such topics. The OECD's report notes that, like many metropolitan regions, MRDH's discourse on spatial planning issues is limited by rivalry among guidelines from the</p>

**Met opmerkingen [SN1]:** Focus more on the need for MP as a means to address challenges related to urbanizing Regions like MRDH

traditional province-municipality administrative structure. Such a dilemma can lead to uncoordinated urban development trajectory and landscape fragmentation in the future metropolization process. The metropolitan landscape preserves ecological resources beyond city boundaries, safeguarding biodiversity and offering essential resources like clean water, air, food, and recreational open spaces for metropolitan inhabitants. The land consumption of metropolitan landscape through the metropolisation process not only results in the loss of green spaces or agricultural fields but also diminishes the natural environment's ability to tackle challenges such as flooding, pollution, drought, and soil subsidence. In this regard, it is imperative to adopt a holistic and balanced landscape-based regional design approach to protect the stock metropolitan landscapes and fortify the resilience of the metropolitan region against future challenges.

The Metropolitan Park Structure (MPS) is conceived as an ecologically oriented network operating at the metropolitan scale. It serves as an interface between urban spaces and natural environments, strategically designed to integrate, safeguard, and enhance the essential resources and inherent values of the metropolitan landscape. The MPS endeavors to establish a resilient transition encompassing nature, agriculture, and urban domains. Its goal is to prevent the depletion of fundamental landscape assets induced by the economy-driven metropolization process, thereby fostering sustainable development within the metropolitan context.

The project is to design a robust metropolitan park structure (MPS)

	tailored for the MRDH, it establishes a landscape-based perspective and a series of landscape principles and strategies for urban planners to join forces to preserve lands crucial to biodiversity, climate resilience, and experience. Through the landscape's coordinating and balancing effect between the built and natural environments, the MPS contributes to MRDH's sustainable urban development by ensuring that the future metropolisation process adapts to its geographic and ecological basis.
research questions and	<ol style="list-style-type: none"> <li>1. What are the essential landscape values and challenges in MRDH?</li> <li>2. What are the design principles and strategies to achieve a robust MPS?</li> <li>3. What are the long-term vision and short-term interventions for MRDH?</li> <li>4. What lessons can be gained specific for region or generic through design?</li> </ol>
design assignment in which these result.	<p>This graduation project aims to develop a landscape-based MPS design framework to safeguard the essential landscape values for achieving sustainable urban transformation in MRDH. Based on the understanding and diagnosis of the MRDH complex urban system, the project carries out a targeted MPS design framework, which includes principles for MRDH's long-term visions and correspondent strategies for short-term interventions. It also encompasses a robust MPS network planning map and list of strategic locations with one local scale design as an example to elaborate how the framework contributes to sustainable urban transformation in multiscale.</p>
<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.]</p>	

**Met opmerkingen [SN2]:** To explore the potential of strategies and principles long term vision and short term projects through design

**Met opmerkingen [SN3]:** Lessons learned? Specific for region and generic?

## **Process**

### **Method description**

Theoretical Background:

1. Landscape-based Regional Design: This project applies this theory to comprehend and design a complex urban landscape system. Landscape-based Regional Design follows a landscape logic that views the urban landscape as a socially inclusive, dynamic, and complex system.
2. Ecosystem Services: The project implements this theory to design and evaluate landscape values in a metropolitan context. Ecosystem services are defined as the accumulated benefits to humans from healthy ecosystems and natural processes.

Methodological Framework:

The methodology is divided into four parts, each addressing specific research questions:

1. Understanding: It involves researching the MRDH's natural and urban systems by examining its Green-blue structure, Transportation system, and Built environments using a layered approach. Additionally, studying its planning history facilitates the diagnosis of the region's current and future challenges, providing a holistic understanding of the region.
2. Application: Building on the understanding of the region and case studies of relevant projects, MPS design principles and strategies will be developed to address the burdens on MRDH's sustainable urban transformation.
3. Exploration: Given the MPS design principles and strategies, long-term visions (regional scale) including plan stages over time, and site-specific designs (local scale) encompassing a list of pilot projects with one short-term strategic project design will be developed to visualize how the design principles and strategies are spatially implemented.
4. Evaluation: An evaluation based on the four primary services from the theory of ecosystem services will be conducted to assess and reflect on the values of the MPS network in MRDH. It serves to further promote the importance of the role of a landscape-based perspective for urban planners working collaboratively at a common ground and scale to contribute to sustainable urban transformation.

Notably, each part is interrelated. Each part is developed from the former and, in turn, helps reflect and refine the preceding parts to realize a positive self-censorship in the MPS design framework.

#### Literature and general practical references

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### **Reflection**

The graduation project collaborated with the ongoing research project in the Honours Programme that is as well under the topic "Landscape-based Urbanism". Results that are carried out from the research will provide important tools for the design to complete a co-herent knowledge-based design project.

The project promotes a common ground for urban planners and practitioners from relevant disciplines to work in metropolitan scale. It stresses the role of landscape in support of ecosystem services for sustainable urban transformation. Furthermore, the project provides possible landscape-based design solutions to metrolization issues for urban planners.