# 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** | |
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| Name | Pingyao Sun |
| Student number | 5334101 |

| **Studio** | | |
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| Name / Theme | Circular Water Stories lab<br>Graduation studio Landscape Architecture: Flowscapes | |
| Main mentor | Dr. ir. Inge Bobbink | Landscape Architecture |
| Second mentor | Dr. ir. E.H. Gramsbergen | Architecture |
| Argumentation of choice of the studio | Water, as the beginning of every life, its eternal relationship with humans and human life is a beautiful topic. There are diverse ecosystems, diverse production activities, and cultural activities, diverse water management techniques, diverse landscape systems that can be explored under these circular water stories topics.<br>Many traditional water systems are declining or disappearing. Even though it is normal that traditional activities be replaced by more efficient modern ways. However, the disappearing of these traditional activities also means the disappearing of some local identity and unique water landscapes, more importantly, the loss of the intelligence and wisdom behind it. Thus, it is an important topic to explore how to see the transformation, what can be learned from the traditional water system, and how to preserve some valuable activities and landscape or how to transform them. The concept of circularity is attractive, we would explore not only the water system and other landscape elements but also their inner relationships, to formulate a circular system that contributes to a better future for the place. I hope to strive for a landscape designer that capable of defining and dealing with complex issues in a professional way and with areas of expertise. The lab gives me the opportunities to look at the water issue in-depth and work with the circular system which allowed me to explore different design methods and cope with the complex site. | |

| **Graduation project** | |
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| Title of the graduation project | The Canal Story – Water Heritage being Alive |
| **Goal** | |
| Location: | Canal du midi, Occltanle Region, South France |
| The posed problem, | At the end of the 17th century, Pierre-Paul Riquet designed the Canal du Midi – a 240km long canal that connects Toulouse to the Mediterranean to develop trade under the reign of Louis XIV. |

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| | Opportunities:<br>The Canal du midi has been described as “one of the most extraordinary civil engineering achievements of the modern era” (GRAHAL i-pat, 2020) and "a masterpiece of human creative genius” (GRAHAL i-pat, 2020). With the unique value, the story of the canal provides a rich background and meaning for this project.<br><br>Since the canal was constructed, it influenced the territory a lot. Diverse landscapes can be found along the canal. It’s a challenge and opportunity at the same time, to explore the different relationships and mechanisms behind the development of this system and how they blend in to each specific landscape.<br><br>Additionally, the canal is also a lever of attractiveness for the territories, there is potential for the design to create more tourism interest in a way that the local communities can be better involved and benefited.<br><br>Challenges:<br>The trading & transporting function of the canal was active for about three centuries and then abandoned by other, faster infrastructures. The canal will decline if it is not seen, understood, and needed. Seeing the impact of Corona on tourism and the entertainment industry, the question rises what else could be a sustainable driver for future development of the canal region and how can landscape design contribute to this challenge.<br><br>Furthermore, the canal faced management challenges such as siltation and flooding. In the meanwhile, the canal serves as an fresh water source for flora and fauna and farming activities. Today when the climate change brings a more extreme weather condition, seasonal flood & drought, seawater intrusion, scarcity of fresh water & underground water, occur and need to be faced.<br><br>Lastly, the canal is famous for the linear “park” landscape created by the plants on the water bank. However, the aging and dieback of the alignment plantations, due to the contamination of the plane trees by the colored canker, will inevitably cause the landscapes as well as the ecosystem of the Canal du Midi to change considerably in the years to come (GRAHAL i-pat, 2020). |
| research questions and | The main research question is: How can Canal du Midi develop into a **resilient green-blue & cultural corridor** and a vital **circular water system** that supports **sustainable development** of the landscape and communities alongside the routing?<br>Four sub-questions follow:<br>- How to represent the **knowledge** and **stories** behind the water heritage, through spatial design? |

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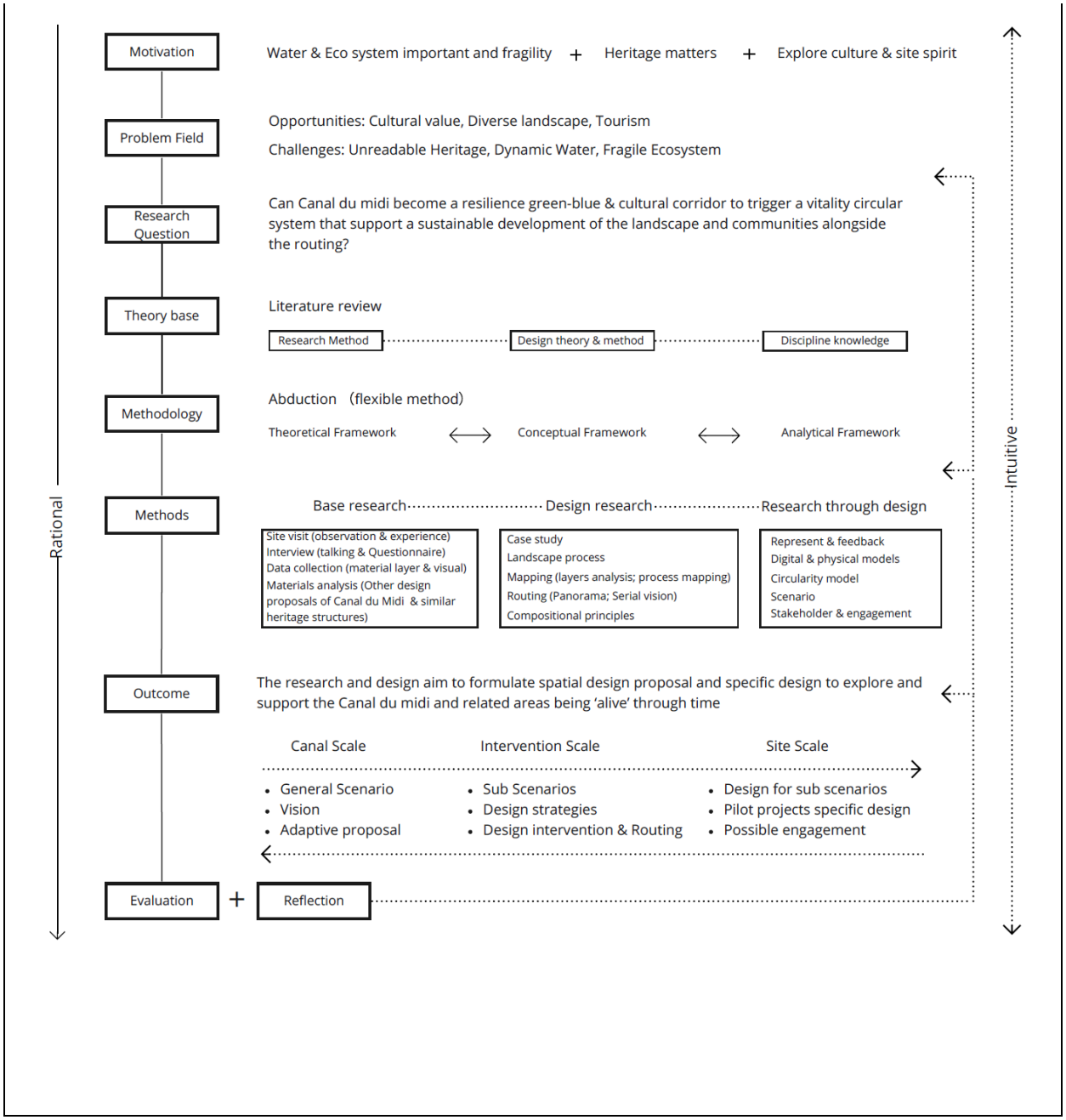
| | - How to make the Canal du Midi and the surrounding heritage landscape more **resilient** and strengthen its **ecological health and biodiversity?**<br>- How to improve the **accessibility** and traveling **experience** along the canal?<br>- What defines the **architectural characters** of the canal and how to relate to it to the design? |
| design assignment in which this result | The project aims to formulate a spatial design proposal to explore and support the Canal du midi and its surrounding to be and stay 'alive' through time. Based on the research question, the design needs to consider three conceptual aspects: firstly, in contact with its story - revealing the historical & cultural charm of the canal; secondly related to the place - enhancing the traveling experience along with routing; thirdly, embedded in the environment - designing for a circularity system that would be sustainable for both water management and the ecosystem.<br><br>The design outcomes will be elaborated in three scales:<br>- Area of influence: This scale contains the whole canal and the water catchment areas as unity, based on a scenario that explores the forthcoming situation to explore a spatial vision and an adaptive landscape development proposal;<br>- Area of effect: This scale contains a zone in the research area that with important landscape system related to the canal (eg. urban-rural – canal system), based on a sub-scenarios study to generate design strategies/principles, and based on spatial analysis to propose a routing design;<br>- Area of control: This scale within the area of effect zooms in to formulate a detailed design that utilized the architectural characters of the canal and considered the demands of local communities and biota, to impact the larger system.<br><br>The outcomes of these three scales would support and evaluate each other within a flexible research framework which is "an investigation of what might be" (Brink, A. van den, 2017). |

# Process

## Method description

According to the large scale and complexity of the project, the aim of the research method is to be able to build up a 'flexible' research framework that adapts interdisciplinary knowledge and supports an open-ended design process where through different scales, the research and design process would support and evaluate each other back and forth.
The research and design process entails the following framework:


Rational
Intuitive
Motivation
Water & Eco system important and fragility + Heritage matters + Explore culture & site spirit
Problem Field
Opportunities: Cultural value, Diverse landscape, Tourism
Challenges: Unreadable Heritage, Dynamic Water, Fragile Ecosystem
Research Question
Can Canal du midi become a resilience green-blue & cultural corridor to trigger a vitality circular system that support a sustainable development of the landscape and communities alongside the routing?
Theory base
Literature review
Research Method
Design theory & method
Discipline knowledge
Methodology
Abduction (flexible method)
Theoretical Framework
Conceptual Framework
Analytical Framework
Methods
Base research
Design research
Research through design
Site visit (observation & experience)
Interview (talking & Questionnaire)
Data collection (material layer & visual)
Materials analysis (Other design proposals of Canal du Midi & similar heritage structures)
Case study
Landscape process
Mapping (layers analysis; process mapping)
Routing (Panorama; Serial vision)
Compositional principles
Represent & feedback
Digital & physical models
Circularity model
Scenario
Stakeholder & engagement
Outcome
The research and design aim to formulate spatial design proposal and specific design to explore and support the Canal du midi and related areas being 'alive' through time
Canal Scale
Intervention Scale
Site Scale
General Scenario
Vision
Adaptive proposal
Sub Scenarios
Design strategies
Design intervention & Routing
Design for sub scenarios
Pilot projects specific design
Possible engagement
Evaluation
+
Reflection

## Literature and general practical preference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## 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 graduation topic is a comprehensive landscape design about a water heritage – Canal du midi. The design is not started from certain problems or challenges but started with a topic about the traditional water systems that with unique value. The design assignment is defined based on reading and understanding the knowledge from the water system and its relationship with people and landscape. This is highly related to my master track and studio topic:  Circular Water Stories lab - Graduation studio Landscape Architecture: Flowscapes.
The lab focuses on water topic, encourage the students to explore broad possibilities behind this topic, and provides certain methods to better study and design for the water issue, such as looking at the climate zone and water catchment area, researching the circular water system, understanding the relationship between people and water, etc.. By using these tools, my graduation project is exploring and experimenting with possibilities about the canal which looking at both the problems (flooding, dry, ecosystem degradation, etc.) and the opportunities (historical & aesthetic value, experience, etc.), and try to integrate the water, the people, and the other landscape elements in a sustainable circular system. This will help me to further explore the meaning of 'Flowscapes' in landscape architecture which in my understanding, is a view and method of looking at such complex & dynamic spatial issues and making design decisions where there is no certainty but the changing interaction and process. And in the end, the landscape design should contribute to a better future by exploring different design interventions in this relationship and process, which is also the final task for my graduation design.

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

In the larger social, professional, and scientific framework, there are three aspects that I hope my graduation work would be part of it.
Firstly, the research & design process of this project will use and try to explore certain landscape research methodologies in the landscape architecture field;
order to save it for the future. Secondly, the research and design outcome would be expected to be useful for some relevance or similar initiatives and projects in which protected heritage needs to be modified in order to save it for the future；
Thirdly, the design should be practical in social and technique perspectives that with potential to be adopted in the real world in a way that the possibility of our upcoming future would be considered.