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	Stavroula Artemis Rovoli
Student number	6085423

Studio		
Name / Theme	Architectural Design Crossovers	
Main mentor	Roberto Cavallo	Design Mentor
Second mentor	Georgios Karvelas	Building Technology Mentor
Third mentor	Joran Kuijper	Research Mentor
Argumentation of choice of the studio	Architectural Design Crossovers offers students the freedom to choose the theme and the brief of the graduation thesis along with their mentors. I believe that this approach allows me to explore and deepen my knowledge in the architectural themes that I am more interested in. Additionally, I feel free to propose innovative and unconventional typologies based on thorough site and theoretical research.	

Graduation project	
Title of the graduation project	'El Aprendiz de Río- An Apprentice of a River: Exploring Madrid's paradoxical relationship with water.'
Goal	
Location:	Madrid, Spain
The posed problem,	Even though Madrid is built on and around water, the element is barely there, (visibly) based on philosophy of experience. Yet, Madrid is dissected into **natural upstream and downstream territories** along with architectural and/or infrastructural elements and interventions. Infrastructure like dams, reservoirs, and drainage systems become active agents in reconfiguring the landscape and urban form. They are markers of water's influence on the production of space within the city, sometimes **visible**, other times **hidden** (Gandy, 2004). Simultaneously, Spain is experiencing water scarcity, the desertification phenomenon and torrential rains (Cyrielle

	Cabot, 2023). The Spanish government invests in highly sophisticated water management systems and water infrastructure for the system to be interconnected on a national level (Council of Ministers, 2023). It is understood that solutions on water management in **moments of crisis** are to build and engineer more. Meanwhile traces of abandoned or obsolete hydraulic works to later leisure facilities can be found all over the city. This reliance on technicity—the technical knowledge and systems embedded in infrastructure generate questions regarding the effect of this approach on the **landscape**, the **city** and **water territories**. Water holds political and societal power due to its essential value to humans. The use and cultivation of this inherent **power** reveals the attitude of the city towards this valuable resource and its paradoxical relationship with it. What if the use of water enables architecture which affords the implementation of infrastructure and public space for the generation of energy, culture and values.
research questions and	Exploring Madrid's paradoxical relationship with water. What if the dissolution of the boundaries between architecture and infrastructure could assist in the change of Madrid's relationship with water?
design assignment in which these result.	The Architectural Design Crossovers graduation studio deals with the city as an assemblage of flows, be them material, energy or people and goods. The theme explored in this graduation thesis is a type of architecture which affords the implementation of infrastructure and public space for the generation of energy, culture and values and the celebration of water as a natural resource. The design proposal seeks to link the importance of water infrastructure in Madrid with the urban commons. It transforms decorative water fountains into public baths and creates public space to experience both the water and the river. Additionally, it disseminates the hidden mechanisms of water management by regenerating the water used in the baths on site through a water treatment plant and an educational center. Water management awareness are brought to the foreground by bringing a water treatment plant into the city center and opening it to the public. Hence, the territorial division between infrastructure, architecture and landscape is blurred by designing it in a way where public space is not compromised but enhanced. Simultaneously the proposal creates a precedent for the creation of more public pools which do not solely depend on the existing water

	management system, to tackle the very hot and dry summers that Madrilenos face every year.

Process

Method description

Literature Review

For me, literature review is a method that I have turned to and let go multiple times while conducting research for the themes of water, infrastructure and urban commons. It has been the first point of departure after exploring my fascinations, so I could grasp the existing knowledge on the matters within the architectural discourse. I have organized it chronologically, i.e., history within the context of Madrid and water, from the establishment of the city and the water infrastructure and architecture development in terms of politics and social issues. At the same time, I am studying the past, current and future conditions of the Manzanares river, its relationship with the city, its flow and the role it plays in urban design. Additionally, I am looking into a broader theoretical framework, to position myself in the dichotomies of my interests, them being architecture vs infrastructure, natural flows management and dualism in architecture in terms of program and aesthetics. This will help me articulate more precisely terms and issues that I would like to investigate further. This list will keep expanding as I expand my research and intensions for this project.

Topo-morphological Cataloguing
Cartographic Mapping
Schematic Mapping
Informal Conversations
Archival Research
Cartographic Collage

Literature and general practical references

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Kaika, M. (2005). *City of flows : modernity, nature and the city* (pp. 11–50). New York: Routledge.

Klingmann, Anna , and Marc Angelil. 1999. "Hybrid Morphologies, Infrastructure, Architecture, Landscape." Daidalos, 1999.

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Reflection

The thesis proposes the transformation of two of Madrid's decorative fountains into functional public baths, addressing the city's residents' needs for cooling in a hot city like Madrid. Additionally, the project seeks to enable public access to the Manzanares River—an element currently missing within the city centre. The intervention not only reclaims water as a shared urban resource for people to experience, but it also introduces a water treatment plant with an educational centre, making the hidden mechanisms of water regeneration visible to the public.

This concept aligns with the Architectural Design Crossovers Studio, which explores the theme of city flows, one of which is water, alongside the notion of urban commons. By focusing on water flows and their management in Madrid, the project ties in with the studio's broader study into how infrastructure and the urban commons can converge to create meaningful public spaces.

The project engages with key architectural challenges related to infrastructure integration into the urban fabric and its effect of public space. It contributes to contemporary architectural discourse by demonstrating how technical infrastructure can be transformed into social infrastructure, fostering civic interaction.