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	Sheryl Kim Gek Si
Student number	5482933

Studio		
Name / Theme	Public Building Graduation Studio	
Main mentor	Stefan Witteman	Project Design Tutor
Second mentor	Florian Eckardt	Technical Building Design
Third mentor	Stefano Corbo	Theory & Delineation Tutor
Argumentation of choice of the studio	The studio focuses on the Public Condenser as a new type of public communal building that facilitates community building on an urban scale. We investigate future-proof designs and offer a systematic and holistic approach to designing public projects through the Research-by-Design approach. The project brings much-needed public facilities and institutions closer to a plethora of people that may come from different backgrounds. Furthermore, it plays a vital role in enhancing social lives and improving the quality of life in cities. This aligns with my personal interest in the relationship between the health of the city and its access to public spaces.	

Graduation project	
Title of the graduation project	Re-commoning Water *The Public Grounds of Water in Urban Ecosystems*
Goal	
Location:	Friedrichshain, Berlin
The posed problem,	As surveyed by the Federal Ministry of Family Affairs in 2017, single-child families make up the majority of Berlin households. This coupled with several interviews I conducted with parents around Friedrichshain, the building provides family resources and water recreation activities that are either overcrowded or severely lacking in Friedrichshain. On a wider level, the building will address the topic of water

	as a public right and a threatened resource.
research questions and	Given the amorphous nature of water, how can it be used as a design material to form spaces that foster social interactions? Can water be used to develop a new public building typology that not only acts as a recreation and gathering device but also an education and communing tool?
design assignment in which these result.	

The building aims to use water to address issues on two levels. Firstly, on a local level, it is a public condenser aiming to provide family resources and water recreation activities that are lacking in the neighbourhood of Friedrichshain, Berlin. Single child families make up for the majority of households in Berlin which leaves the bulk of peer-to-peer socialisation of children outside of the home. I conducted several interviews on the street with young parents that expressed how the district has enough parks and playgrounds for their children but would love more water-related activities that also catered to younger children such as toddlers. On a wider level, the building addresses water as a public right and a threatened resource. Public consciousness of water issues in Germany may not be prevalent as Germany enjoys high-quality drinking water all year round but with the recent droughts and effects of climate change, this is projected to change in the coming future. As future decision-makers of the country, water literacy at a young age is paramount in ensuring we do what is best for our society and the environment. Furthermore, my fascination with using water as a design device lies with how water has always been a gathering point, a place to meet, socialise and relax. It signifies nature, cleanliness and rejuvenation and has always been an attractor for social spaces. The state of water can exist in several forms: gaseous (steam, mist, fog), liquid (rain, river, pond), solid (ice) or crystalline (snow). The dynamic state of water presents numerous opportunities for it to be used as a spatial tool both indoors and outdoors. Utilising thermodynamic principles, i.e. the relationship between temperature and humidity, I am in search of thermal landscapes that will foster different social interactions.

Water is used as a building material in this case. It forms boundaries that guide the user through several pavilion-like spaces on the ground floor as they sit within ponds consisting of wetland ponds. Spaces such as learning spaces and an exhibition hall form large tectonic blocks surrounded by these ponds, allowing the user to experience water through all the senses. Large cylindrical columns punctuate the space giving either light or a passageway to the first floor. These columns are not only structural but bear the weight of the water tanks above where the rainwater is collected and stored from the surrounding roofs of the site. The first floor houses a natural wading pool that serves as both recreation and also a place to teach toddlers and young children how to swim. The greenhouse sits at the back with the largest of the water tanks that also contains a top layer of wetland for testing and monitoring purposes. The building aims to use water to foster different social interactions through water, space, and the in-between.

Process

Method description

This project follows the studio method of Research-by-Design starting with investigating the meaning of a public condenser through several assignments focusing on specific techniques such as collages and diagrams. Meanwhile, in-depth research of Berlin in all several aspects such as history, culture, demographics, politics and architecture and city planning coupled with a week-long excursion to the city helped further shape our research into the public's needs, wants and aspirations. Site analysis was done on three potential sites through diagrams and drawings which coupled with research and focused readings on our main topic of the Public Condenser. In this case, it was on water in architecture, water literacy in Germany, family centres in Berlin, climatic control, the and communing of water.

Process diagrams and sequential mapping were used to illustrate and further explain the role of water in the building. From harnessing rainwater to the water life path through the building, these diagrams help establish water's role in the building. Specific elements of the case studies were studied such as circulation, materiality, scale, climatic control etc. Drawings at various scales will also be used to explain the circulation route of the building and its relation to the site. After P2, these schematic designs will progress to a concrete building form and structure with clear building technologies components that demonstrate its materiality, circularity and urban ecology. Research into circularity and sustainability will be done on a deeper and more specific level that suits the building.

Literature and general practical preference

As said before, the reading process journeyed through topics such as water in architecture, water literacy in Germany, family centres in Berlin, climatic control, the and communing of water.

Literature:

1. Clément, G. et al. (eds) (2006) Gilles Clément, Philippe Rahm: environ(ne)ment: manières d'agir pour demain = approaches for tomorrow. 1st ed. Milano : Montréal : New York: Skira ; CCA ; Distributed in North America by rizzoli.

2. Heckenast, G., Ferencz, M. and Kertész, A.T. (2021) 'The impact of water in architectural thinking', Pollack Periodica, 16(1), pp. 138–144. Available at: https://doi.org/10.1556/606.2020.00131.

3. Group, C.S. (2017) 'Patterns of Commoning: Water Beyond the State', P2P Foundation, 7 February. Available at: https://blog.p2pfoundation.net/patterns-of-commoning-water-beyond-the-state/2017/02/07 (Accessed: 17 January 2023).

4. Tillie, N. et al. (2009) REAP Rotterdam Energy Approach and Planning: Towards CO2-Neutral Urban Development.

5. Schneiderhan-Opel, J. and Bogner, F.X. (2021) 'The Effect of Environmental Values on German Primary School Students' Knowledge on Water Supply', Water, 13(5), p. 702. Available at: https://doi.org/10.3390/w13050702.

Case Studies:

1. gh3* — Borden Park Natural Swimming Pool (no date) gh3*. Available at: https://www.gh3.ca/work/natural-swimming-pool-02 (Accessed: 17 January 2023).

2. Jade Eco Park - Philippe Rahm architectes (no date). Available at: http://www.philipperahm.com/data/projects/taiwan/index.html (Accessed: 9 November 2022).

3. MVRDV - Expo Pavilion 2.0 (no date). Available at: https://www.mvrdv.nl/projects/432/expo-pavilion-20 (Accessed: 14 December 2022).

4. Glass Pavilion at the Toledo Museum of Art / SANAA (2010) ArchDaily. Available at: https://www.archdaily.com/54199/glass-pavilion-at-the-toledo-museum-of-art-sanaa-pritzker-prize-2010 (Accessed: 17 January 2023).

5. IranAvada (no date) 'CONCAVE ROOF SYSTEM', BMDesign. Available at: https://bmdesignstudios.com/portfolio/concave-roof-system/ (Accessed: 14 December 2022).

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)?

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

The education path at TU Delft I have undertook has followed a path of architecture in the public realm. From designing a new Urban Living Room in Rotterdam in MSc1 Complex Projects Studio to addressing the regeneration of Strahov Stadium in Prague in MSc2 Borders & Territories Studio, my focus on civil architecture has exposed me to projects varying in size, scale, culture, history and so on. It has challenged me to reframe the notion of how a public building may serve its city and understanding the varied ways of tackling these challenges has further solidified my focus on public works.

My graduation project is a public building in Berlin that addresses the needs of young families in the district and also speaks on the social, environmental and political issues of water we are facing today. The project speaks on water as a commons and the importance of water literacy in our society. This is especially important as water in urban areas is managed by wider governing bodies and not the individual and thus I believe requires more transparency, accountability and public awareness. It fulfils the brief of the Public Building Graduation Studio 2022/2023 in which we are to investigate and design a *Public Condenser*. The different issues and needs addressed in my building tackles the notion of *Multiplicity* and act as a new framework for public engagement and exchanges.