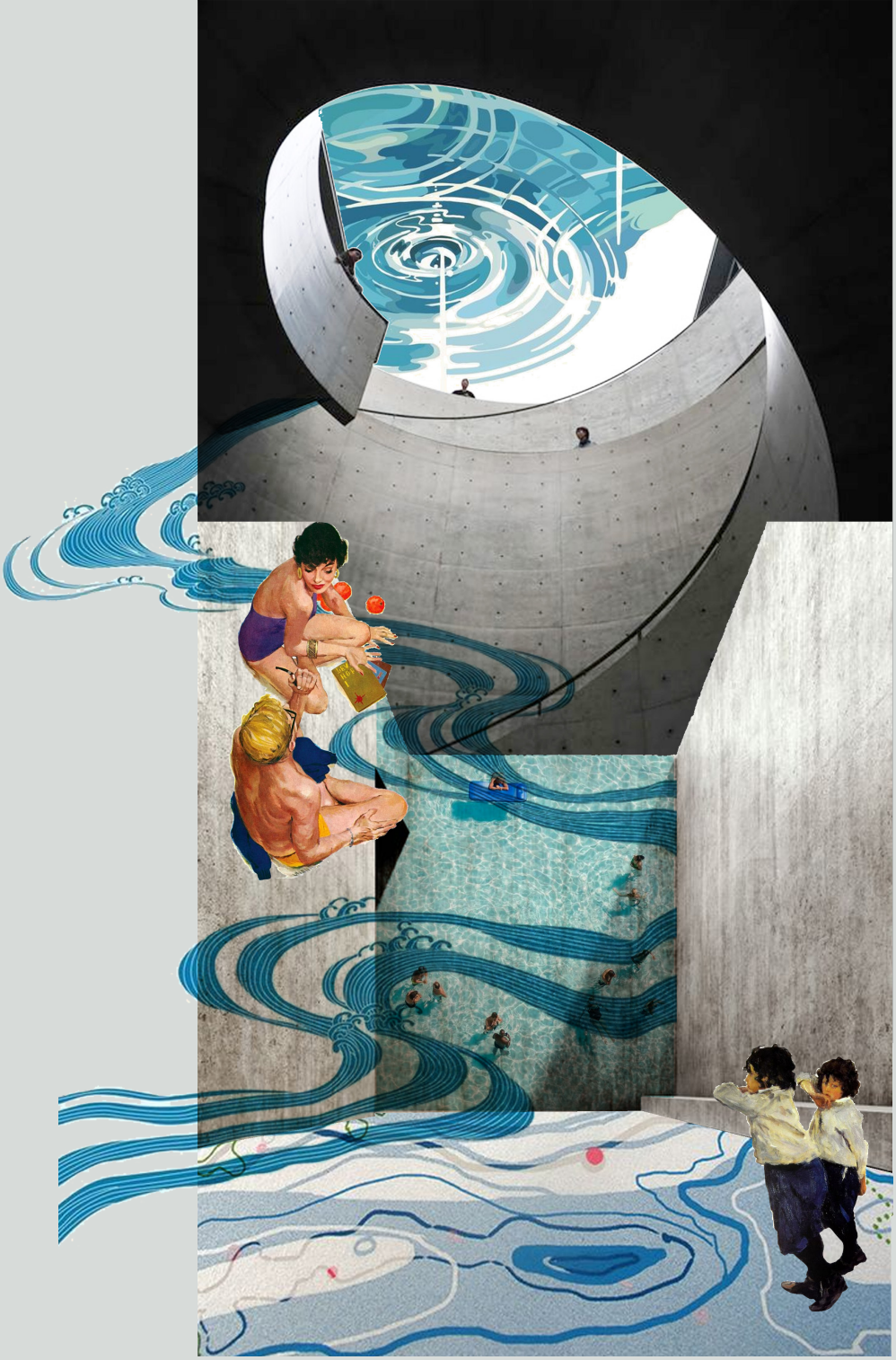


Re-commoning Water

The Public Grounds of Water in Urban Ecosystems

REFELCTION

SHERYL SI 5482933

PUBLIC BUILDING GRADUATION STUDIO 2022/2023

Psychogeography Map

BACKGROUND

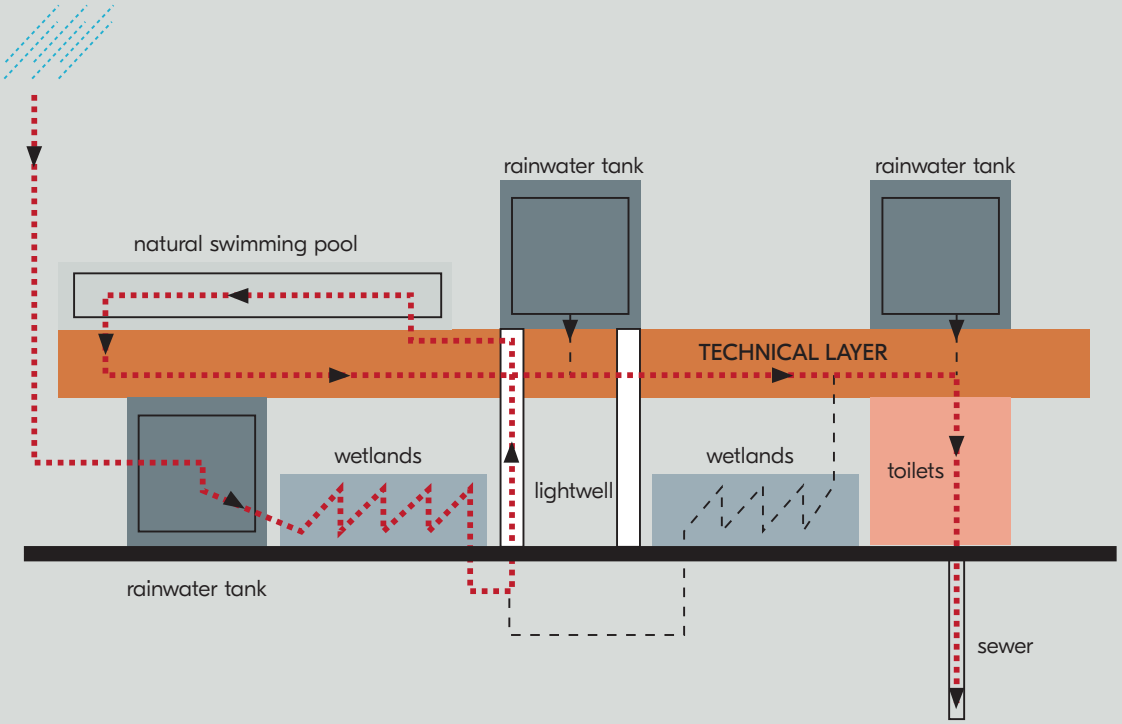
The studio focuses on the Public Condenser as a new type of public communal building that facilitates community building on an urban scale. We investigate future-proof designs and offer a systematic and holistic approach to designing public projects through the Research-by-Design approach. The project 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.

The relationship between the health of a city and its access to public spaces has always been crucial one. The development of the project started with three main interconnecting topics: investigating the future of public buildings in Berlin, the main design assignment, and the Public Condenser building typology introduced by this Graduation Studio. Through the research of these topics, the aim of my Public Condenser is a family centre and swimming pool hall which part and parcel is a water purifying plant.

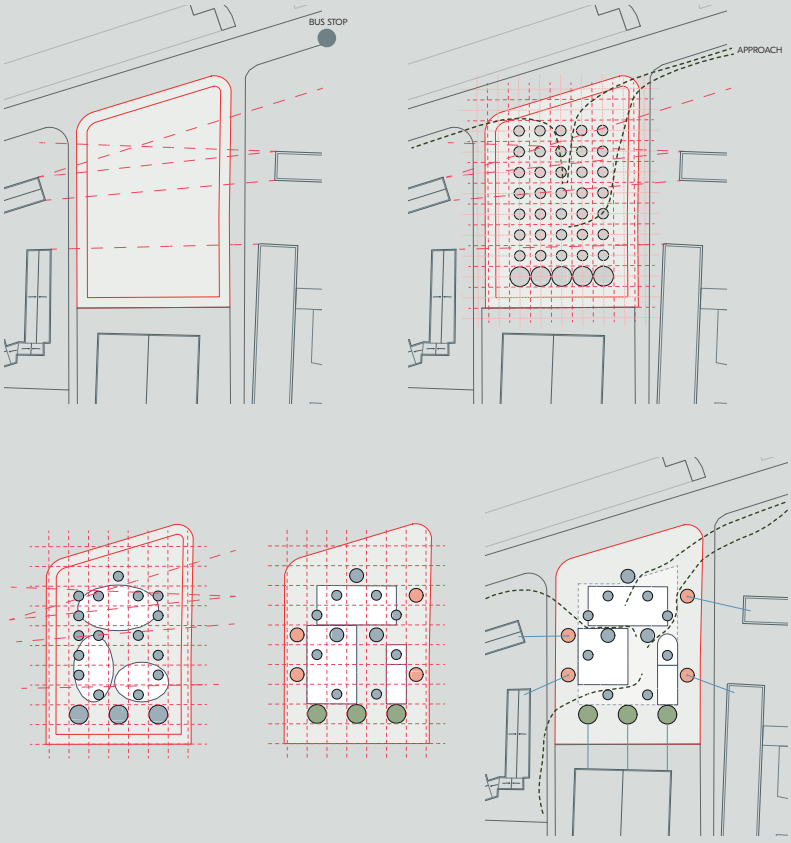
The research on Berlin helped shape the contextual framework of how the city worked but it was not until the excursion that my findings and observations gave a direction in shaping the main design assignment. Spending a week in the district of Friedrichshain, it became clear that its inhabitants were quite content with what the area provided for them. Many people I interviewed on the street reaffirmed how they felt like the district was not really lacking in anything they desperately desired. At first, it was daunting how sufficient the area seemed to be and finding a direction on how this project would go seemed redundant. However, I observed how much more present families or parent-and-child pedestrians seem to occupy the daily goings of the area. I quickly realised Friedrichshain had a high proportion of families and I quickly focused my interviews on this demographic.

Thus, this project was borne from a very simple reason: many parents I interviewed wished for a place for their toddlers to learn how to swim. To further understand the relationship between swimming pools and their

Water Path Through the Building



Distribution of Water Tanks



neighbourhood, I myself took up swimming at a local pool hall in The Hague. I went at various times of the week from weekday mornings to weekend afternoons and I observed a very telling difference in the demographic of the pool goers. Early weekday mornings were regularly reserved for children's swimming lessons and after the pool is free, the elderly would arrive to commence their regimen. The weekends were usually extremely busy with crowds of families coming and going. I observed a very diverse age range in this busy atmosphere ranging from parents with their toddlers in the splash pool, to young children playing around in the wading pool. The deeper pools were occupied by older children and teenagers; numerous adults were also peppered around aiming to get their swimming laps in. The swimming pool hall was a vibrant zone for social interaction, family bonding and recreation.

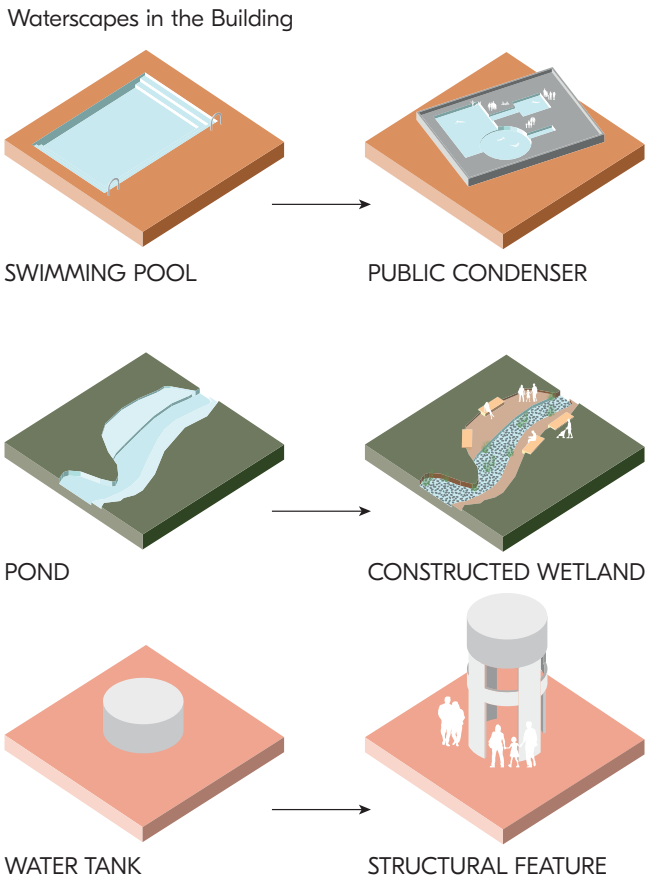
DESIGN AIM

This encompassing experience across several age groups started a journey of using water as a design material. It forms boundaries that guide the user through several pavilion-like spaces on the ground floor as they sit within ponds consisting of wetland vegetation. The family centre 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.

My design process was a two-fold strategy of designing the building both as an infrastructural machine and as a multi-layered atmospheric waterscape. 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 different waterscapes in

the building (swimming pool, wetland pond, rooftop garden etc.) all feed into the multisensory experience of water for the visitor. Several methods were used in my research and design process concerning waterscapes and architecture; the technique of collage and mapping helped collate my ideas on water, public space and Berlin. Diagrams and drawings aided in bringing this research contextually to the site I picked.

On the technical side, the building aims to collect, store and purify rainwater to be used in the swimming pools. This technical process inspired the possibility to showcase, expose and at times, exaggerate the role of water in the building. It was also important to the foundation of the project that I picked case studies existing in climates similar to Berlin. As Berlin is influenced by a temperate seasonal climate, water is usually bountiful and needs to be directed, controlled and channelled away from the building as opposed to hotter climates that may want to collect and store the water to cool the building. Case studies such as the Borden Park Natural Swimming Pool in Canada, Muttenz Water Purification Plant in Switzerland and Noorderpark Swimming Pool.



REFLECTION

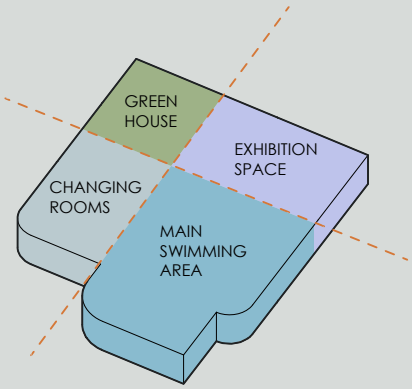
The design started with the placement of the water tanks. Much of the work was done on the volume of water that would be collected and stored, the materiality, sizing, and structural capabilities of the tanks and the water systems in the building. As I needed to store an estimated minimum of 6 million litres of water annually, the building has a number of sizable water tanks ranging from 5m to 9.5m in diameter. I chose concrete as the main material for the water tanks after comparing it to the other options (steel, plastic, wood etc.) and deciding it was the most suitable. Concrete was the best option as it prevents algae growth, keeps a stable temperature throughout the year, is highly durable and prevents the water from changing in taste. These large tanks became influential in the spatial arrangement of the whole scheme as their cylindrical form shaped the design language of the rest of the building.

The P2 presentations solidified that I had a strong theoretical base for my design and that I needed to further develop in communicating the building as a machine, as a prototype, and to connect it to its context socially and ecologically. I realised that the building at this point was an amalgamation of spaces and water tanks and did not come together cohesively. The water tanks themselves had a logic in the way they were configured but as they punch upward through the building, there was not a strong relation to the spaces vertically.

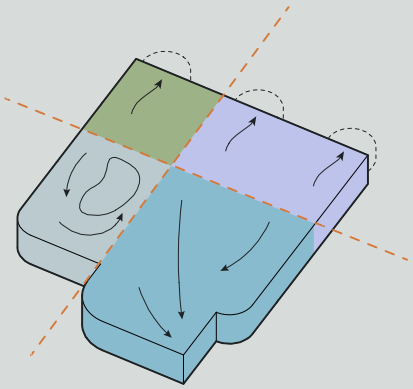
Thus, the design pivoted into researching and developing further the structural systems and materiality of the building. Material selection was very important to the project as its effect on water and/or water vapour was paramount in creating the optimum climates. The research was done with a catalogue of scientific journals that tested the performances of different materials with humidity. This led to a very specific material catalogue from the surfaces to the specific insulation material used for each individual space in relation to its humidity adsorption capabilities.

Although I had all the ingredients, the feedback I received at P3 rightfully pointed out that the building was lacking in the development of form. Reflecting back, it would have been better if I had started the building form studies earlier and focused less on the technicalities. As technical

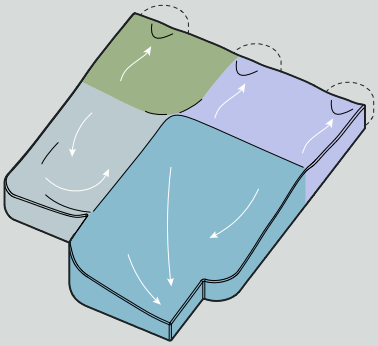
Roof Form Studies



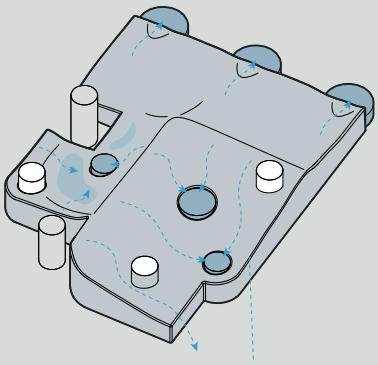
PROGRAM ESTABLISHING THE AXIS



DIRECTION OF WATER FLOW

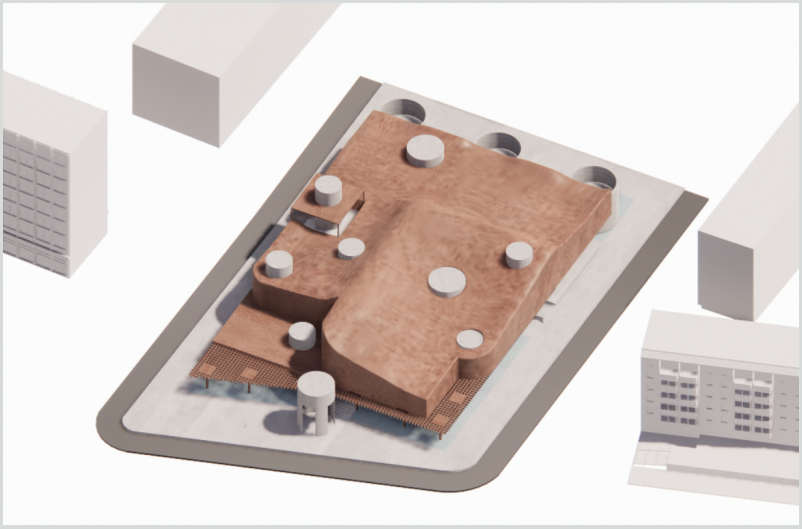


ROOF FORM



CREATING 3 TYPES OF WATER SCAPES

1. WATER FLOWING INTO SELECTED TANKS
2. WATER POOLING ON THE ACCESSIBLE ROOF
3. WATER FLOWING DOWN THE BUILDING INTO THE WETLANDS BELOW



as the project is with the usage of water, climate and materiality, I should not have ignored the process of form studies and developing a design language for so long as they go hand in hand. This was helpful in kickstarting the rigorous process of form-finding through hand modelling with clay and foam and then translating that to 3D in Rhino. The identity of the building quickly started to materialise and tied together many of the building's elements.

This project developed into a multi-layered instrument whereby not only is it a public condenser aiming to provide family resources and water recreation activities that are lacking in the neighbourhood but also addresses water as a public right and a threatened resource. These layers of complexity were probably the cause of my intense research process as I felt that I needed to prove it was feasible. Going forward, I aim to achieve a better balanced design and research process. As important as a solid foundation is, there comes a time when you have to start building on top of it.