INDIVIDUAL BOOKLET

MPARC - ARK128 - 2022/2023
Chalmers School of Technology
Elvira Richardsson

HYDROSOCIAL CYCLE

- "The hydrologic cycle intertwined with societal needs for water management such as daily life and horticulture."

INDEX

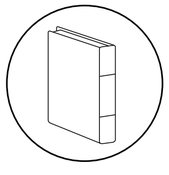
1 SYSTEM & SITE ANALYSIS

FLOODPLAINS

For my individual project within our terrain I will work with the system reference of floodplains. I want parts of my assigned area to be allowed to flood in cases of heavy rainfall. This is a way of flood mangement as well as creating a green-blue, interesting and, diverse area full of movement.

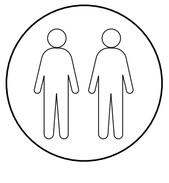
KARST LANDSCAPE

For the terrain reference I will work with the karst landscape. This is due to its shapes and structural abilites. The karst landscape has natural cave systems that has been formed by water over time. It also has the ability to transport water.



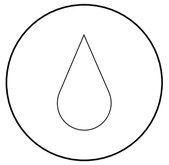
EDUCATION

For my project I will work with creating a space for education and curiosity. I want my project to be a hub where you can visit and learn about the water systems and floodplains that surrounds the area.



SOCIAL

For my project I will work with creating a space for social interactions. A safe place where people can gather and expericence the area together.



WATER

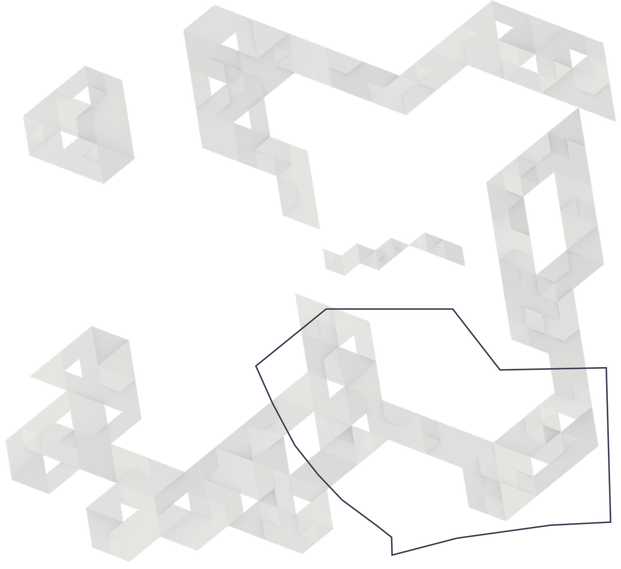
For my project I will work with creating a space for water systems in form of the system of a floodplain. I want to let the water run though and create motion within the area. The water should be the focal point and taken into consideration when making design choices.

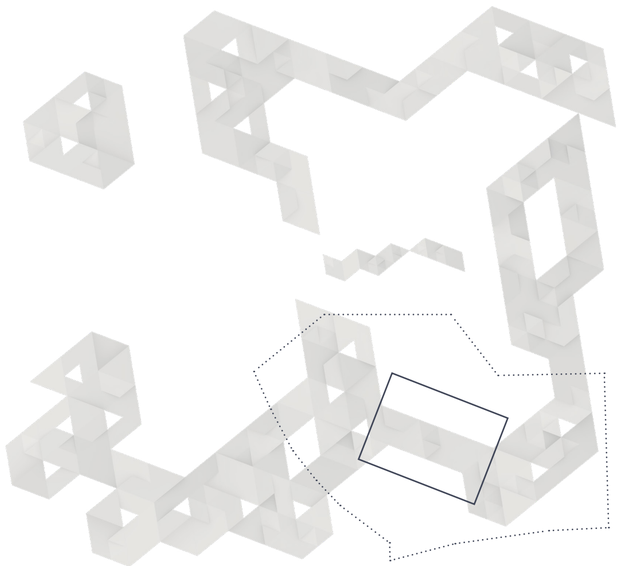
HYDRO-SOCIAL CYCLE

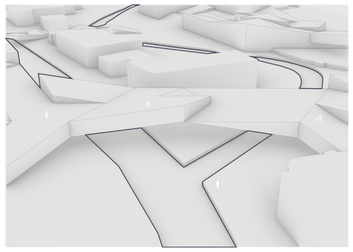
For my project I will work with creating a hydro-social cycle where the people are close to the water systems and the floodplains. People should benefit from the closeness to water and the water should benefit from the people visiting the area and learning about its functions.

STRUCTURAL SUPPORT

The project should not only work as a educational center with focus on the hydra-social circle, but it should also work as a structural support for the terrain.

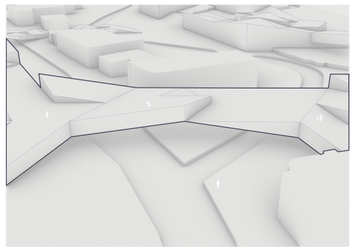






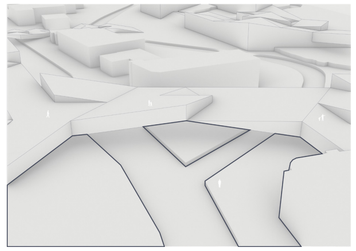
MÖLNDALSÅN

On the focus area Mölndalsån unites with one of its side arms. This creates an interesting intersection with a closeness to the water. This further connects to the aspect of hydro-social.



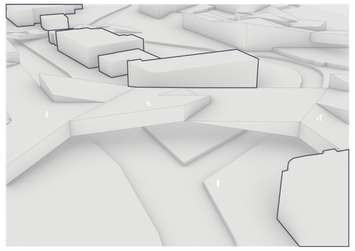
THE BRIDGE

The bridge is the focal point of the focus area. The bridge acts as a connection between a school and a housing unit. It is also a conncetion of pathways upon the terrain. The bridge adds to the accessibility and walkabilty.



THE LOT

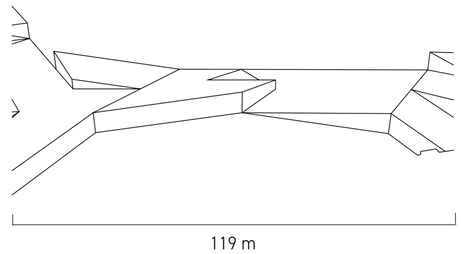
Underneath the bridge is an empty lot. Due to the intersection of Mölndalsån and its side arms, the lot has a closeness to water. The lot also borders the already existing buildings on the site.



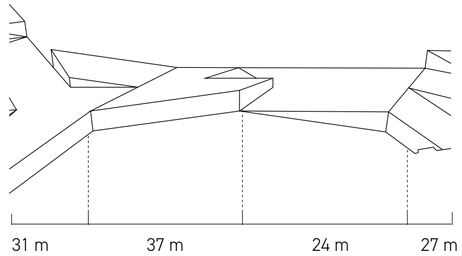
EXISTING BUILDINGS

In close proximity to the focus area are already existing buildings. These are preserved due to their social and cultural value to the site and house both bussniesses, offices, housing units etc.

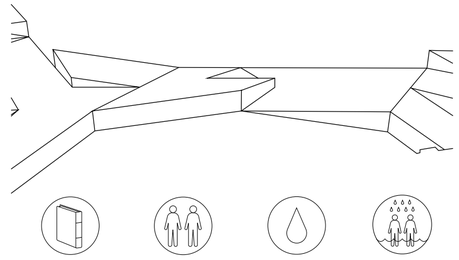
The bridge spans over 119 meter which means that it needs load bearing support to become walkable.

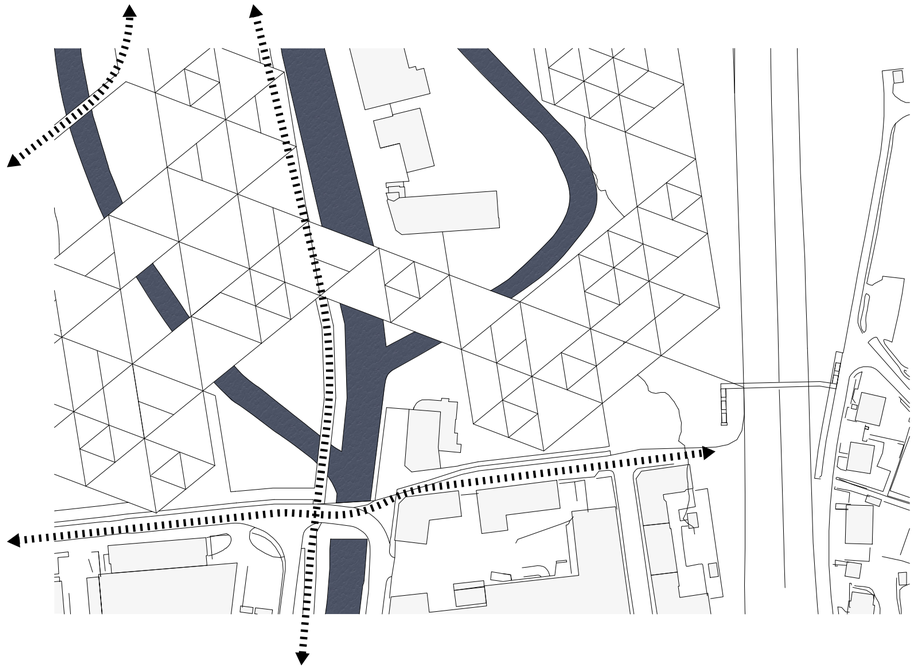


I chose three points, with Mölndalsån and the lot underneath the bridge in concideration, at which structural support system is needed with an approiate spacing inbetween them.

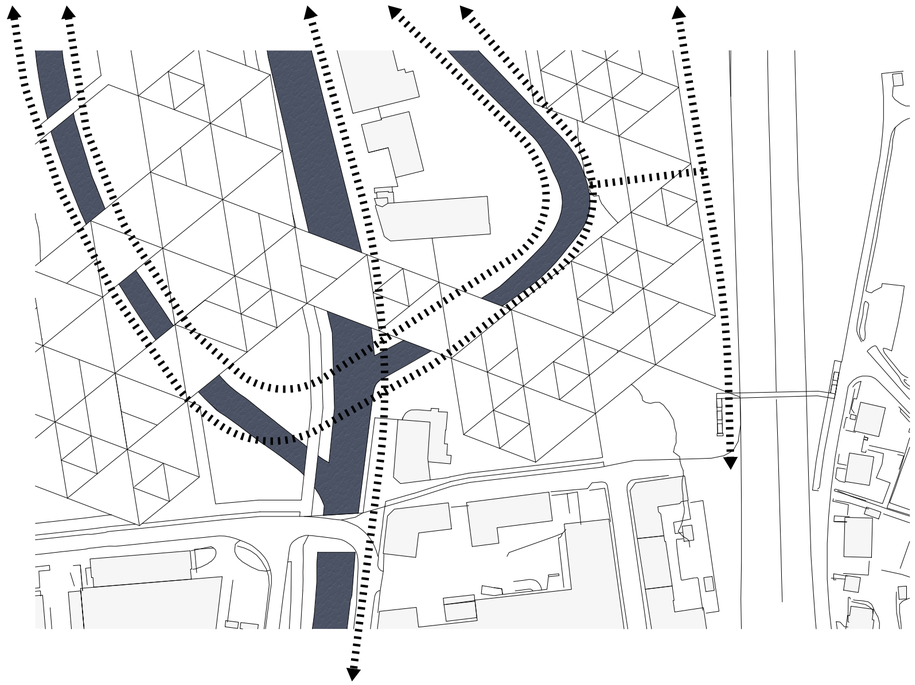


After placing the structural support, the values and functions will be applied.

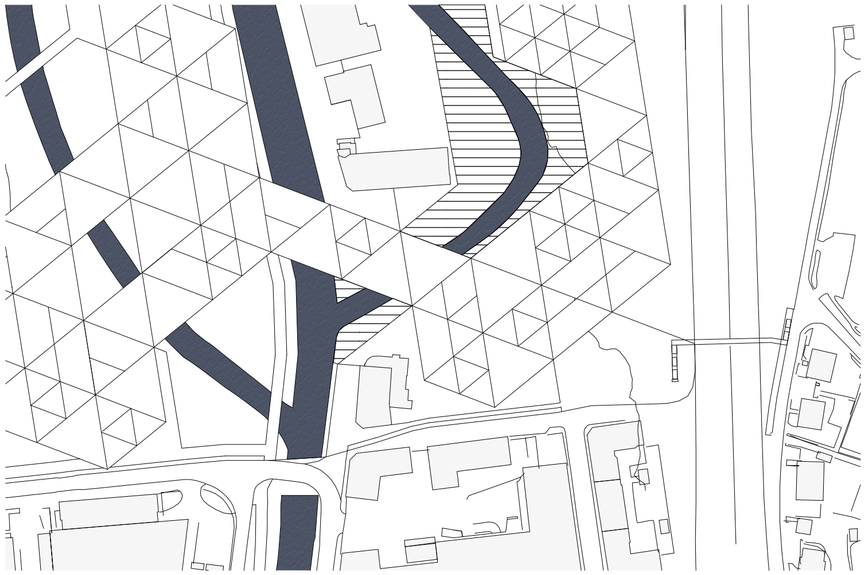




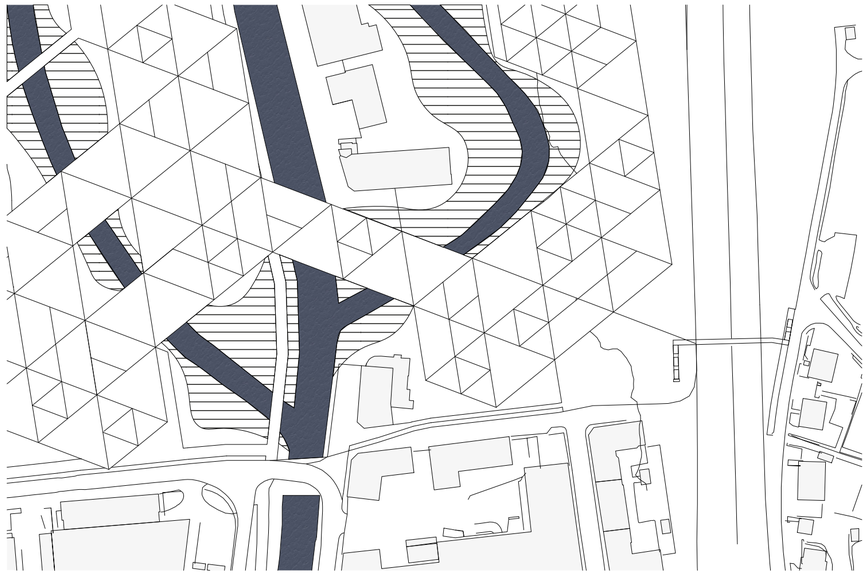
The existing ground level paths on the site.



I want to add more ground level paths in order to activate the area and terrain. The paths also serve a purpose by bringing people closer to Mölndalsån and its sidearms.

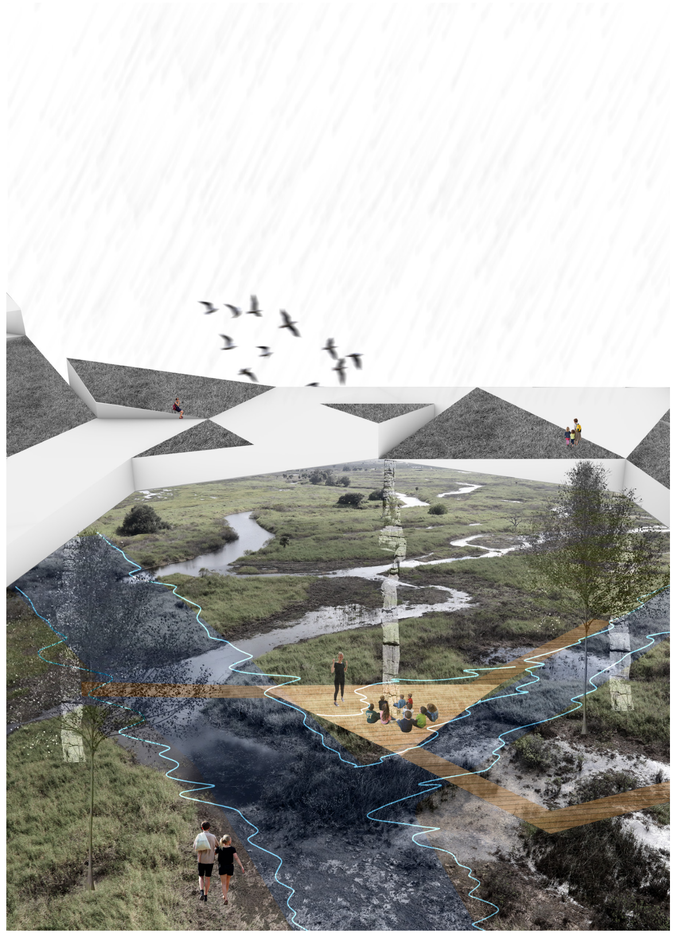


The current perimeter of the floodplains.



I want to make the floodplains more dynamic and fluid. More area should be covered with floodplains and the water are allowed to move and flood by its own nature.

2 CONCEPT & DESIGN CHOICES



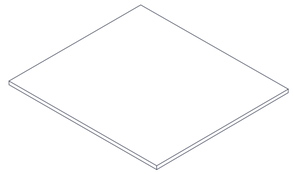
The concept for the indivudual project is an outdoor classroom for the schools on the site. The classroom will serve as a educational and social space that's closely connected with the floodplains. The classroom will also be a load bearing structure for the terrain and bridge abvove.

Exampels of outdoor classrooms

ANALYZIS OF AN OUTDOOR CLASSROOM

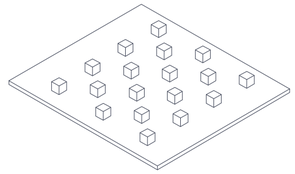
FLOOR AREA

As a base for the structure and outdoor classroom is a floor area with enough space for both students and teachers. For this project the floor area will be elevated above the flood plains.



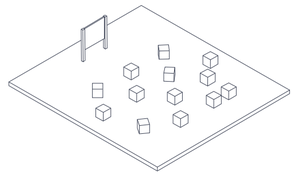
SEATING/DESKS

The key components to an outdoor classroom is the seating and desks for the students. The furniture should be flexible and possible to move around according to the different classes.



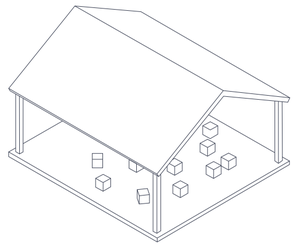
TEACHER SPACE

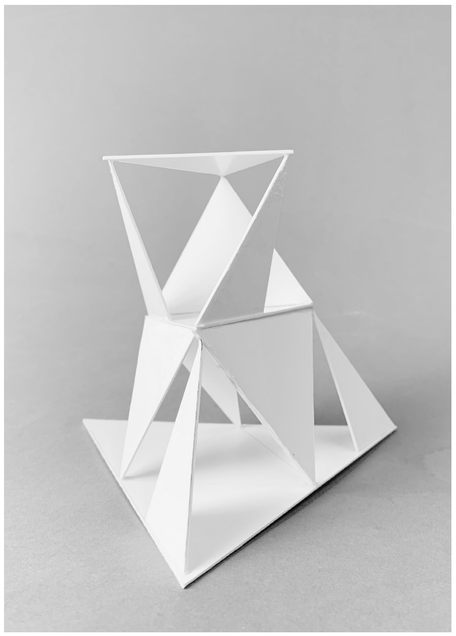
Other than space and furniture there should be space for the teachers and teaching. A board or other appliances can be used for creating this space.



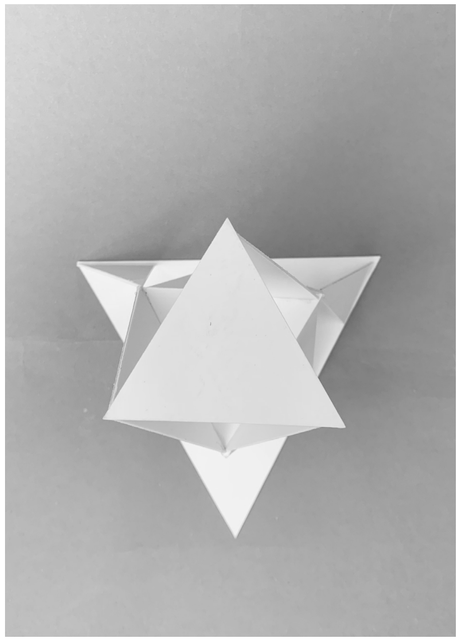
ROOFING/SUN SHADE

An option to the outdoor classroom to create more shelter to rain and sun is to implement roofing into the design. This makes the classroom more weather prof and can be used throughout all seasons.

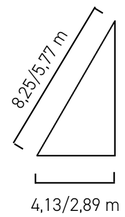




Perspective View

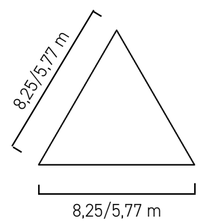


Top View



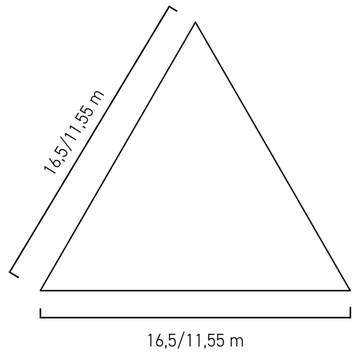
COMPONENT 1

Component 1 consists of a "half triangle" (one half of component 2) and is used for carrying the load of the bridge.



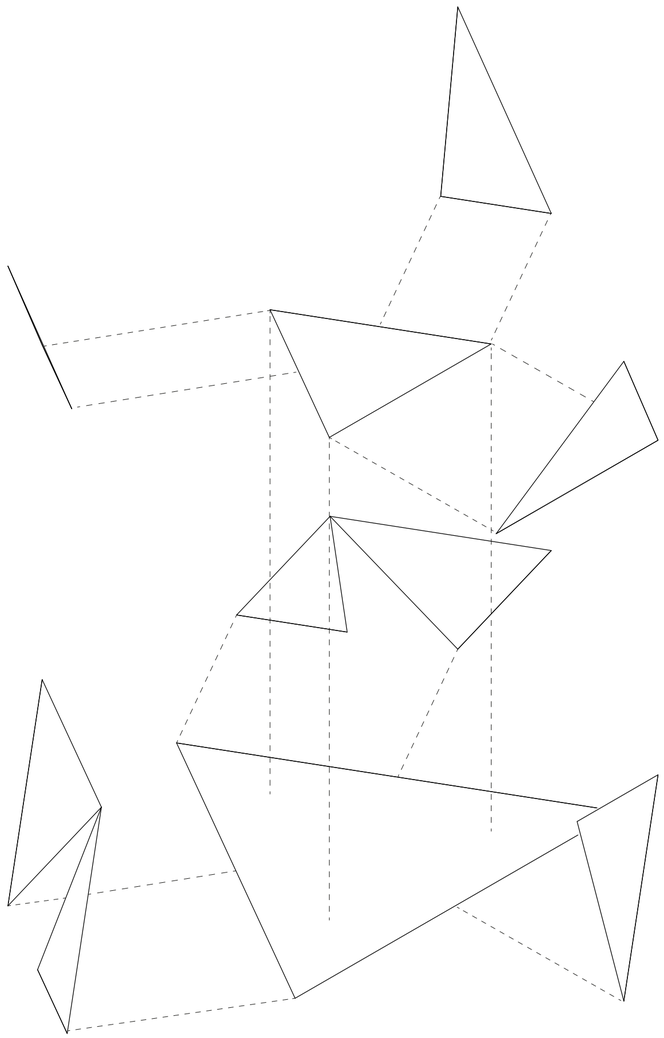
COMPONENT 2

Component 2 is a full triangle and is used for carrying the load of the bridge.

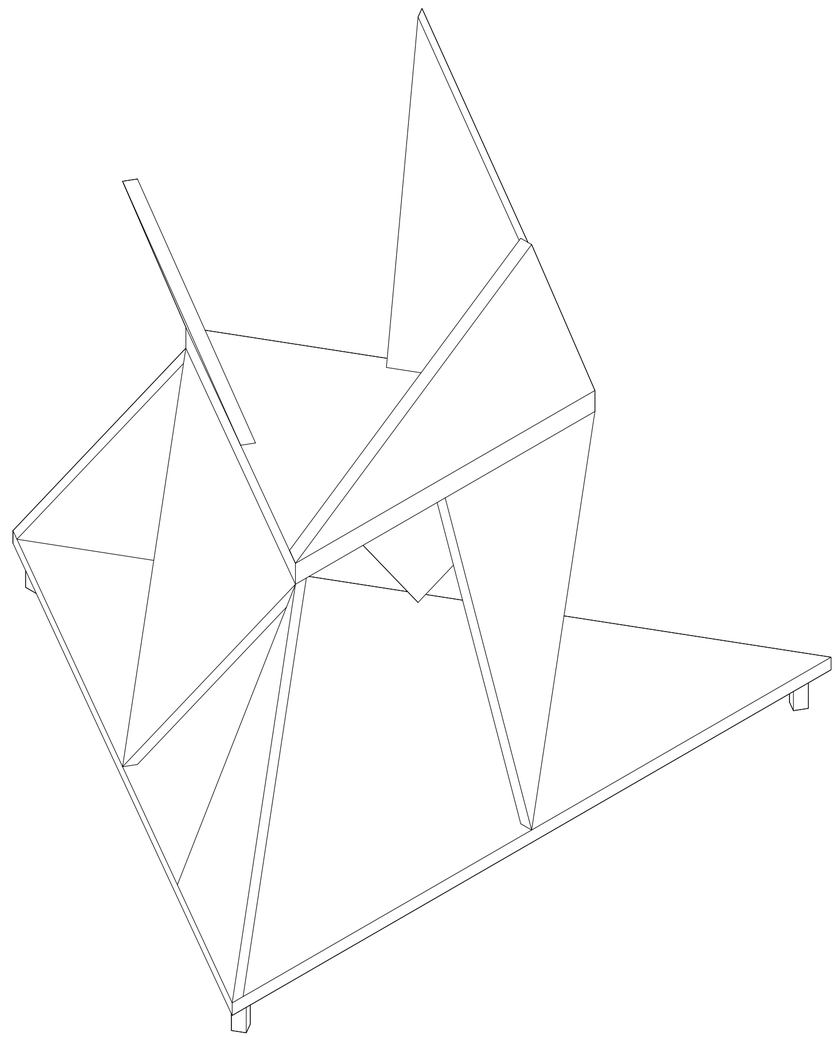


COMPONENT 3

Component 3 is a full triangle and is half the size of the original 33x33 m triangles in the terrain. This component is used as the base plate/floor area for the outdoor classroom.



By putting the components together they form a sculptural structure with interesting spaces.



By refining and adding thickness to the components the structure is completed.

3 THE PROJECT

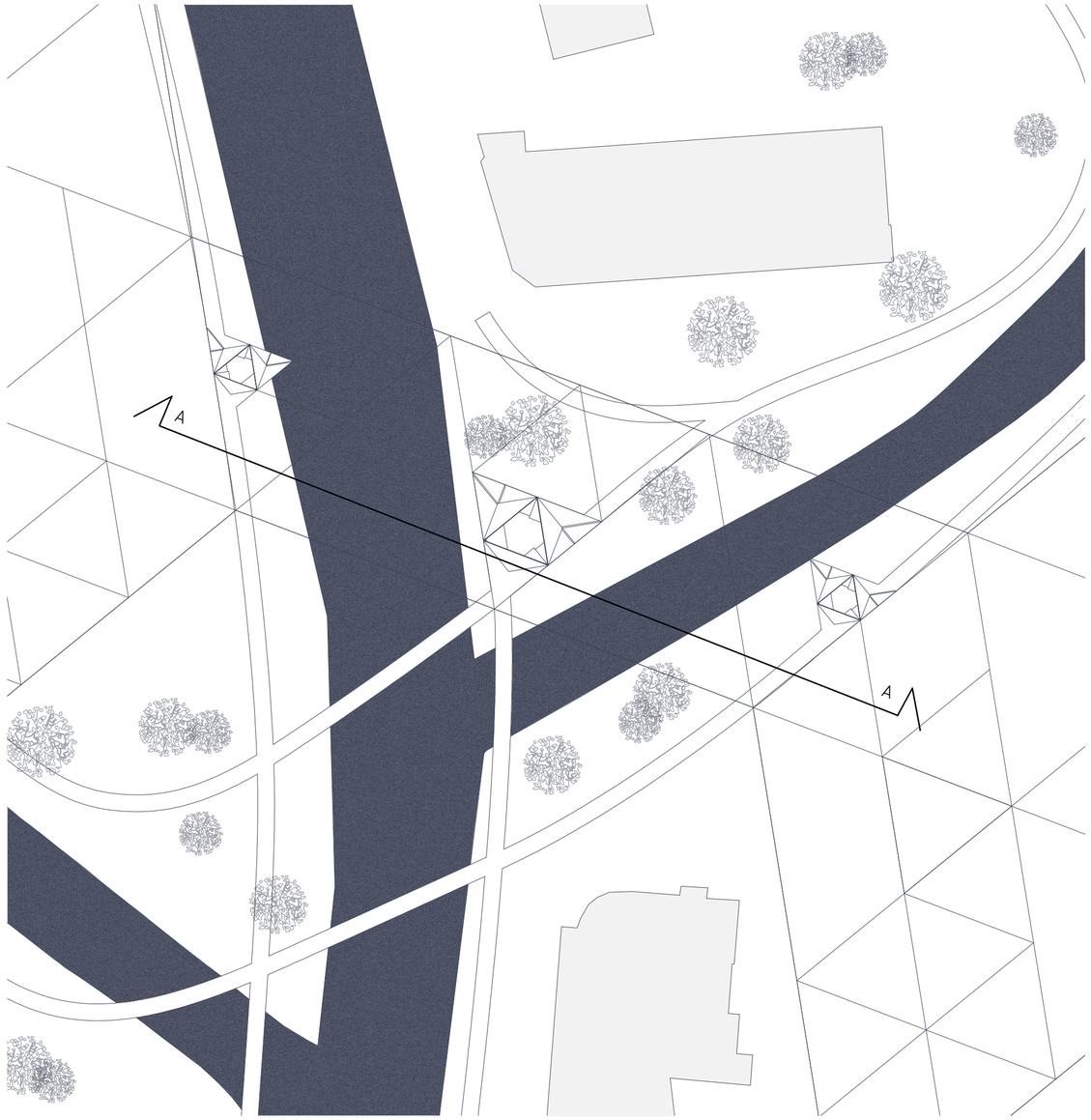
SITUATION PLAN

Hydro-sociality in terms of the project is about closeness to water and experiencing its shape and flows. Water is essential to human lives and its functions can spark a sense of curiosity. The concept for the project is an outdoor classroom that can be used by both the schools on the site and regular visitors.

The project is an architectural structure that connects to a bridge, which spans between a school and a housing unit. The structure provides both support and space for activities.

With the structure, values such as educational and social have been added to the site.

The structure is a sculptural wooden structure, consisting of triangles with the same dimensions as the urban terrain. Three of the structures have been situated in the focus area and are elevated above the flood plains. By doing so the structure is resilient to on-coming rainwater and occasional flooding.



SITUATION PLAN [1:500]

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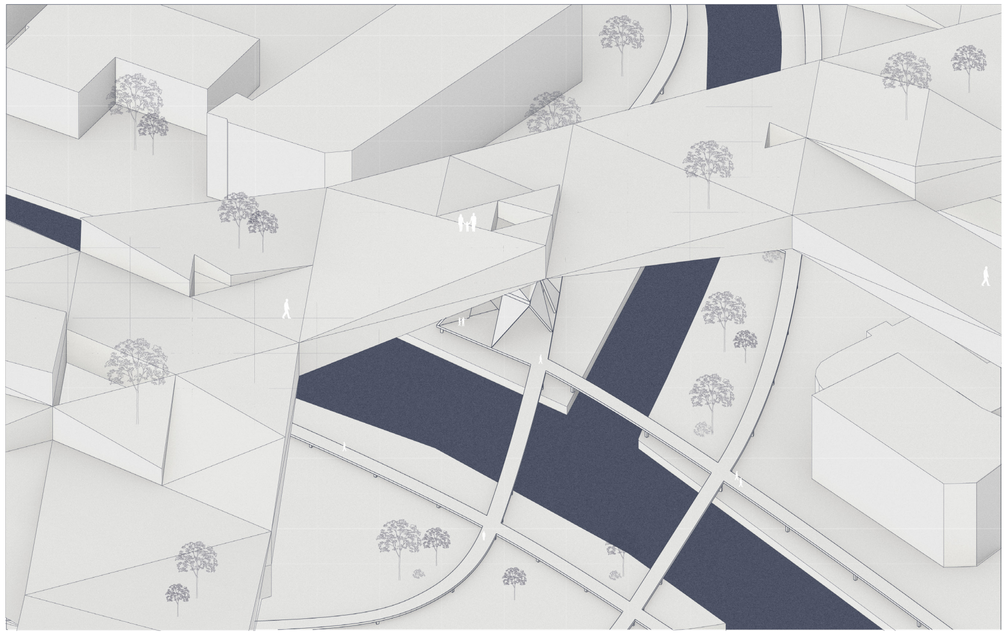
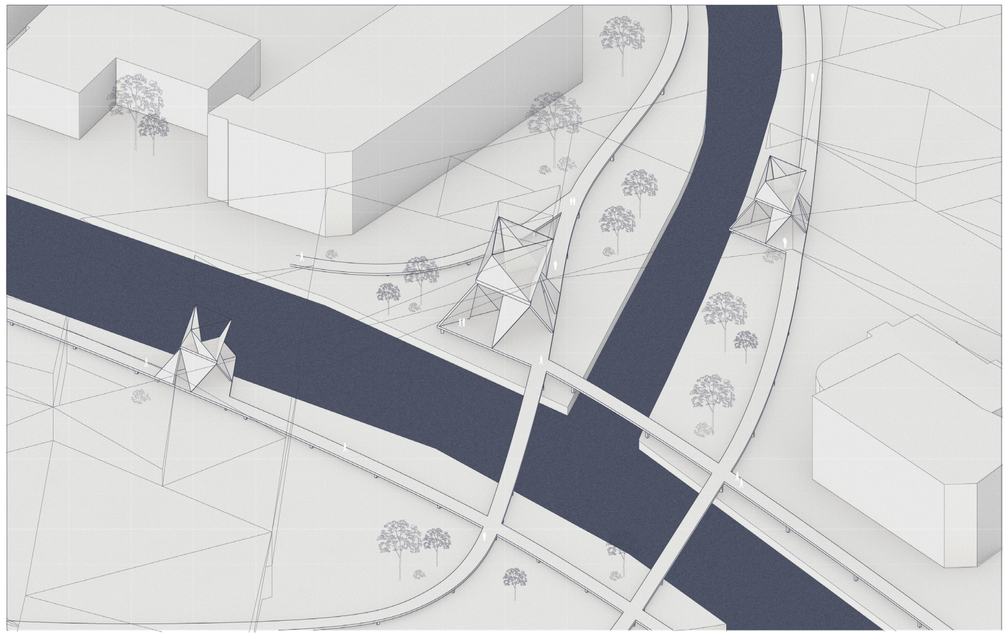
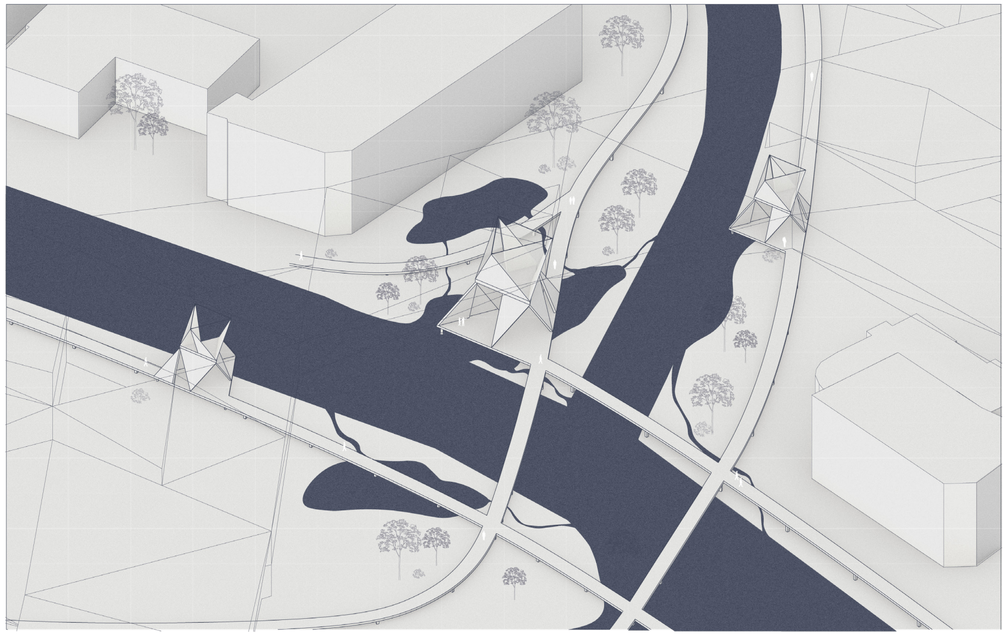


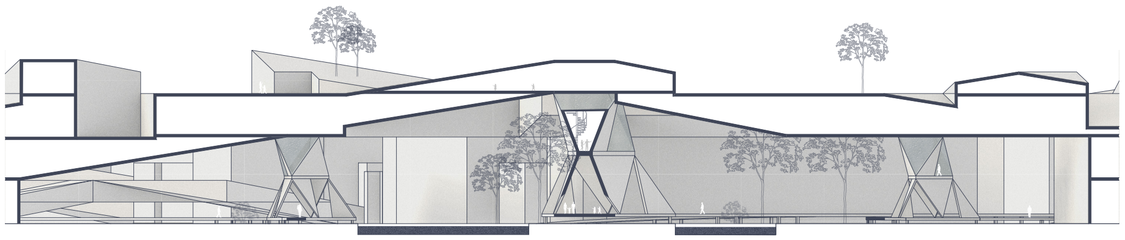
With bridge visible.



Without bridge visible.



Flooding situation.



SECTION A-A [1:250]

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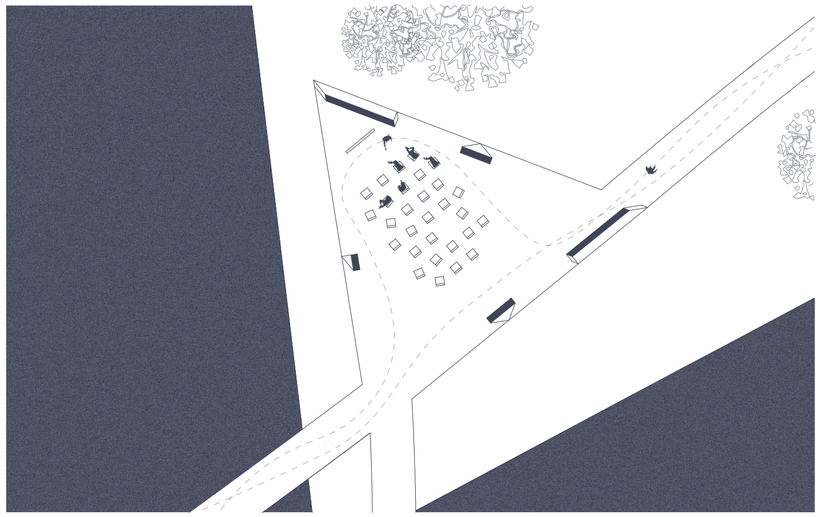

KEY PLAN [1:200]

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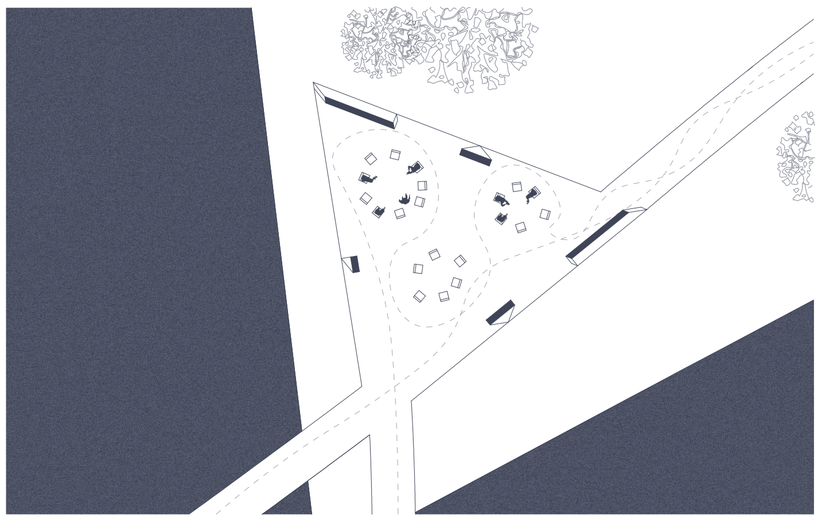
Proposition for furnishment A.



KEY PLAN [1:200]

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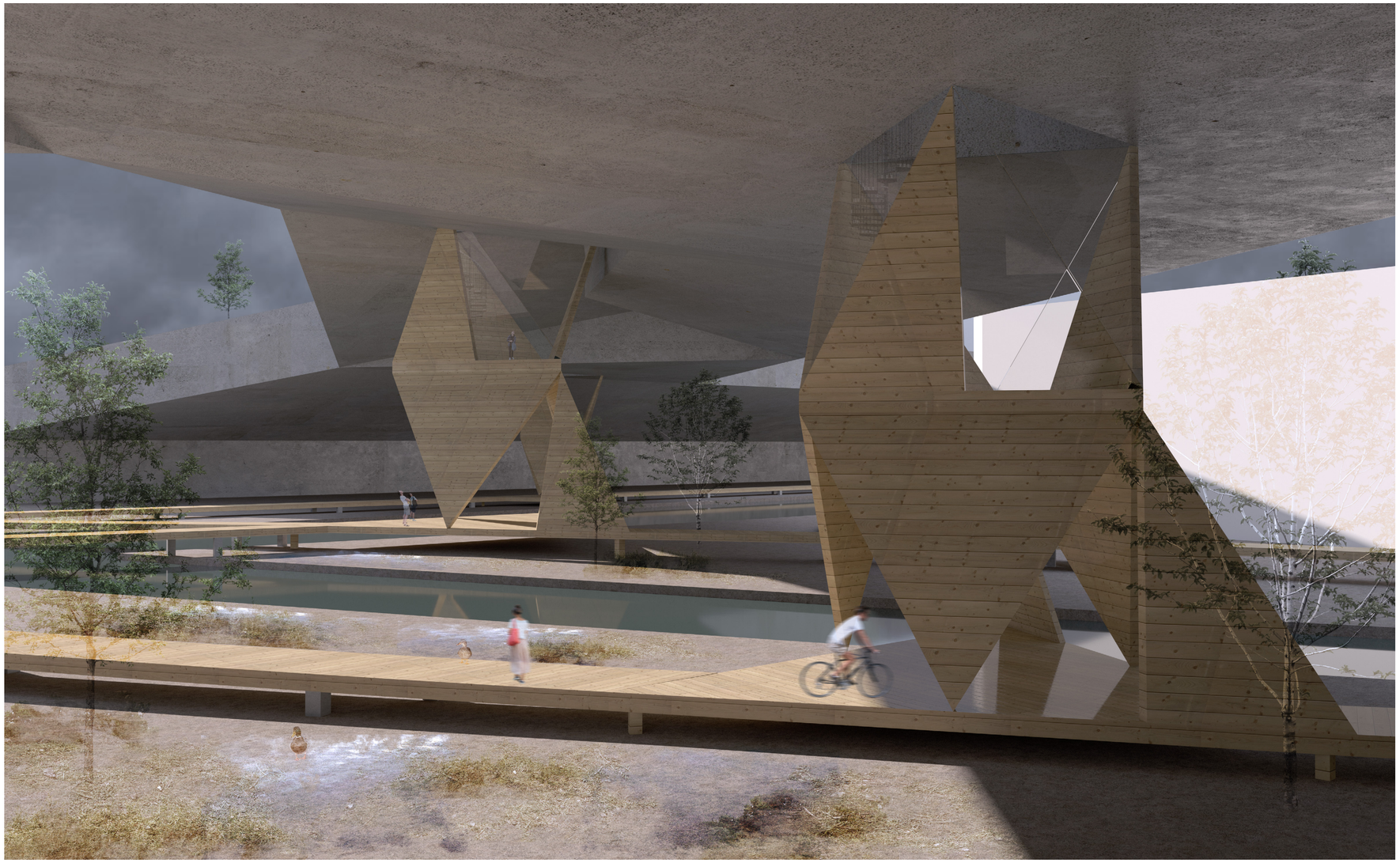
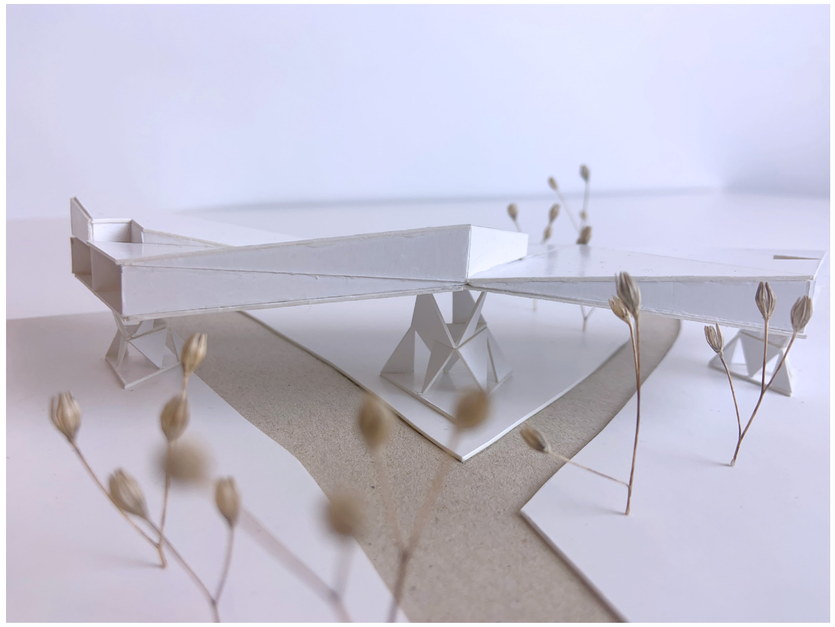
Proposition for furnishment B.





THANK YOU!

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