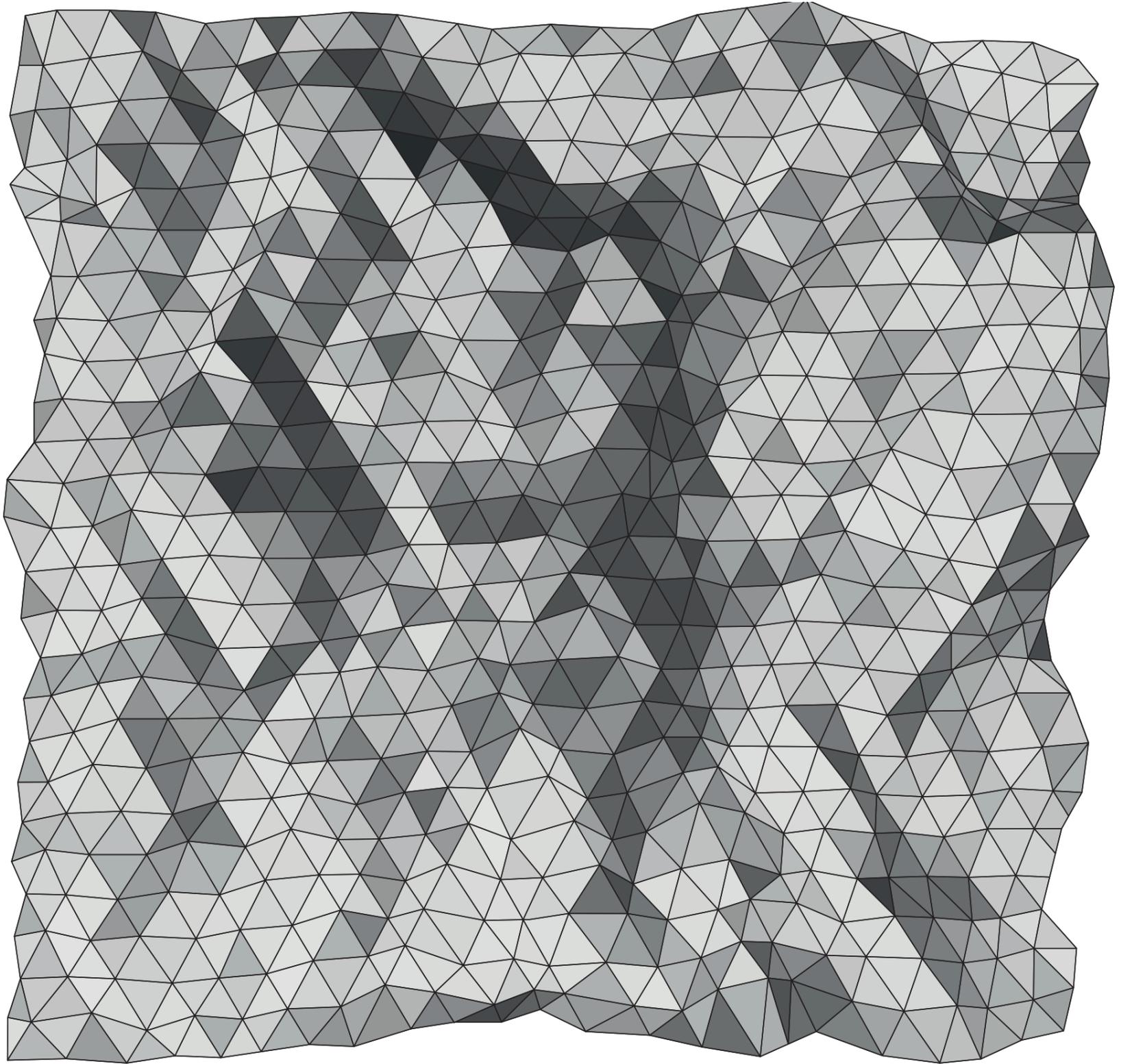


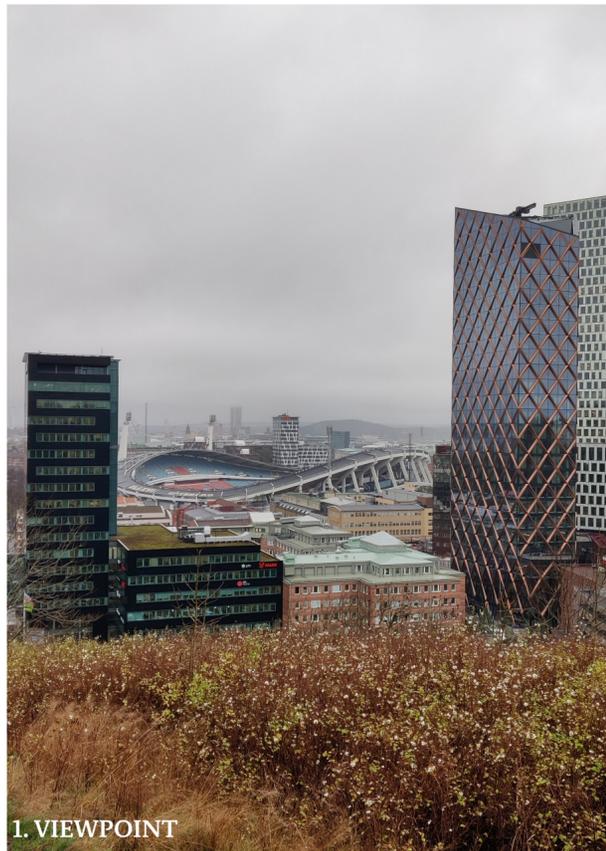
[FABRIC]ATING THE HYBRID



THE X-DUCT BOOKLET

ELIN EMRETSSON

SITE VISIT



1. VIEWPOINT



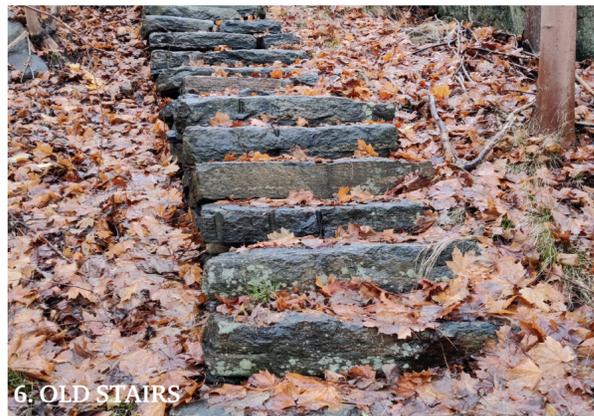
4. STAIRS



5. POWERSTATION



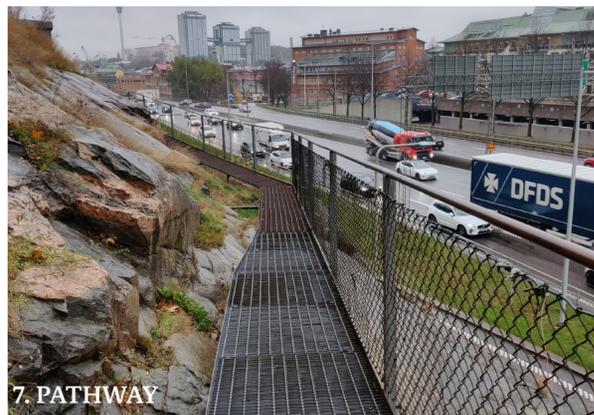
2. RAINWATER



6. OLD STAIRS



3. BARRIER



7. PATHWAY

SITE ANALYSIS



THE X-DUCT REFERENCES

- REGARDLESS OF SEASON

- IN THE EVENT OF BOTH HEAVY RAINFALL AND DROUGHT

- MULTIGENERATIONAL

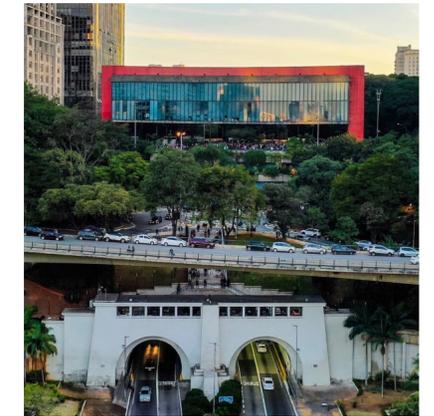
1. MACBA, BARCELONA

- Multifunktional outdoorspace where people from different generations co-exist



2. MUSEO DE ARTE, SAO PAULO

- Building enabling the flow of people and traffic.
- Takes the form of a bridge



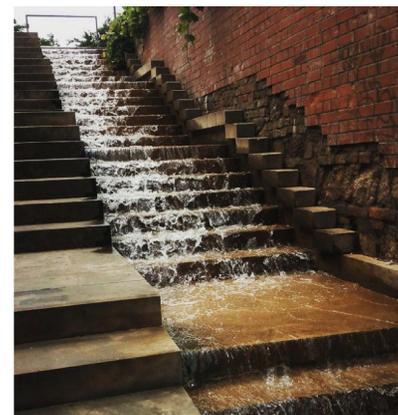
3. BLOX, COPENHAGEN

- Multifunktional building bridging the highway
- A place for different generations to meet
- Playground for young children part of stairs

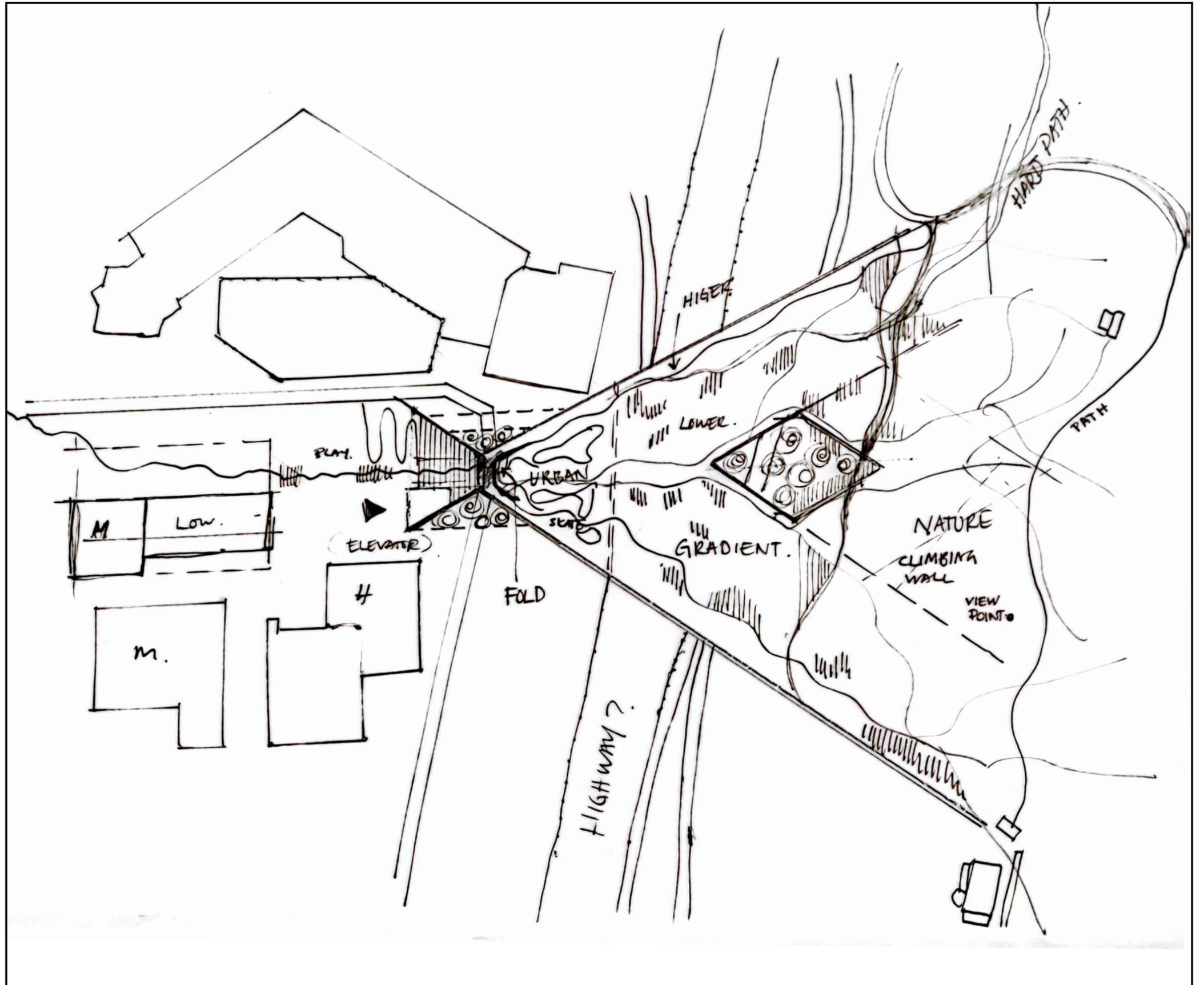
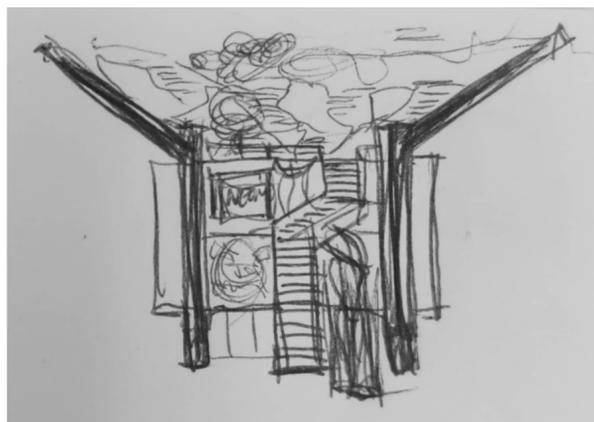
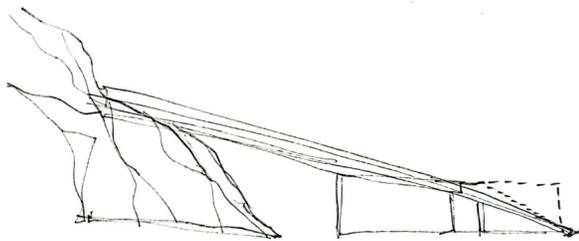
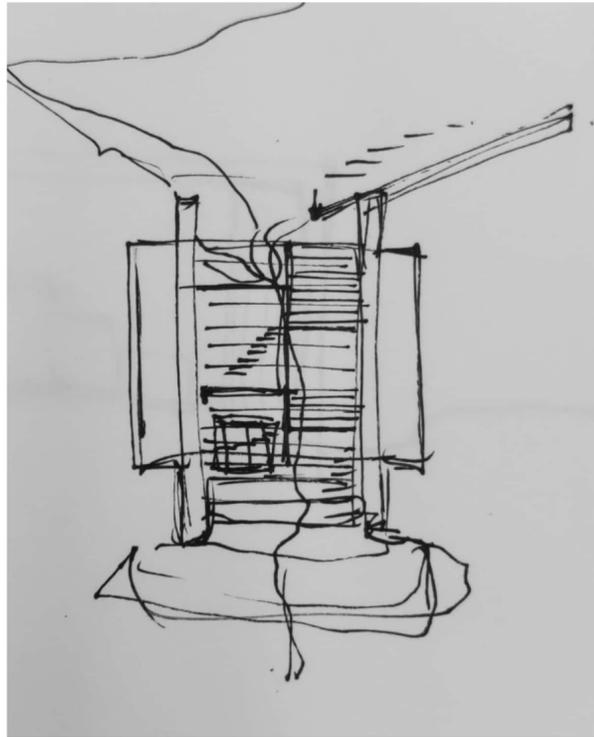


4. FORMS

- The skatepark, an example of form that could both conduct water and people.
- Stairs that enable flow of water, when water is present
- Moss growing in green concrete, reduces both sound and air pollution.

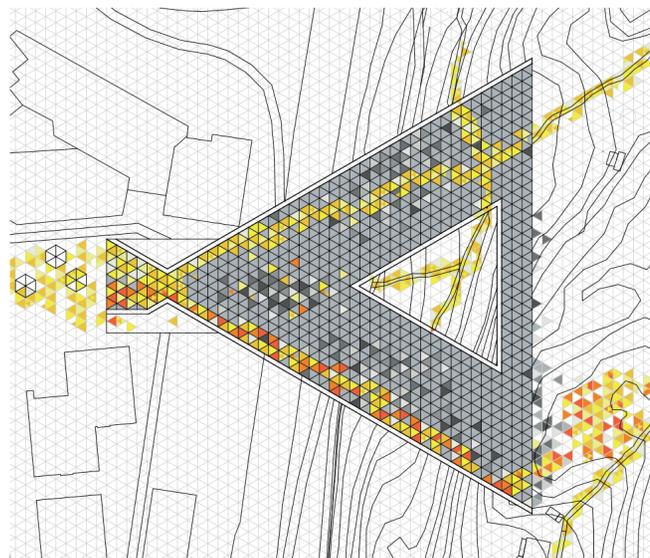
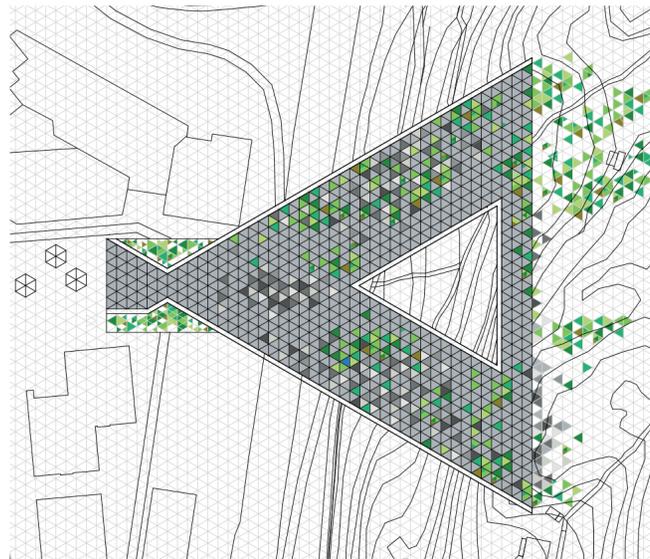
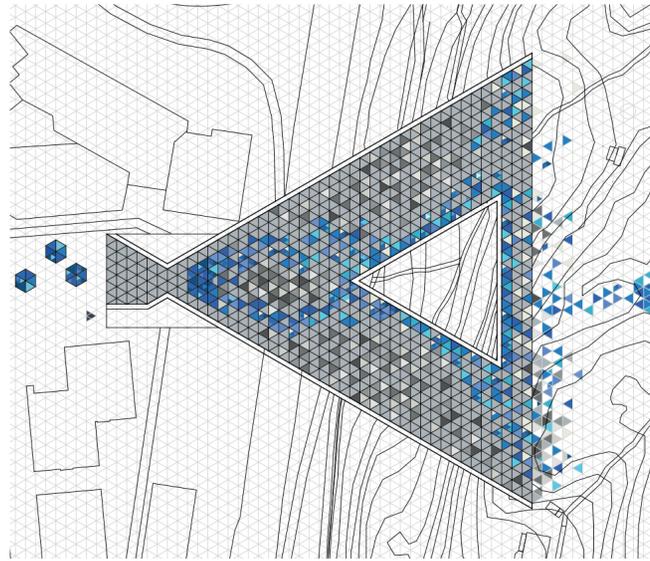


SKETCHING THE X-DUCT



FLOW CHARTS

MAPPING THE CONCEPT



1. THE FLOW OF WATER

Calculating the slope of each triangular segment allows for the entire structure to gather water and conduct it to the central reservoir and further along the square.

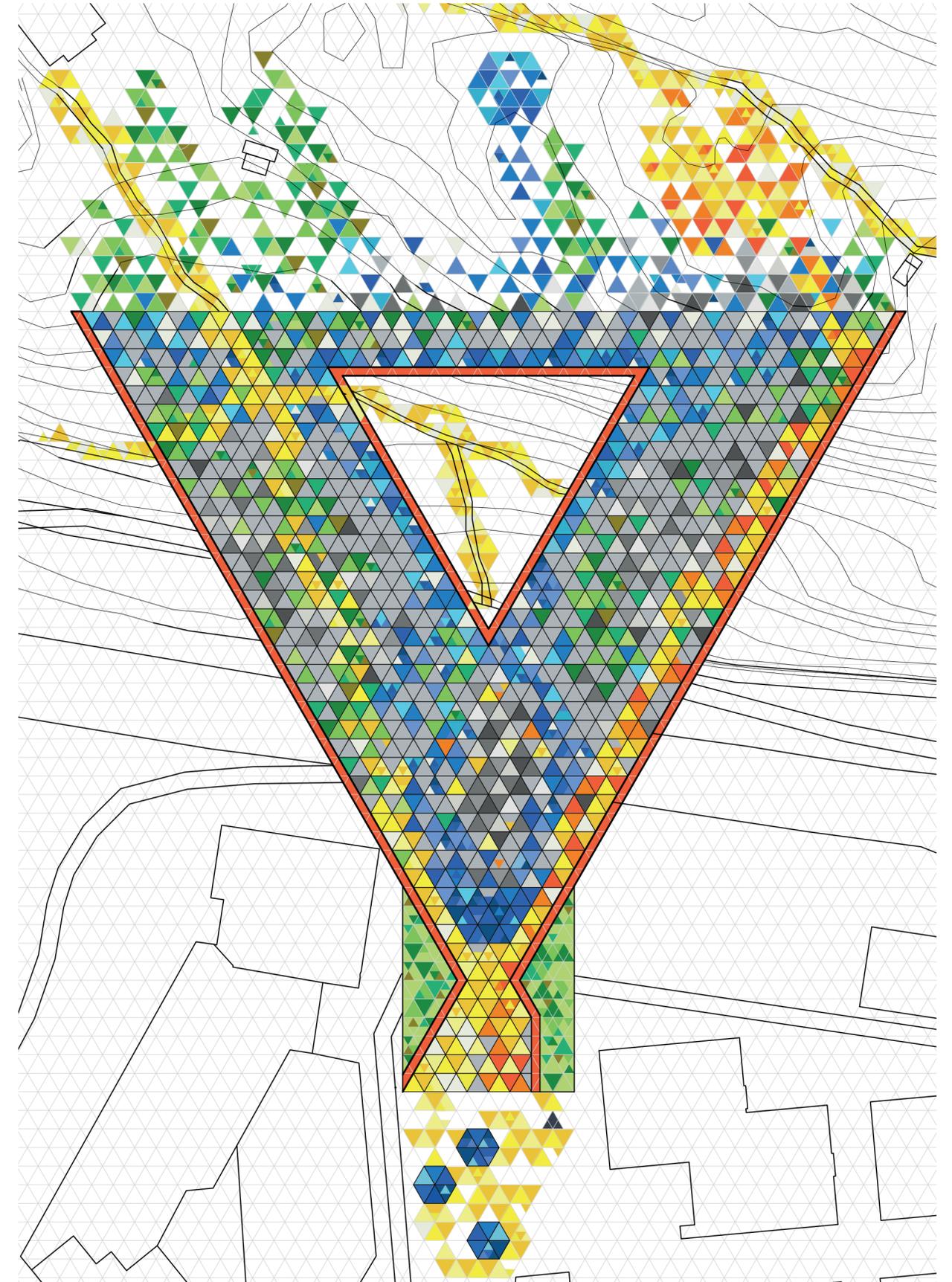
2. EXPANDING THE GREEN STRUCTURE

Some of the segments are dedicated to the green structure, filled with soil and sand. They would thus allow greenery to extend into the urban landscape and create a bridge over the highway for living creatures that previously could not cross it.

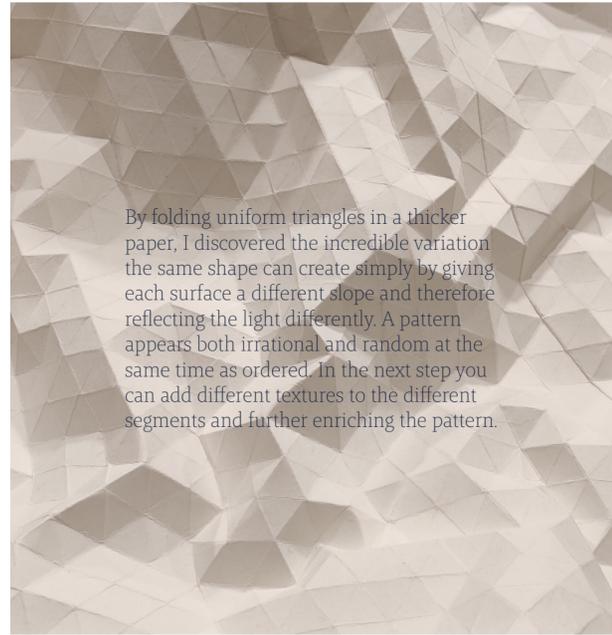
3. CONNECTING PATHWAYS

The paths are already there. What's needed is a structure that captures people's movement and guides it through the system. Now, many of the movements through this landscape are cut off by barriers and dead ends.

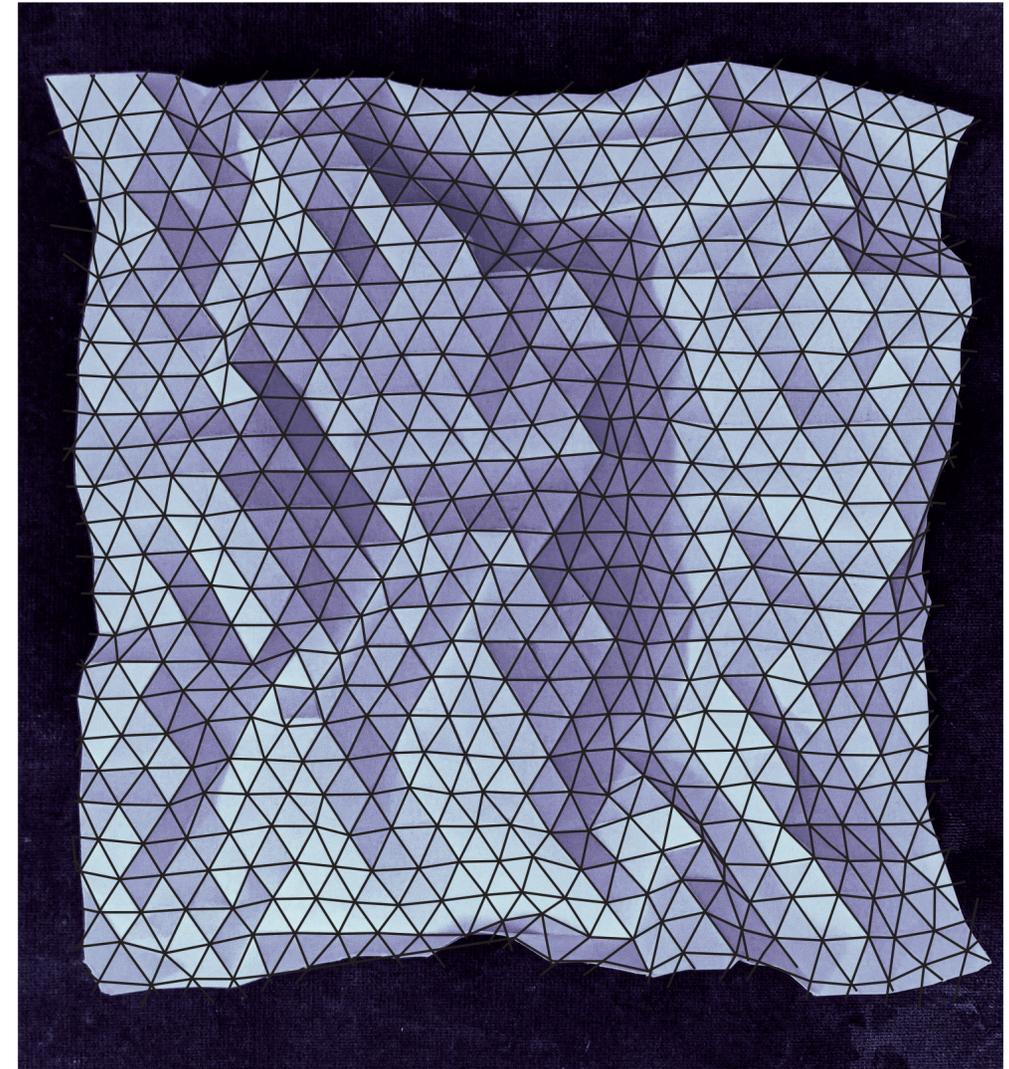
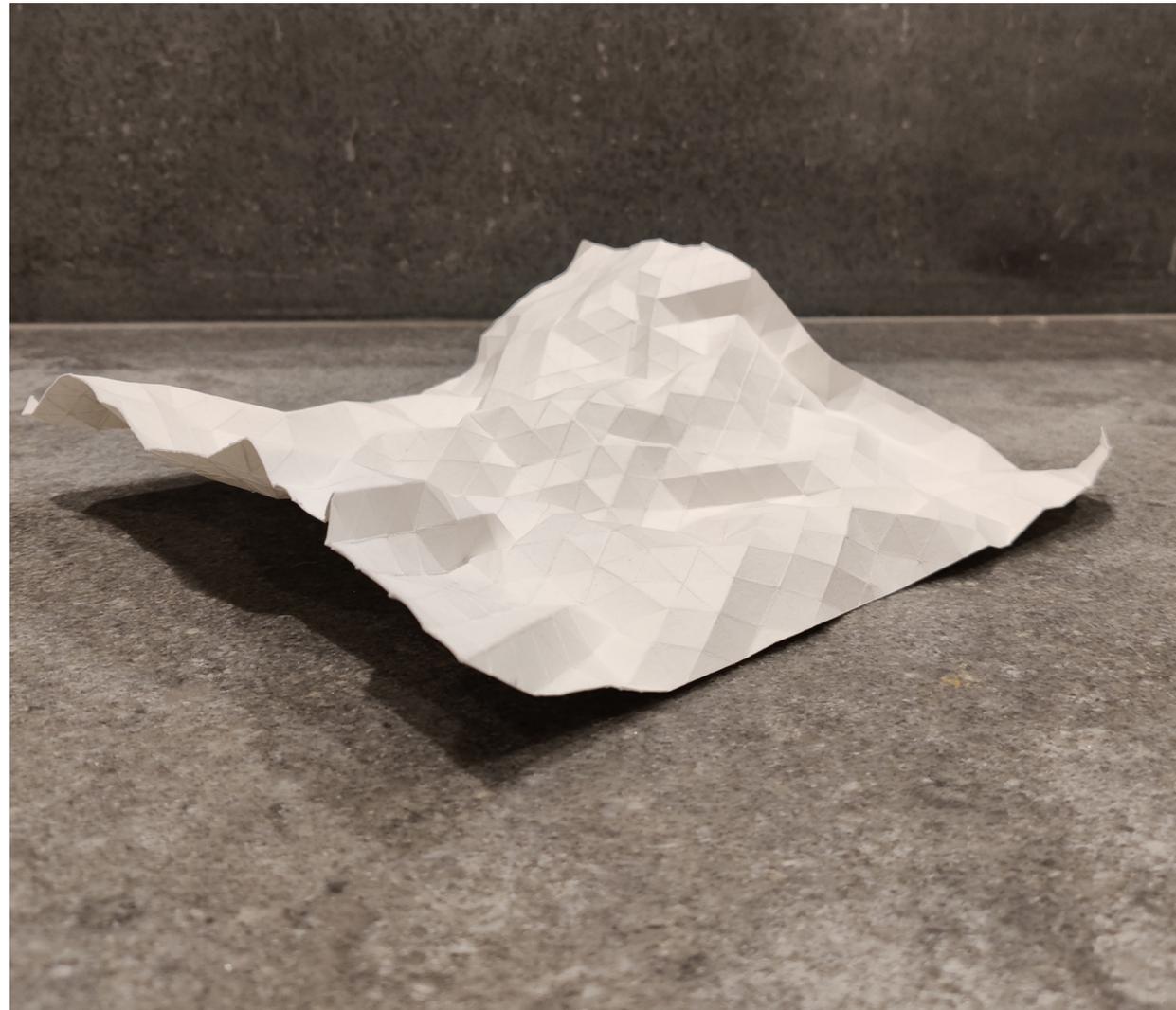
A VARIED LANDSCAPE



FOLDING PAPER



By folding uniform triangles in a thicker paper, I discovered the incredible variation the same shape can create simply by giving each surface a different slope and therefore reflecting the light differently. A pattern appears both irrational and random at the same time as ordered. In the next step you can add different textures to the different segments and further enriching the pattern.



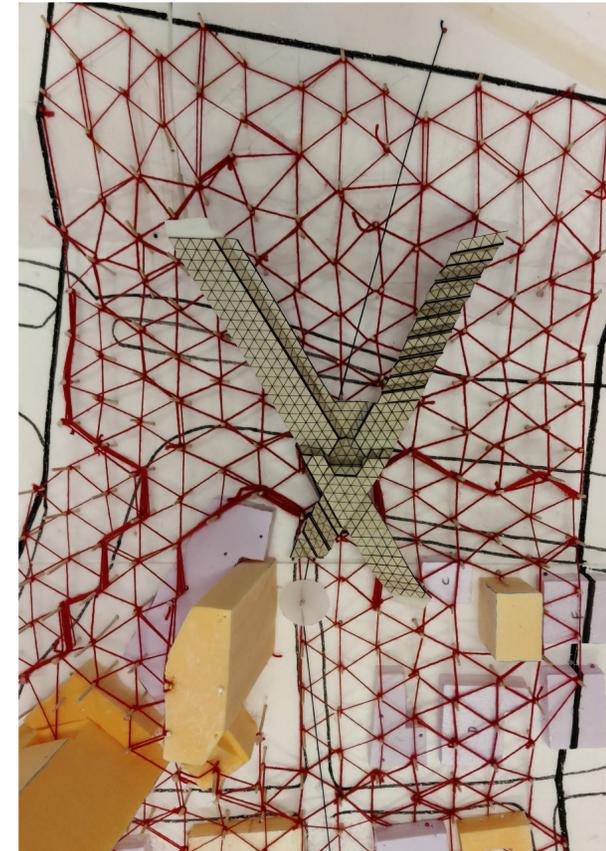
By digitising the patterns that emerged when I illuminated my folded sheets, I was able to test the scale of my drawings and use them in the next stage of my design, further enriching the pattern.

MODEL MAKING

I created my final design by building a model. Starting with the folded paper, I looked for a sequence of positive and negative folds that would lead the water down to my intended center point. I soon found that I had to use multiple layers of paper to have enough material to create pathways not only over but through the structure.

Once I was happy with the shape of the paper model, I flattened it out and cut the paper in all of the negative folds and thus had a blueprint to build the model in the next material. I had imagined that wooden triangles glued to fabric would provide a basis for visualizing the fabric quality and variation in the slope of the structure, this proved more difficult than expected and in the end, I produced a fairly flat model. But what it does show with clarity is how the structure creates new paths up the hillside and how these paths have different inclinations and qualities. I also decided to free the x-duct from the original grid and slanted the entire structure with 8 degrees. This way it fits seamlessly into the existing infrastructure and captures larger movements of pedestrians and cyclists.

I was looking for a way to break the triangle's almost overpowering idiom and realized that I wanted to add a structure that had a radically different quality. As I wanted to capture all the water that the mountainside could produce I realized that I needed a structure that collected it and lead it down onto the aqueduct itself. I gave the structure the shape of a two-story building and also added a system of pipes on the mountainside that would not only be able to channel rainwater but also harvest morning dew in times of drought. The roof of the building does not rise above the height of the viewpoint. instead, its roof provides the viewpoint with additional space. It is also possible to enter the building through the southern leg of the x-duct.



THE X-DUCT MODELS

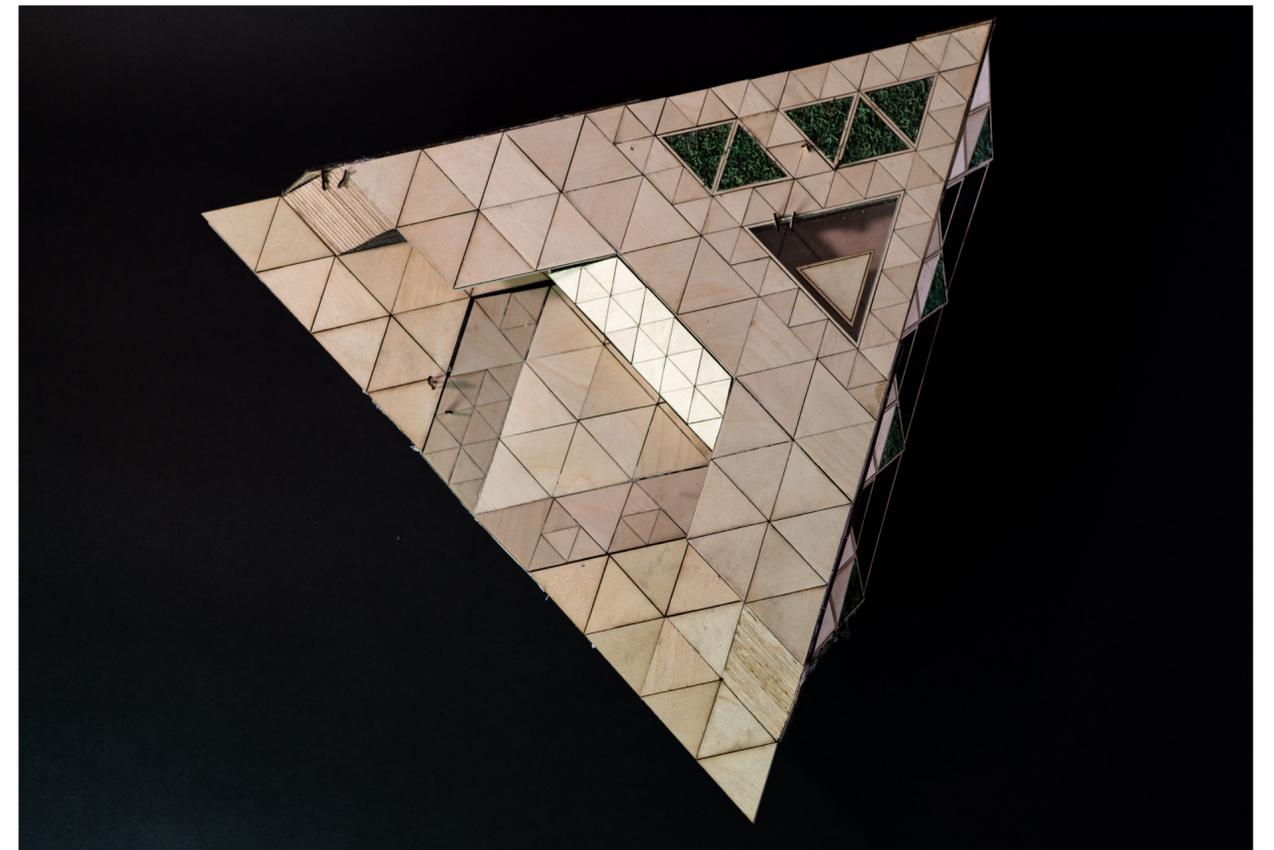
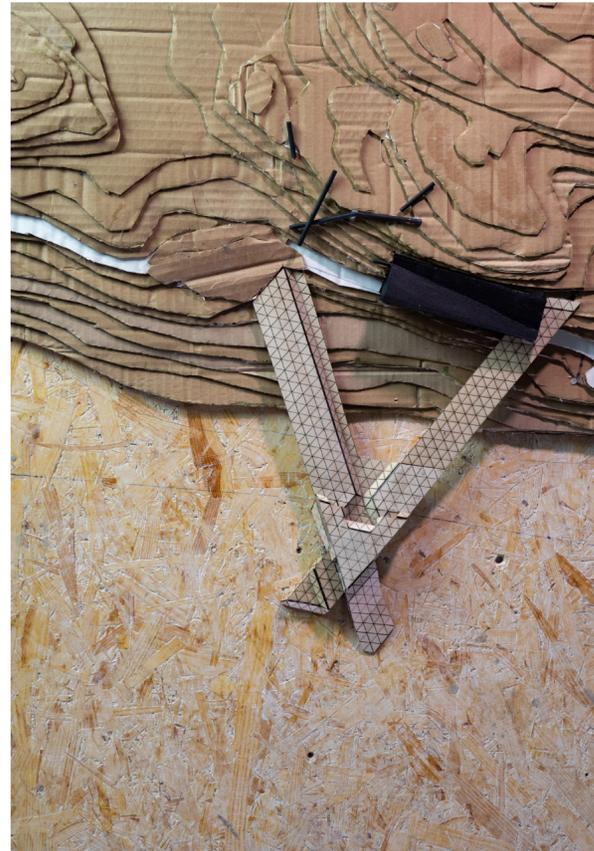
I produced two models, a landscape model in scale 1:500 and a model of the center of the aqueduct which I have named The reservoir. The larger model's goal is to visualize how movement is possible through and over the structure and how its form has stitched together two parts of the city that was previously separated by the highway.

The smaller 1:100 model focuses on the reservoir and aims to explain how this part of the structure works. The water that collects on the mountain and on the aqueduct itself is led down to a central low point where it then flows into a tank inside the building. It is then filtered through layers of different sediments, gravel and sand, to increase its quality and usability.

There are spaces underground to test and store the purified rainwater. If needed this stock of fresh water could be used as drinking water in the local community. But more commonly the water is circulated back into the building and used to operate a children's learning facility. Additional spaces inside The reservoir are preserved for exhibitions and a science labs where children can learn about environmental change and its impact on the local biological environment.

On the outside large parts of this building are covered with moss, a material that not only purifies the air but helps to reduce sound pollution from the highway. Infrastructure passes both around and above this building. As part of the operations, there is a public café or restaurant which uses rainwater to prepare the food. There is even possible space for a garden on the roof of the structure, growing crops for the restaurant. When it does not rain the structure is an excellent place to meet and practice skateboarding

Overall the x-duct is a new landmark, a possibility for Gothenburg to show what it has to offer. It stitches together two parts of the city previously disconnected but at the same time, it is also just an everyday place facilitating your way to work.



THE X-DUCT DRAWINGS

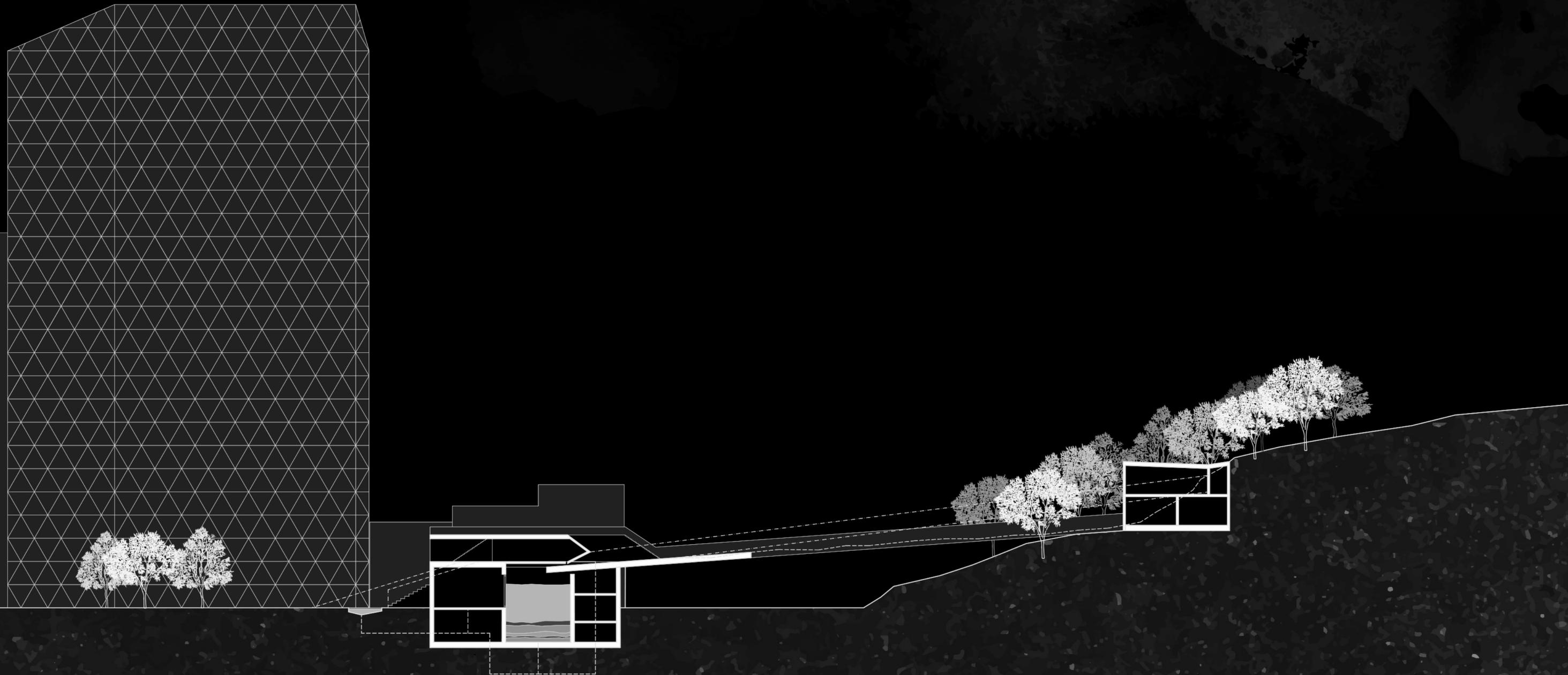
SITEPLAN

SCALE 1:500



THE X-DUCT DRAWINGS

SEKTION A-A



SCALE 1:500