



# Sense of safety in Dutch river landscapes

P5 presentation  
Valerie Heesakkers  
Explore Lab 34  
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Geert Coumans *Architecture*  
Jan van de Voort *Building Technology*  
Saskia de Wit *Research*  
Leo van den Burg *Examinor*





10-10-1998



**“That enormous force that you see coming, that flushes everything away, it damages more than just homes. It also damages the faith you have in your living environment.”**

*“Die enorme kracht die je dan op je dorp ziet afkomen, die alles wegspoelt, dat beschadigt meer dan alleen de huizen. Dat beschadigt ook het soort vertrouwen dat je in je woonomgeving hebt.”*

Floris Alkemade (Rijksbouwmeester) - VPRO Zomergasten, July 18 2021

1. Prologue
- 2. Research: Understanding sense of safety**
3. Design assignment
4. Landscape design
5. the Platform & the Shelter
6. Water course
7. Future flood
8. Conclusion

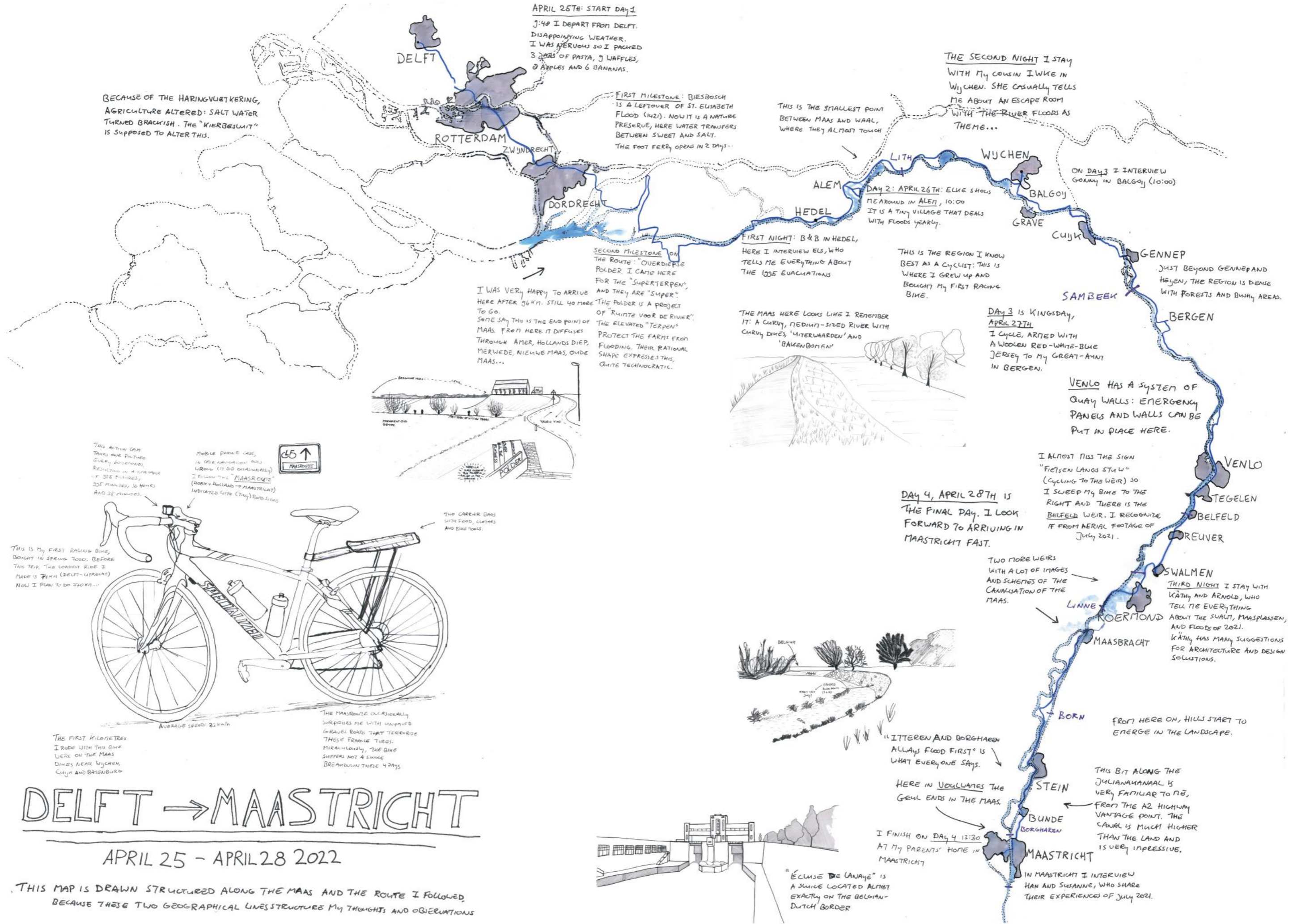


# **What is the role of architecture in perceiving a sense of safety in Dutch river landscapes?**

- (1) How are the characteristics of the Limburg river landscape perceived?**
- (2) How do people gain a sense of safety from the landscape?**
- (3) What is the role of architecture in establishing a sense of safety?**







# DELFT → MAASTRICHT

APRIL 25 - APRIL 28 2022

THIS MAP IS DRAWN STRUCTURED ALONG THE MAAS AND THE ROUTE I FOLLOWED, BECAUSE THESE TWO GEOGRAPHICAL LINES STRUCTURE MY THOUGHTS AND OBSERVATIONS

## (1) How are the characteristics of the Limburg river landscape perceived?



“**Water is never the same**, and a dike always swings. There’s always a view...and wind.” - Els (Hedel)

“The Maas has everywhere the same **trees**. They are a kind of **benchmarks** along the Maas.” - Gonny (Balgoij)

“**The Maasplassen. And the Swalm, the Maas and the Roer**, is also very close. But the landscape is defined by the Maasplassen. That is specific for this area. It is a big recreational area now. And it all exists because of **gravel extraction**” - Käthy (Swalmen)

“I don’t find it very typical here. Here it is quite canalised. I particularly like the floodplains in river landscape. But here it is a river that is **firmly being kept in place**.” - Susanne (Maastricht)

“So this is a beautiful area, and before last summer **I have never worried or thought that it might be dangerous** here.” - Henk (Eijsden)

## (2) How do people gain a sense of safety from the landscape?



Communication with government

Community & solidarity

Personal safety & material safety

Role of the government vs. the role of self-sufficiency

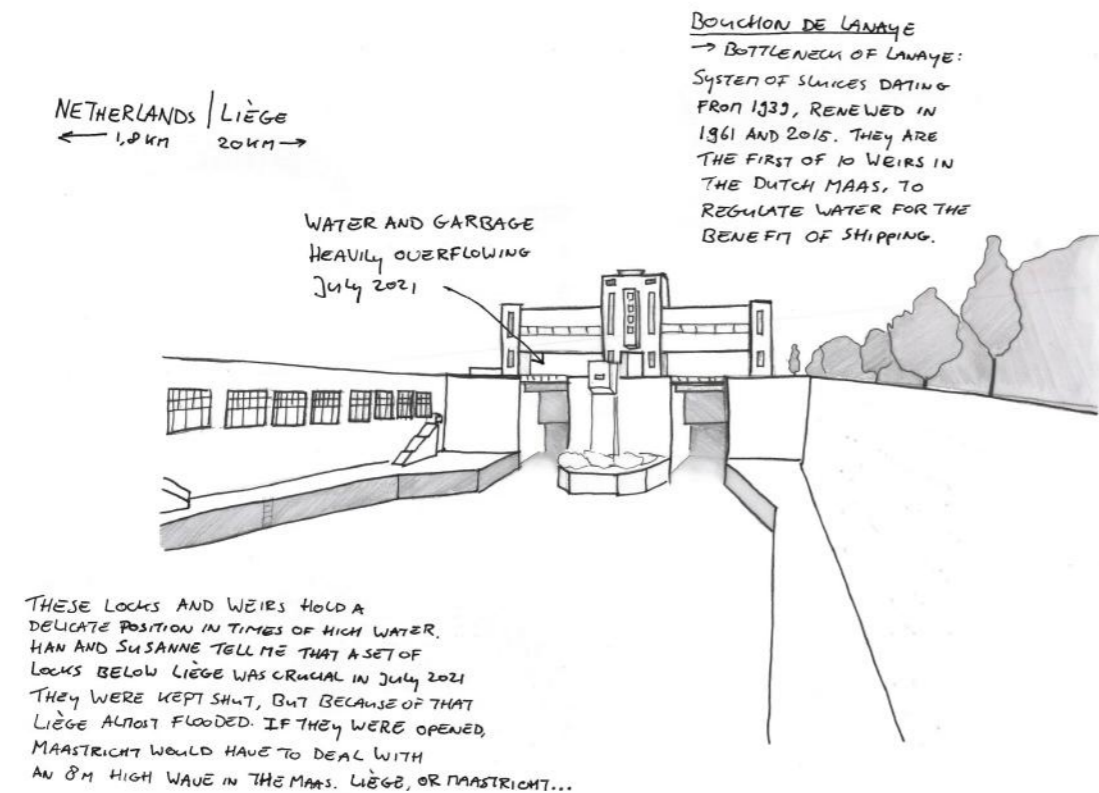
“At some point, I called the crisis centre, someone I know worked there and he said **“Get out of there, because it might be coming to the first floor.”**” - Henk

“I’m not afraid something will happen to us. But it is mainly the investment in your house, **the economical damage, you won’t get anything back.**” - Henk

“First all the tables and chairs disappeared and I thought those bushes will stay, but they were all gone at some point. **And then you’d see caravans disappearing.**” - Susanne

“I do think it was scary, because you knew that there were people in your area that were struck by the floods. **Everyone feels very connected in those times.**” - Käthy

### (3) What is the role of architecture in establishing a sense of safety?



### River literacy

- ▶ Rivers are seen as entities defined by a line.
- ▶ The line separates land from water.
- ▶ A flood is a violation of that line.
- ▶ Water is everywhere.
- ▶ It is in moments in its different forms: rain, water, vapour, ice.
- ▶ Water is defined by its form in time, rather than by its location in space.

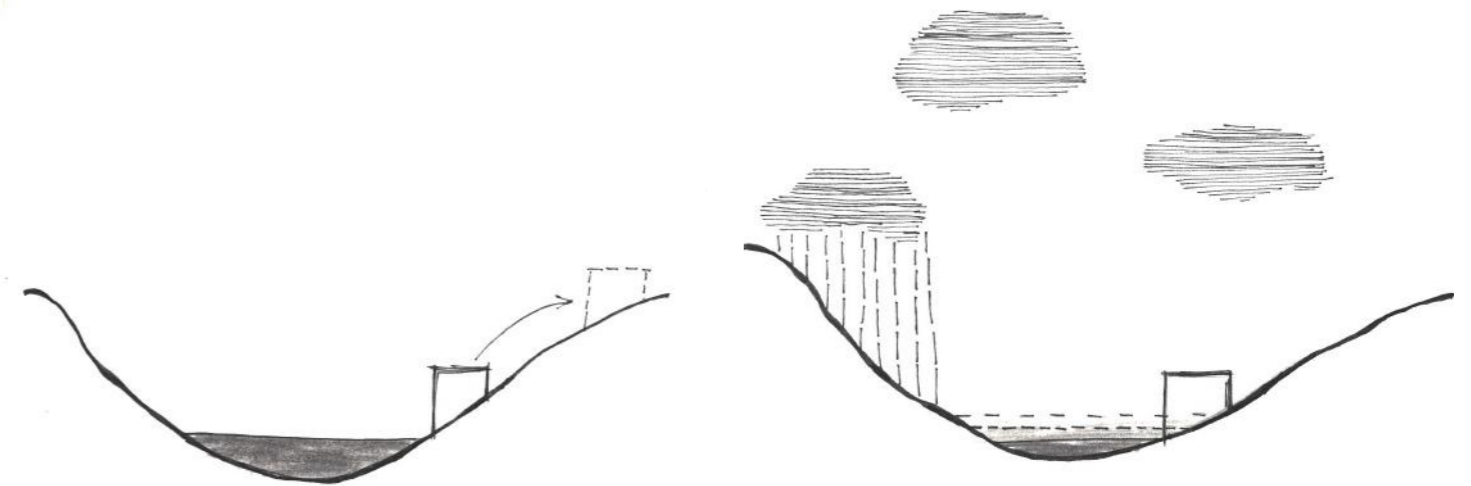
### Power balance

#### Dominance

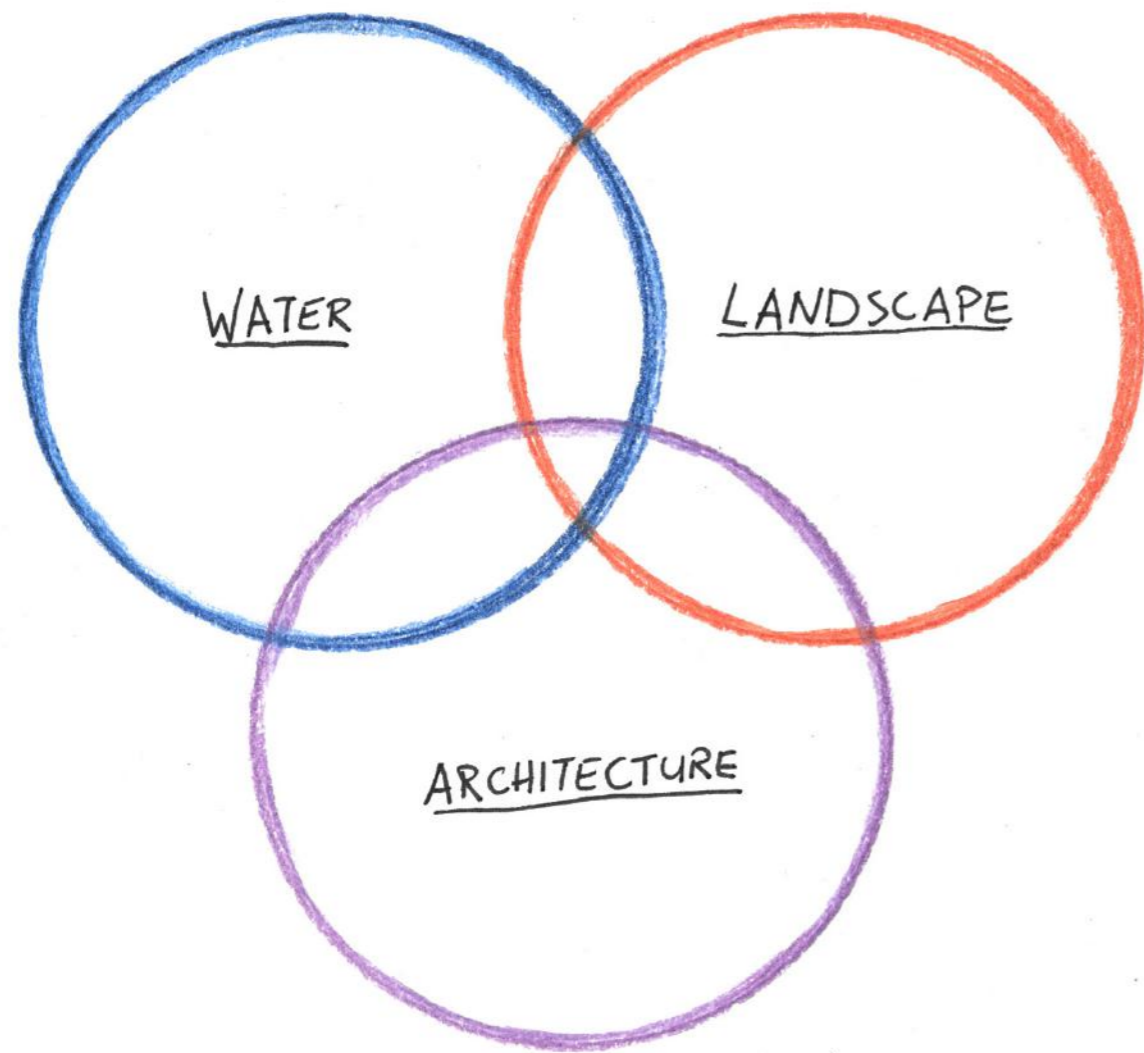
- ▶ One dominates the other with its forces.
- ▶ Dutch in dominance: management strategy.
- ▶ Maas in dominance: floods.
- ▶ Climate change.

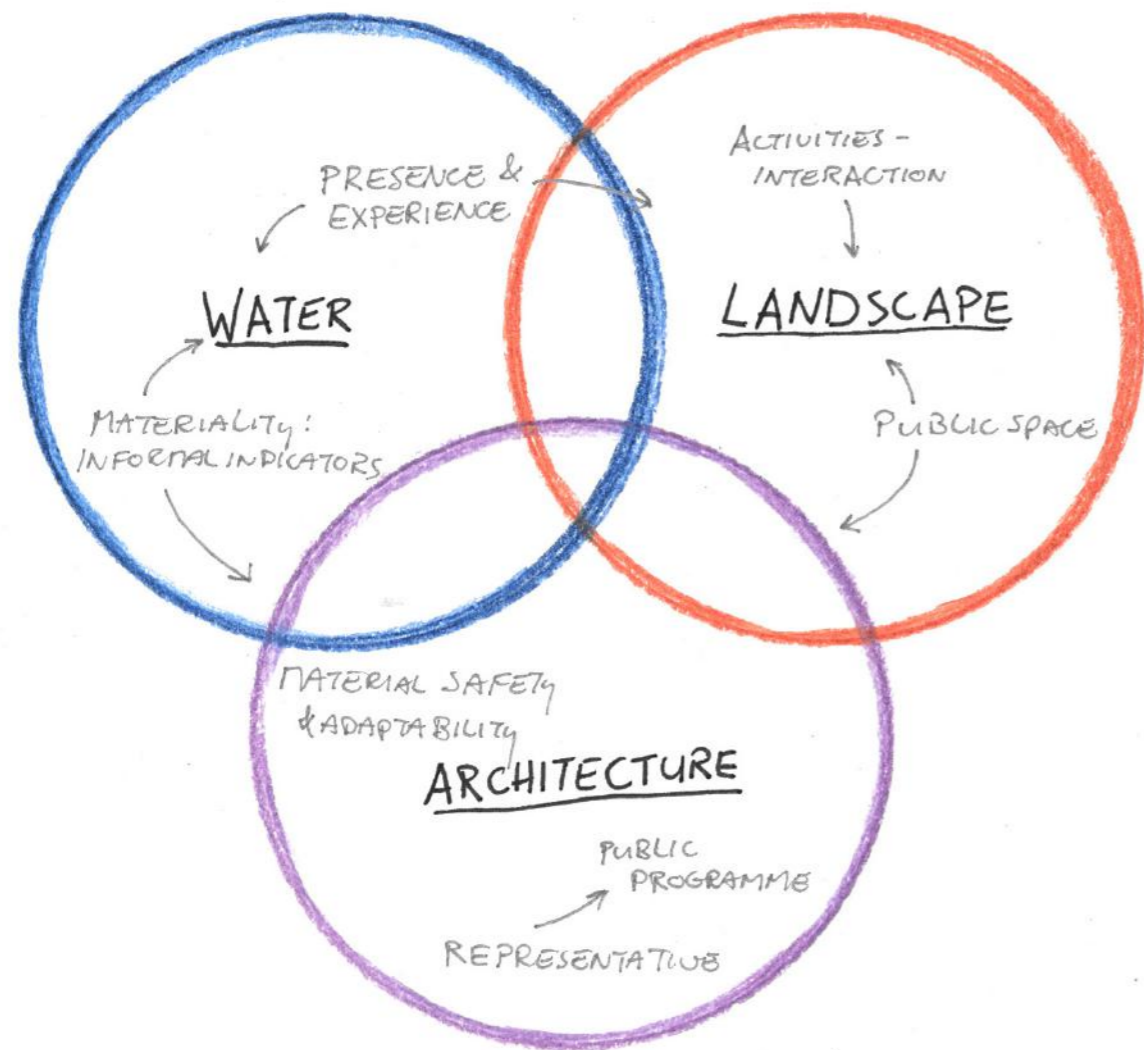
#### Spatiality

- ▶ Claims on the same territory.
- ▶ River: flow, erosion, deposition.

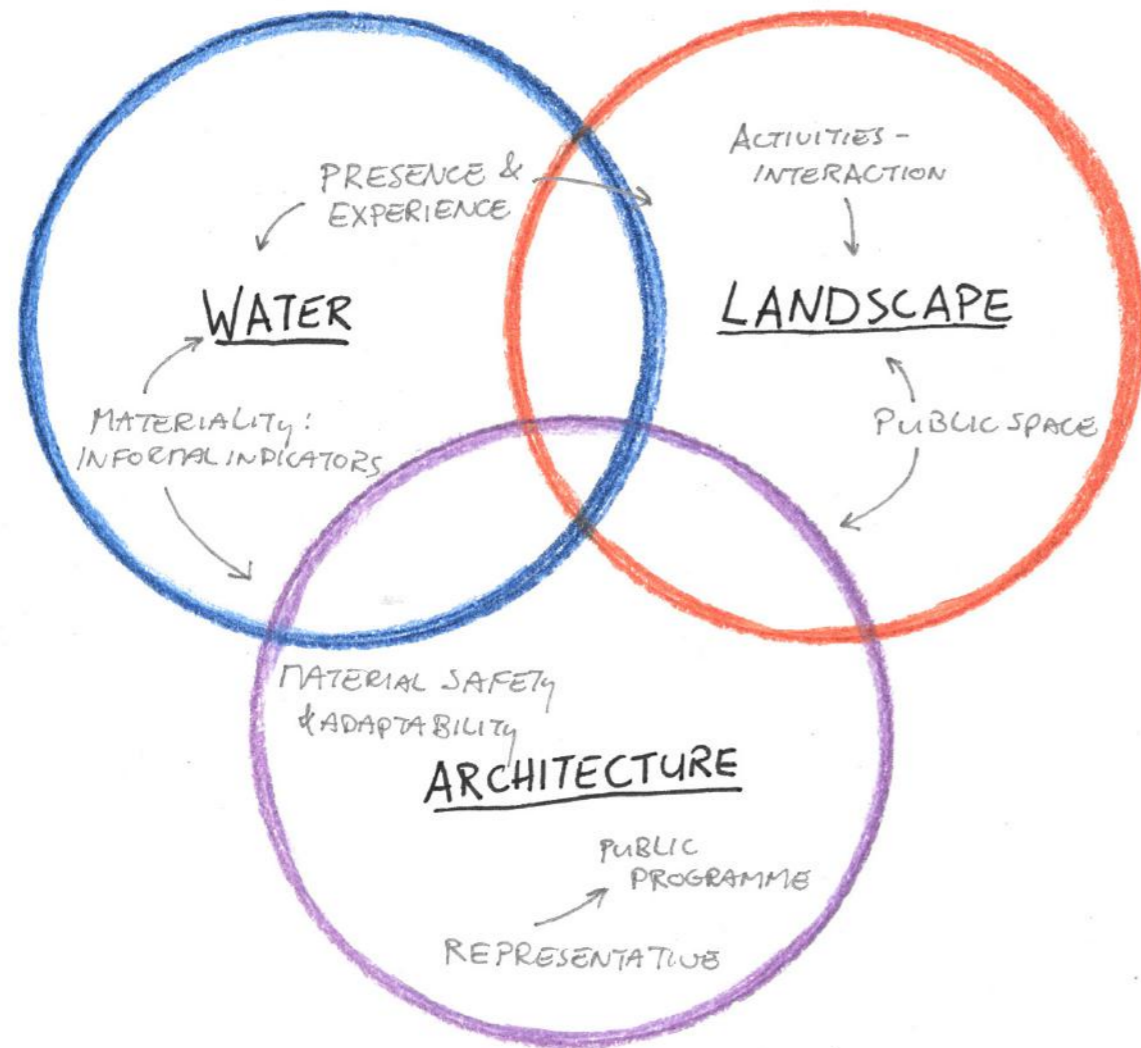


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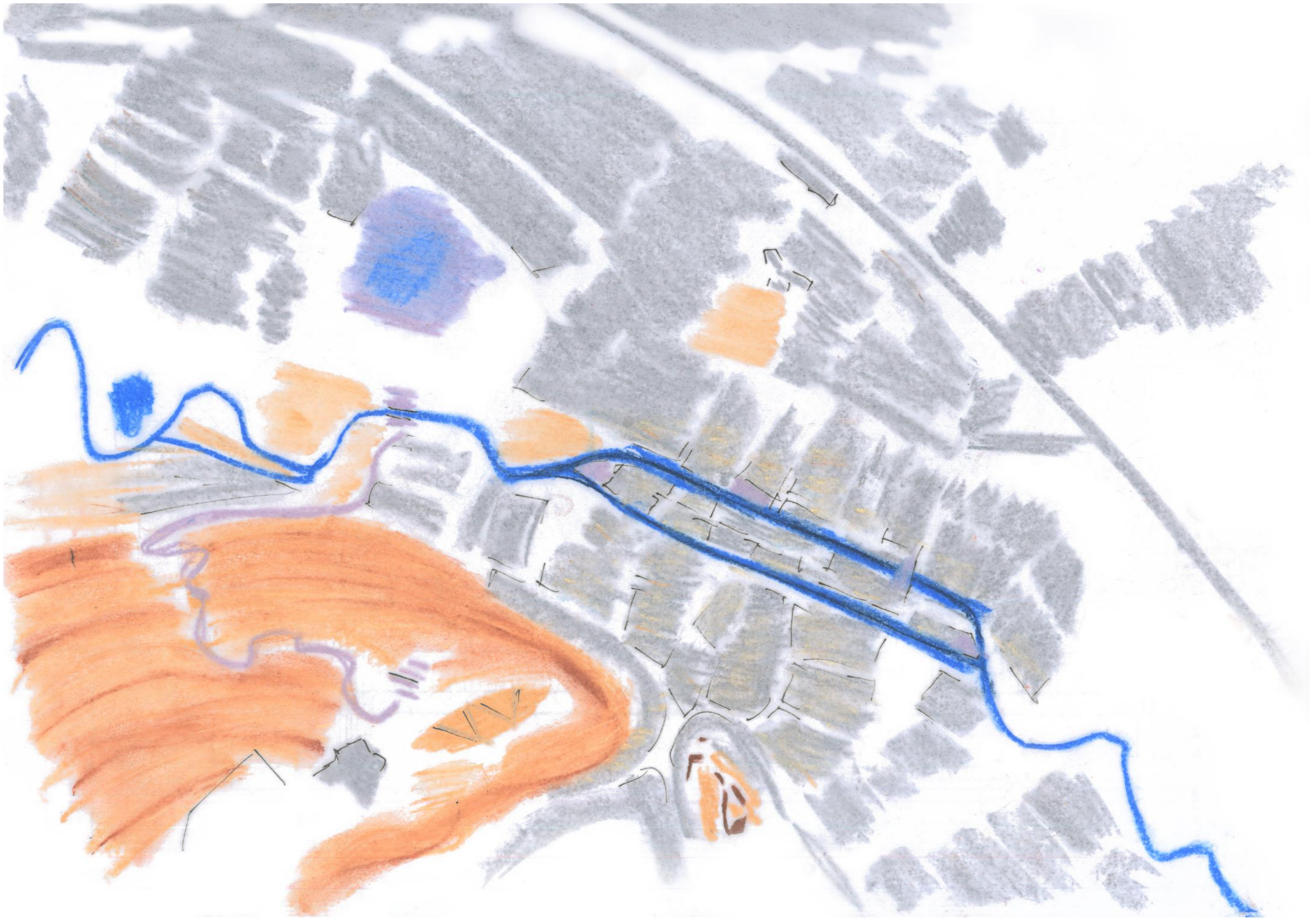


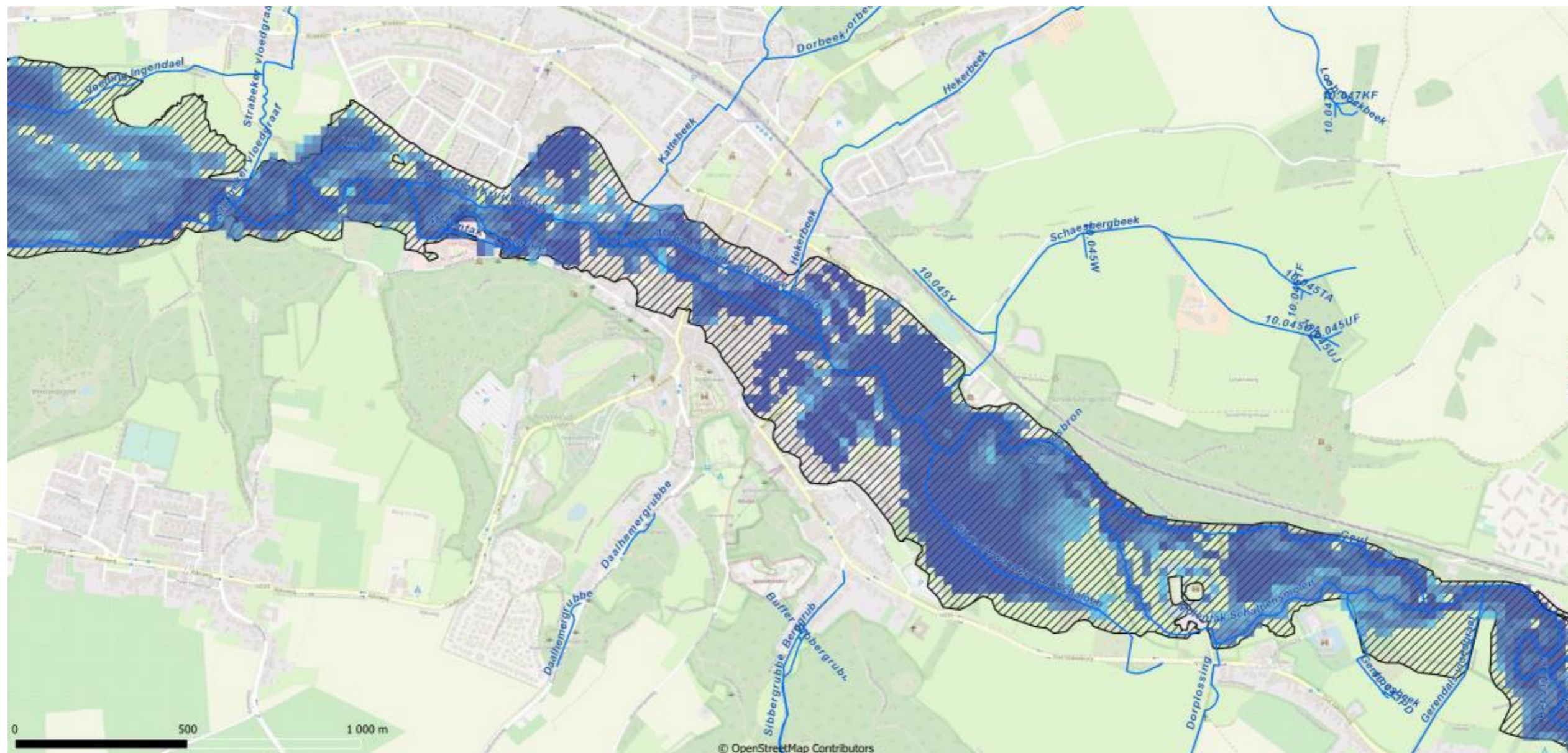




### Design goals

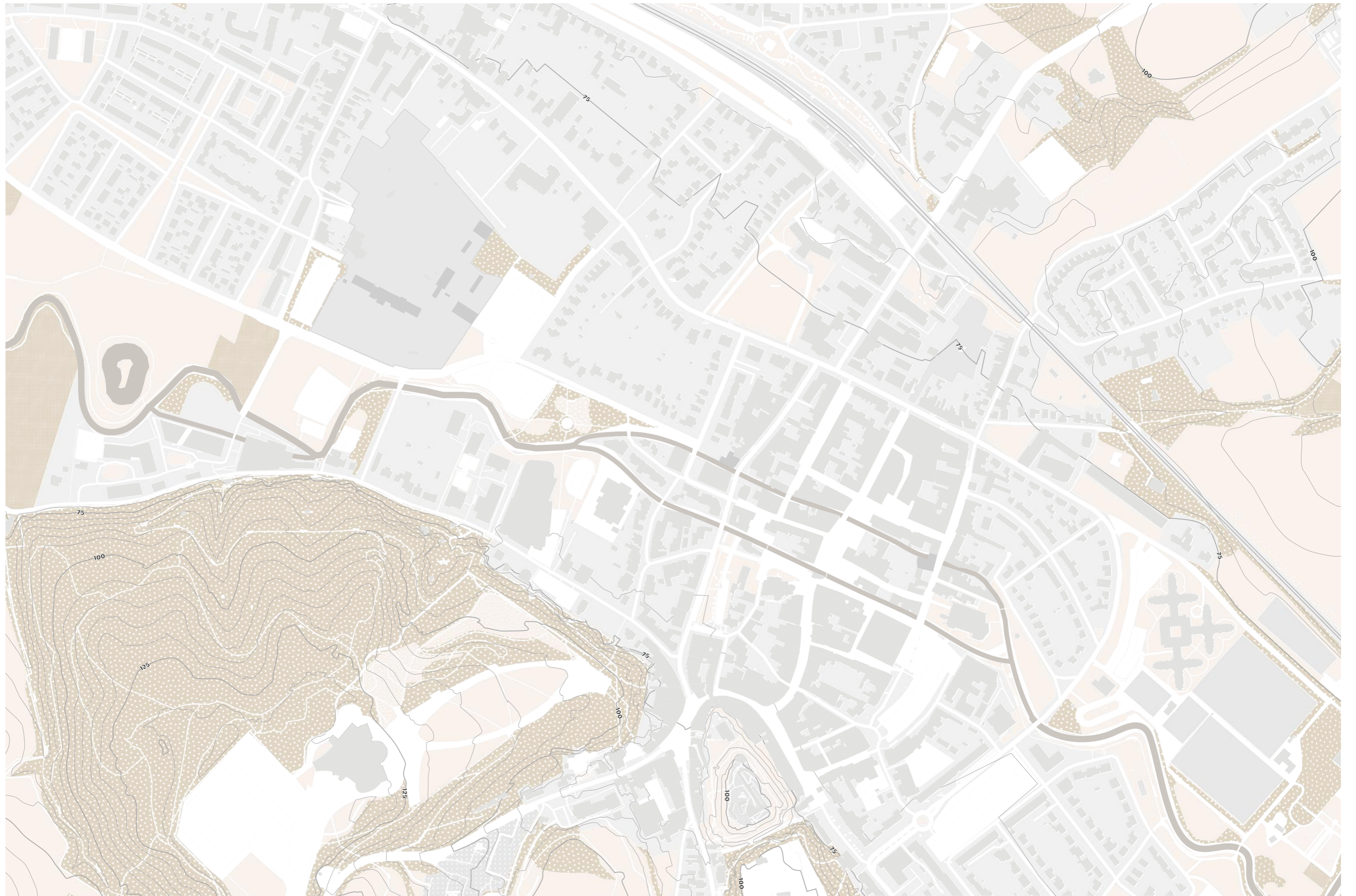
1. Stimulate an active relationship with the landscape.
2. Indicate water presence, water dynamics and flood dangers.
3. Decrease distance government-residents.
4. Provide safety from flood dangers.

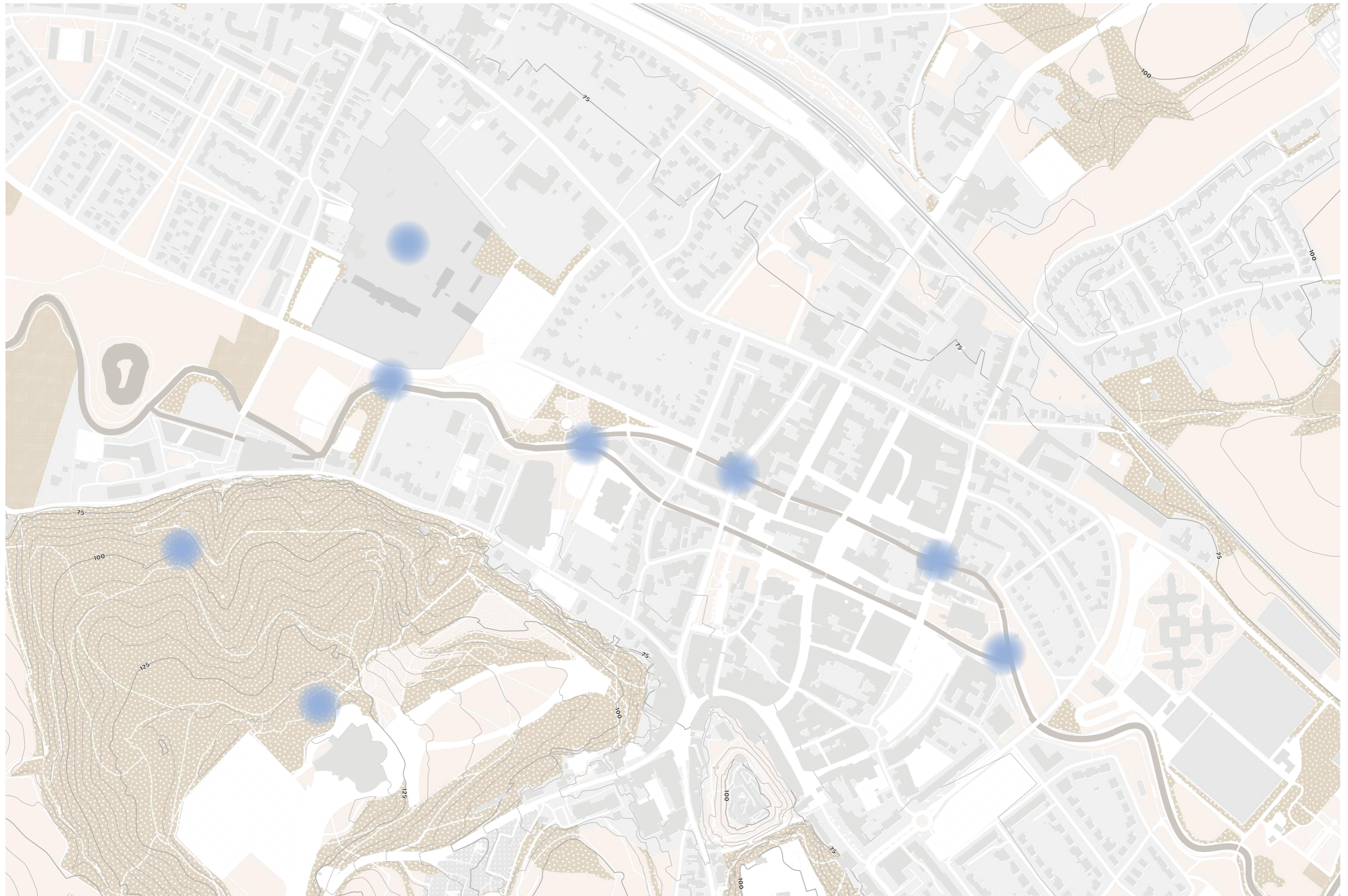




Analyse overstroming Valkenburg - Watersysteemevaluatie Waterschap Limburg (Deltares, 2022)

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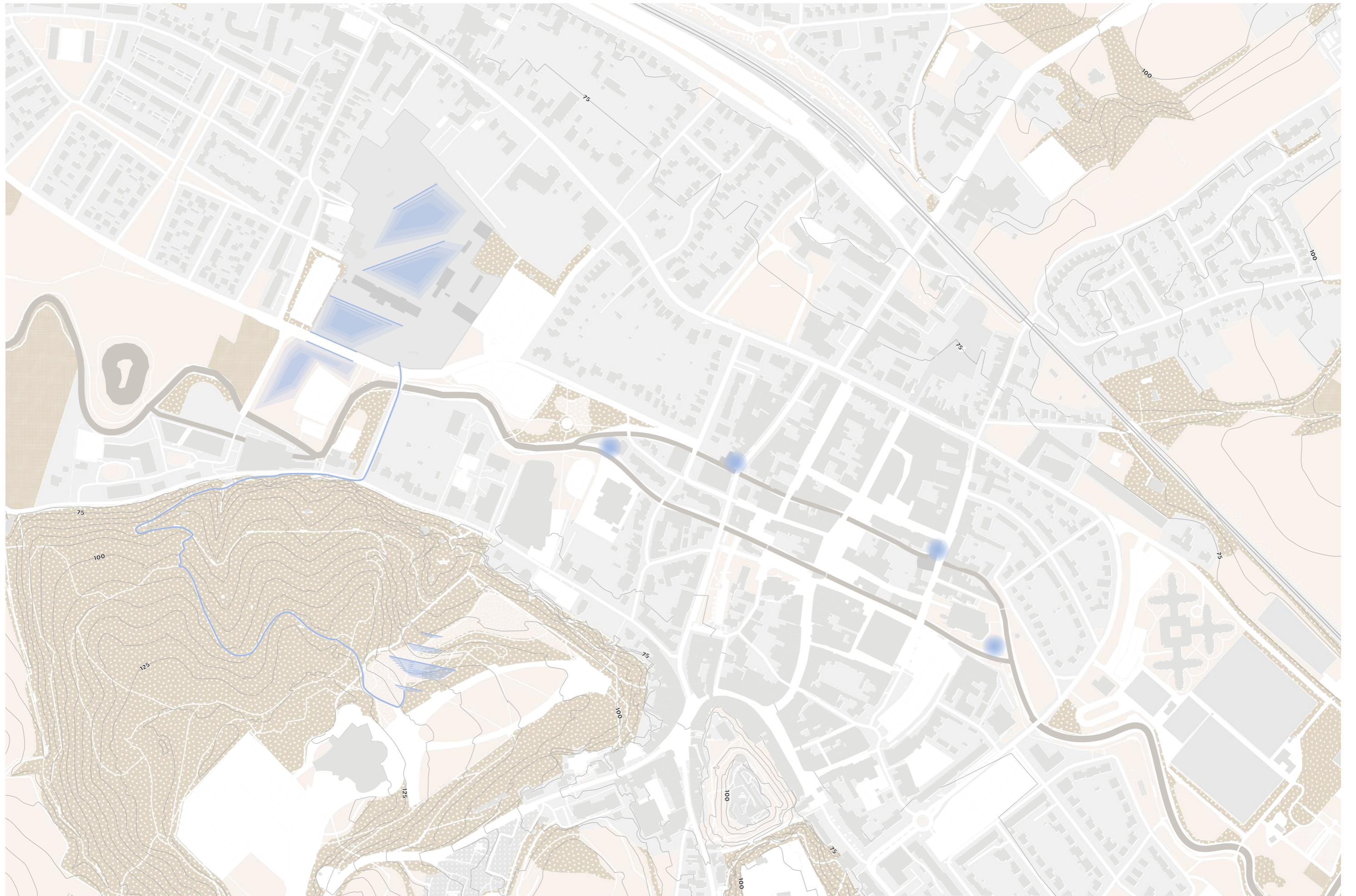




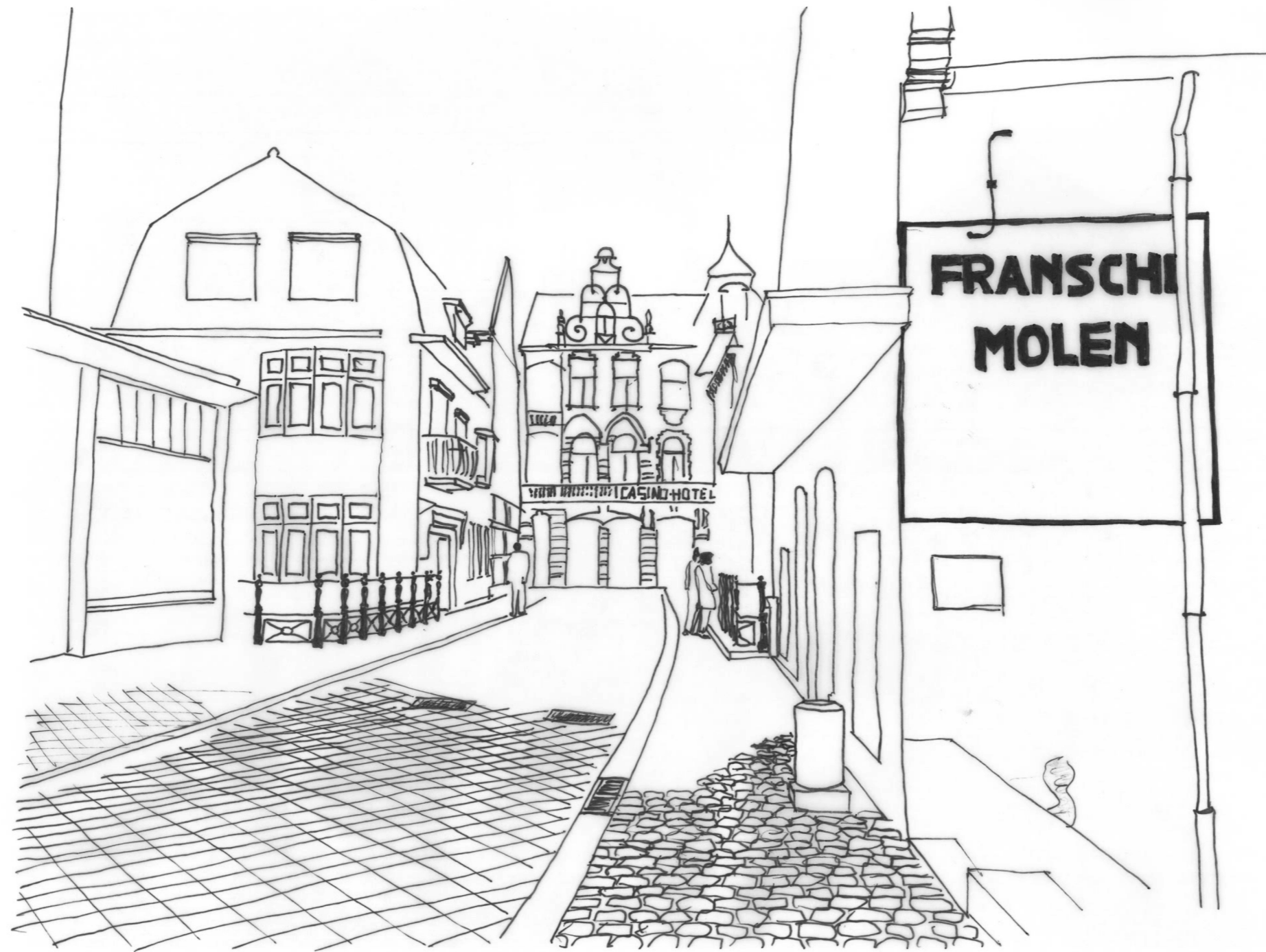
**River landscape dynamics**

**Height over water**

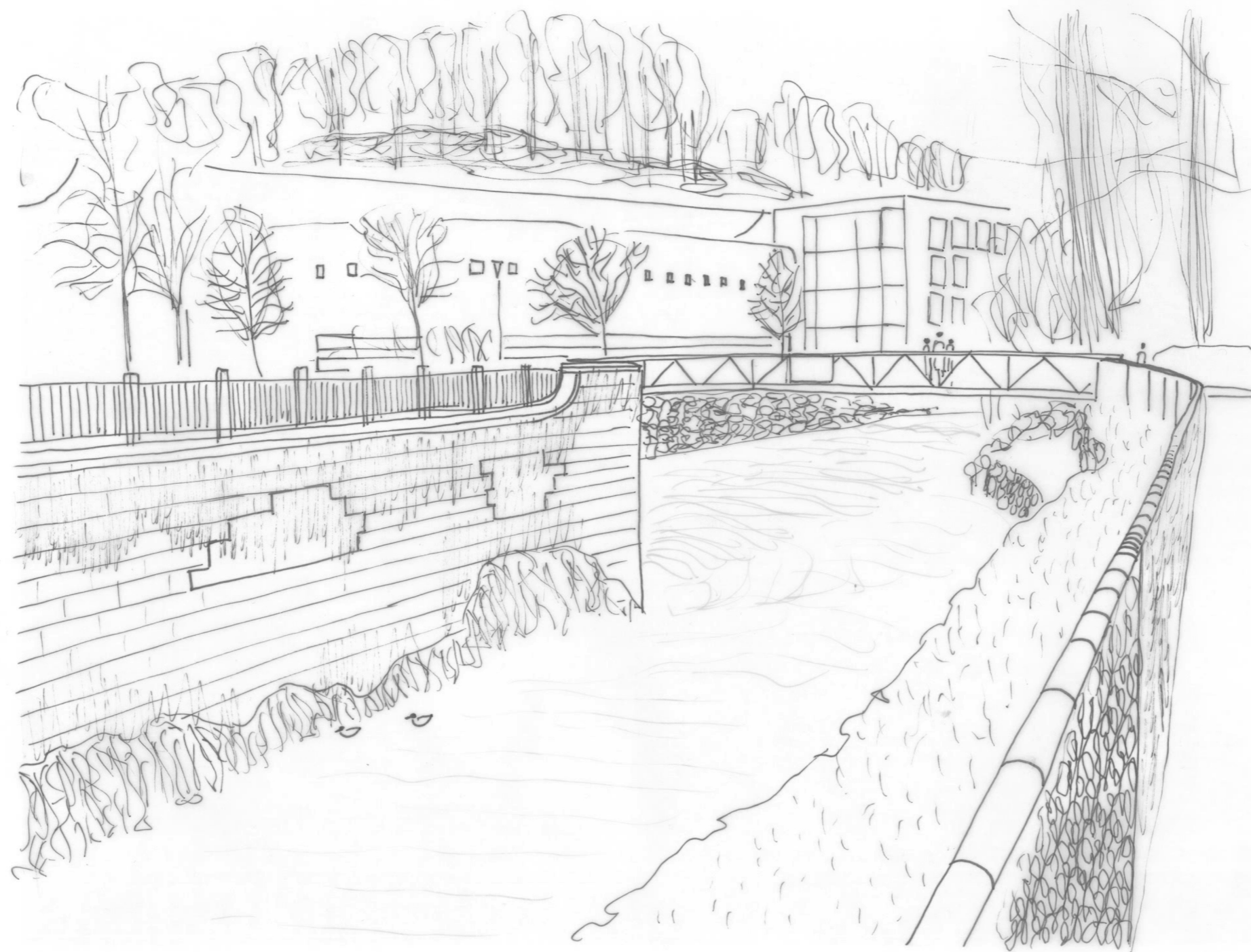
**Relation historic city - water**



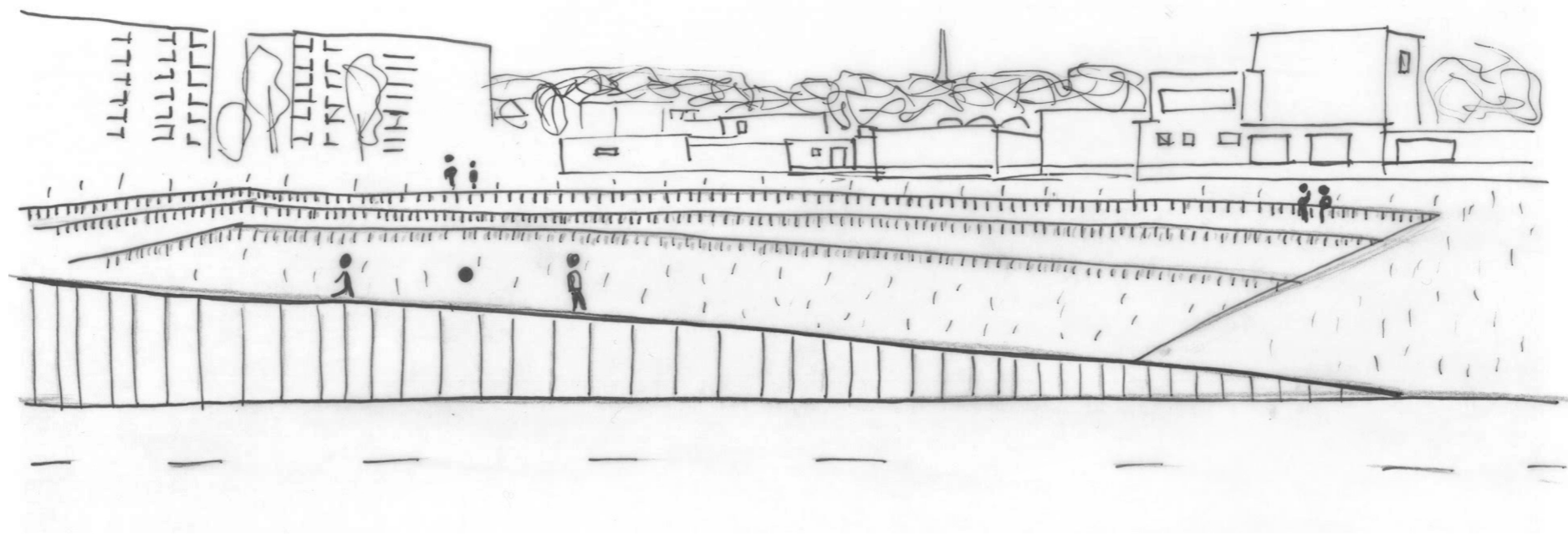




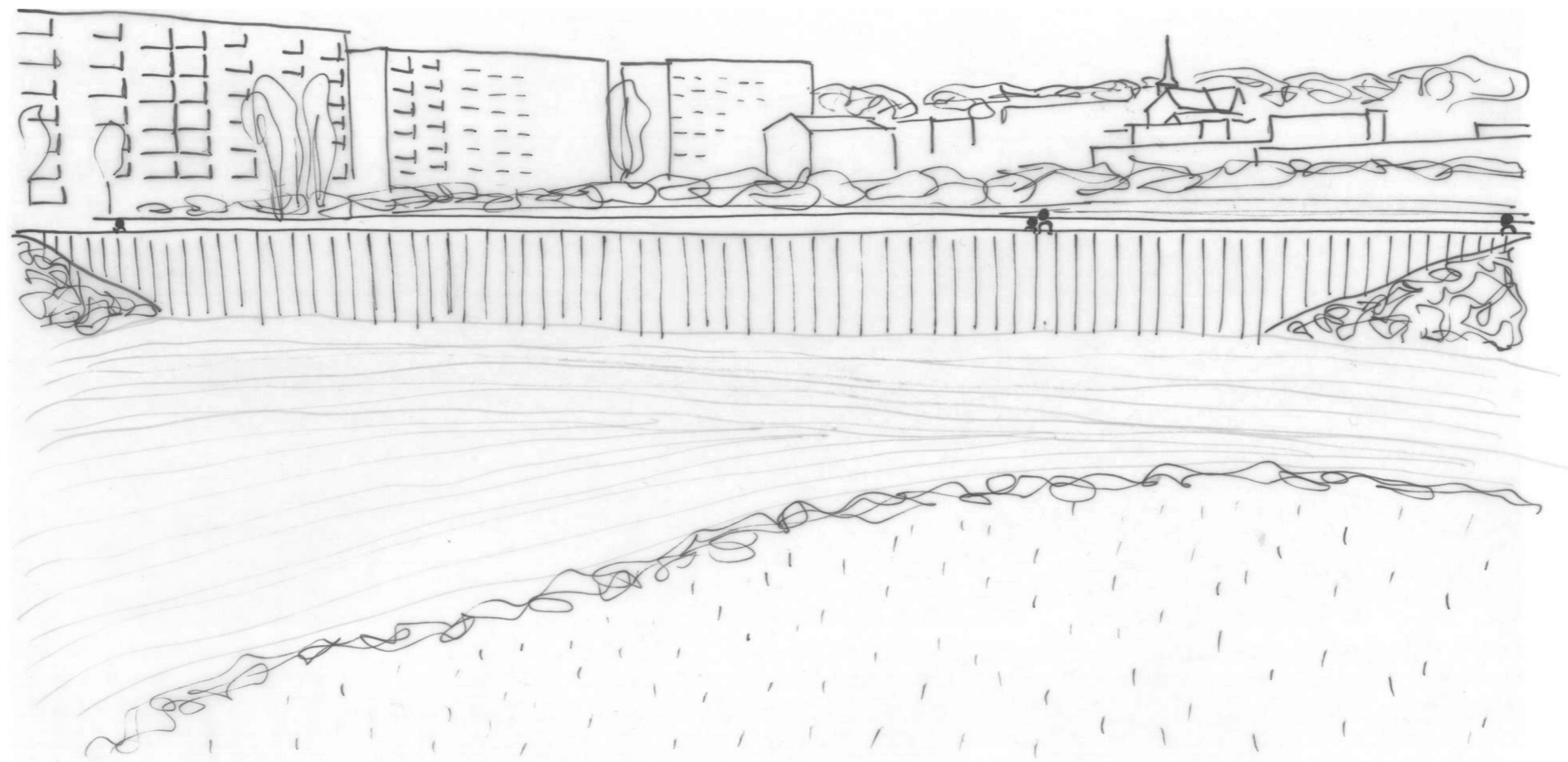






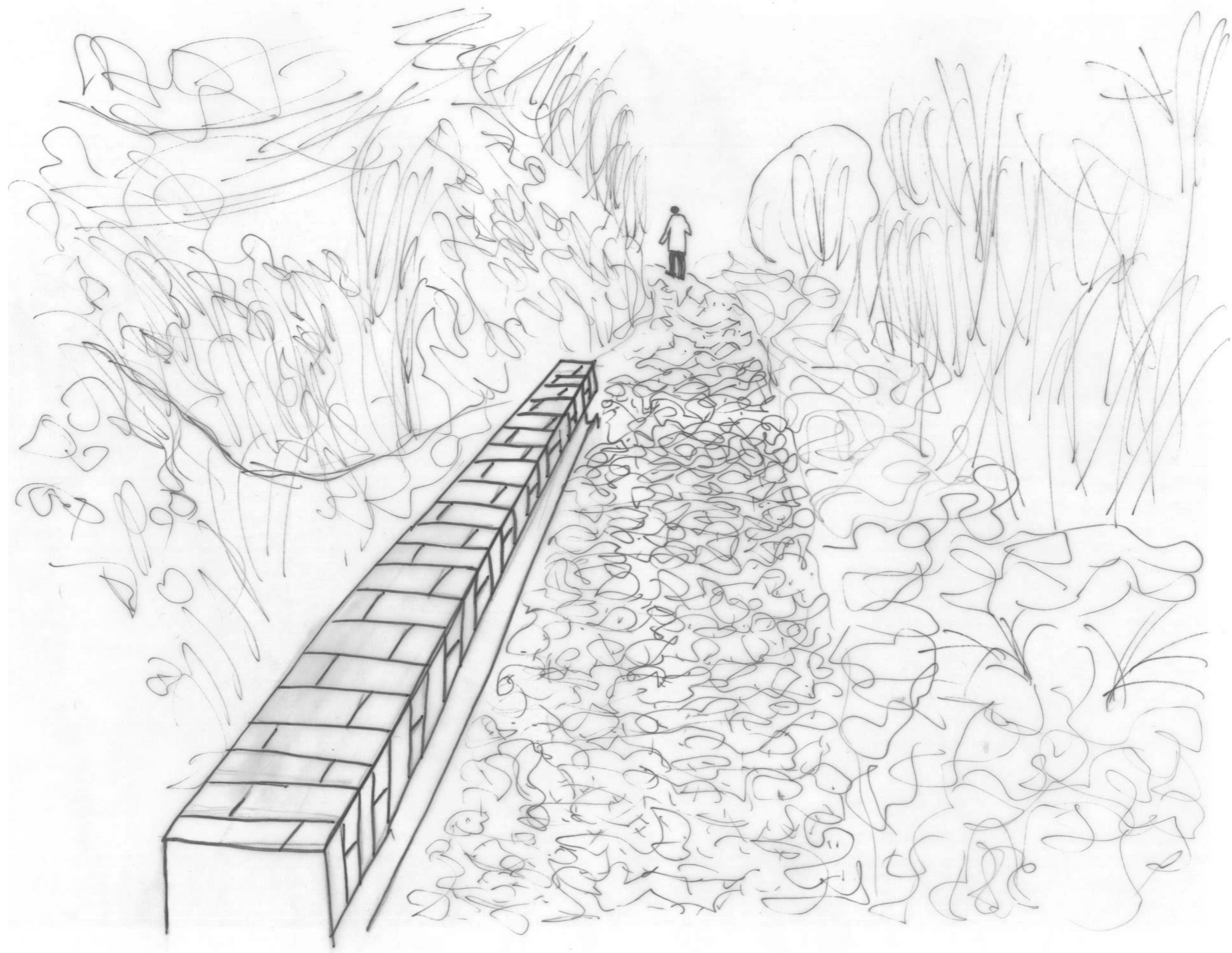














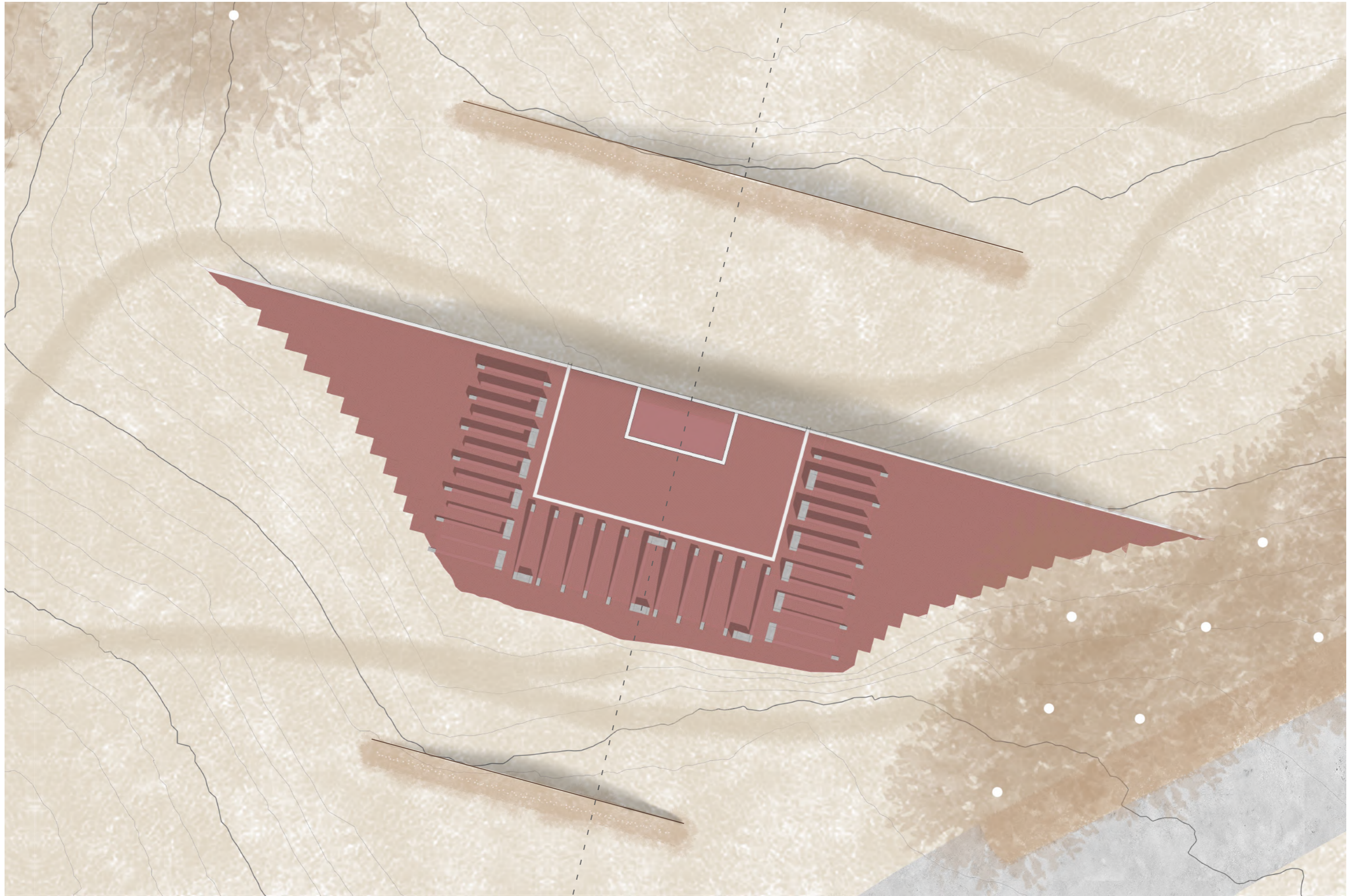






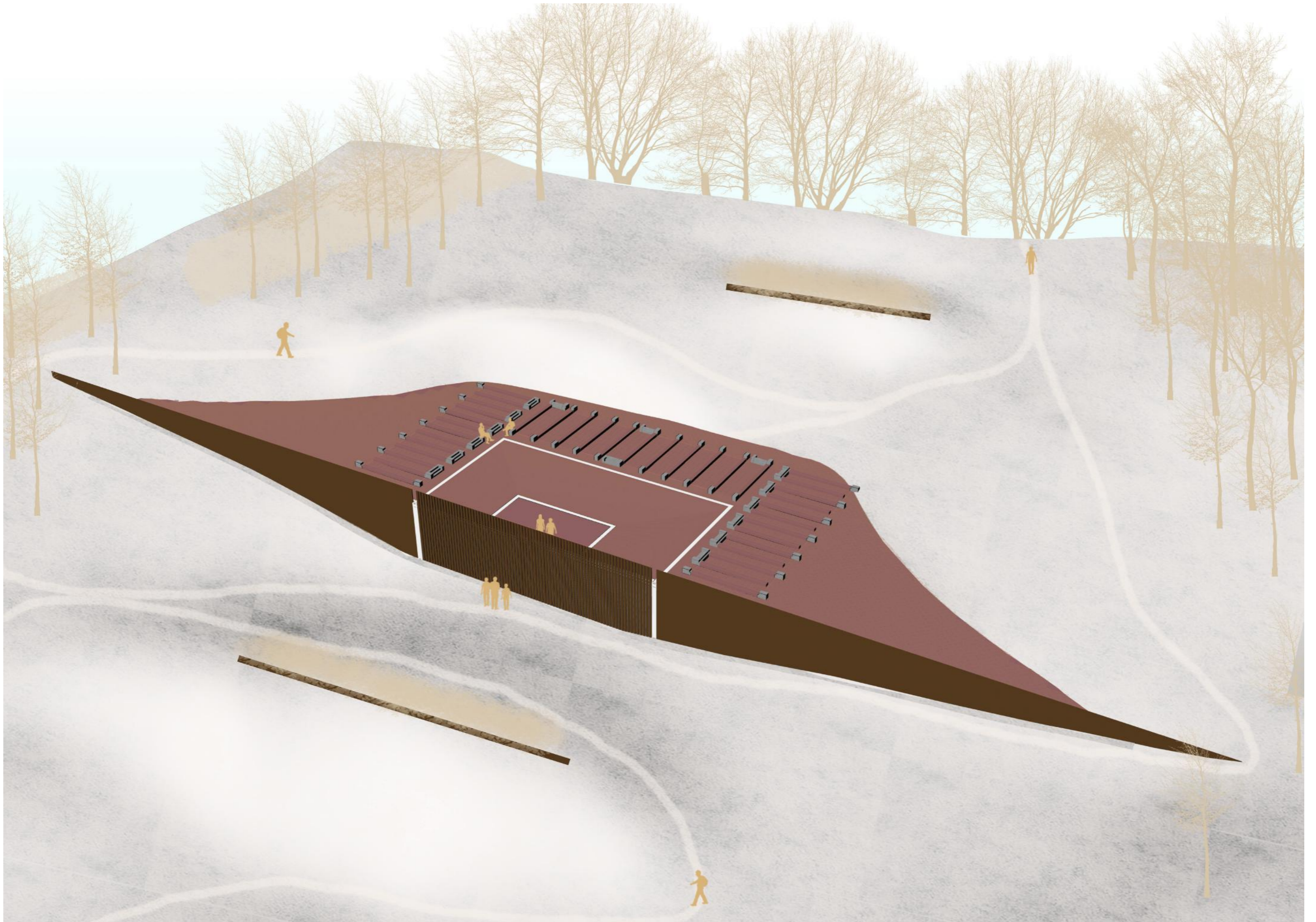
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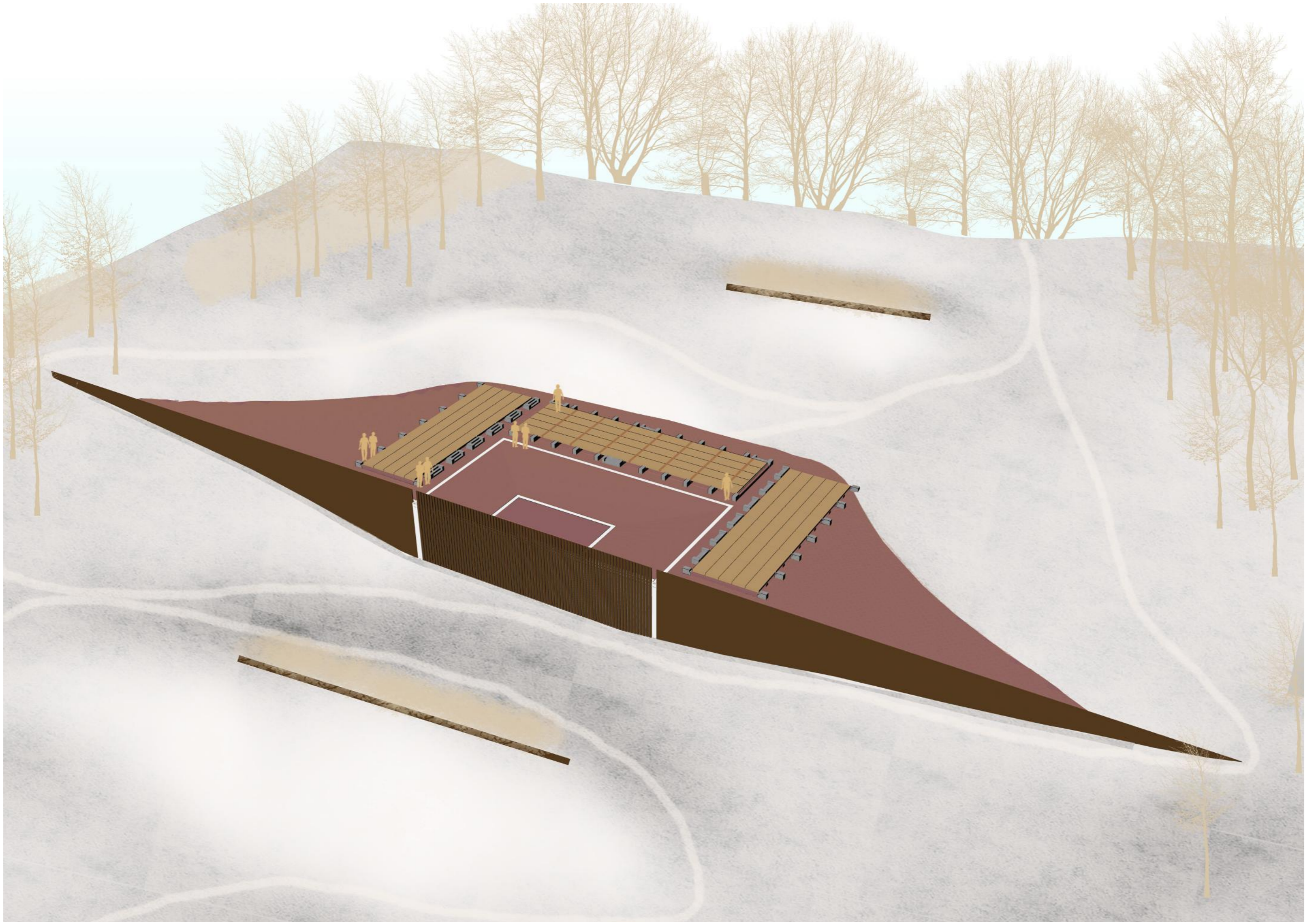


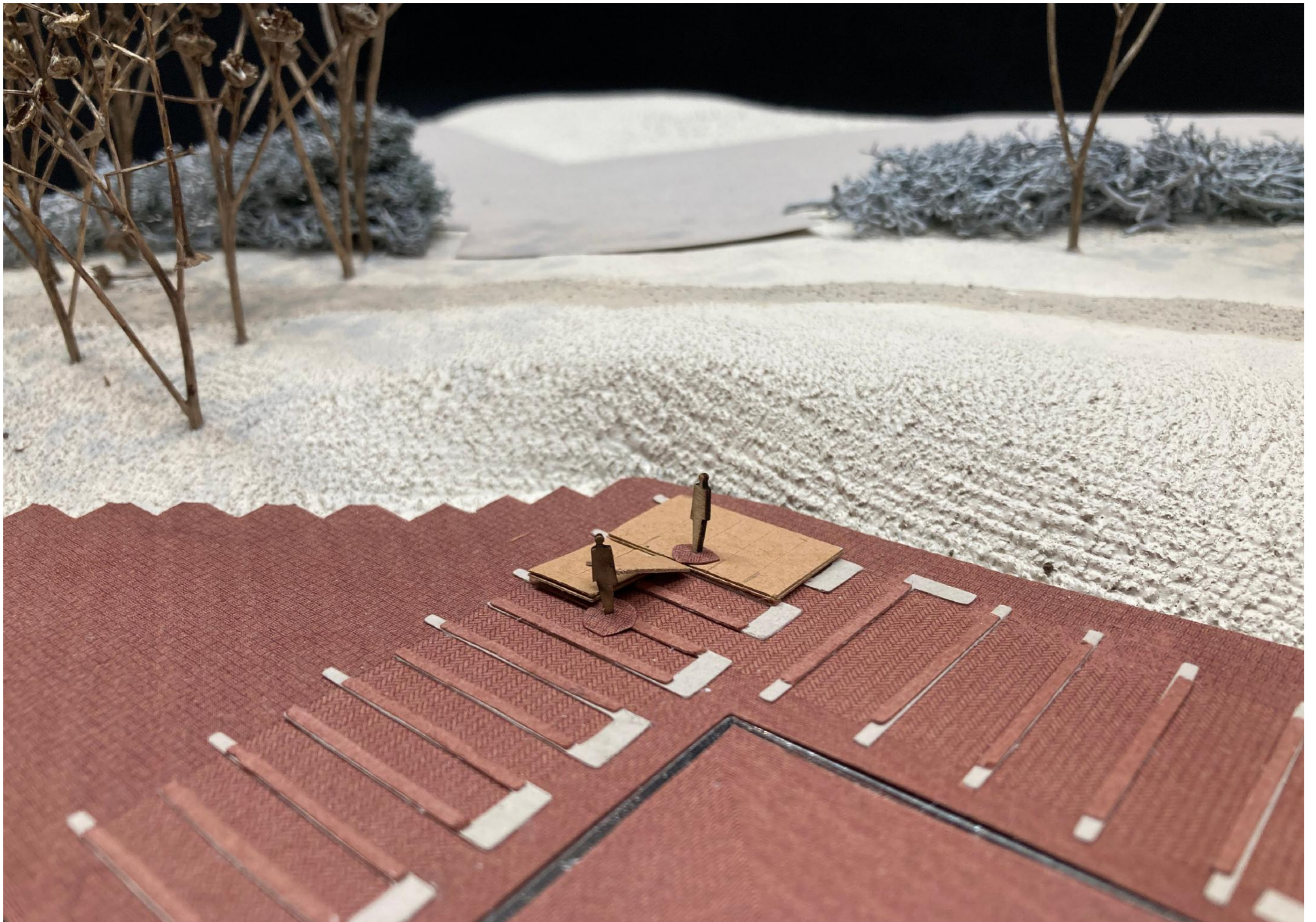


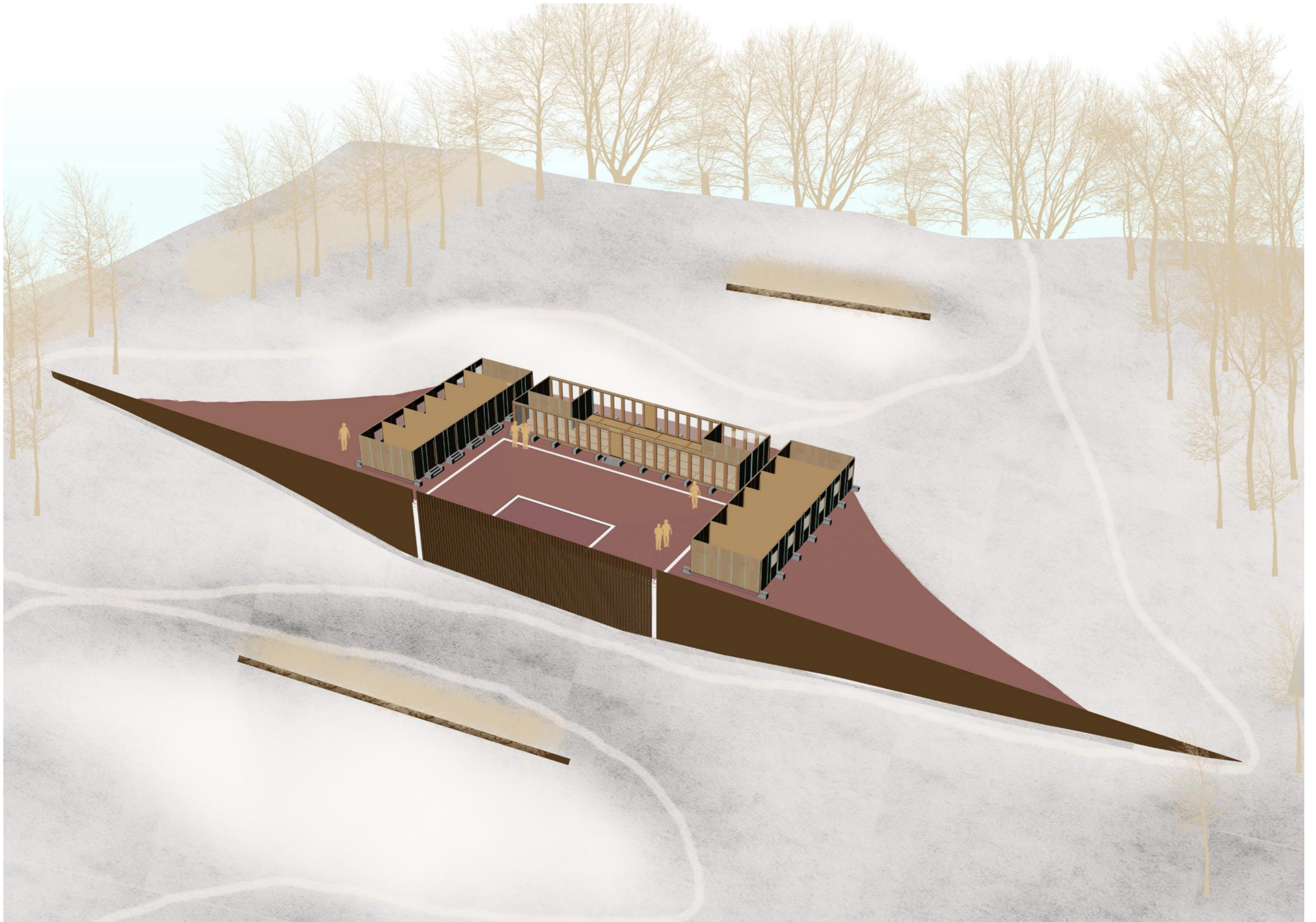




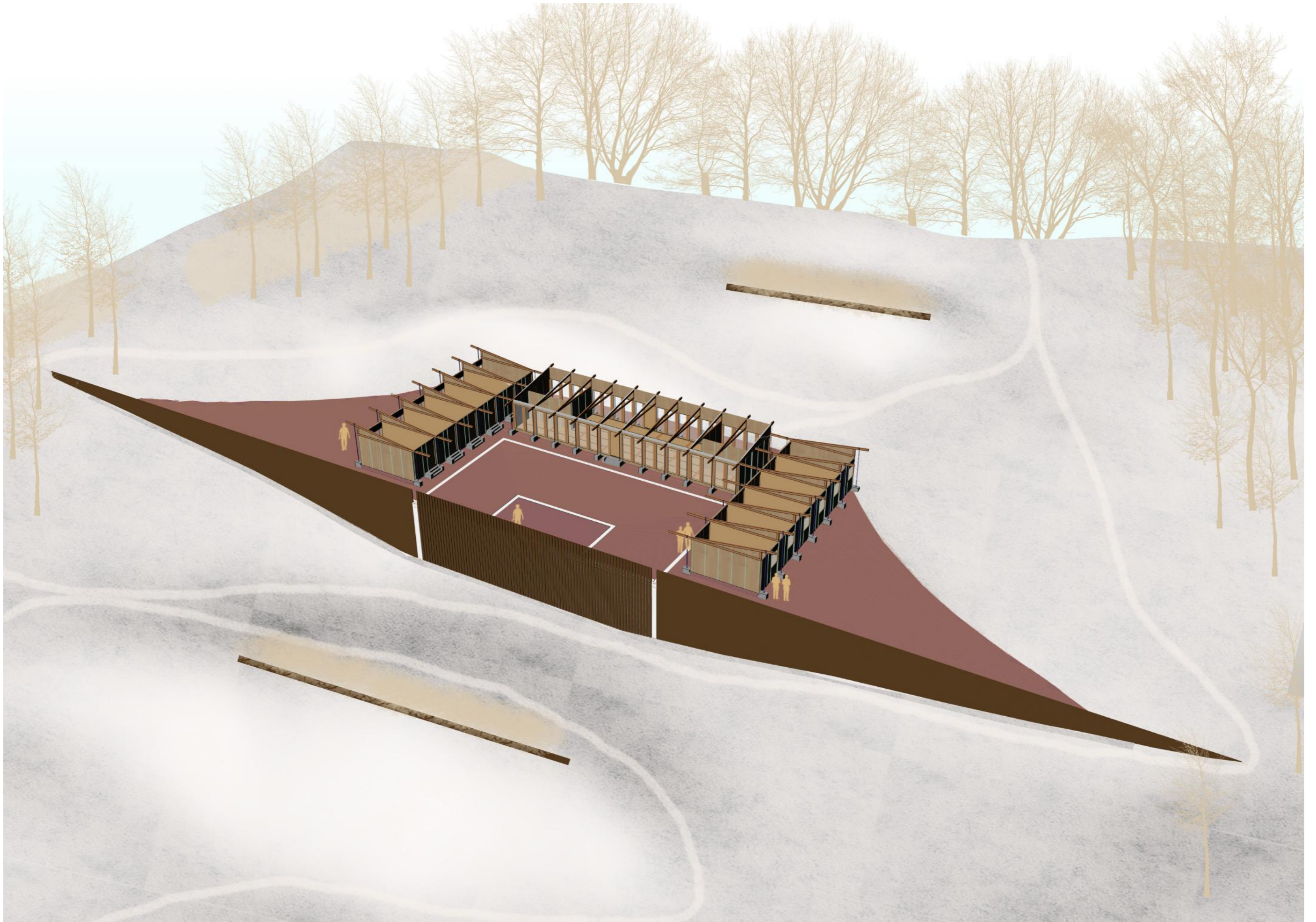






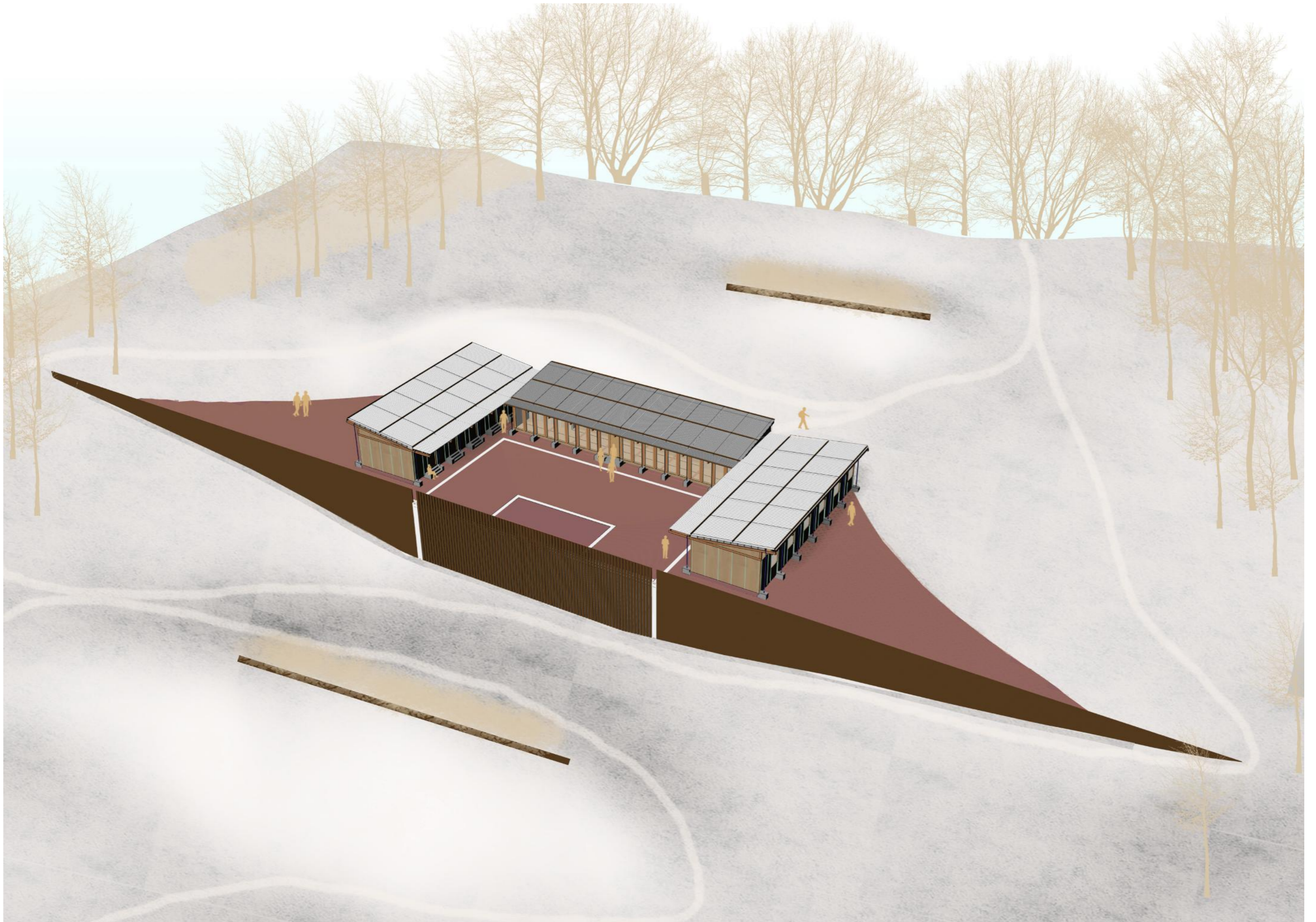


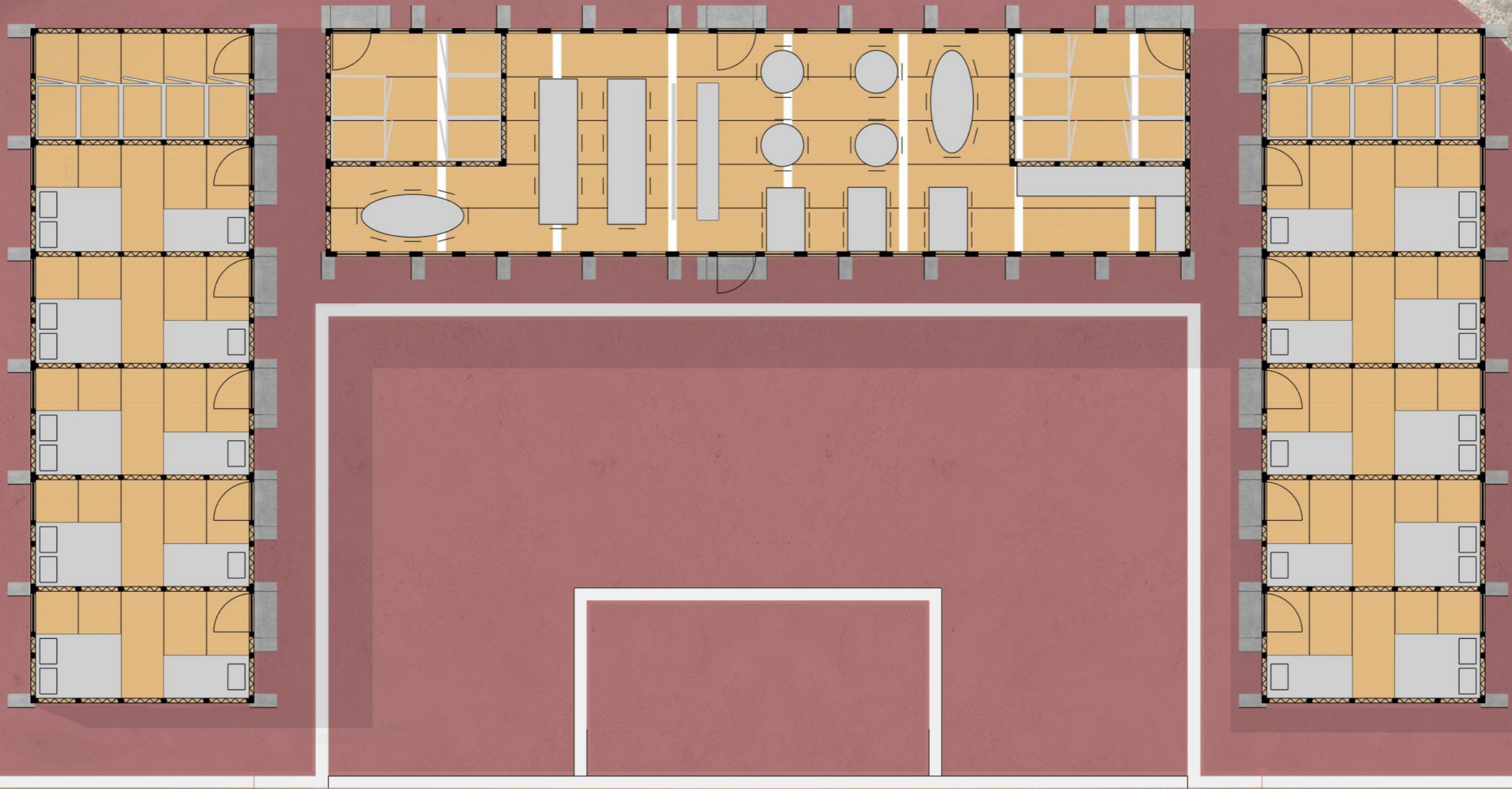










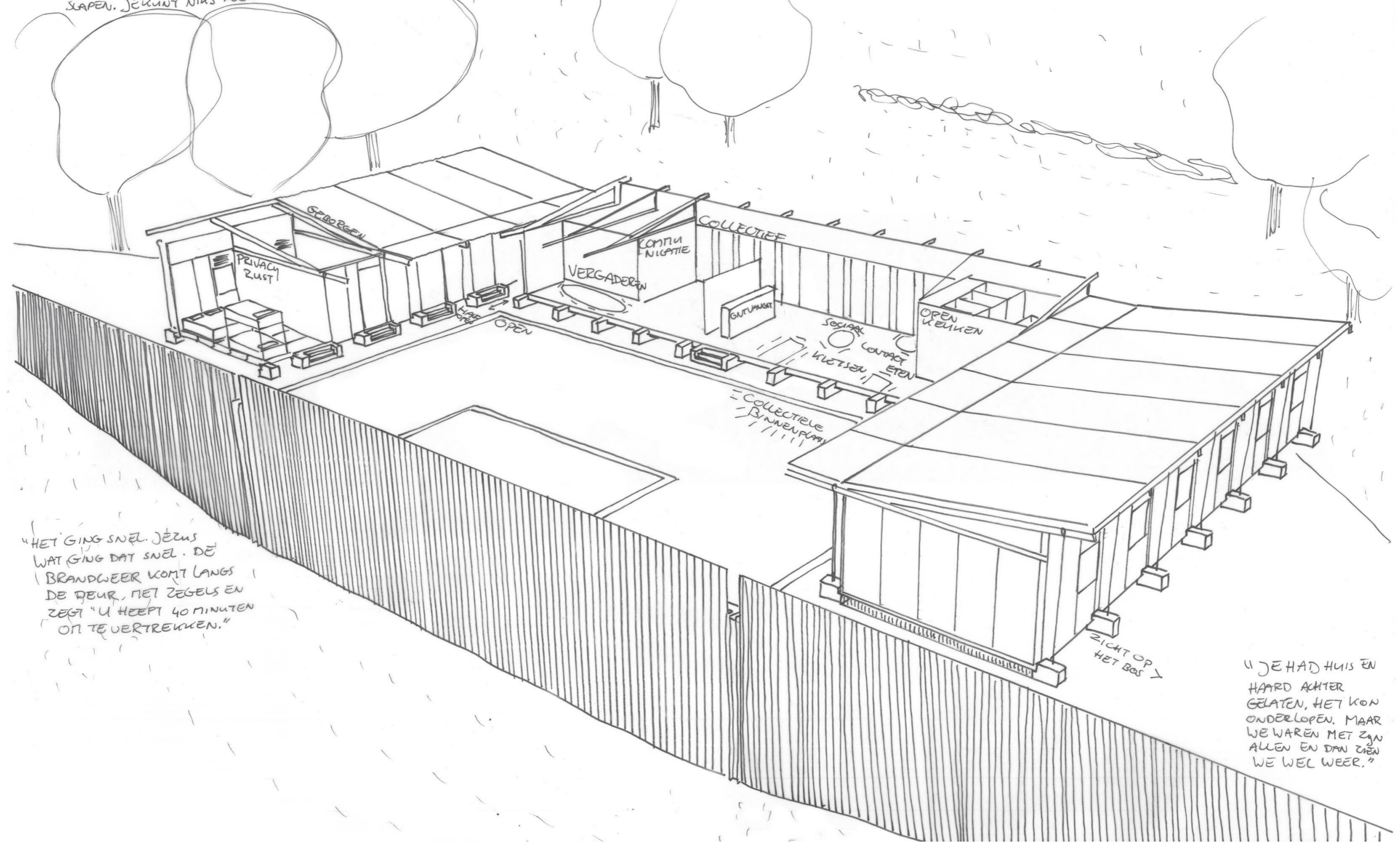


"HEEL RAAR. SLECHT  
GESLAPEN OOK. AARDIG  
WAT PILSJES NAAR BINNEN  
GEGOTEN OM TE KUNNEN  
SLAPEN. JE KUNT NIKS DOEN."

"DE LOKALE OMROEP IS  
BIJ DE COMMUNICATIE TUSSEN  
STADSBEStuur EN INWONERS  
ONTUISBAAR."

"HET CRISISCENTRUM  
VING MENSEN OP DIE  
NERGENS HEEN. KONDEN.  
DIE HADDEN CONTACT MET  
ALLE MEETPUNTEN."

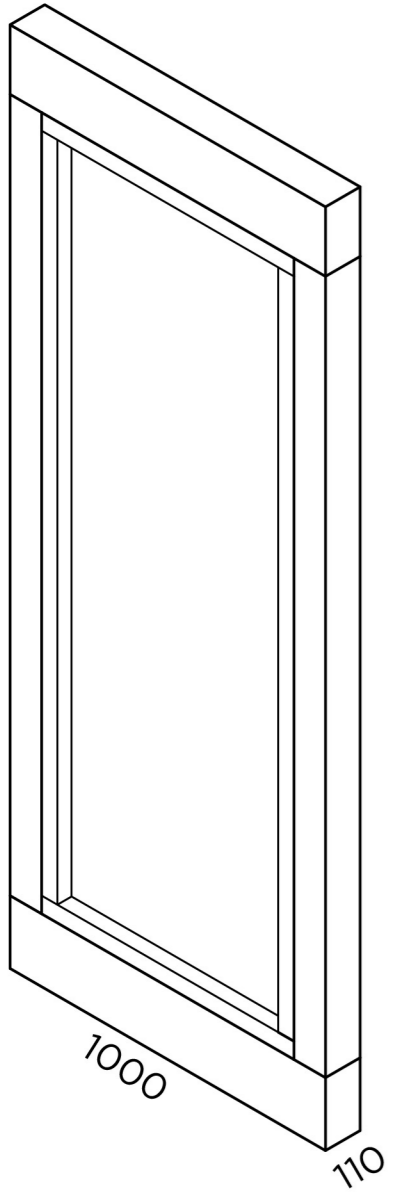
"ER ZYN VEEL INITIATIEVEN  
GEWEEST. HEEL SNEL WERDEN  
ER DINGEN OPGELOST. IEDEREEN  
VOELT ZICH HEEL VERBONDEN  
MET ELKAAR."



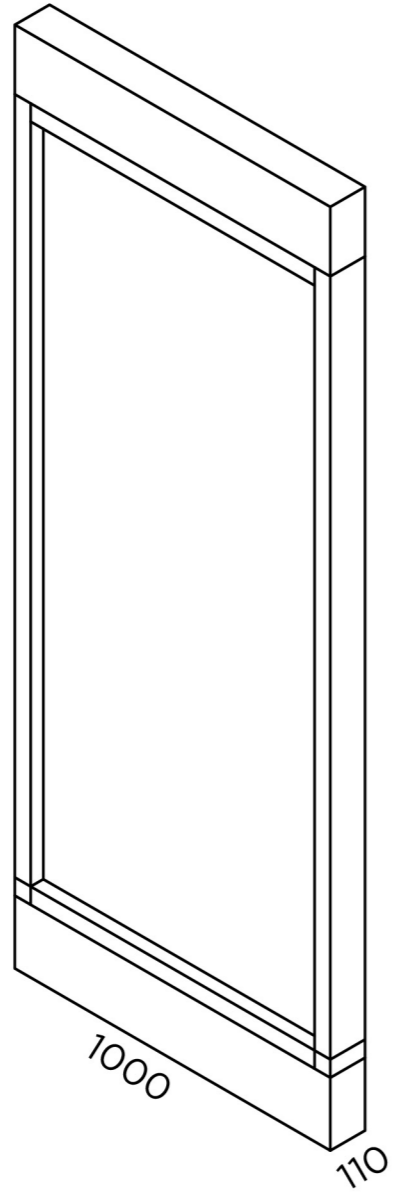
"HET GING SNEL. JÉZUS  
WAT GING DAT SNEL. DE  
BRANDWEER KOMT LANGS  
DE DEUR, MET ZEGELS EN  
ZEGT "U HEEFT 40 MINUTEN  
OM TE VERTREKKEN."

ZICHT OP  
HET BOS

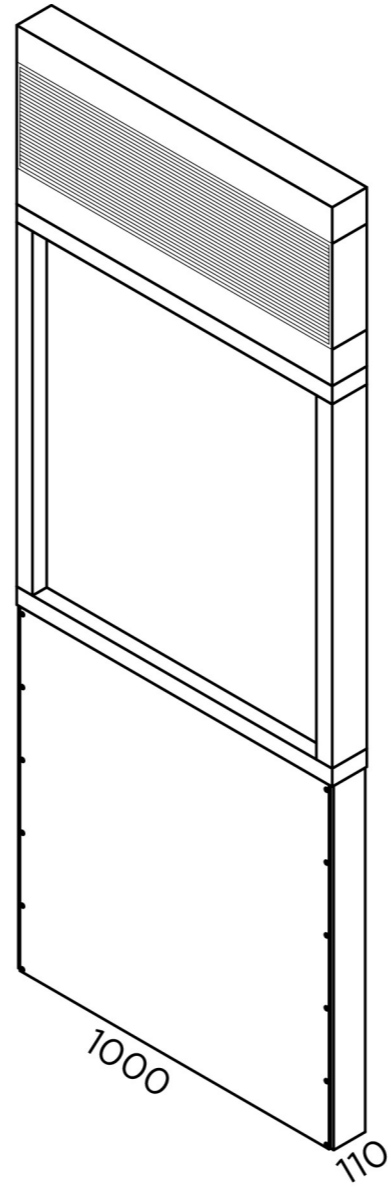
"JE HAD HUIS EN  
HAARD ACHTER  
GELATEN, HET KON  
ONDERLOPEN. MAAR  
WE WAREN MET ZYN  
ALLEN EN DAN ZIEN  
WE WEL WEER."



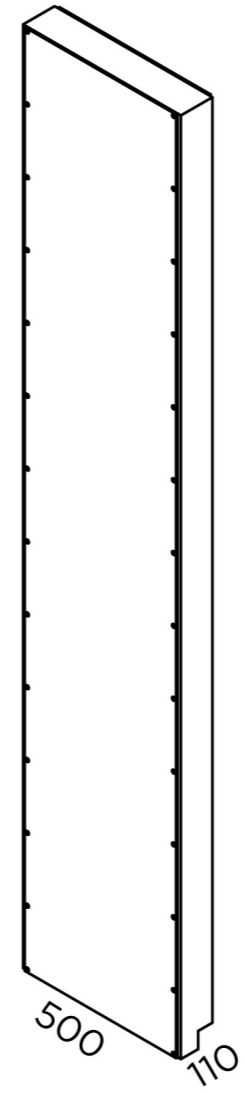
**Window panel large**



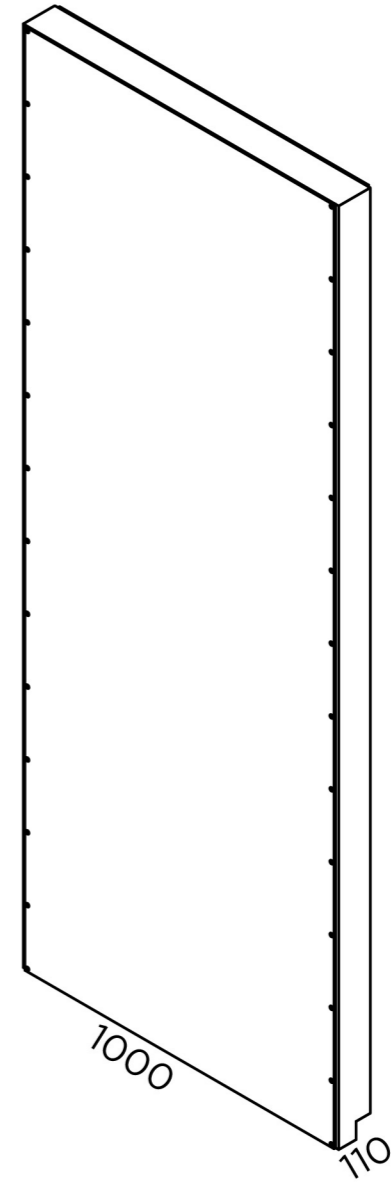
**Door panel**



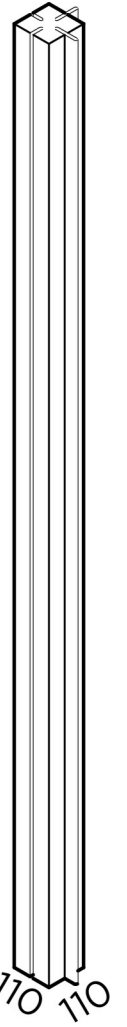
**Window & ventilation**



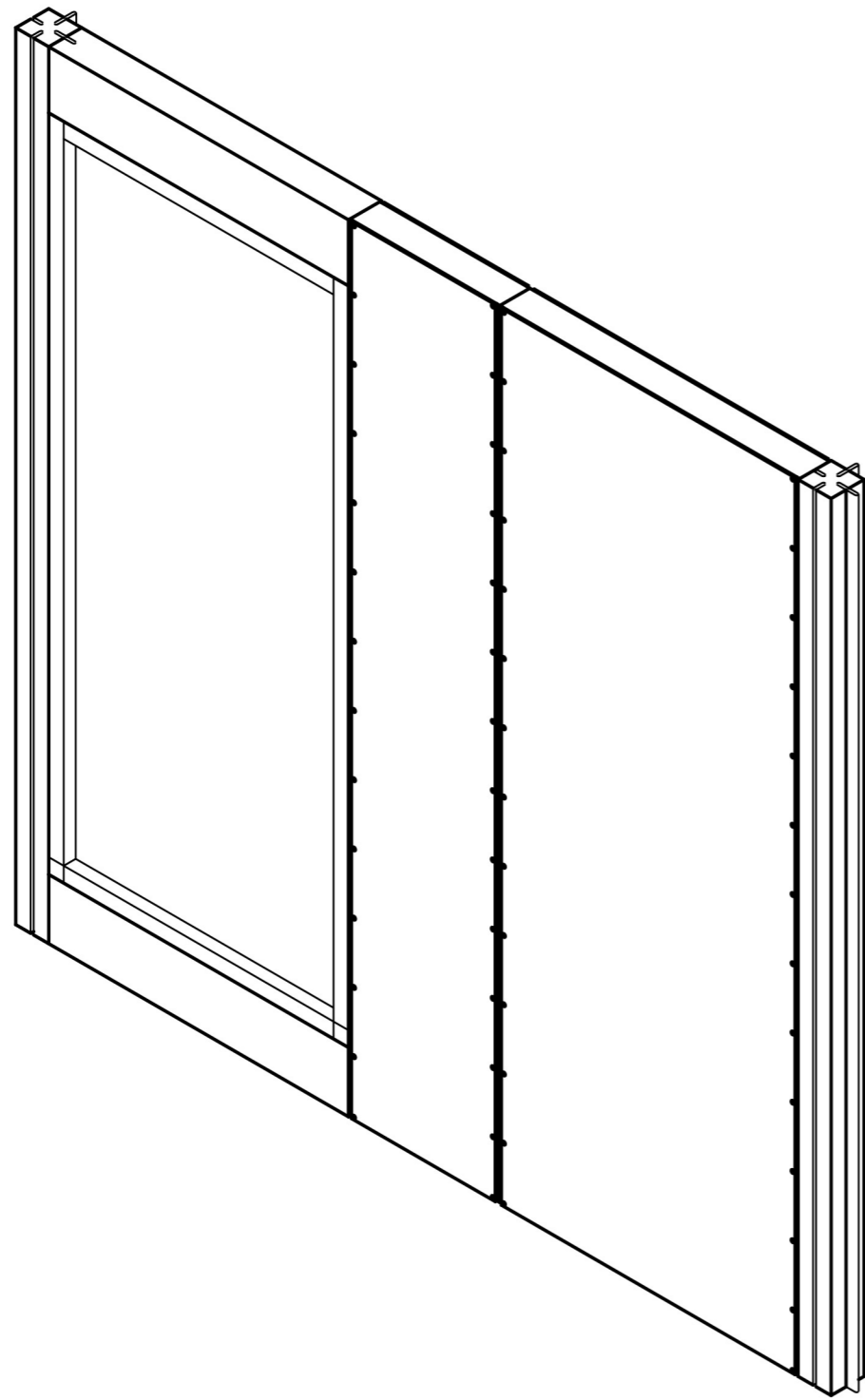
**Closed wall panel  
small**



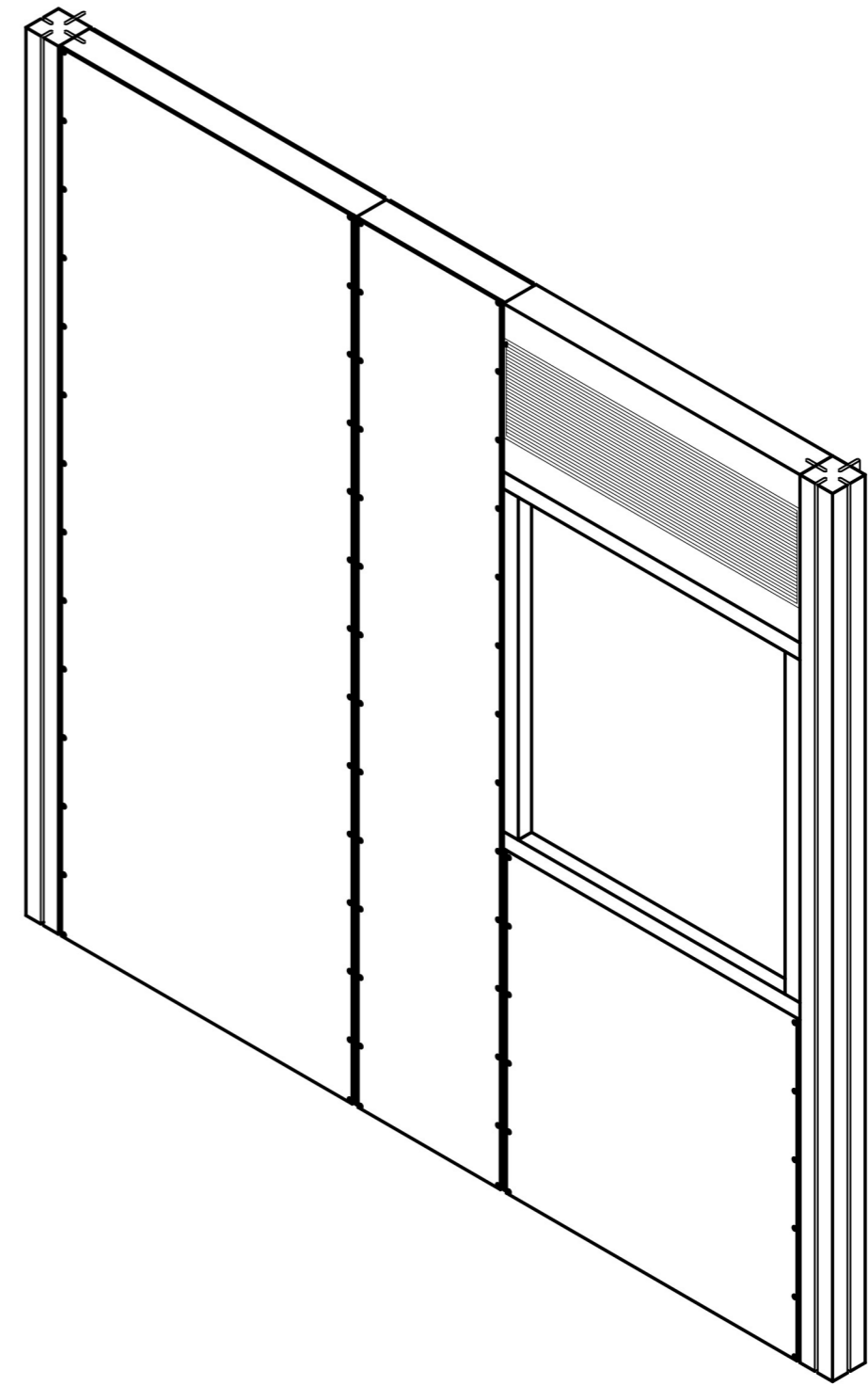
**Closed wall panel  
large**



**Column**



Front facade shelter unit

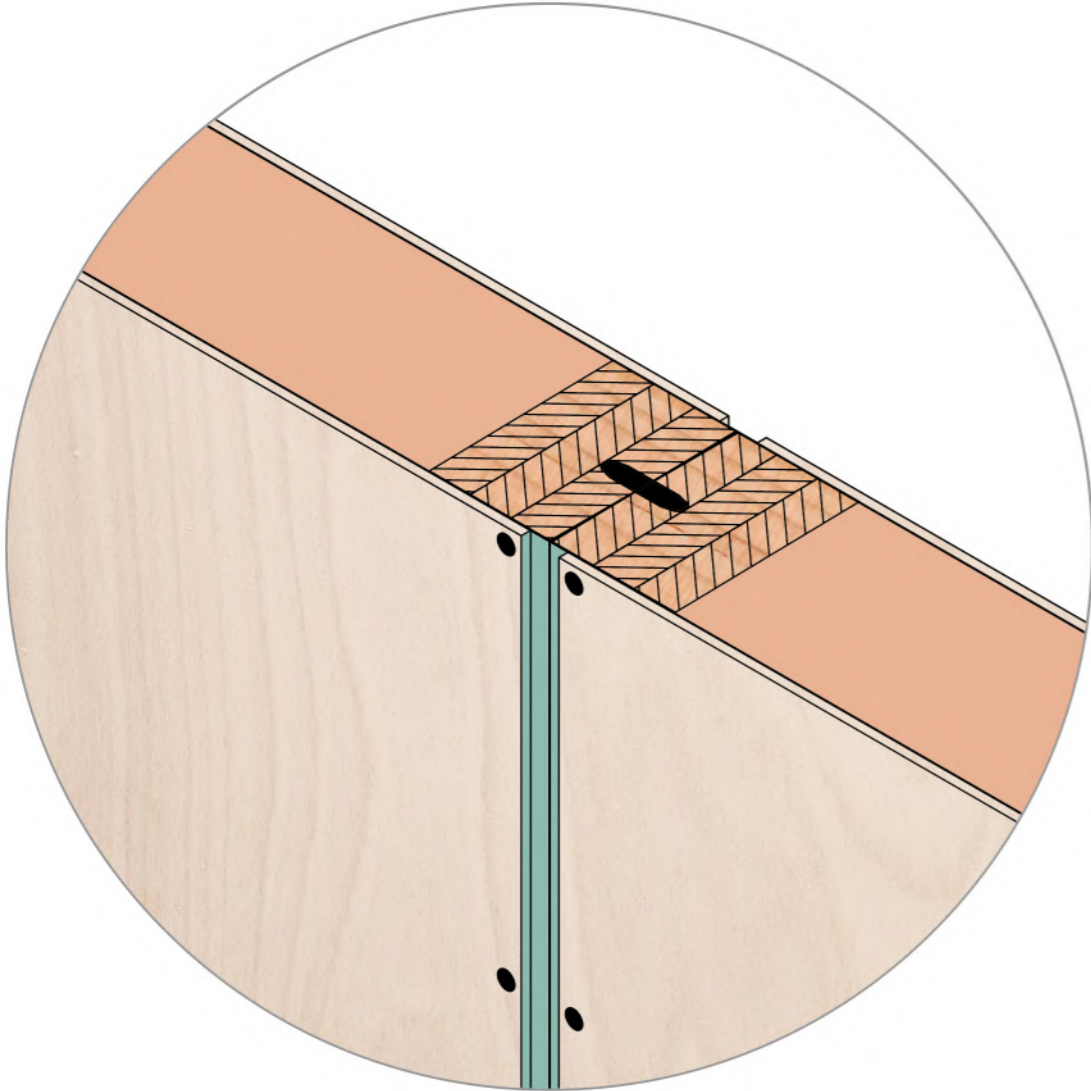
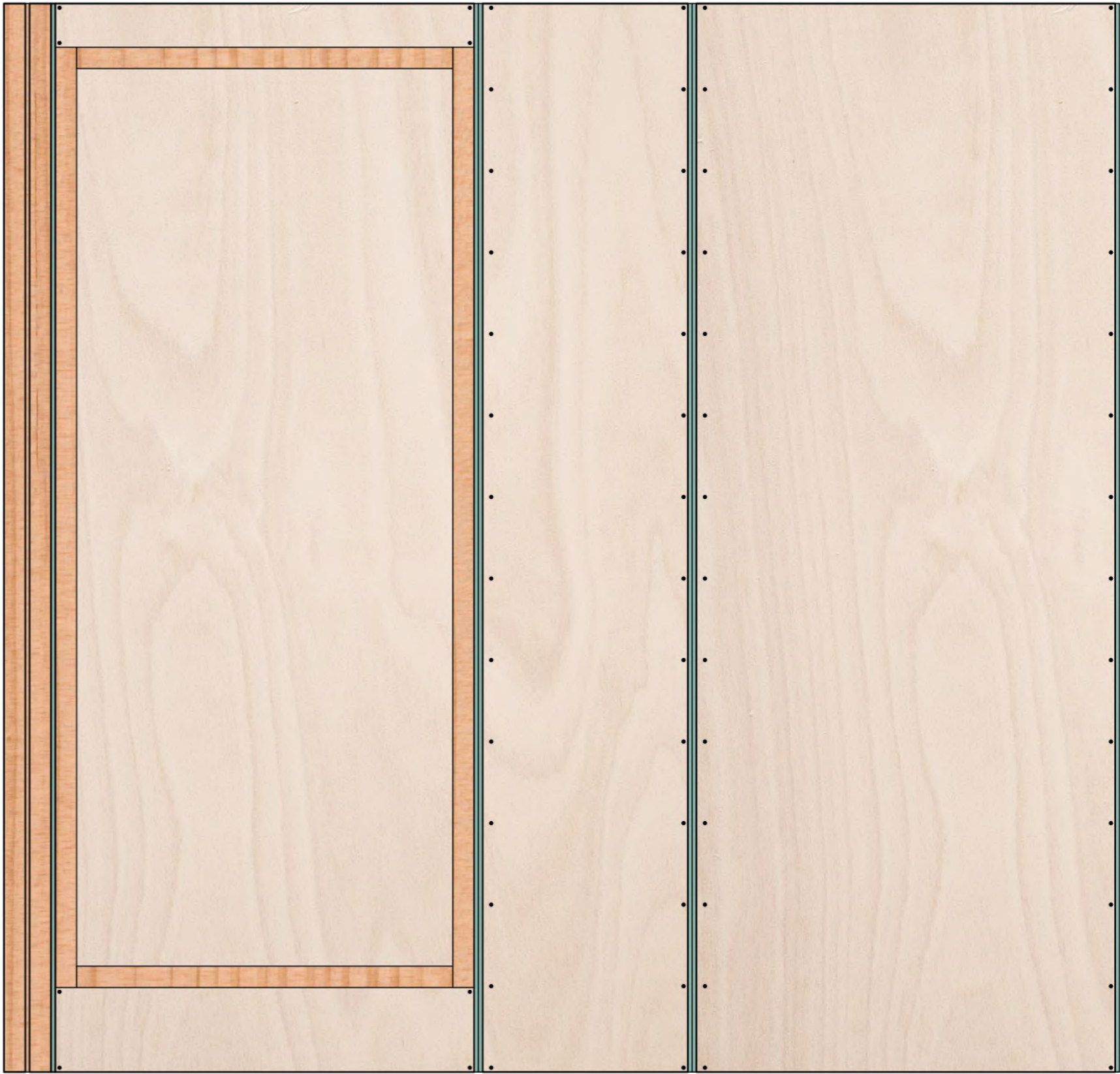


Back facade shelter unit

Facade horizontal section



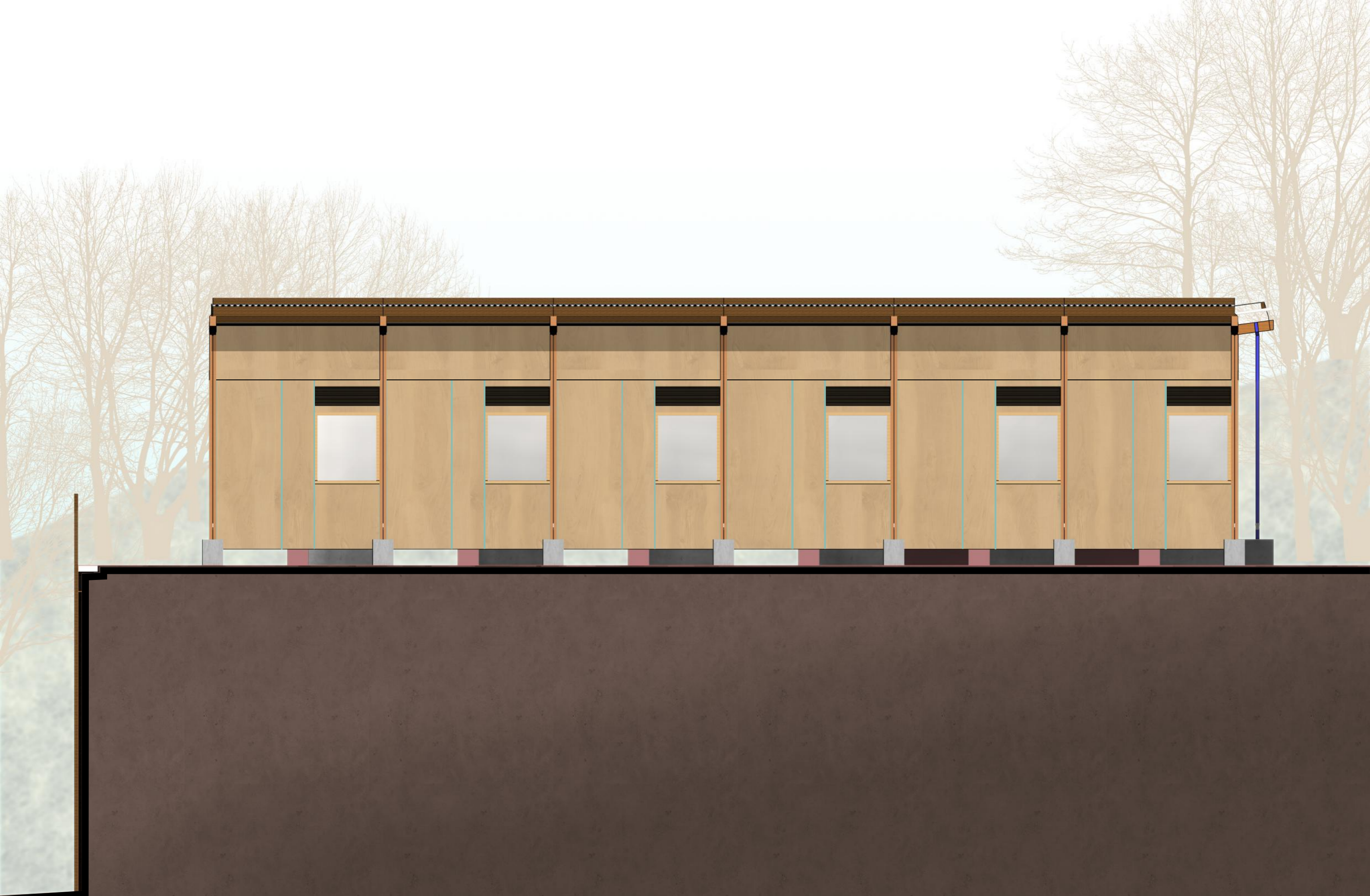
Facade front view



Detail flute

Detail sandwich panel



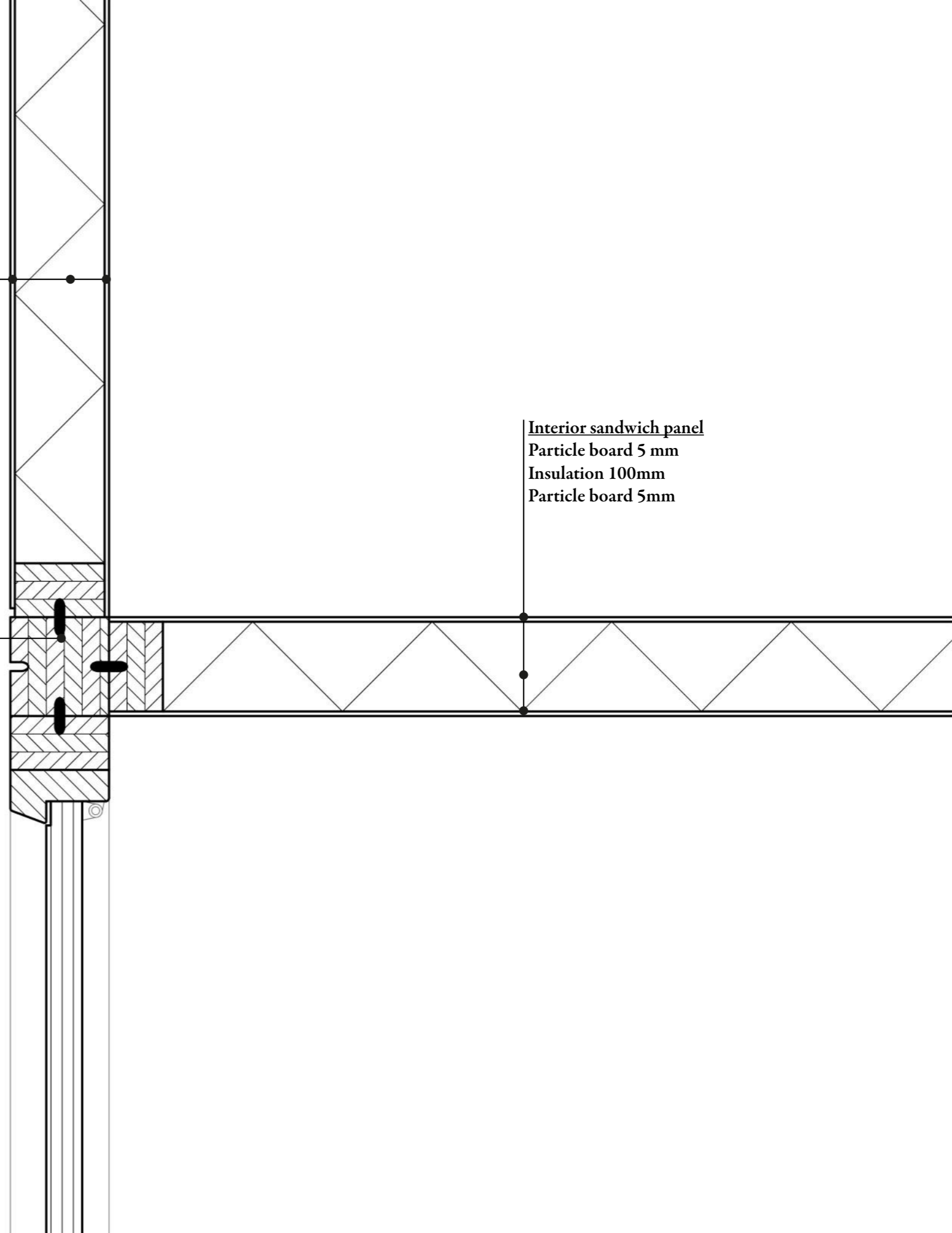


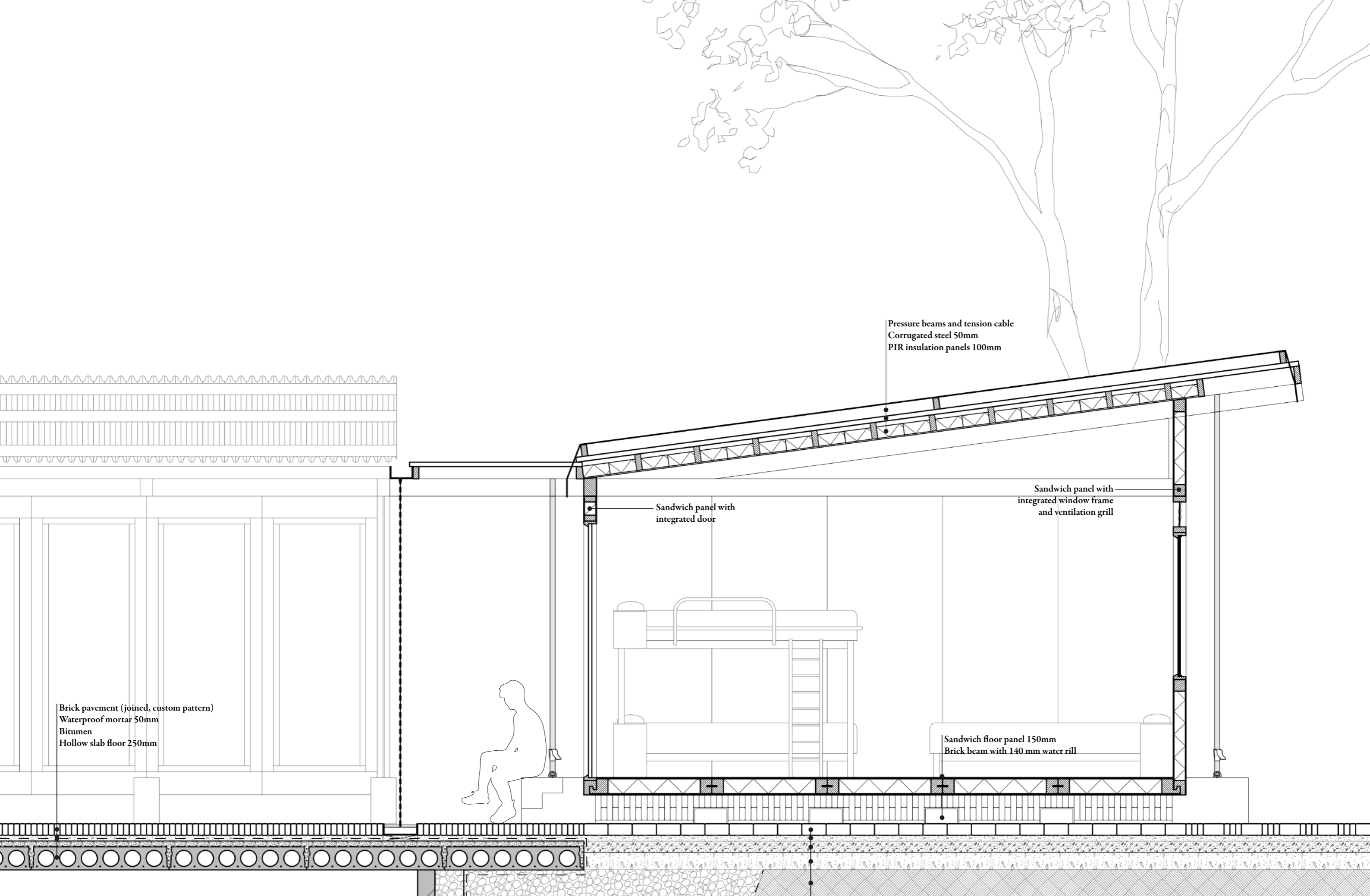


Facade sandwich panel  
Plywood (lacquered) 5 mm  
Insulation 100mm  
Particle board 5mm

Interior sandwich panel  
Particle board 5 mm  
Insulation 100mm  
Particle board 5mm

Column  
Laminated Douglas 110x110mm  
Hard rubber joint





Pressure beams and tension cable  
Corrugated steel 50mm  
PIR insulation panels 100mm

Sandwich panel with  
integrated door

Sandwich panel with  
integrated window frame  
and ventilation grill

Sandwich floor panel 150mm  
Brick beam with 140 mm water rill

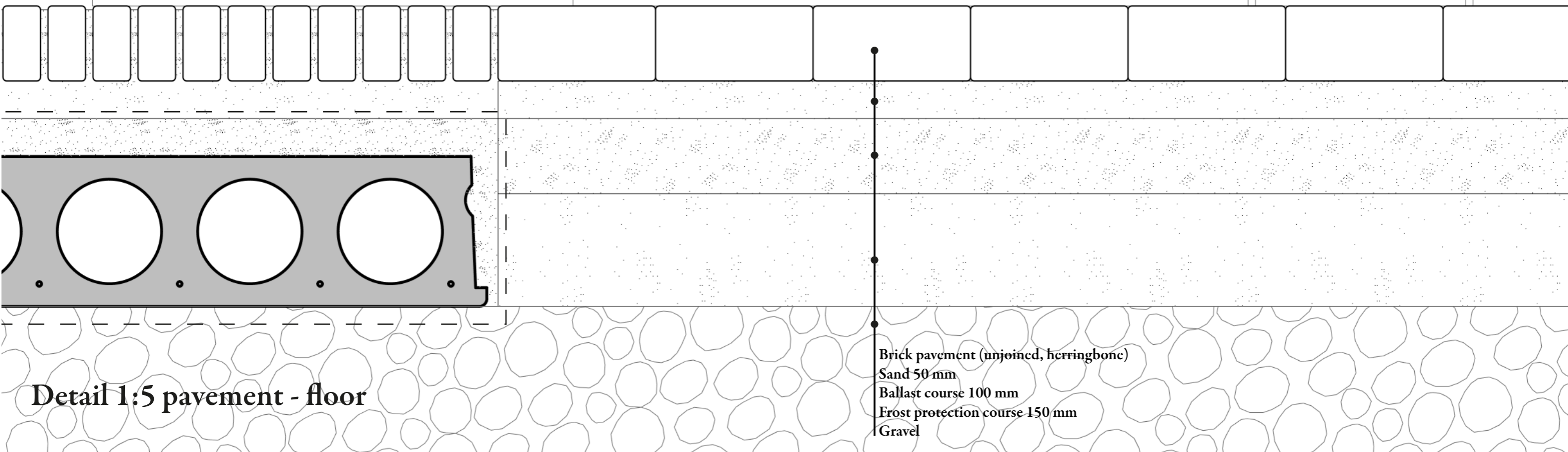
Brick pavement (joined, custom pattern)  
Waterproof mortar 50mm  
Bitumen  
Hollow slab floor 250mm

Lashing strap

Concrete foundation block

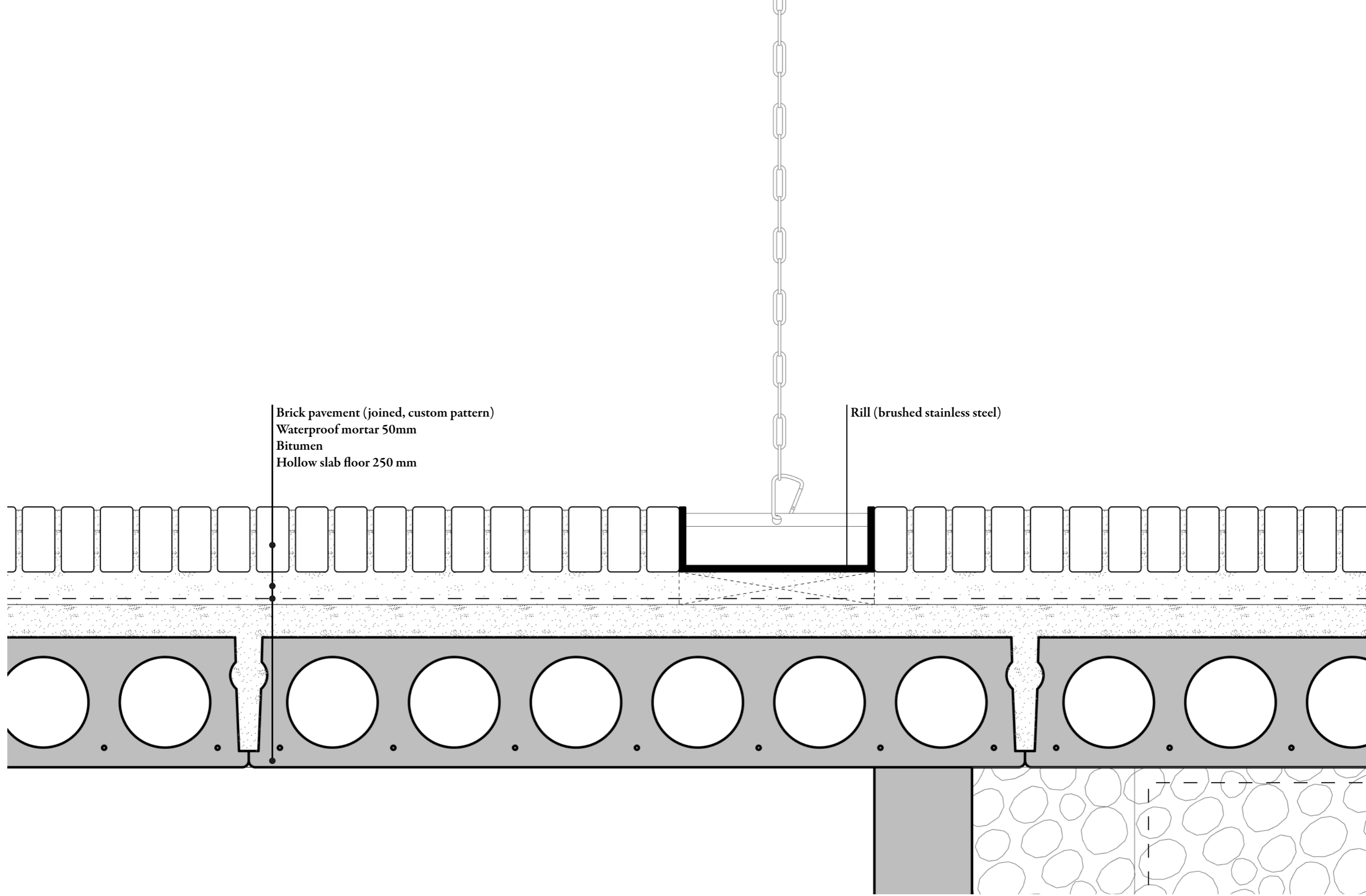
Sandwich floor panel 150mm  
Underlayment 10 mm  
Insulation 122 mm  
Underlayment 18 mm

Brick beam with 140 mm water rill



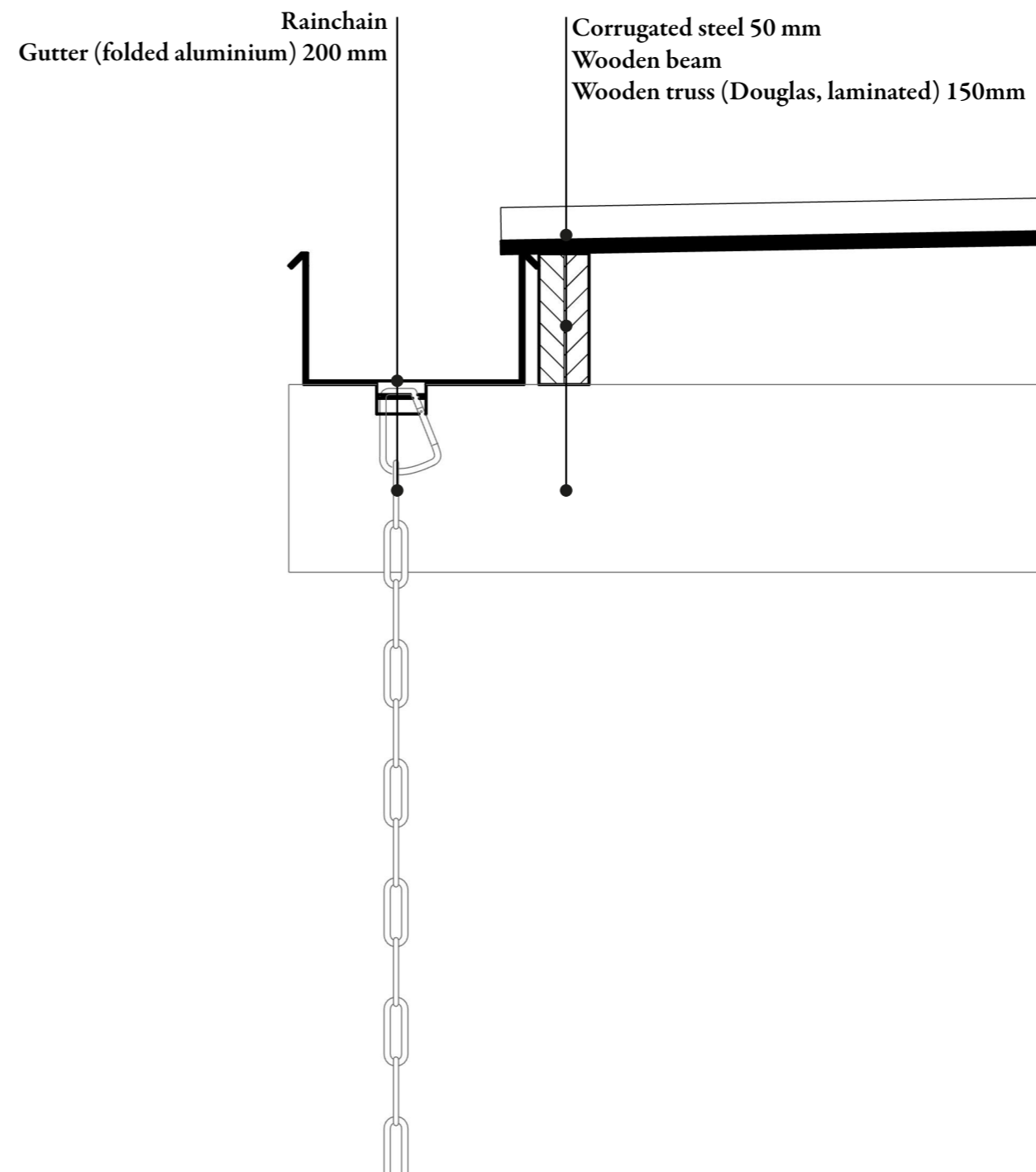
Brick pavement (unjoined, herringbone)  
Sand 50 mm  
Ballast course 100 mm  
Frost protection course 150 mm  
Gravel

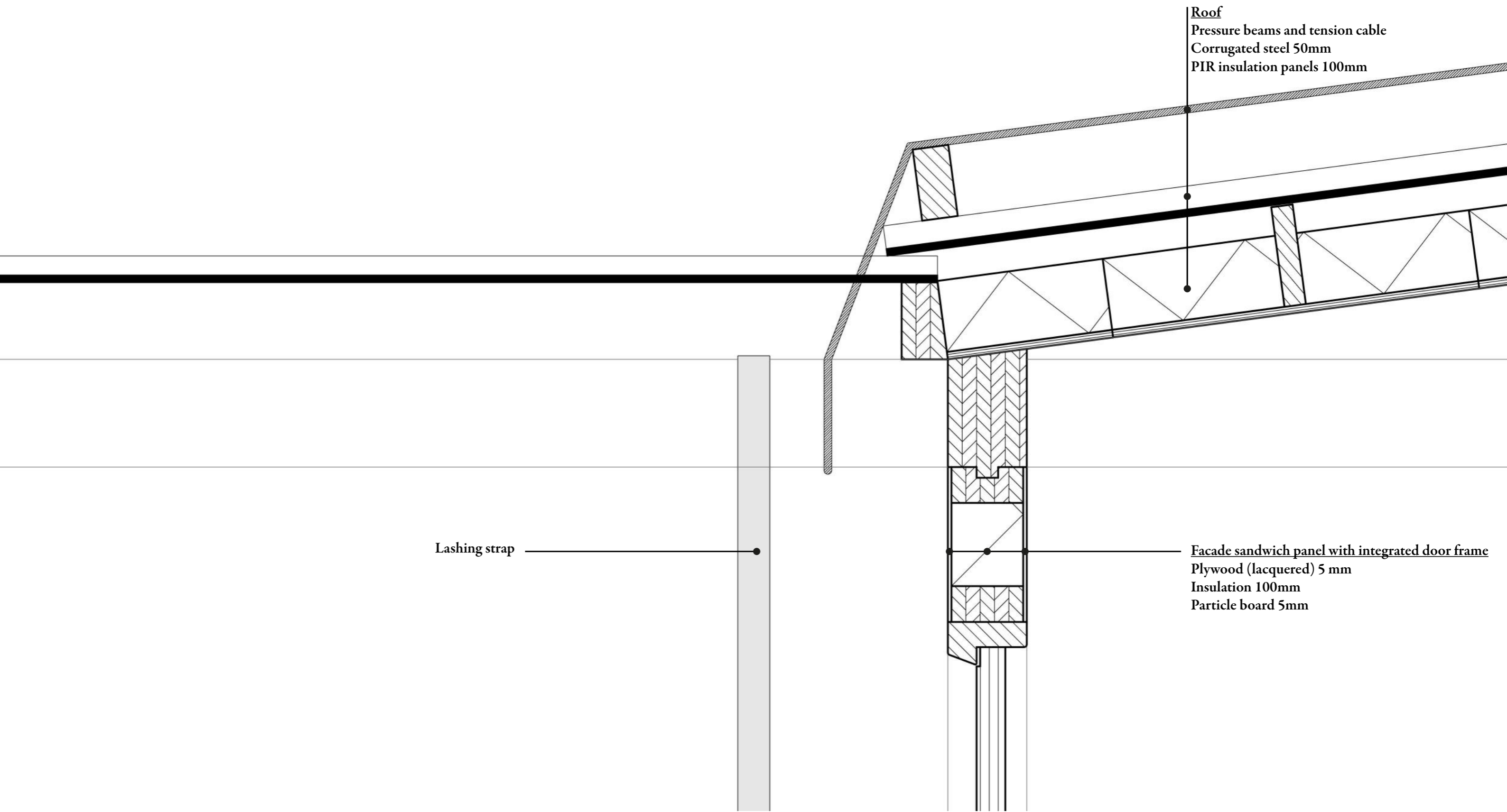
**Detail 1:5 pavement - floor**



Brick pavement (joined, custom pattern)  
Waterproof mortar 50mm  
Bitumen  
Hollow slab floor 250 mm

Rill (brushed stainless steel)

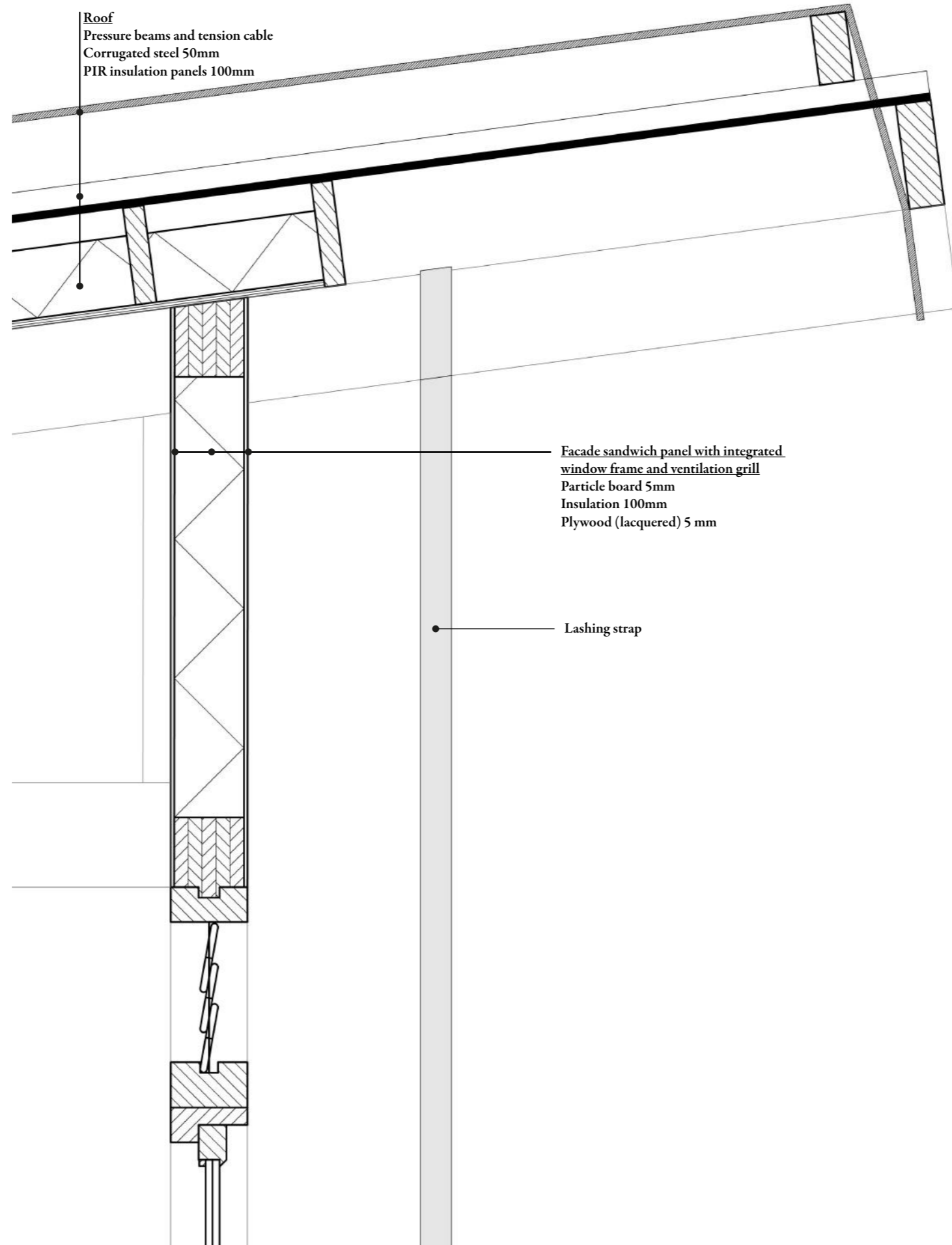


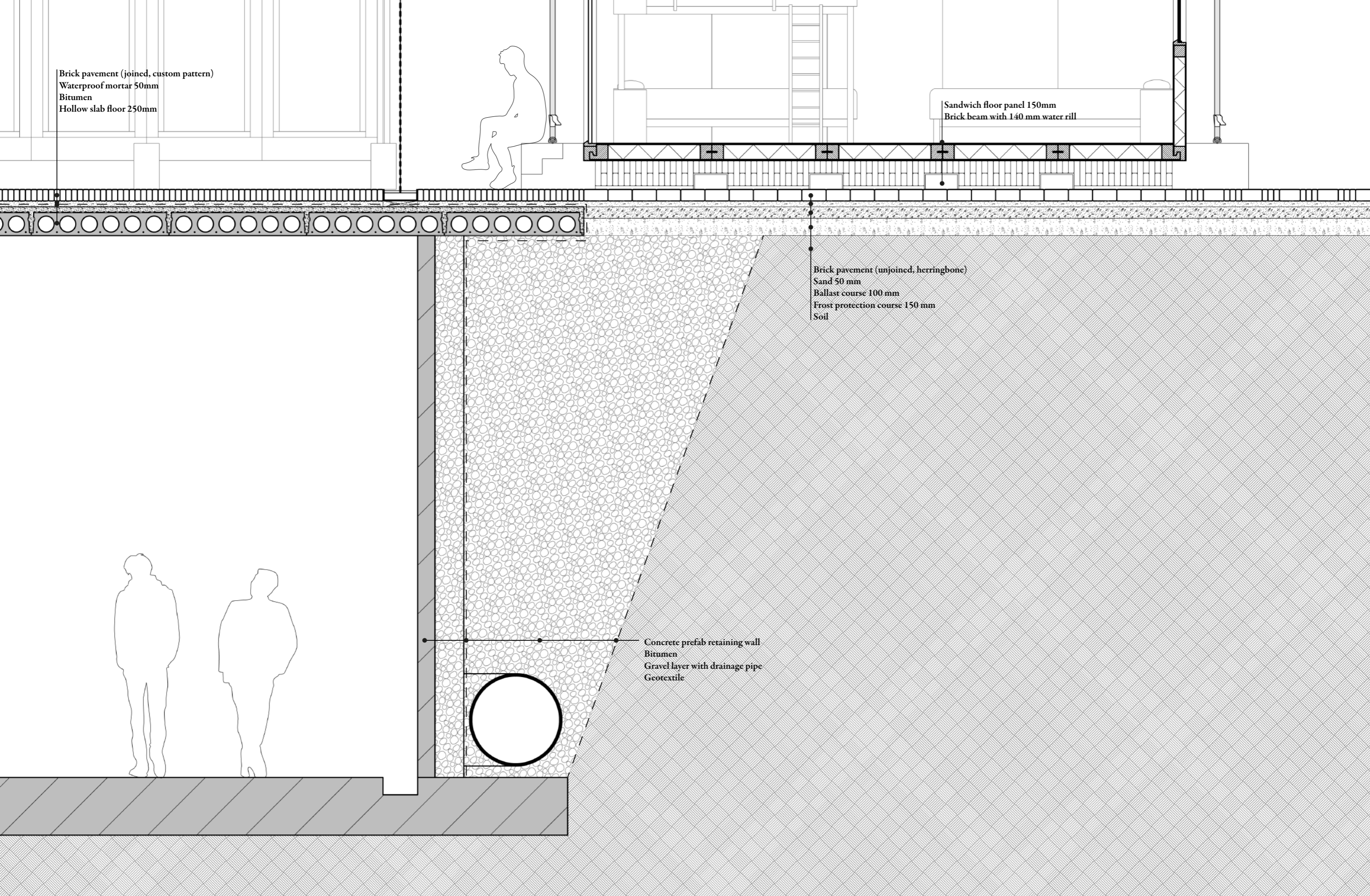


**Roof**  
Pressure beams and tension cable  
Corrugated steel 50mm  
PIR insulation panels 100mm

Lashing strap

**Facade sandwich panel with integrated door frame**  
Plywood (lacquered) 5 mm  
Insulation 100mm  
Particle board 5mm





Brick pavement (joined, custom pattern)  
 Waterproof mortar 50mm  
 Bitumen  
 Hollow slab floor 250mm

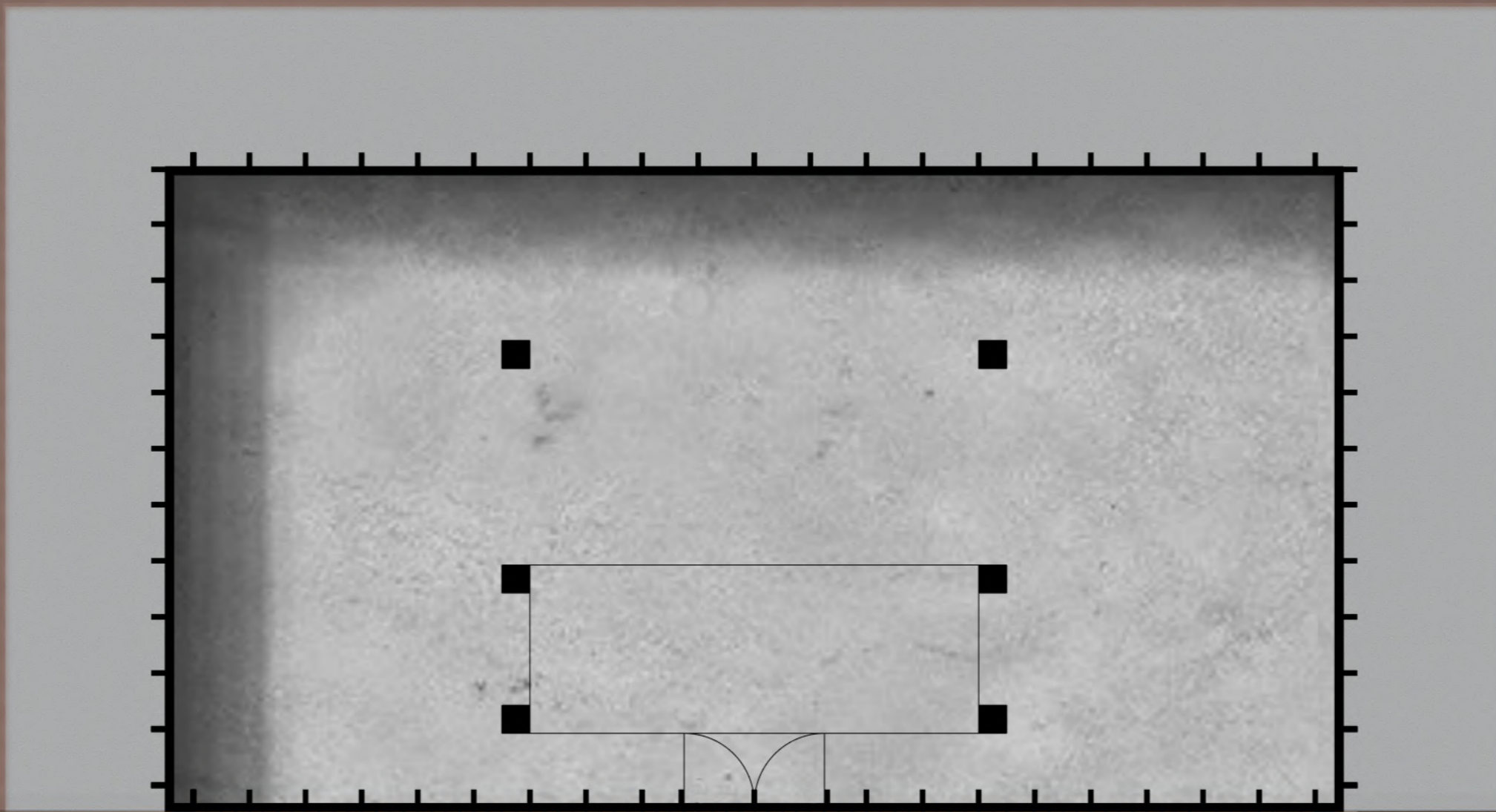
Sandwich floor panel 150mm  
 Brick beam with 140 mm water rill

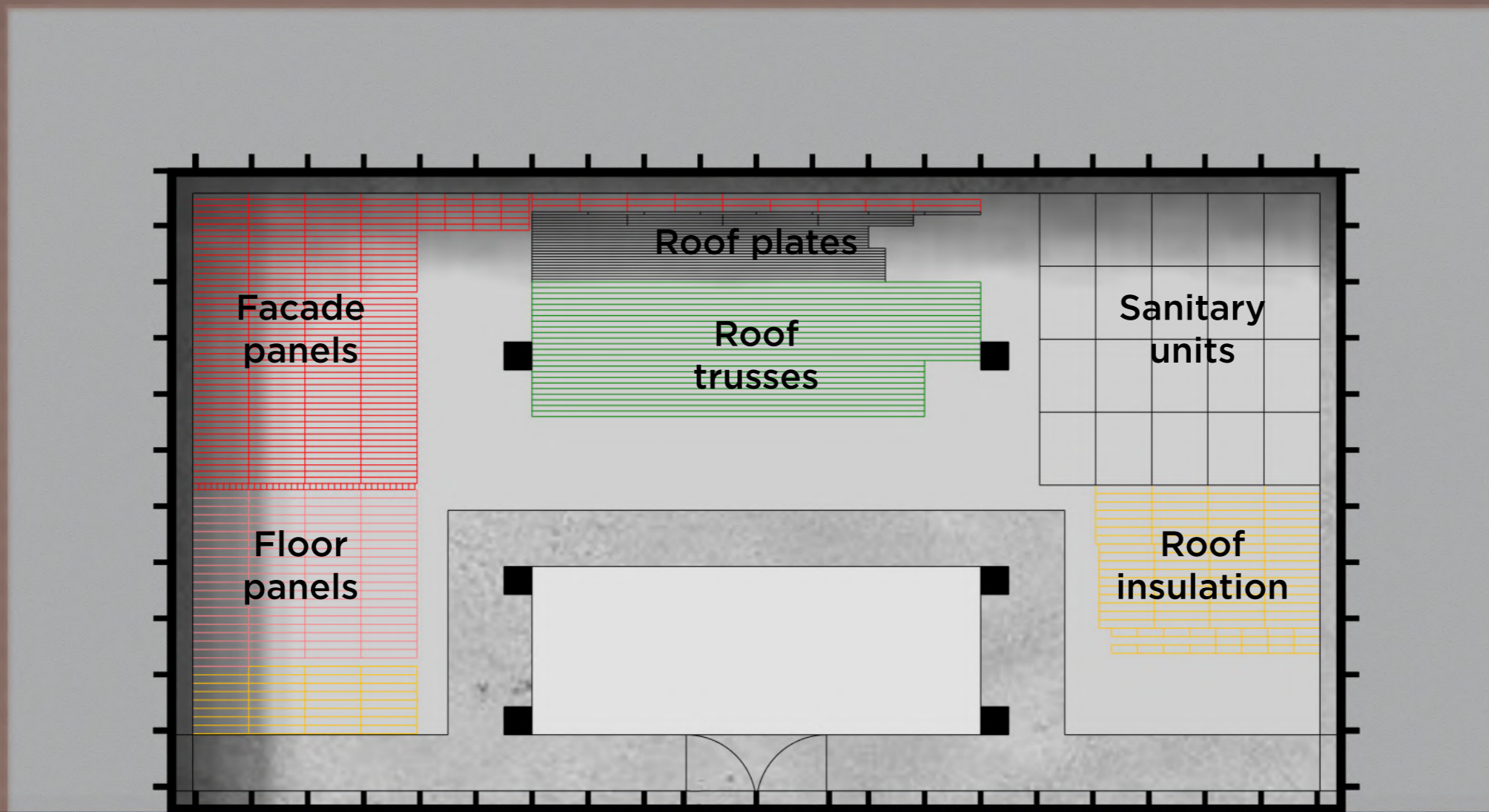
Brick pavement (unjoined, herringbone)  
 Sand 50 mm  
 Ballast course 100 mm  
 Frost protection course 150 mm  
 Soil

Concrete prefab retaining wall  
 Bitumen  
 Gravel layer with drainage pipe  
 Geotextile



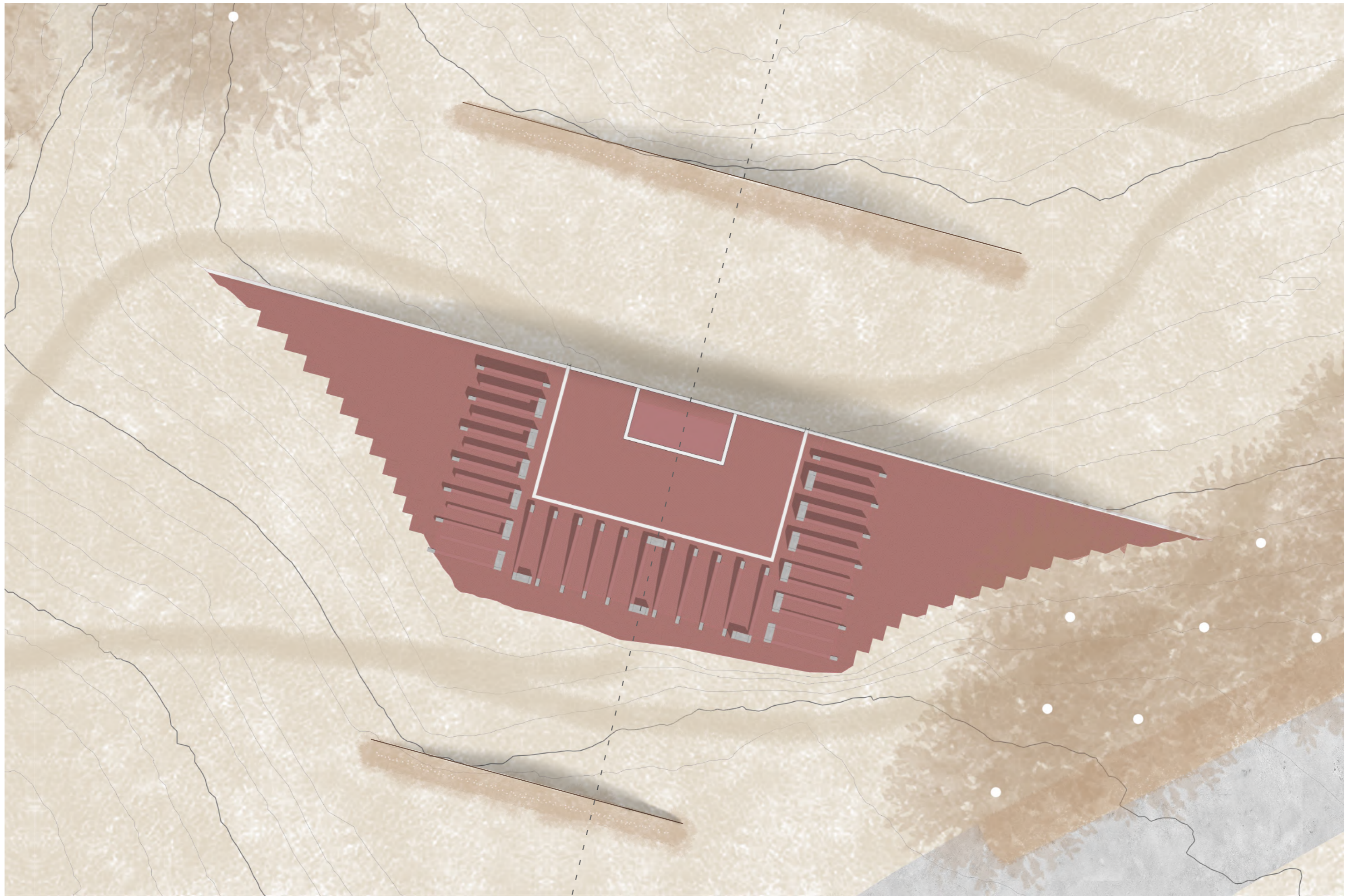


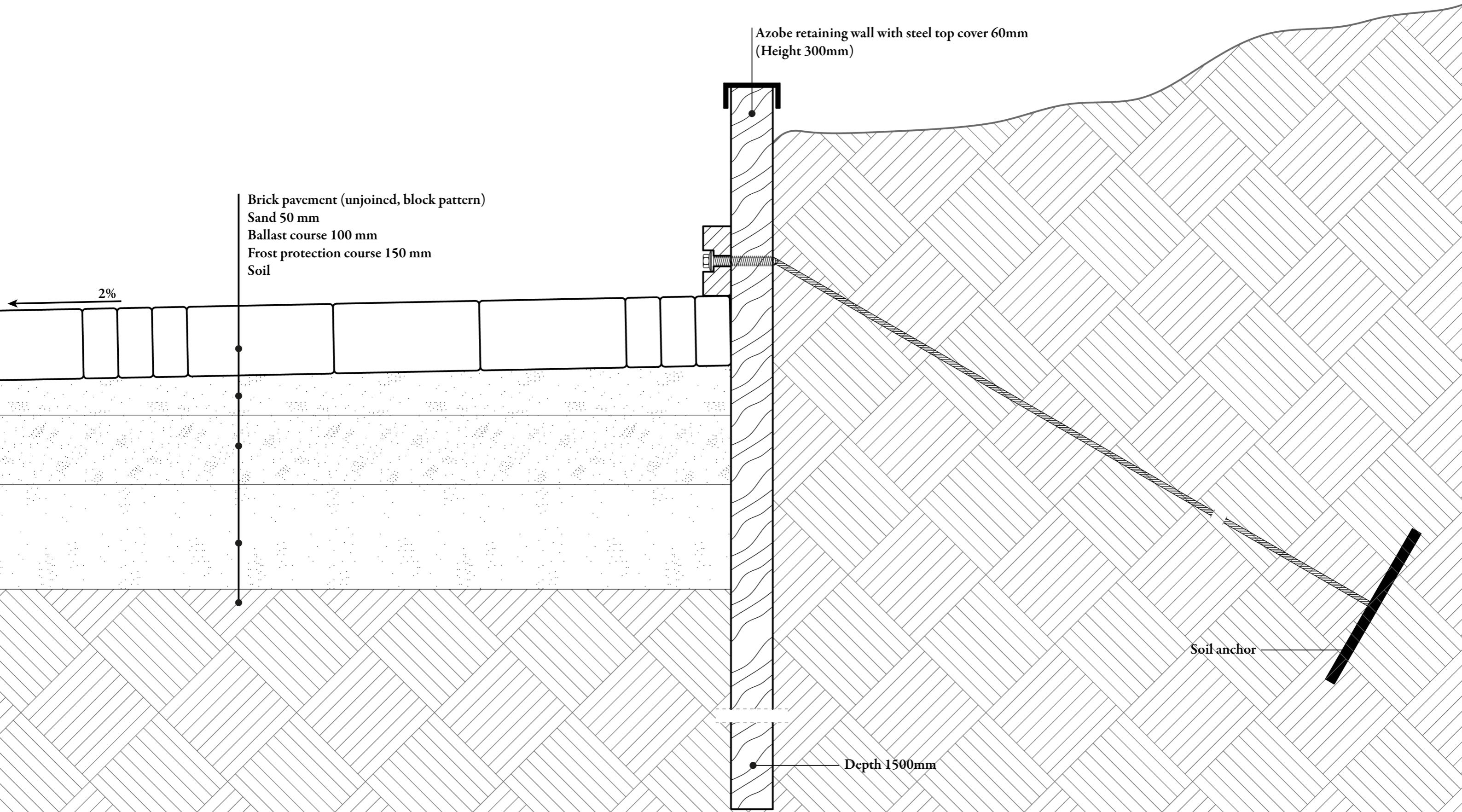


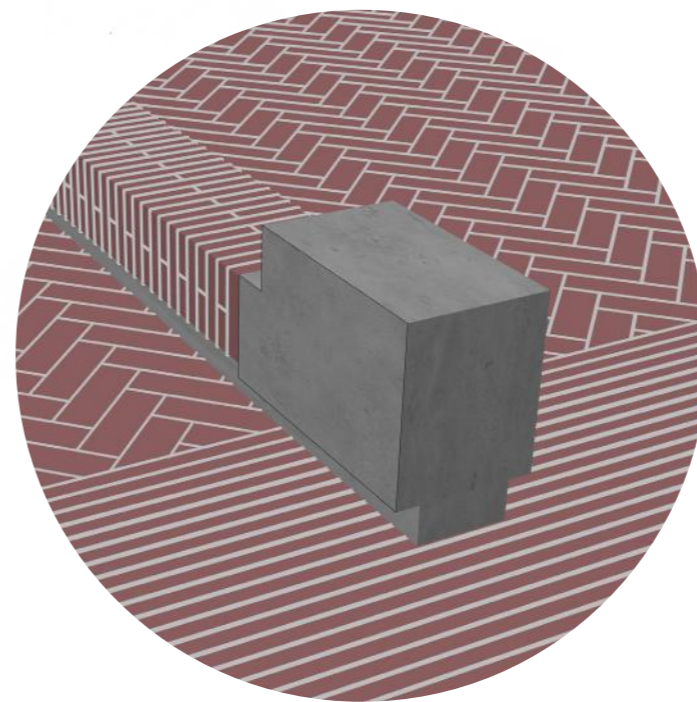
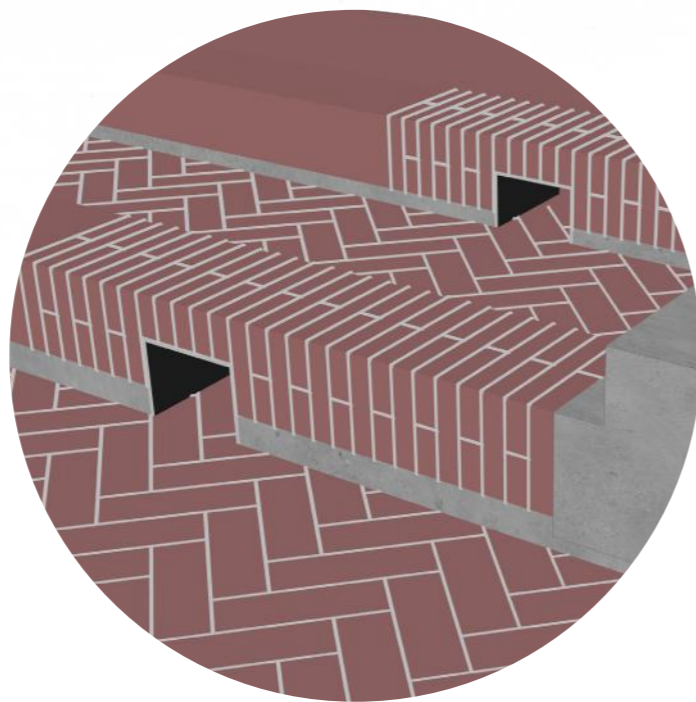
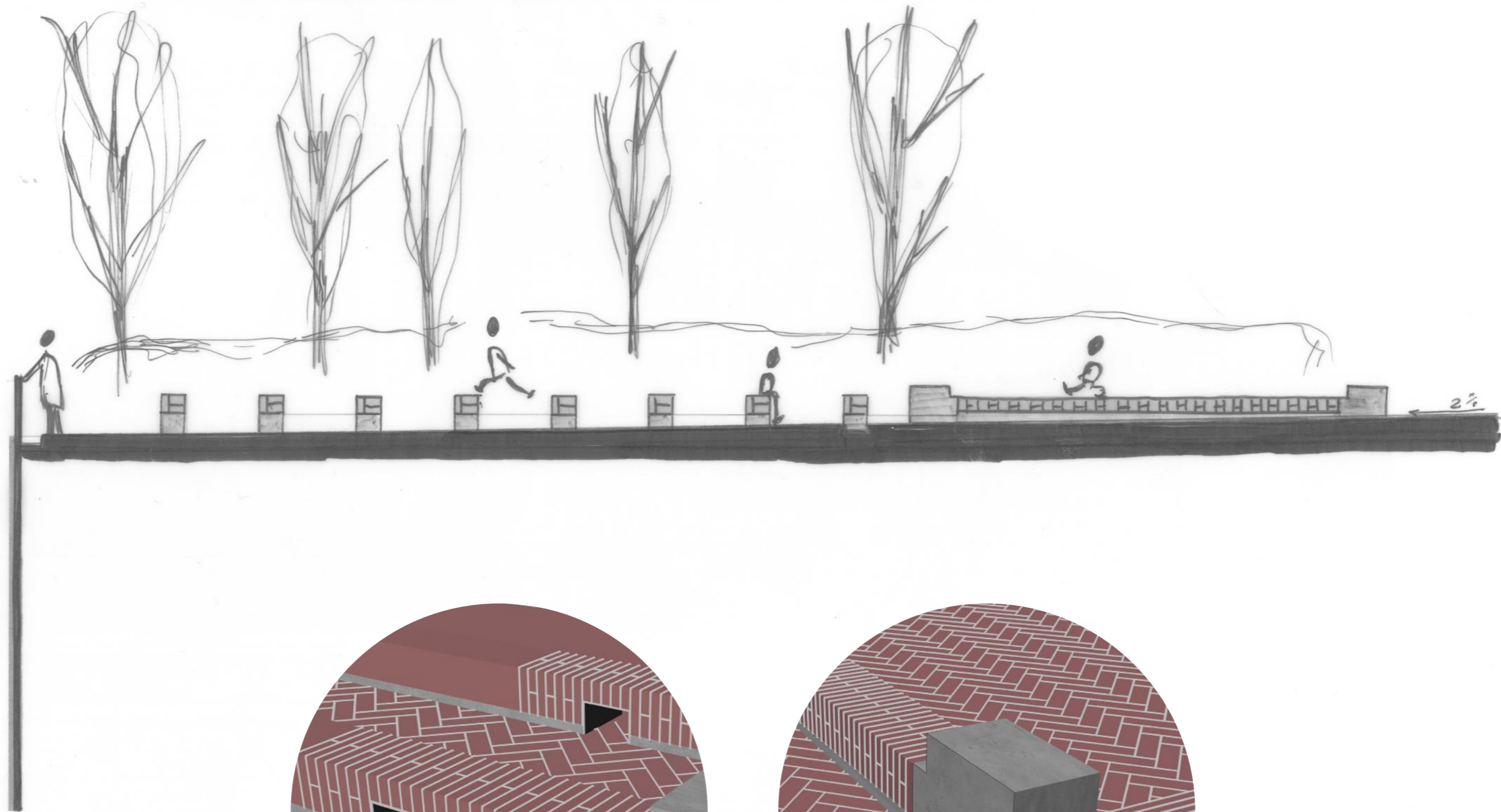




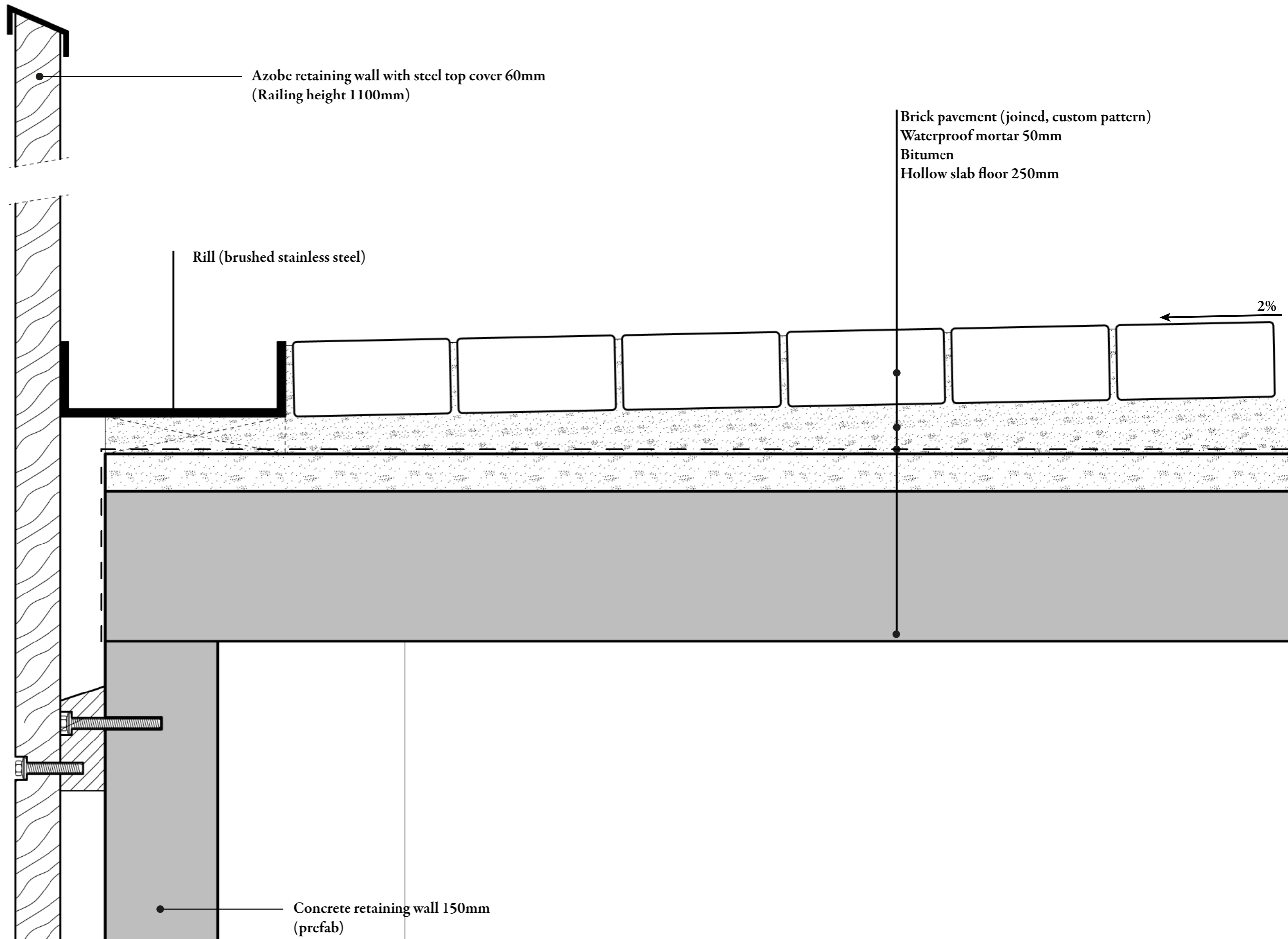
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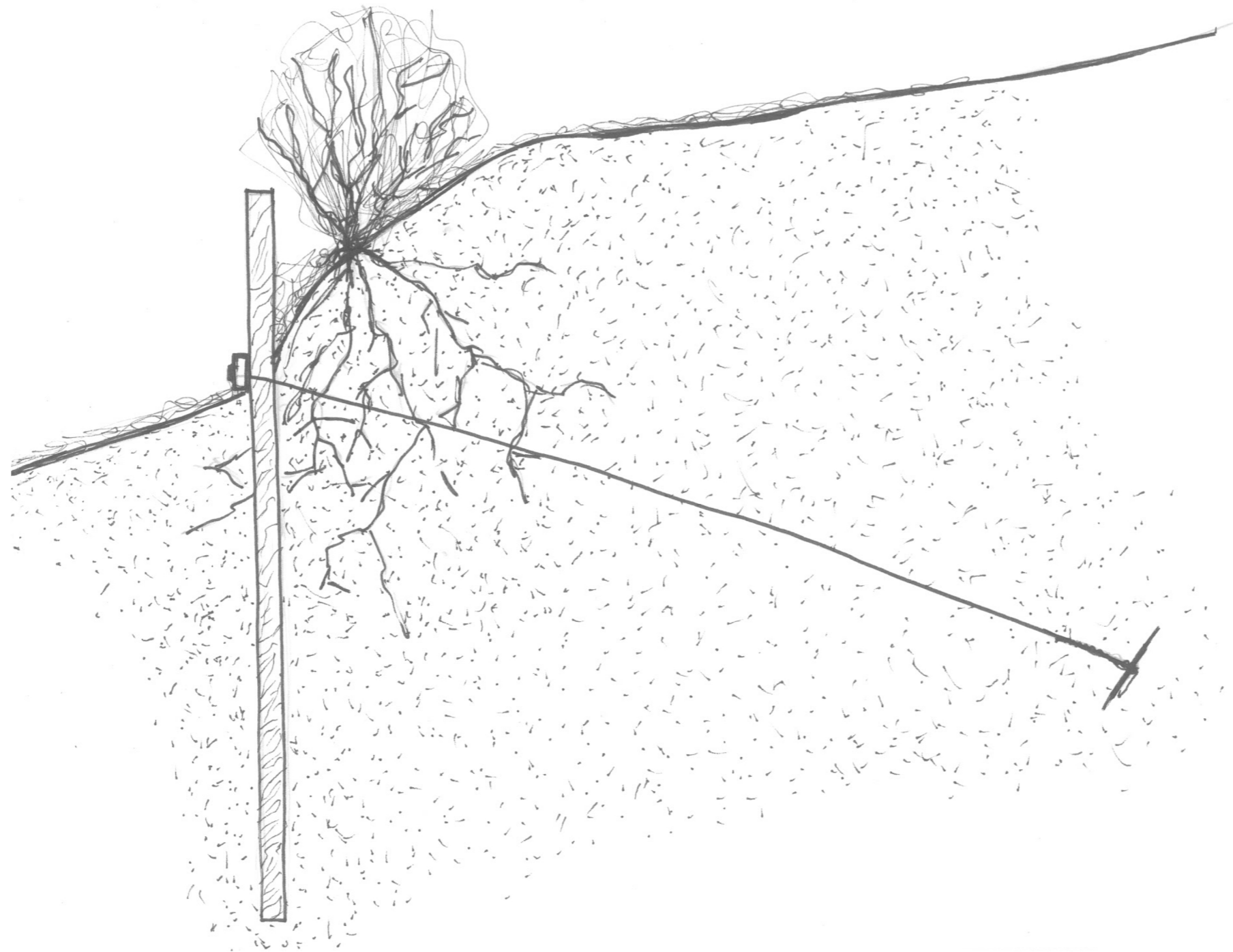


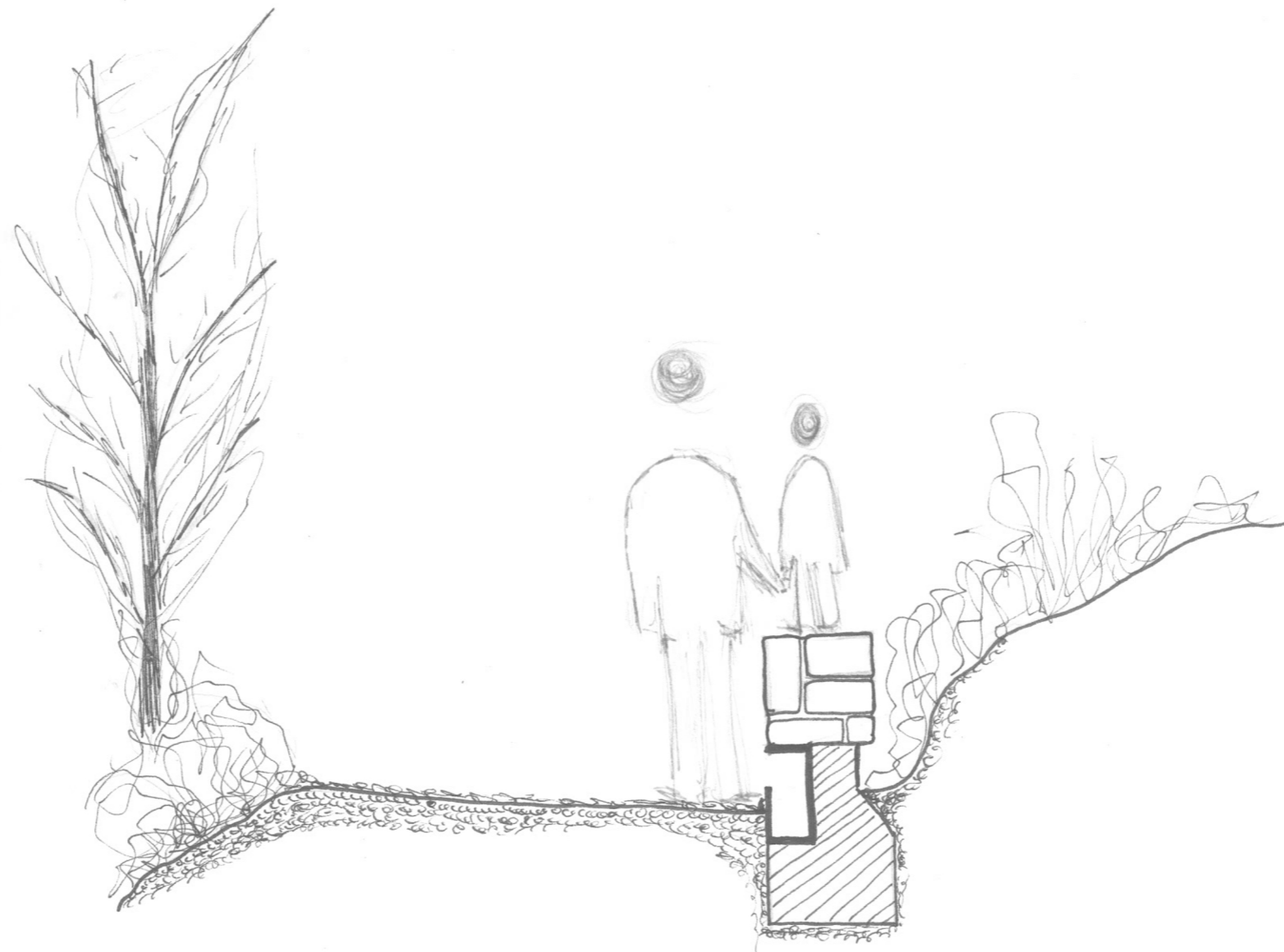




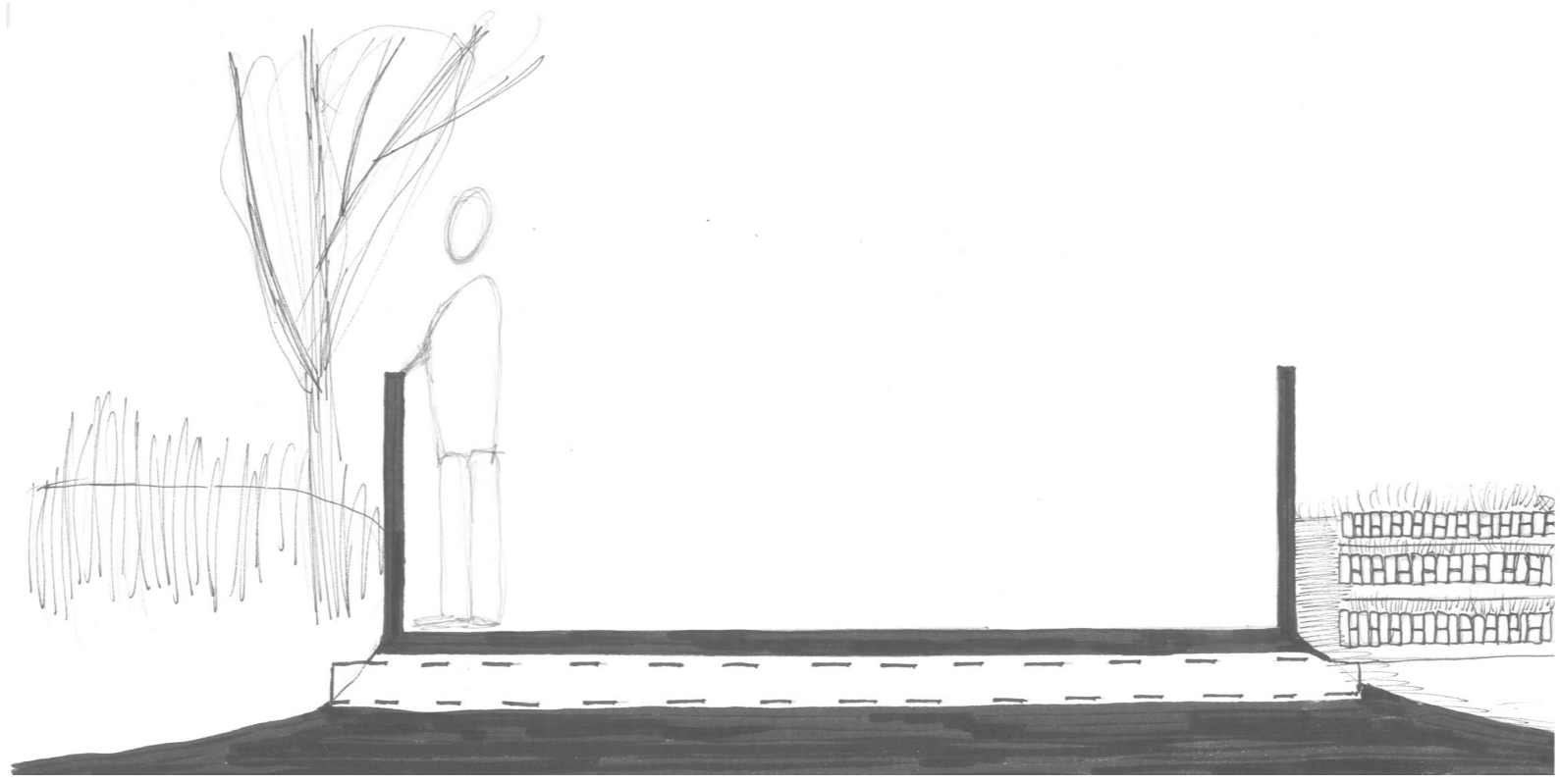
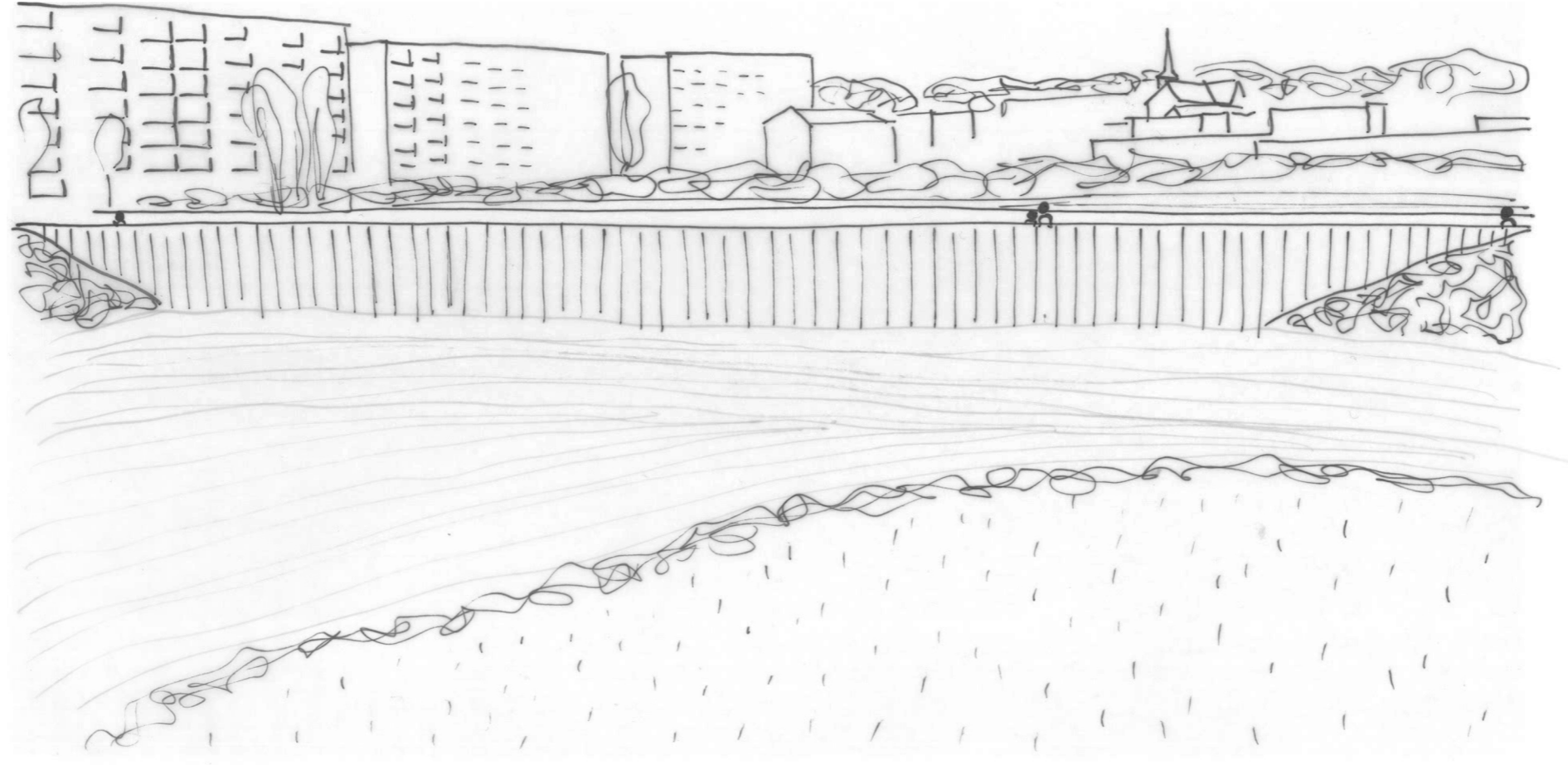


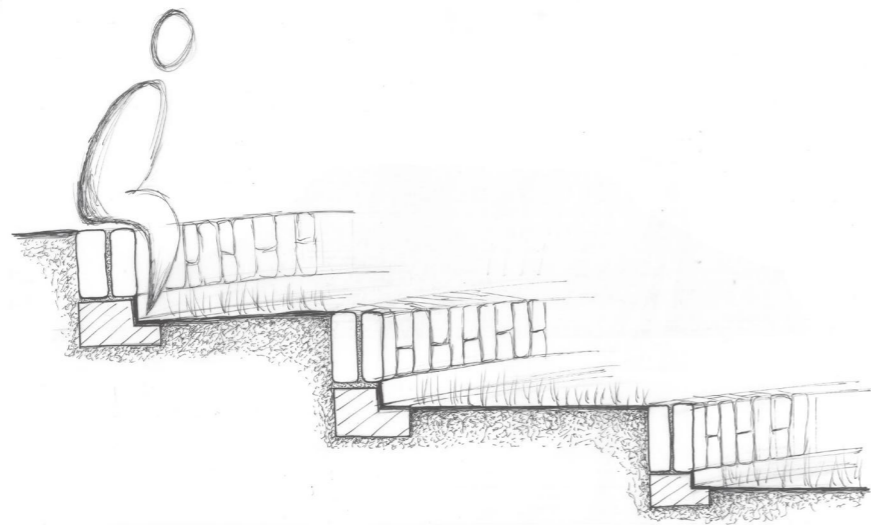
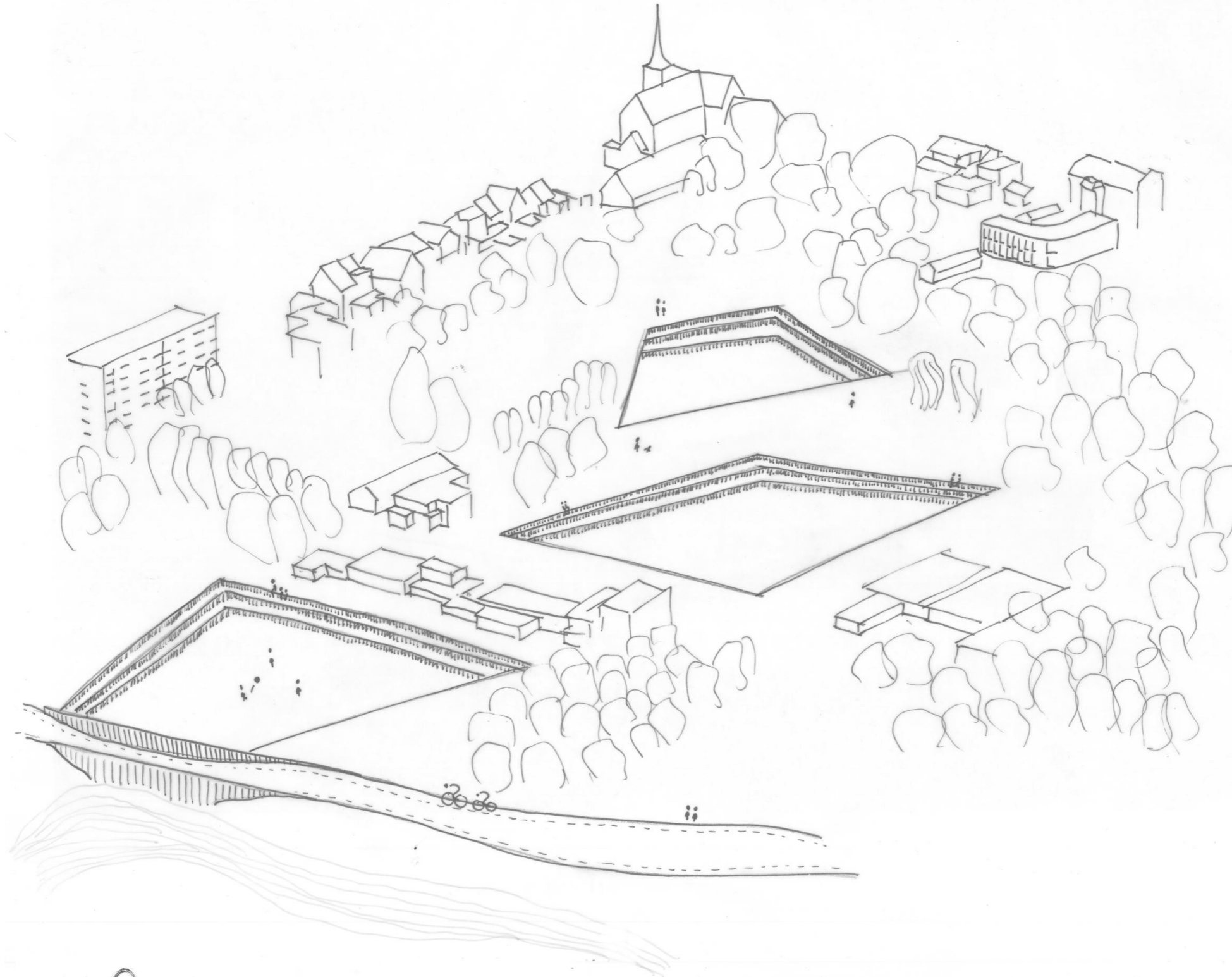


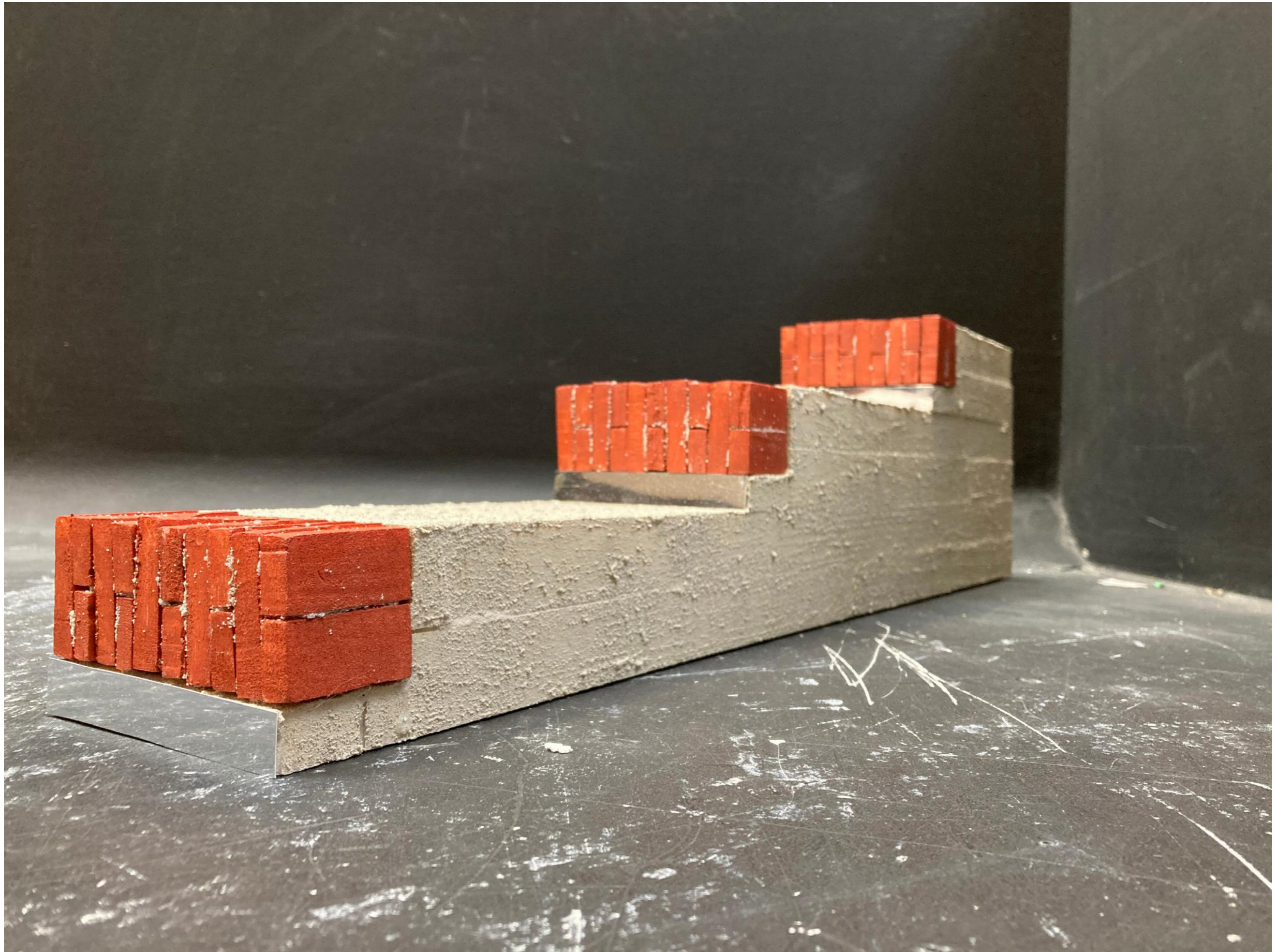










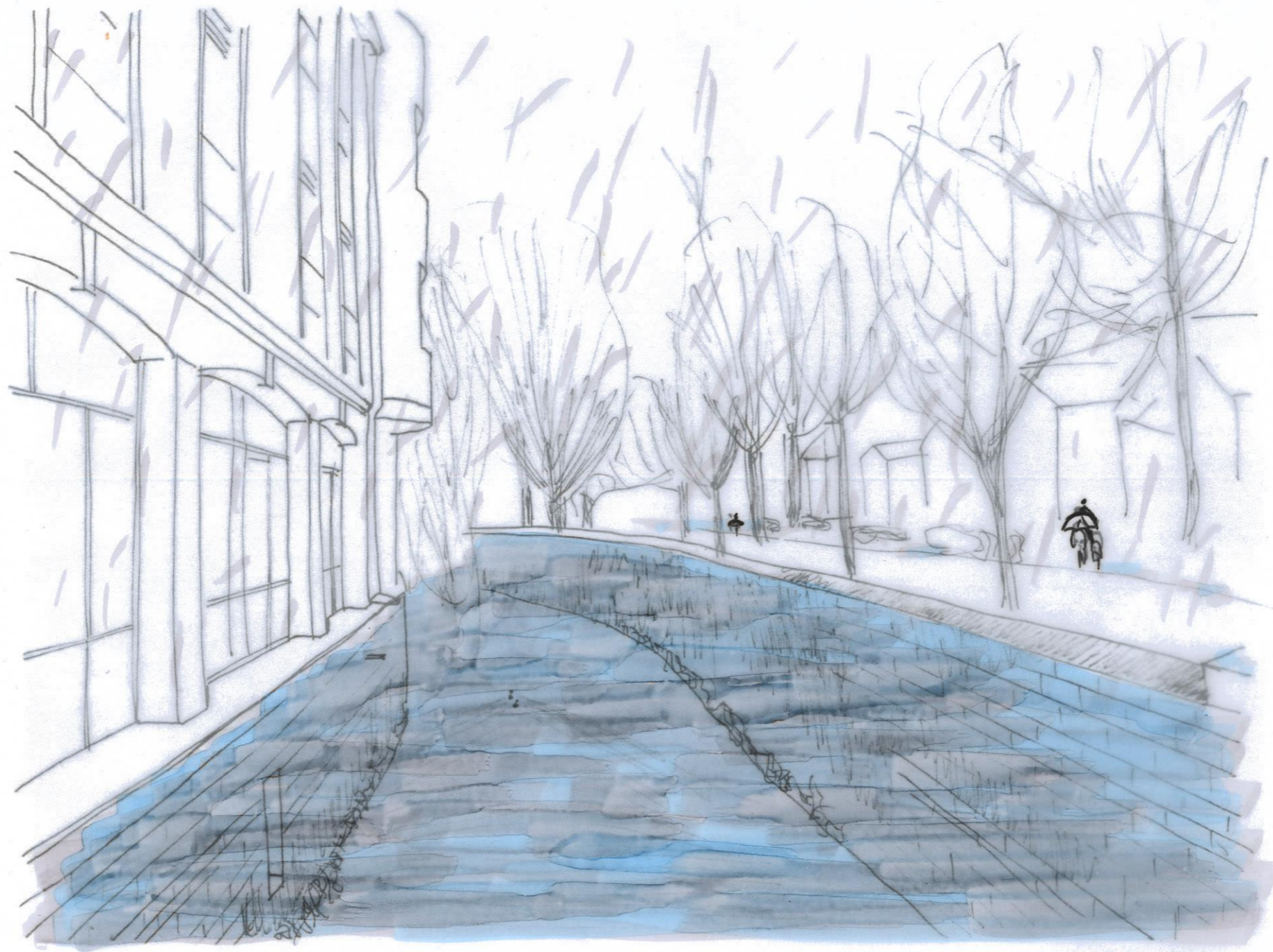


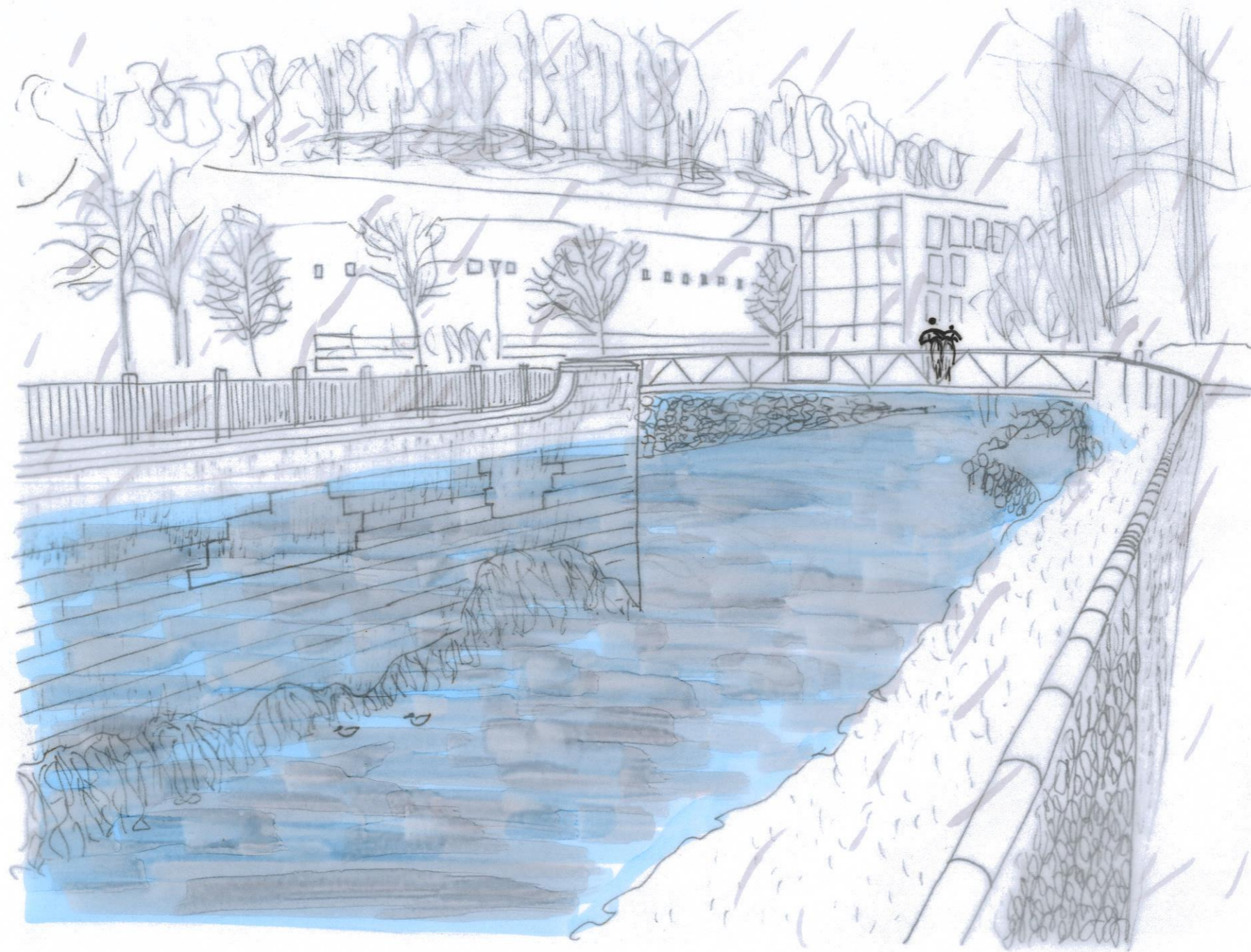




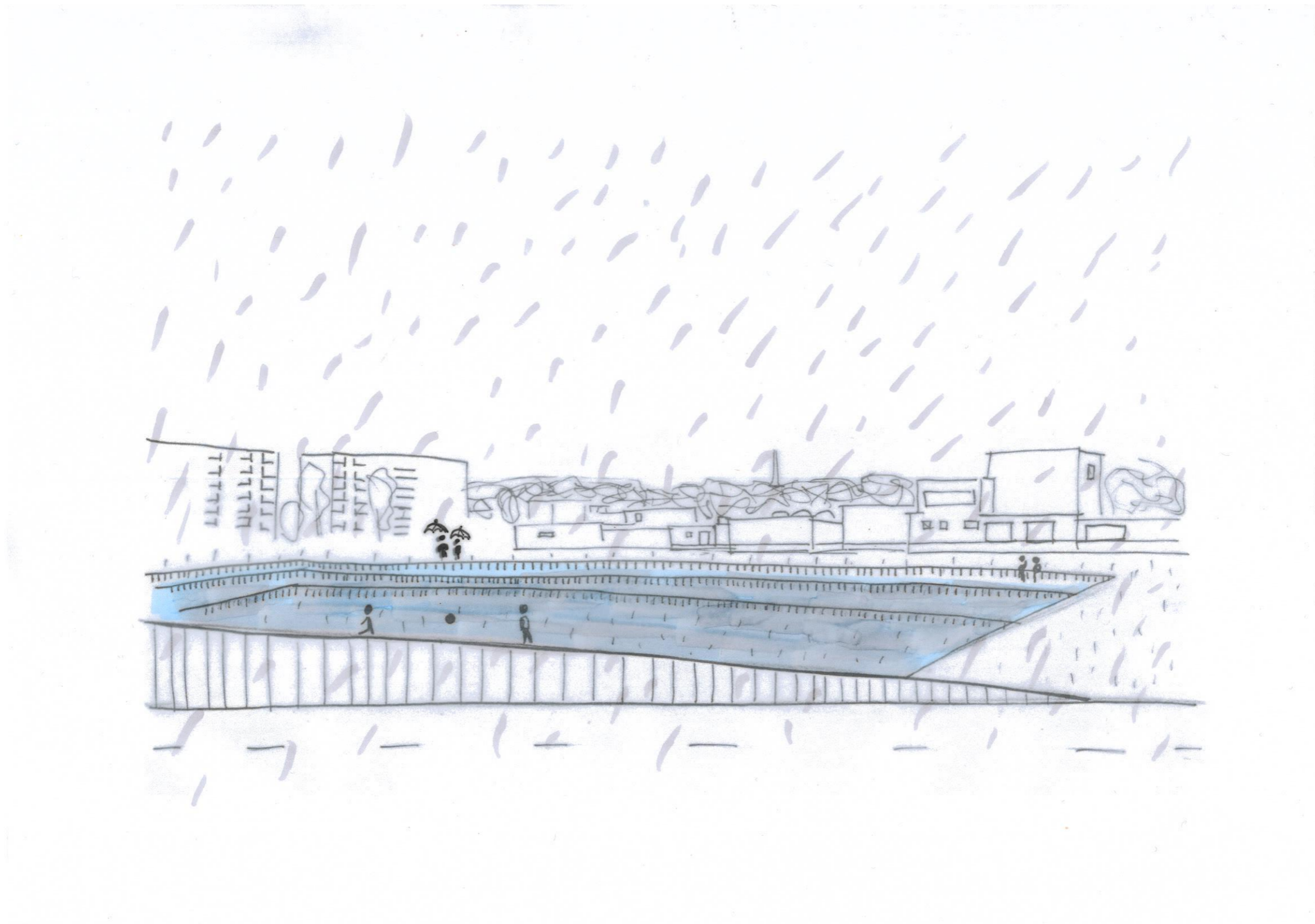
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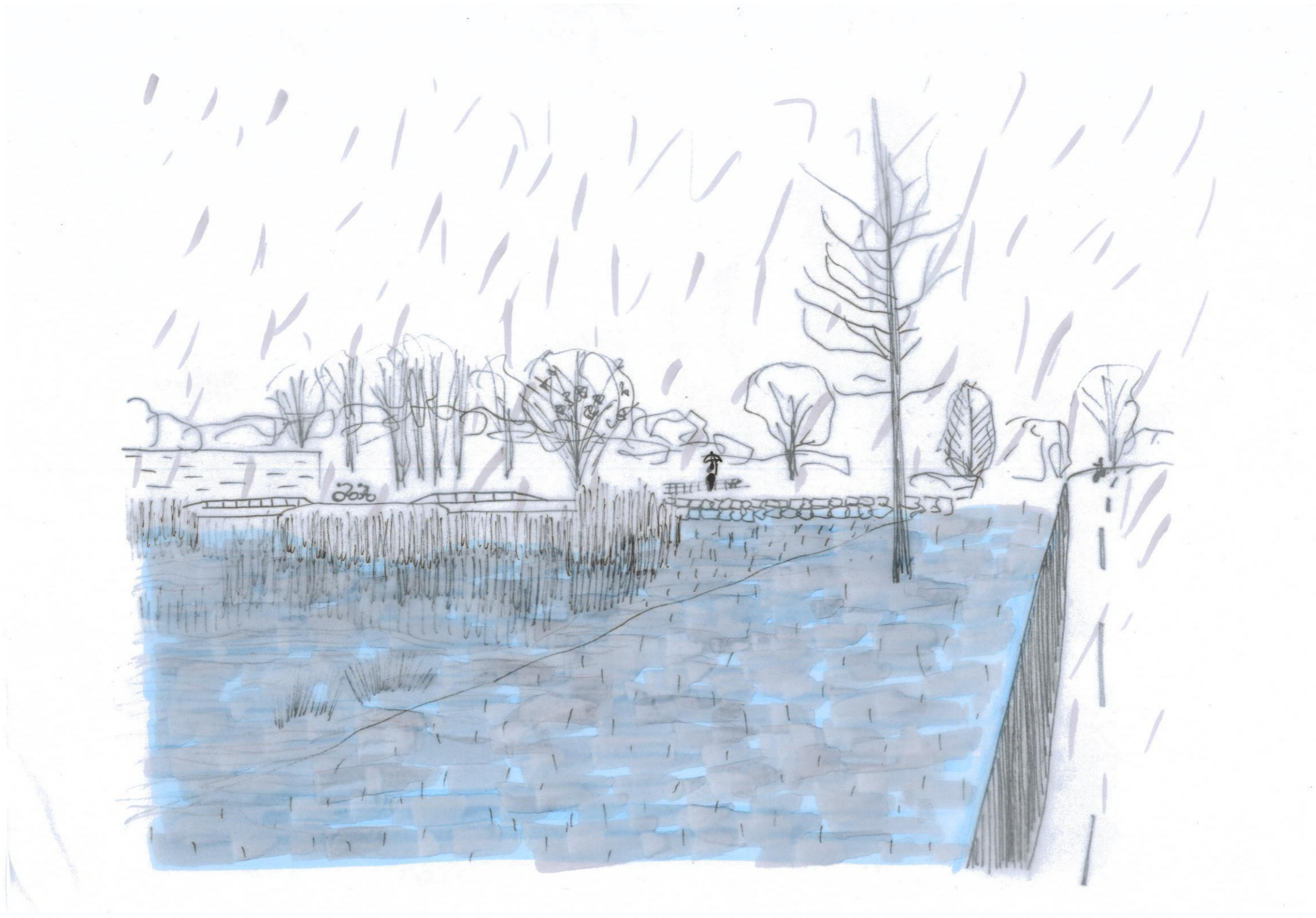






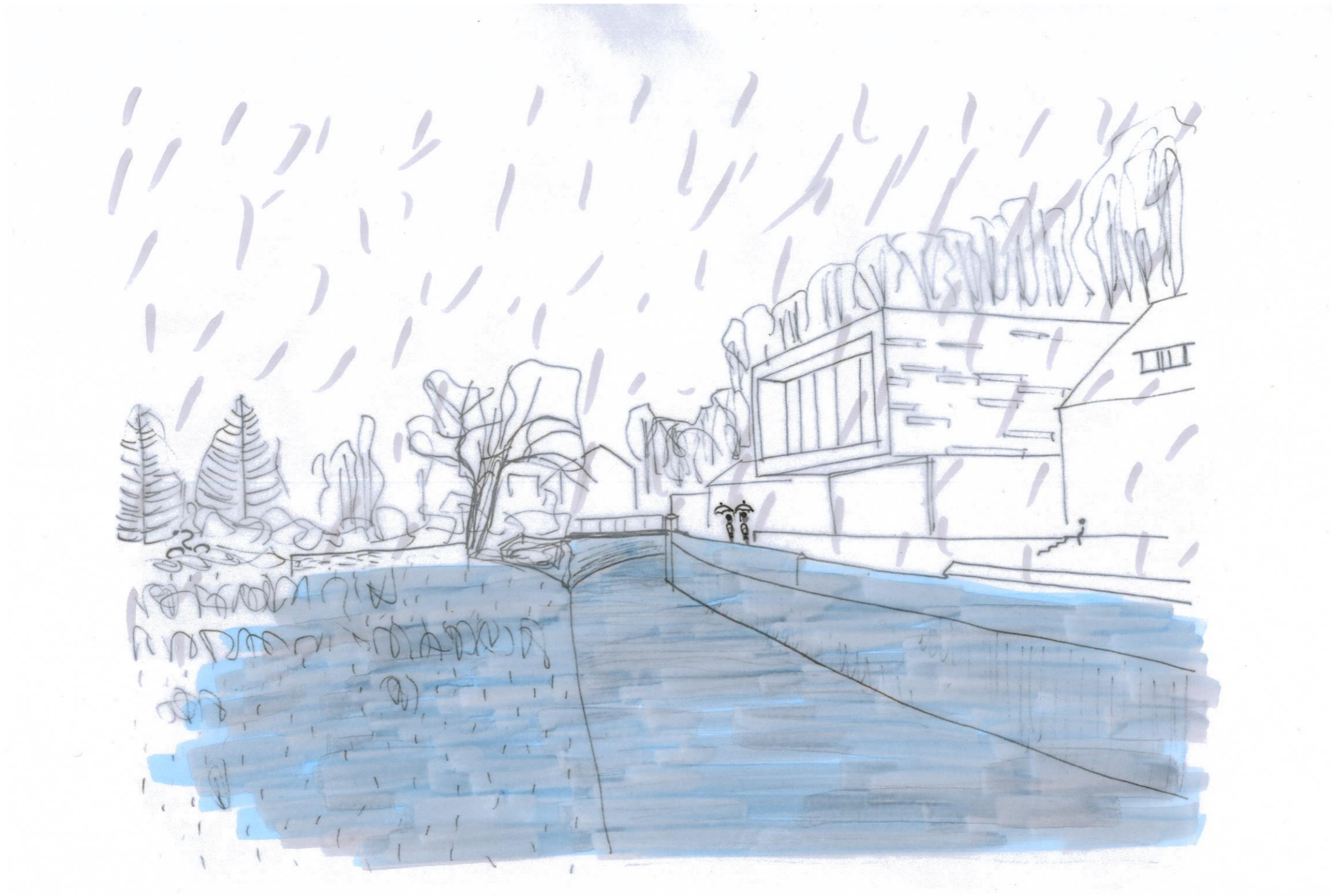


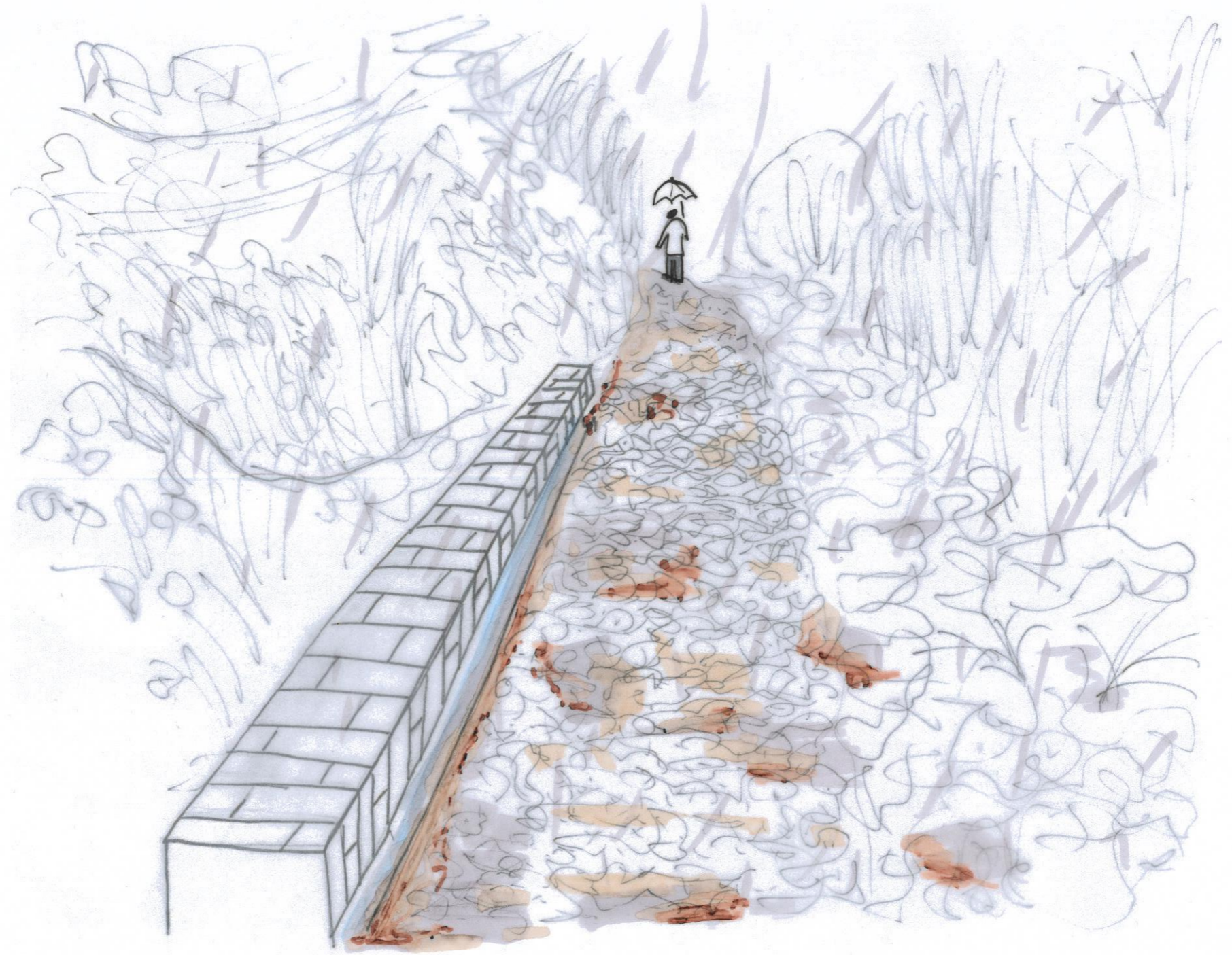


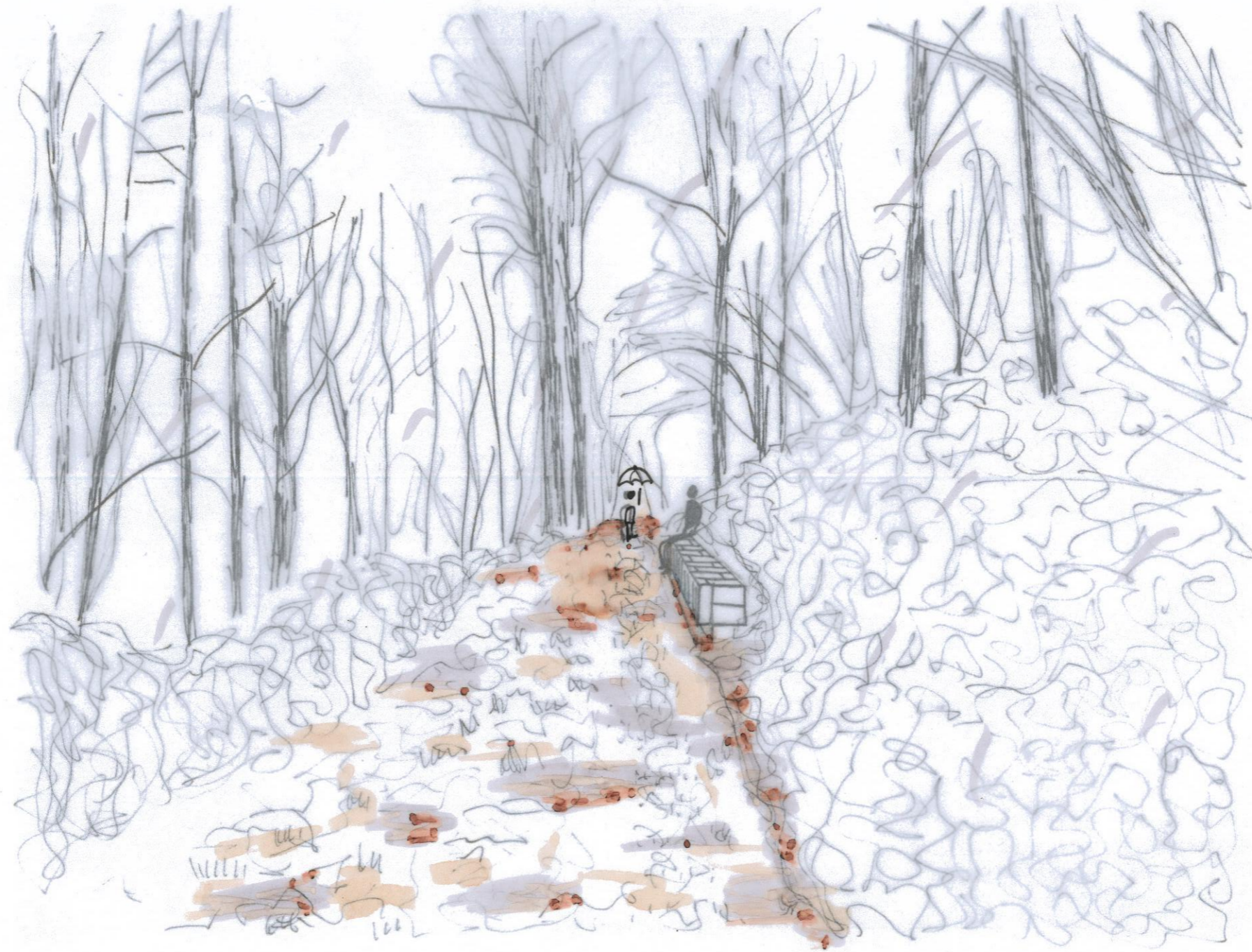


















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7. Future flood
- 8. Conclusion**



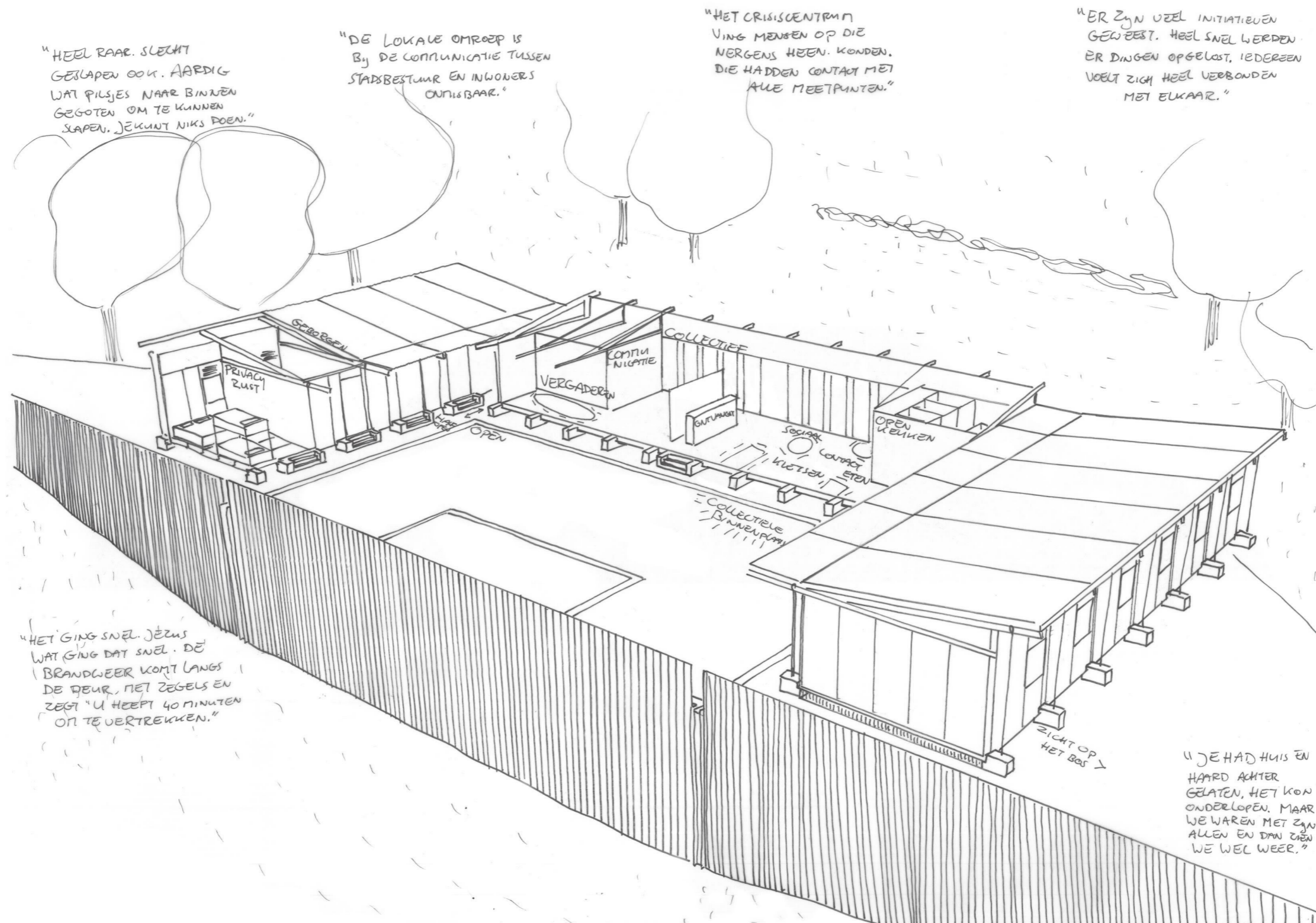
# 1. Stimulate an active relationship with the landscape.



## 2. Indicate water presence, water dynamics and flood dangers.



### 3. Decrease distance government-residents.



## 4. Provide safety from flood dangers.





Thank you

