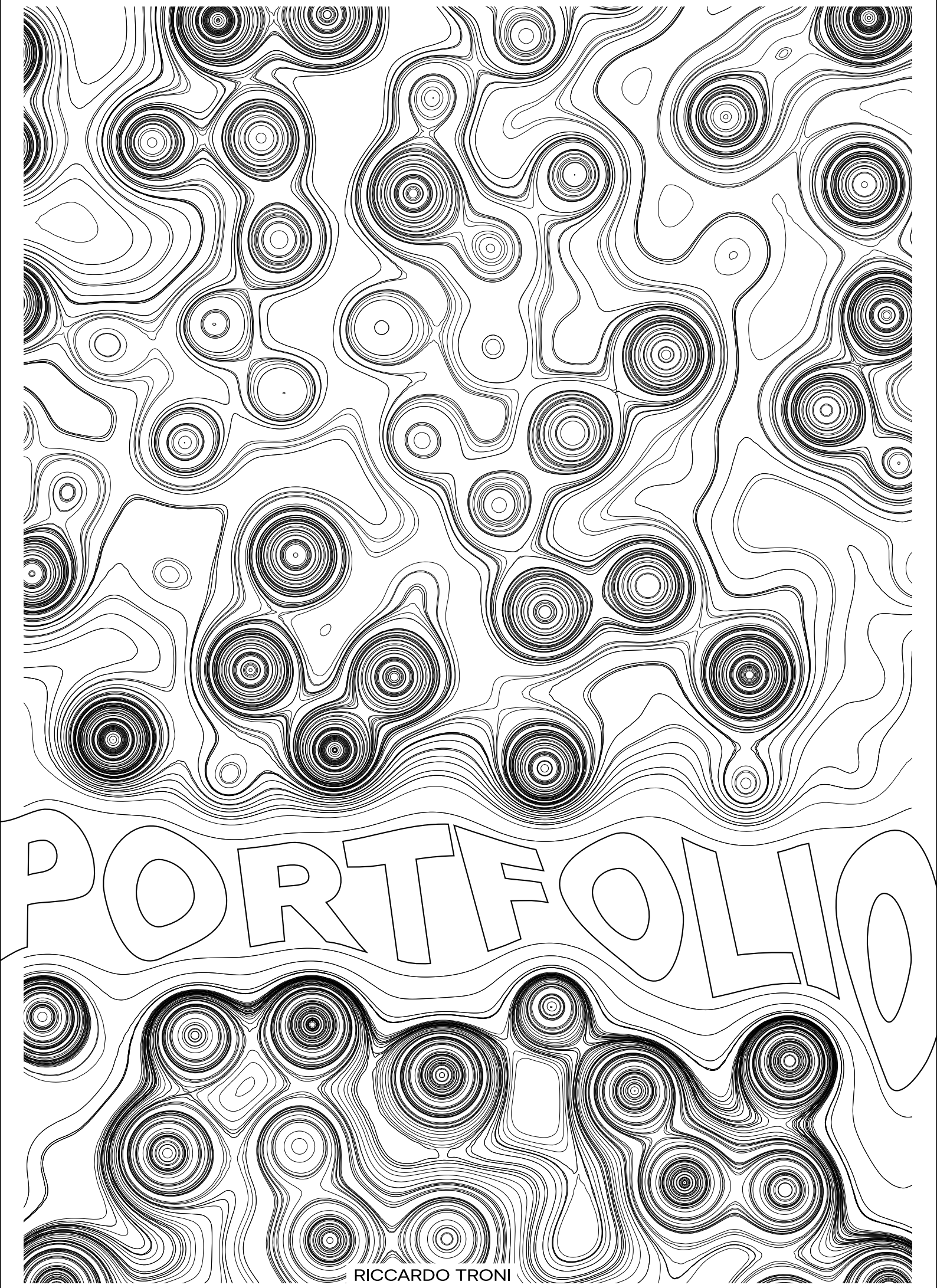
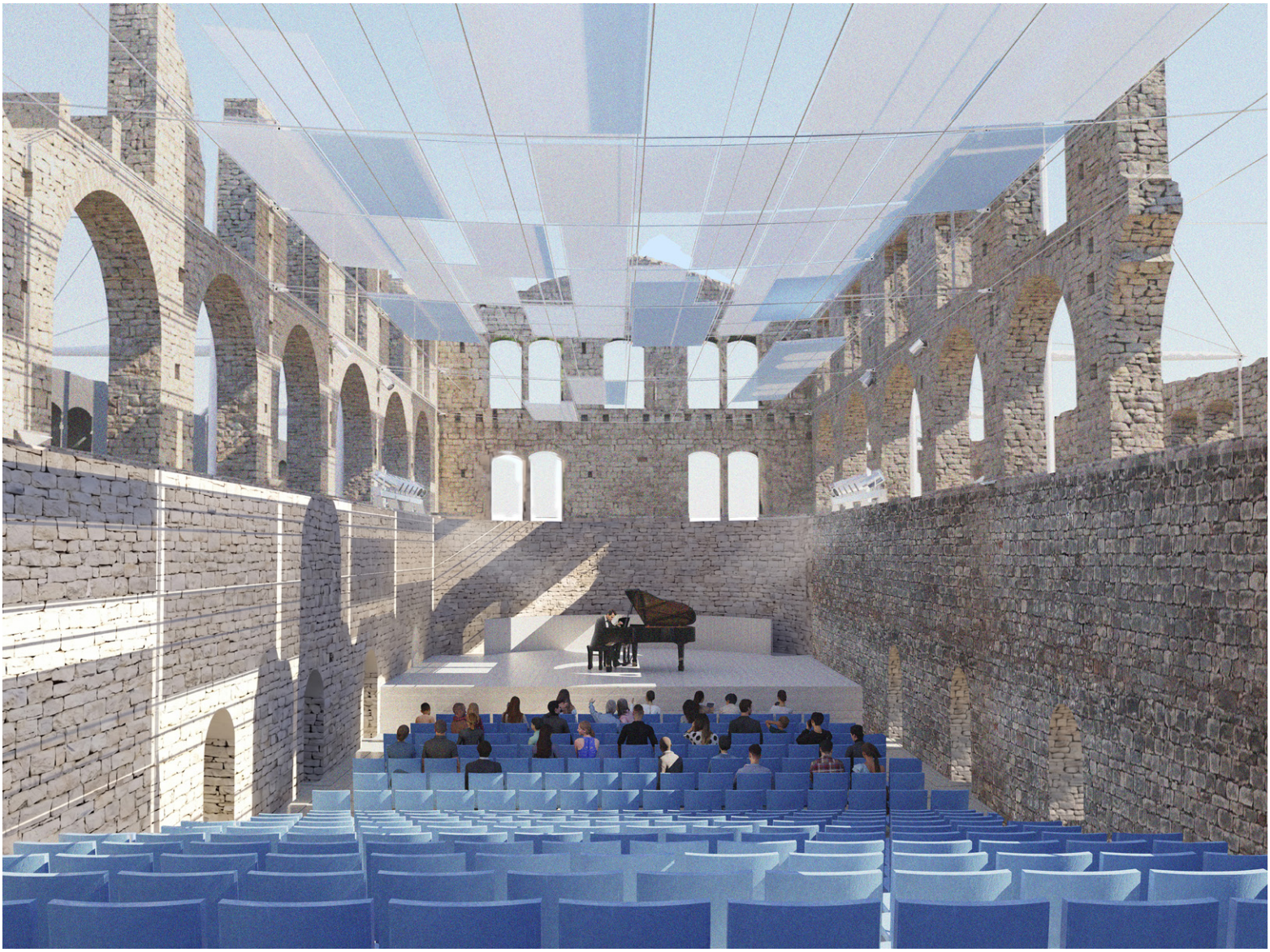


RICCARDO TRONI







MORE OF YOU, LESS OF ME

Multicultural Center / Competition Work / Team of 2 / August 2026

Site: Pisciotto, Sicily

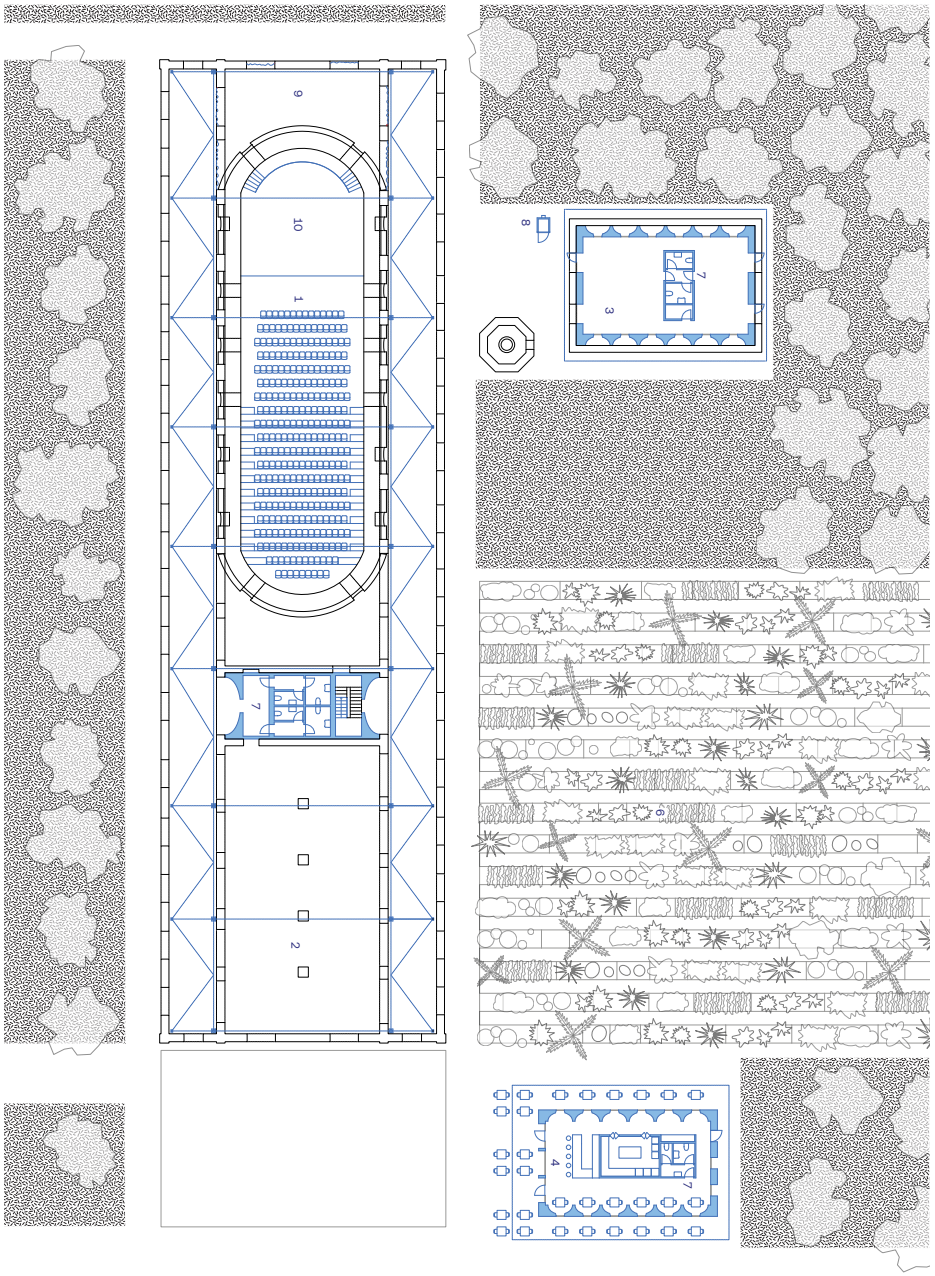
Turning a former brick factory into a cultural venue with minimal intervention. In our vision, the old firing chamber becomes the theatre since it was the building's original production space and its curved walls carry sound almost like they were built for it. The frontal area, once the production floor, becomes an agorà for gatherings, opening onto the theatre through two lateral naves once their dividing walls come down.

The only addition is a steel frame of white tapered pillars and tie rods, threaded through the clerestory to hold a triple grid of sky-blue fabric drapes shaped to echo the bricks once fired there. Placed unevenly, they filter Sicilian light and fade into the color of the sky, giving enough shade for a summer concert without hiding the original walls. A single services block sits between theatre and agorà, built behind the old walls rather than replacing them.

The multipurpose space and seaside bar are new but share the same language and the stone strips where bricks once were left to dry become a Mediterranean garden. The result is a building for music, film, and hands-on brickmaking, connecting visitors to the site's industrial and ecological past.

Softwares used: Rhino, Grasshopper, Revit, Illustrator, Photoshop, 5D



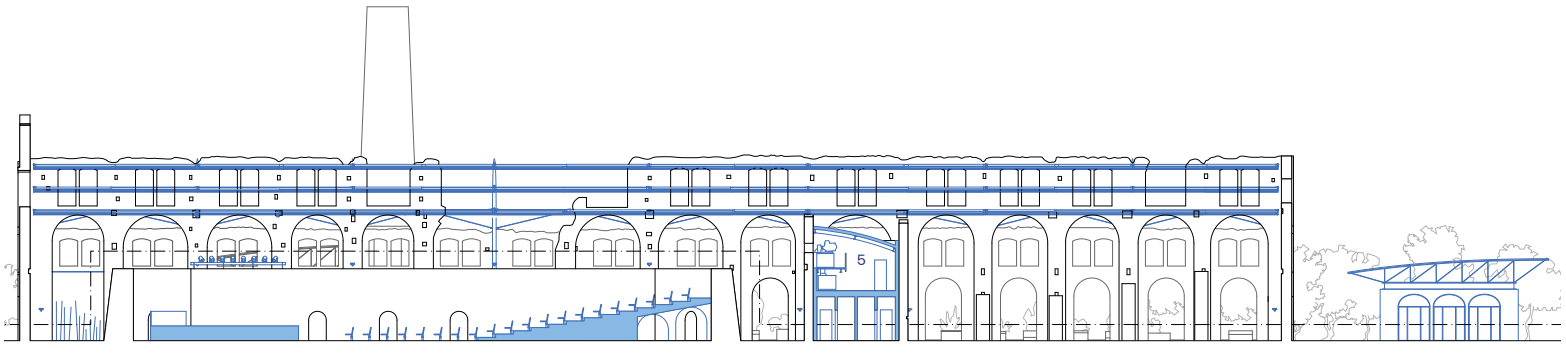


1. Theatre/Cinema
2. Agorà/Foyer
3. Multipurpose Space
4. Café
5. Beamer Room (page 4)
6. Mediterrean Garden
7. Services
8. Firing Oven
9. Backstage
10. Stage

0 2.5 10 20m





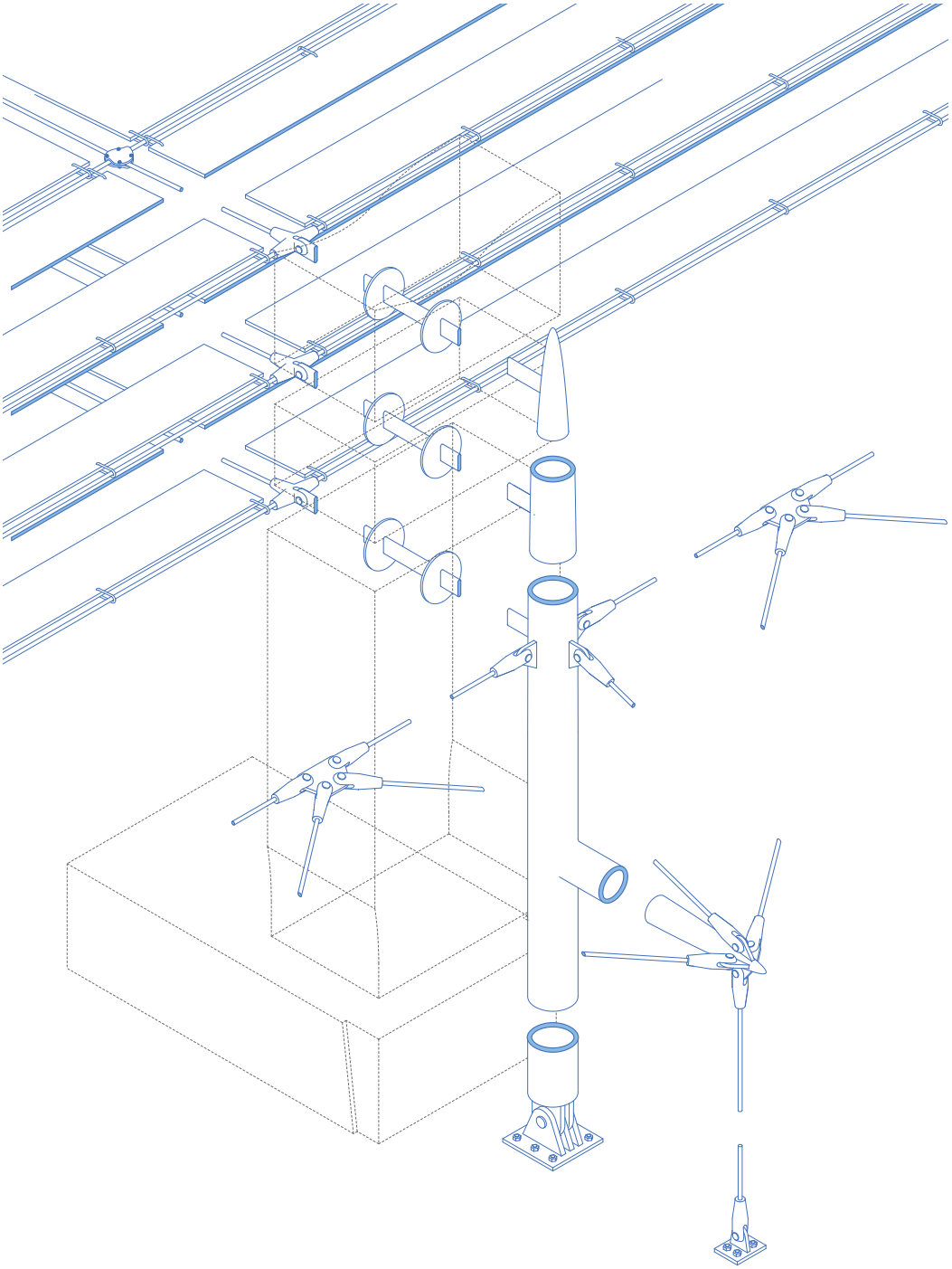


Top image: the steel structure with drapes, the multipurpose space built inside the existent ruin, the stripes garden and the beach bar in front of the main entrance

Section 1, from left to right: cinema/theatre,covered by the three layered drape system, firing oven for brick workshops, multipurpose space

Section 2, from left to right: cinema/theatre, at the center the beamer room for projections and sound management, the agorà and the bar

0 5 25 50m



1. Profilated Steel Sheet, 2.5cm, prepainted - solar screen

2. Ventilated Cavity, open at perimeter - parasol roof

3. Steel Tie Rods Ø 2cm, s355, welded fork ends and turnbuckles

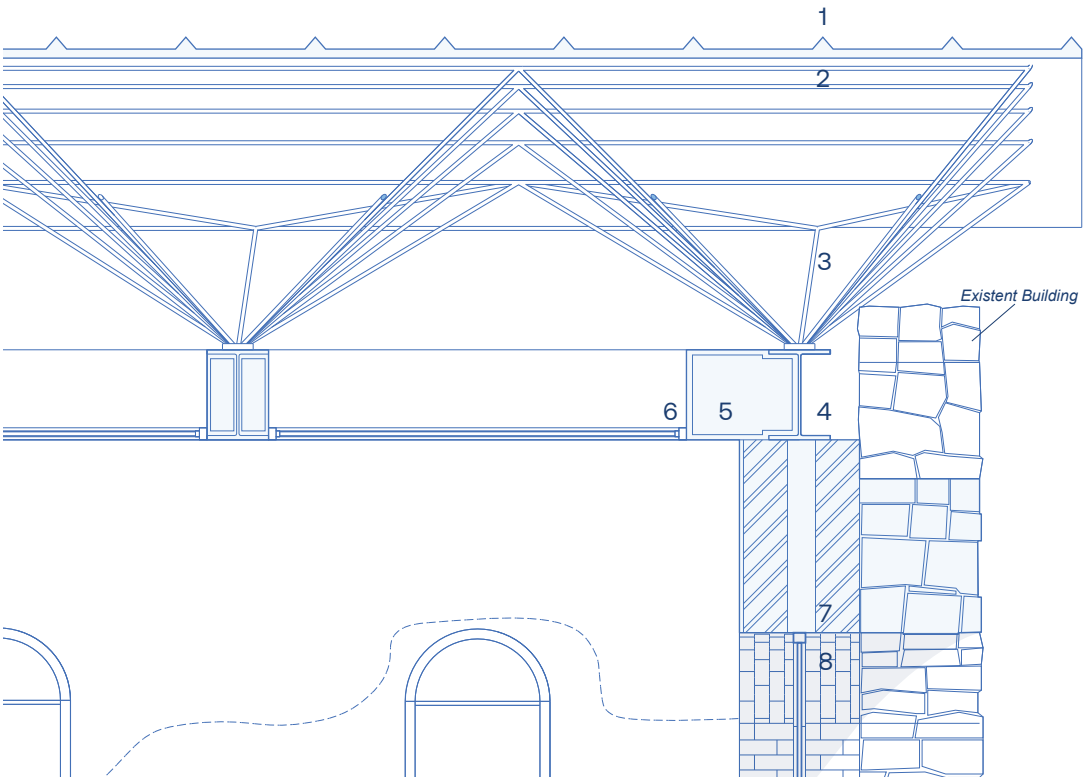
4. Steel Beam IPE 450, S275, galvanised

5.Insulated Roof Cassette, 45 cm deep between steel beams, 35cm mineral wool

6.Rooflight , 888x2089mm, alluminum frame, double glazed

7. Wall, outside → inside: 120 mm facing brick / 100 mm mineral wool, full fill / 120 mm brick / 15 mm lime plaster 355 mm total

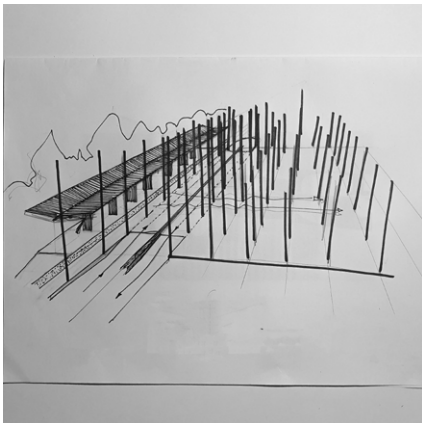
8. Window, 100x320cm, double glazed



0 10 50 100cm







COMMON GROUND PAUSE

Station / Personal remake of a studio work / January 2024

Site: Fiorano, Italy

The field, the station, the bike path and the road all sit at the same level.

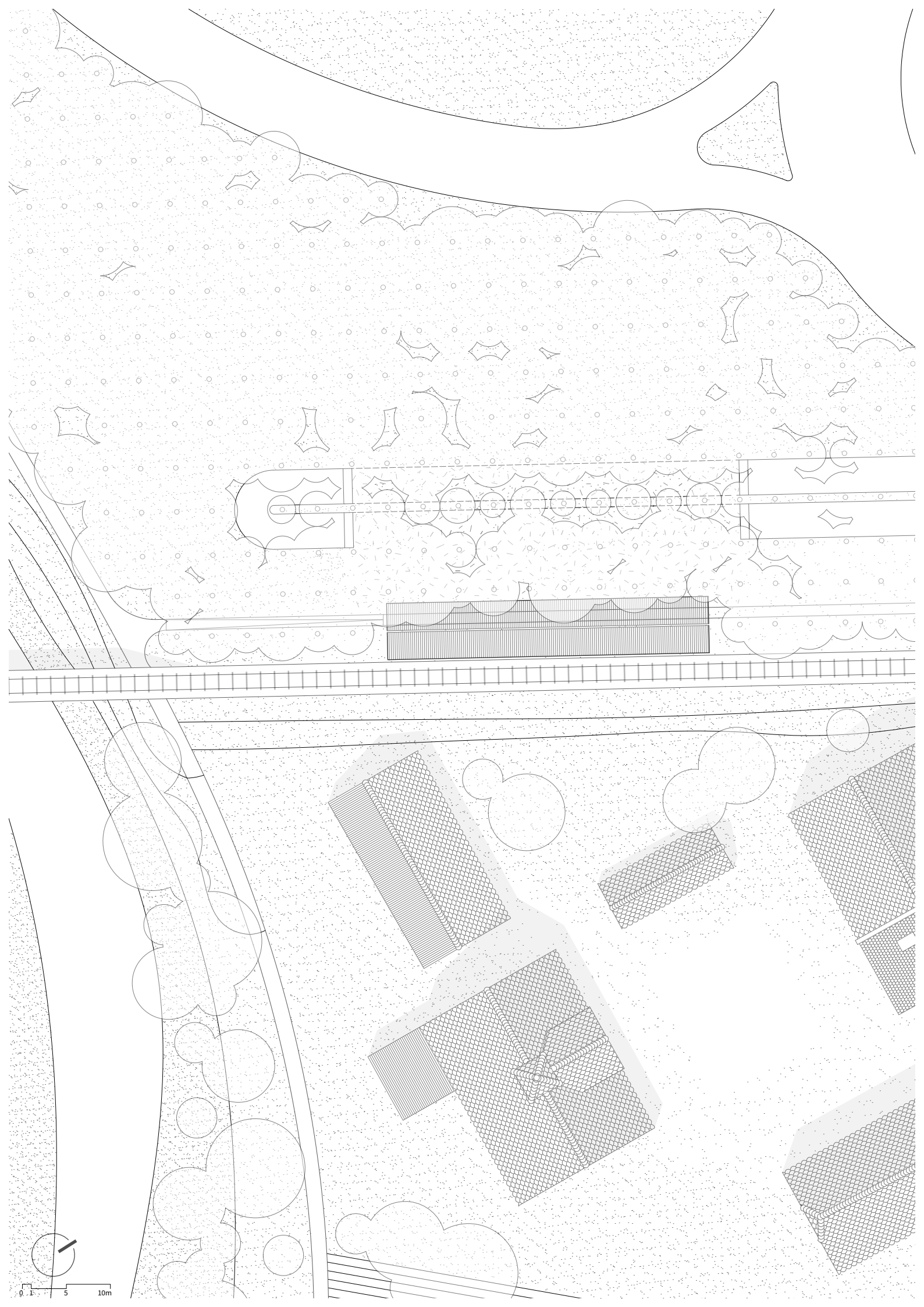
Humans and nature share that ground in the same place, for the same reason: to pause and wait for something to come.

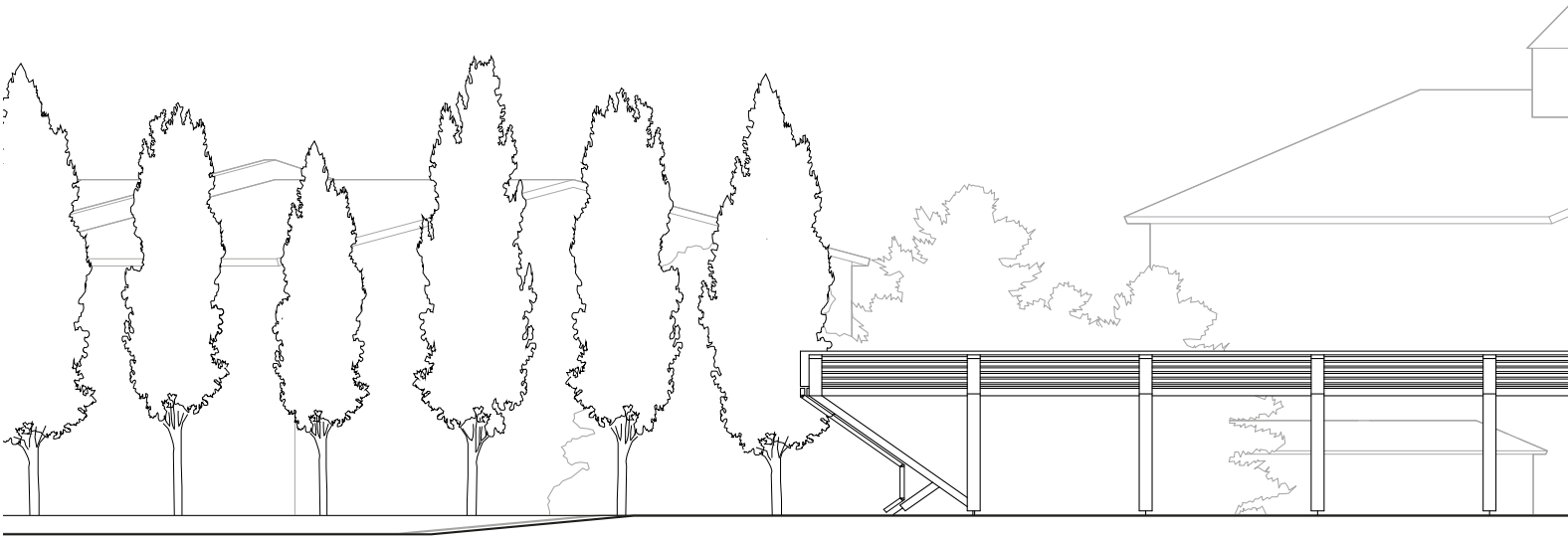
The station is built for smaller beings too, not just people. The trees are planted to resemble the piantata, the traditional plantings along the canals of the Pianura Padana, and the station's structure follows their alignment, its pillars picking up the spacing of the trunks. That same pattern indirectly shelters the birds resting here: the branches moderate temperature and give cover from predators, which thrive in open fields.

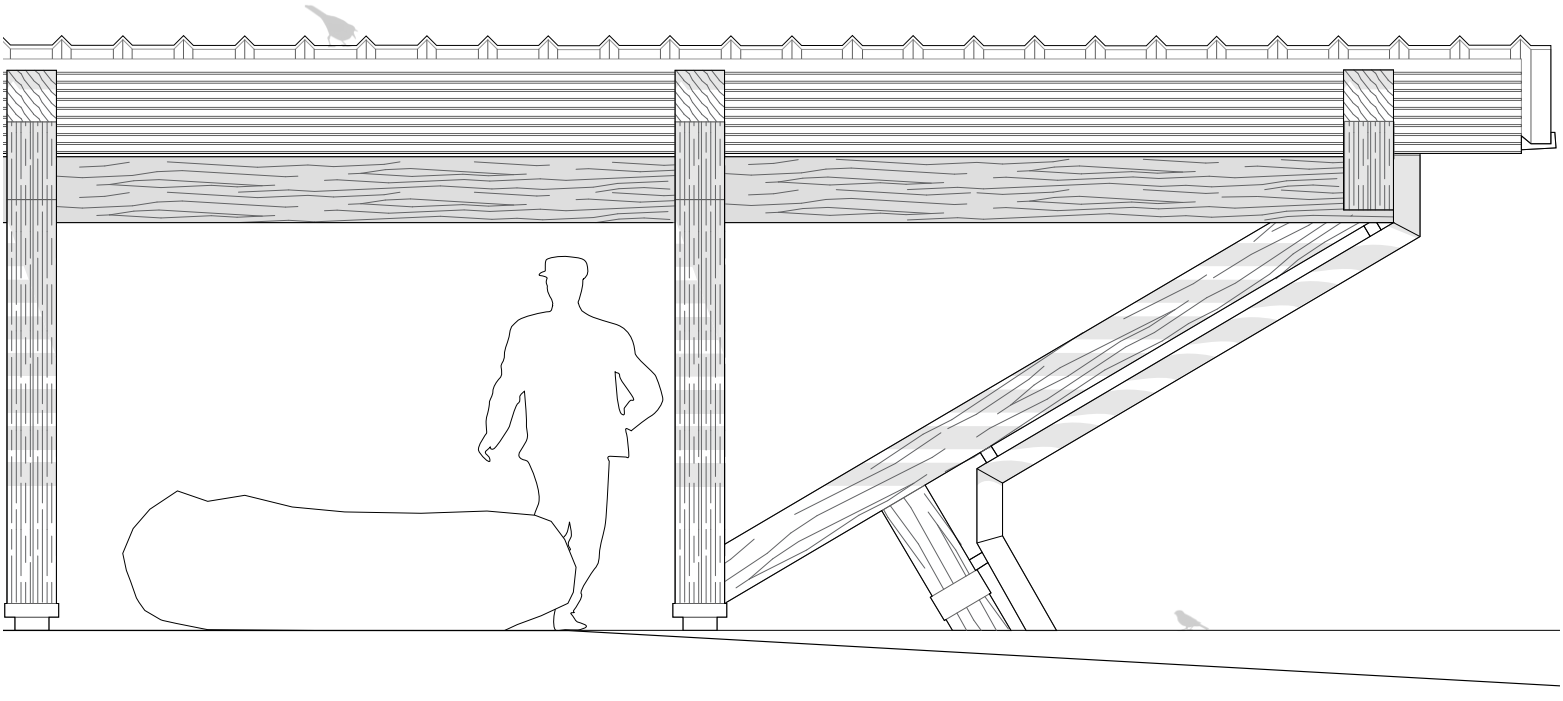
The project has two parts in a symbiotic relationship: one continues the other and neither would work alone.

The cycle path then descends under the bridge and continues along the canal, following the trees. The cyclist moves through the same space as the birds and the rest of the fauna, undisturbed, from one field to the next.

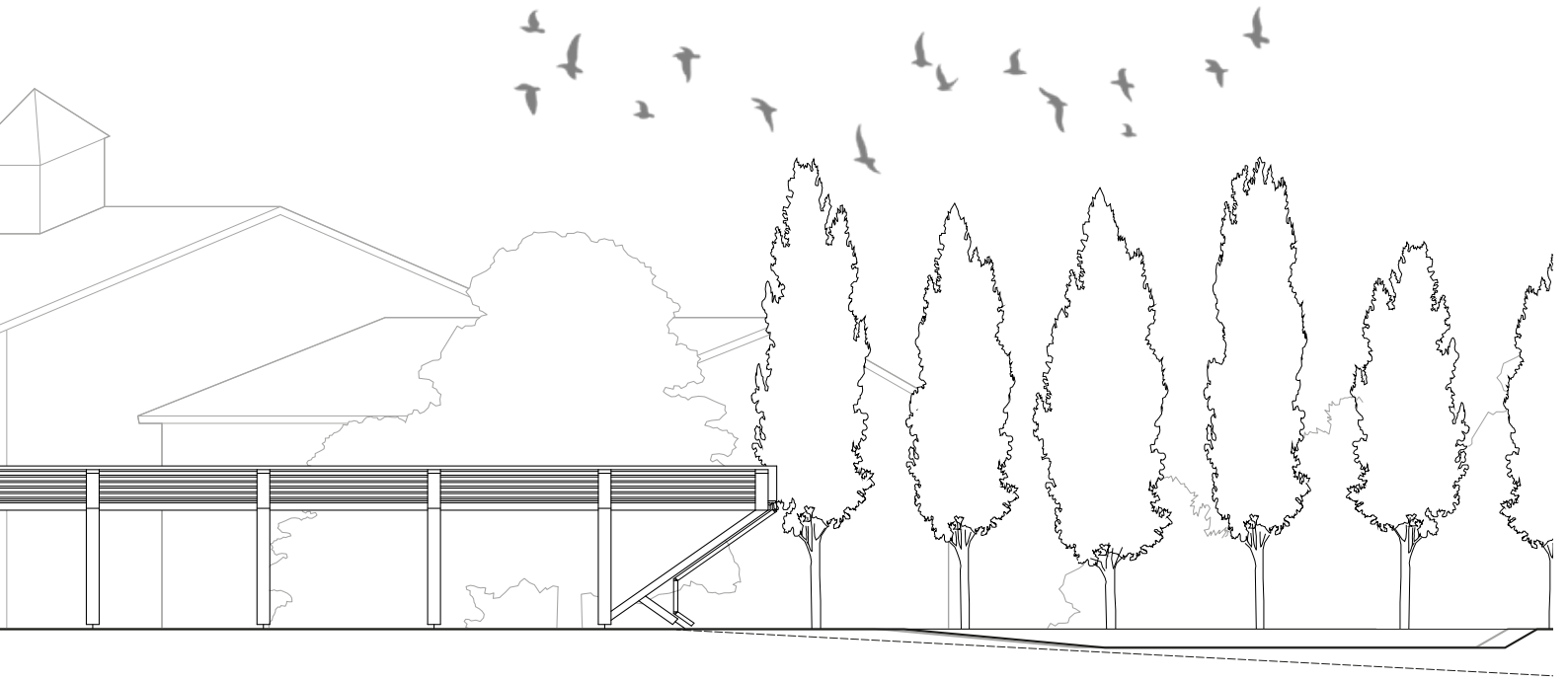
Softwares used: Rhino, Autocad, Illustrator, Photoshop, 5D

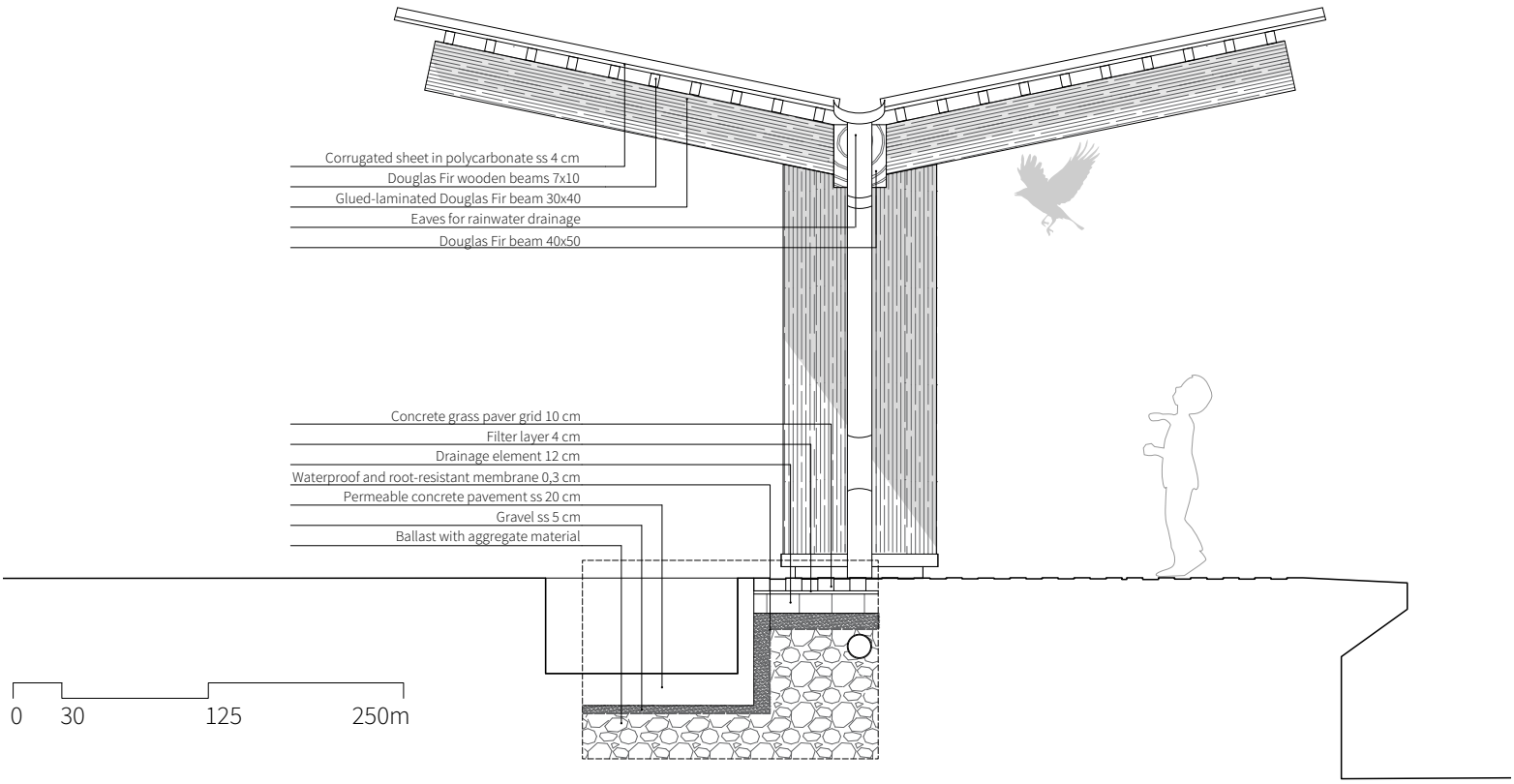

0 1 5 10m





0 30 125 250m




Corrugated sheet in polycarbonate ss 4 cm
Douglas Fir wooden beams 7x10
Glued-laminated Douglas Fir beam 30x40
Eaves for rainwater drainage
Douglas Fir beam 40x50
Concrete grass paver grid 10 cm
Filter layer 4 cm
Drainage element 12 cm
Waterproof and root-resistant membrane 0,3 cm
Permeable concrete pavement ss 20 cm
Gravel ss 5 cm
Ballast with aggregate material
0
30
125
250m



A single shared ground where humans and wildlife pause together,
station and habitat as one undivided landscape.



MAKE THE BUILDING AS LIGHT AS POSSIBLE

Watchtower / Studio Work / Team of 3 / January 2024

Site: Ringkøbing Fjord, Denmark

Reference Project: Tipperne Bird Sanctuary, Johansen Skovsted Arkitekter

This studio asked us to go beyond first impressions and question how much weight a building really carries.

The starting point was a structure that seemed light but wasn't: Tipperne Bird Sanctuary, in Denmark. To make the difference visible, we were tasked to scale it up for the exercise and not consider foundation weight and structural stability.

Same design logic, same kg/m². The brief was to reduce weight as far as possible, without increasing carbon.

We tested three strategies:

1. Doubling the height of each floor to halve the horizontal structure needed,
2. Tailoring the vertical elements to their actual loads,
3. Doing the same for the horizontal elements.

These cut the structure's weight by nearly 70%. Calculations and formulas were not included

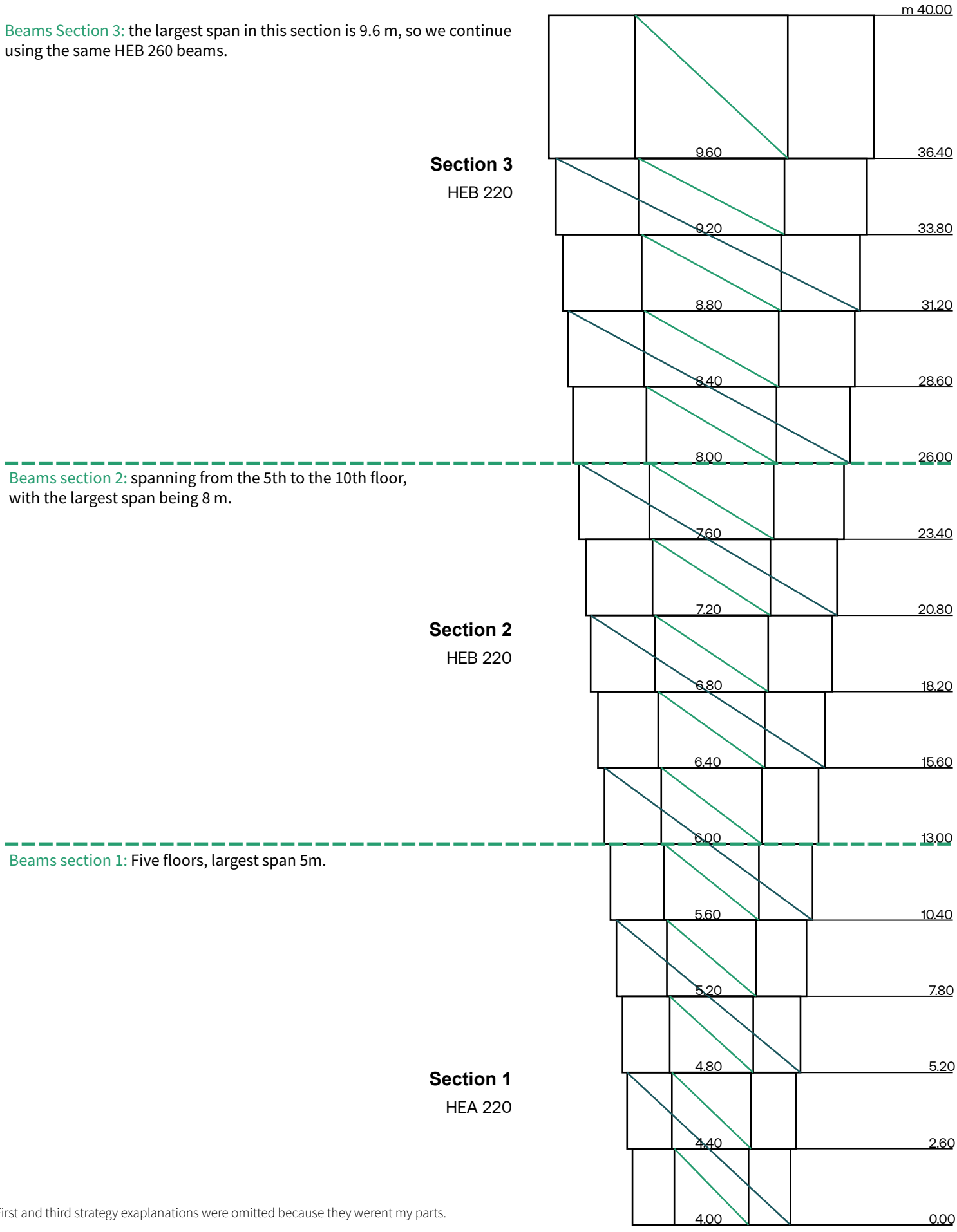
I will remember this project as the one where Excel became a design tool, where SCORS ratings and charts turned out to be genuinely interesting to look at. It was a way to see how much a building's impact can actually be reduced.

Softwares used: Excel, Illustrator, Photoshop

3.2 Strategy Two - Split the tower into three sections *

In Cocoon Tower, we use HEB for all the beams, even for those with significantly smaller spans. However, diving the tower for those with smaller spans would be a wiser move, allowing us to use different types of beams fr each section while optimizing the beam selection span based.

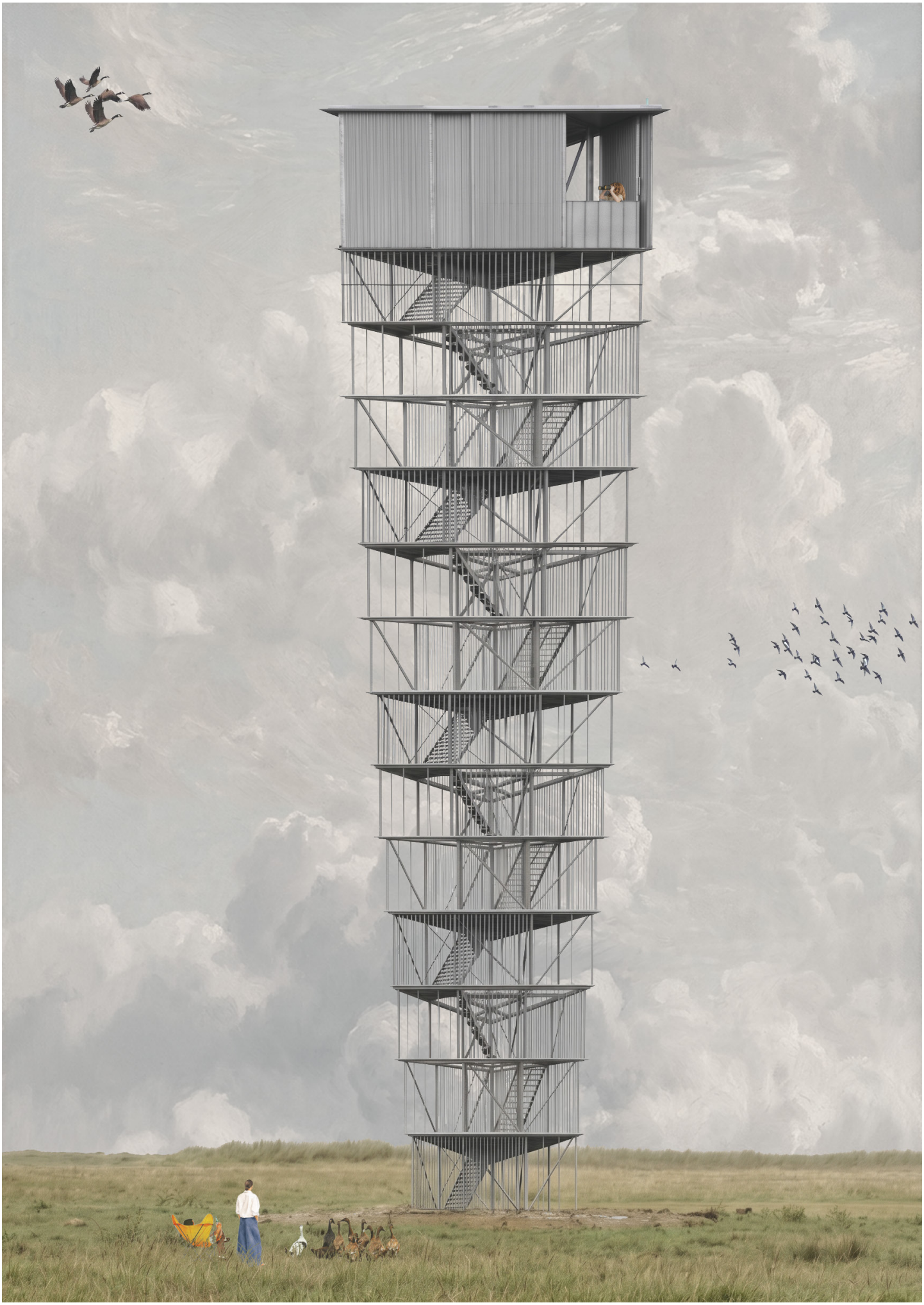
Beams Section 3: the largest span in this section is 9.6 m, so we continue using the same HEB 260 beams.



Beams section 2: spanning from the 5th to the 10th floor, with the largest span being 8 m.

Beams section 1: Five floors, largest span 5m.

*First and third strategy exaplanations were omitted because they werent my parts.



Personal visualisation of the Cocoon Tower. Students could choose any tower as a starting point, but every version had to reach the same height of 40 metres regardless. It doesn't follow real physics: its slender, proportions look structurally impossible because the exercise was never asked to make it stand, only to test the structure weight.

Second Strategy: split the tower into three sections and tailor the vertical elements

TSCT v2

Scheme name: Strategy Two

The Institution of StructuralEngineers

Material	Material Type	Material Specification	Structural Element	Description	Component Lifespan [years]	Temporary Works	% of Temp Works Wasted	Volume [m³] or Mass [kg]?	Material Quantity [m², kg]	Reinforcement [kg/m³]	Element Embodied Carbon [tCO₂e]	A1-A3	A4	A5w	B4	C2-C4	D	Biogenic Carbon
Steel	Structural_Sections	Global closed sections	2.1 Frame	Columns: CHS Ø76,1 x 4.5 mm	60	No		Mass [kg]	3.489		10	9	1	0		0	-5	
Steel	Structural_Sections	Global open rolled sections	2.1 Frame	S3 Beams System: HEB 260	60	No		Mass [kg]	28.345		50	44	5	0		1	-10	
Steel	Plate		2.2 Upper floors/slabs	Floors including Stair Surface	60	No		Mass [kg]	4.741		12	12	0	0		0	-6	
Steel	Structural_Sections	Global open rolled sections	2.3 Roof beams	Roof Beams: HEB 260	60	No		Mass [kg]	4.659		8	7	1	0		0	-2	
Steel	Plate		2.3 Roof	Roof Slab	60	No		Mass [kg]	1.884		5	5	0	0		0	-2	
Steel	Structural_Sections	Global closed sections	2.5 Structural ext. walls	Diagonal Brace: Steel CHS Ø76,1 x 4	60	No		Mass [kg]	1.794		5	4	0	0		0	-3	
Steel	Structural_Sections	Global closed sections	2.5 Structural ext. walls	Diagonal Rod: Steel CHS Ø76,1 x 4,5	60	No		Mass [kg]	107		0	0	0	0		0	0	
Steel	Structural_Sections	Global open rolled sections	2.1 Frame	S2 Beams System: HEB 220	60	No		Mass [kg]	11.755		21	18	2	0		0	-4	
Steel	Structural_Sections	Global open rolled sections	2.3 Roof beams	S1 Beams System: HEA 220	60	No		Mass [kg]	5.250		9	8	1	0		0	-2	
1.1 Excavation-Foundation								Mass [kg]	0									
1.1 Excavation-Other																		

CO_2e

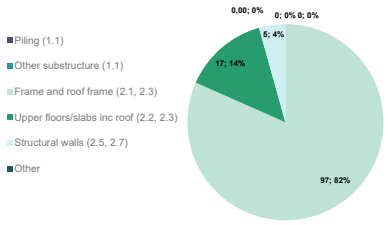
Substructure & Superstructure

A1 - A5:	121 tCO_2e	197 $kgCO_2e/m^2$
Biogenic Carbon:	0 tCO_2e	0 $kgCO_2e/m^2$
A-C:	125 tCO_2e	202 $kgCO_2e/m^2$
Module D:	-33 tCO_2e	-53 $kgCO_2e/m^2$

	A5s	C1
Global Values [tCO_2e]	3	2

	A	B	C	D	Biogenic Carbon
Total [tCO_2e]	121	0	3	-33	0

Strategy Two - Element emission breakdown [tCO2e]



This project scheme releases carbon equivalent to:

143 one-way flights from London to New York

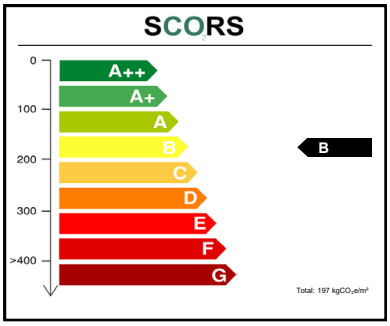
71 people's consumption of meat, dairy and beer for 1 year

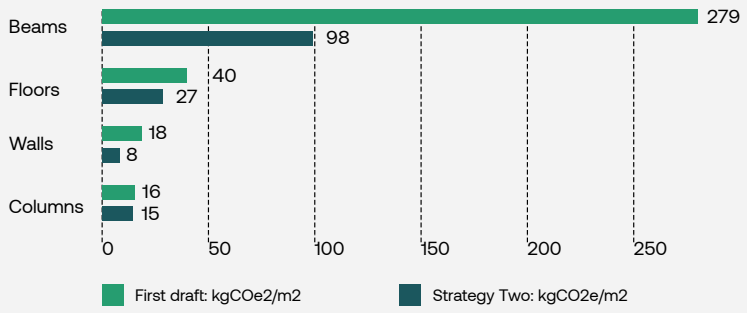
39 average family cars running for 1 year

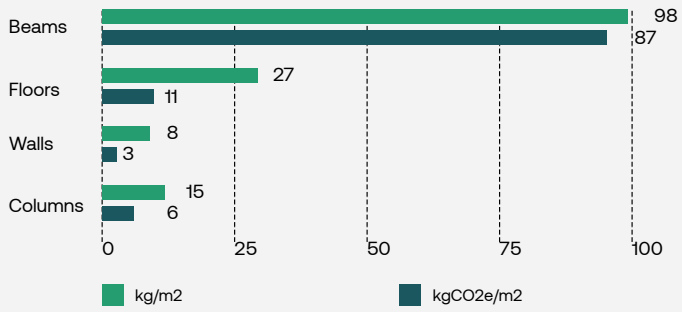
Scheme performance against targets:

SCORS:	137 $kgCO_2e/m^2$	Scheme does not meet target
RIBA:	156 $kgCO_2e/m^2$	Scheme does not meet target

This project scheme has a SCORS rating of B







Conclusions:

The further optimization has resulted in a weight reduction of 59,8% and 57,8% in total carbon footprint of the structure. Consequentely, the Cocoon Tower has now raised to B rating.

The ad-hoc structural design and implementation of three different profiles (HEA 220, HEB 220, HEB 260), contributed to further lower both the weight and the CO2 emissions. However, they still account for the largest share of the total emissions, contributing to 64%, which is 10% less than the previous strategy.

These results raise the question of whether making the beams more efficient in the next strategy, could once again bring even a sligther reduction in both the overall weight and the carbon footprint of The Cocoon Tower.

Third Strategy: tailor the horizontal elements

TSCT v2

Scheme name: Strategy Three

The Institution of StructuralEngineers

Material	Material Type	Material Specification	Structural Element	Description	Component Lifespan [years]	Temporary Works	% of Temp Works Wasted	Volume [m³] or Mass [kg]?	Material Quantity [m³, kg]	Reinforcement [kg/m³]	Element Embodied Carbon [tCO₂e]	A1-A3	A4	A5w	B4	C2-C4	D	Biogenic Carbon
Steel	Structural_Sections	Global closed sections	2.1 Frame	Columns: CHS Ø76,1 x 4.5 mm	60	No		Mass [kg]	3 489		10	9	1	0		0	-5	
Steel	Structural_Sections	Global open rolled sections	2.1 Frame	S1 Beams: Castellated IPE 300	60	No		Mass [kg]	4 494		8	7	1	0		0	-2	
Steel	Structural_Sections	Global open rolled sections	2.1 Frame	S2 Beams: Castellated IPE 360	60	No		Mass [kg]	9 507		17	15	2	0		0	-3	
Steel	Structural_Sections	Global open rolled sections	2.1 Frame	S3 Beams: Castellated HEA 280	60	No		Mass [kg]	17 305		31	27	3	0		0	-6	
Steel	Plate		2.2 Upper floors/slabs	Floors including Stair Surface	60	No		Mass [kg]	4 741		12	12	0	0		0	-5	
Steel	Structural_Sections	Global open rolled sections	2.3 Roof beams	Roof Beams: Castellated HEA 280	60	No		Mass [kg]	3 828		7	6	1	0		0	-1	
Steel	Plate		2.3 Roof	Roof Slab	60	No		Mass [kg]	1 884		5	5	0	0		0	-2	
Steel	Structural_Sections	Global closed sections	2.5 Structural ext. walls	Diagonal Brace: Steel CHS Ø76,1 x	60	No		Mass [kg]	1 794		5	4	0	0		0	-3	
Steel	Structural_Sections	Global closed sections	2.5 Structural ext. walls	Diagonal Rod: Steel CHS Ø76,1 x 4	60	No		Mass [kg]	107		0	0	0	0		0	0	
1.1 Excavation-Foundation								Mass [kg]	0									
1.1 Excavation-Other																		

CO_2e

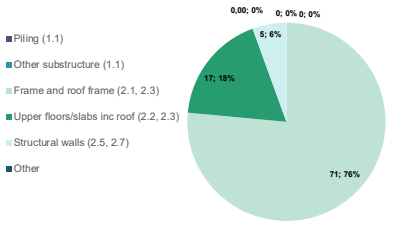
Substructure & Superstructure

A1 - A5:	95 tCO_2e	155 $kgCO_2e/m^2$
Biogenic Carbon:	0 tCO_2e	0 $kgCO_2e/m^2$
A-C:	98 tCO_2e	160 $kgCO_2e/m^2$
Module D:	-28 tCO_2e	-45 $kgCO_2e/m^2$

Global Values [tCO_2e]	A5a	C1
	3	2

Total [tCO_2e]	A	B	C	D	Biogenic Carbon
	95	0	3	-28	0

Strategy Three - Element emission breakdown [tCO2e]



This project scheme releases carbon equivalent to:

112 one-way flights from London to New York

56 people's consumption of meat, dairy and beer for 1 year

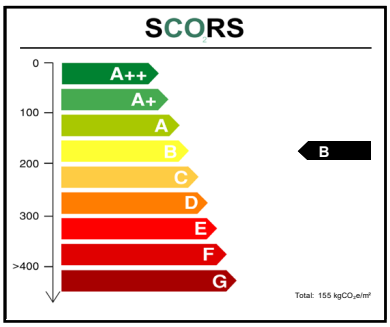
31 average family cars running for 1 year

Scheme performance against targets:

SCORS: 137 $kgCO_2e/m^2$ Scheme does not meet target

RIBA: 156 $kgCO_2e/m^2$ Scheme meets target

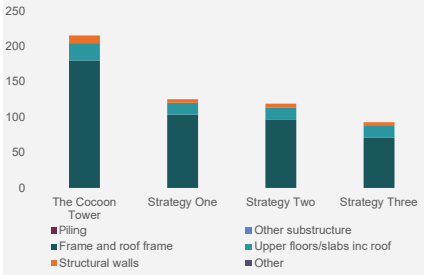
This project scheme has a SCORS rating of B



Estimated embodied carbon (tCO_2e) Modules A1 - A5 and A - C



Estimated embodied carbon (tCO_2e) Modules A1 - A5 by element



Estimated embodied carbon (tCO_2e) by lifecycle stages



Comparison to 2030 targets ($kgCO_2e/m^2$)



The scheme with the lowest emissions is Strategy Three. Compared with the highest emission scheme, The Cocoon Tower, this scheme saves the equivalent of:

144 one-way flights from London to New York

72 people's consumption of meat, dairy and beer for 1 year

40 average family cars running for 1 year

Scheme Rankings

Rank	Scheme	SCORS Rating & A1-A5 Emissions ($kgCO_2e/m^2$)
1st	Strategy Three	B (155)
2nd	Strategy Two	B (197)
3rd	Strategy One	C (208)
4th	The Cocoon Tower	F (354)





RAINFALL AS DESIGN VARIABLE IN FAÇADE PRESERVATION

Design Based Research Method / Master Thesis / June 2026

Site: Belgium **Thesis Advisor:** prof. Rachel Armstrong





Near Knaresborough in England, Mother Shipton's Cave holds a spring so rich in dissolved calcium that anything left under its flow slowly turns to stone.

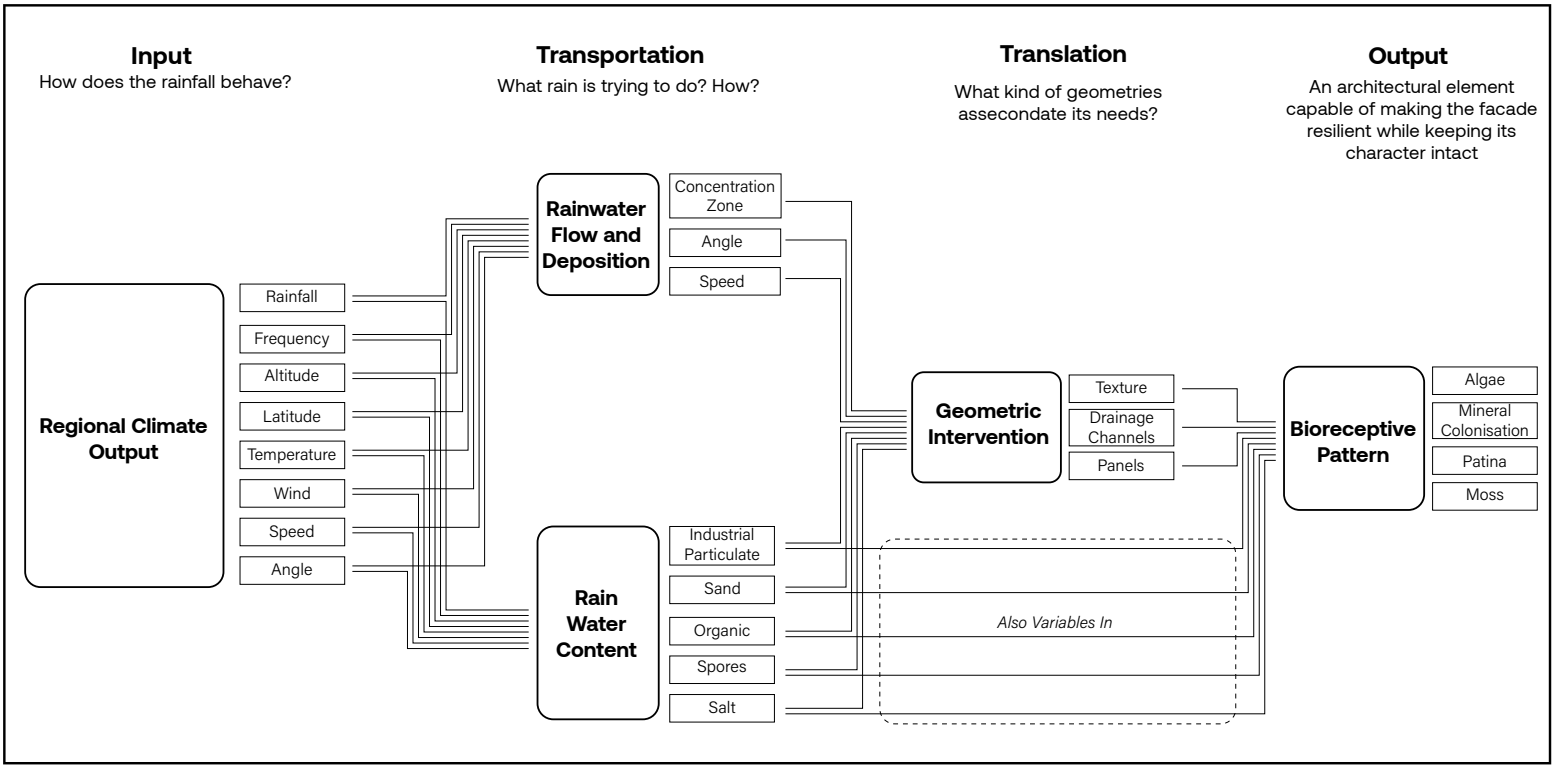
Toys, hats, teddy bears, hung there for decades, come out layered in mineral crust. Those objects became site spefic manufacts that enriches the cave without looking too disconnected.

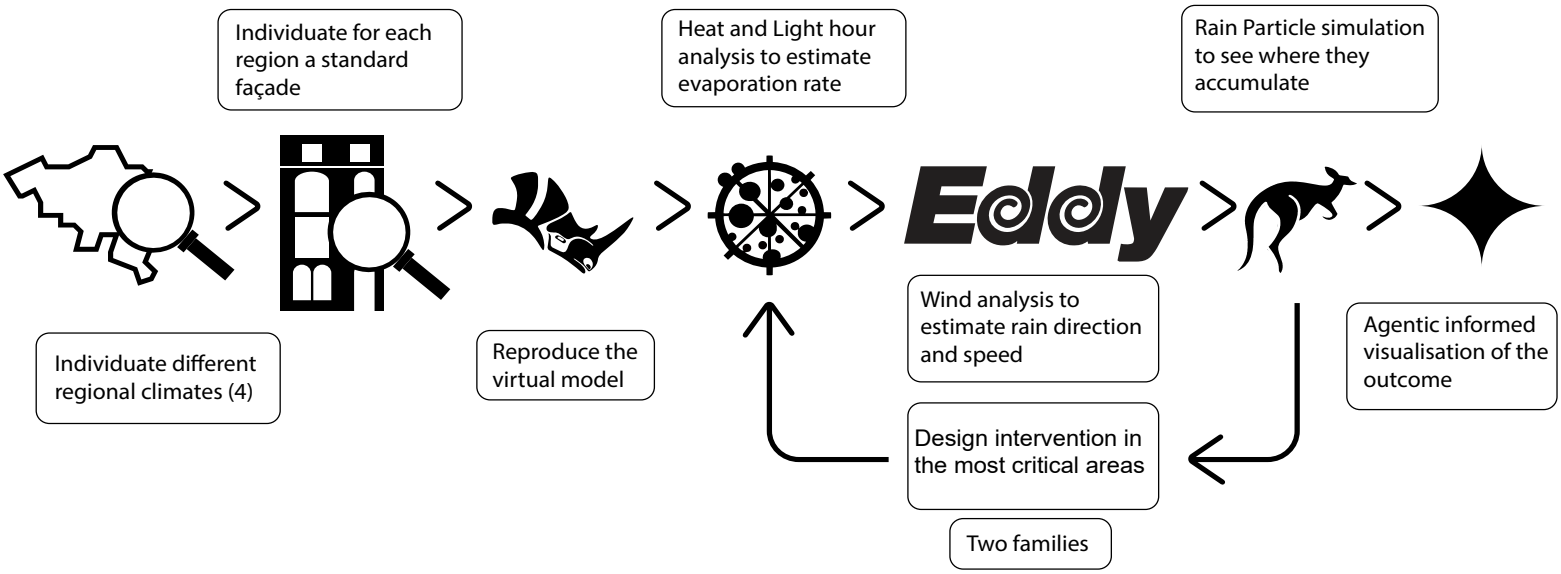
This thesis asks if a building façade could work the same way, using rain's own behaviour and chemical content for a free, site-specific ageing that turns façades into weathering archives instead of surfaces to costly repair.

Working with real façades across Belgium, the project uses computational fluid dynamics and particle simulation, in Rhino, Grasshopper, Eddy3D and Kangaroo2, to map where wind-driven rain slows, speeds up, and settles on a building's surface.

The interventions redirect that water toward places where its effects become part of the design rather than a problem.

Softwares used: Rhino, Grasshopper, Illustrator, Photoshop, Gemini

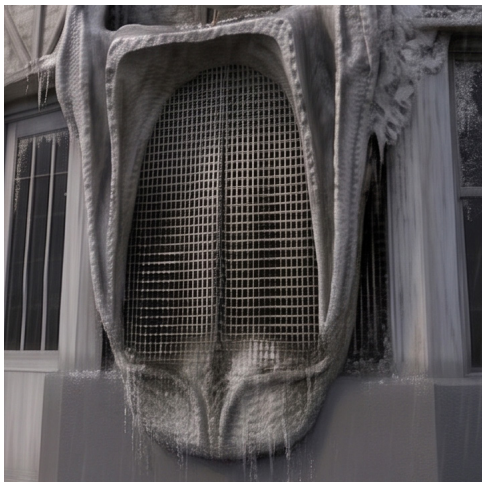






Family H: Flow-slowing geometries

Clay printend interventions applied in zones where simulation shows high-speed runoff to redirect water away from vulnerable zones.



Family L: Grid Net Framing

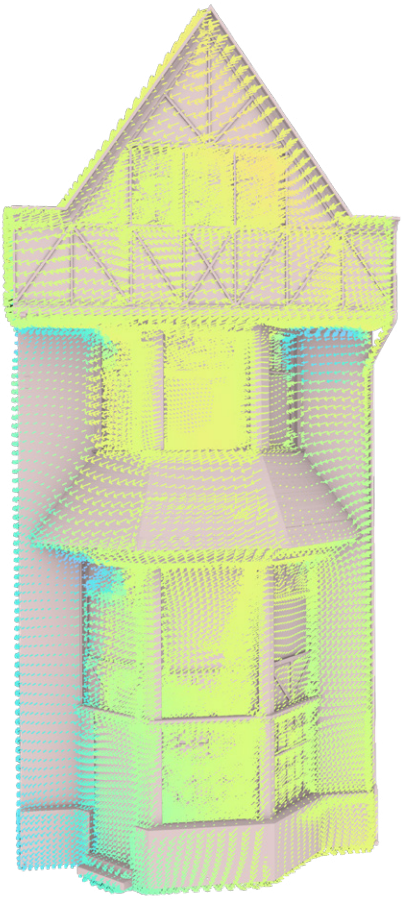
PLA net frame attached to a clay printed structure, that gives structure to the biological growth or mineral accumulation that can be beneficial to façade performance.

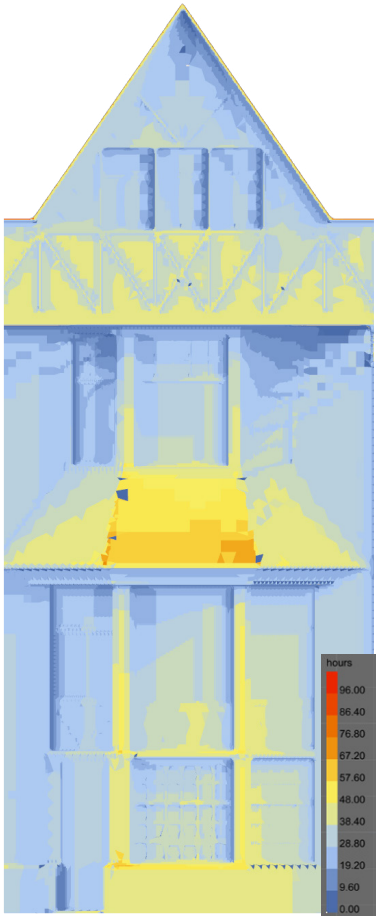
High-speed → Family H (Slowing down water flow); Low-speed → Family L (Mineral/Spores accumulation);

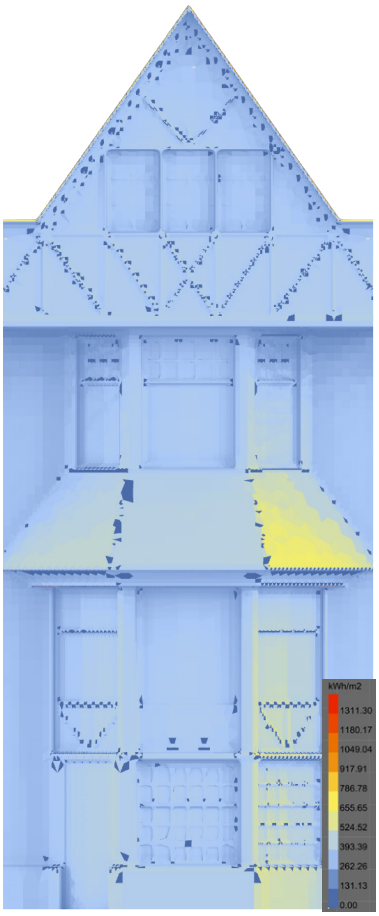
Third Case



Zeedijk 47, De Panne







Category	Specific Parameter	Data	UM
Physical	Droplet diameter	0.5-5mm	mm
	Impact velocity	10	m/s
	Wind Direction	WSW	degrees°
	Rainfall Quantity	814	mm
	Event Duration	3144	h
	Angle of incidence on façade	60	degrees°
Chemical	Salinity (NaCl)	Low	mg/L
	Pollutant load (PM2.5, PM10, SO2)	High	µg/m³
	Mineral content (Ca, Mg, Si)	Medium	mg/L
Biological	Spore concentration (fungi, moss)	Medium	spores/m³
Thermodynamic	Surface temperature	22,92	°C
	Evaporation rate	Medium	mm/day

Rain Chemical Cocktail

On the coast, rain has high salt and sand concentration, high wind velocity and strong rainfall exposure.

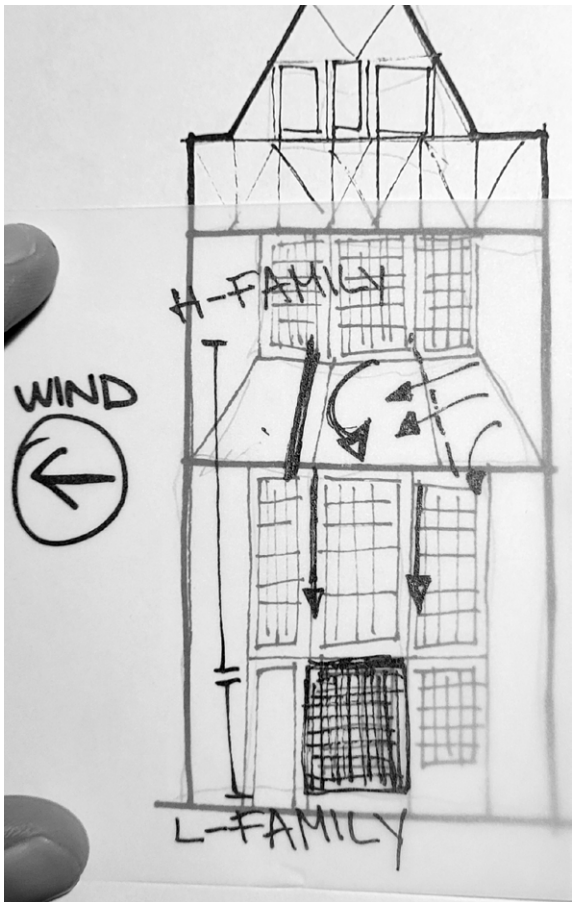
Façade Critical Zone

The central zone was selected because it receives the highest rainfall accumulation in the simulation, as visible in the diagram, particle vectors are densest in this area.

Concept

The idea is to get the water coming from the roof and shelter both the two central windows and the main entrance by creating a second higher barrier. Rain water is then used to shade the lower window.

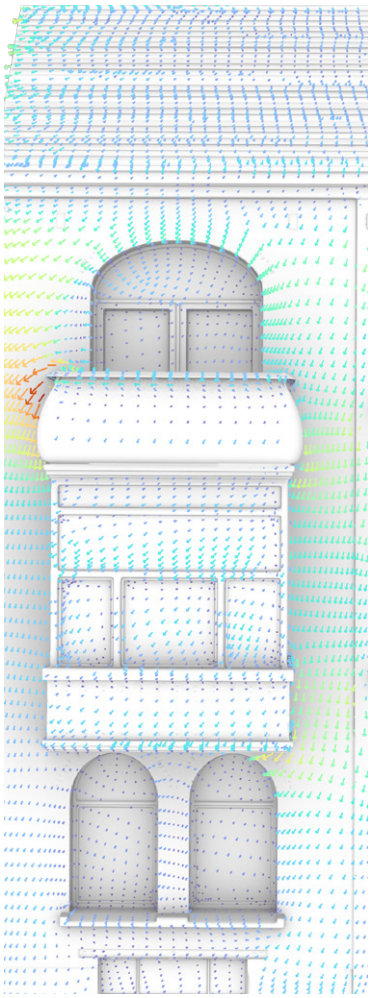


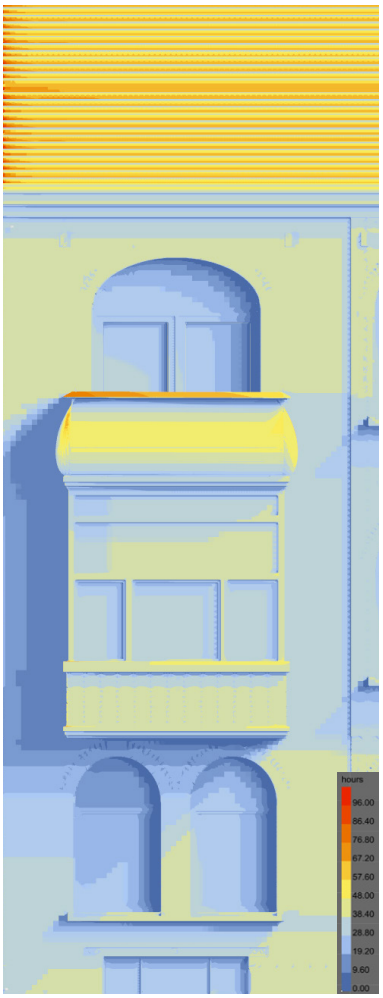


Fourth Case



Bd de Smet de Naeyer 2, 1090 Jette







Category	Specific Parameter	Data	UM
Physical	Droplet diameter	0.5-5mm	mm
	Impact velocity	18	m/s
	Wind Direction	WSW	degrees°
	Rainfall Quantity	776	mm
	Event Duration	3084	h
	Angle of incidence on façade	45	degrees°
Chemical	Salinity (NaCl)	High	mg/L
	Pollutant load (PM2.5, PM10, SO2)	Low	µg/m³
	Mineral content (Ca, Mg, Si)	High	mg/L
Biological	Spore concentration (fungi, moss)	Low	spores/m³
Thermodynamic	Surface temperature	26,05	°C
	Evaporation rate	High	mm/day

Rain Chemical Cocktail

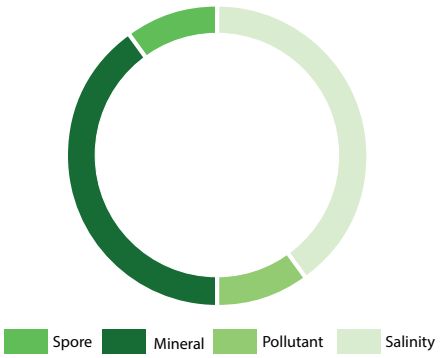
In the city, rain has high seed and pollution concentration, moderate wind velocity and rainfall exposure.

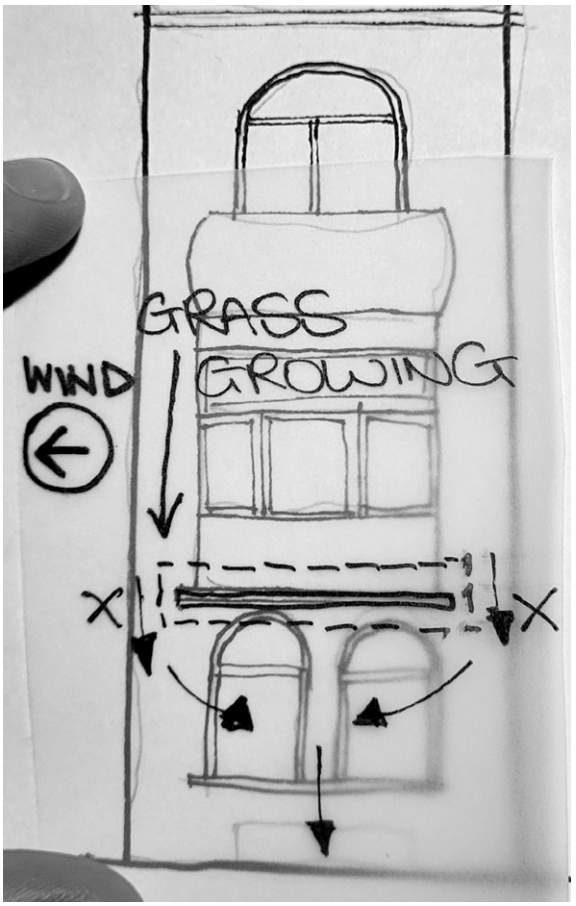
Façade Critical Zone

The zone under the balcony was selected because vegetation was already growing on the buldges around the balcony (see picture above).

Concept

The idea is to encourage seed deposition on that area while protecting others from high speed water flow.





Third Case - Before and After

Solar Radiation

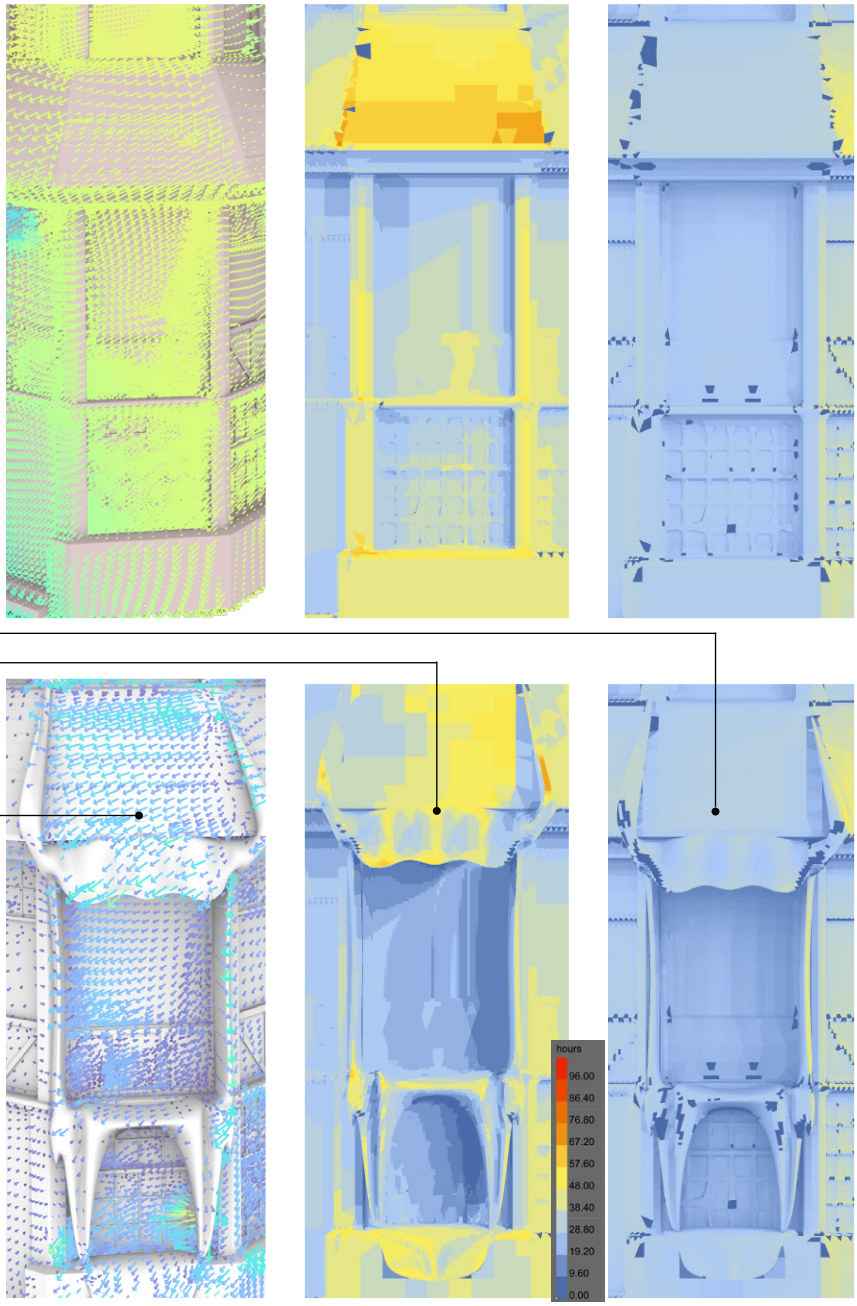
Less solar radiation reaching the façade means less heat gain inside, keeping rooms cooler and the air fresher.

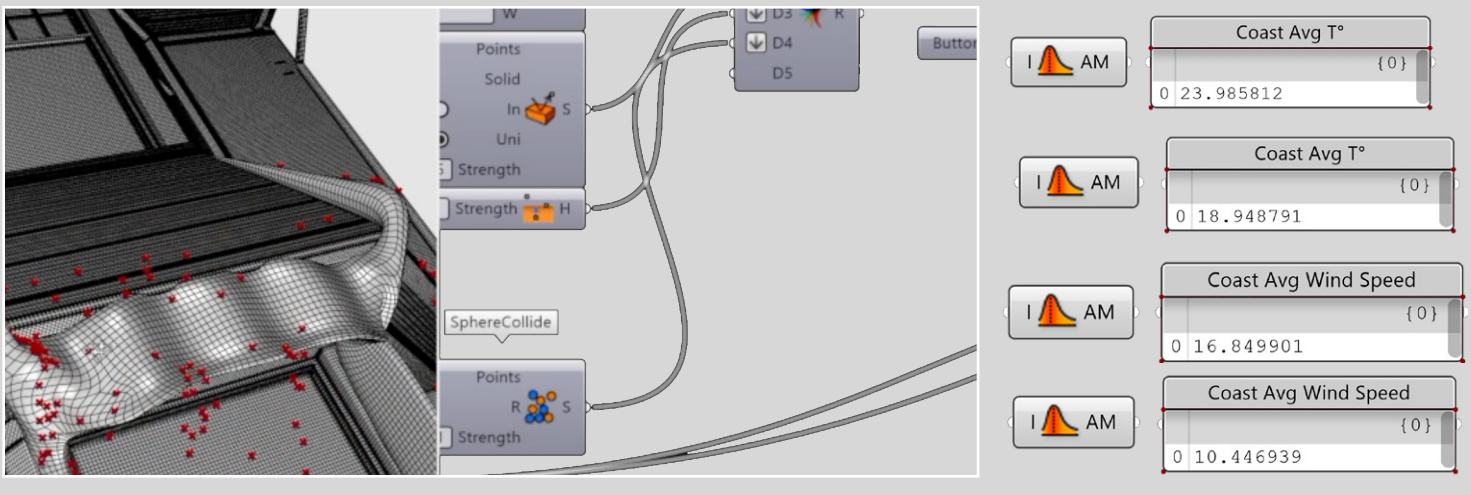
Light Hour

Direct light on the roof and window areas is roughly halved by the new geometry. The overhang and grid frame block the most intense midday sun, while still letting enough through for mineral build-up to develop.

Wind Speed

The intervention slows wind speed across the area of roughly 38–40%. On the grid frame for mineral deposition, speed drops to near zero across most cells, giving salt and limestone time to accumulate instead of washing away.





Wind Driven Particle

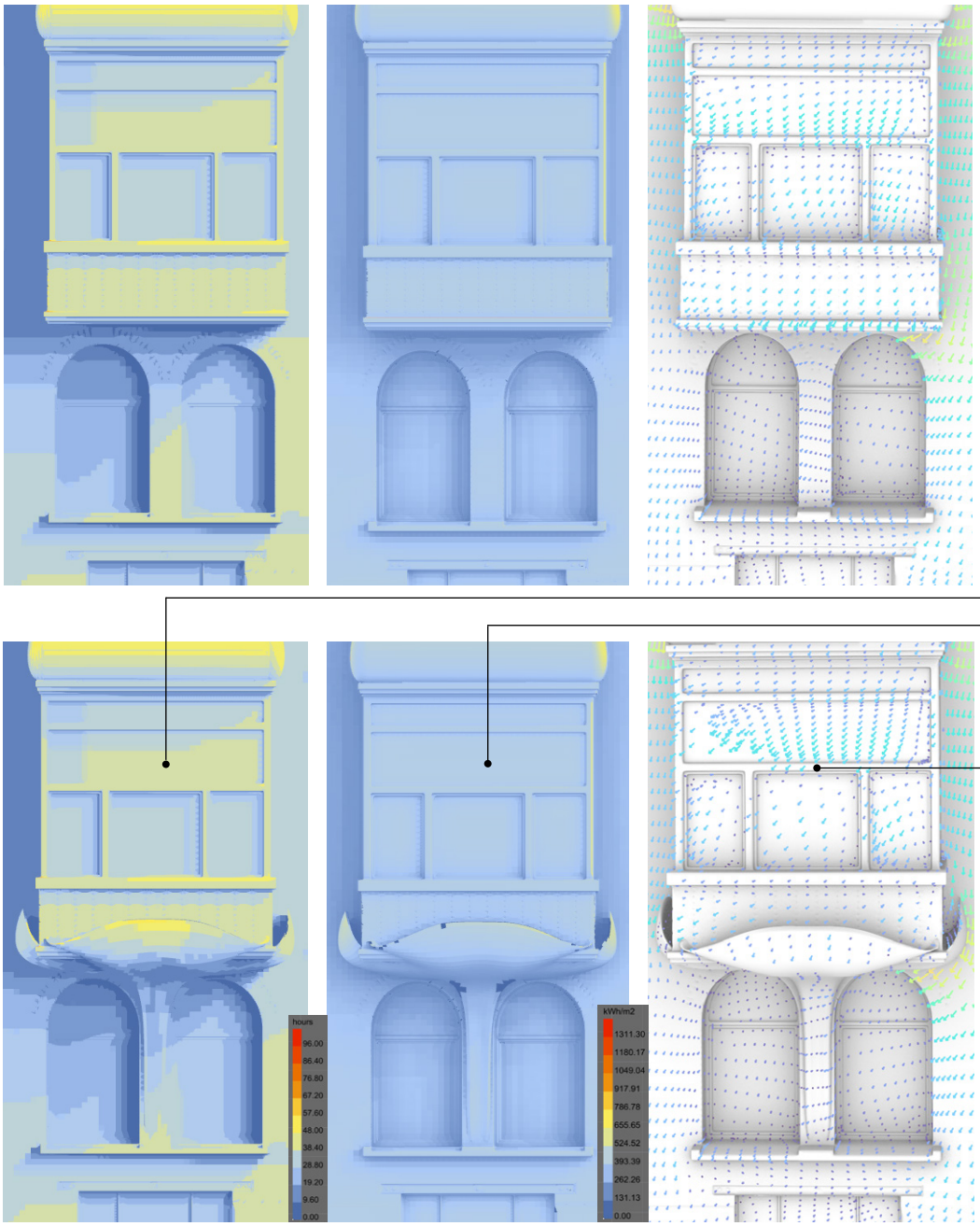
“Using Kangaroo2, raindrops are simulated as they’re carried by wind across the façade, to check whether the geometry redirects them or creates new places for water to get stuck.

Two arms of different thickness handle this differently: the thinner one lets water pass toward the edge, the thicker one blocks it before the entrance.

Data outcomes

Before and after values, averaged across the intervened portion of the façade, taken from the Grasshopper canvas

Fourth Case - Before and After



Solar Radiation

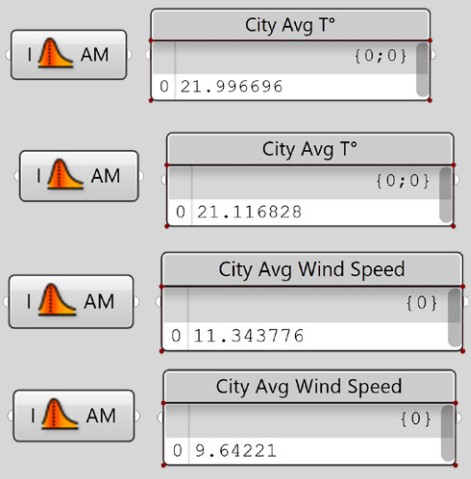
Unlike the coast, this intervention isn't primarily about shading. The balcony's existing curvature already generates turbulence on its own, so the geometry works with that complexity rather than against it, redirecting flow more than it blocks the sun.

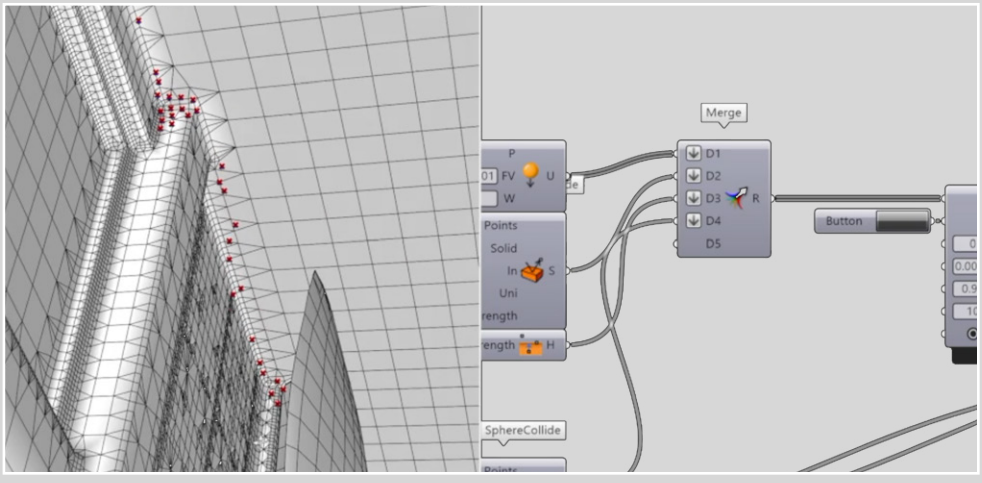
Light Hour

Exposure around the balcony and window recesses shifts only slightly. This façade's geometry is already complex enough that even a small insertion changes how air and rain move, without needing a large light-blocking form to do it.

Wind Speed

Average wind speed drops from 11.3 to 9.6 m/s across the area, though the effect is subtler than on the coast. Family H's diverting ridges cut flow concentration at the window head joints by about 10%.





Data outcomes

Average temperature drops from 22.0°C to 21.1°C, and wind speed from 11.3 to 9.6 m/s, a gentler difference than the coast.

Wind Driven Particle

The brick relief under the balcony already hosts flowers and plants, so the geometry is designed to let rain get stuck there on purpose.

Family H intercepts and retains the seeds, soil and dust that wind-driven rain carries, encouraging a flowering balcony to grow on its own over time

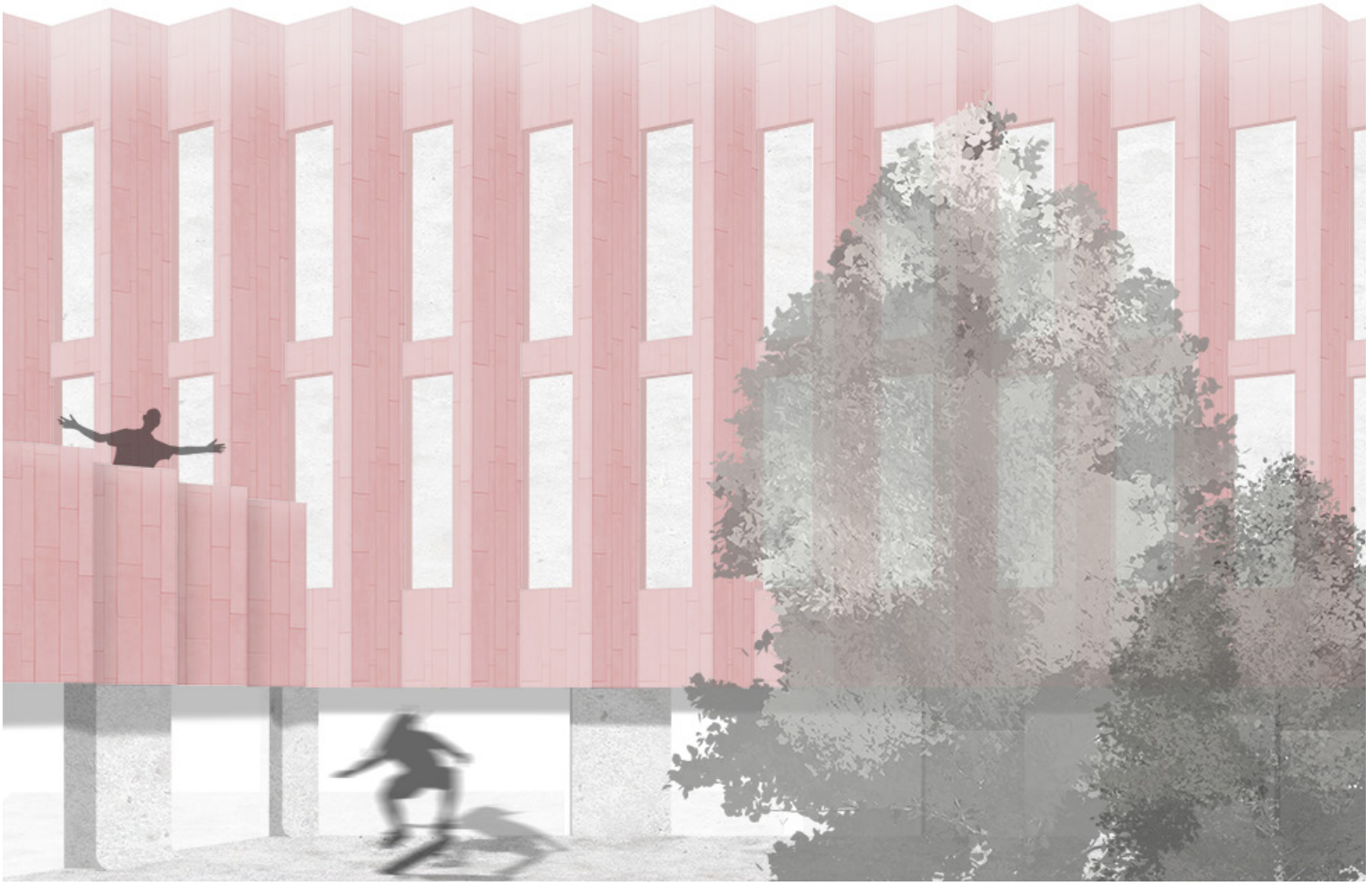


Ultimately, with all the data and virtual models, it was done an **Agentic aided rendering visual simulation** of how the building would look like after 10 years of weathering.

I then added context to the facades with photoshop.



Instead of clearing the moss and grass that grow around the balcony, why not build a **research-based design method** that turns that growth into something people look forward to the next time it rains?





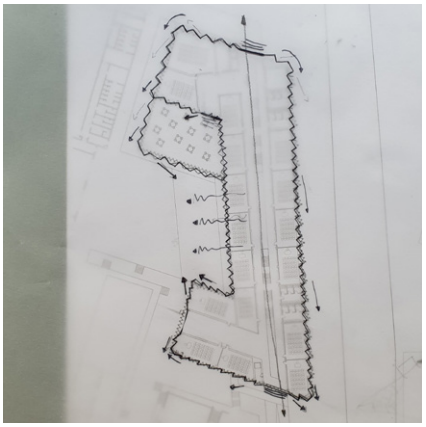
TURN IT TO THE SIDE!

Undergraduate Thesis / Team of 2 / September 2022

Site: Parma, Italy **Thesis Advisor:** prof. Alessandro Brunelli

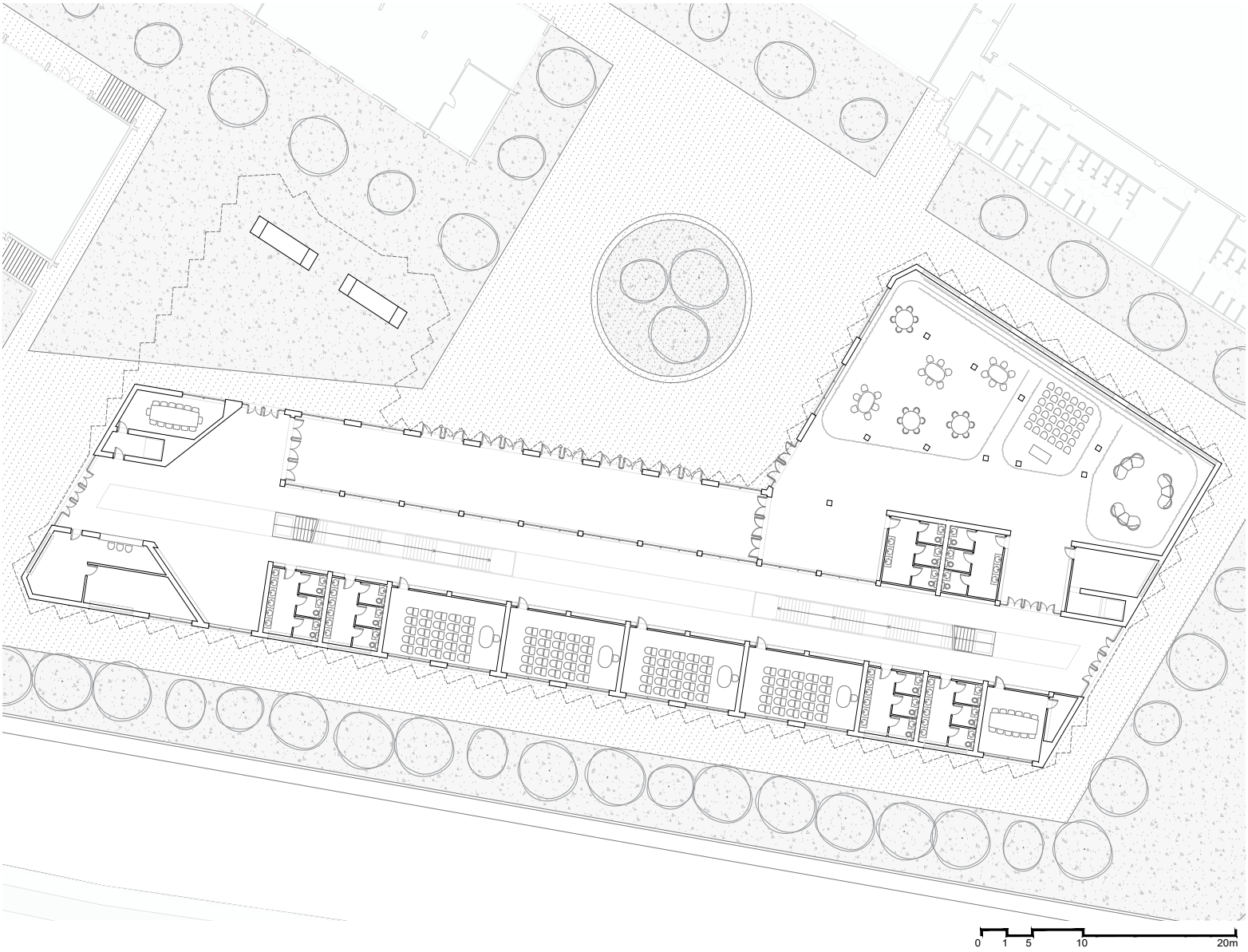
In occasion of the final workshop, we focussed on the future expansion of the campus on *Via Toscana* in Parma. Through the study of solid spaces and voids, the needs of the students while adhering to the guidelines of the PNRR *(National Resilience and Recovery Plan)* post-pandemic, our group conceived the architectural composition of the following concept.

An inverted C shaped building defends a secluded courtyard from the morning traffic and away from life outside the campus. A thought that revolves around the meaning of community; a place where socializing is spontaneous and studying is an experience.

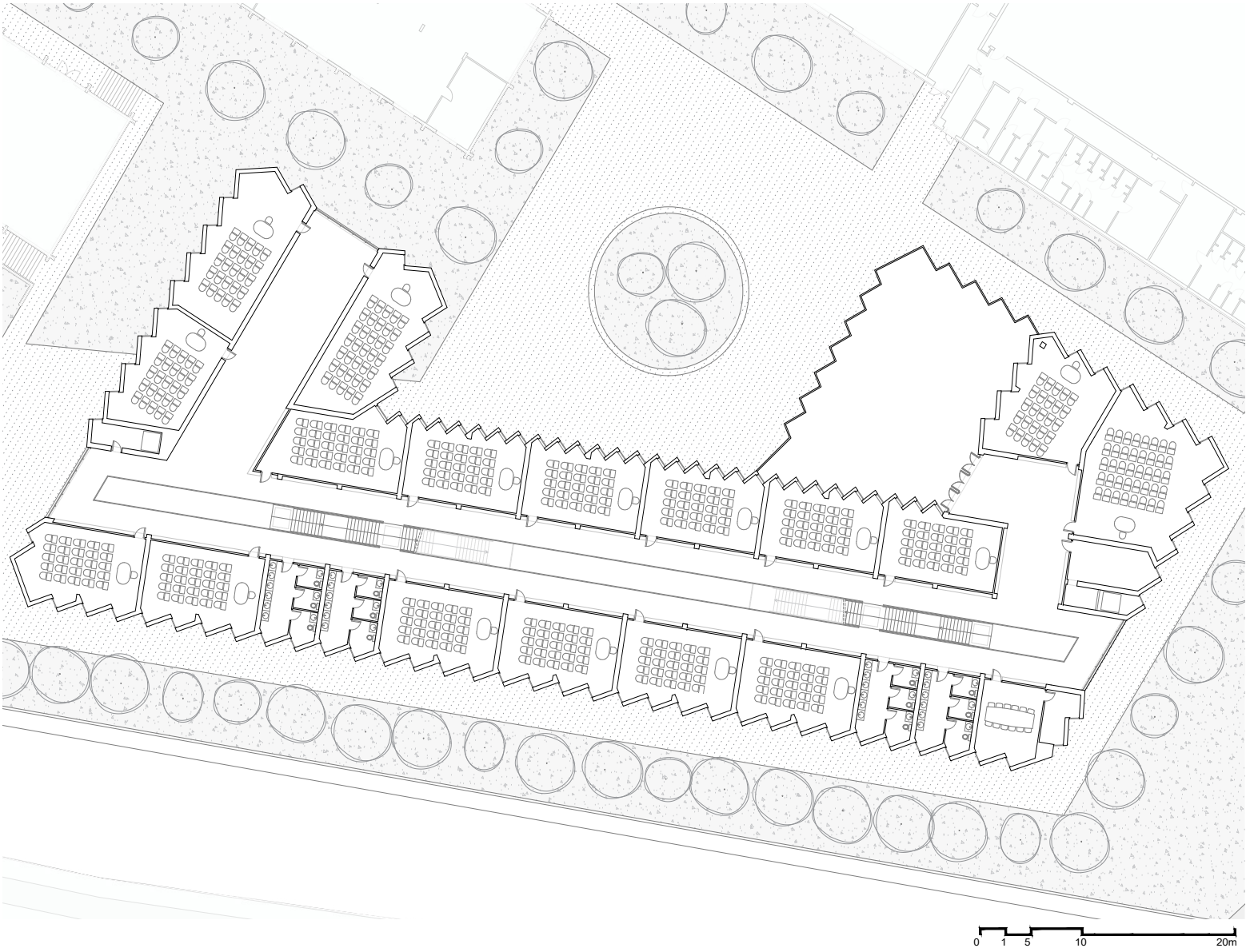


We wanted a skin that mimics the roofs of the industrial buildings nearby on the campus. But instead of putting the sawtooth on the roof, as factories do, we turned it to the side of the building, where it brings light and specific views to specific areas inside. This sawtooth skin rests on a mineral layer that dissolves into the ground.

Softwares used: Rhino, Autocad, Illustrator, CURA Slicer 3D printing, Photoshop

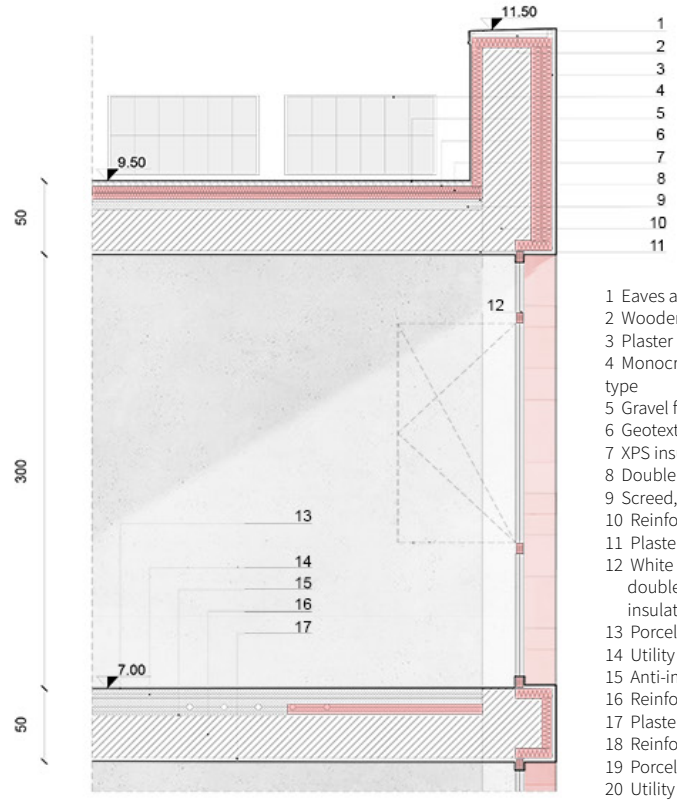

0 1 5 10 20m

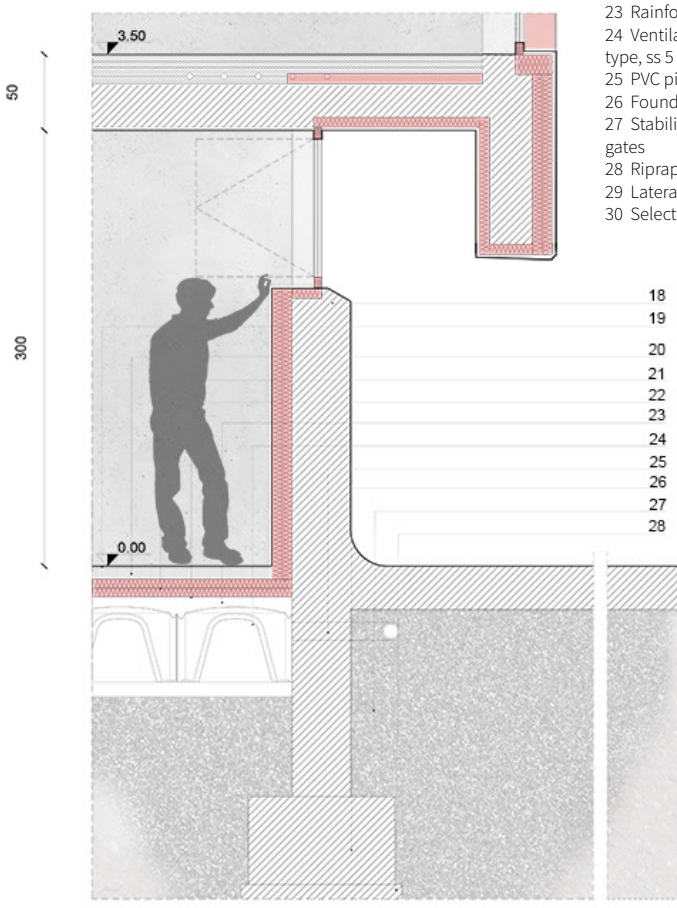



0 1 5 10 20m

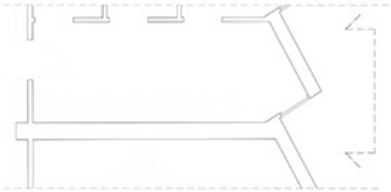


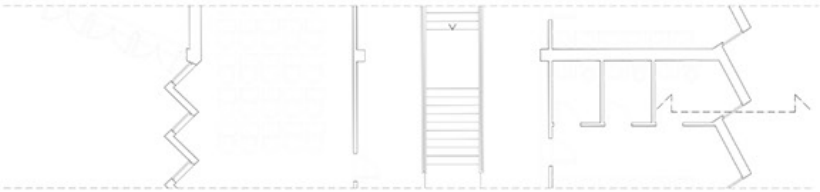


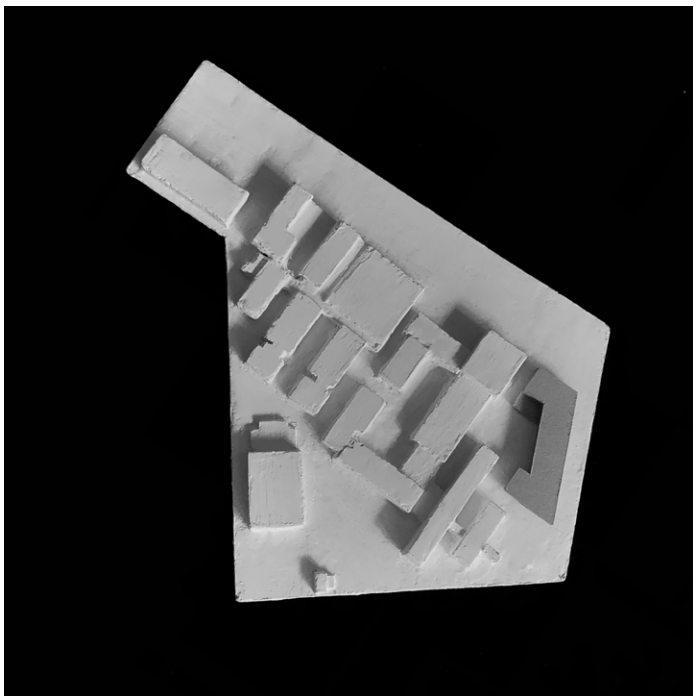




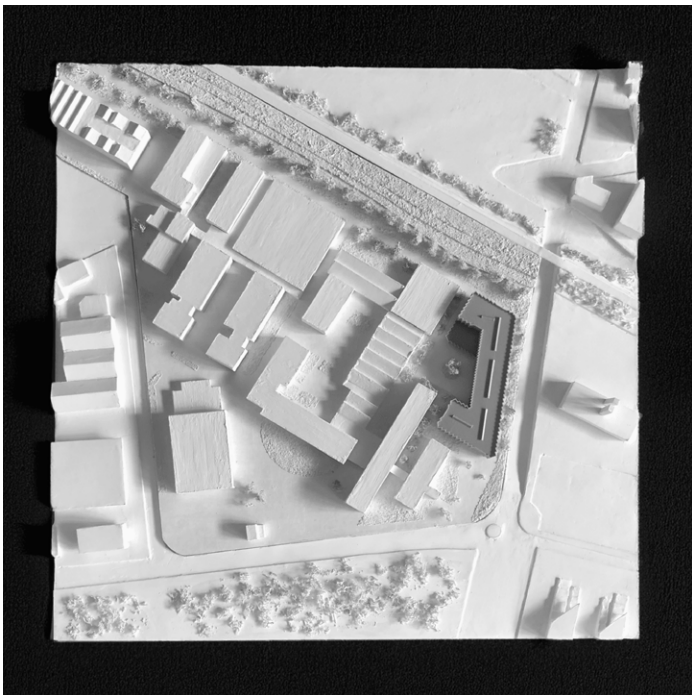
1 Eaves and metal cladding, ss 0,5 cm
2 Wooden board, 6 cm
3 Plaster layer, 2 cm
4 Monocrystalline photovoltaic panel, Solaredge type
5 Gravel for protection and ballasting, 3,2 cm
6 Geotextile (TNT), 0,2 cm
7 XPS insulation, 20 cm
8 Double layer waterproofing, 1,2 cm
9 Screed, inclination 1.5%, 6 cm
10 Reinforced concrete slab, 28 cm
11 Plaster layer, 2 cm
12 White PVC window frame (360x110), double glazed with insultated air gap ss 5cm insulated structure
13 Porcelain stoneware cement effect, ss 1 cm
14 Utility passage screed, ss 20 cm
15 Anti-impact layer, ss 1 cm
16 Reinforced concrete slab, 28 cm
17 Plaster layer, 2 cm
18 Reinforced concrete wall system
19 Porcelain stoneware cement effect, ss 1 cm
20 Utility passage screed, ss 8 cm
21 Double layer waterproofing, 12 cm
22 Waterproof membrane, ss 1 cm
23 Rainforced concrete slab
24 Ventilation system with formwork IGLOO type, ss 5 cm
25 PVC pipe for ventilation, Ø 1,2 cm
26 Foundation footing
27 Stabilized base with various types of aggregates
28 Riprap
29 Lateral shed with metal cladding
30 Selective glass 4%



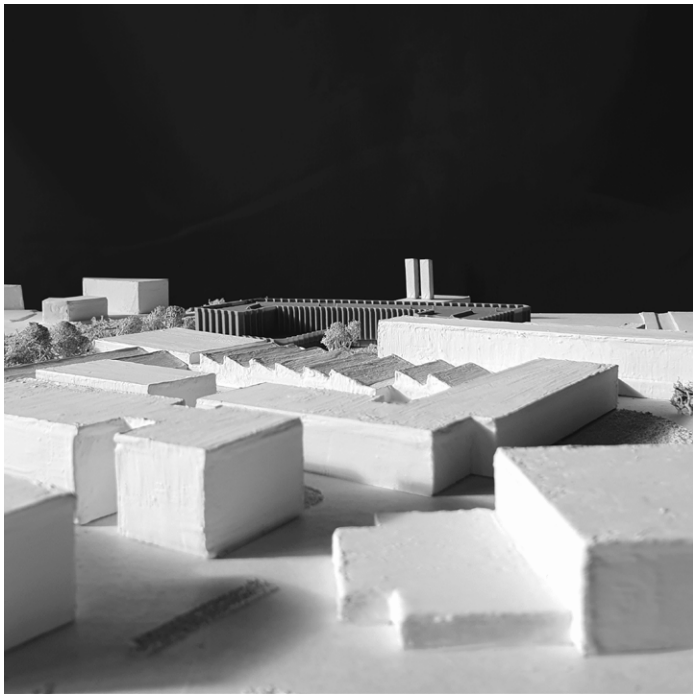




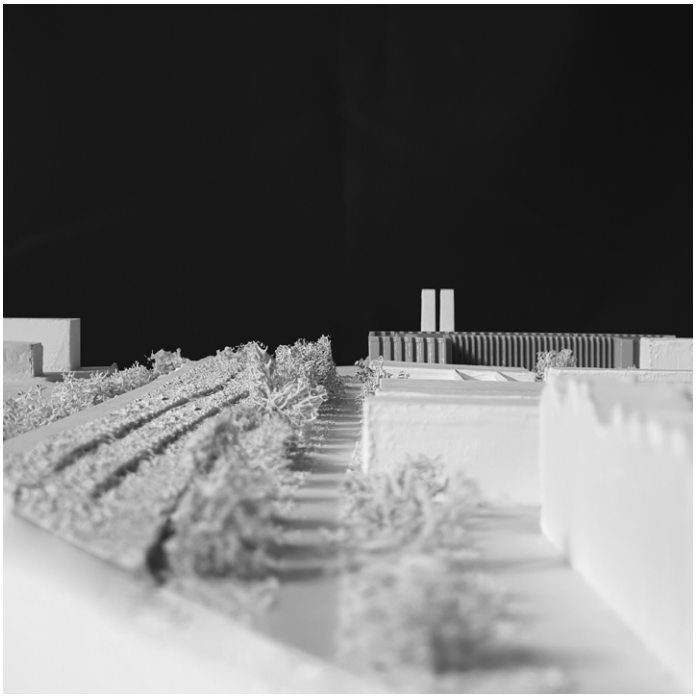
Preliminary campus' maquette, 1:1000.



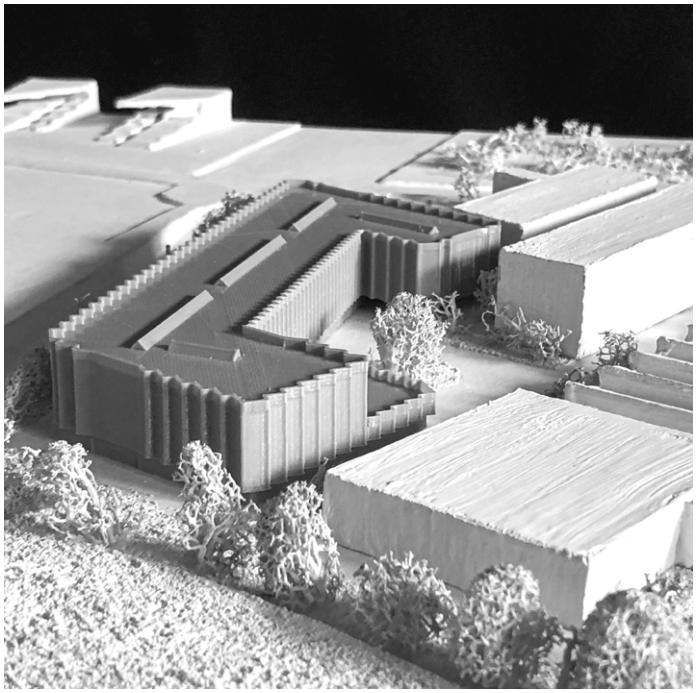
Campus' maquette and urban context, 1:500.



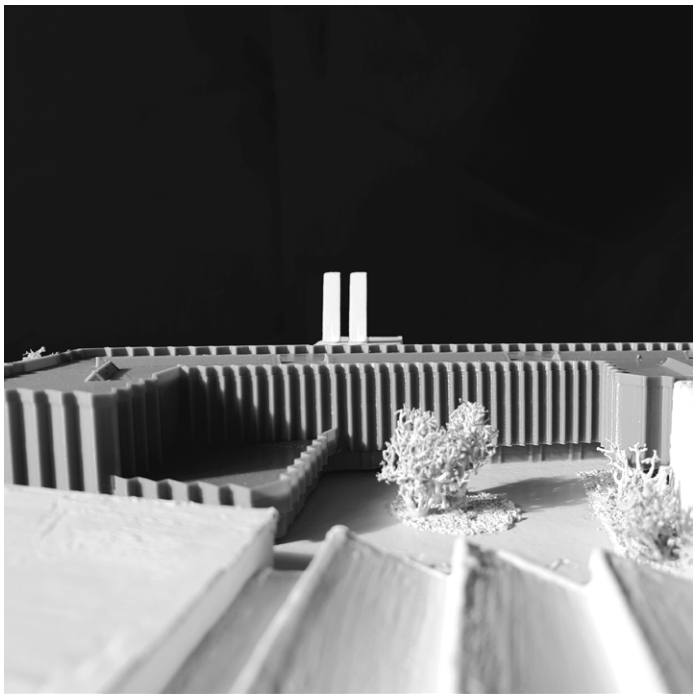
The skin openings are oriented to guide the gaze towards visually appealing areas, rather than parking lots and recycling stations.



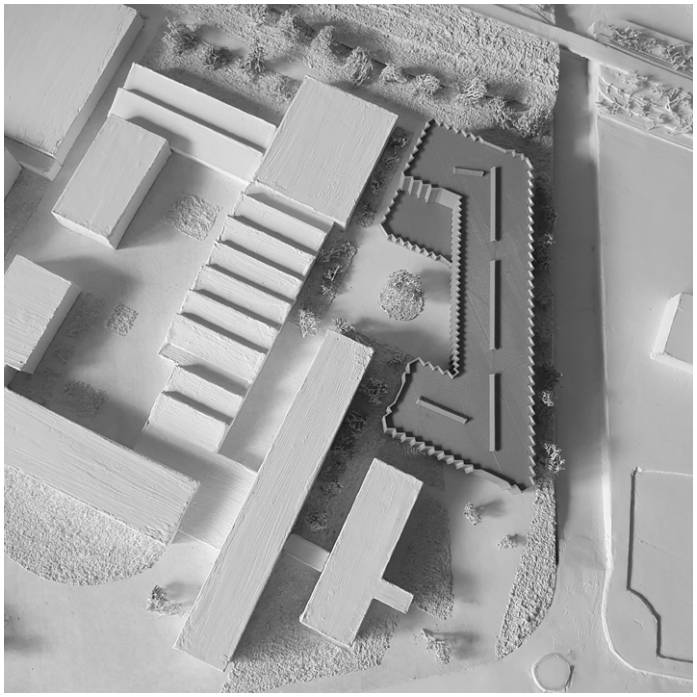
In the rear area, a straight tree-lined cycle-pedestrian track allows to entry and exit from the school at any time, quickly and safely.



View from the railway.



The secluded courtyard.



The composition aims to complement the campus, prosecuting its shape.



The carapace reproposes industrial-shed like shape mimicking campus roofings.



A TILE FOR GHENT VIERNULVIER

Biocraftmanship Studio/ Individual Work / September 2025

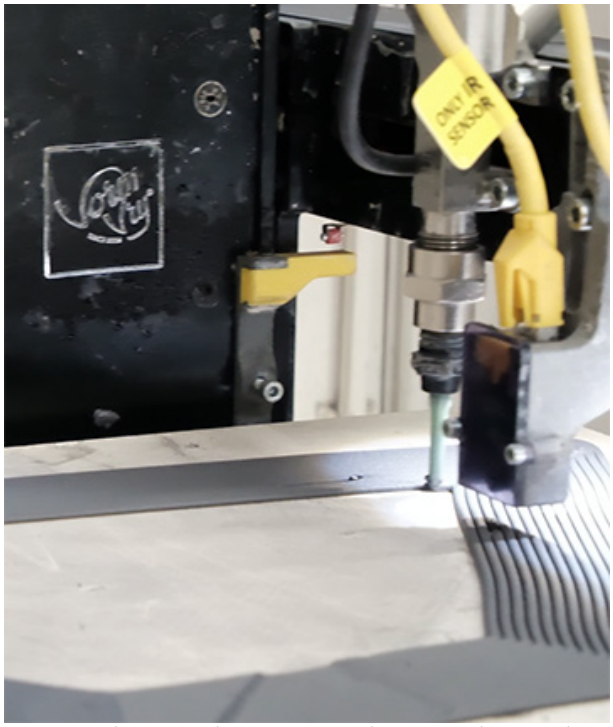
Site: Ghent, Belgium

Viernulvier invited the Biocraftmanship Studio 2025 to make a temporary installation along the canal, to raise awareness of the bioreceptivity of different materials. Each group worked with one material: concrete, wood, mycelium or clay.

Our clay group made the model in the clay laboratory, from mixing the natural clay to fertilizing it before the installation.

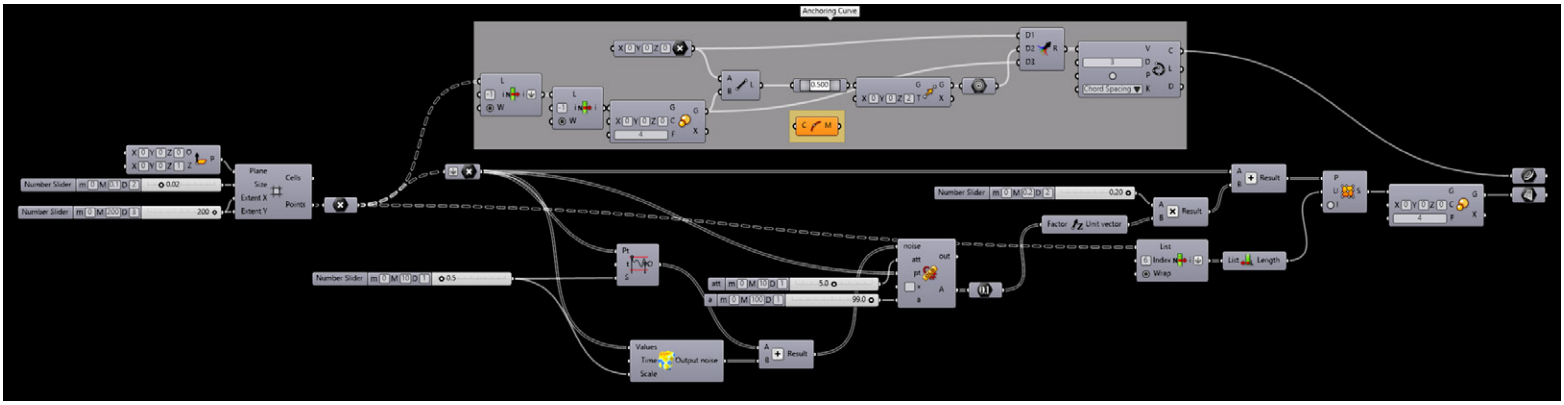
It was the chance I'd wanted to finally use computational design in practice. I learned about clay shrinkage and firing ovens, and it was my first time using a clay 3D printer. We learned a lot together, and the tiles turned out great.

Softwares used: Rhino, Grasshopper, Prusa Slicer 3D printing



TUM 4 and PRUSA slicer were used to print the panels.

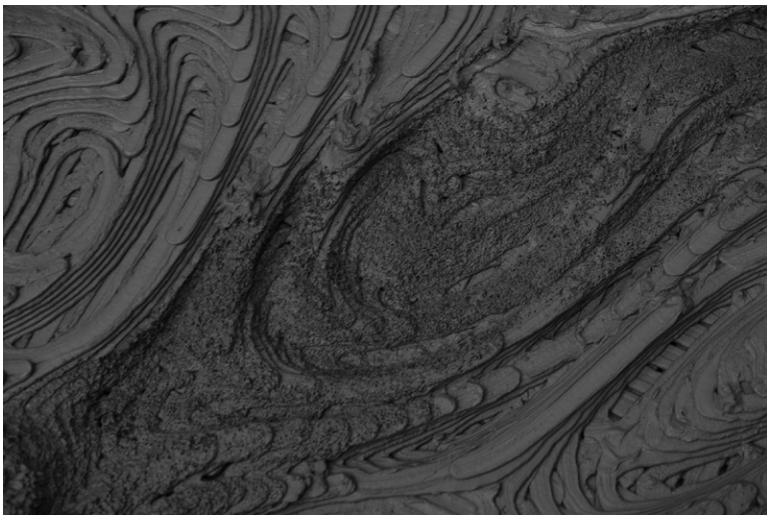

Freshly printed panel wating to be fired.



Script used to generate the wavy surface, with an attempt to depress it.

Before firing, I made tiny pores in the lowest part to make it even more bioreceptive.

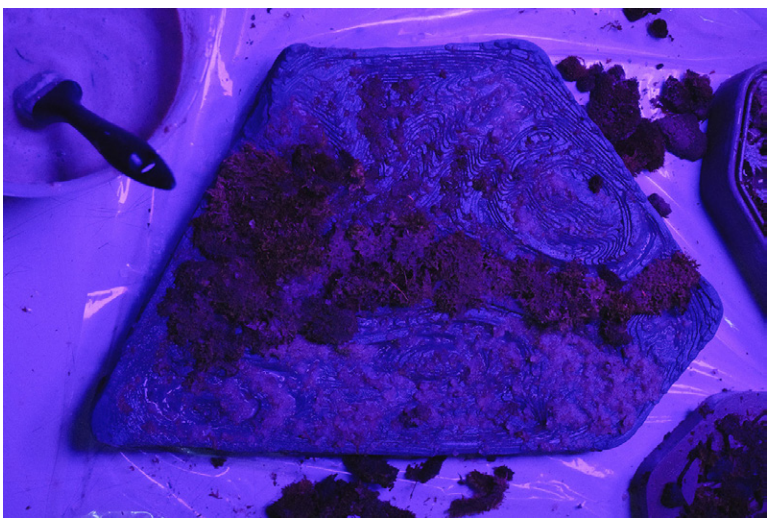




Close up view of the micropores .

Once baked, first moss was planted with a mix of fertilizer and aerogel to retain the moisture.





Panel prior the UV light growth and installation

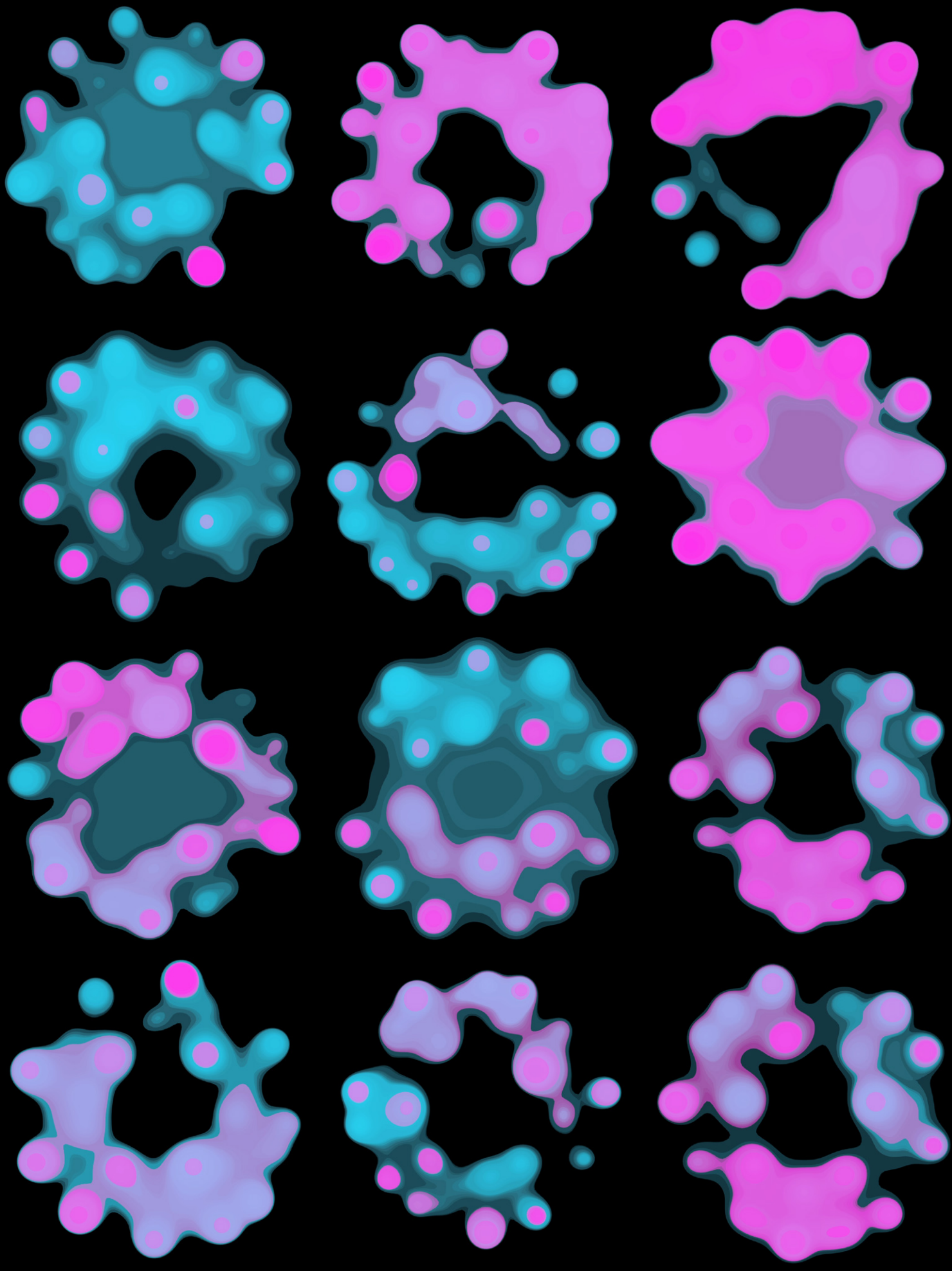
Following page, Viernulvier back entrance with all the different panels attached to the canal wall.



EXTRAS

Form Finding Experiments

Parametric software has led me to new, unexpected shapes, often better than anything I first had in mind. I'd like to join a team that specialises in this work and gives me the environment to grow my passion for analytical and parametric thinking.




Radius
m 0 M 10 D 0
3
O X 0 Y 0 Z 0
Z X 0 Y 0 Z 1
P
C
R
C
1
None
R
E
P
Fr
Seed
m 0 M 100 D 0
59
G
35
N
S
P
P
O X 0 Y 0 Z 0
Z X 0 Y 0 Z 1
Pl
I
X
A
C1 (tangency)
C
P
L
t
Smo
P
O X 0 Y 0 Z 0
Z X 0 Y 0 Z 1
X 0 To 15
Y 0 To 15
Z 0 To 1
R
80
N
S
P
Seed
m 0 M 30 D 0
16
P
O X 0 Y 0 Z 0
Z X 0 Y 0 Z 1
Pl
I
X
A
G
m²
A
C
K
A
K
A
A
Z
T
{0}
P
T
Scri
0
7
I
R
Smoothe
C1 (tangency)
C
P
L
t



Different ways of shaping metaballs, from three dimensional to (randomly) colouring zones.

Gaussian Splatting Modelling

3DGS represents one of my freshest explorations as alternative for architecture rendering scenarios.
A photogrammetric dataset was created by extracting thousands of frames from a video sequence and processed through **Agisoft Metashape** to generate a tie point cloud model. The masked and cleaned point geometry was then imported into **PostShot** for reanalysis and conversion into a Gaussian Splat representation. This pipeline allowed for the preservation of high-fidelity surface detail and lighting conditions.













This method is already implemented in photography for background scenery because is fast and open source, i wonder if it will ever be a valid alternative for architecture renderings especially in natural contexts where reality is difficult to obtain through normal softwares.

Thank you for taking the time to read it.
If you’d like to see more, you can find me on Instagram @archithug or scan the QR code below.