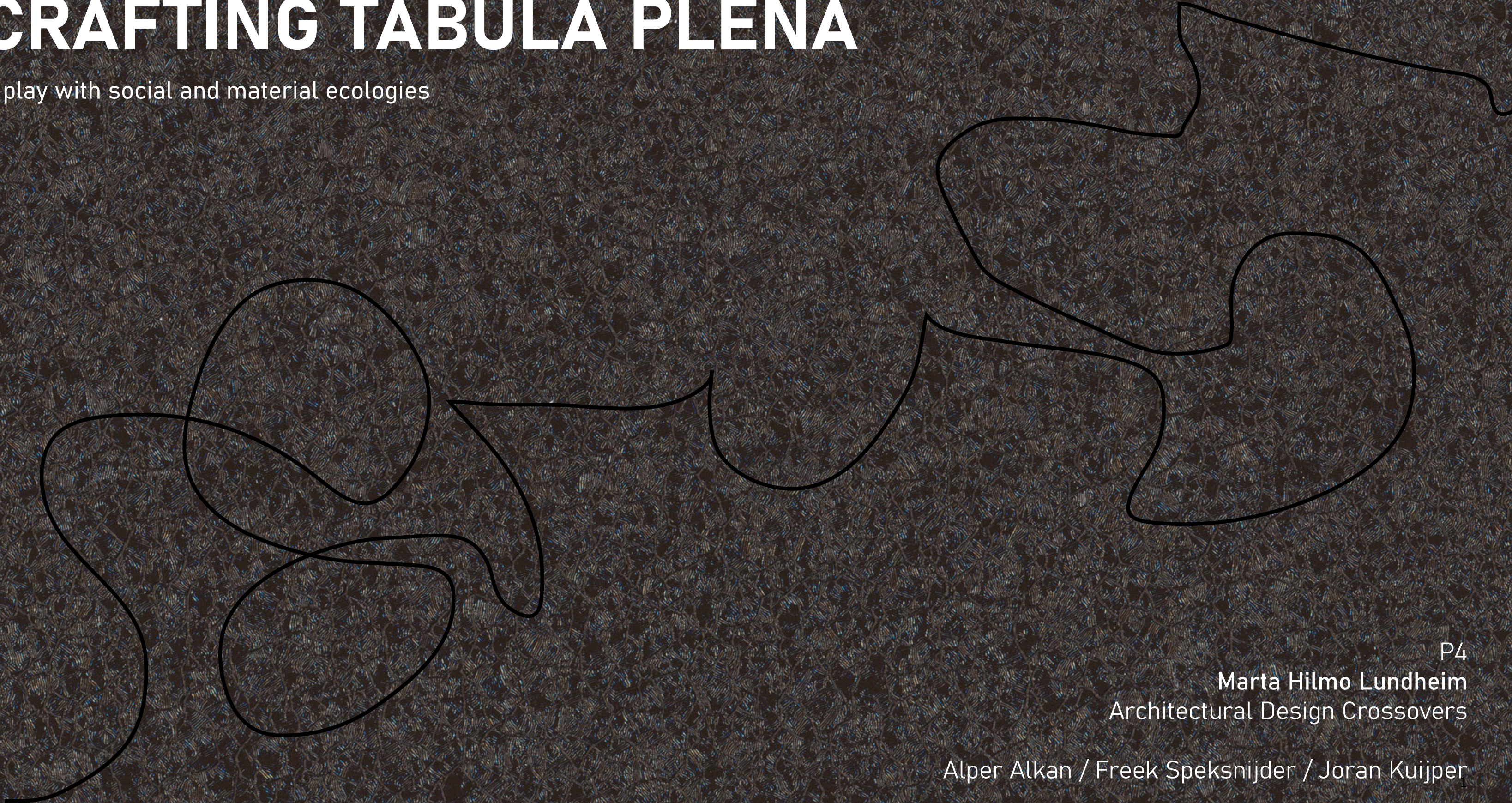


# CRAFTING TABULA PLENA

A play with social and material ecologies



P4

Marta Hilmo Lundheim  
Architectural Design Crossovers

Alper Alkan / Freek Speksnijder / Joran Kuijper



















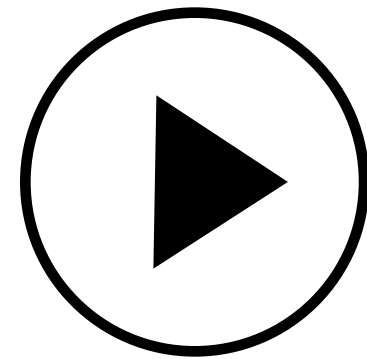






***Social ecology***  
*Urban scale*

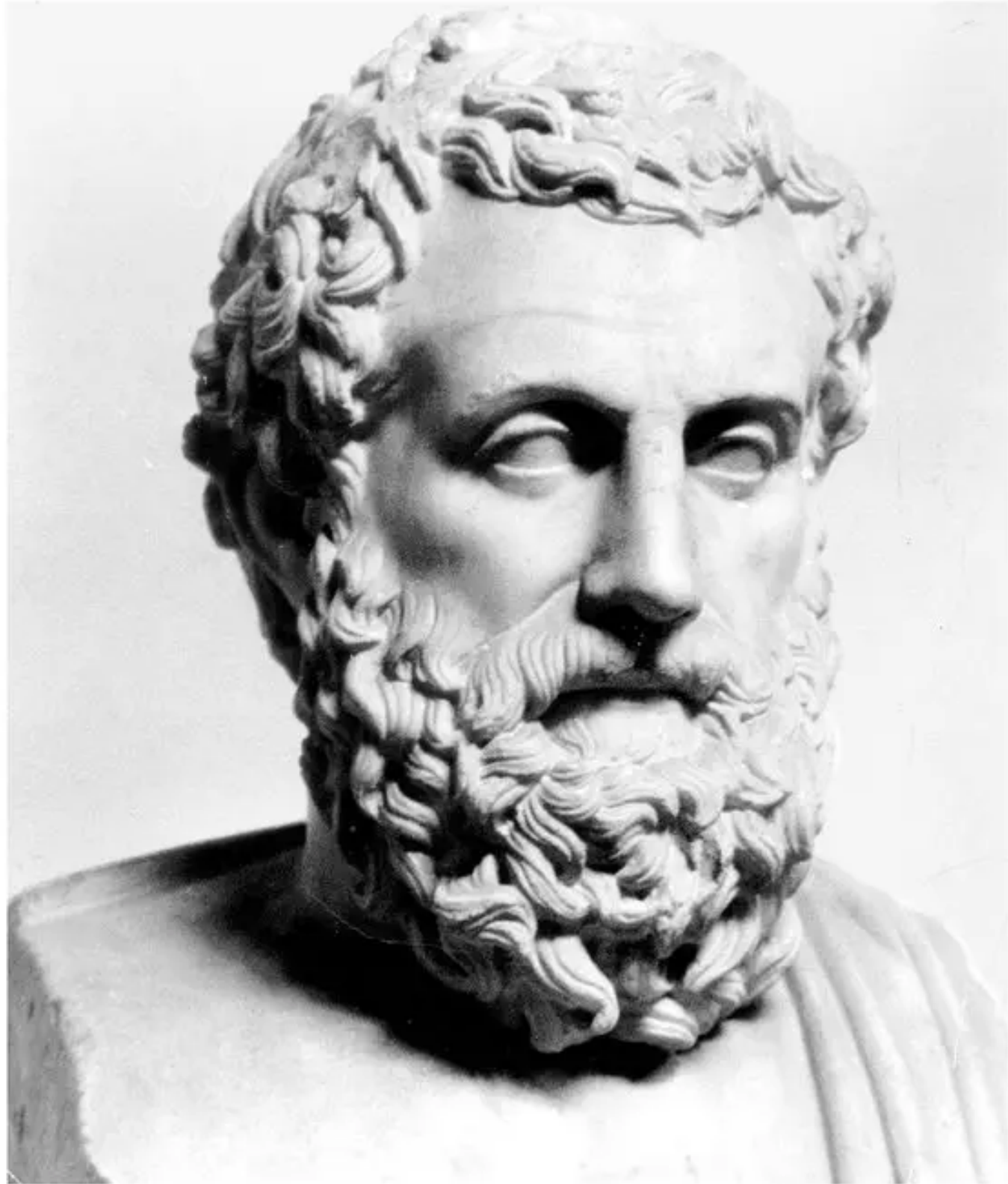
*INTRINSIC*



*FUN*

*SOCIAL*





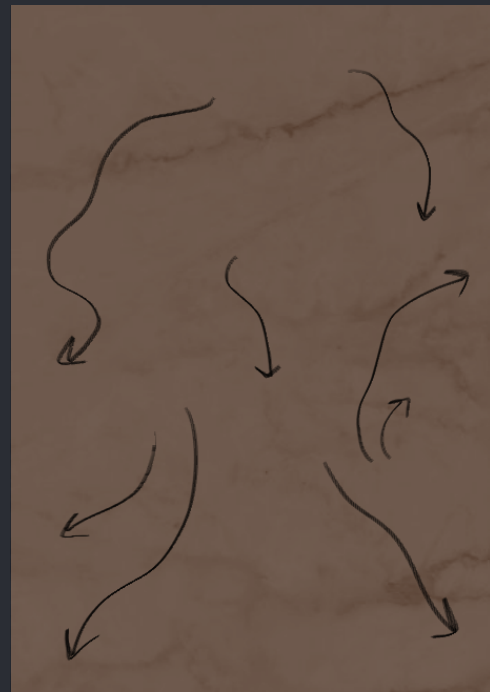
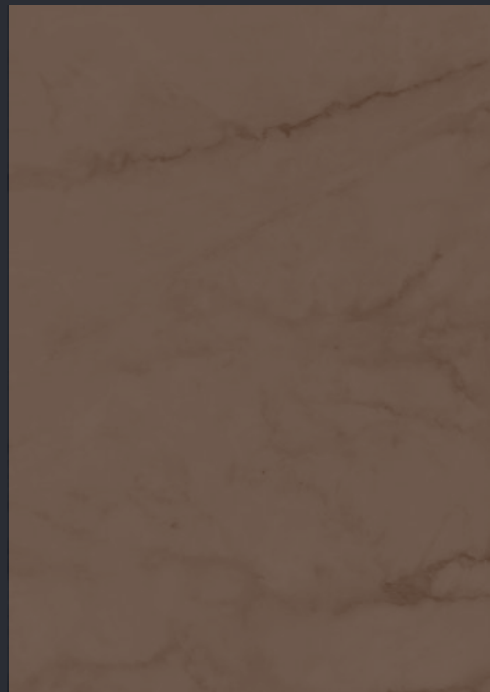
*The hylomorphic model: The idea of the craftsman is imposed onto the matter*



***Material ecology***  
*Site scale*

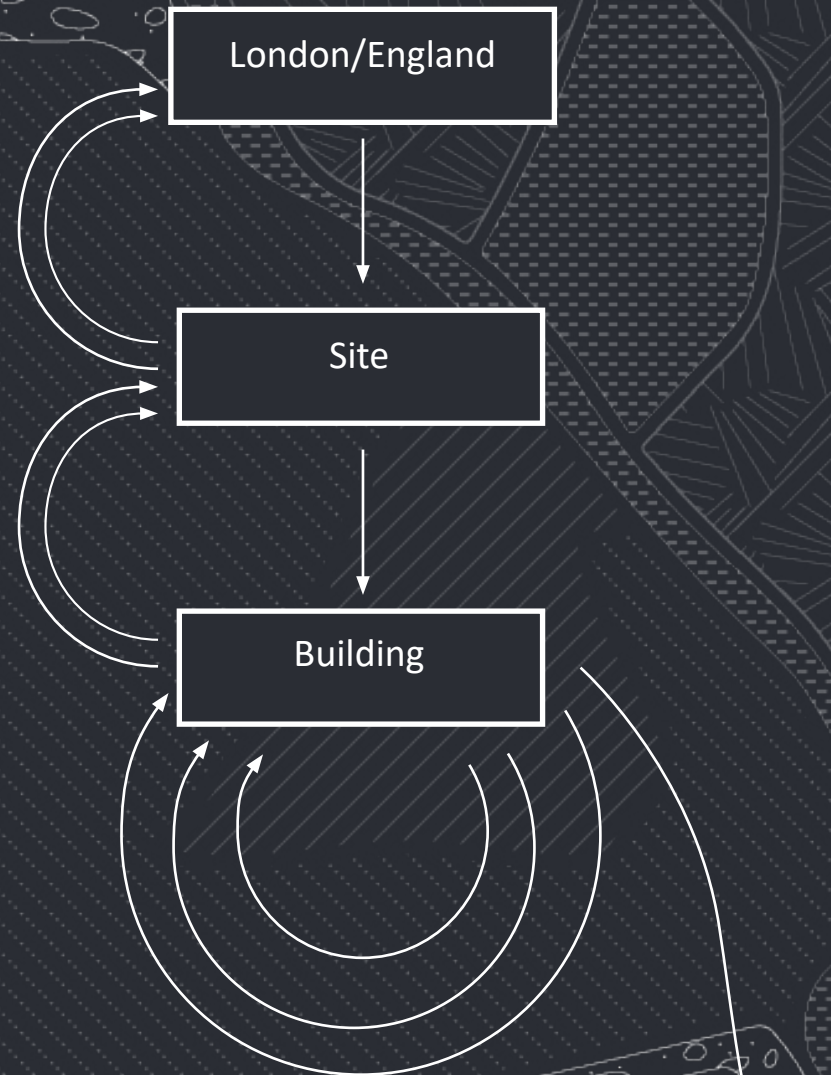


*Following the flow of the material; experimentation and flamboyancy.*



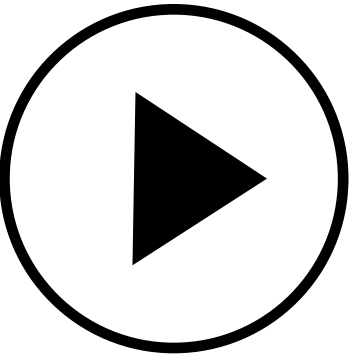
***Material ecology***  
*Site scale*





***Material ecology***  
*Site scale*







***Tabula Rasa:*** A clean slate. An opportunity to begin again with no record, history, or pre-conceived ideas. The site is a blank canvas.



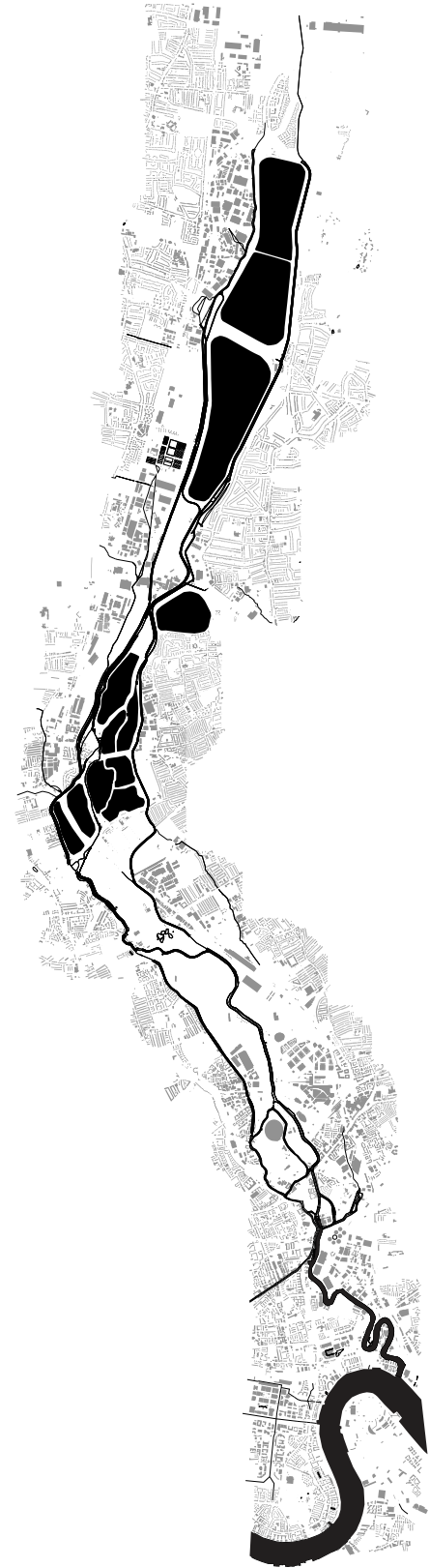
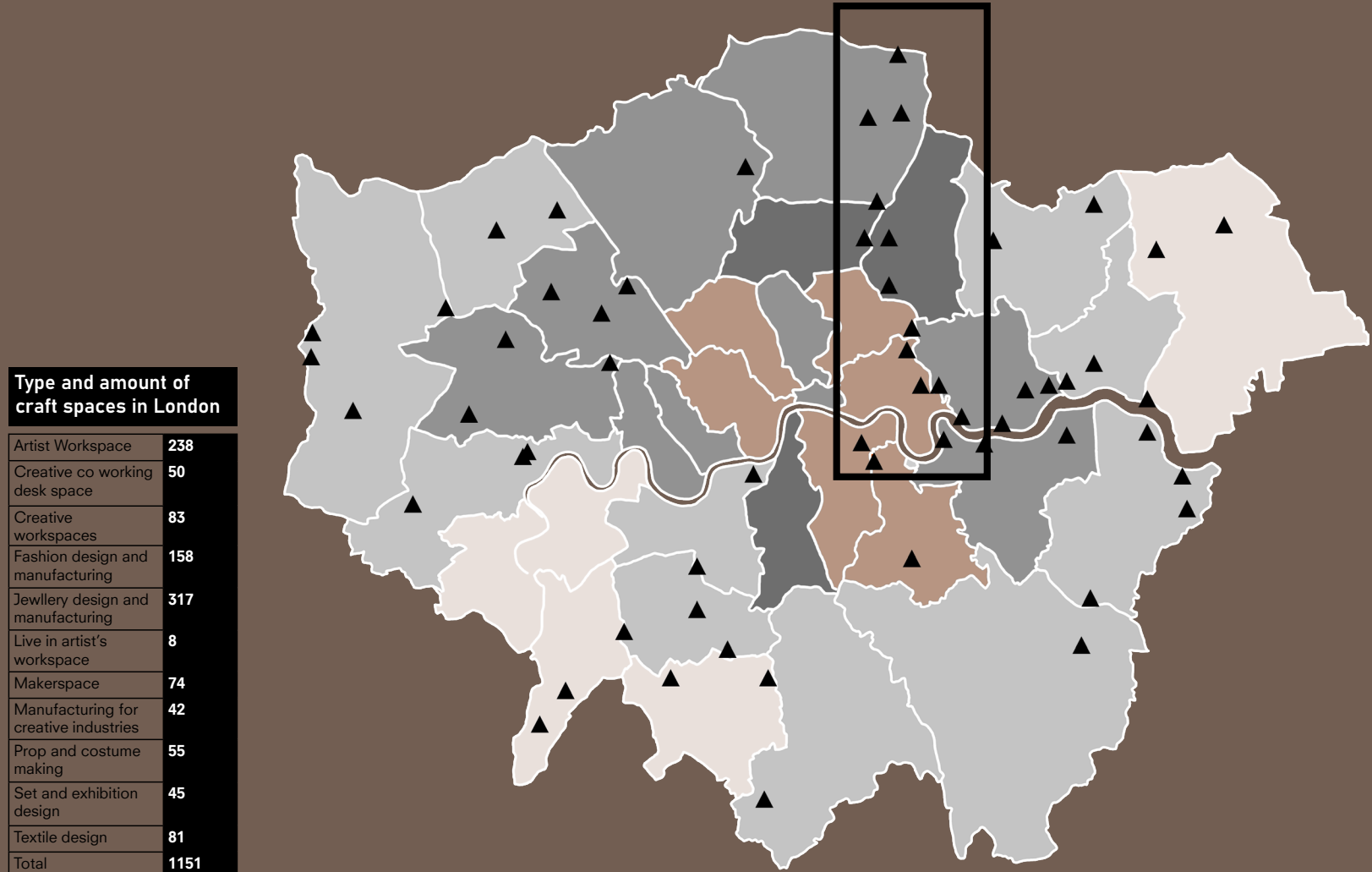
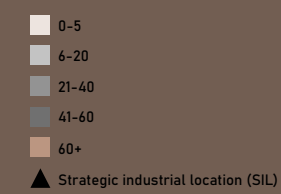
***Tabula Plena:*** *The site as an existing condition. Offers the opportunity to contribute and respond to what is already there.*



Site...



Type and amount of craft spaces in London	
Artist Workspace	238
Creative co working desk space	50
Creative workspaces	83
Fashion design and manufacturing	158
Jewellery design and manufacturing	317
Live in artist's workspace	8
Makerspace	74
Manufacturing for creative industries	42
Prop and costume making	55
Set and exhibition design	45
Textile design	81
Total	1151



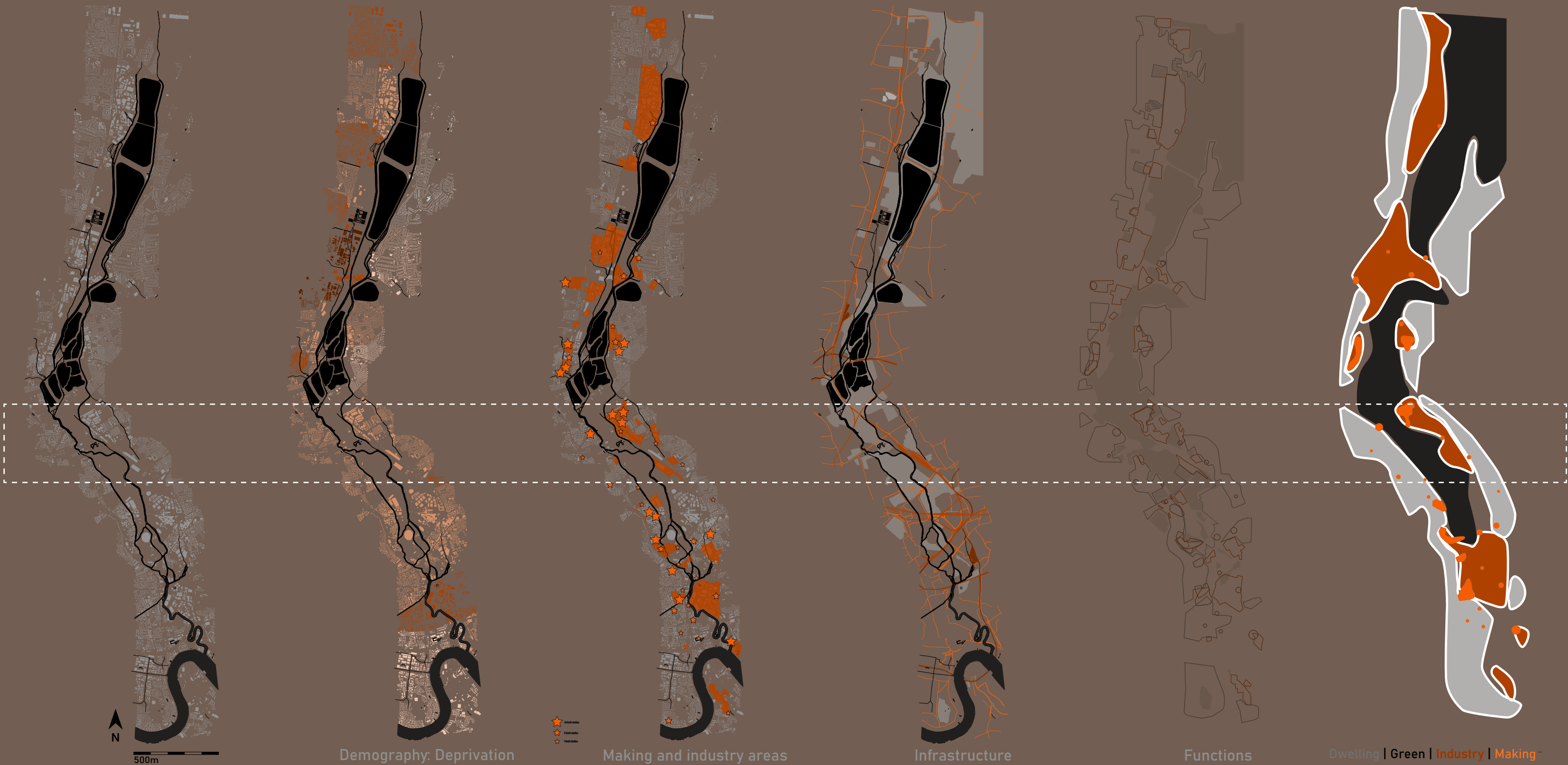








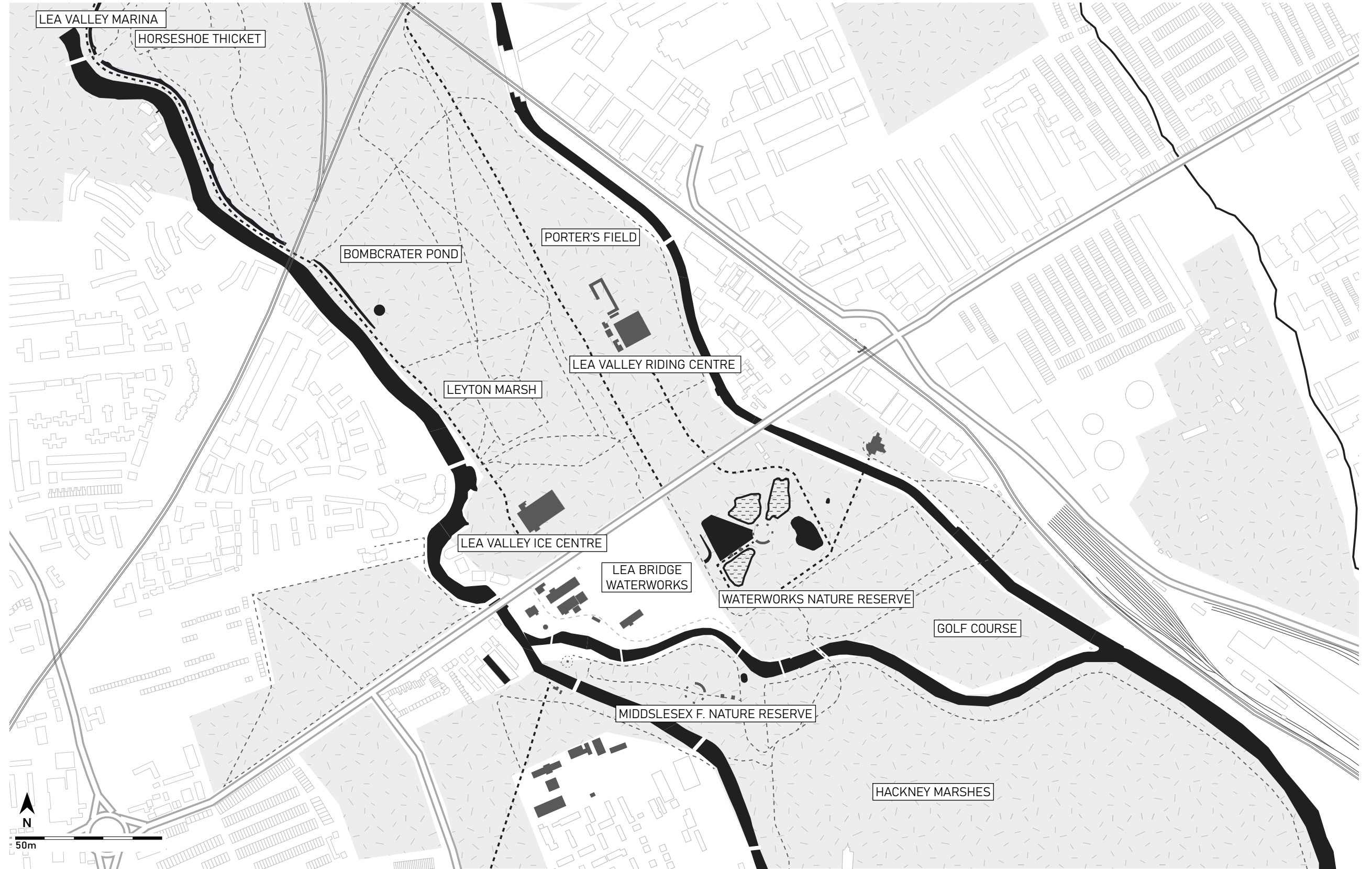
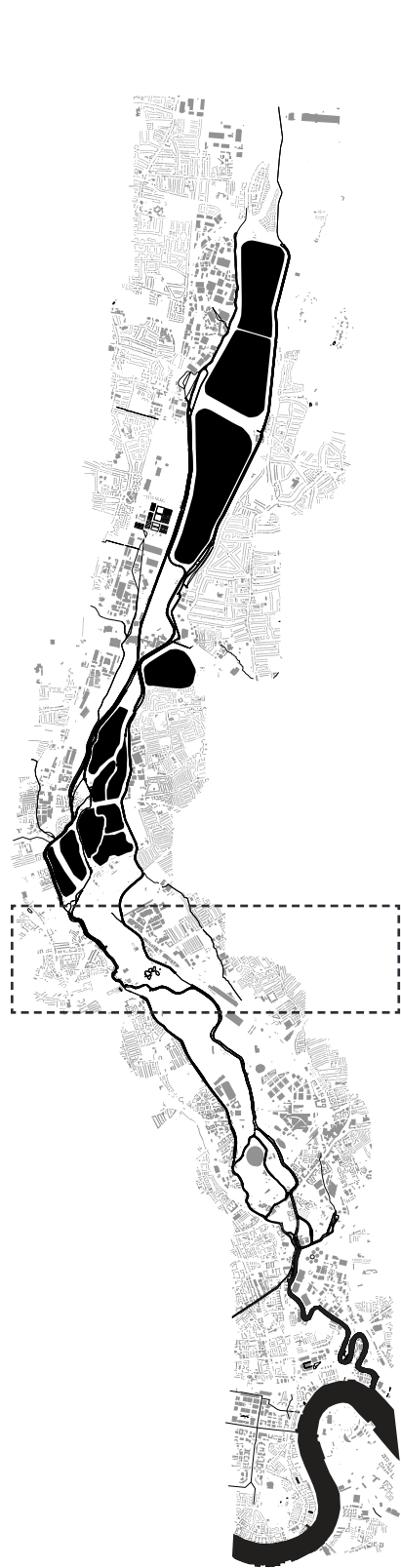




















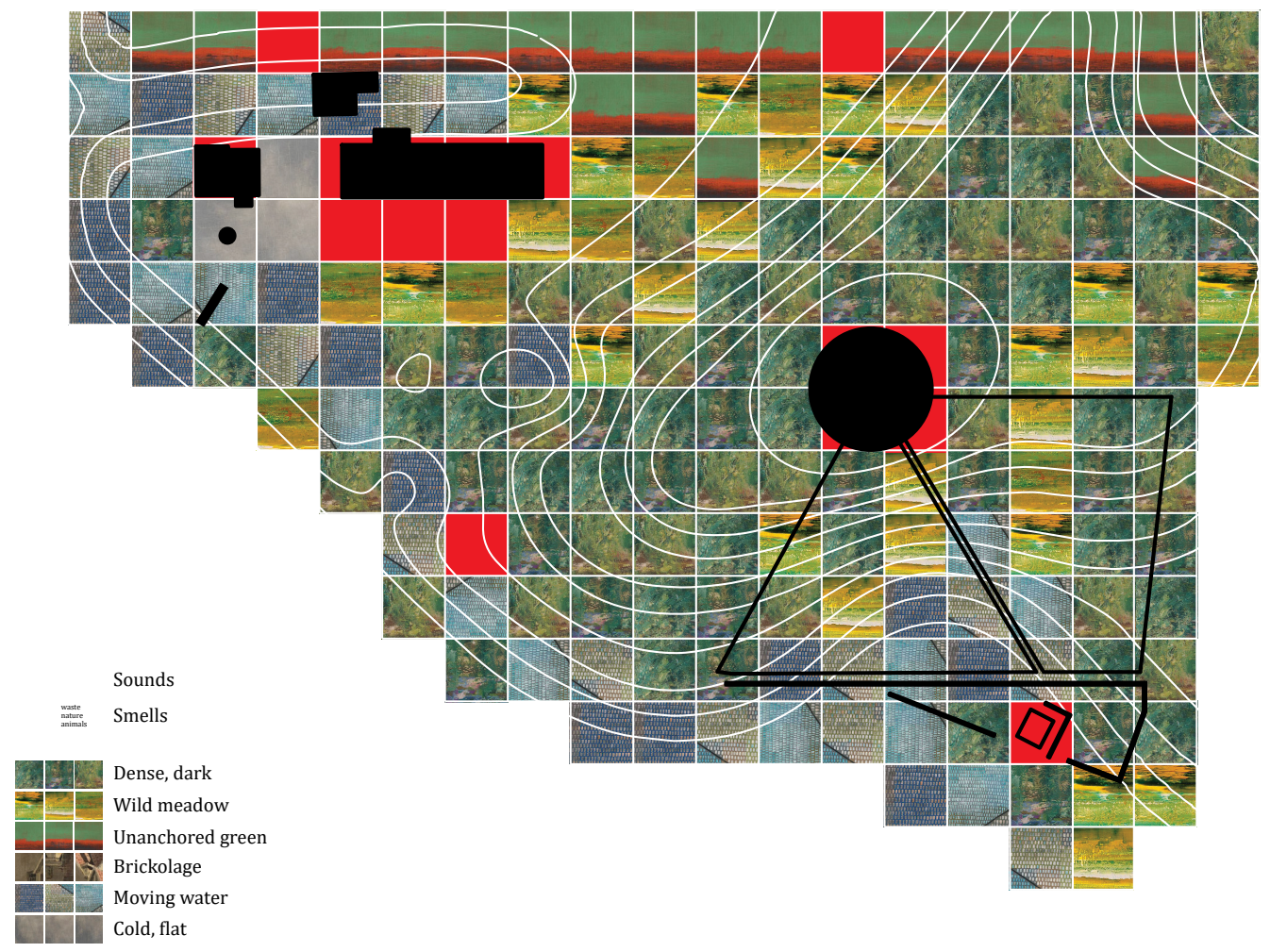
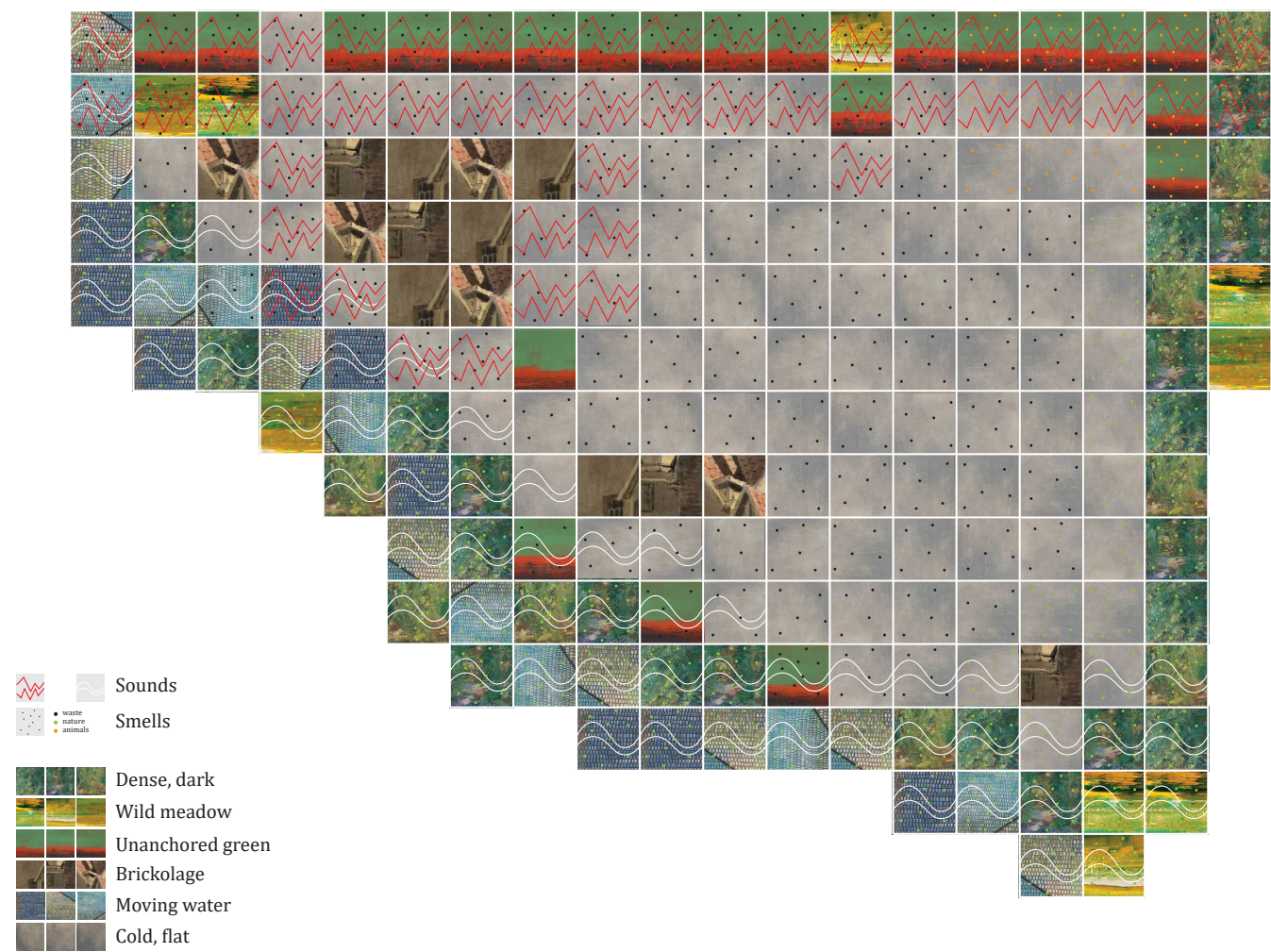




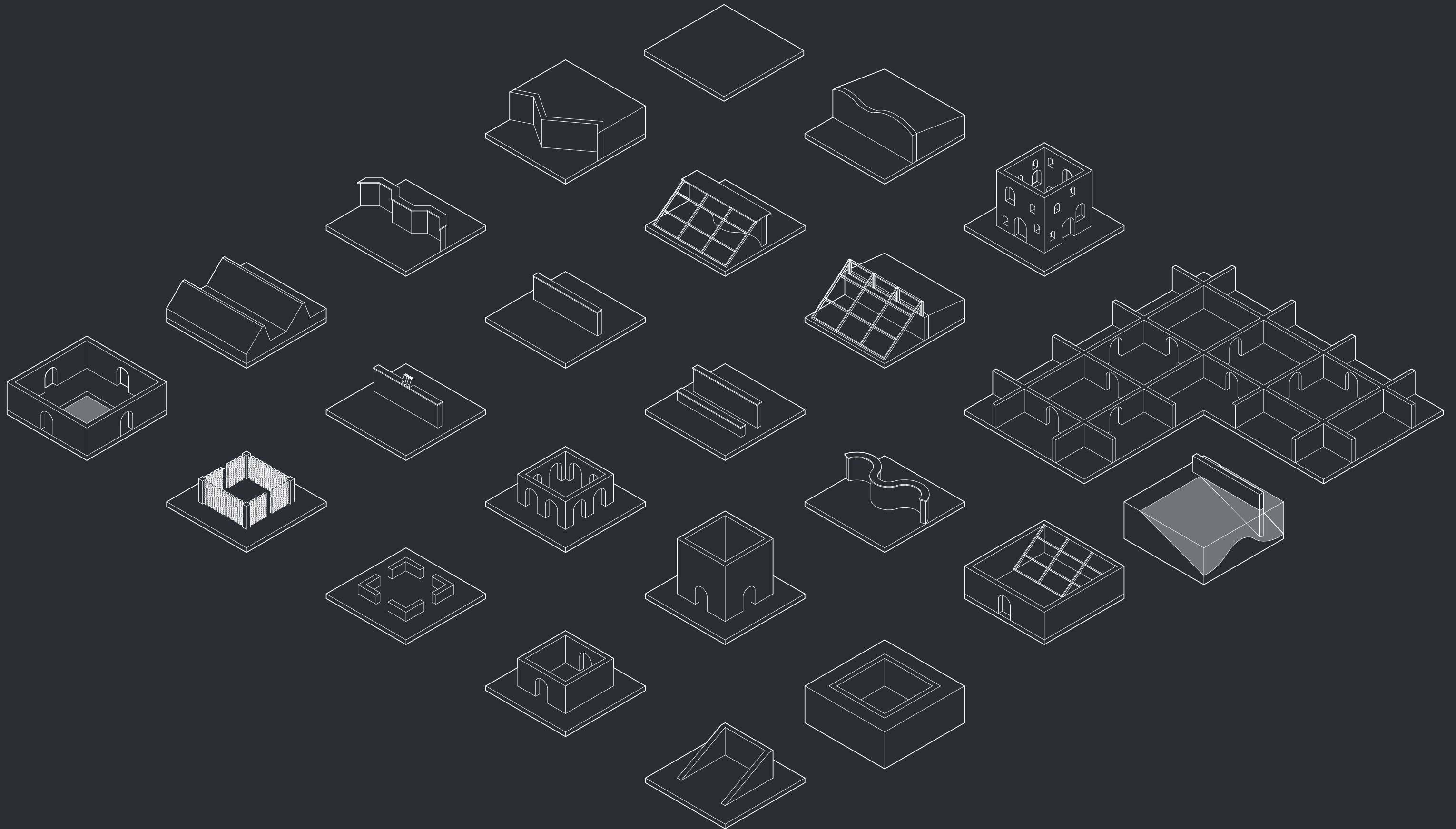


**Translation...**

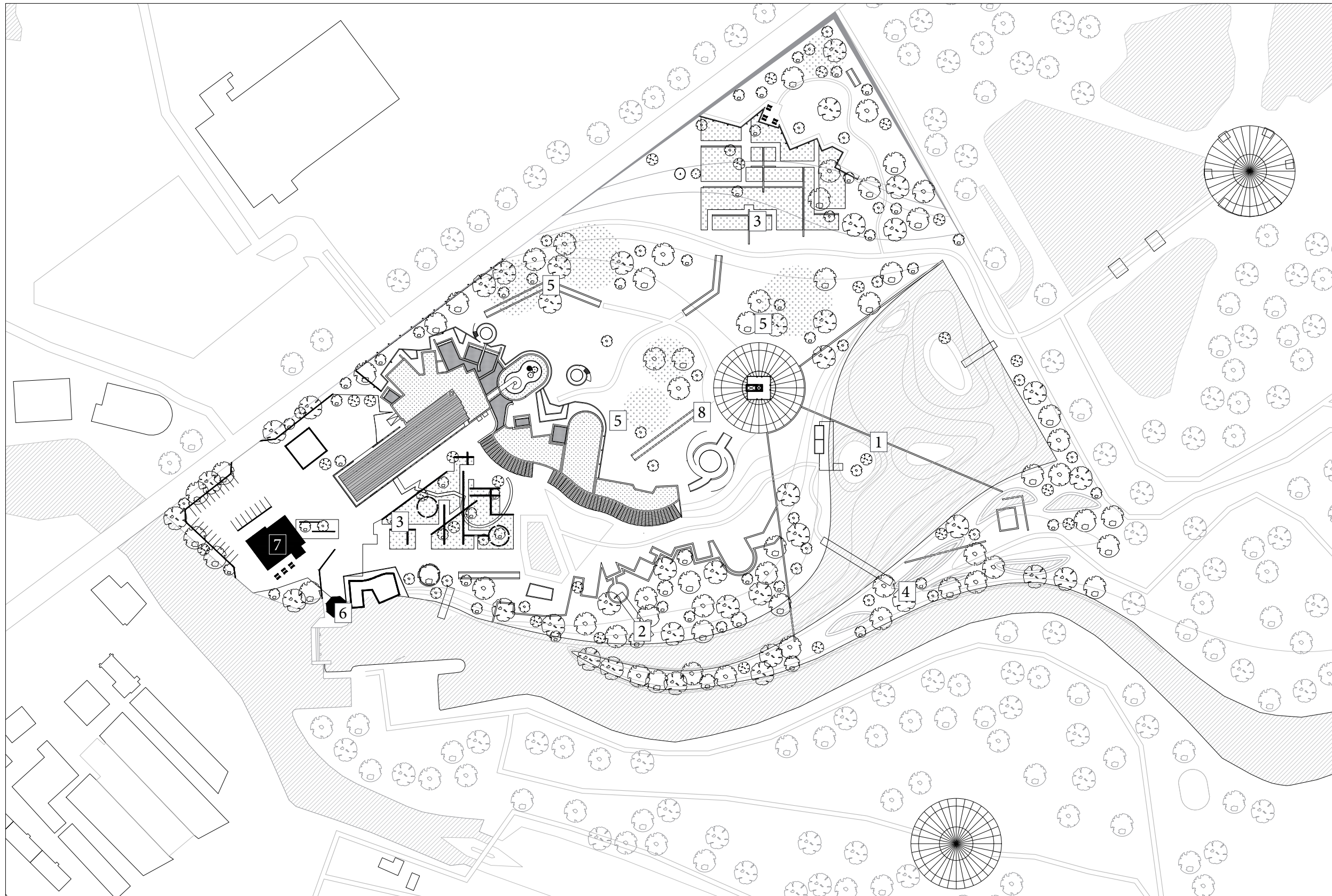










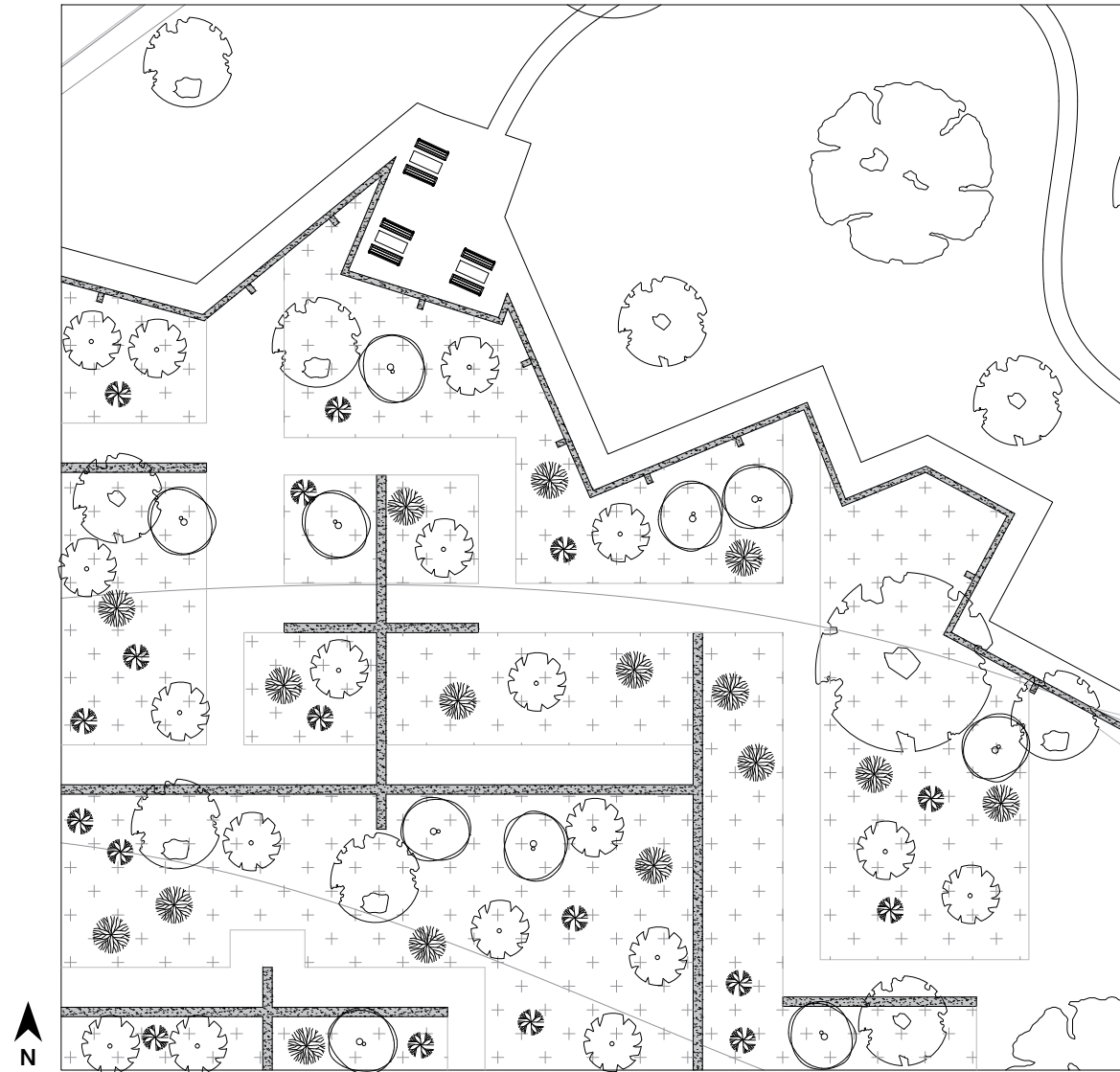


- 1. Wild swimming
- 2. Bird nesting area
- 3. Fruit gardens
- 4. Marshland
- 5. Flower meadow
- 6. Hydro power plant
- 7. Temporary lodging
- 8. Watch tower

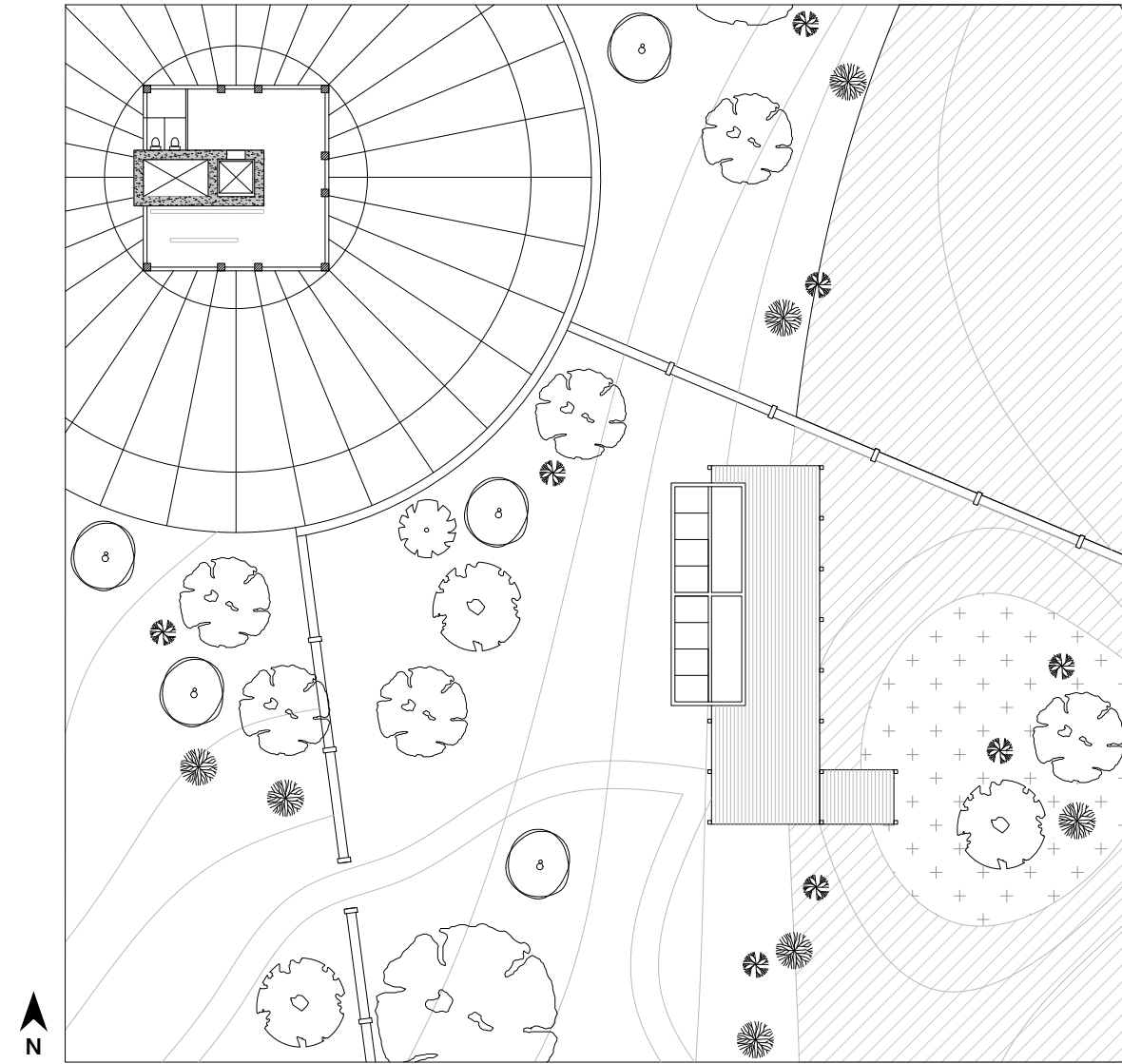






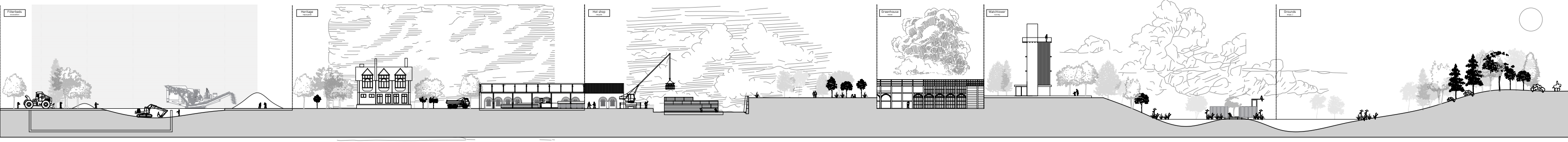


Fruit garden, 1:100



Filterbeds: wild swimming and mini expo, 1:100

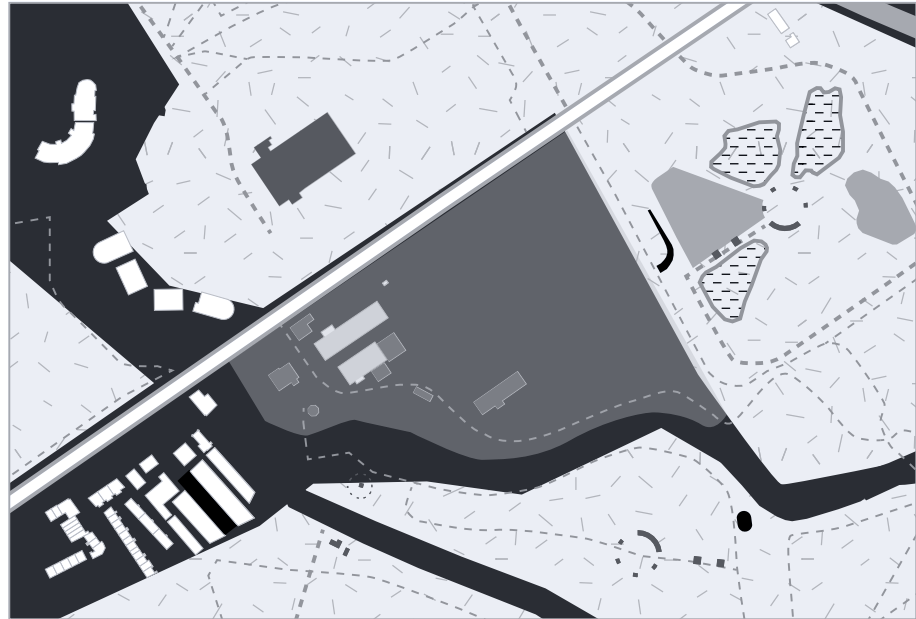












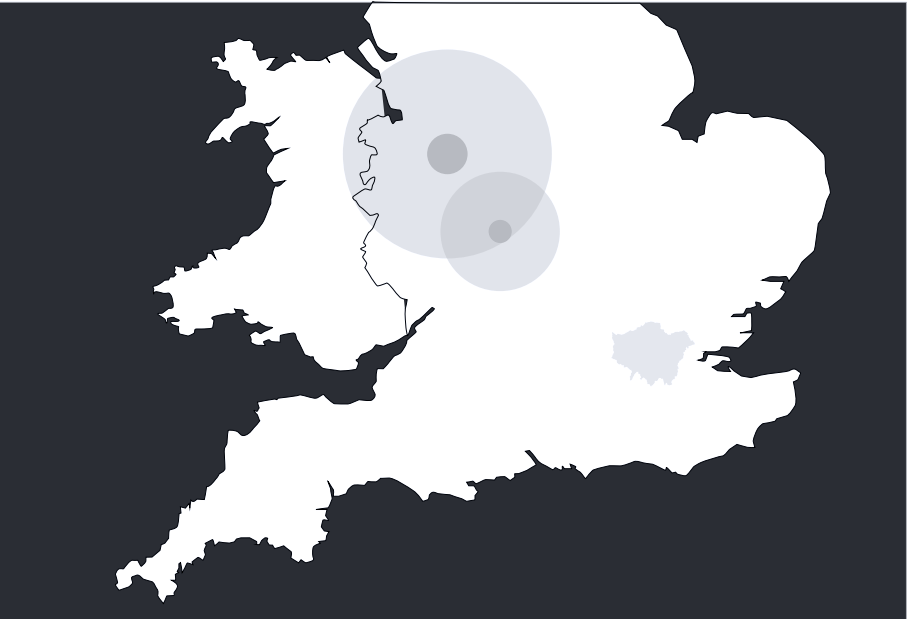
Project site: Lea Bridge Road

Concrete	<i><b>0 km</b></i>
Steel trusses	<i><b>0 km</b></i>
Glass	<i><b>0 km</b></i>



Greater London and surroundings

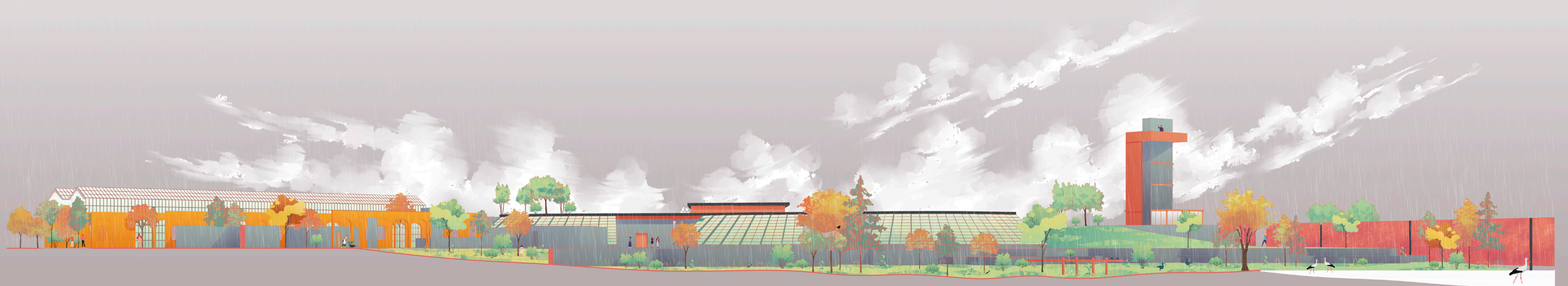
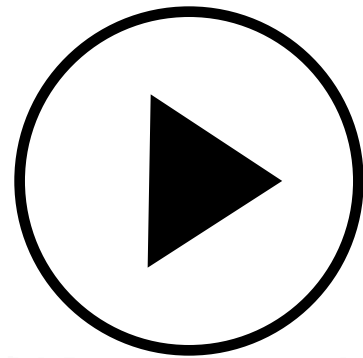
Sand	<i><b>0-70 km</b></i>
Fly Ash	<i><b>61 km</b></i>



England

Wood	<i><b>265 km</b></i>
Steel connections	<i><b>217 km</b></i>

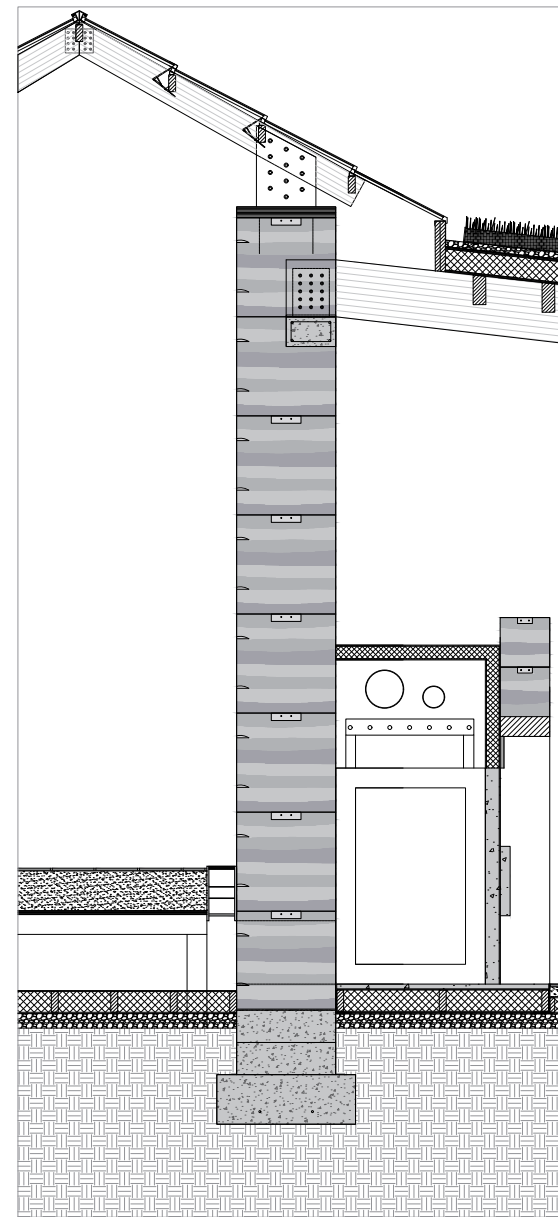
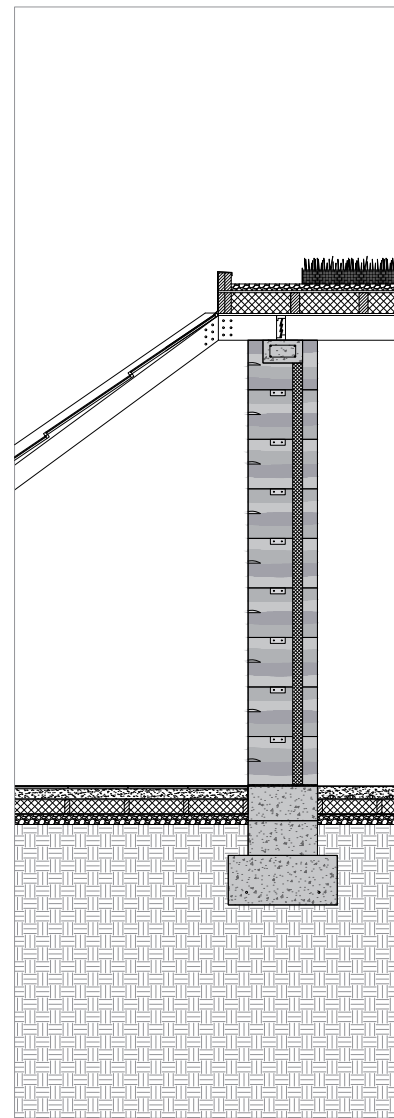
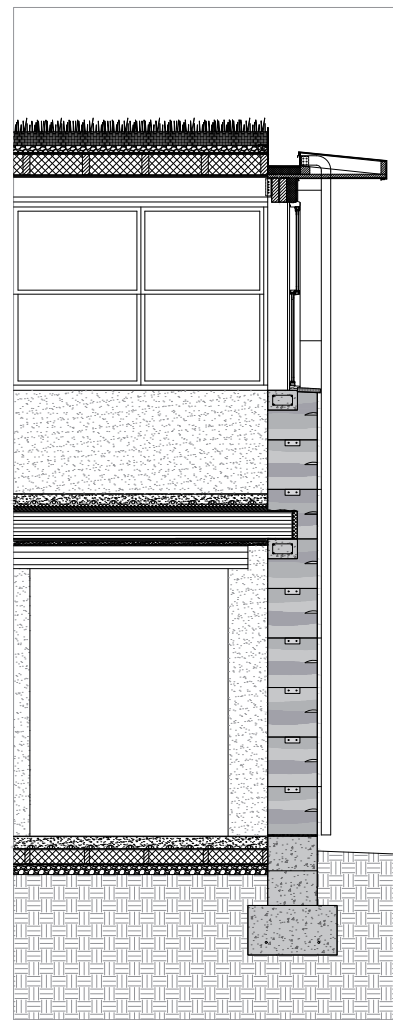
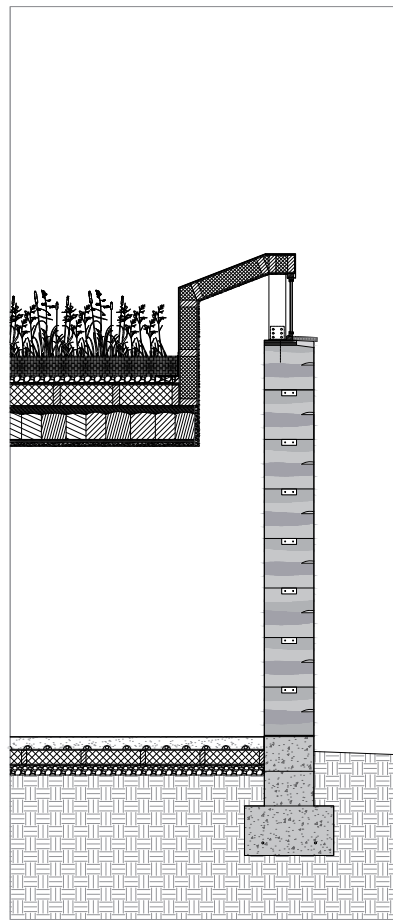
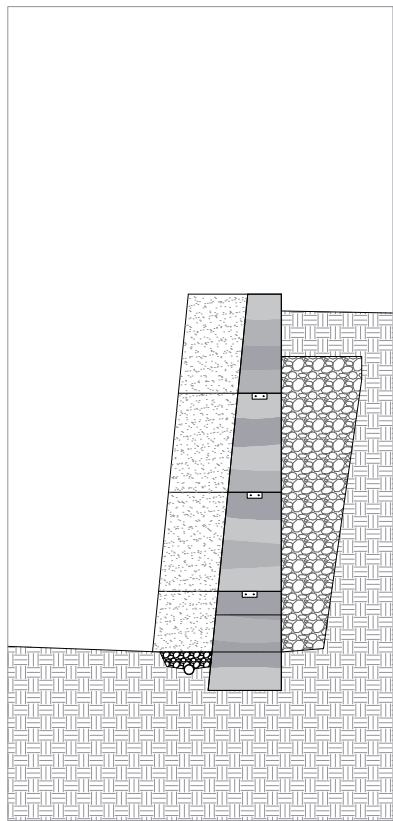






**And it's important, you see, that you honour  
the material you use.** Louis Kahn









**Climate zone 1**  
Hot greenhouse  
Germination chambers

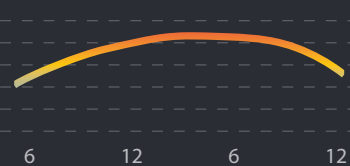


85-95%

● Natural light  
● Growth light

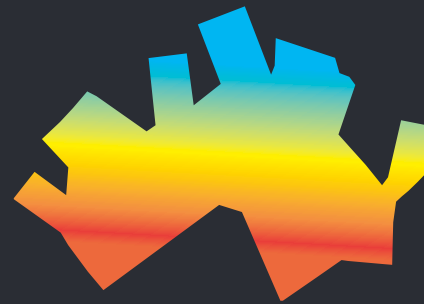


**Climate zone 2**  
Passive greenhouse

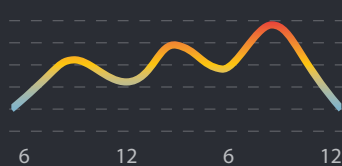


50-60%

● Natural light

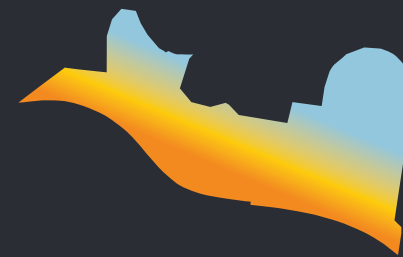


**Climate zone 3**  
Workshop

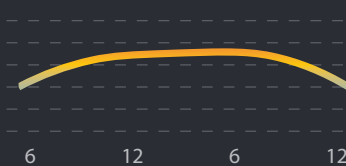


40-50%

● Natural light  
○ LED

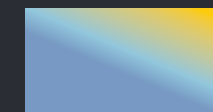


**Climate zone 4**  
Interiors

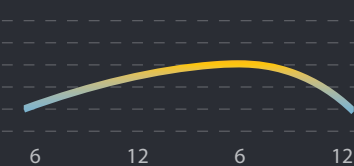


40-50%

● Natural light  
○ LED



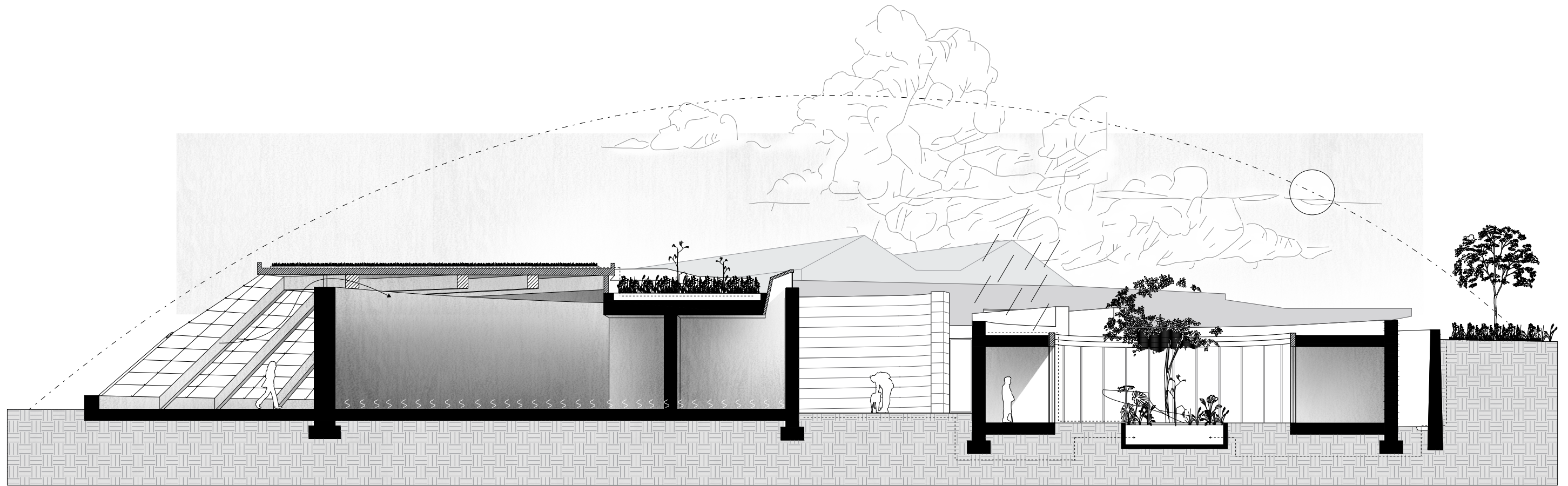
**Climate zone 5**  
Outside



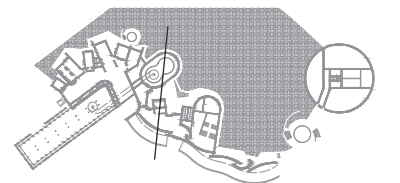
50-90%

● Natural light

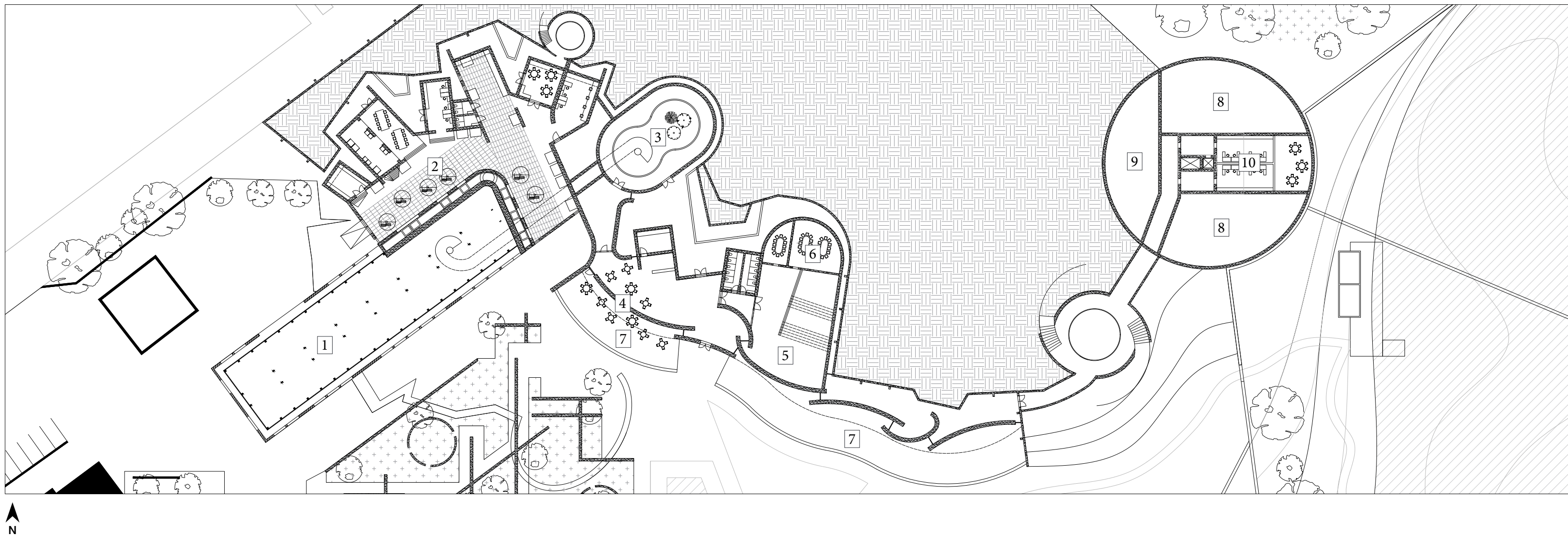




Section BB 1:200





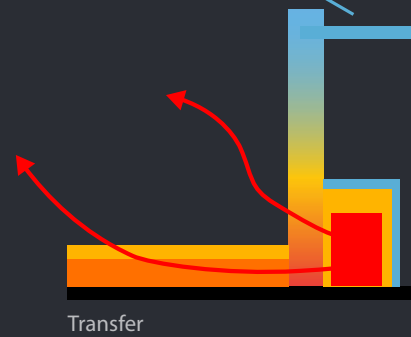
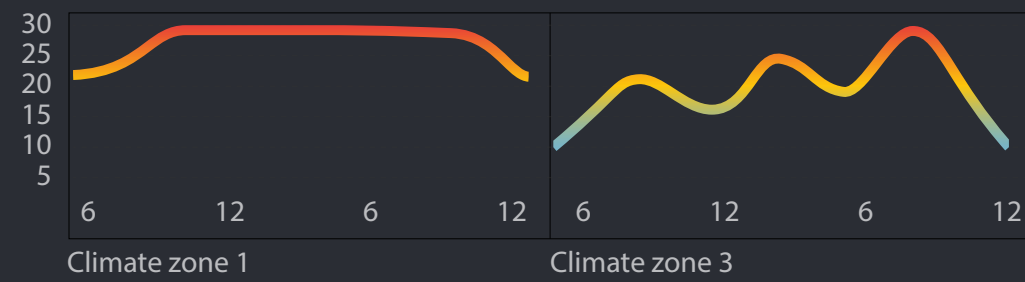
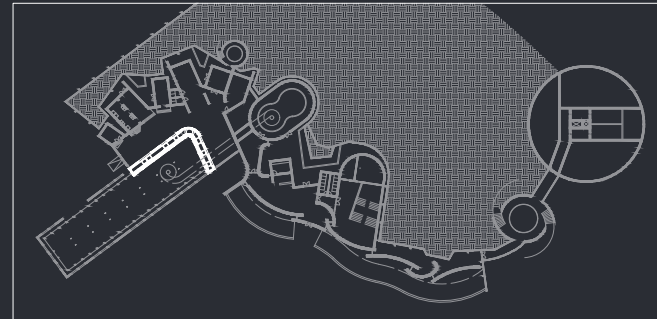


1. Hot greenhouse
2. Workshops
3. Expo
4. Restaurant
5. Auditorium
6. Conference rooms
7. Passive greenhouse
8. Plant factory
9. Germination chamber
10. Labs

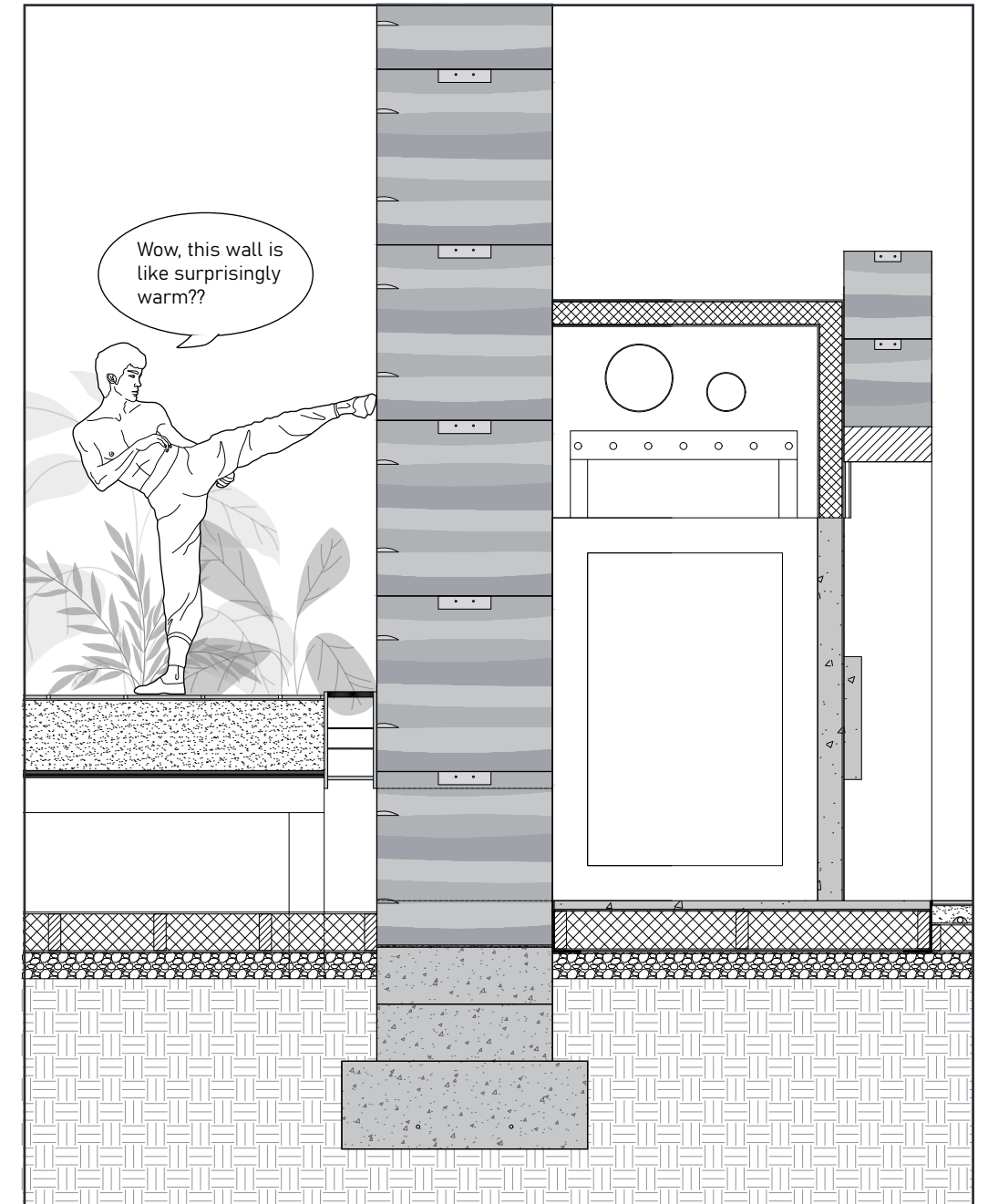
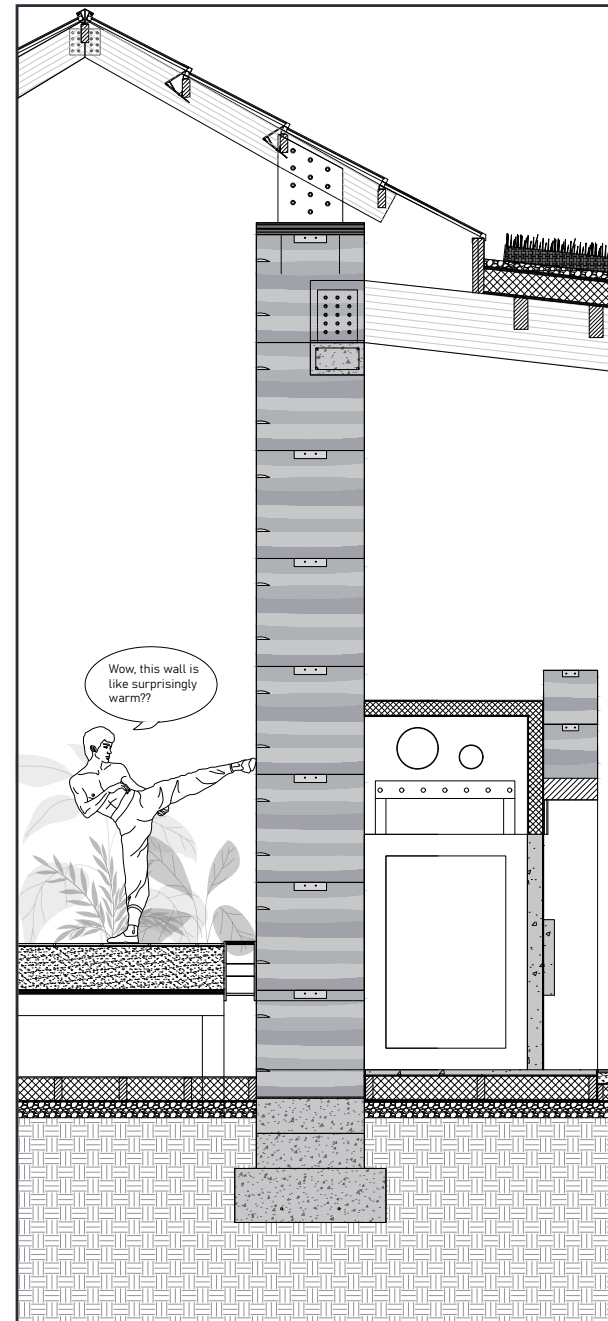




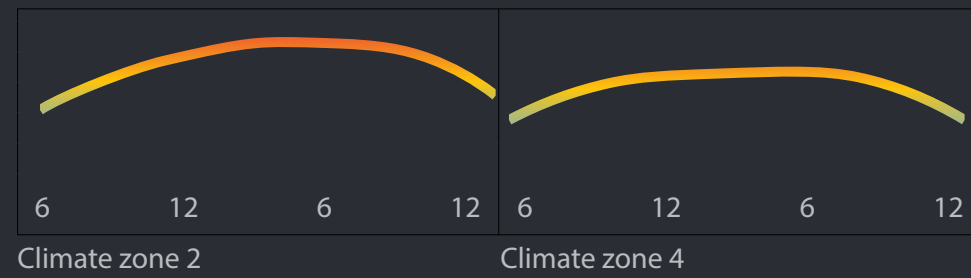
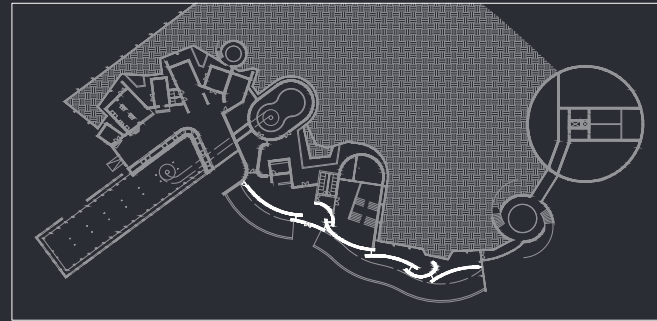




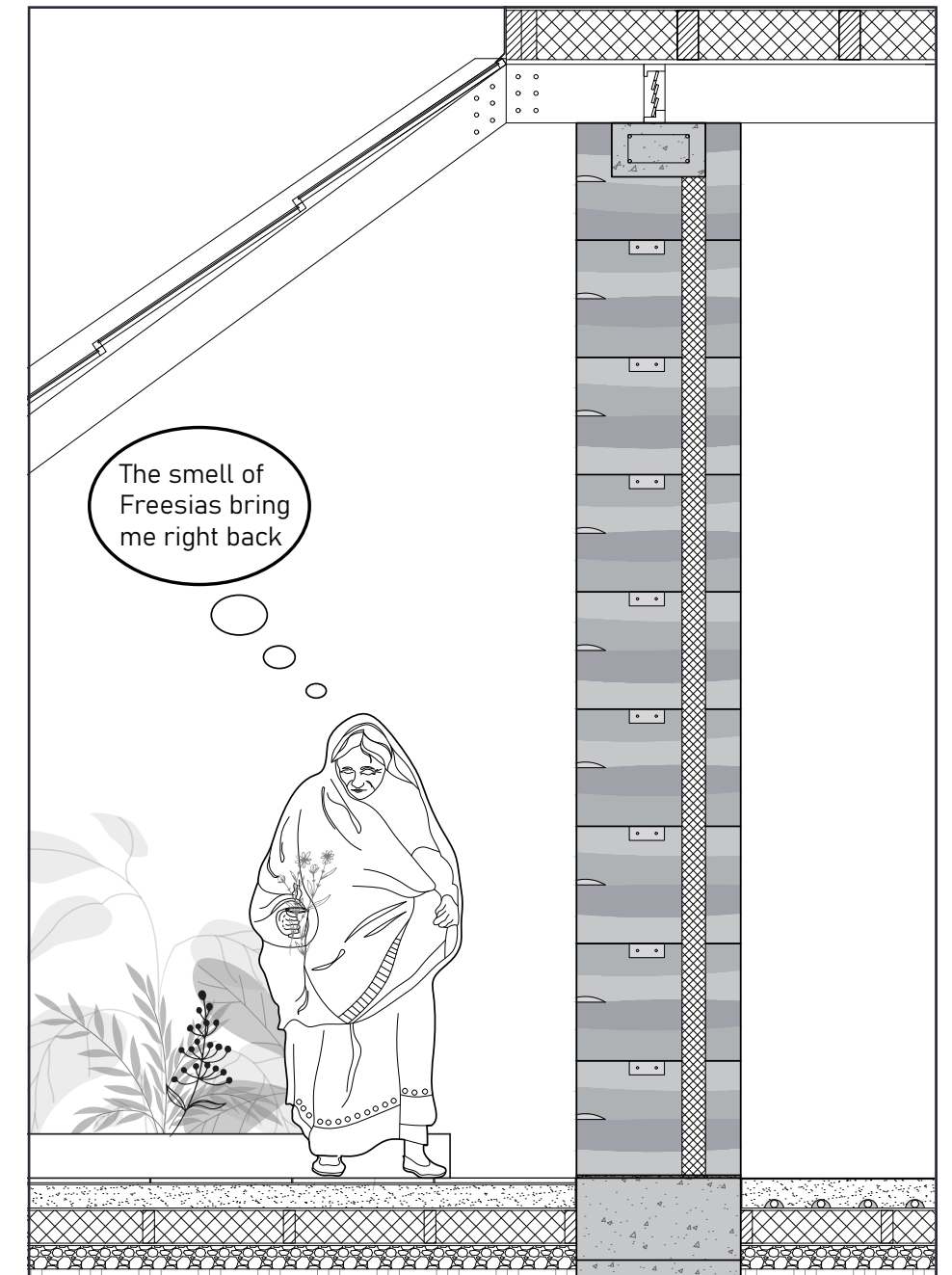
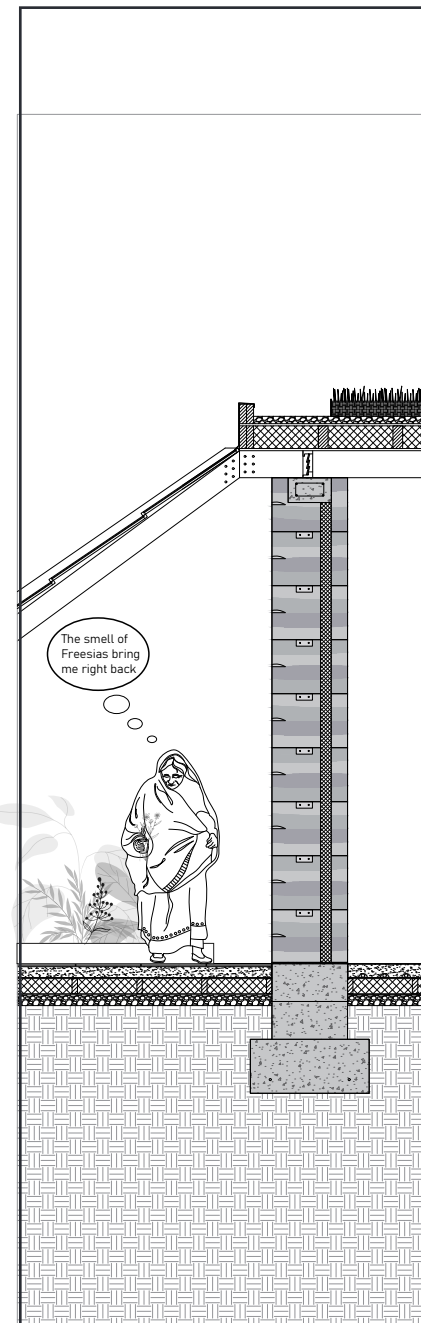
Wall 1: Heated wall



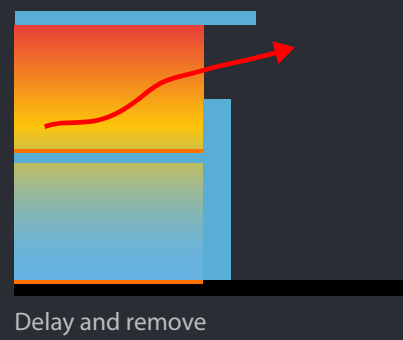
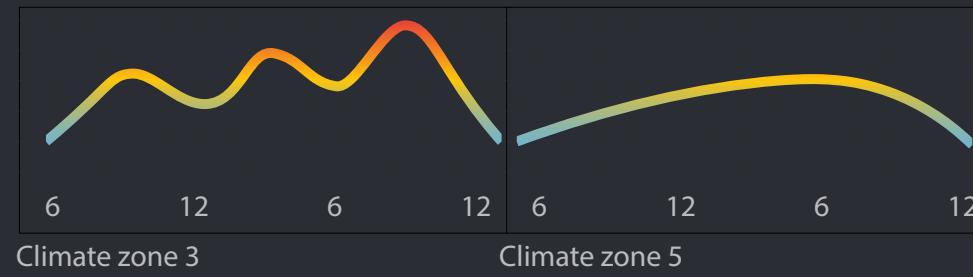
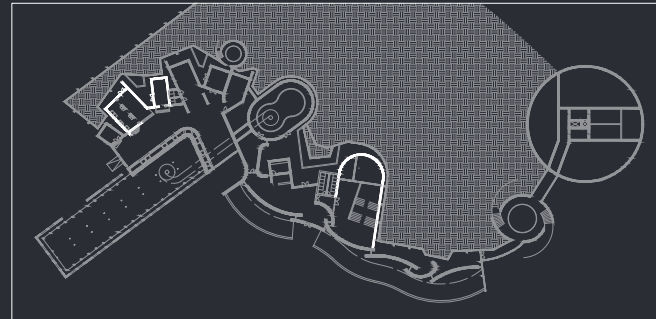




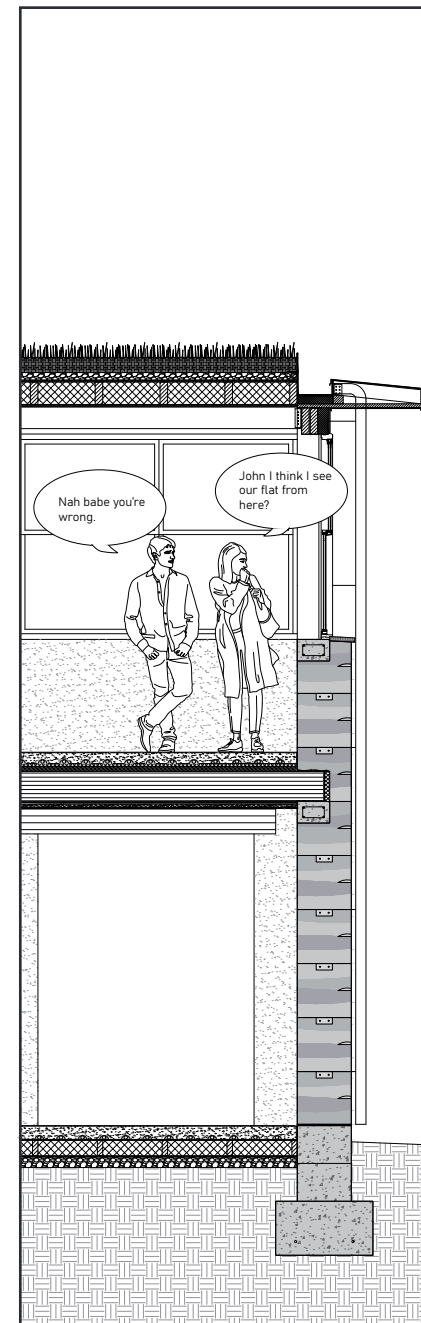
Wall 2: Dancing wall



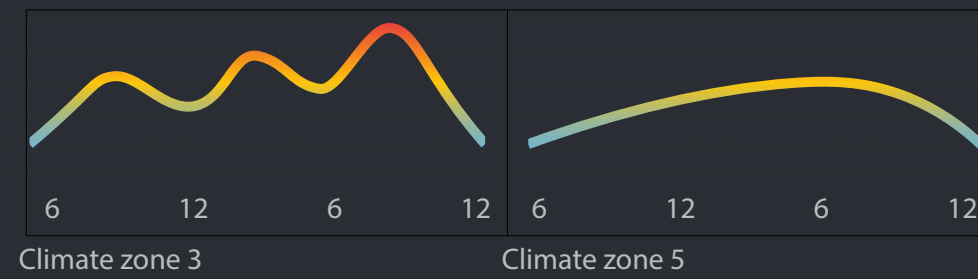
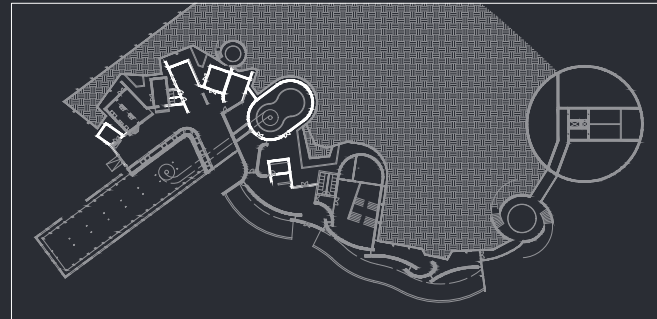




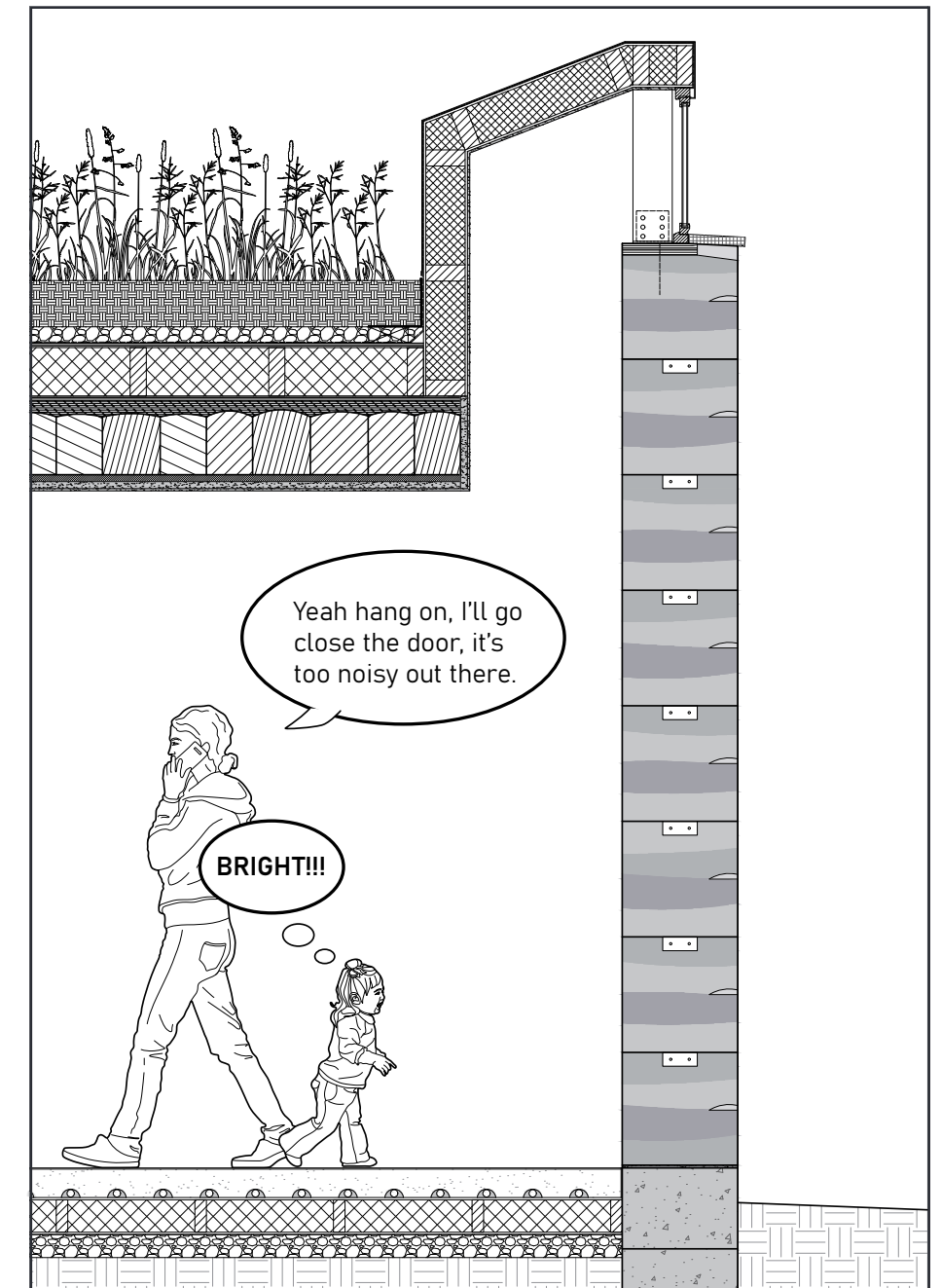
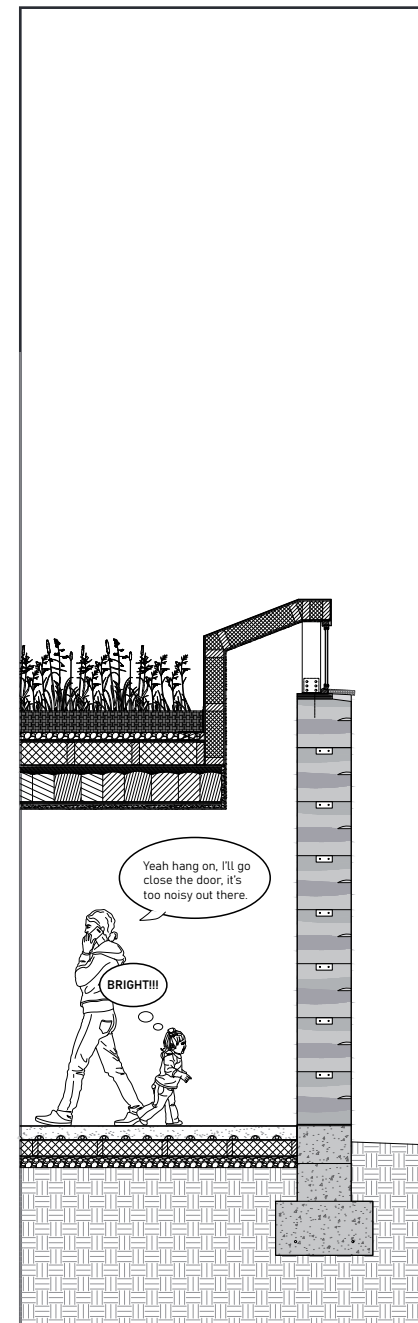
Wall 3: Composite wall



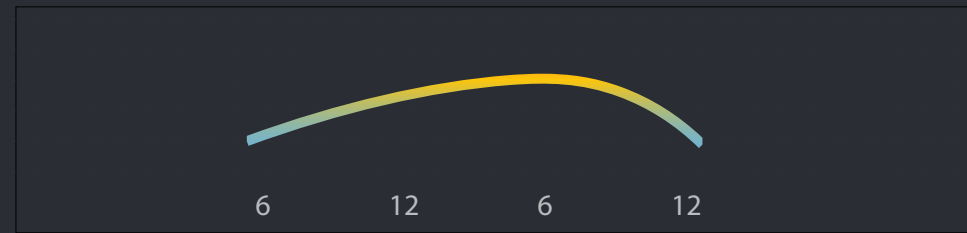
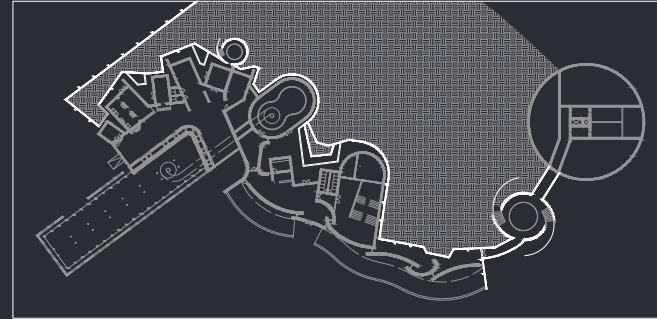




Wall 4: Cave wall





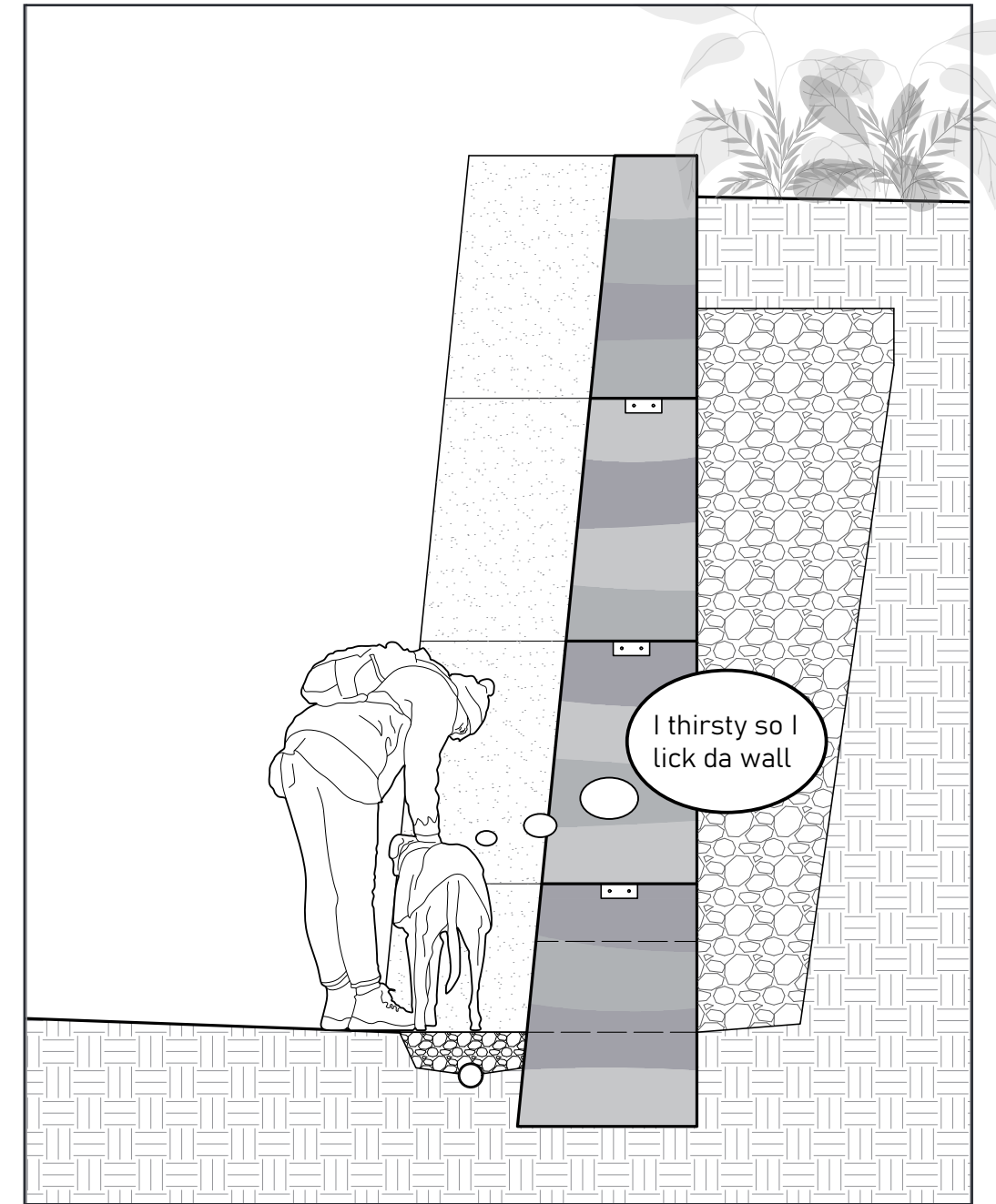
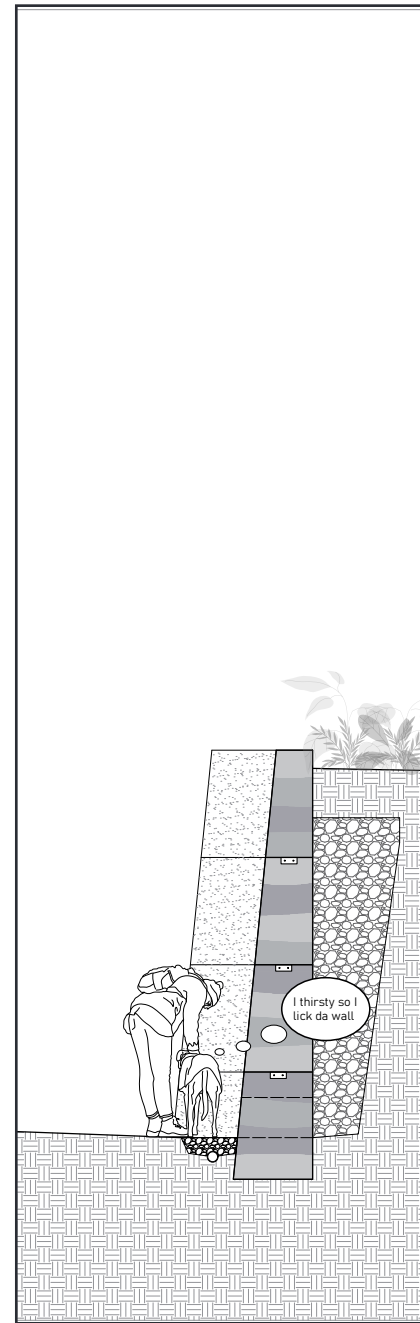


Climate zone 5

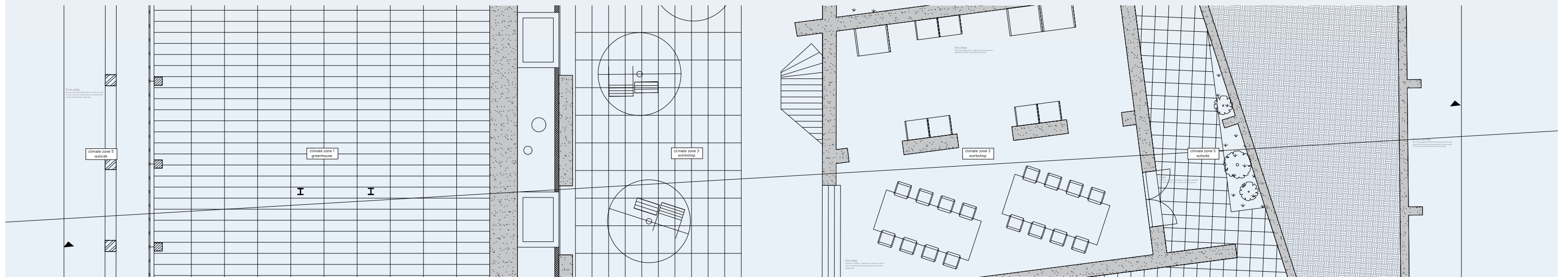


Store

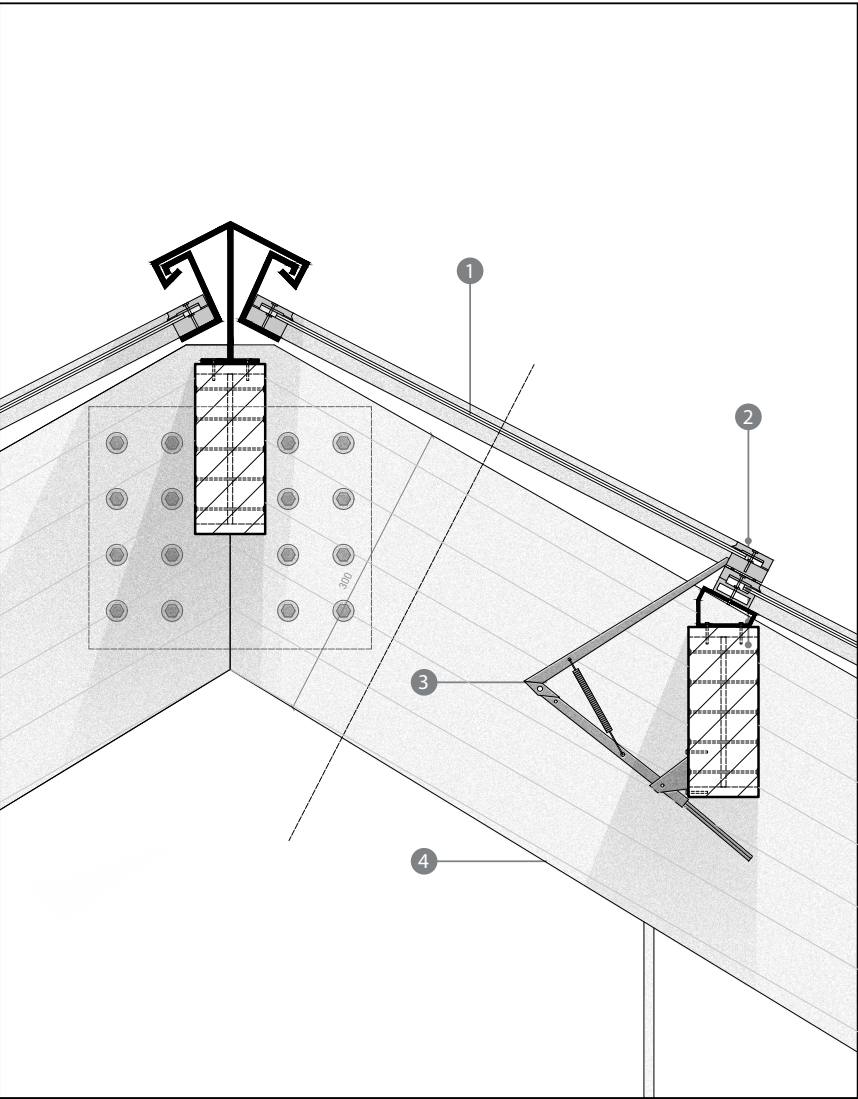
Wall 5: Retaining wall











D2 1:5 Greenhouse roof detail

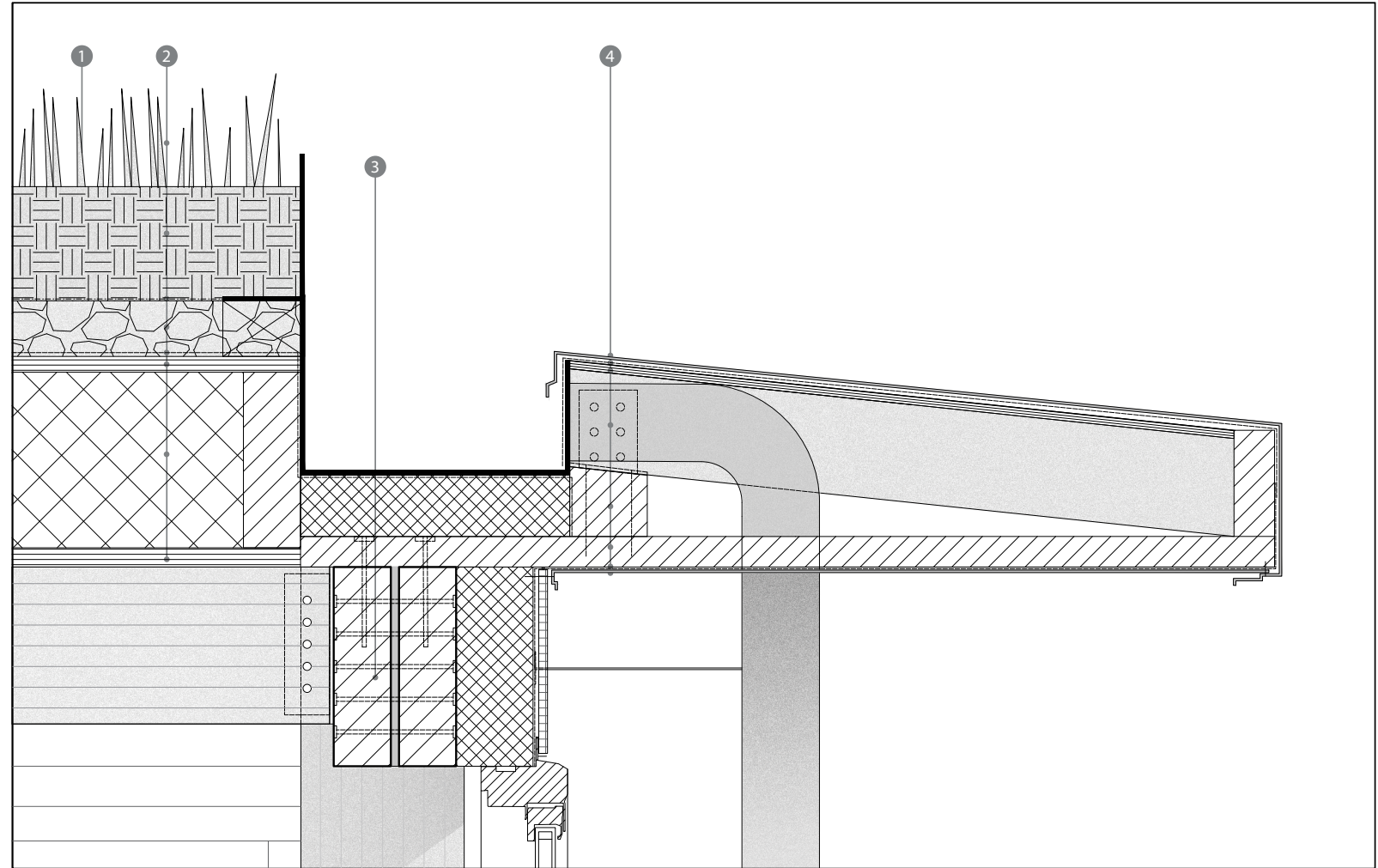
- 1 Artisan glass pane**  
Locally hand made glass panes created from sands gathered on site and around London. Glass can be recycled and remade on site enabling a circular material flow.
- 2 Glazing**  
Custom made modular aluminium frames  
1000x500mm Artisan glass  
Steel connection element  
170x70 wooden beam
- 3 Vent opener**  
Automatic vent opener with expanding wax which opens the window when temperature rises over 25 C
- 4 Main construction**  
Alternates between new glulam beams (300x120 mm) and reused steel truss collected from old shed on site







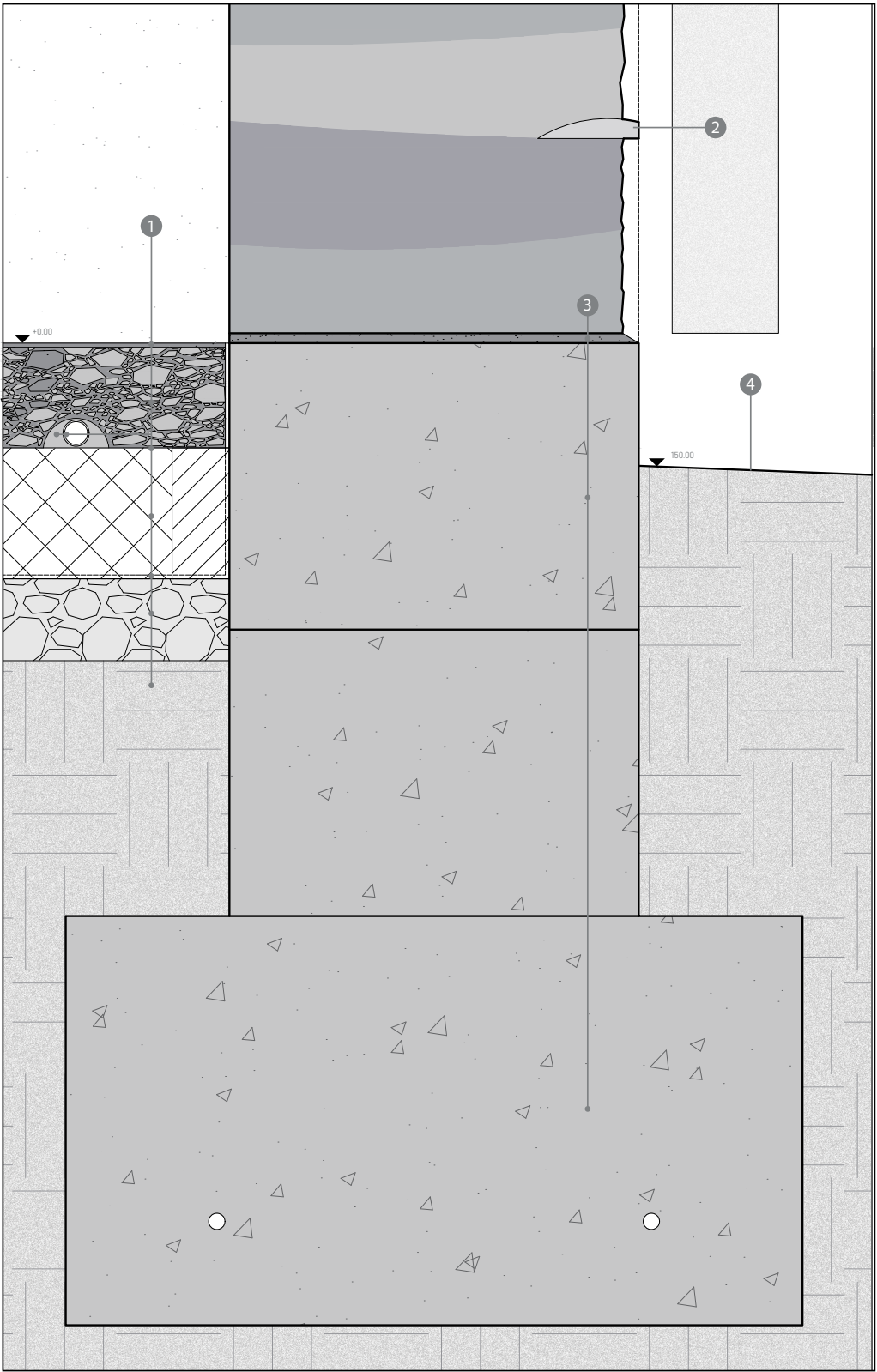




D3 1:5 Foundation detail

- 1 Green roof**  
Extensive green roof with sedum turf incorporating local native grasses and herbs.
- 2 Roof**  
140 mm Soil  
Root filter fabric  
70 mm Drainage layer  
  
Waterproof bitumen coating  
20 mm Plywood  
210 mm Insulation, framing: 210x70 mm h.o.h. 600 mm  
20 mm Plywood
- 3 Beam connection**  
300x300mm Main laminated column  
250x70 mm Main glulam beams  
Steel knife edge connection element  
  
200x70 mm Secondary wooden beams h.o.h. 500 mm  
Invisible steel beam hanger, screws finished with wooden inlay.
- 4 Overhang**  
3mm Aluminium cap  
Waterproof bitumen coating  
10mm plywood  
130x50mm wooden beam  
Connection block  
Gelclad eco-panel insulation material Rc 4.7  
50mm laminated wood  
Waterproof bitumen coating  
3mm Aluminium cap





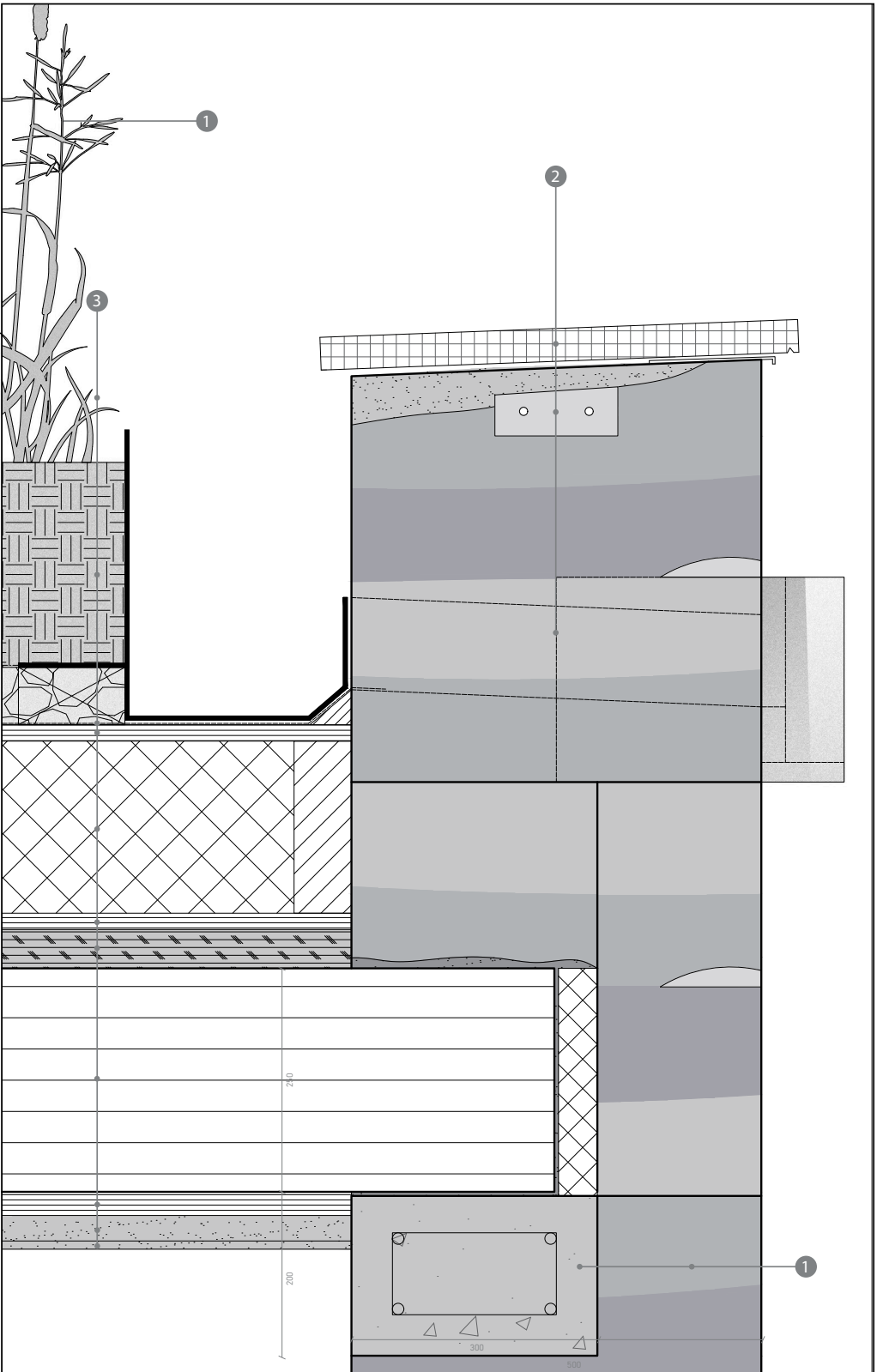
D3 1:5 Foundation detail

**1 Earthen floor**  
5 mm finish layer (earth polished with linseed oil)  
125 mm rammed earth  
Clay mortar covering radiant pipes  
160 radiant floor heating  
Foil  
160 mm insulation: Therma Cork Rc=4.5 Made from bark: negative carbon footprint  
Vapour barrier  
100 mm gravel  
(relatively) Undisturbed earth

**2 Erosion check**  
20 mm high trass-lime erosion check.  
  
On completion the wall is 500mm thick but as part of the wall erodes it will shrink until it stabilizes at 480mm thick, leaving the erosion checks protruding by 20 mm.

**3 Foundation**  
12 mm clay mortar  
2x 350x500 mm concrete foundation blocks  
1x 500x900 concrete foundation block  
rebar  
  
Concrete is made using recycled cement mined on site to reduce carbon footprint.

**4 Ground**  
Ground slopes away from the wall and there is a 150 mm splash zone to protect rammed concrete wall.



D4 1:5 Roof detail 1

**1 Roof edge**  
40 mm Fired clay tile  
metal sheet  
Waterproof foil  
Lime-trass reinforcement  
  
60x150 mm trass lime mortar with rebar  
  
Emergency overflow, outside in tinted stainless steel

**2 Green roof**  
Intensive green roof with wildflower turf incorporating local native grasses. (Ex. Crested dogs-tail, yorkshire fog)

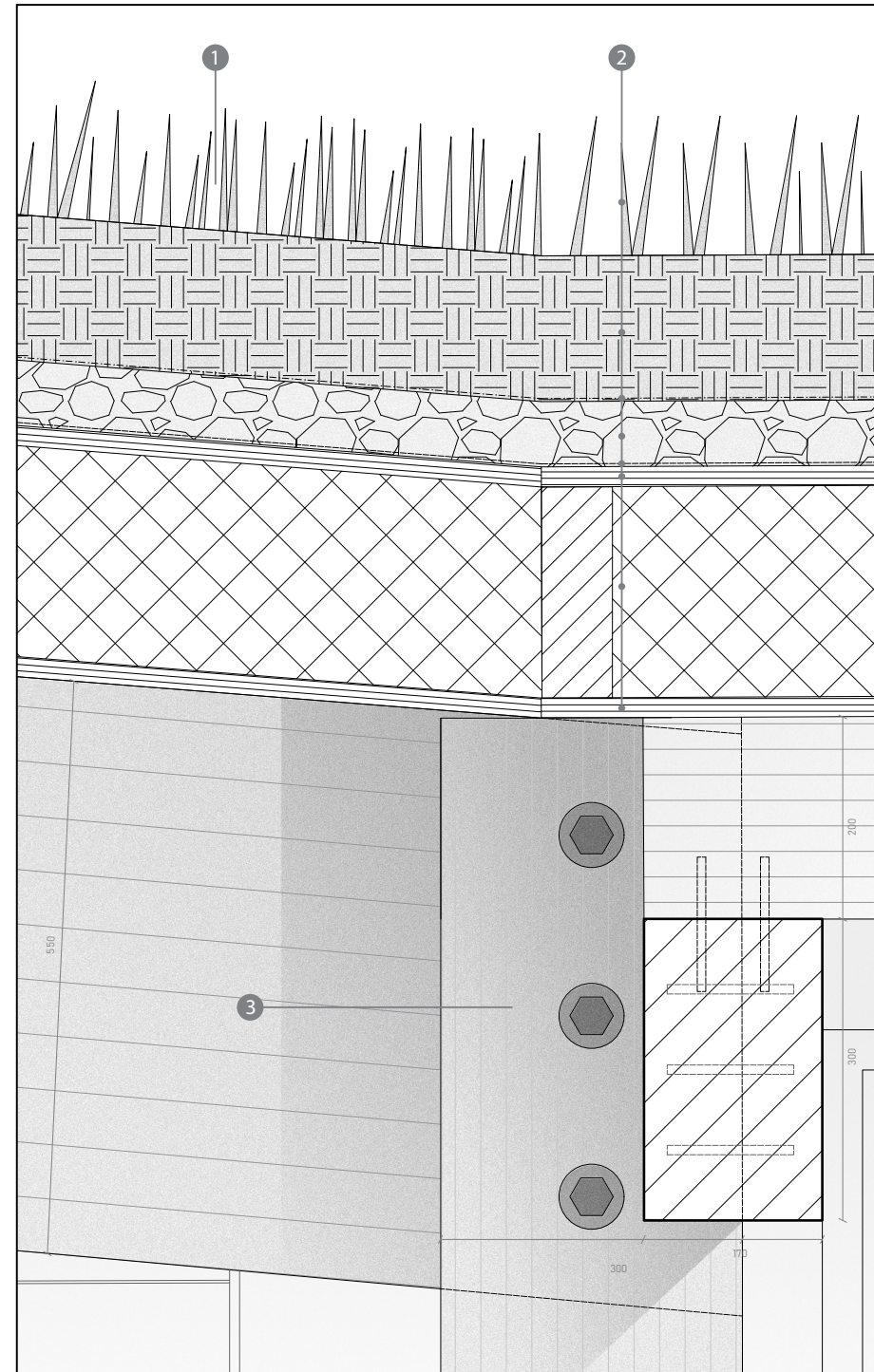
**3 Roof**  
Intensive flora  
250 mm Soil  
Filter fabric  
70 mm Drainage layer  
  
Waterproof bitumen layer  
20 mm Plywood  
210 mm Insulation Therma Cork Rc=6 Made from bark: negative carbon footprint  
  
20 mm Plywood  
  
0-100 mm Granulated cork-loam-trass-lime slope  
250 mm Solid wood slab (Dippelbaum)  
30 mm Wooden frame  
30 mm Clay board  
10 mm Clay plaster

**4 Wall**  
200x300 mm concrete bond beam with rebar  
  
480-500mm thick wall made of RRCA blocks (rammed recycled concrete aggregate)



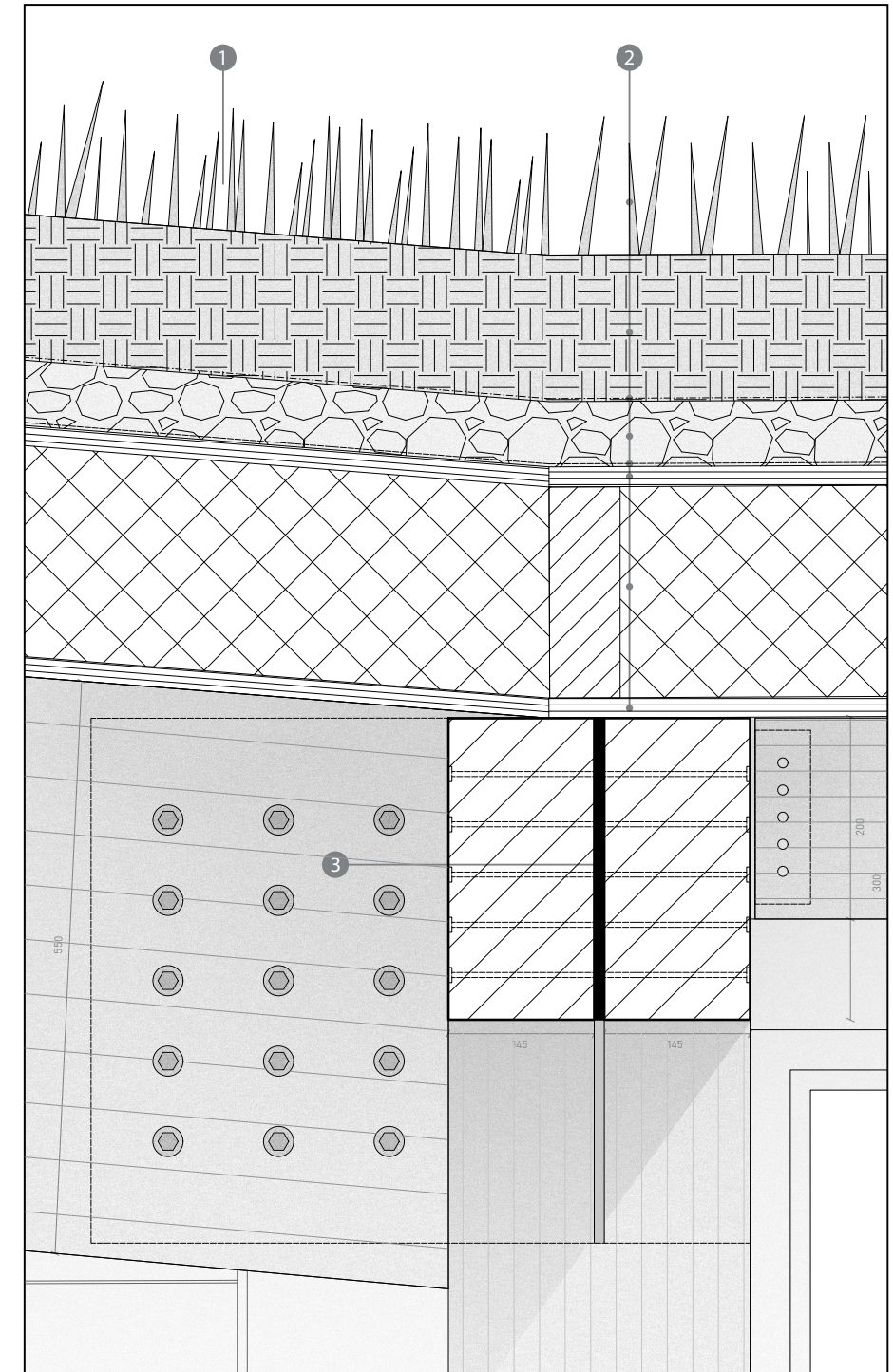






D1 1:5 Transition detail

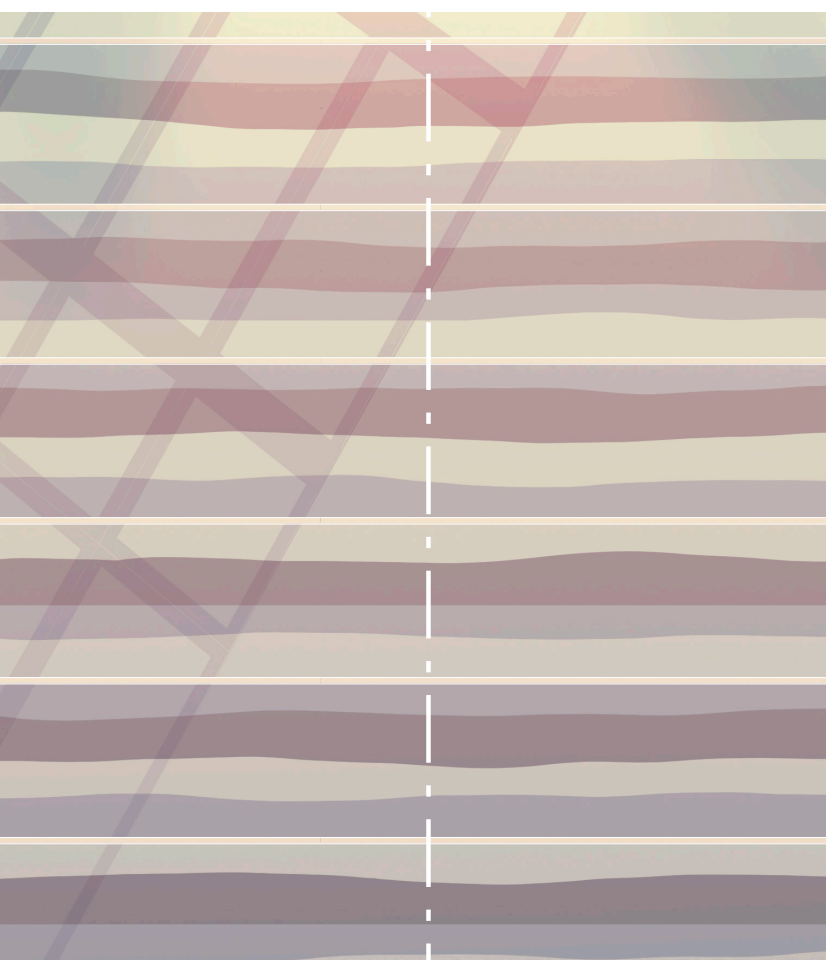
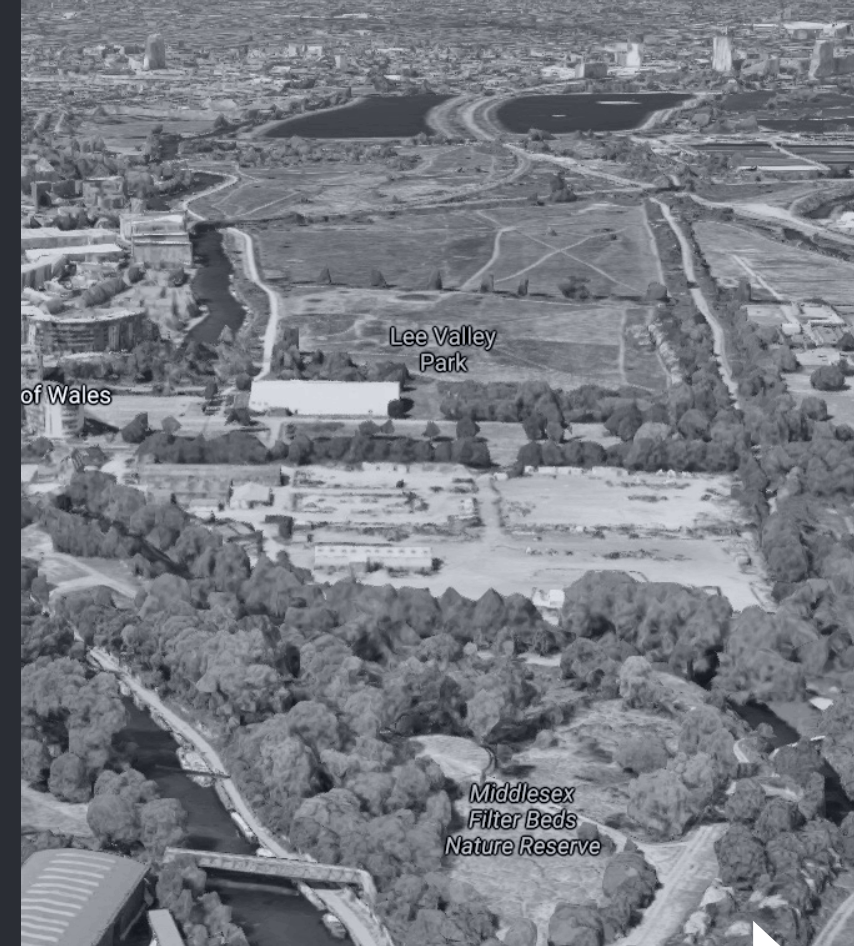
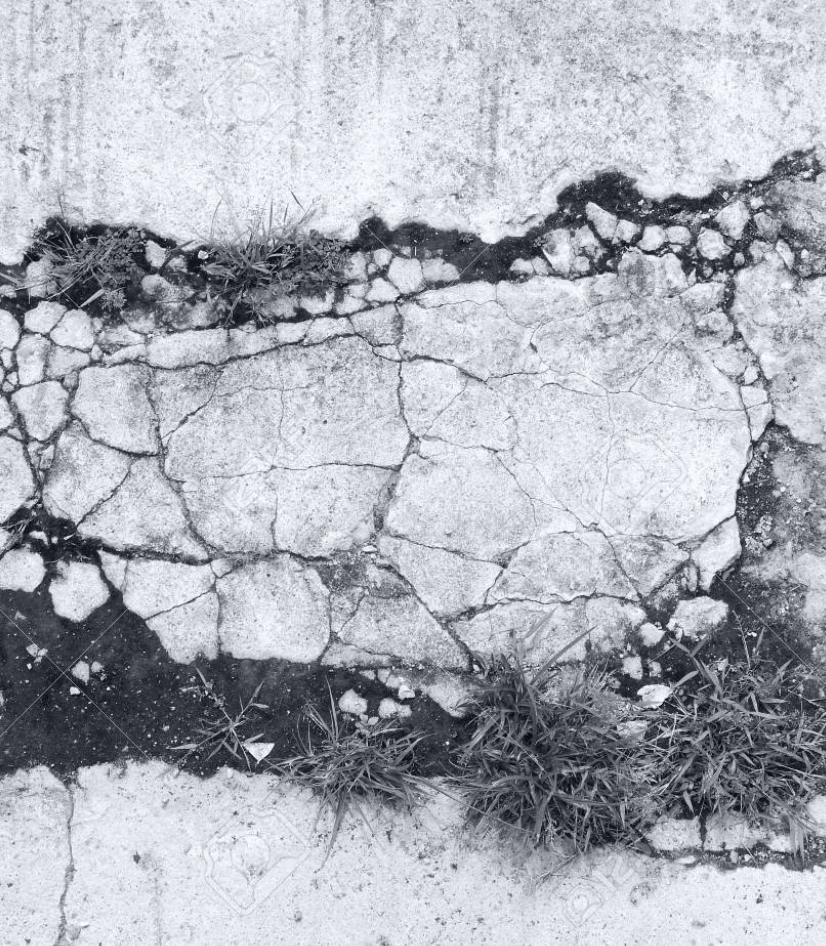
- 1 Flora**  
Extensive green roof with sedum turf incorporating local native grasses and herbs.
- 2 Roof**  
Extensive flora  
140 mm Soil  
Root filter fabric  
70 mm Drainage layer: gravel mix  
  
Waterproof bitumen coating  
20 mm Plywood  
210 mm Insulation Therma Cork Rc=6  
Made from bark: negative carbon footprint  
20 mm Plywood
- 3 Beam connection**  
300x300mm Main laminated column  
550x100 mm Main glulam beam  
300x170 mm secondary glulam beam  
Bolts and wooden dowels, traditional joinery techniques  
  
200x70 mm tertiary beam  
Wooden dowels



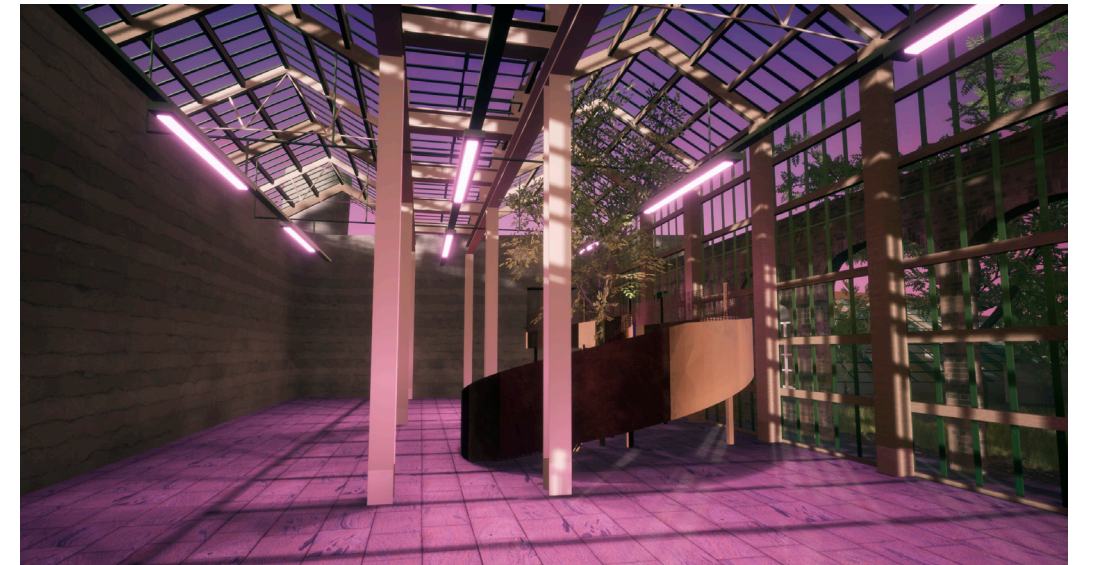
D1 1:5 Transition detail

- 1 Flora**  
Extensive green roof with sedum turf incorporating local native grasses and herbs.
- 2 Roof**  
Extensive flora  
140 mm Soil  
Root filter fabric  
70 mm Drainage layer: gravel mix  
  
Waterproof bitumen coating  
20 mm Plywood  
210 mm Insulation Therma Cork Rc=6  
Made from bark: negative carbon footprint  
20 mm Plywood
- 3 Beam connection**  
300x300mm Main laminated column  
550x100 mm Main glulam beam  
300x145 mm secondary glulam beam  
Steel knife edge connection element  
  
200x70 mm tertiary beam  
Invisible steel beam hanger, screws finished with wooden inlay.



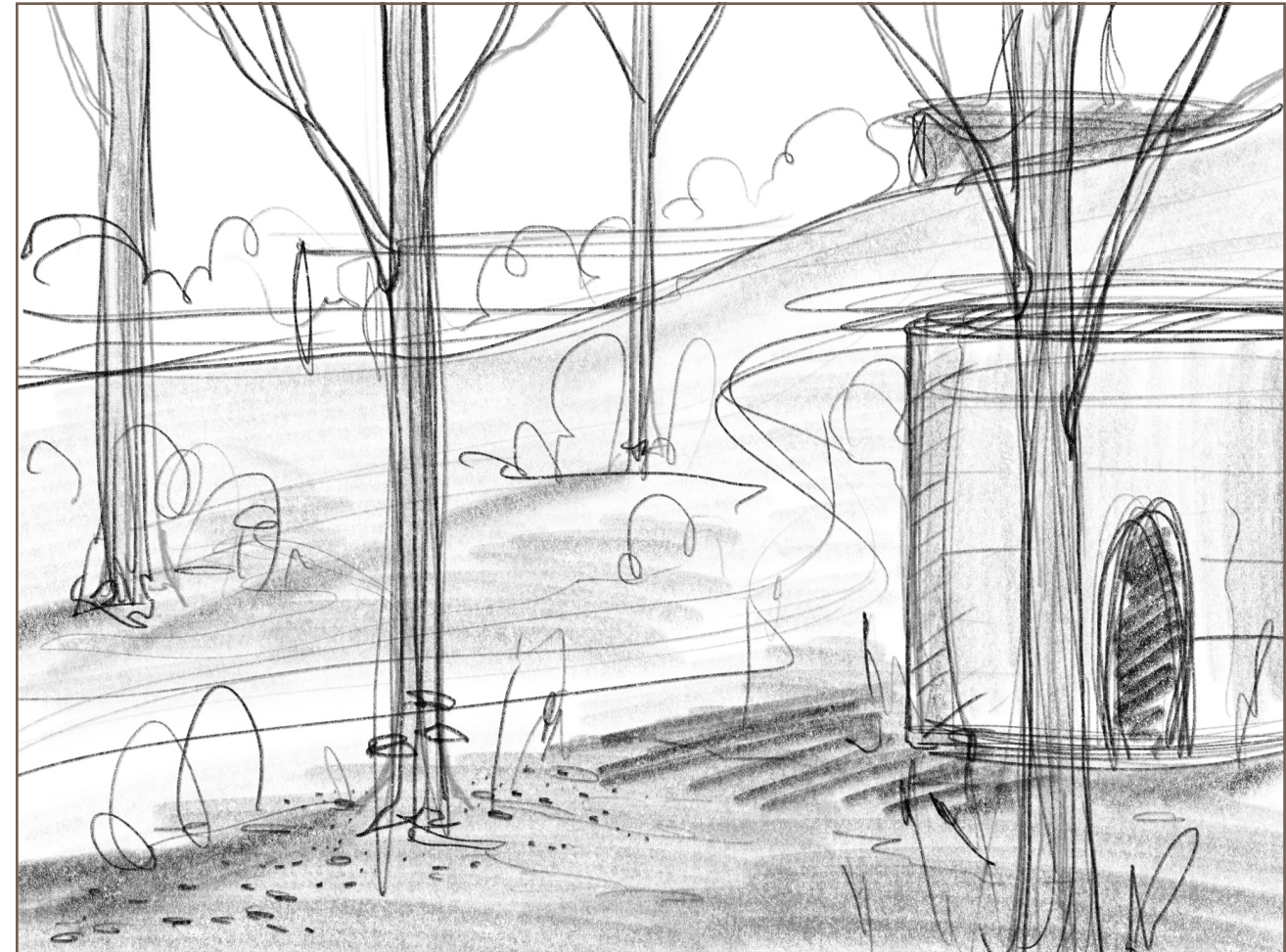






**VR TOUR IN PROGRESS :)**





**Thank you.**