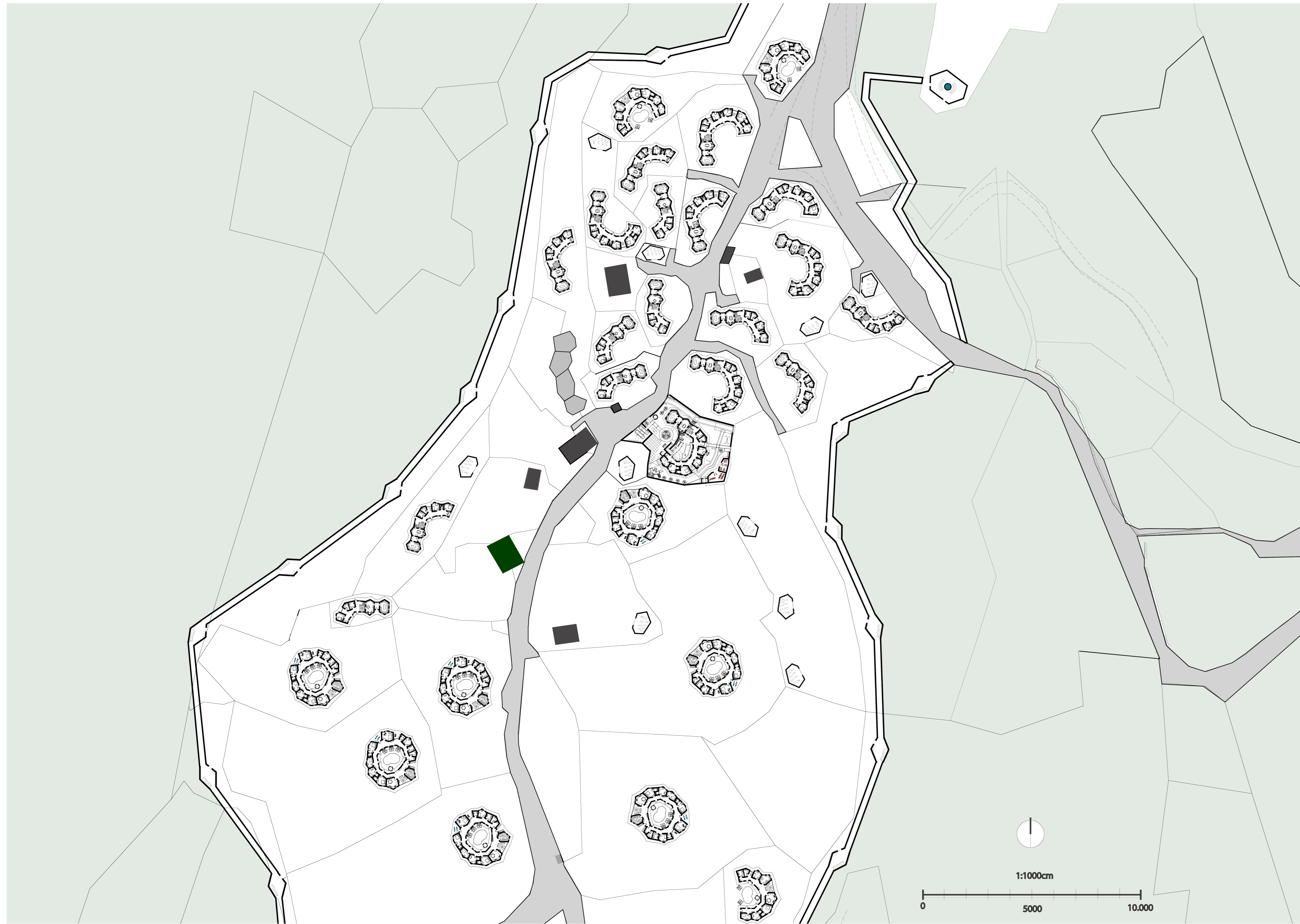


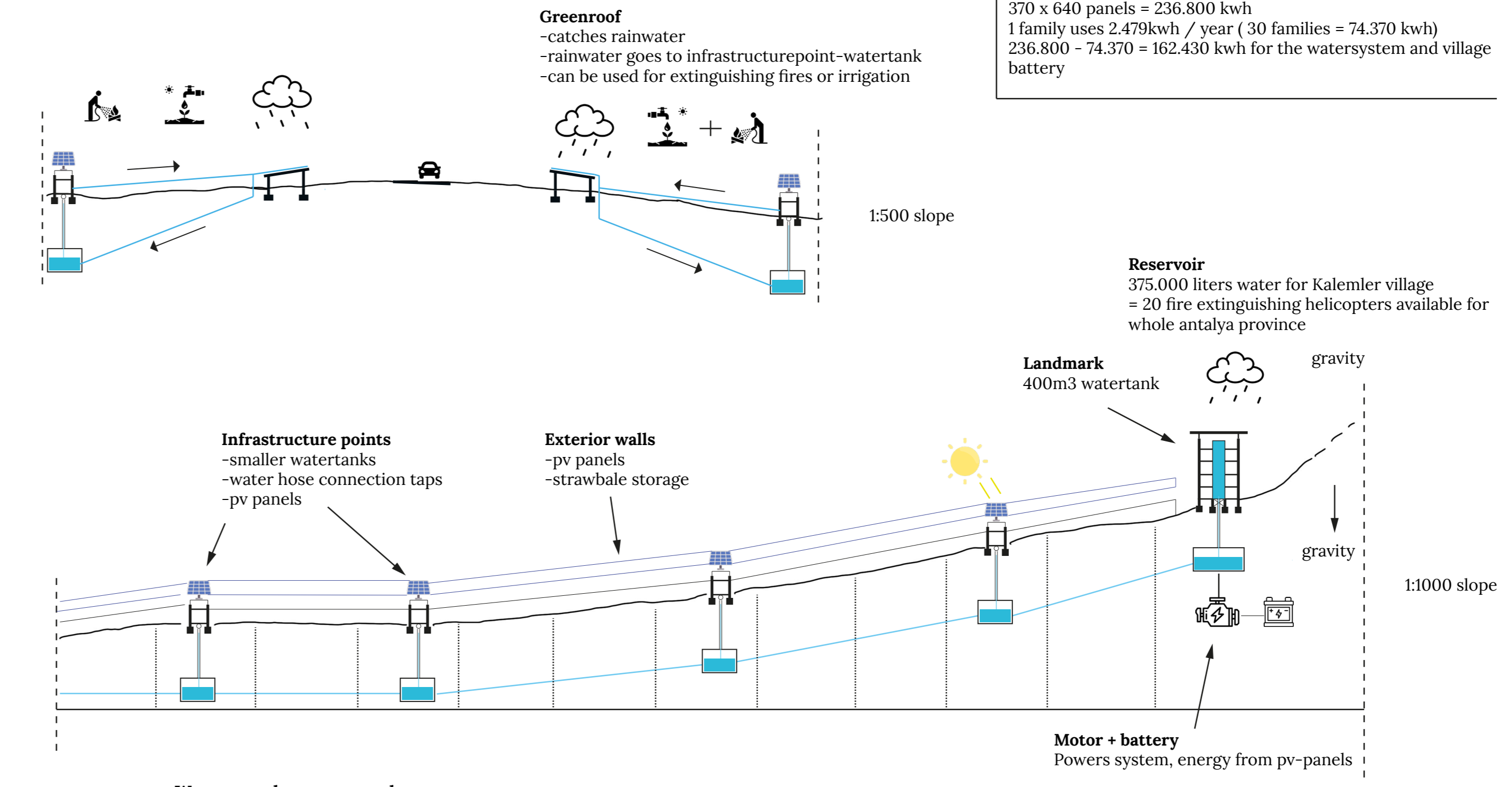
Wildfire resilient village of the future



Masterplan, situational drawing 1:1000

Water distribution & collection system

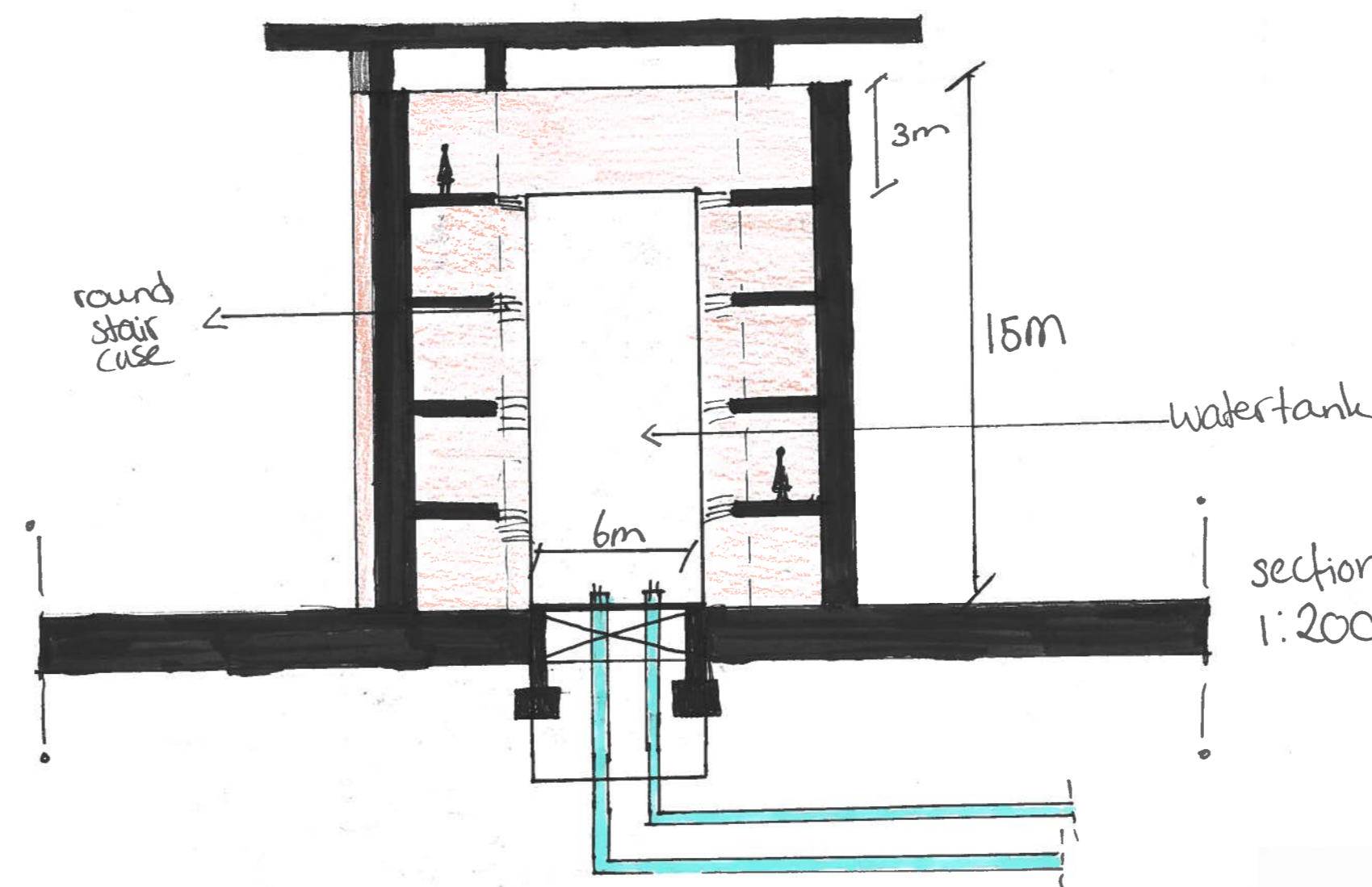
-distribution: underground water pipes (use of gravity downwards hill)
-collection: watertower roof & extra collection points in mountains



Water collection = 12.480.000 L / year
1 roof = +/- 400 m²
400 x 30 (houses and community centre) = 12.000m² roof surface
1.040 l/m² rain/year in Antalya
12.000m² x 1.040l = 12.480.000L water to catch & safe in tanks

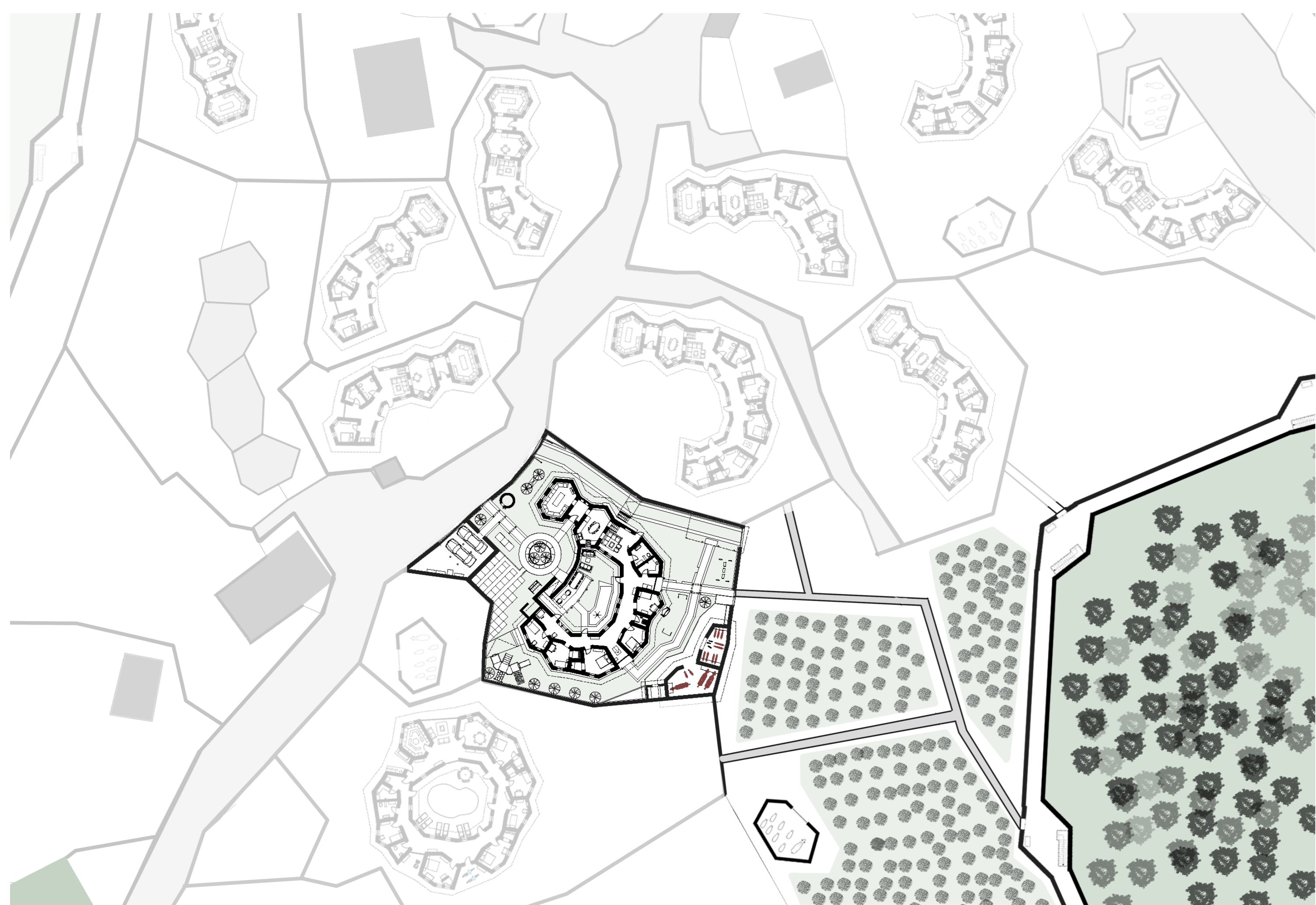
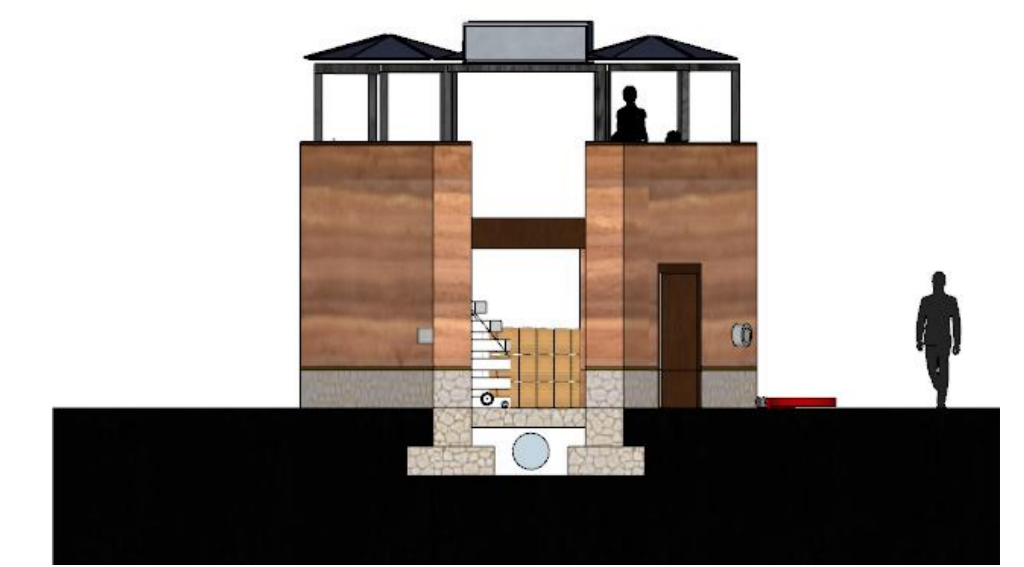
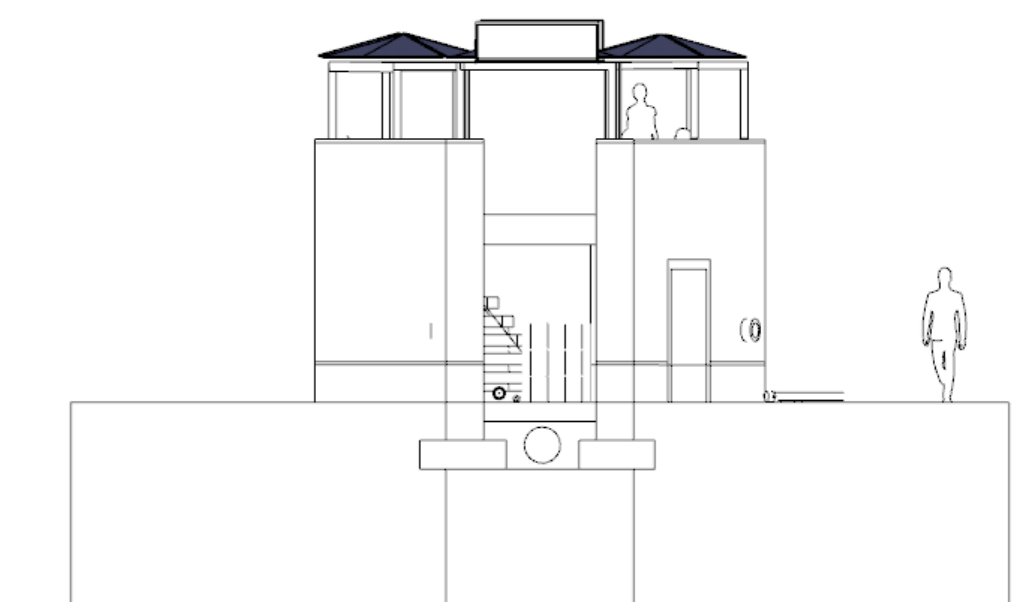
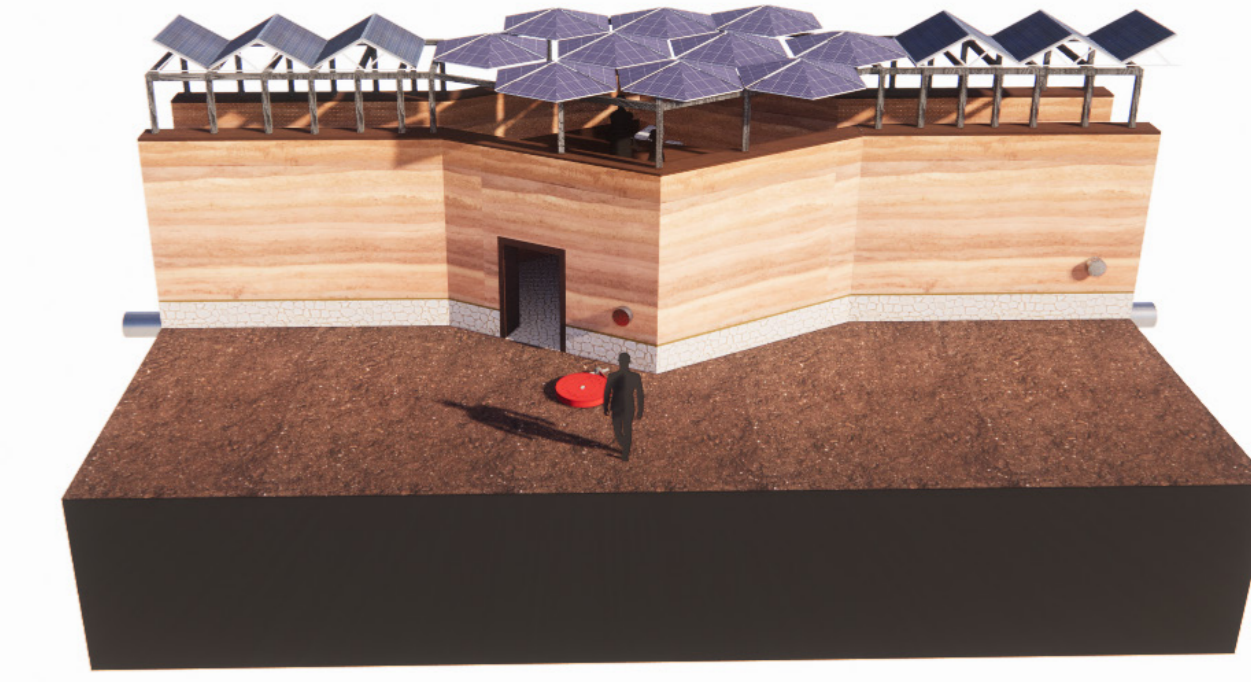
Solar energy collection = 236.800kwh / year
1 panel = 370kwh (maximum sun hours in Antalya, also winter)
370 x 640 panels = 236.800 kwh
1 family uses 2.479kwh / year (30 families = 74.370 kwh)
236.800 - 74.370 = 162.430 kwh for the watersystem and village battery

Watertower large watertank:
-always full, only use for wildfire scenario
-when full, excess to smaller watertanks
Infrastructure point, small watertank:
-can be used for irrigation / flushing toilets / water for animals



Landmark

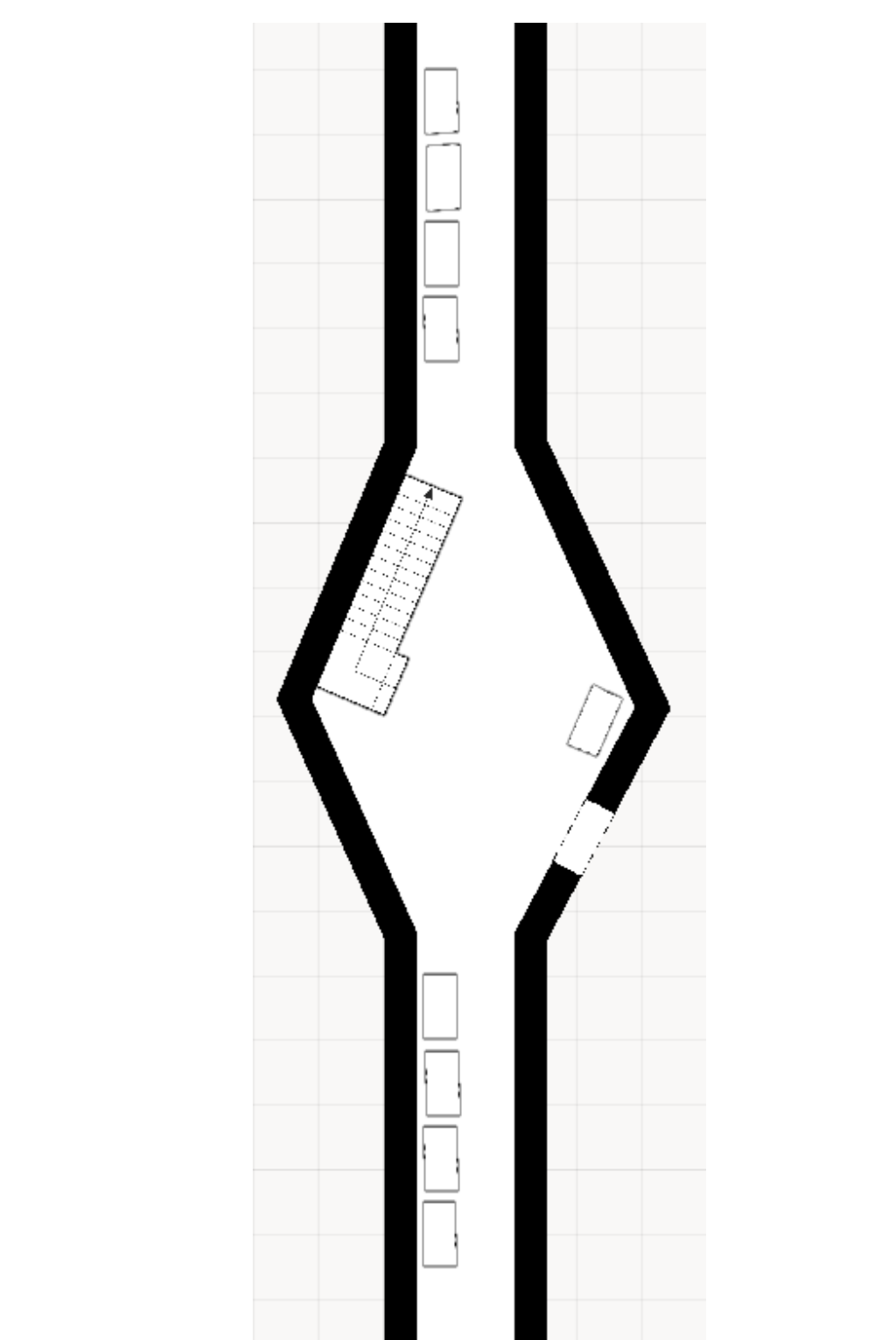
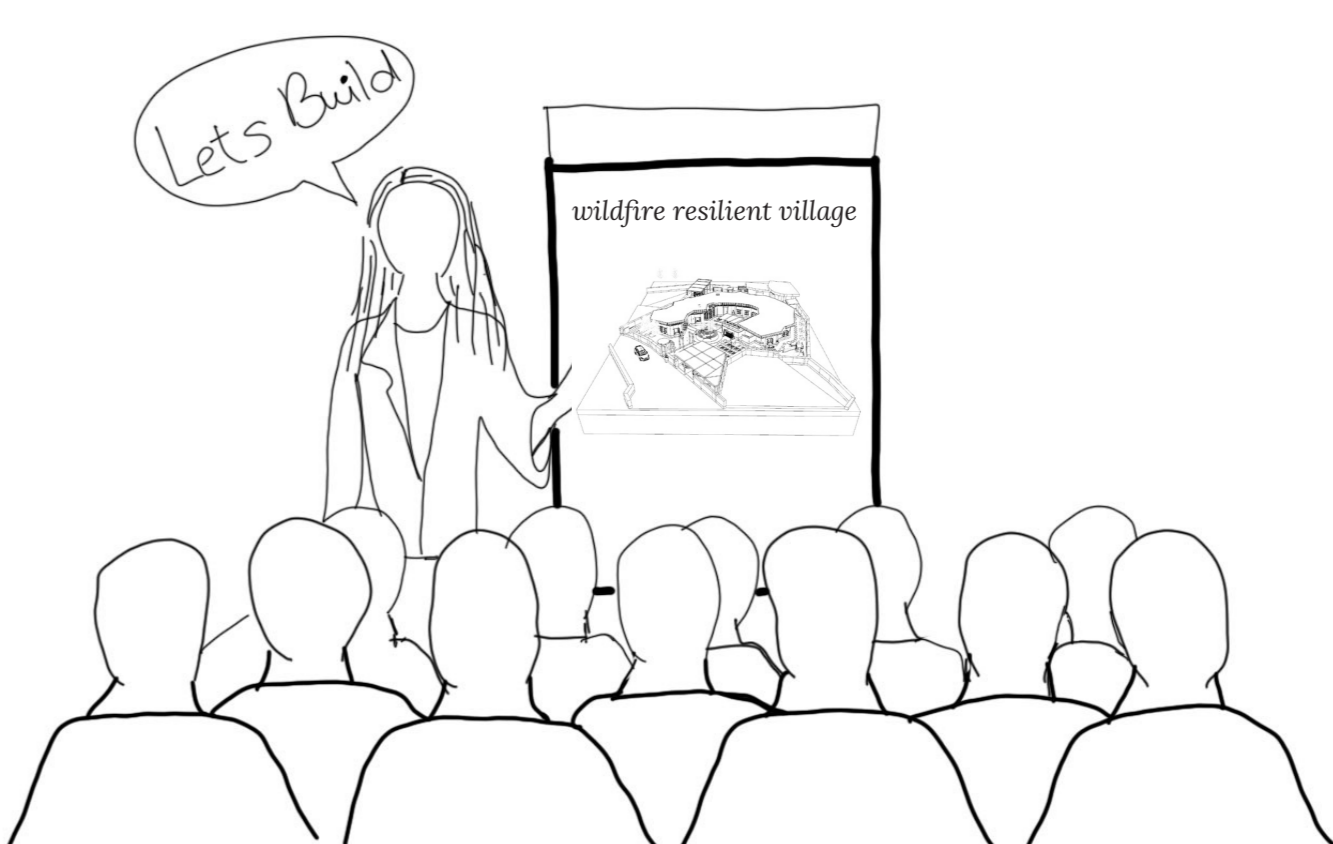
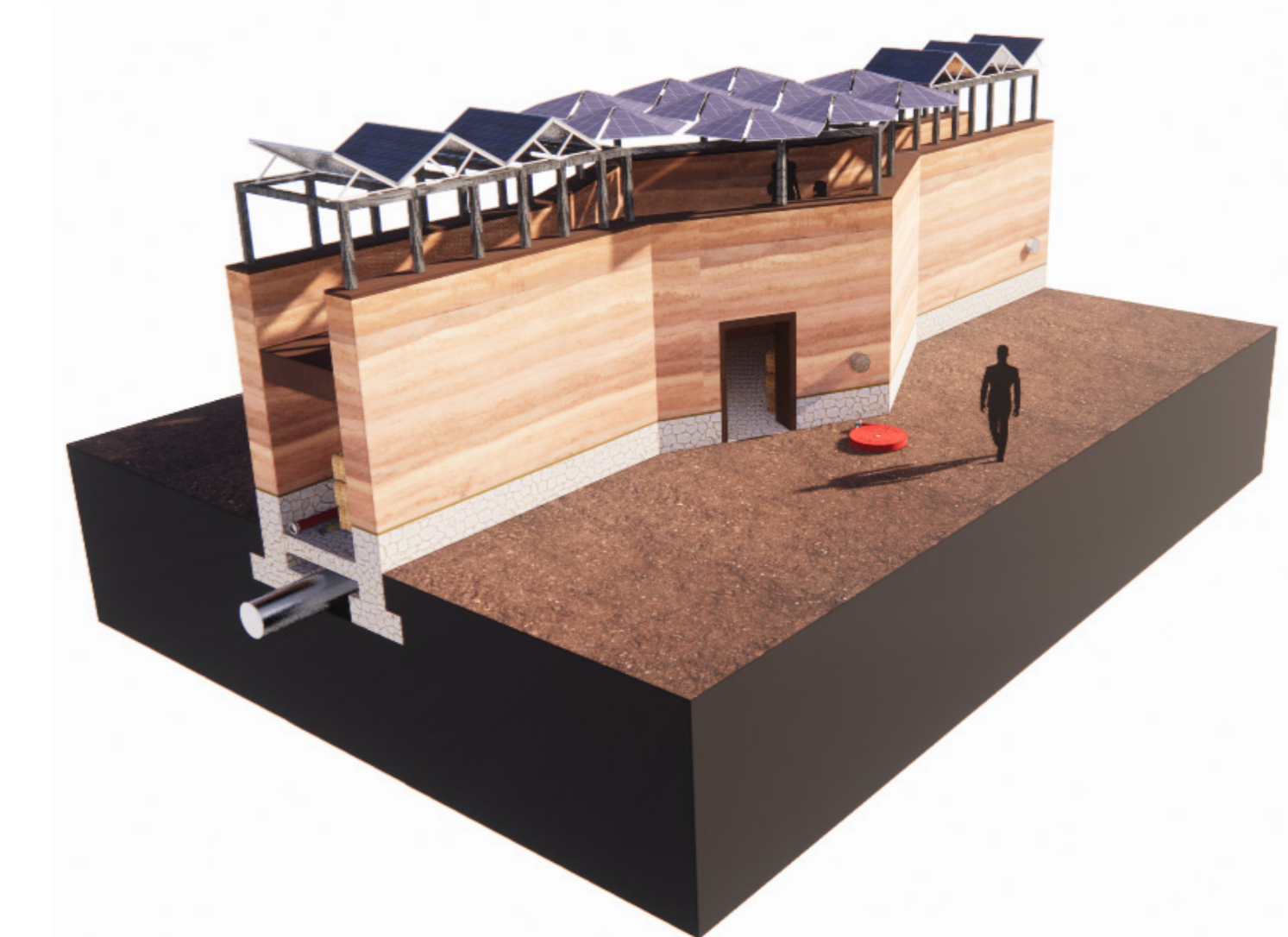
Infrastructure points



Plan ground level in situation 1:500



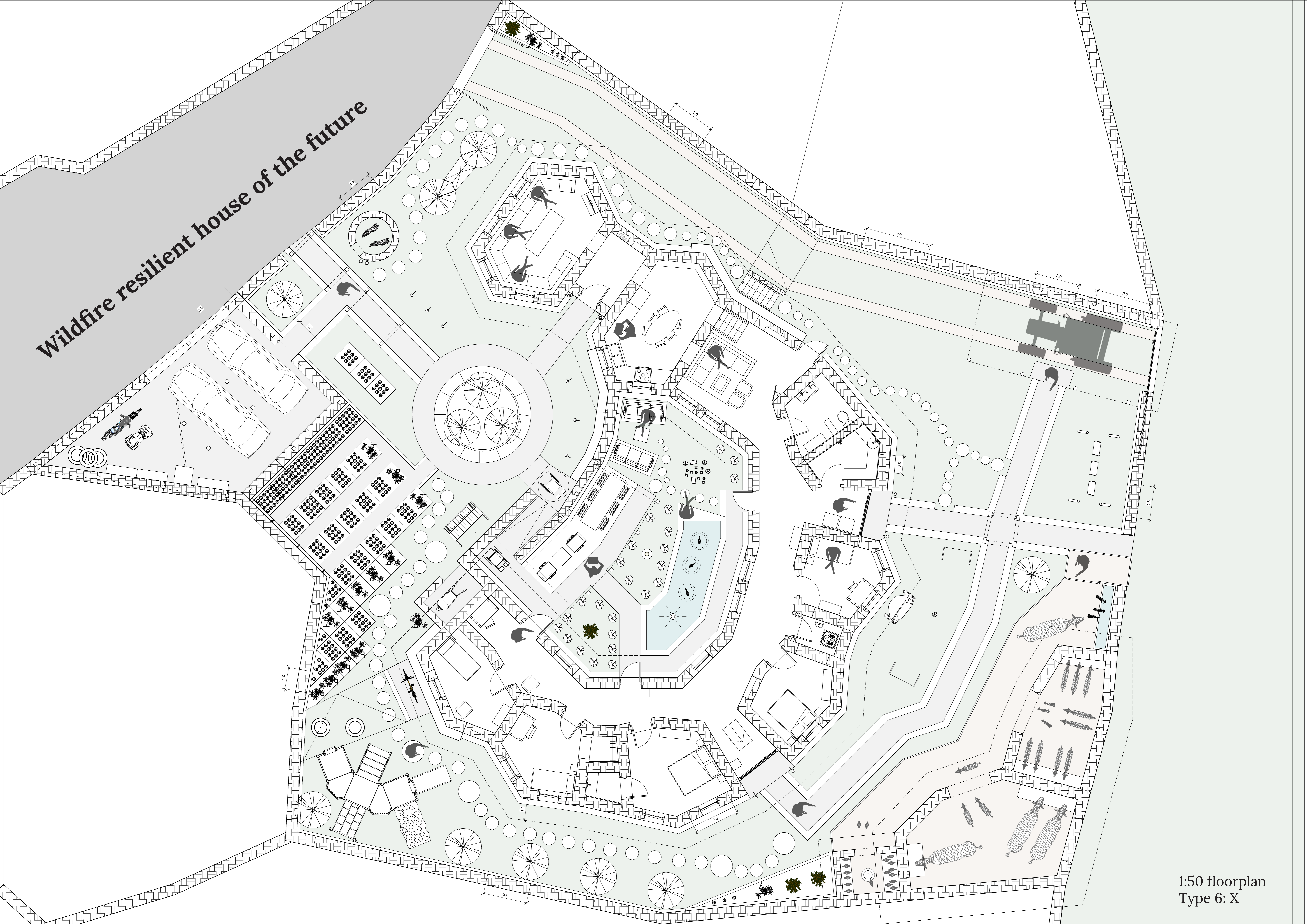
Floor plan, façades and section 1:200

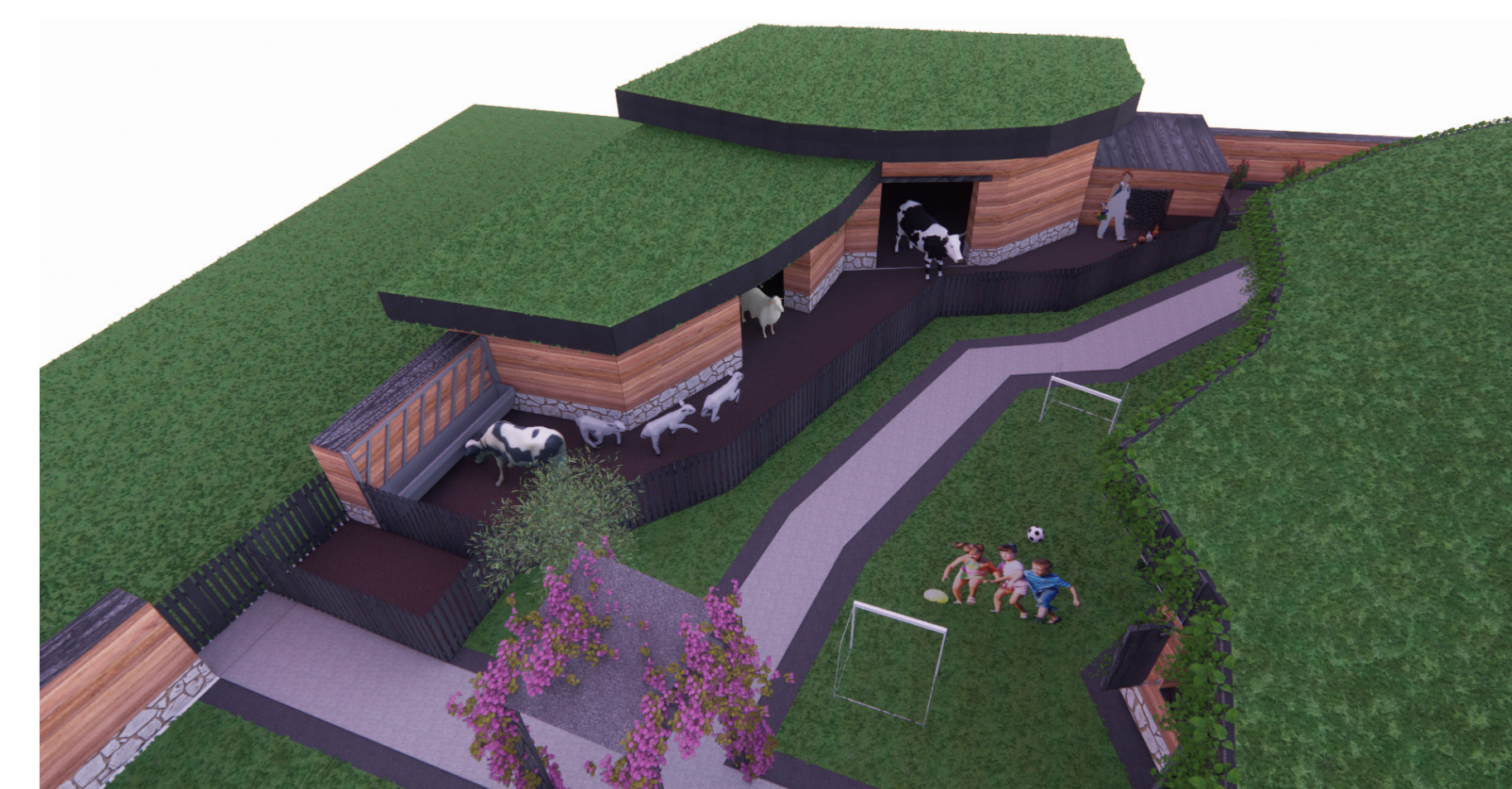
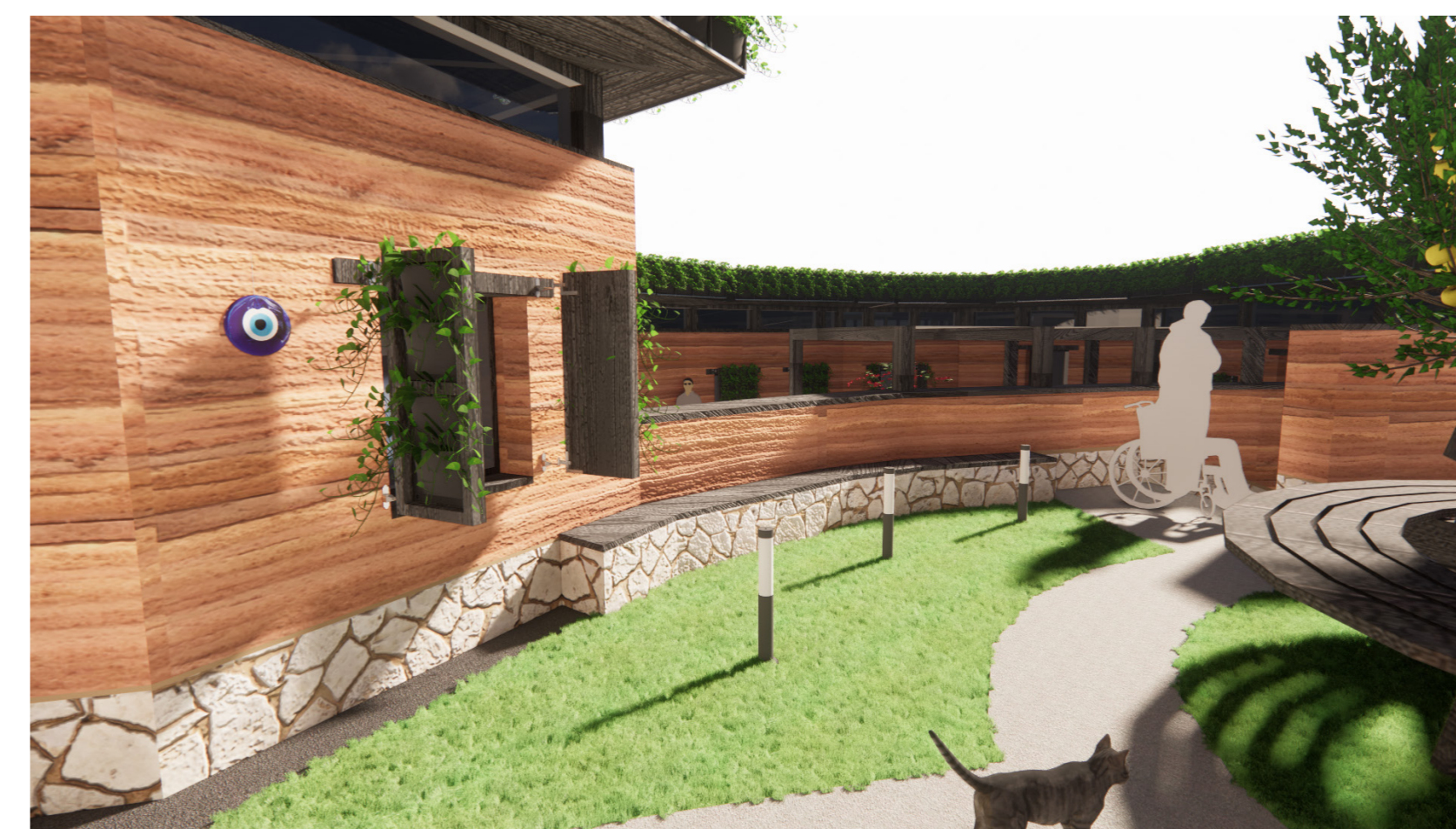
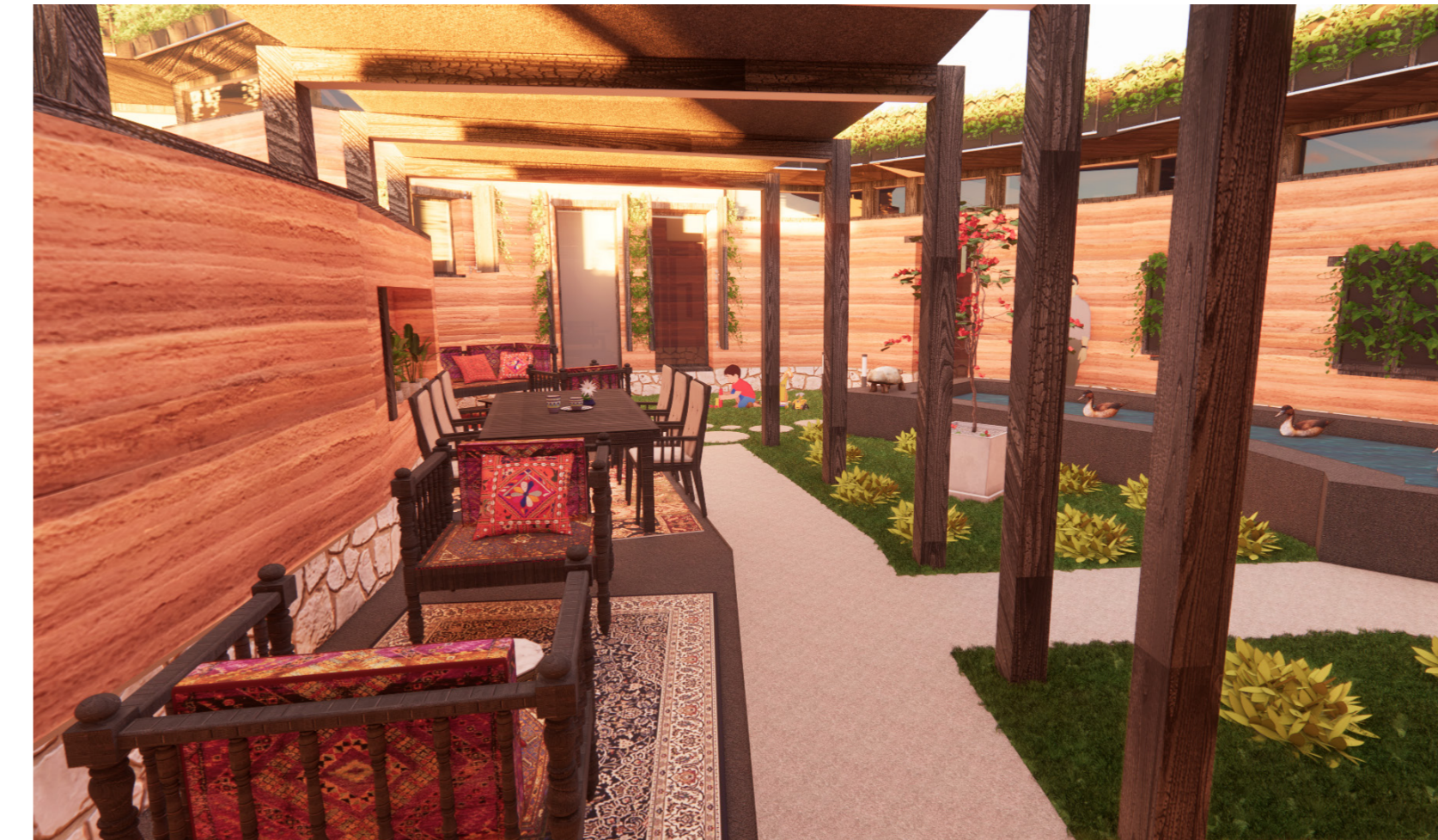
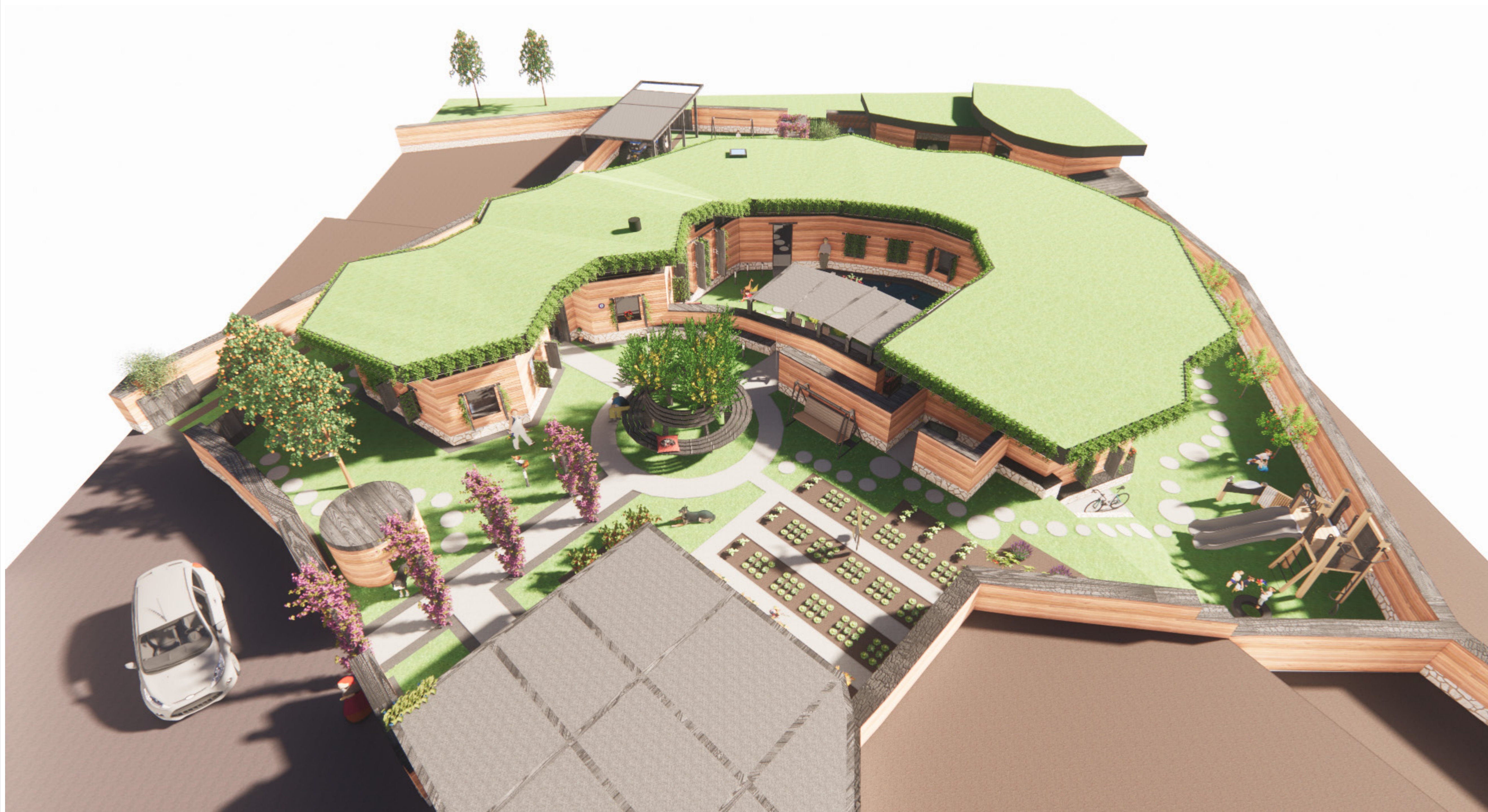


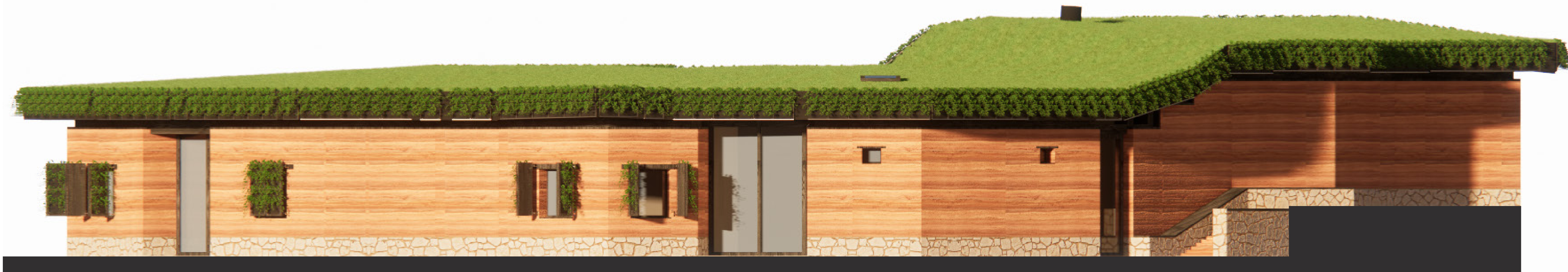
Floor plan + sections 1:100



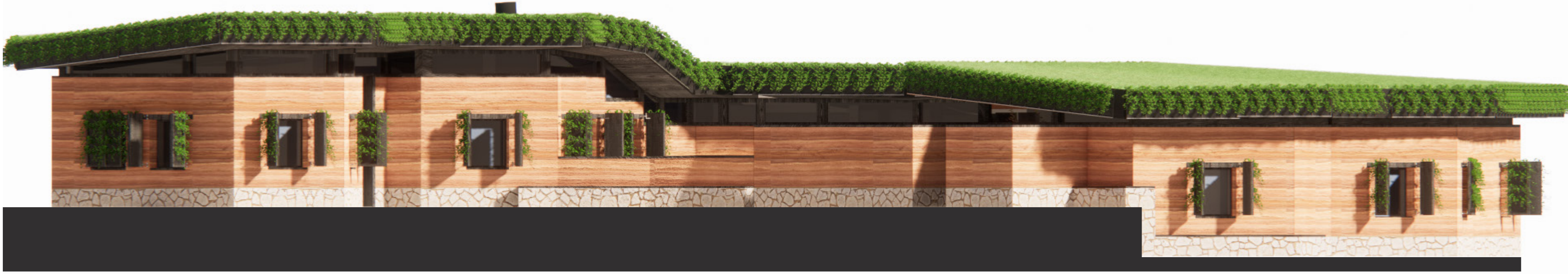
Wildfire resilient house of the future







east façade 1:50



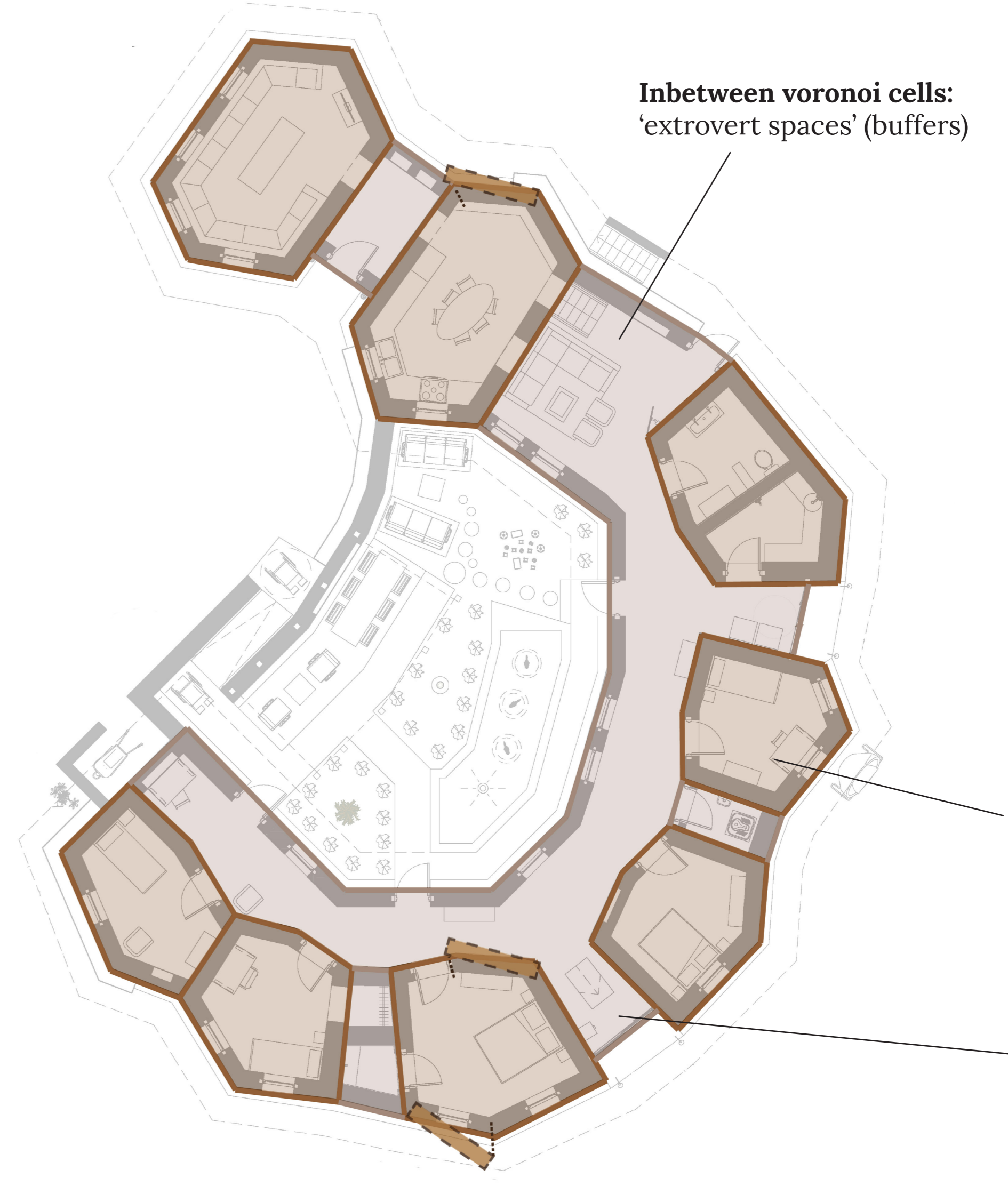
west façade 1:50



south façade 1:50

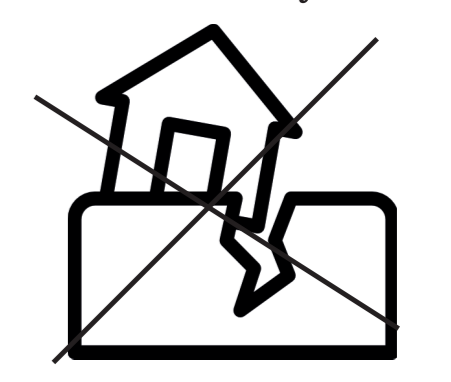


north façade 1:50



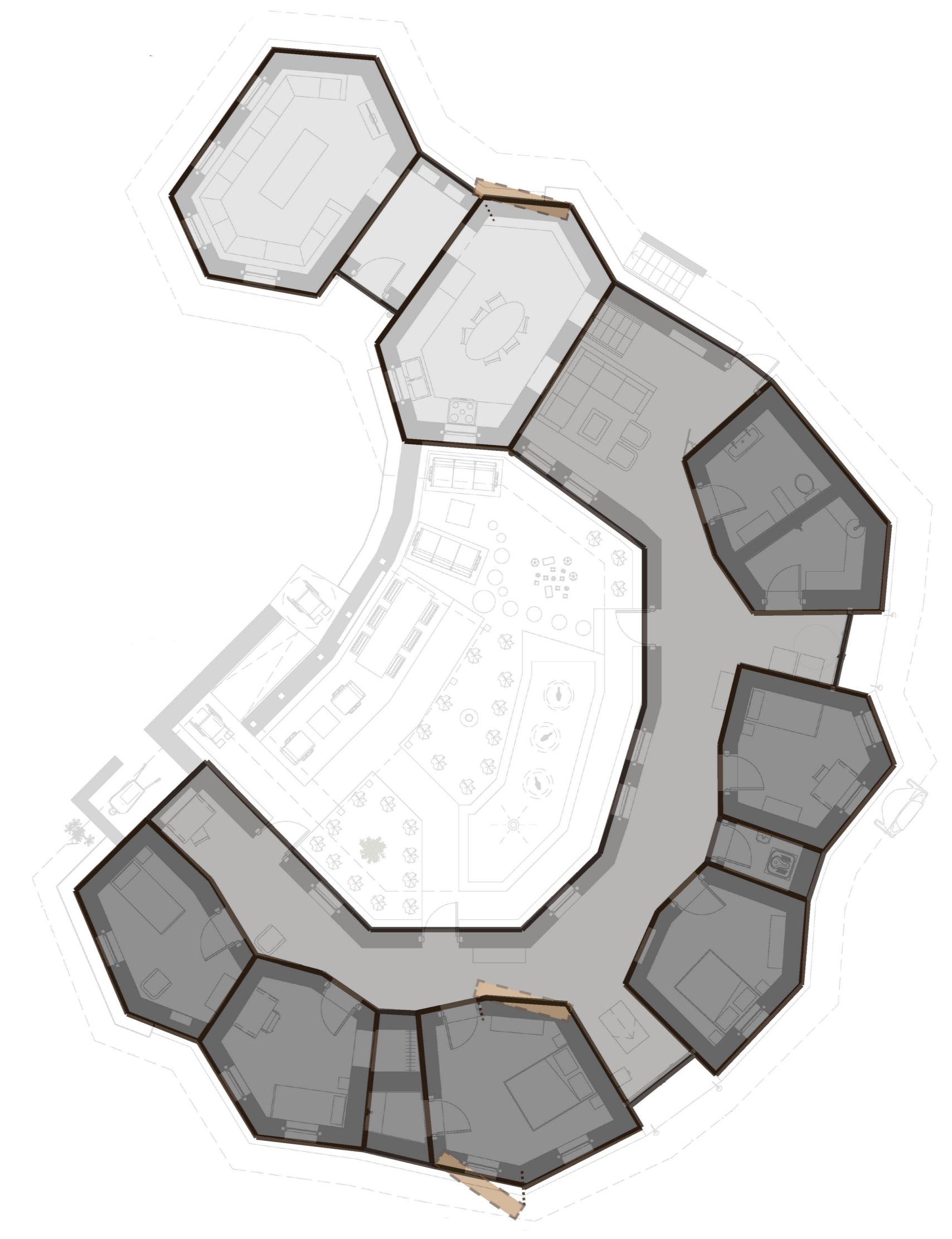
Building typology strategy

- Voronoi-principle
6 corners
- Shape:
 - cancels out lateral seismic forces
 - suits the organic vibe of village
 - gives space for self builders
 - accepts 'mistakes'
 - follows daily life & practices



Voronoi-cells:
'introvert rooms'

Buffer zones:
deal with imperfections during construction

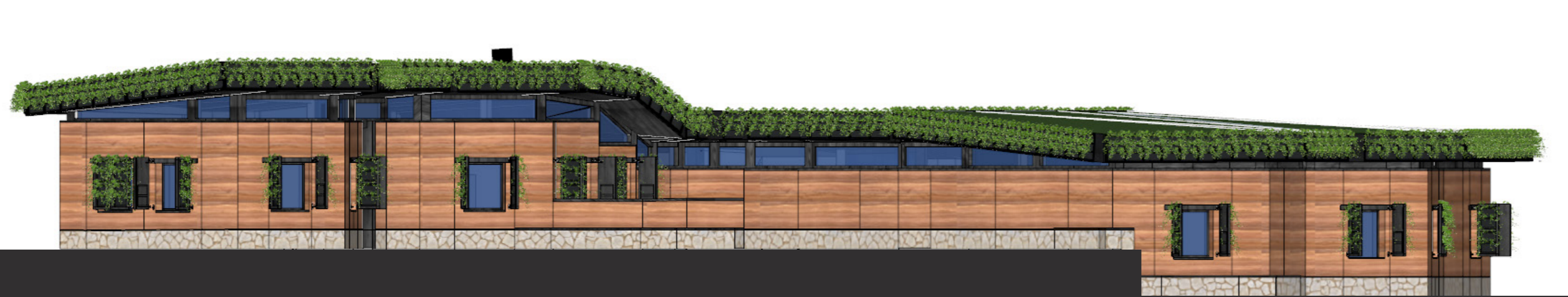


Building typology strategy

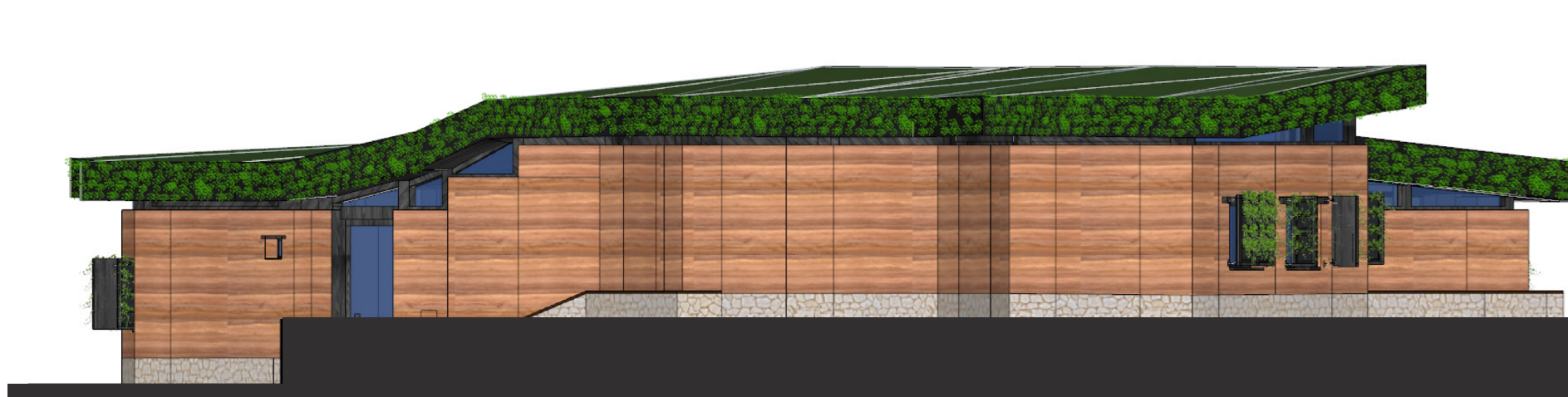
Privacy gradient:
the deeper, the more private



south façade 1:100



west façade 1:100

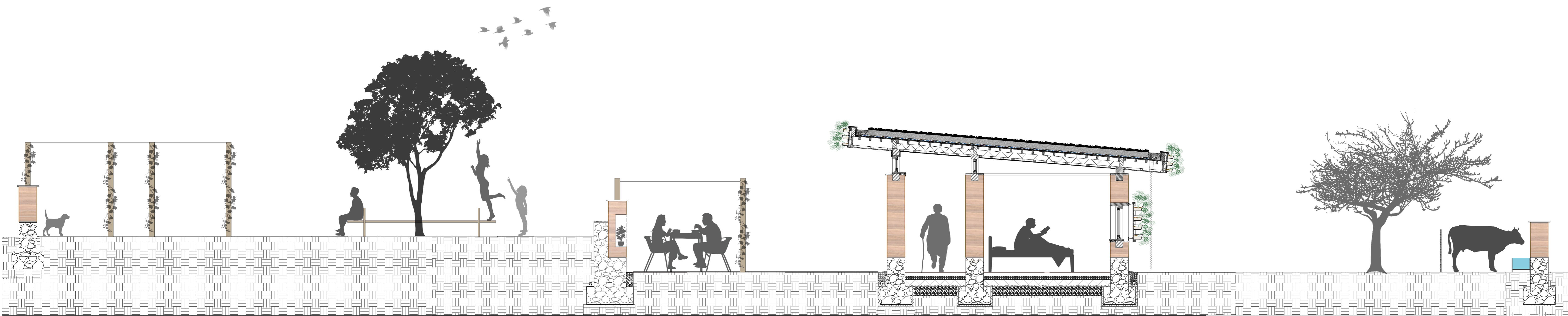


north façade 1:100

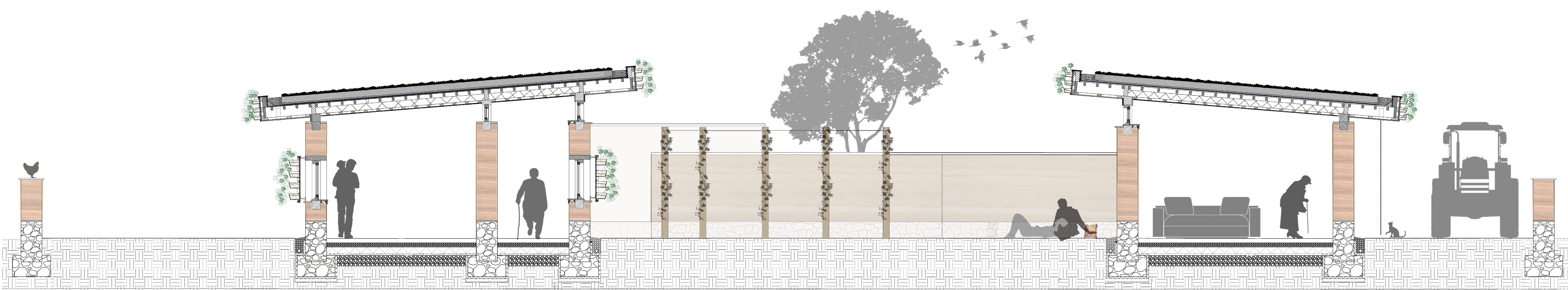
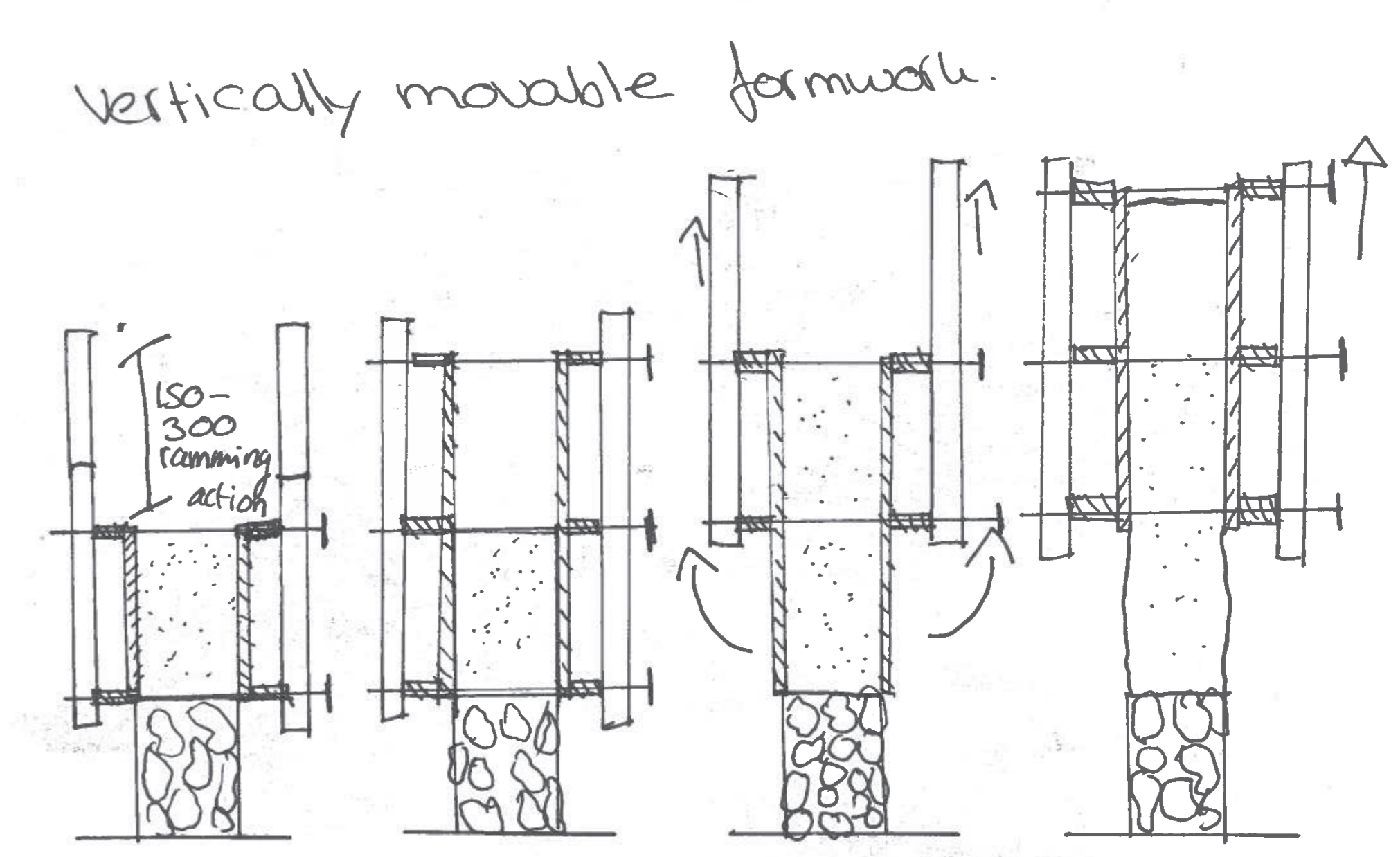


east façade 1:100

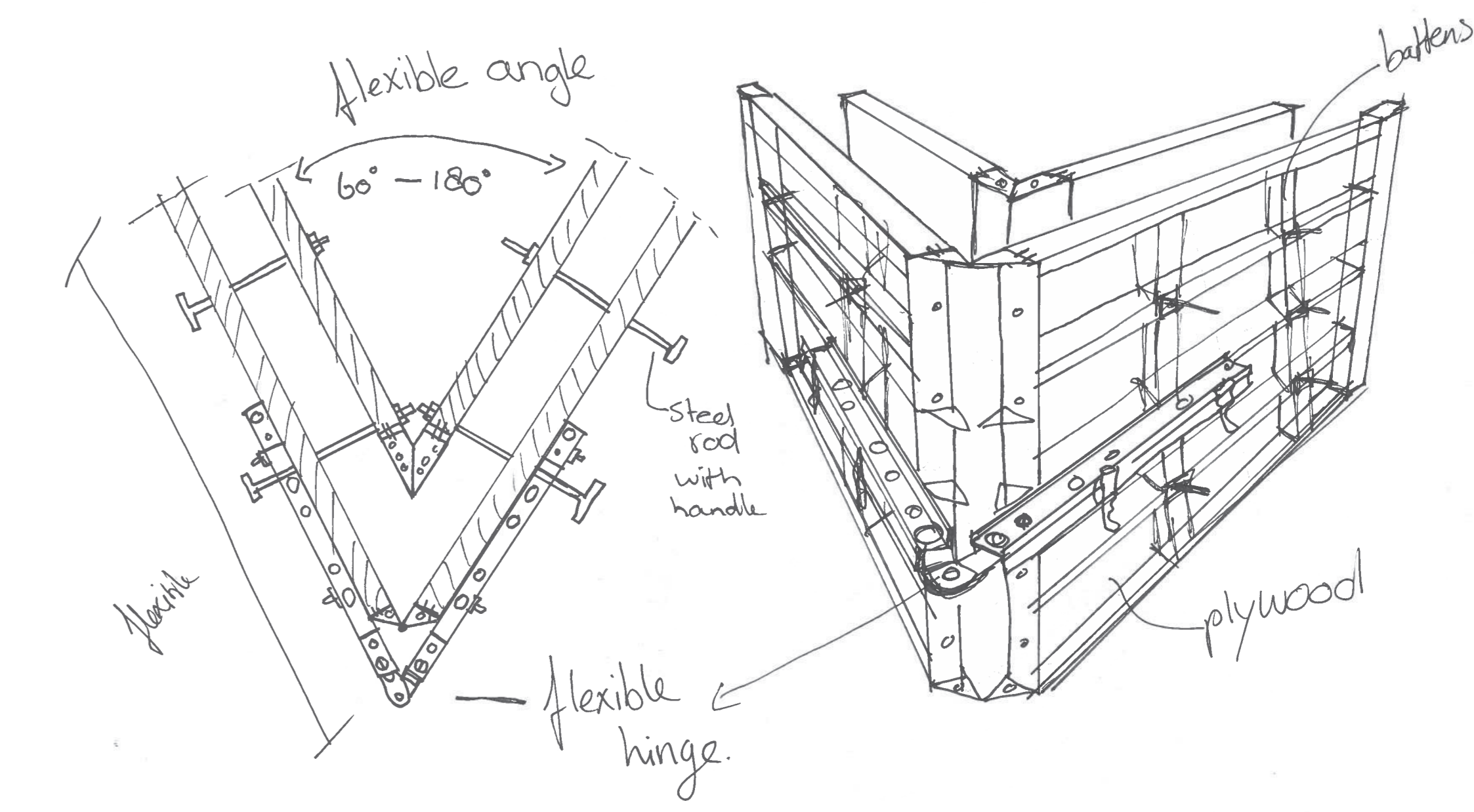




cross-cut west-east 1:50

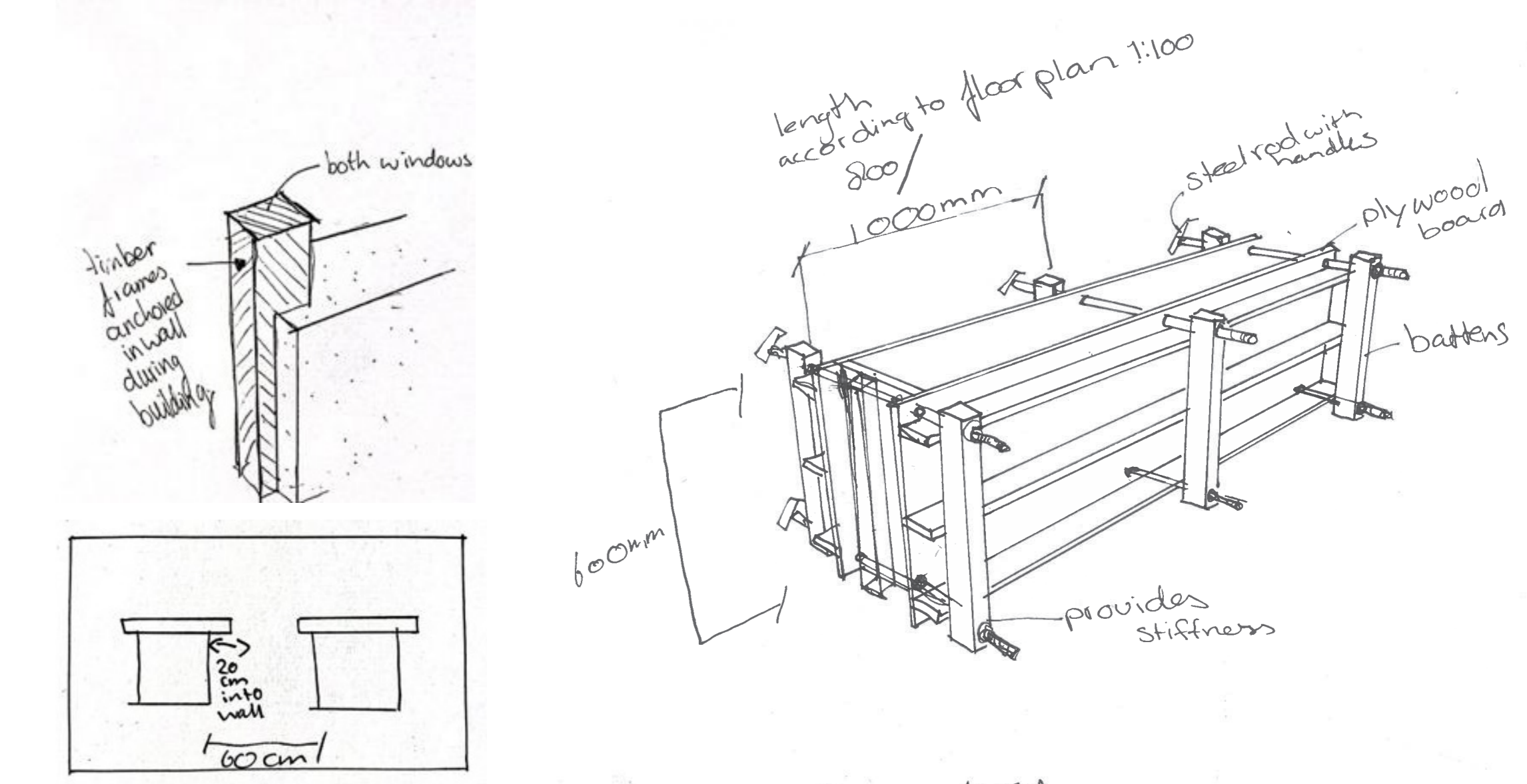


cross-cut north-south 1:50

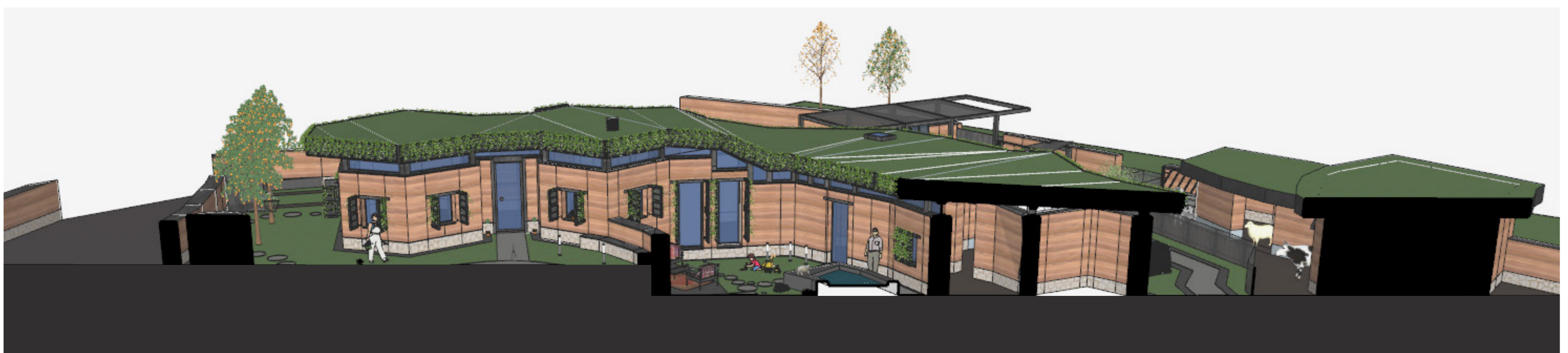
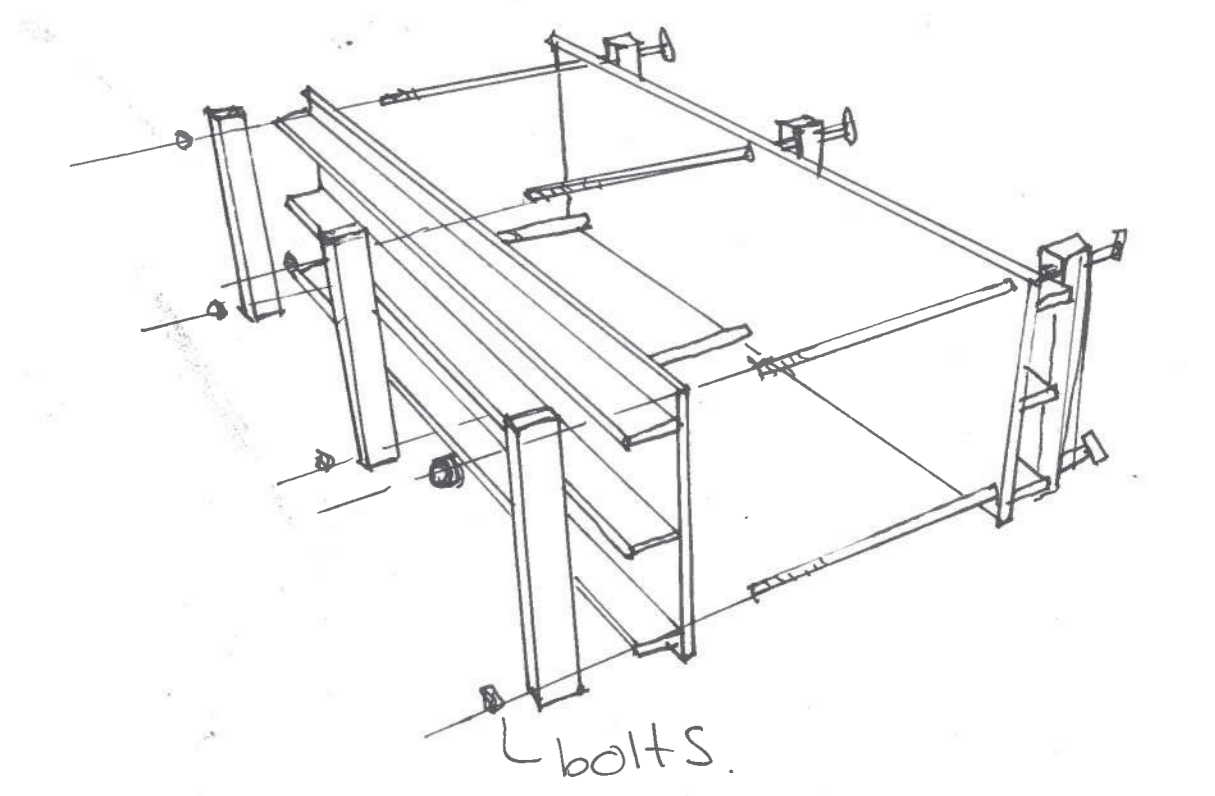


cross-cut north-south 1:100

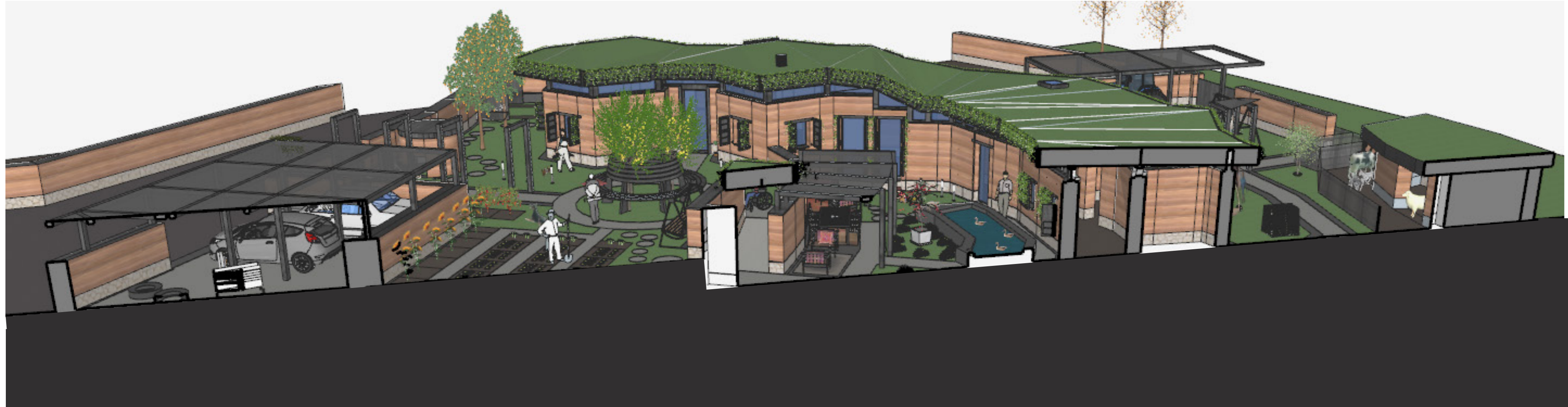
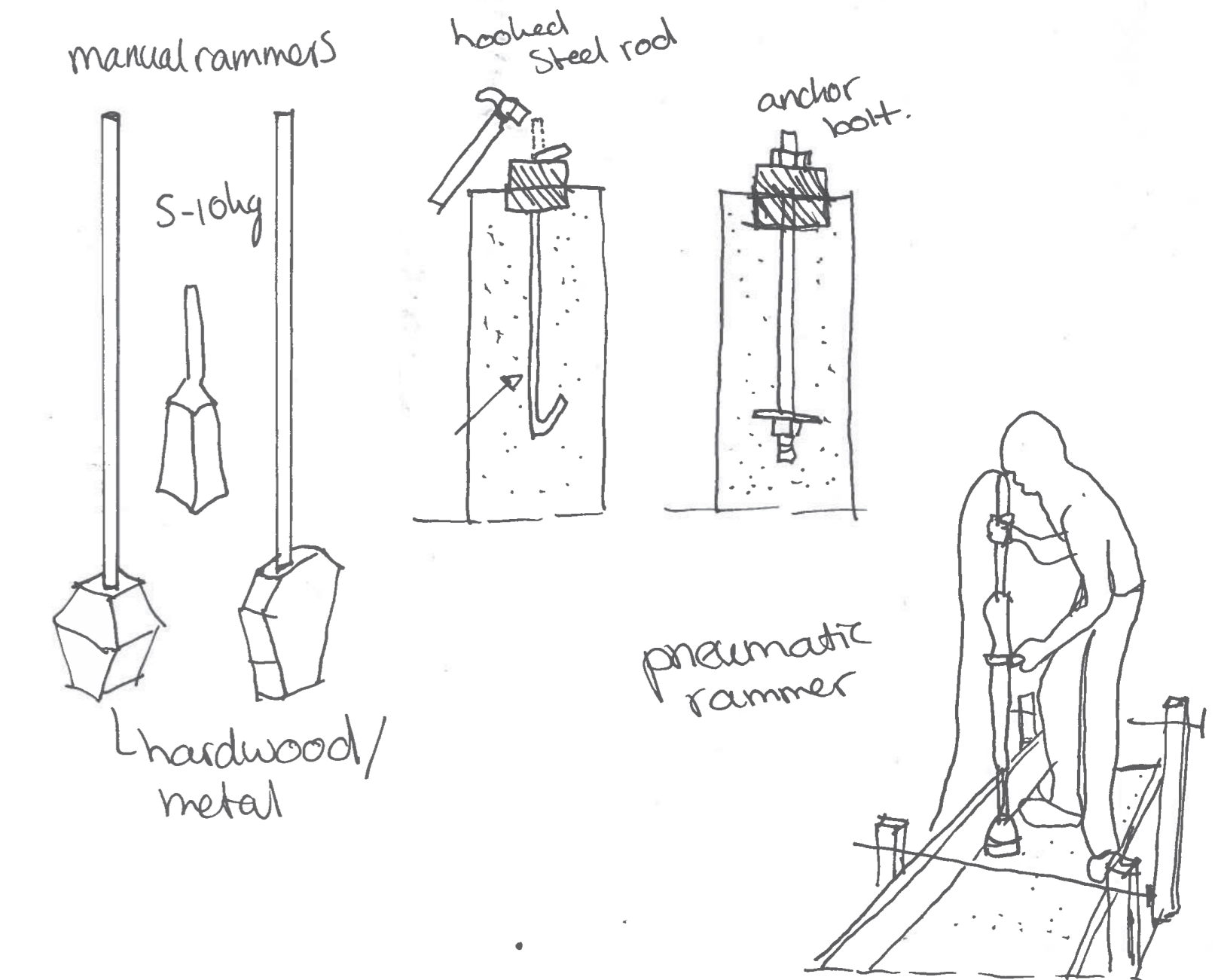
Roof view 1:200



'climbing formwork'
 wooden formwork:
 Primary face: 2 faces of plywood, 300mm, oiled surface
 Battens: reinforced with wooden strips horizontal and vertical (acts as stiffeners on the plywood, holds everything together (horizontal forces due to ramming))
 Side face:
 Plywood, reinforced vertical
 Metal rods: handle on 1 side
 Take out the metal rods and move the formwork up vertically till you have built the whole wall.
 Fill the small holes caused by the rods with same earth mixture
 You can also push tubes in these holes for electricity / plumbing



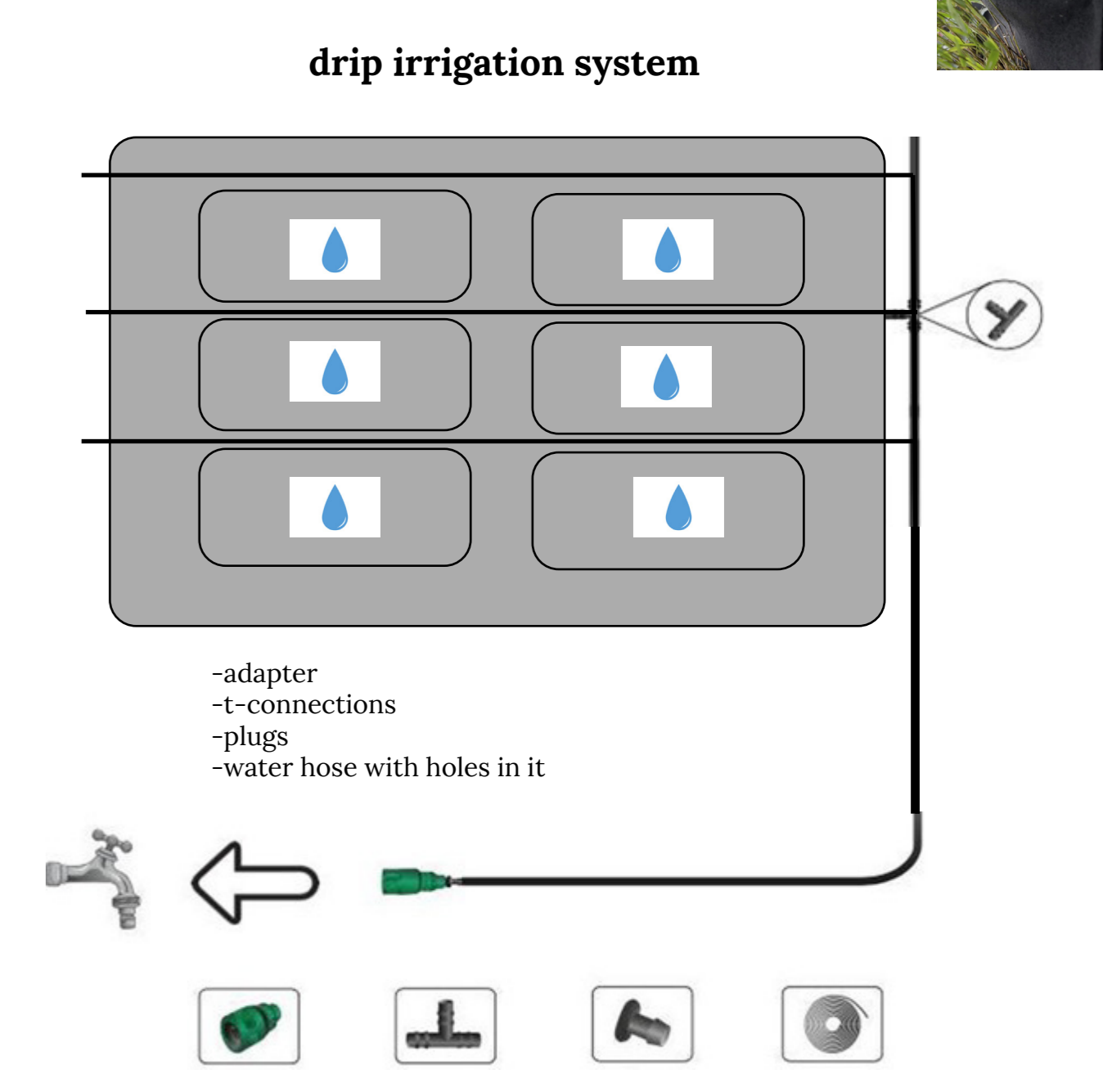
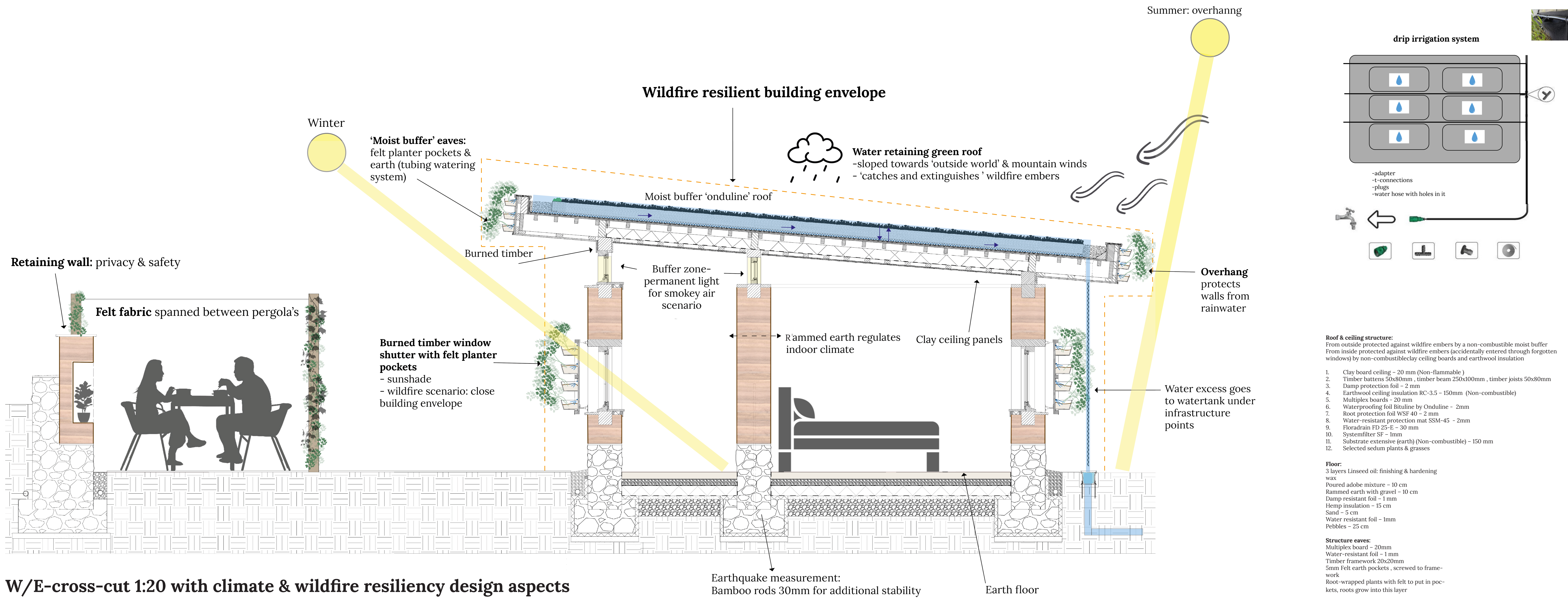
cross-cut west-east 1:100



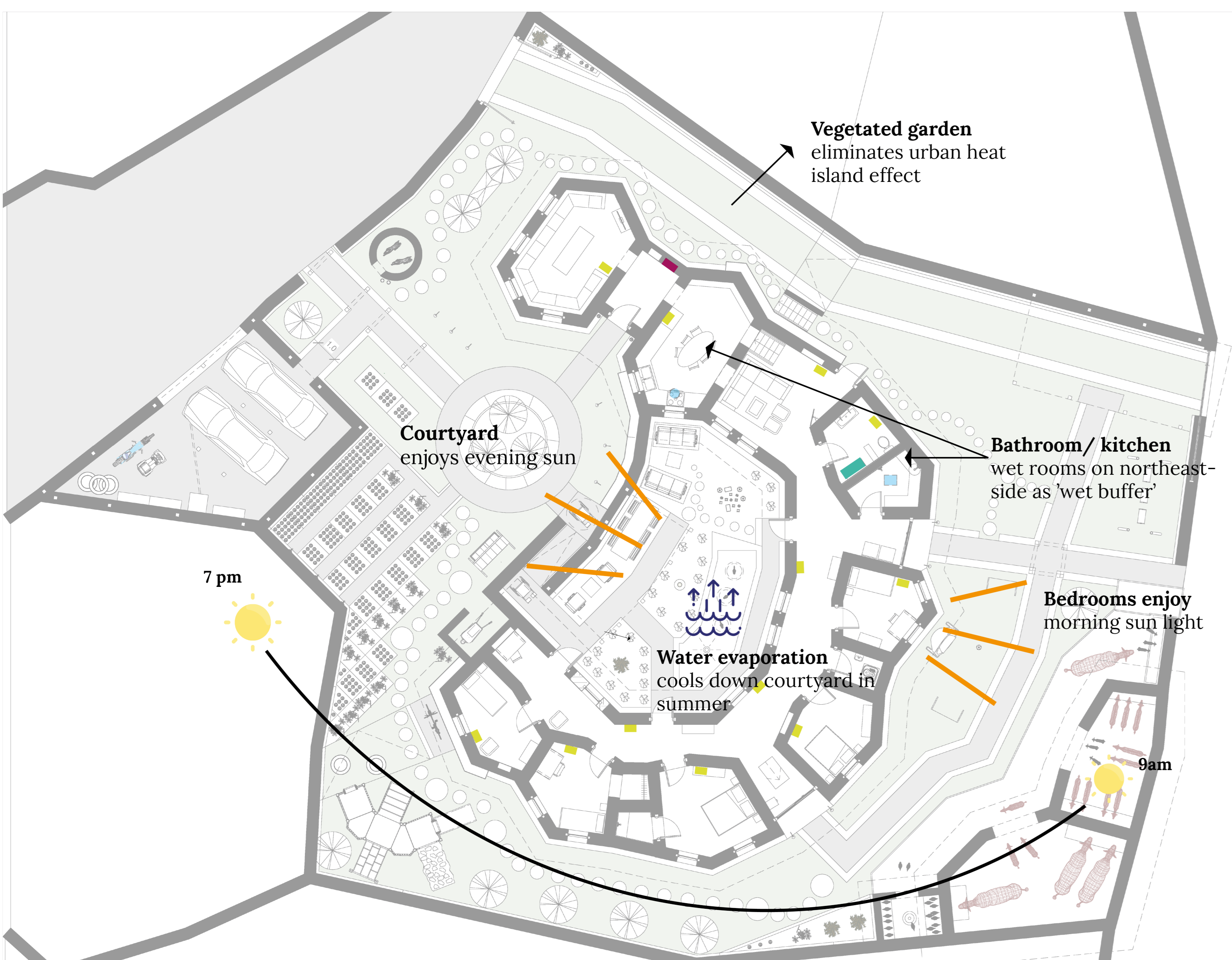
cross-cut west-east 1:100



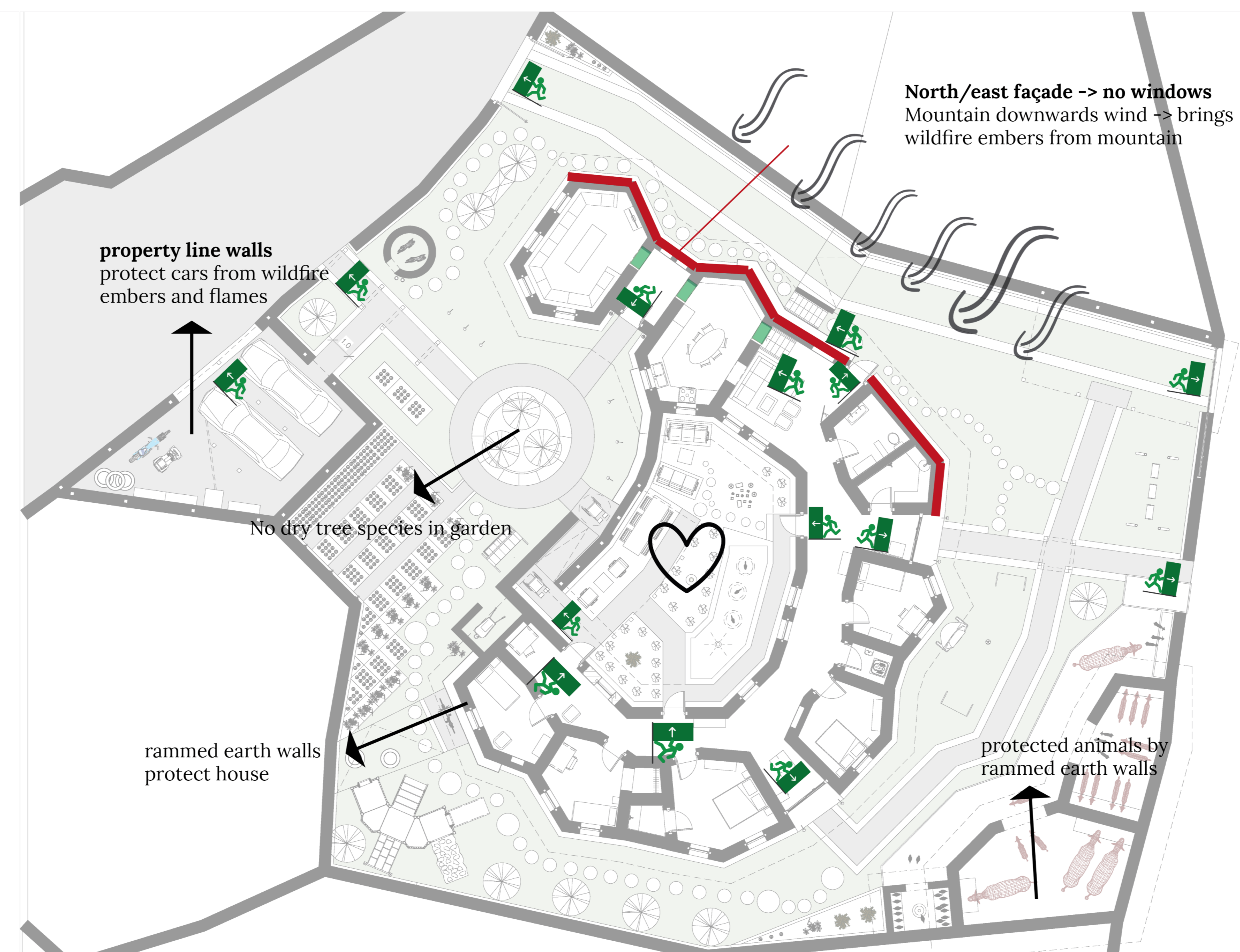
1:50 façade fragment



W/E-cross-cut 1:20 with climate & wildfire resiliency design aspects

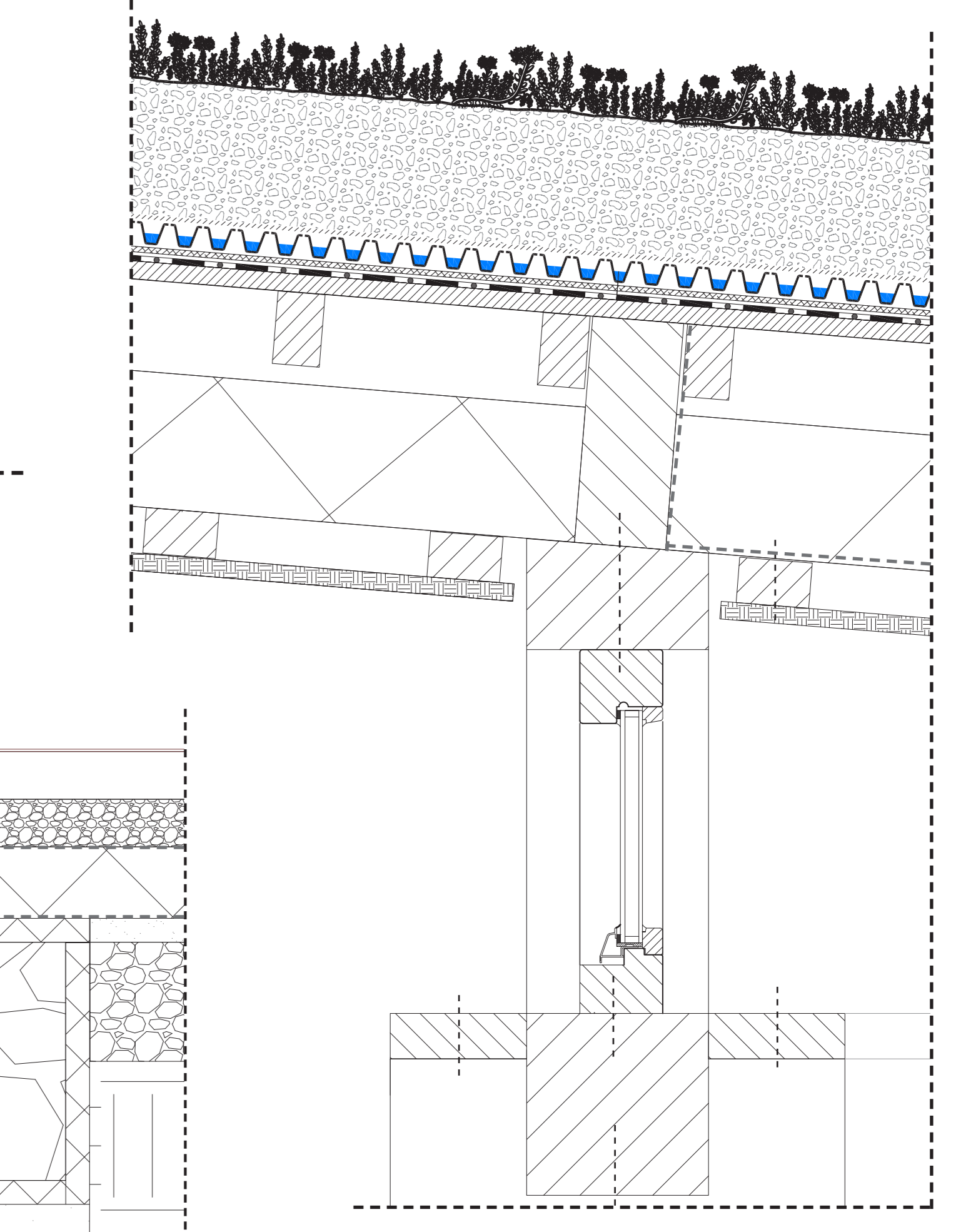
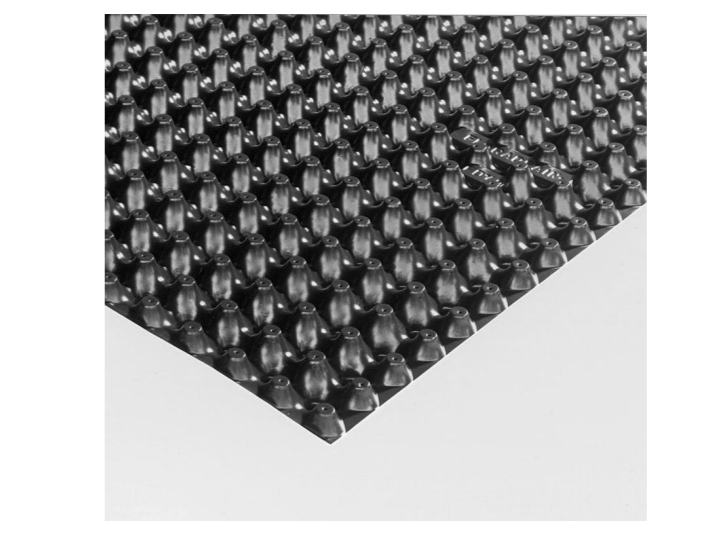
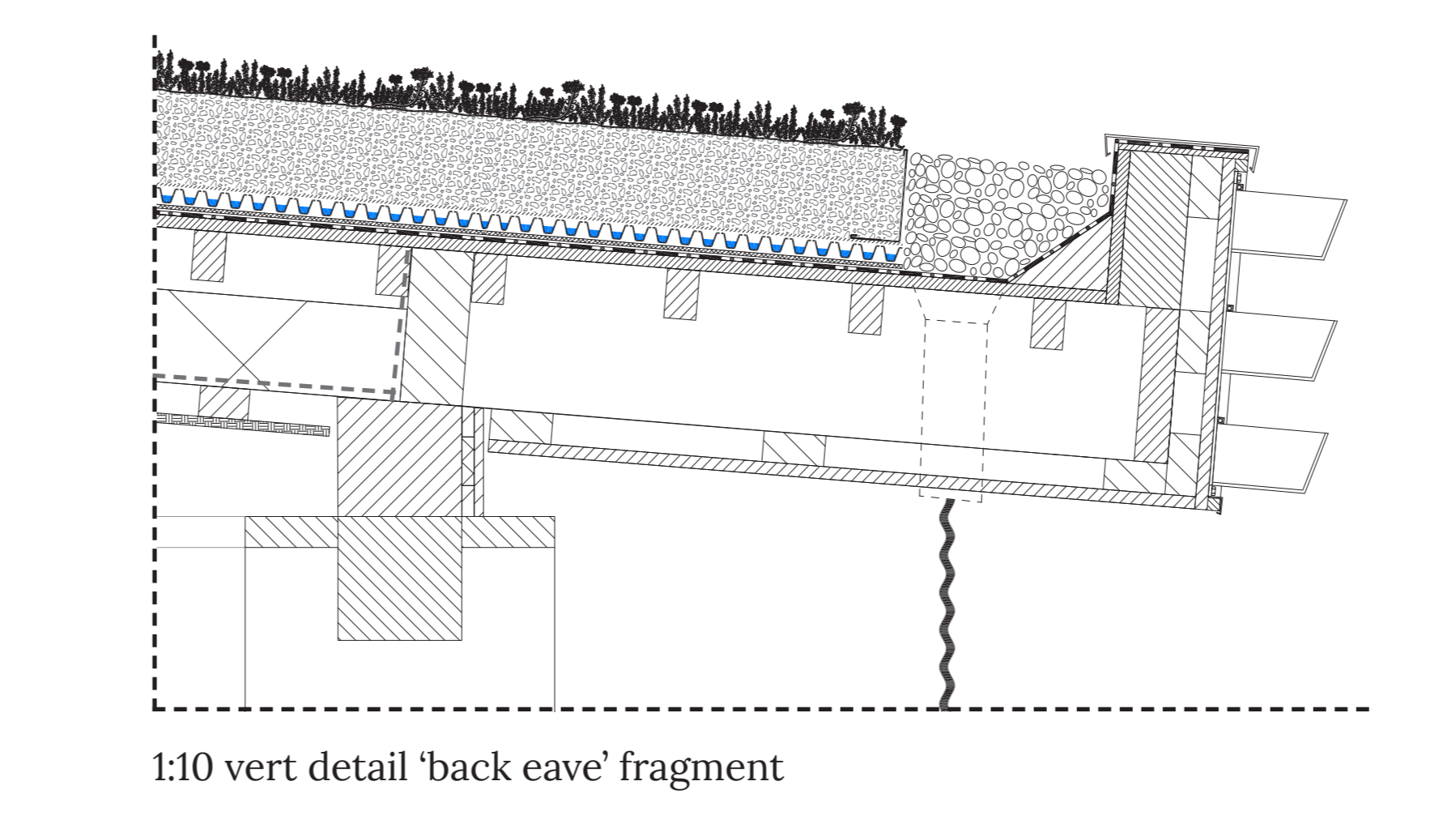
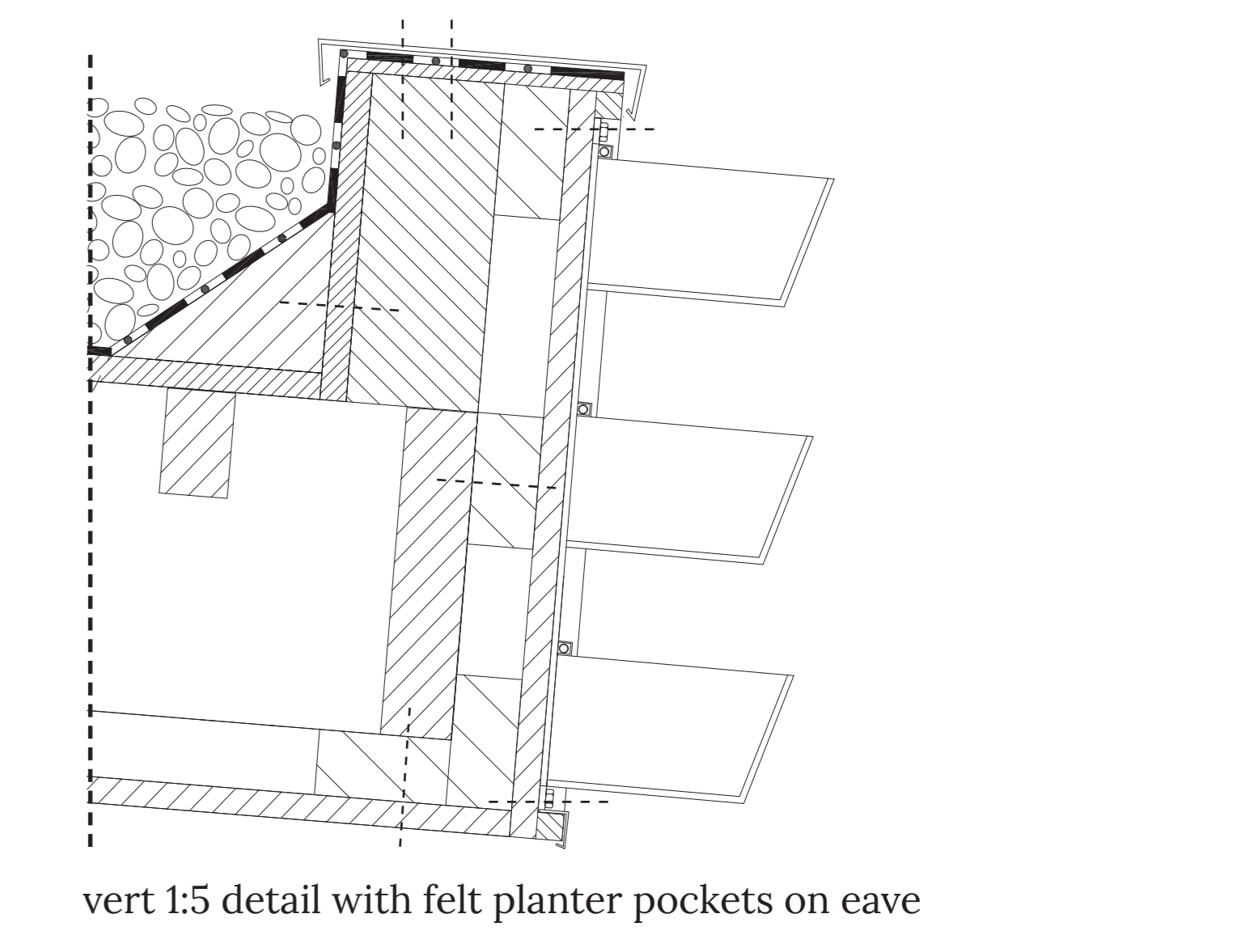
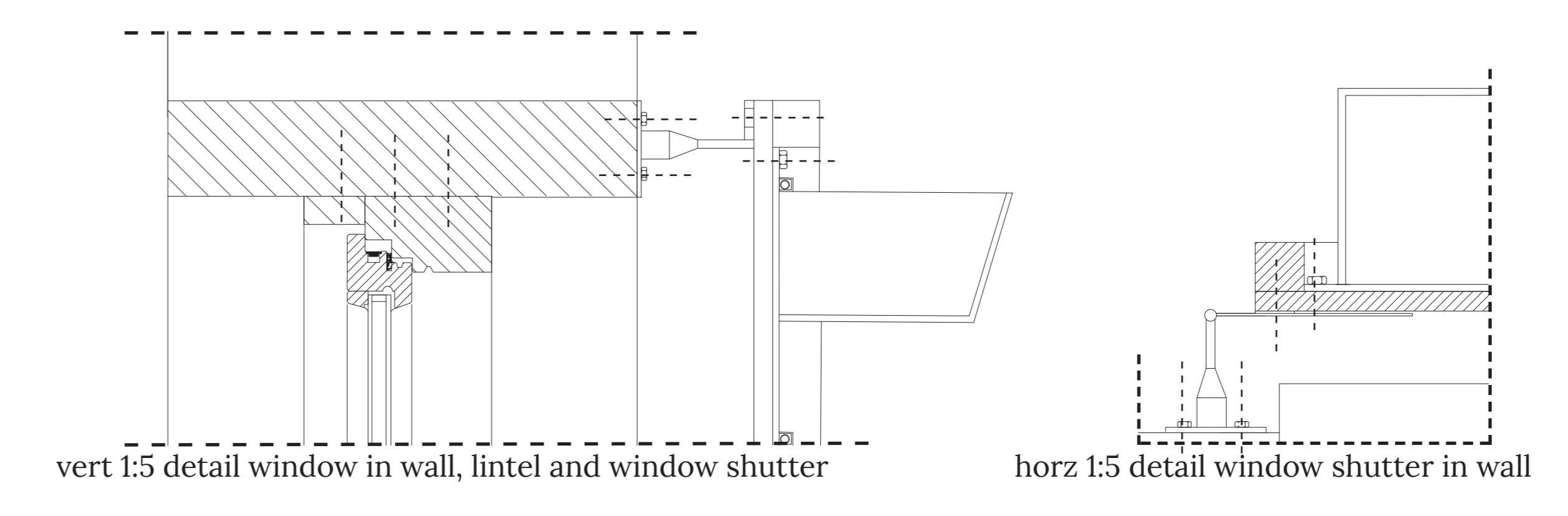


Climate design

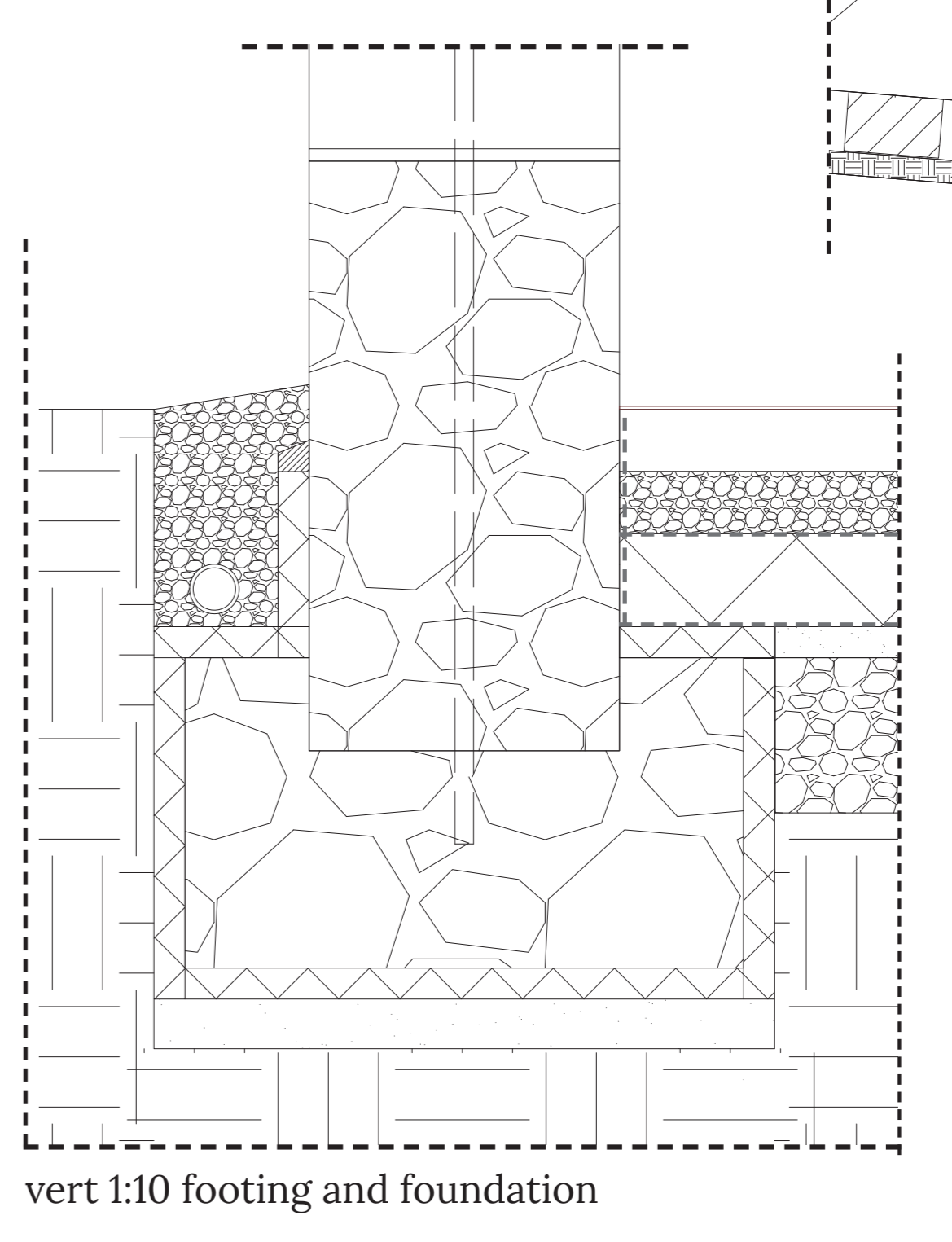
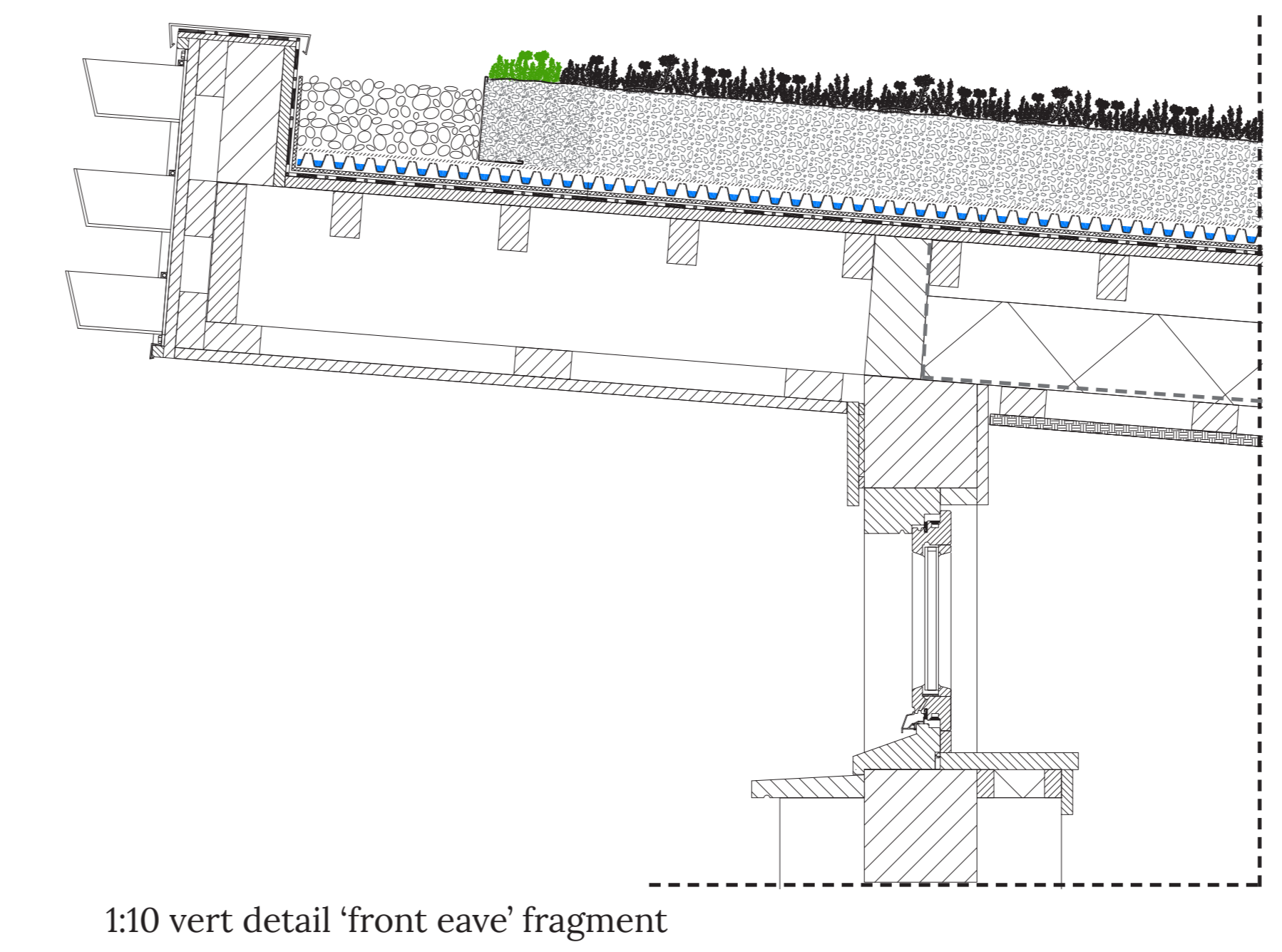
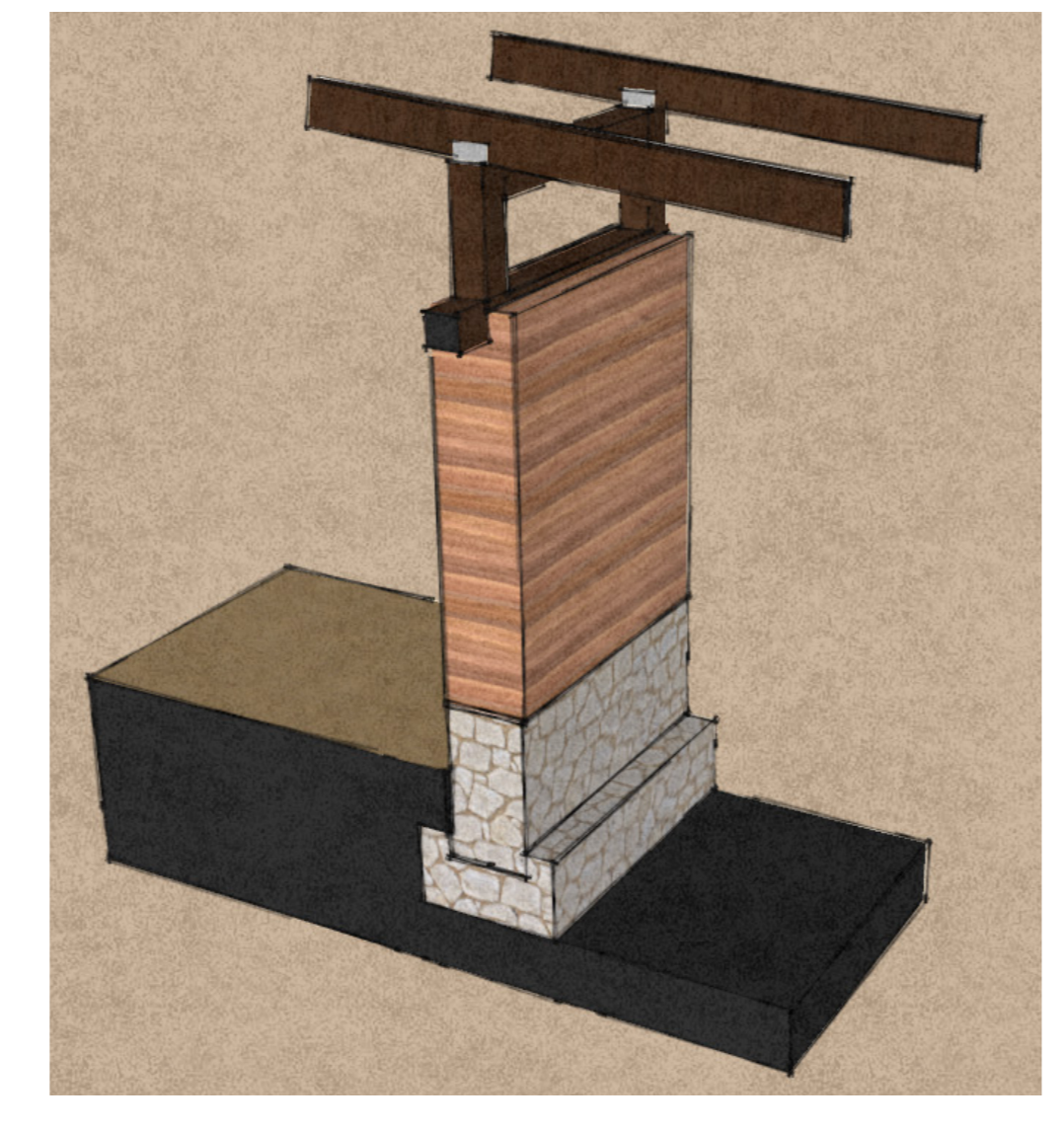
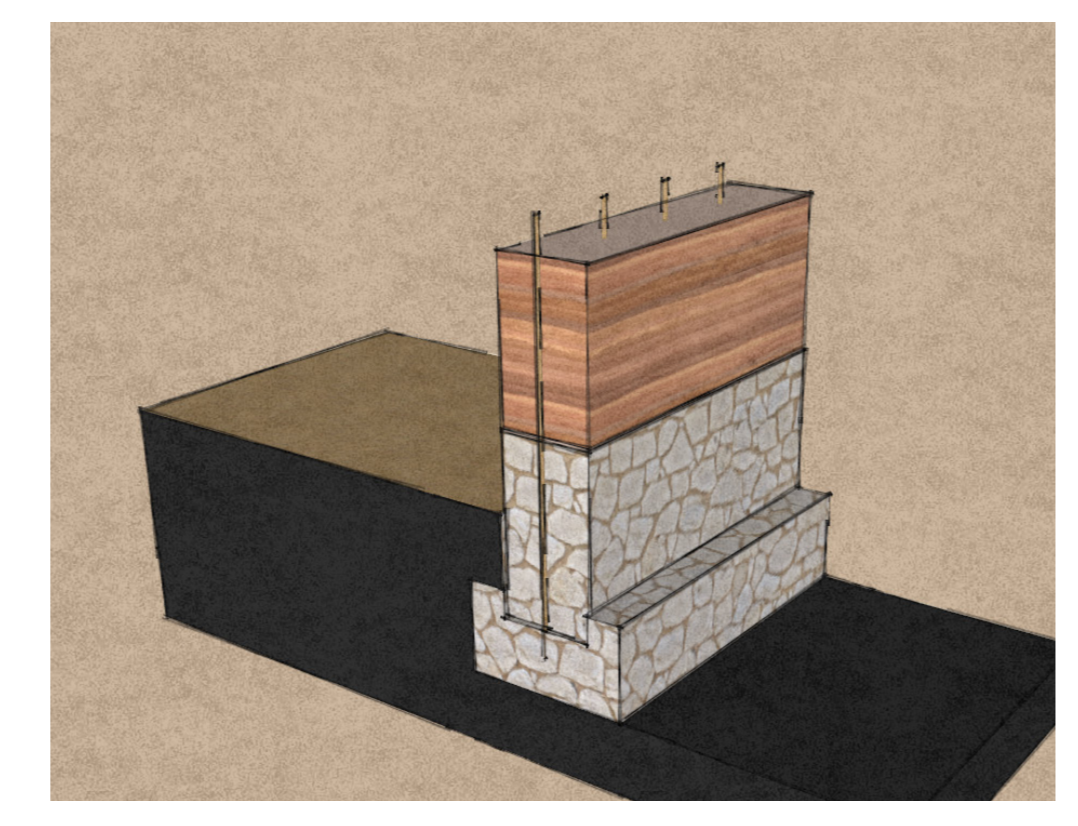
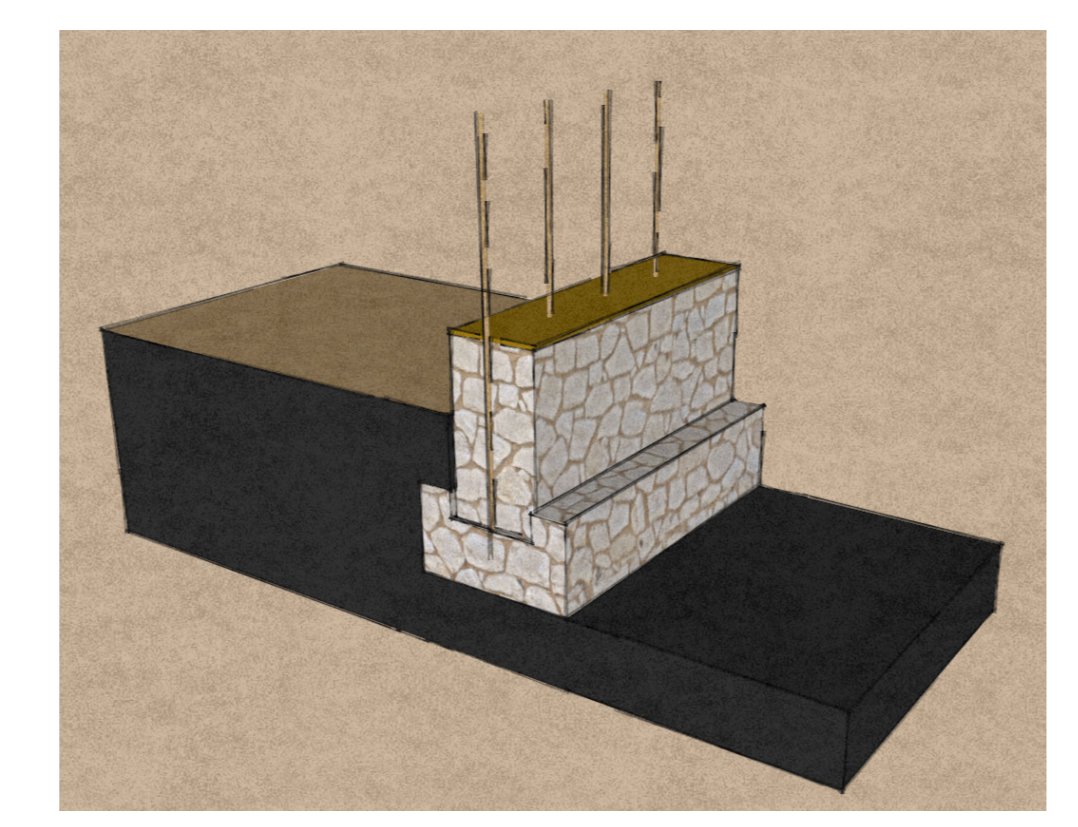
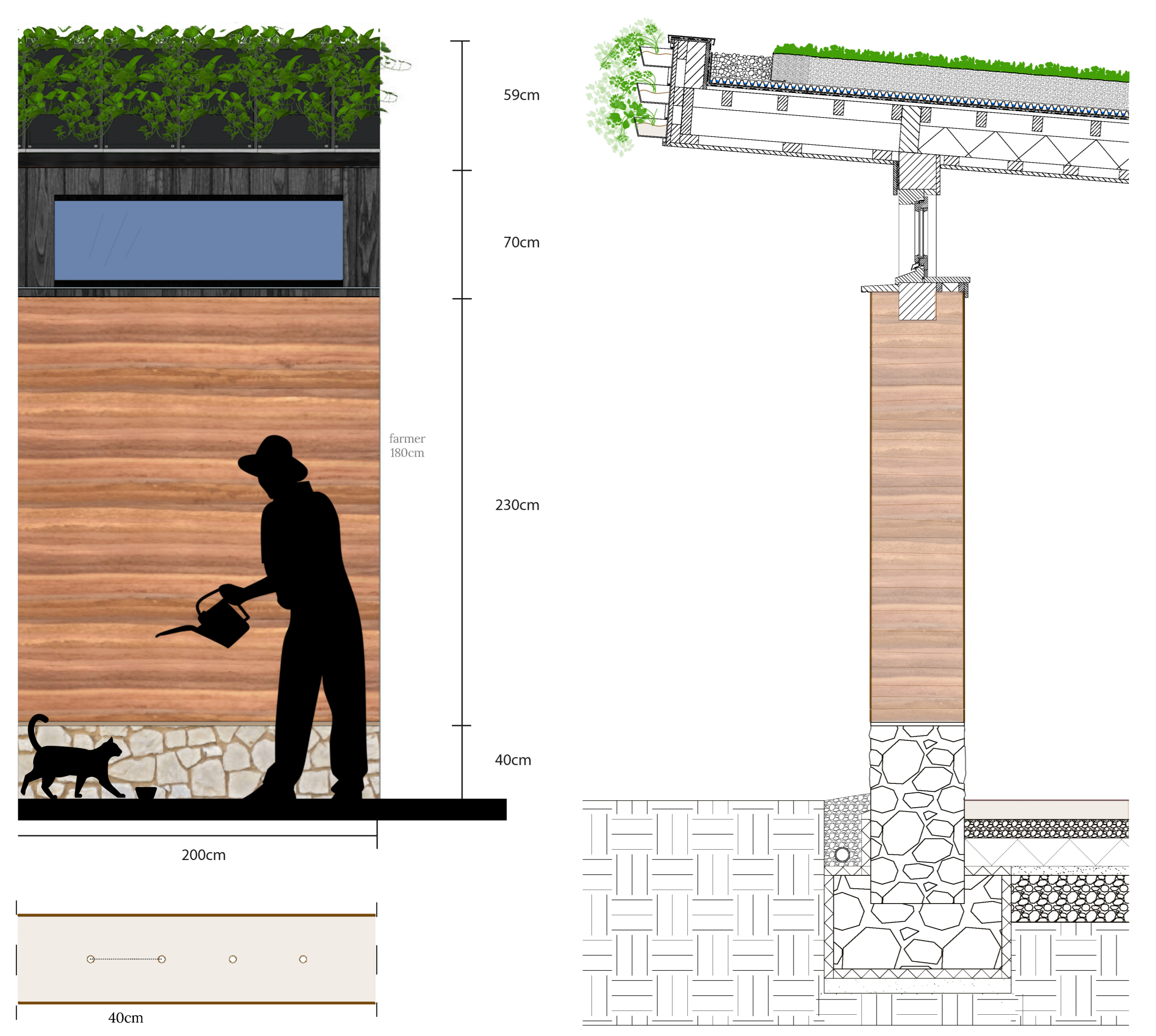


Wildfire resiliency design



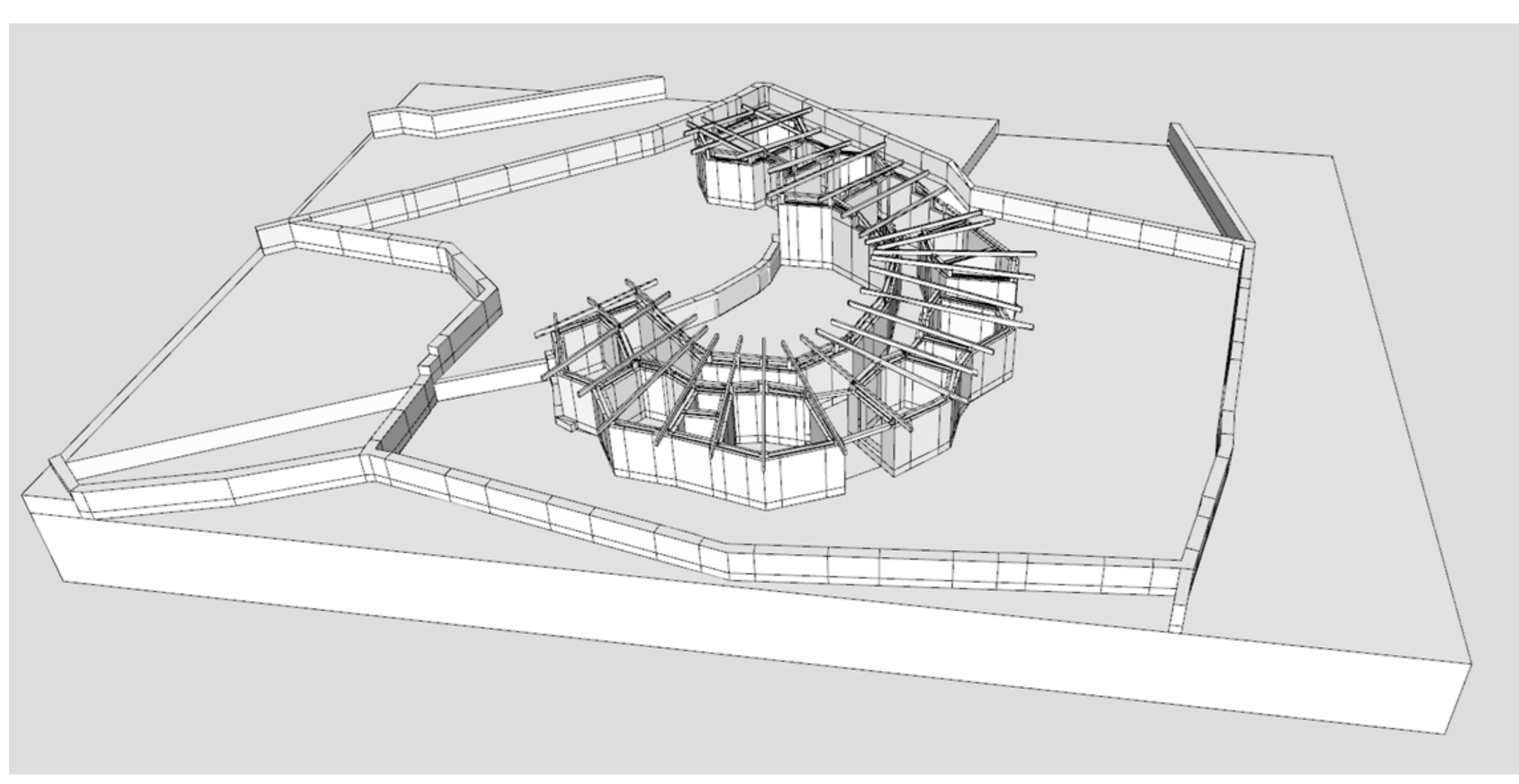


1:20 details horz, vert & façade fragment (1)

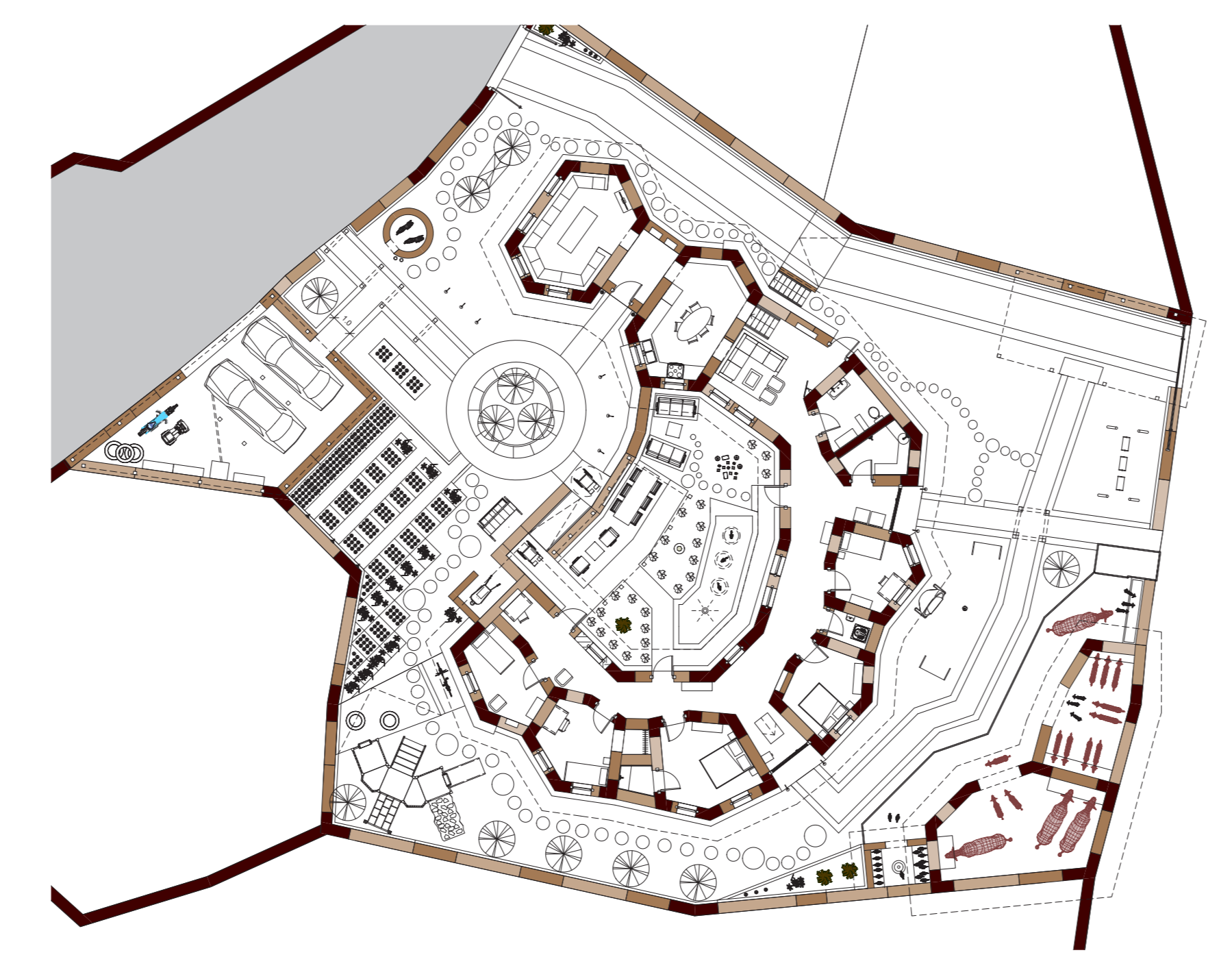


vert 1:5 detail inside top window

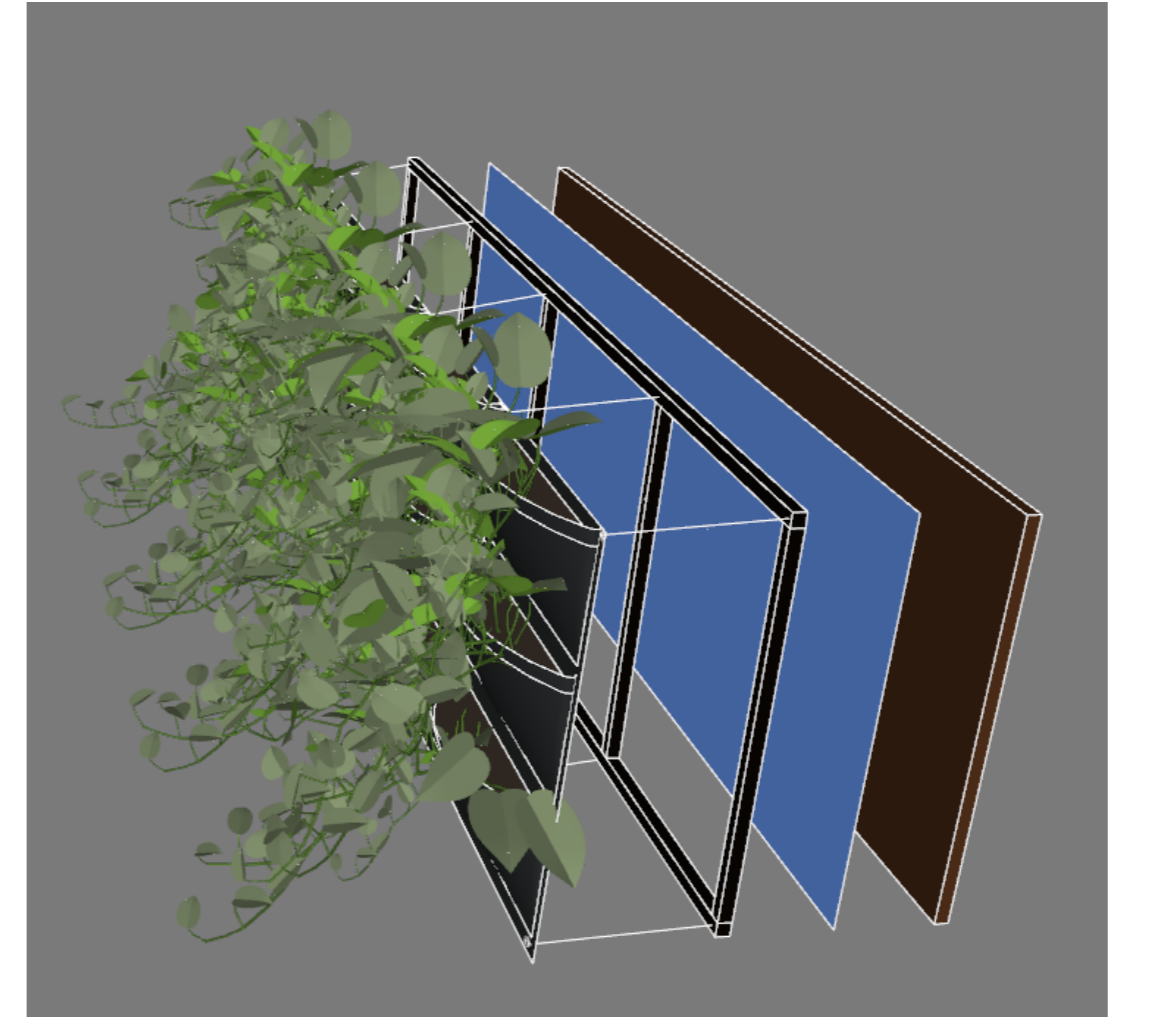
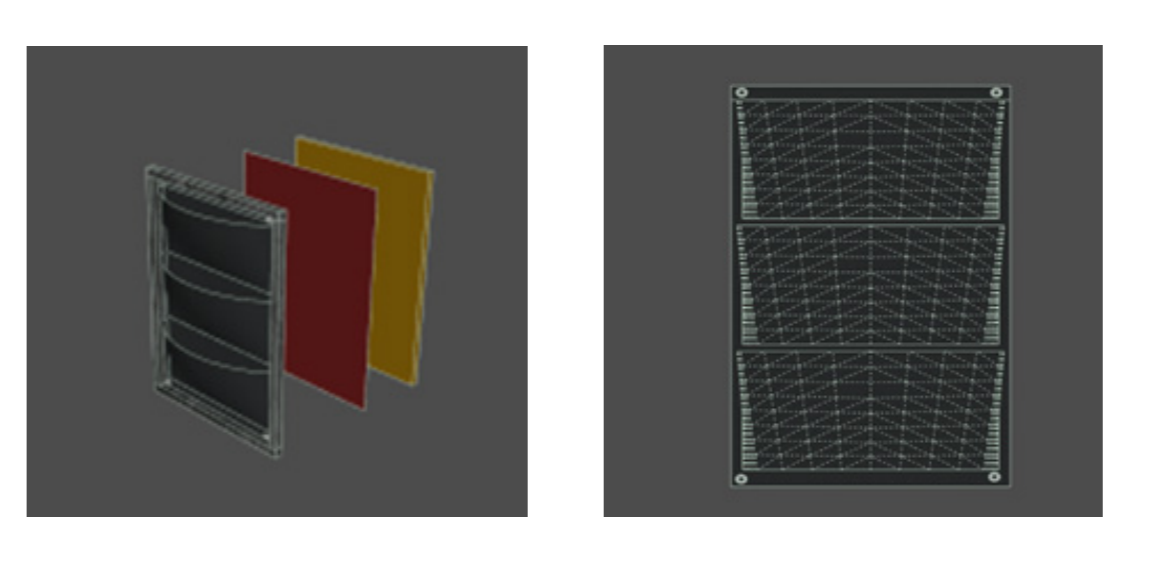
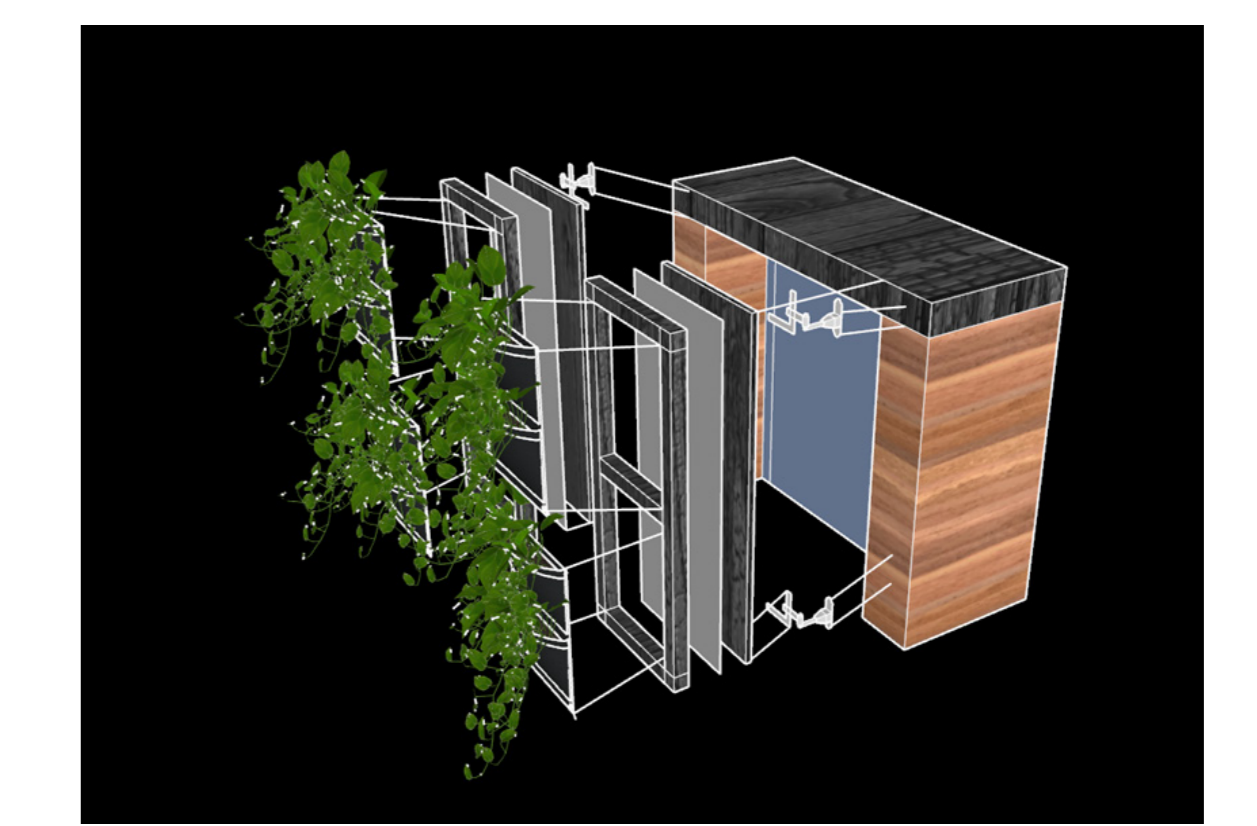
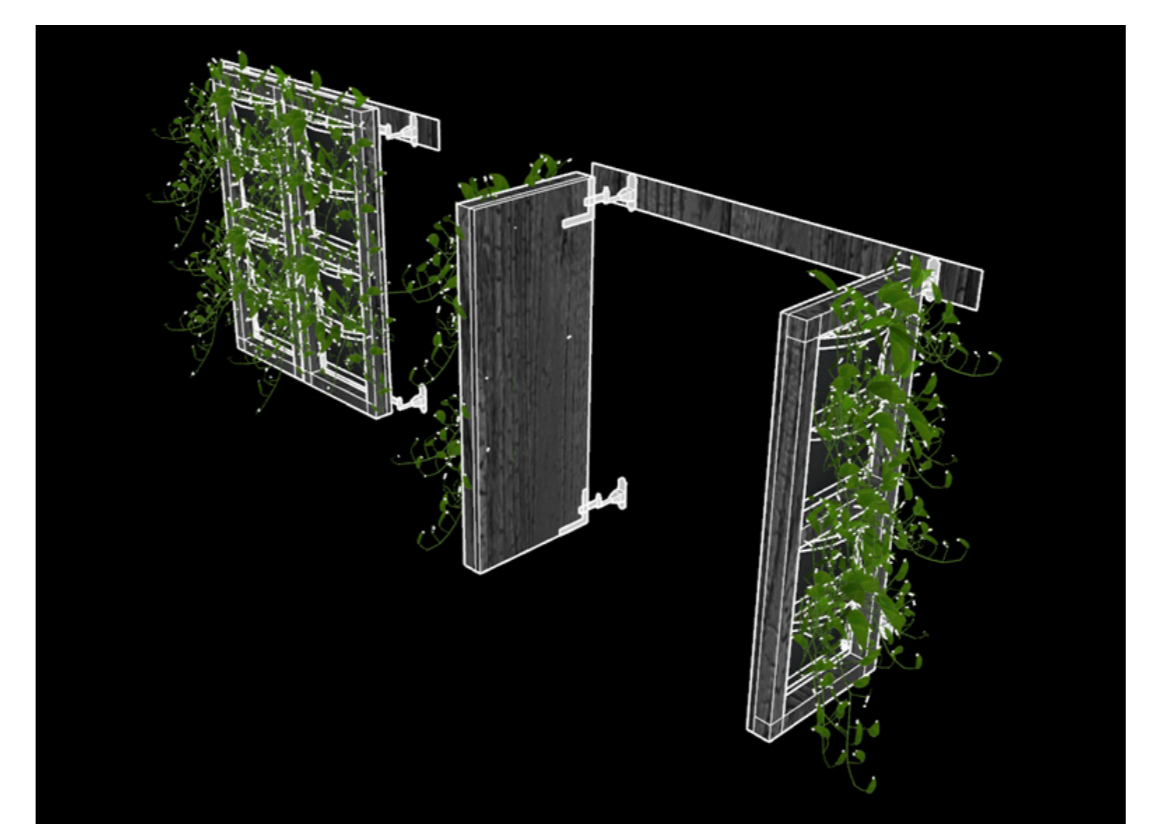
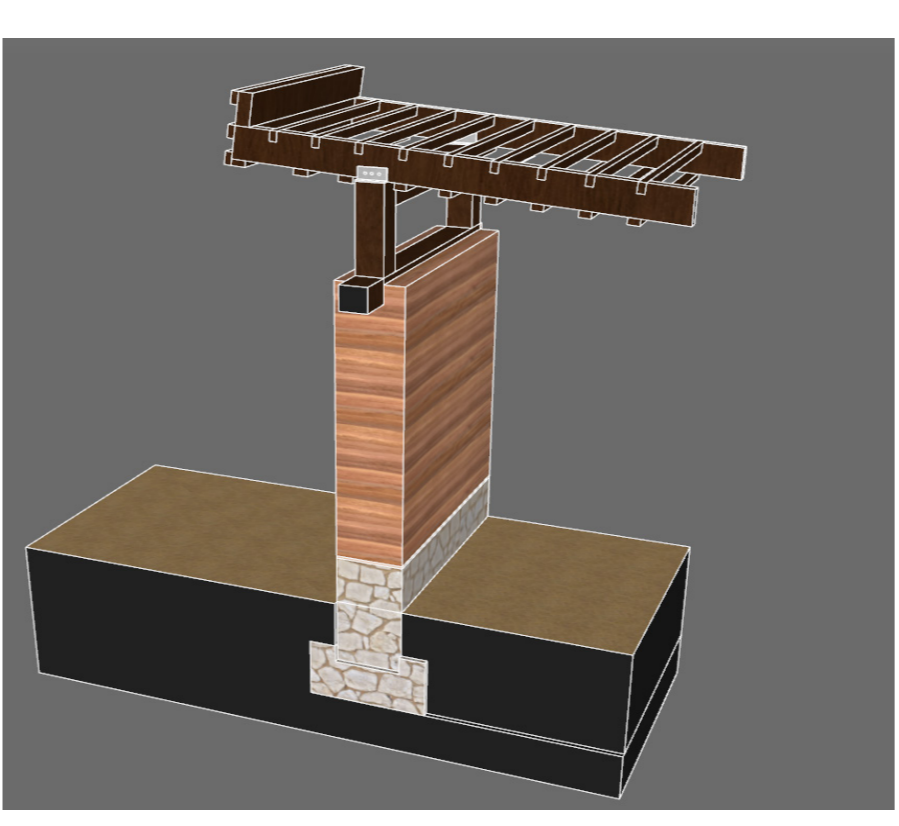
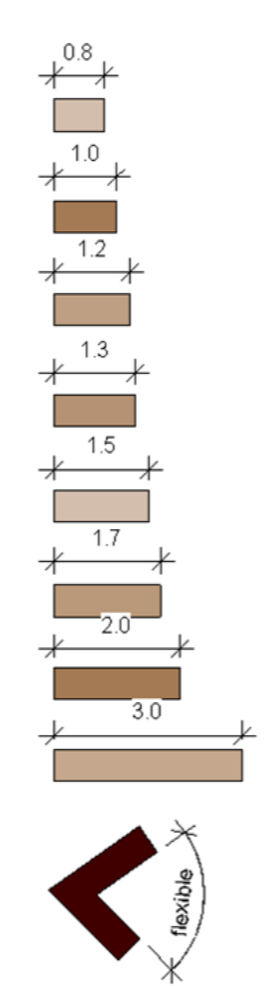
1:20 details horz, vert & façade fragment (2)



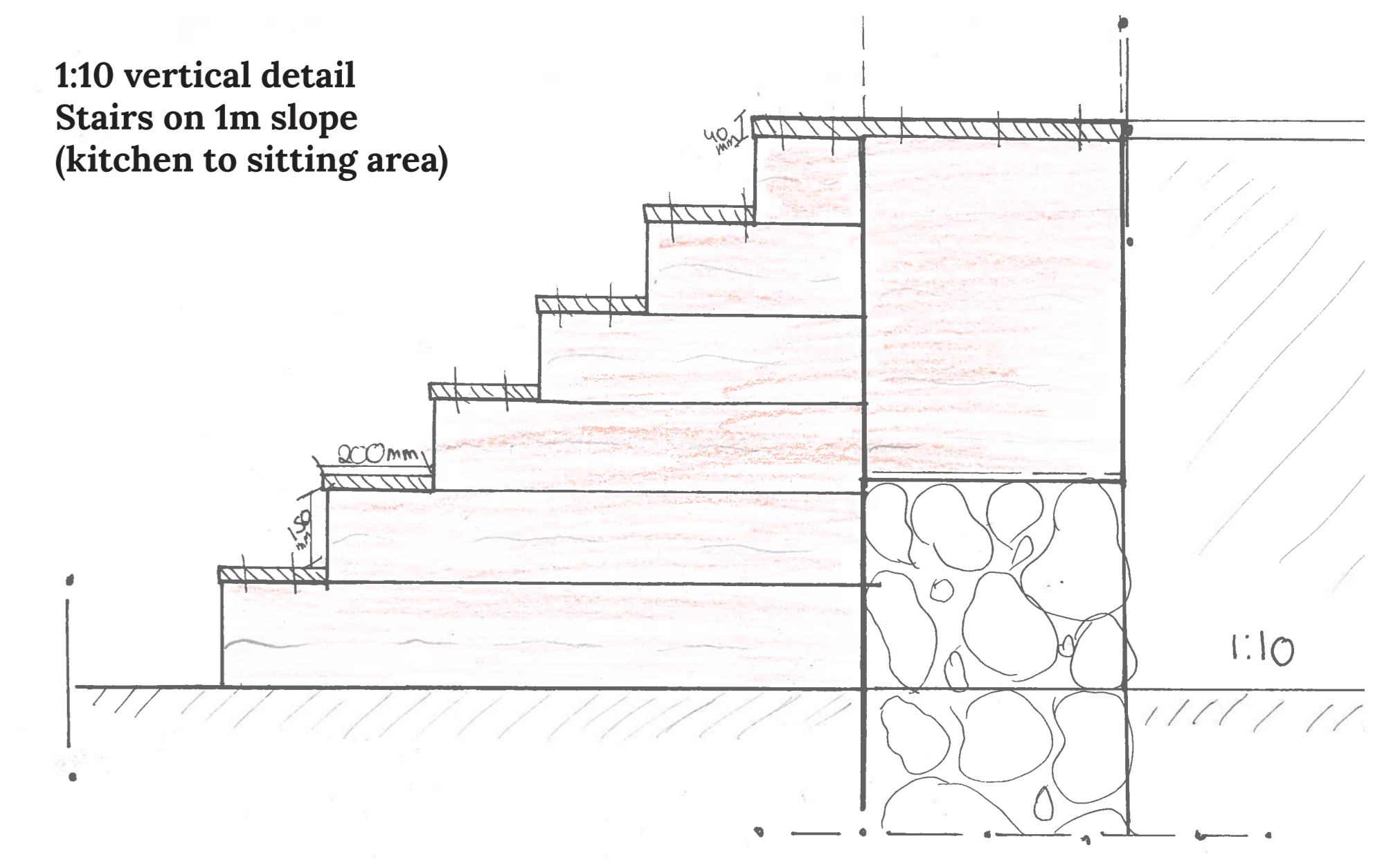
Support structure



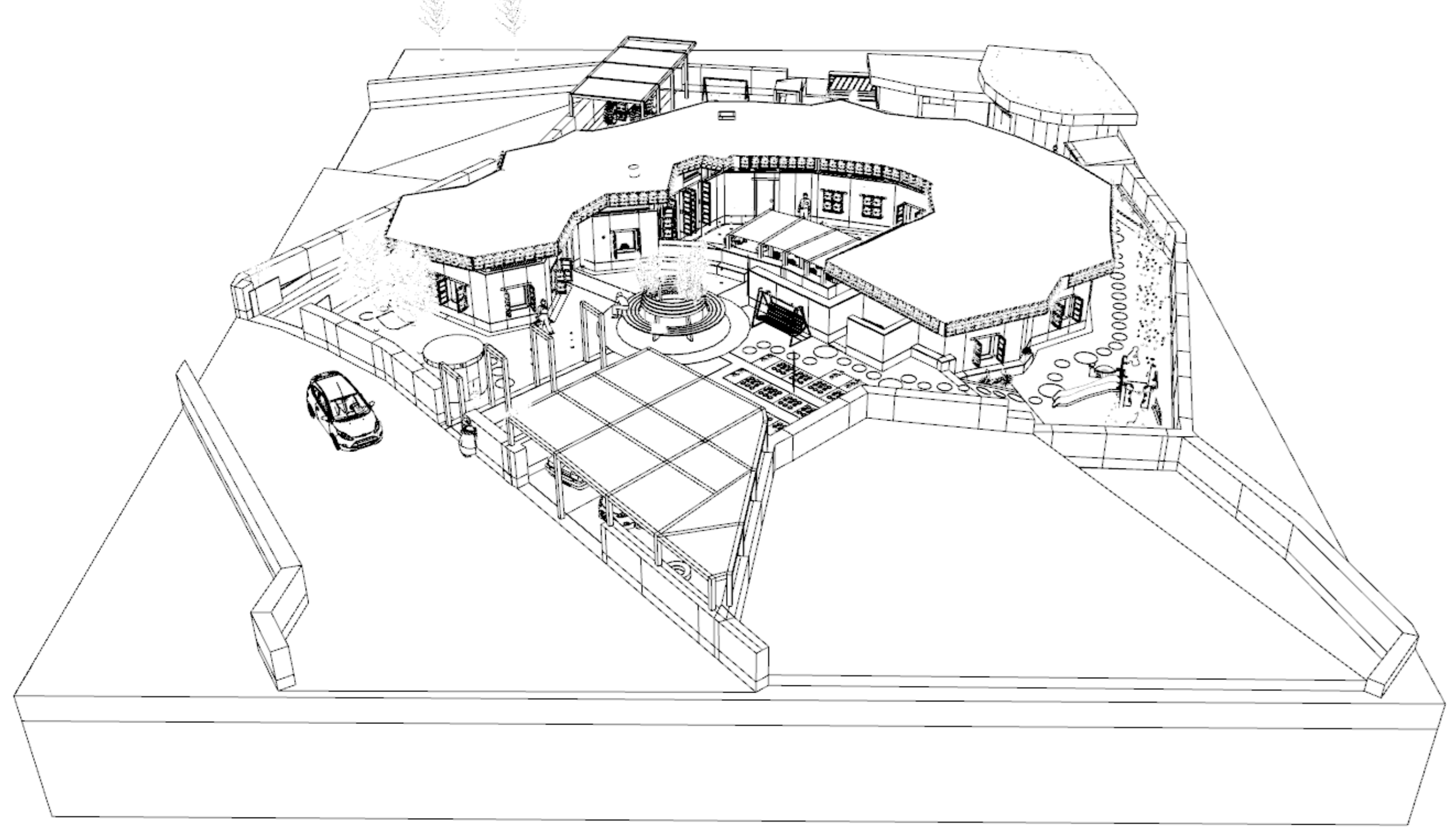
Support structure
 Rubble stone masonry footing and foundation base
 Rammed earth walls 50 cm
 Timber ring beam 200x200 mm
 Timber columns 200x200
 Timber main roof beams 250x100mm (1/20 x 5)
 (25/3 x 10)



1:10 vertical detail Stairs on 1m slope (kitchen to sitting area)



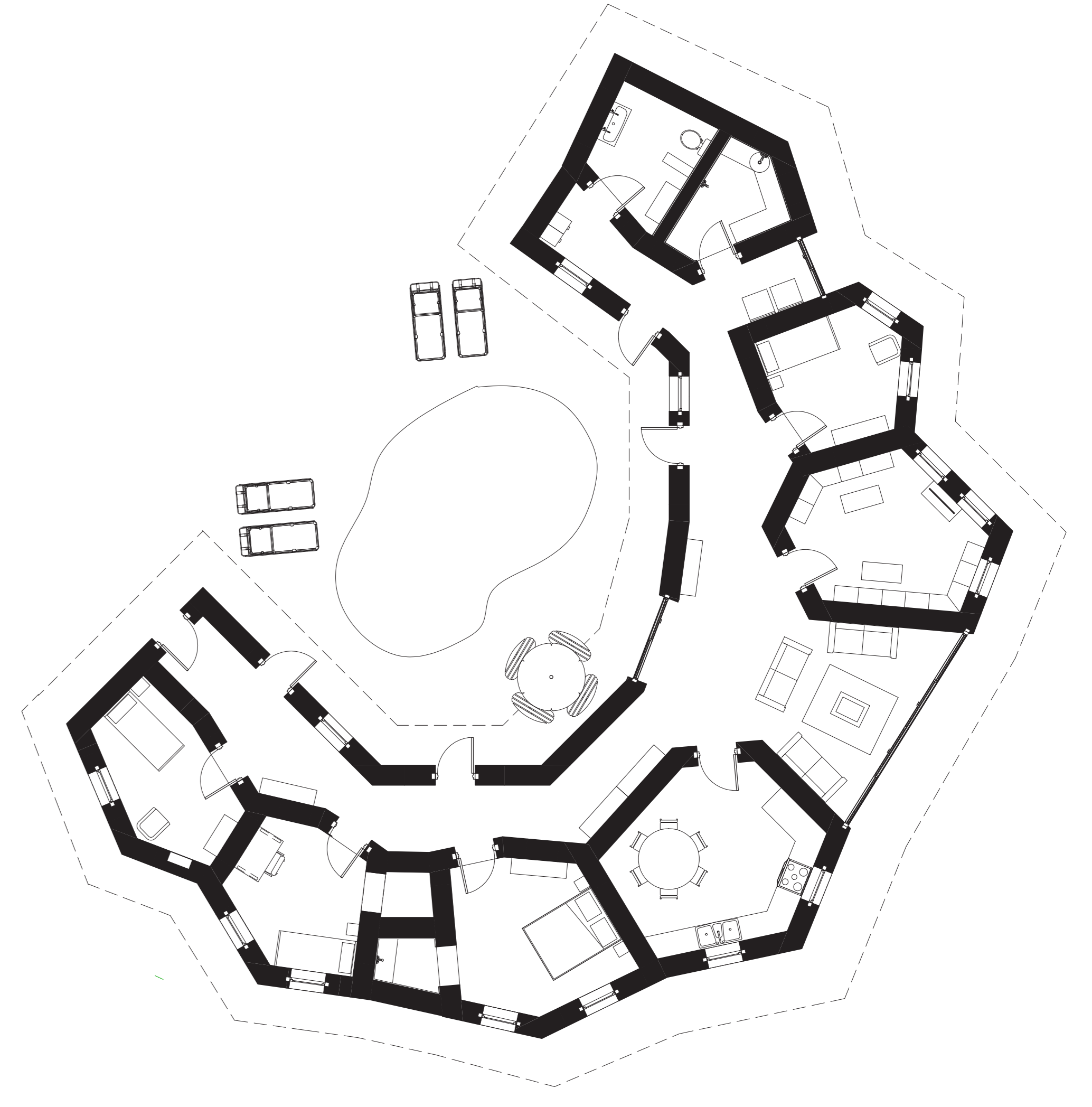
Birdview



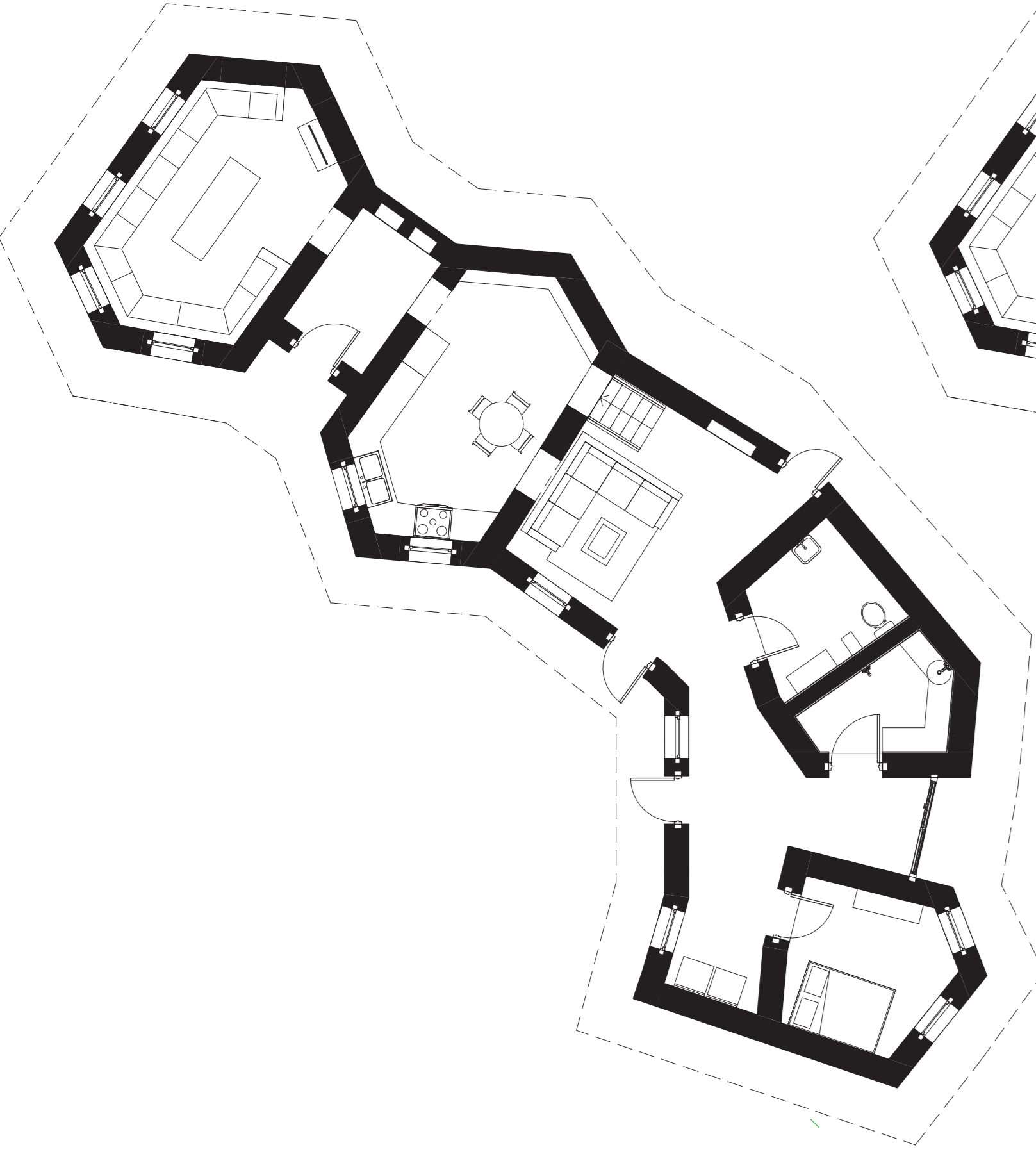
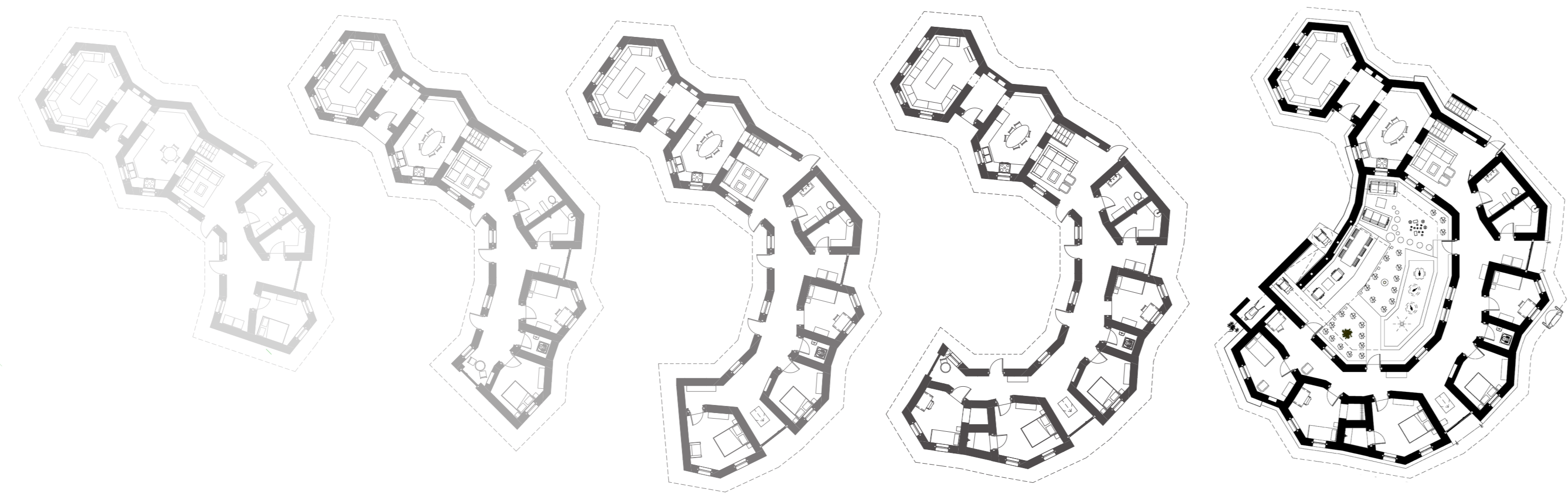
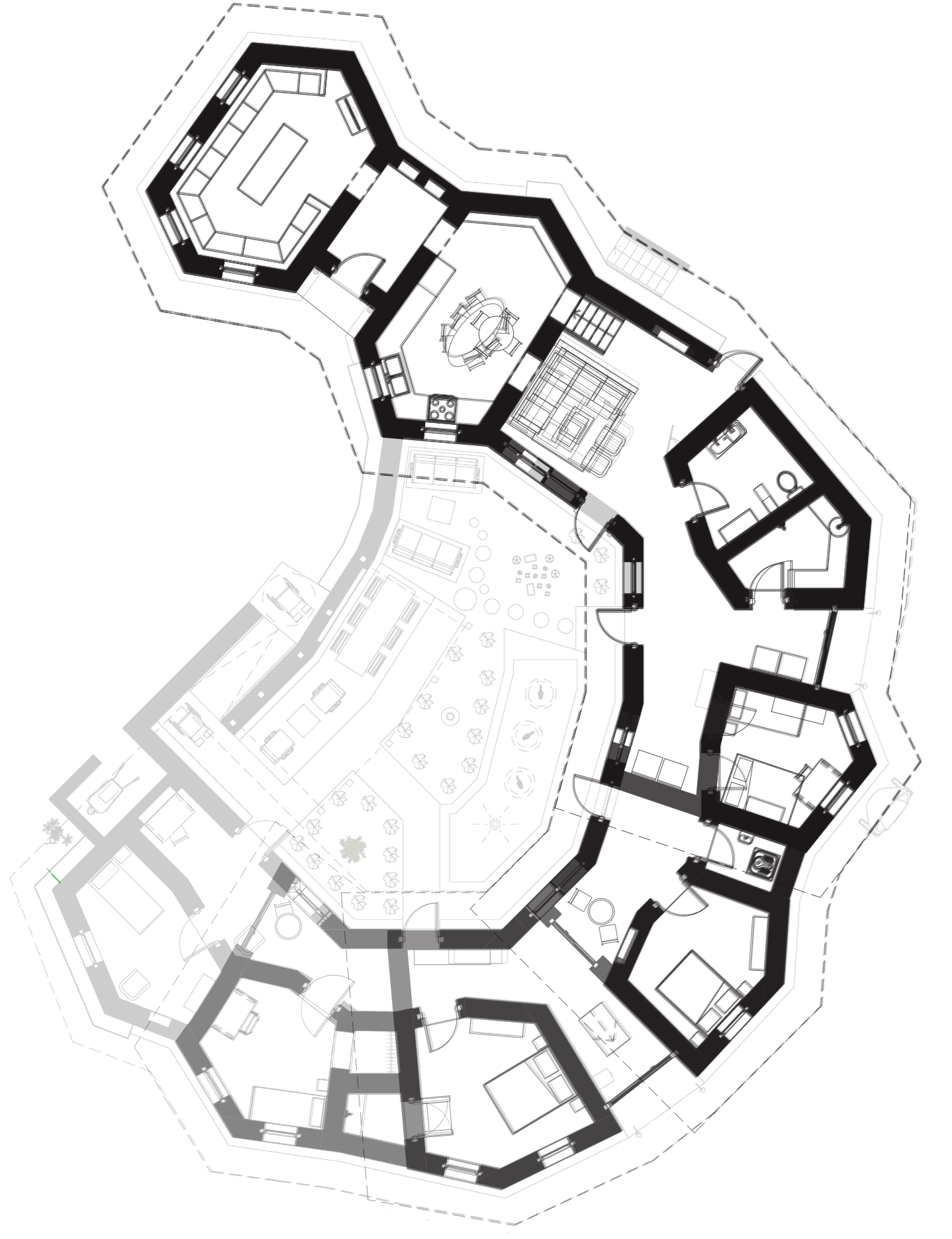
Building typology strategy:
House can grow according to household needs



Type 8: L-house 1:100



Type 7: H-house 1:100



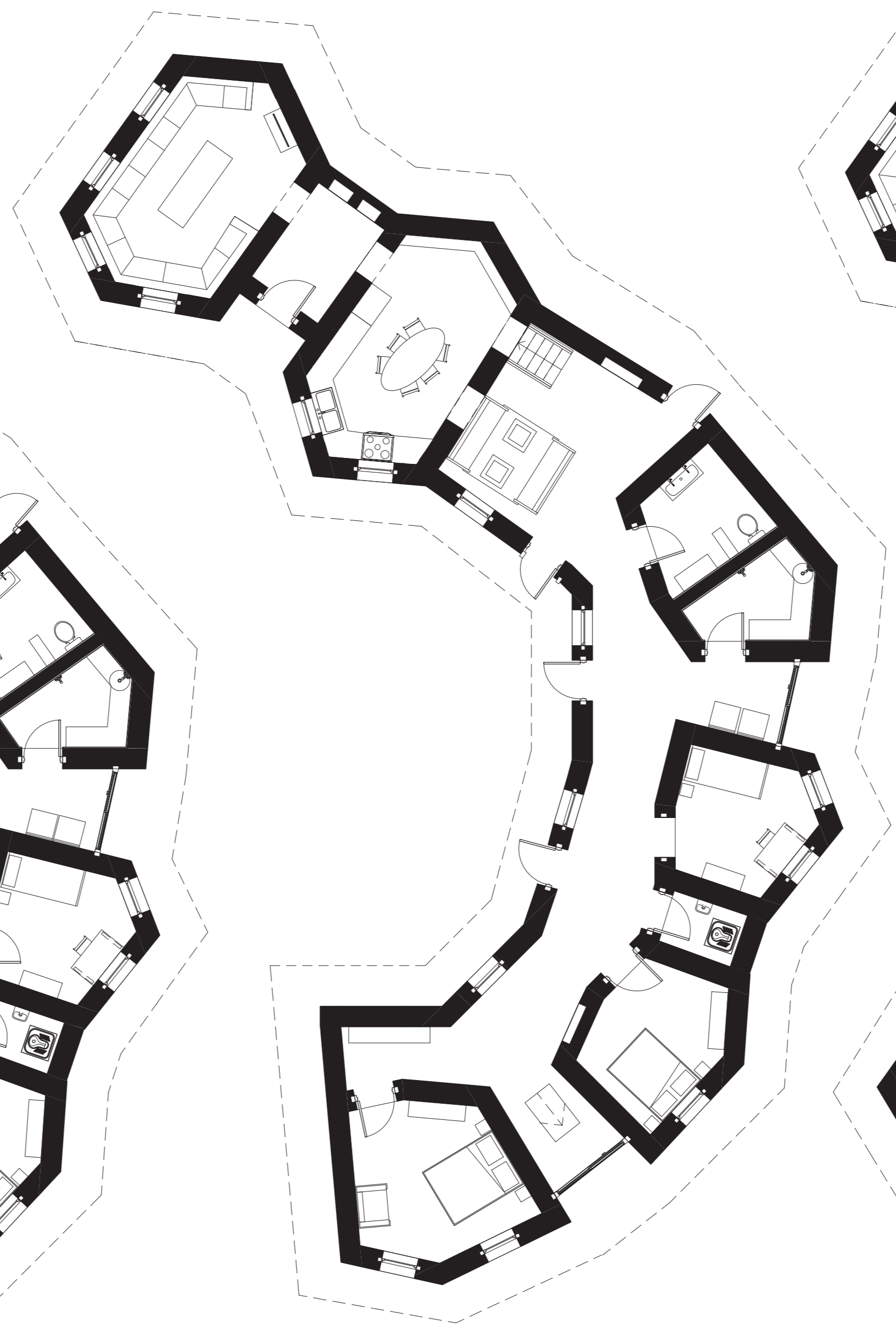
Type 2: W-house 1:100



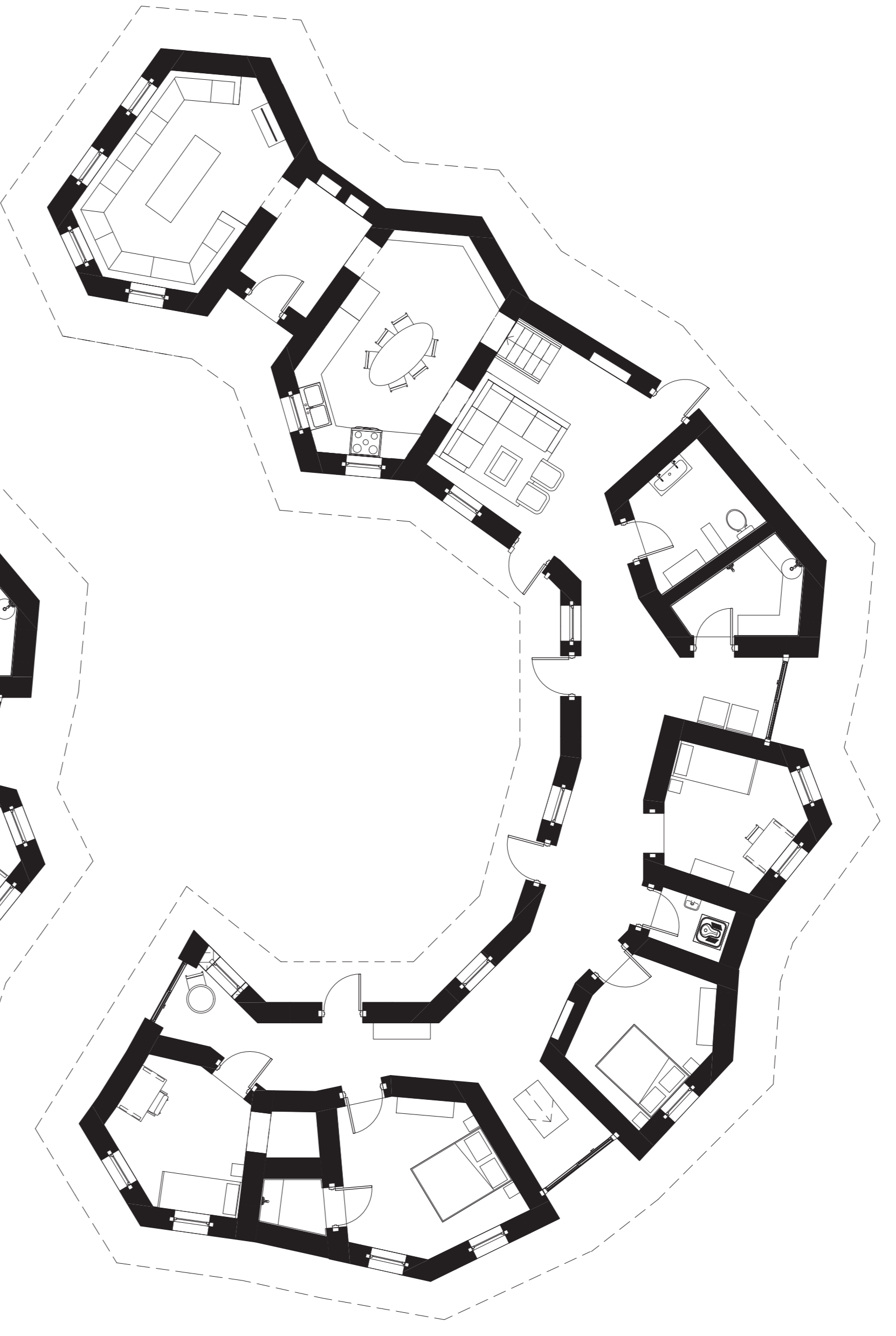
Type 3: M-house 1:100



Type 4: F-house 1:100



Type 5: GF-house 1:100



Type 6: X-house 1:100

