Design studio G7
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Universidad Europea 2018/2019
Prof: Ángel Alonso
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The floating forest
Location
Scale 1/750

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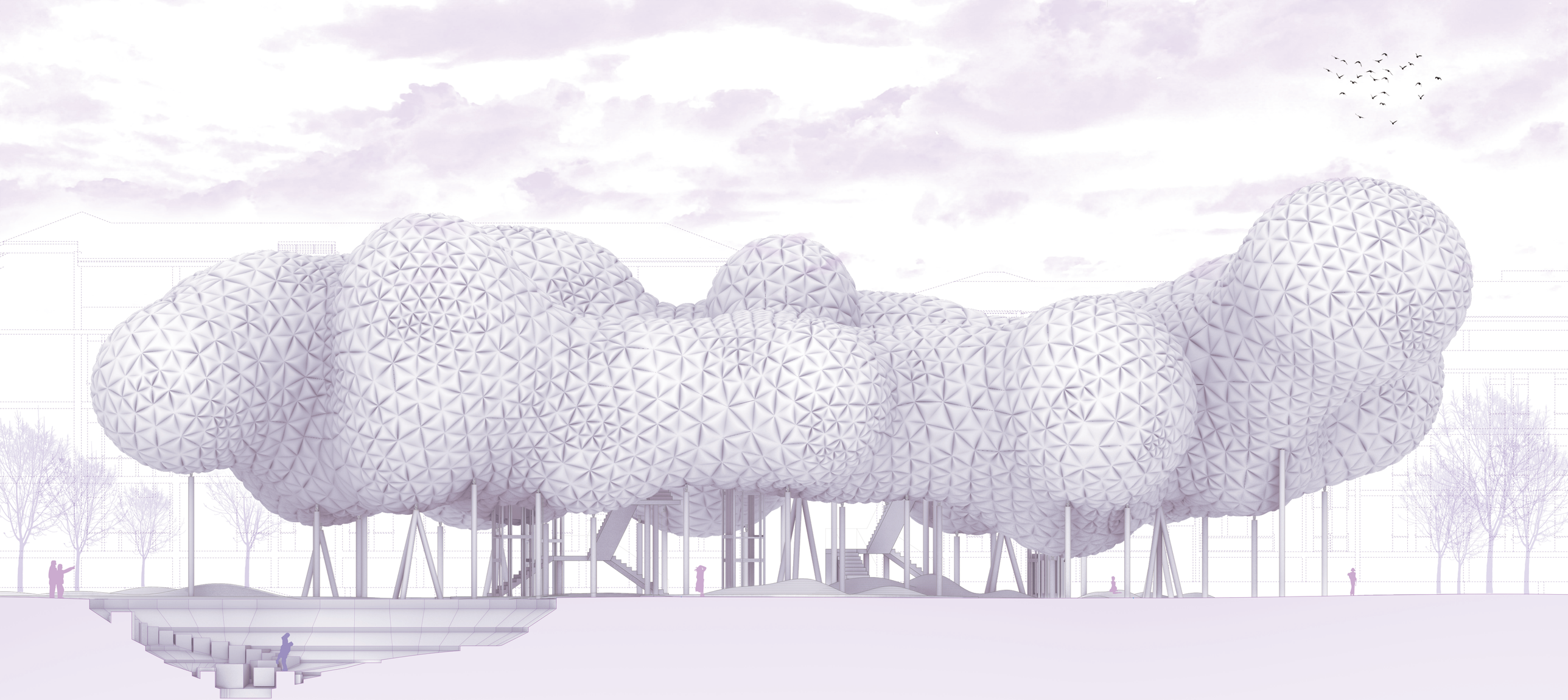
The floating forest
Diagrams and explanation
Apadrina un olivo



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The floating forest
East elevation
Scale 1/100

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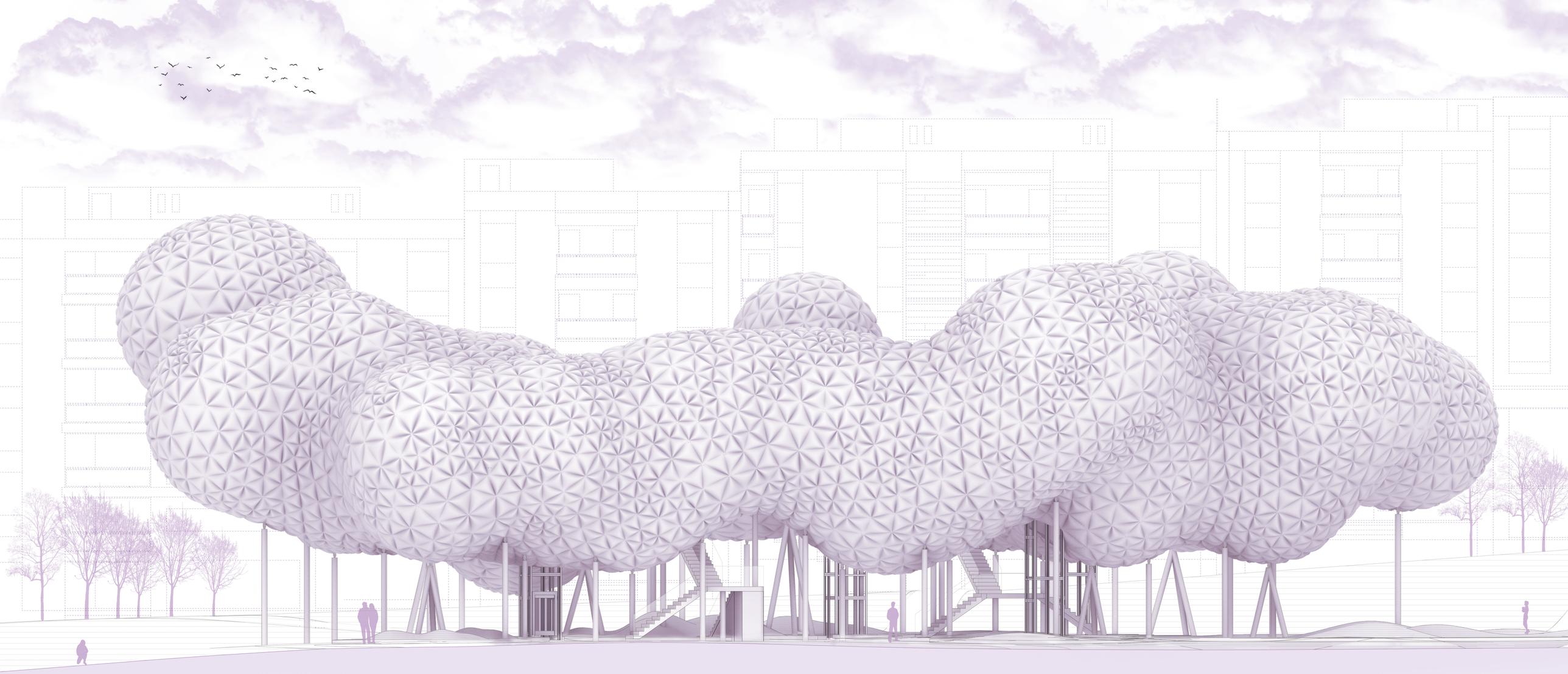
The floating forest
North elevation
Scale 1/100



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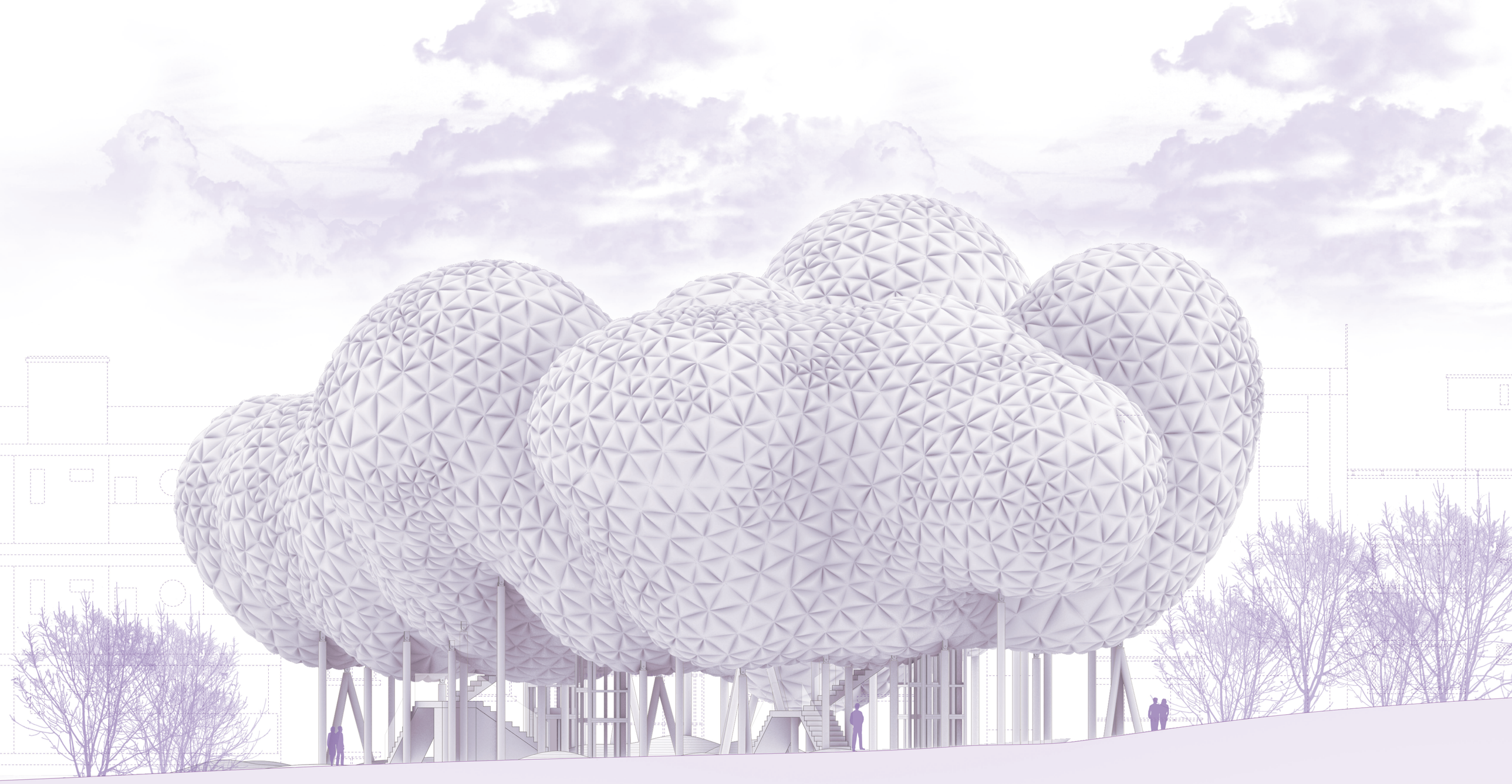
The floating forest
West elevation
Scale 1/100



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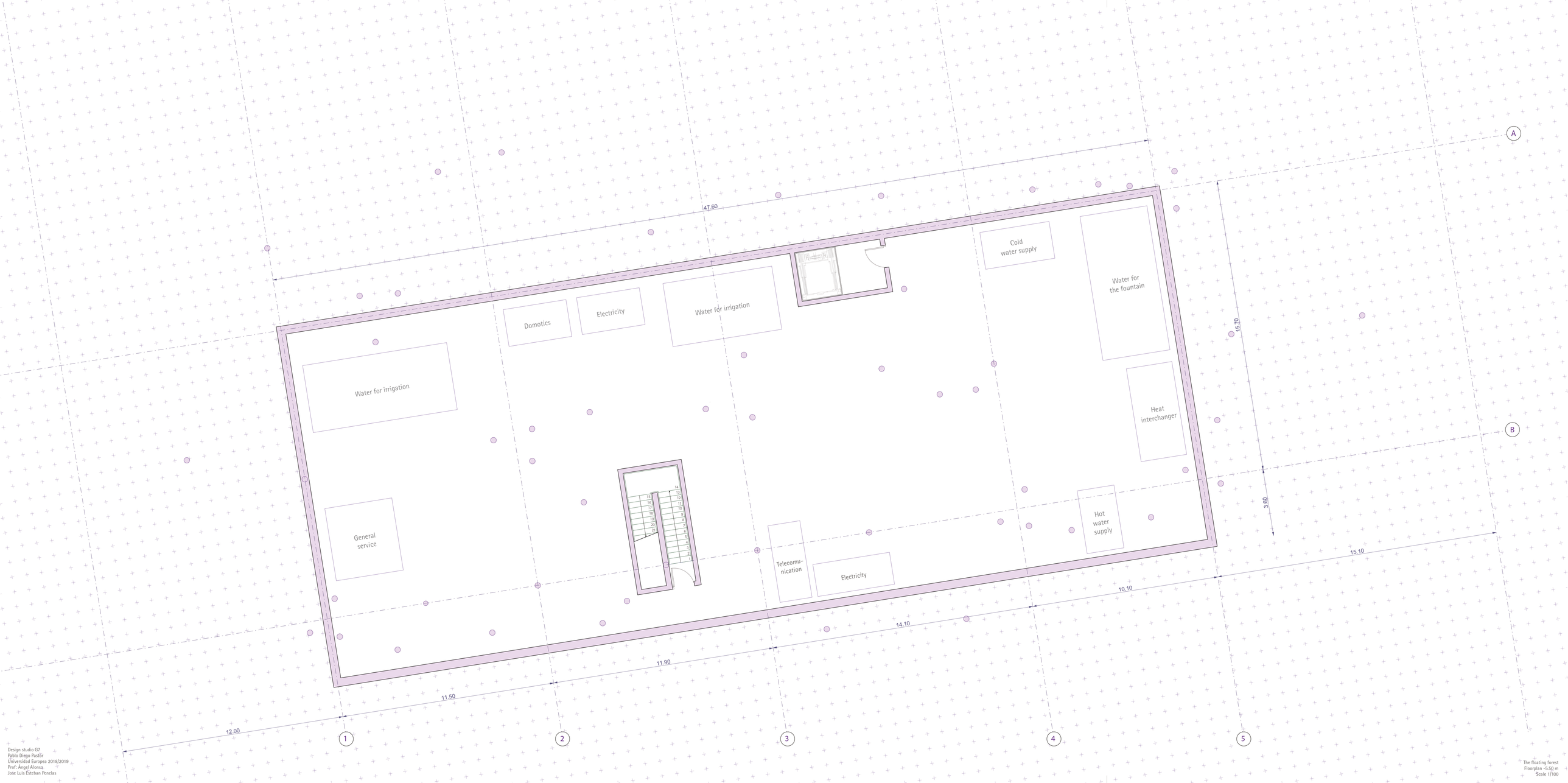
The floating forest
South elevation
Scale 1/100



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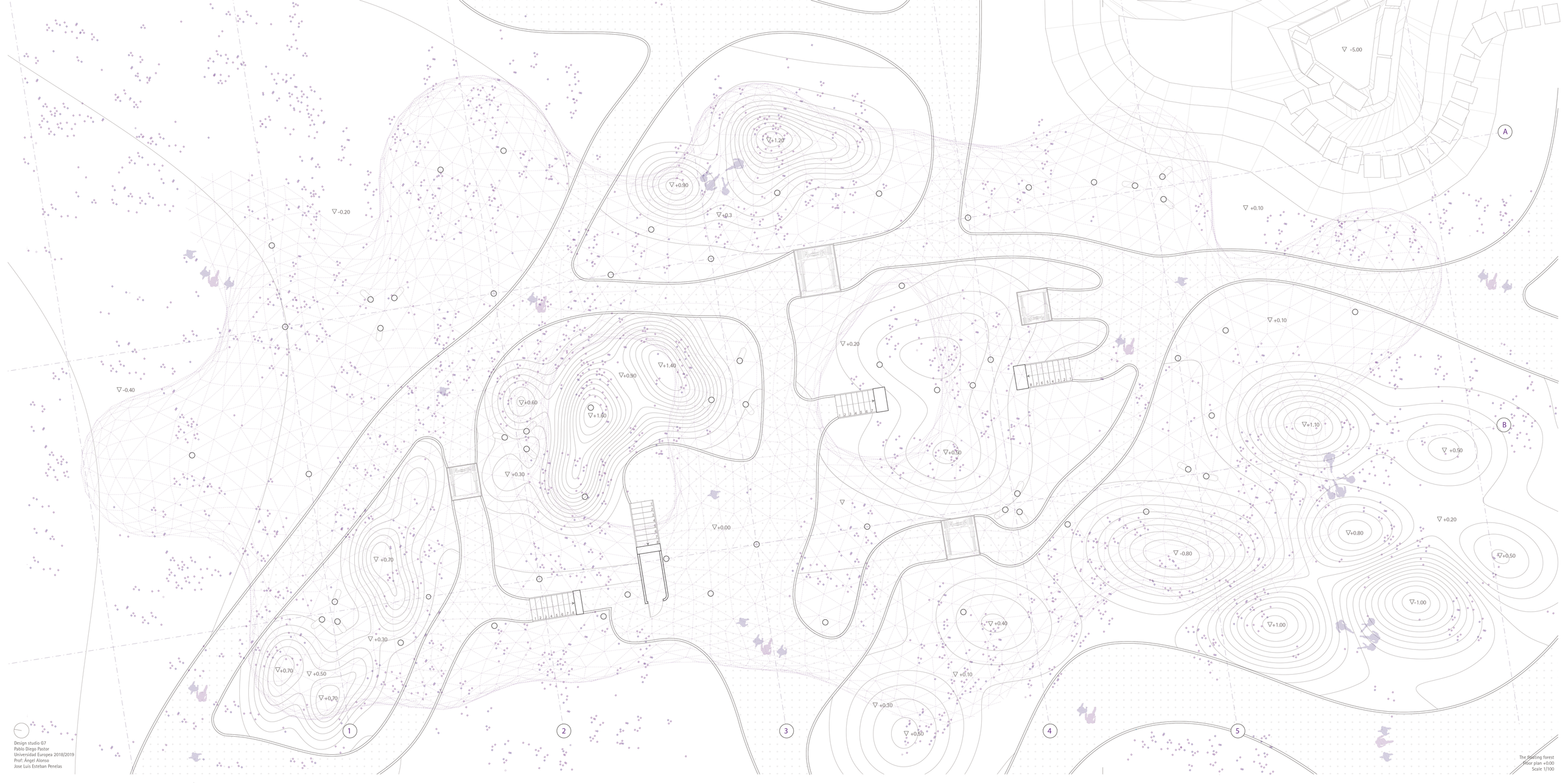
The floating forest
Floorplan -5.50 m
Scale 1/100



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The Resting forest
Floor plan +0.00
Scale 1/100

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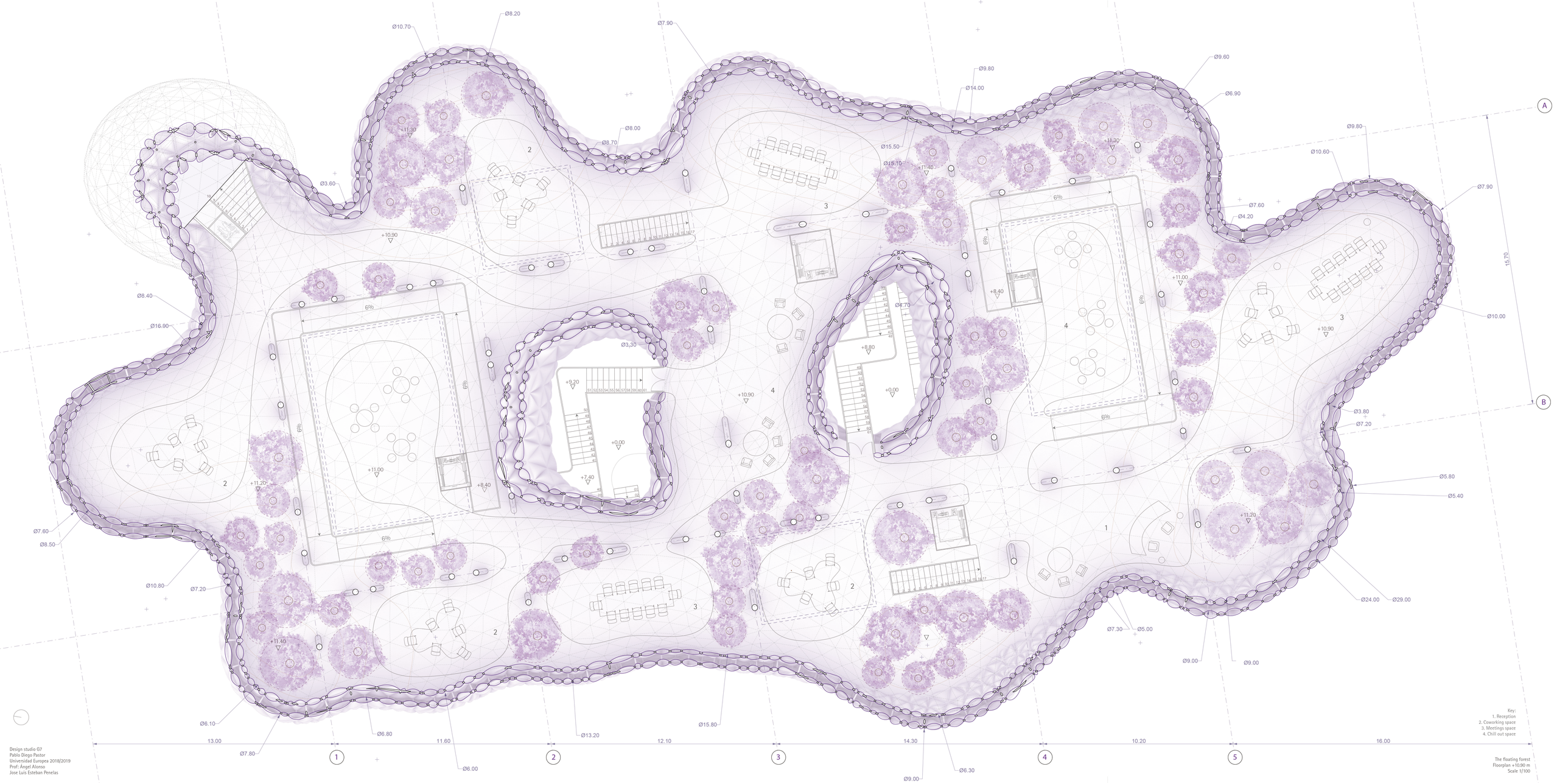
Key:
1. Storage room
2. Bathroom

The floating forest
Floorplan +07.60 m
Scale 1/100



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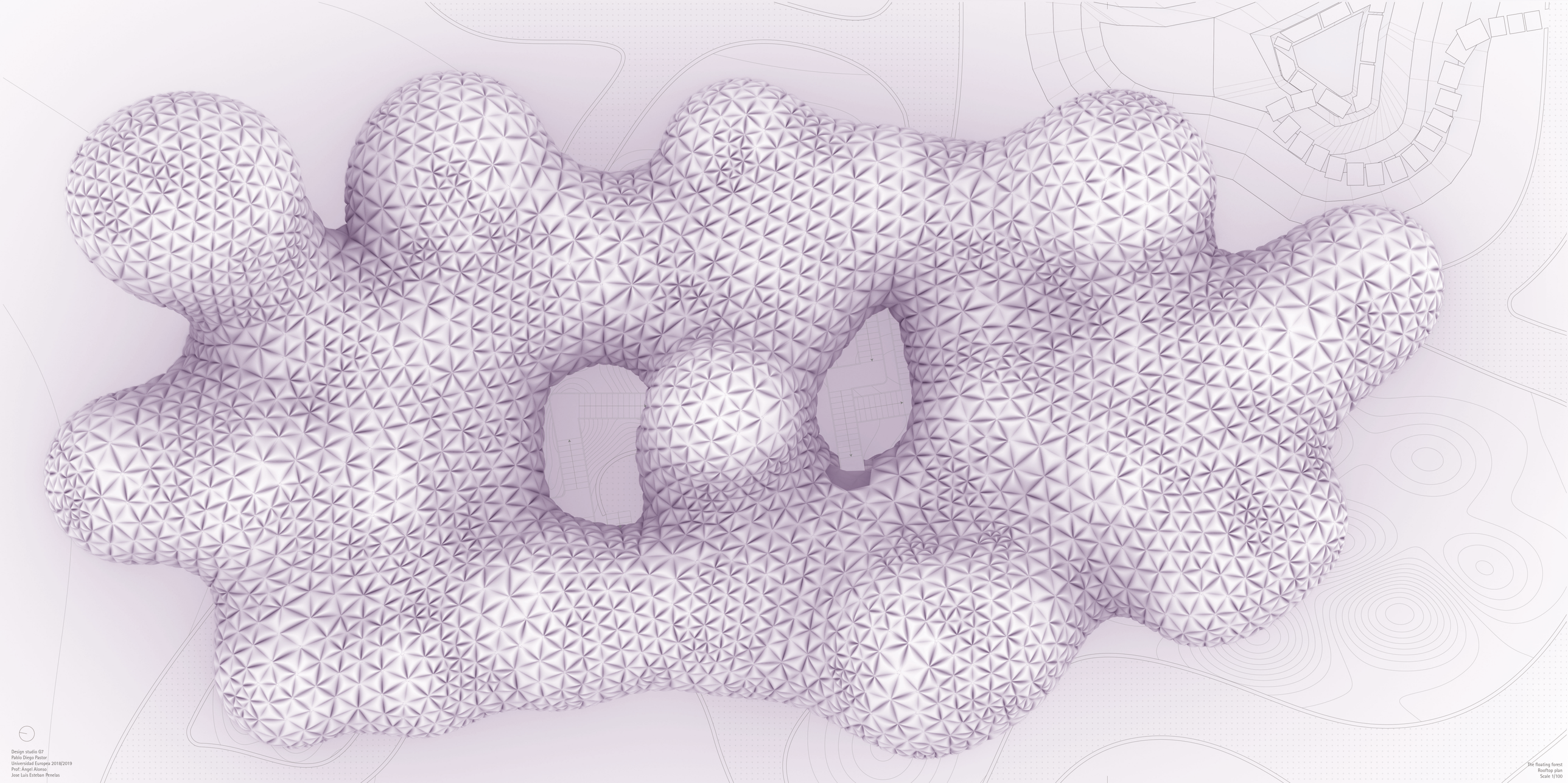
Key:
1. Reception
2. Coworking space
3. Meetings space
4. Chill out space

The floating forest
Floorplan +10.90 m
Scale 1/100



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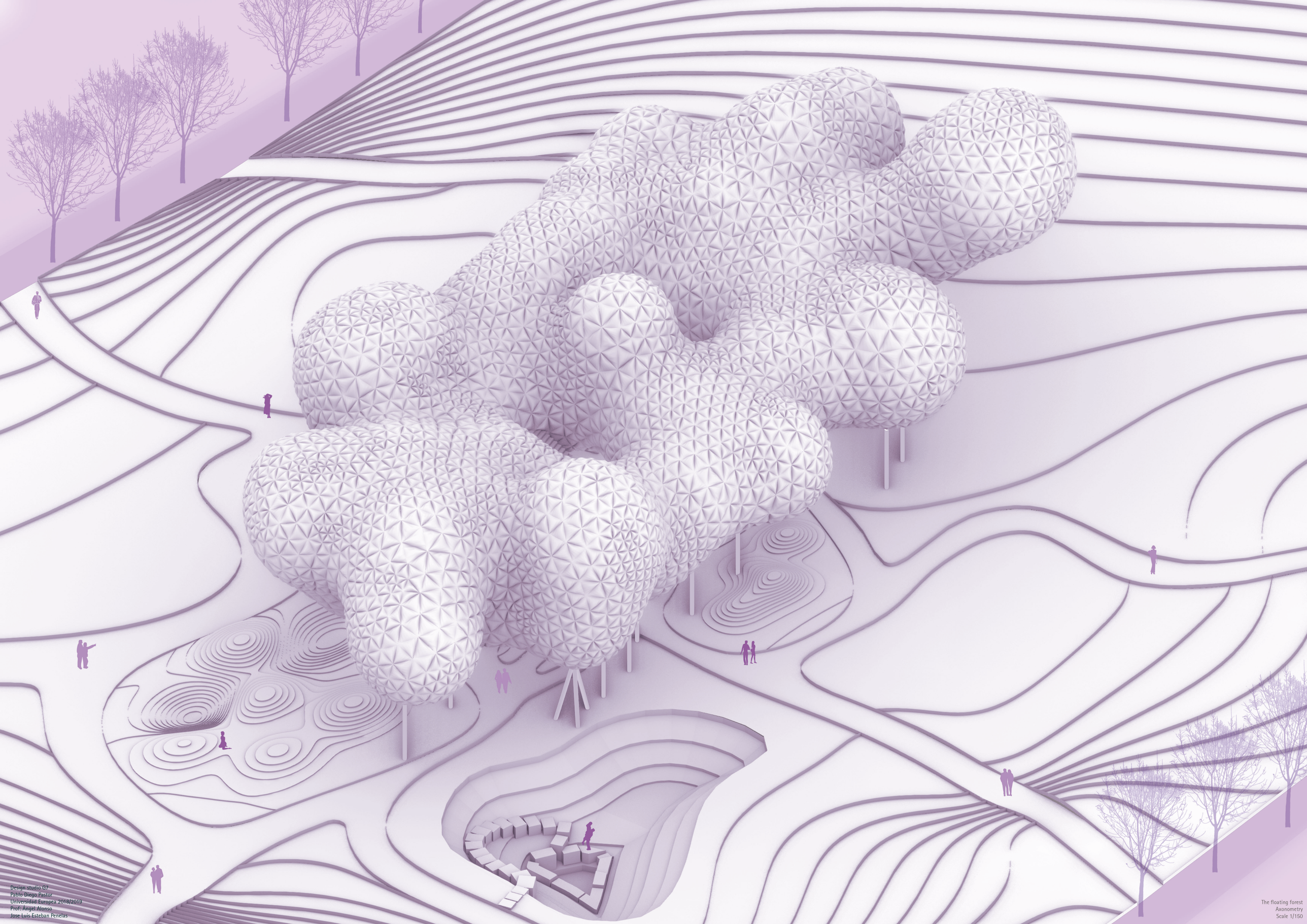
The floating forest
Rooftop plan
Scale 1/100



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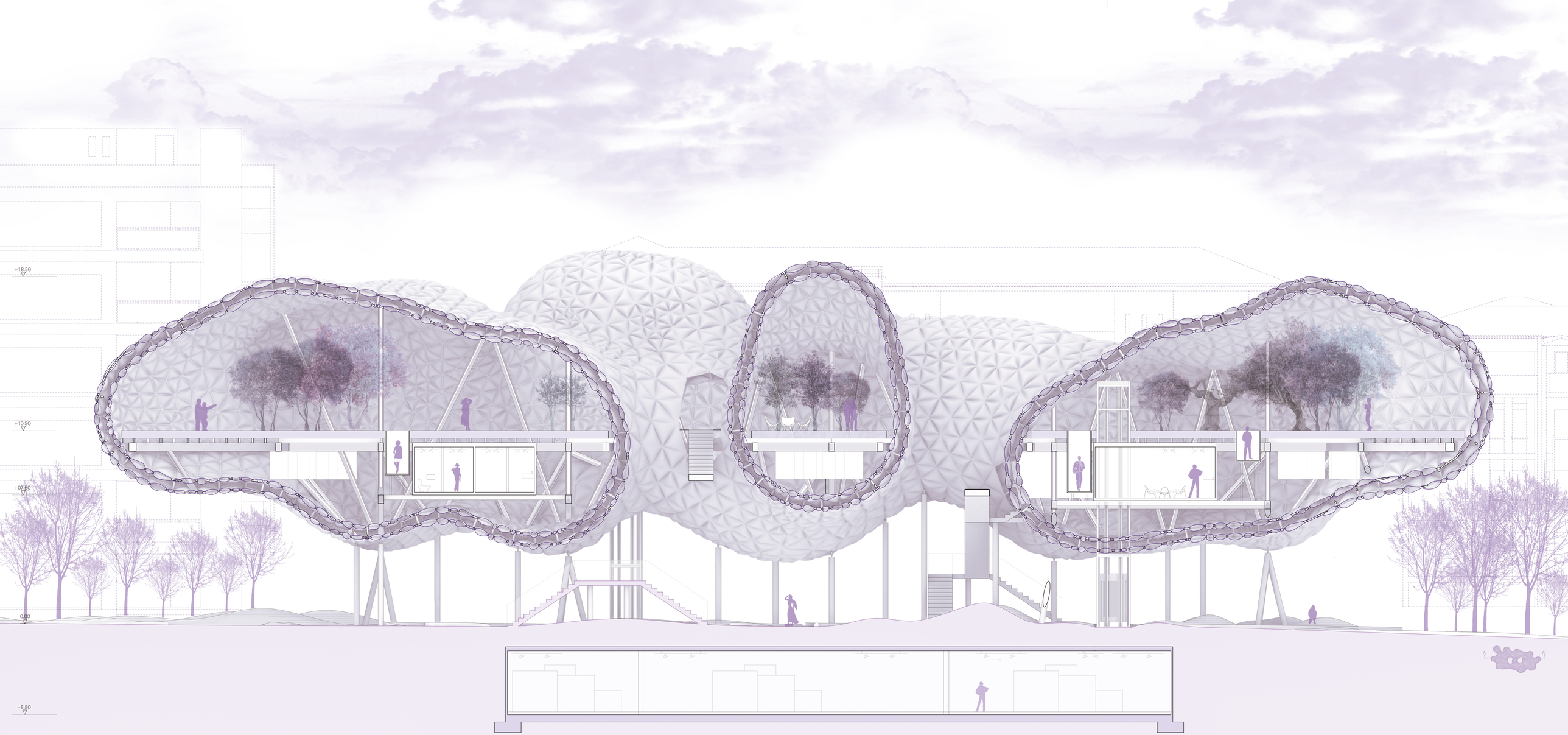
The floating forest
Axonometry
Scale 1/150



Design studio 07
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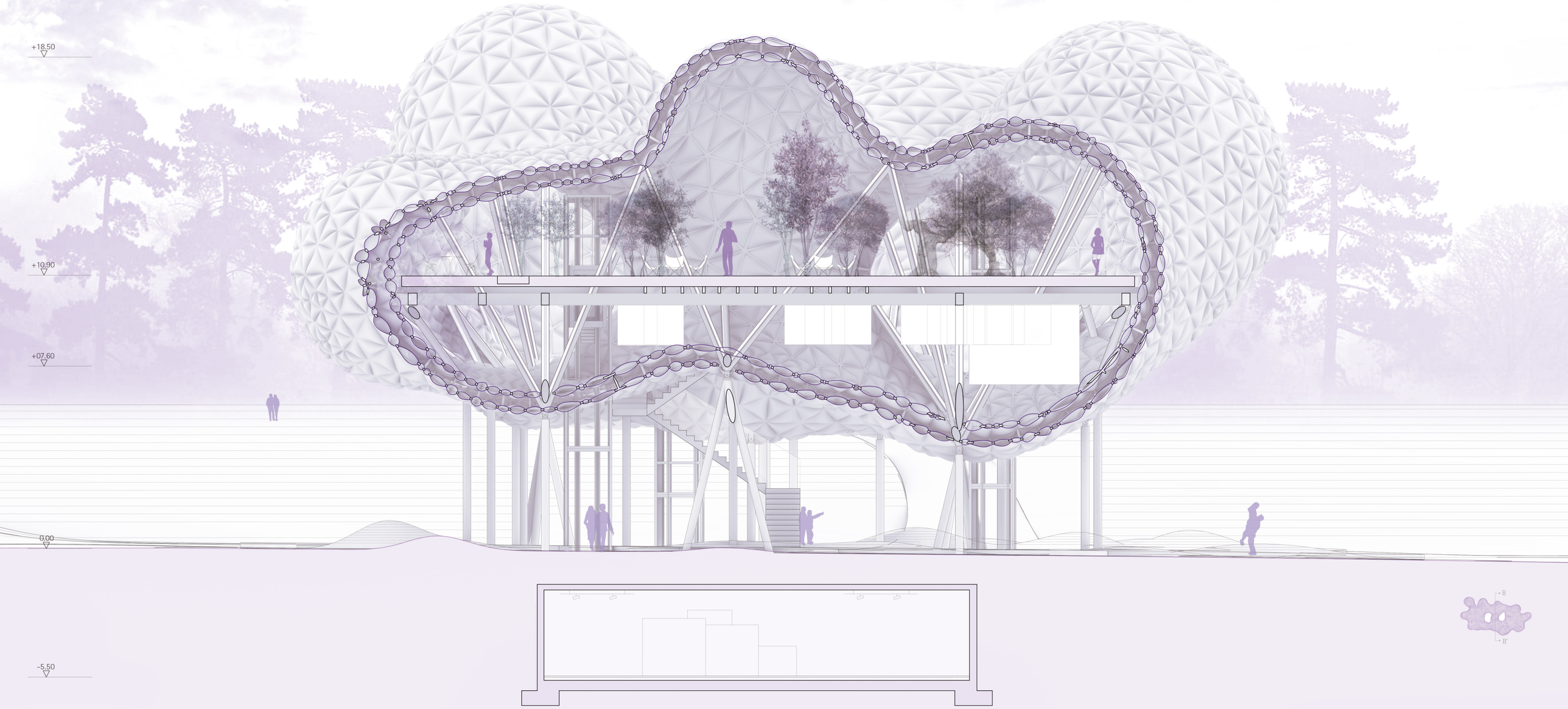
Jose Luis Esteban Penelas

The floating forest
Section A.A'
Scale 1/100



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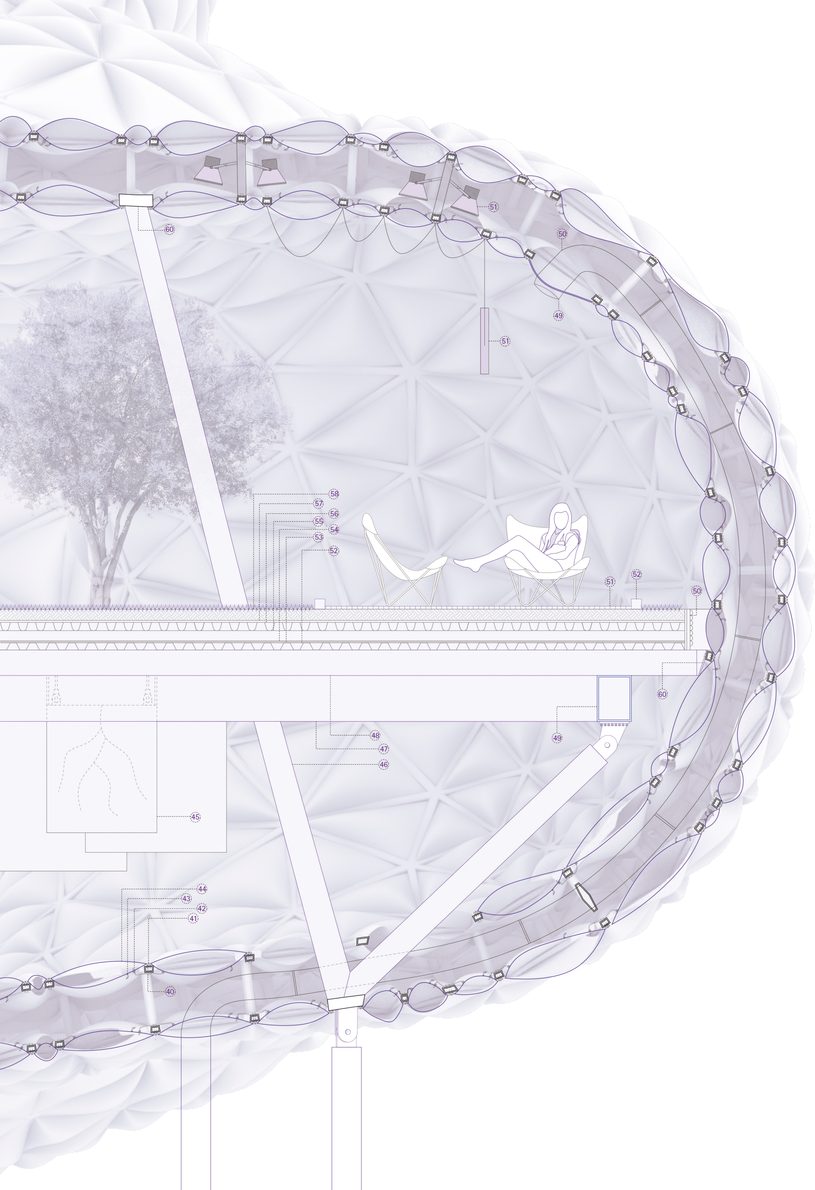
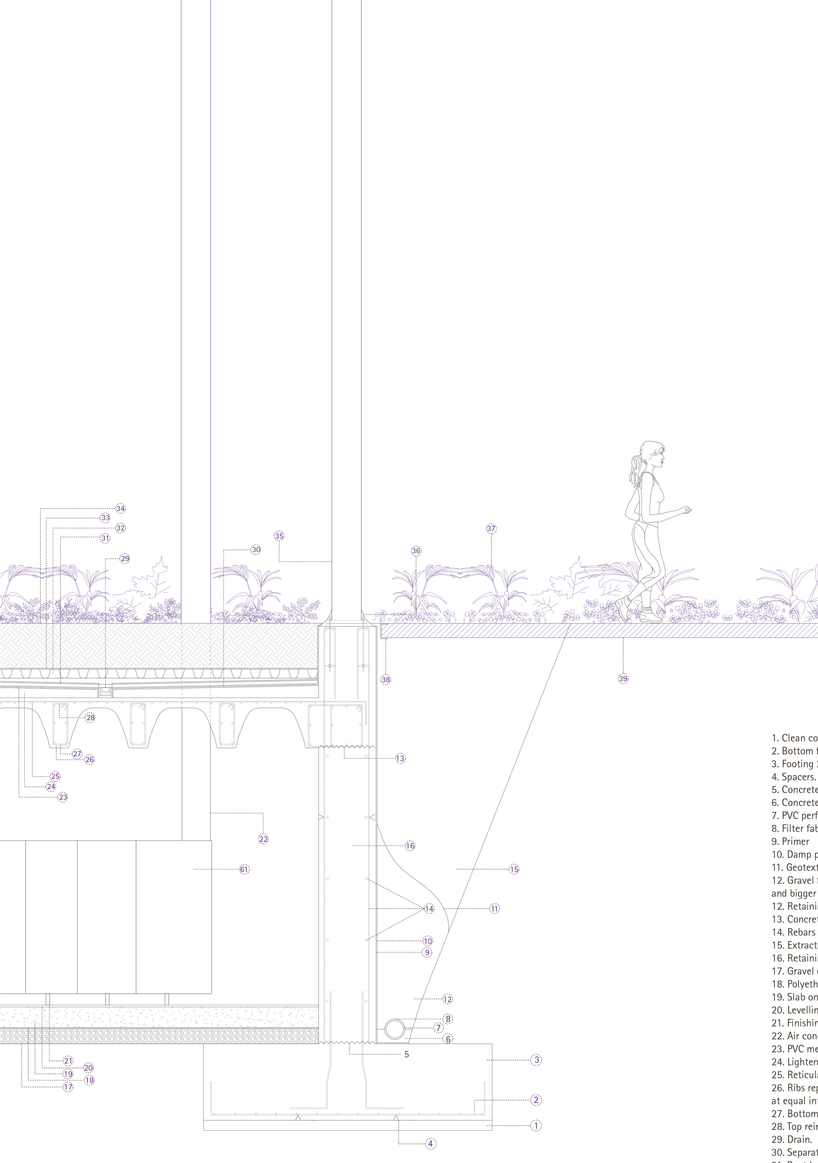
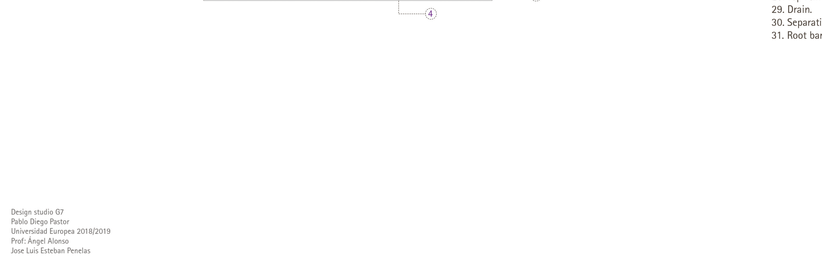
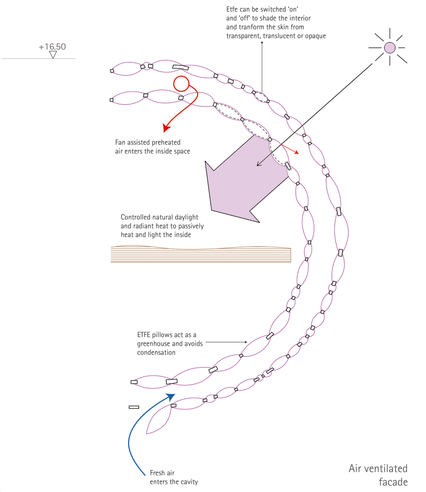
The floating forest
Section B.B'
Scale 1/100

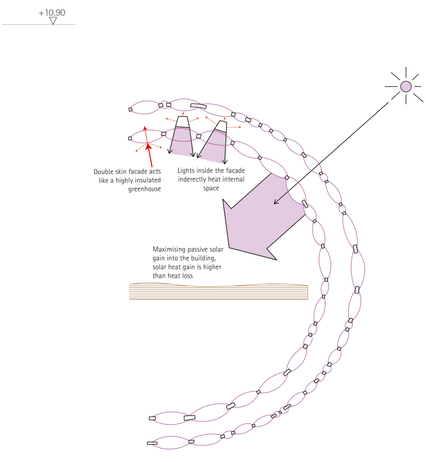




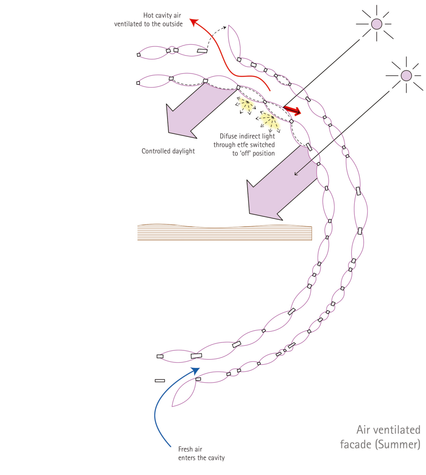




Air ventilated facade



Air ventilated facade (Winter)



Air ventilated facade (Summer)

1. Clean concrete e=10cm.
2. Bottom footing reinforcement.
3. Footing 2.85x2.85x0.75m.
4. Spacers.
5. Concrete Joint.
6. Concrete seat bed.
7. PVC perforated drain pipe Ø20 cm.
8. Filter fabric over pipe.
9. Primer
10. Damp proof membrane.
11. Geotextile leh.
12. Gravel filling, smaller diameter at the top and bigger at the bottom.
12. Retaining wall e= 50cm
13. Concrete Joint.
14. Rebars Ø12.
15. Extracted soil filling.
16. Retaining wall e= 50cm.
17. Gravel crushing e= 15cm.
18. Polyethylene film.
19. Slab on grade e= 20cm.
20. Levelling mortar e= 6cm.
21. Finishing (Vinyl floor).
22. Air conduct.
23. PVC membrane.
24. Lightened concrete.
25. Reticular slab reinforcement mesh.
26. Ribs repeated in both directions of the slab at equal intervals.
27. Bottom reinforcement bars.
28. Top reinforcement bars.
29. Drain.
30. Separating felt.
31. Root barrier .
32. Drainage layer.
33. Moisture retention layer.
34. Lightweight soil with lavender.
35. Steel pilar CHS 323.9 e=12.5mm
36. Waterproofing resin.
37. Lavandula plantae.
38. Steel plate.
39. Compacted earth creating paths.
40. LED lights
41. Anchorage tensor, welded to structure. Antirust treatment and protection to the fire with painting.
42. Air extraction to reduce cushion.
43. Air impulsion to expand cushion.
44. 4 layer ETFE cushion with electrogel to change properties.
45. Olive pots.
46. Steel pilar CHS 273 e= 12mm.
47. Steel beam RHS 45x30cm e= 12mm
48. Steel joist RHS 25x10cm e=12mm.
49. Edge beam RHS 45x35cm e=12mm.
50. LED lights.
51. Stone pavement.
52. Timber slats.
53. Steel deck.
54. Cement board deck.
55. Root barrier.
56. Extruded polystyrene insulation.
57. Drainage layer.
58. Lightweight soil.
59. Grass e= 5cm
60. Steel plate.
61. Air treatment unit (UTA)

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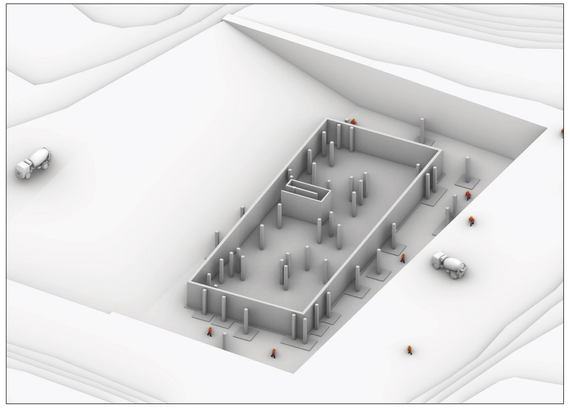
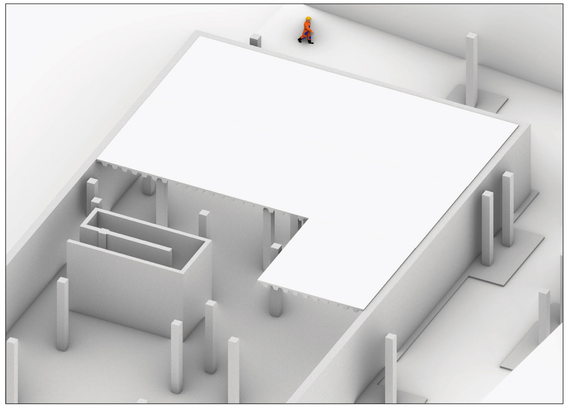
1. Weeding and soil preparation : getting ready the ground so that when the machines come, the plot won't be full of plants and weeds. Excavation of the soil.

2. Excavate the space in which the footings will be placed.

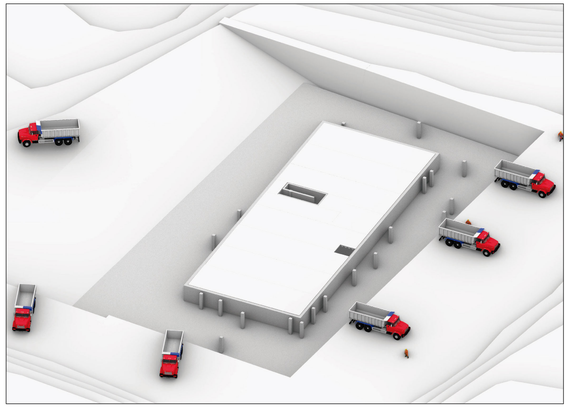
3. Placing concrete and reinforcement inside the voids to create building's footings.



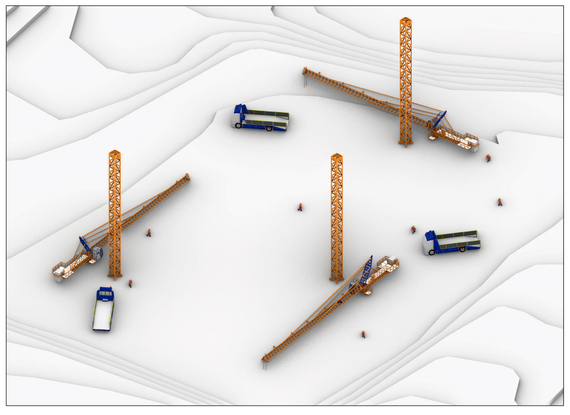
4. Using formwork, retaining walls and concrete pillars are built.



2. Mep machinery is placed inside the basement. Waffle slab is constructed after the retaining wall and the concrete pillars are finished.



6. Trucks with soil arrive at the plot and fill the empty space done during the construction of the footings. The pillars that will hold the incline steel pillars are connected to the wall in order to be braced.

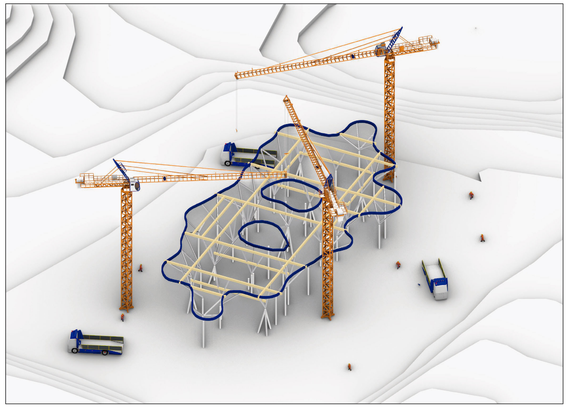


7. Cranes are mounted inside the plot.

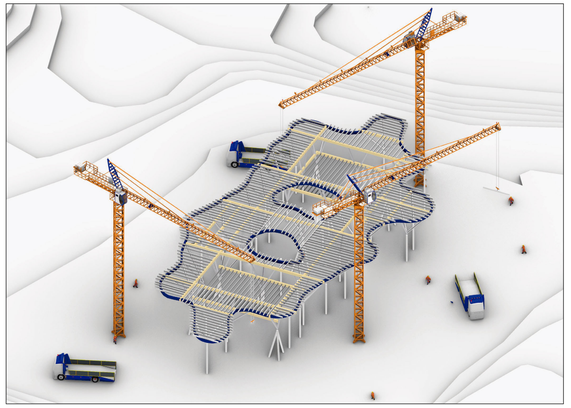
8. Steel pilars are placed with the help of the crane and fixed to the ground to the concrete pillars.

9. Incline steel pillars (CHS) are joinned with the first set of pillars.

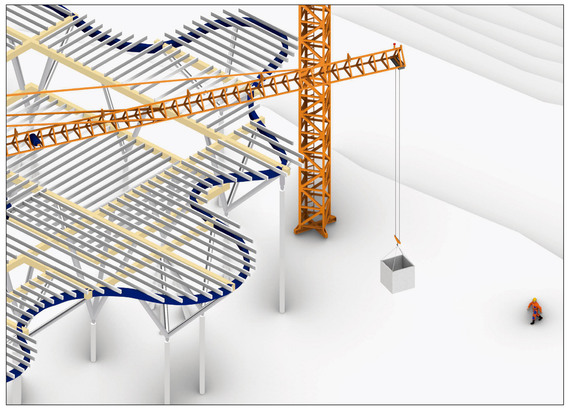
10. Steel beams are placed on top pf the incline pillars.



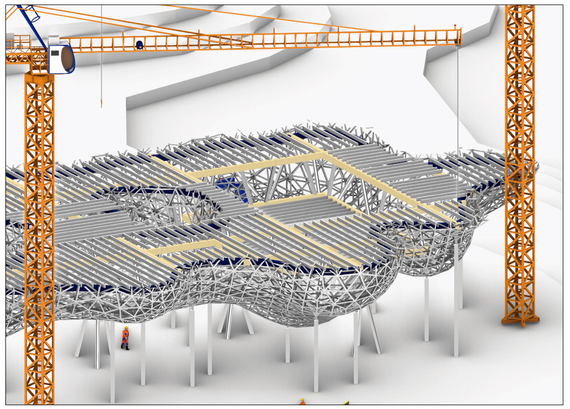
11. The edge beams are raised up and weld to the previous beams.



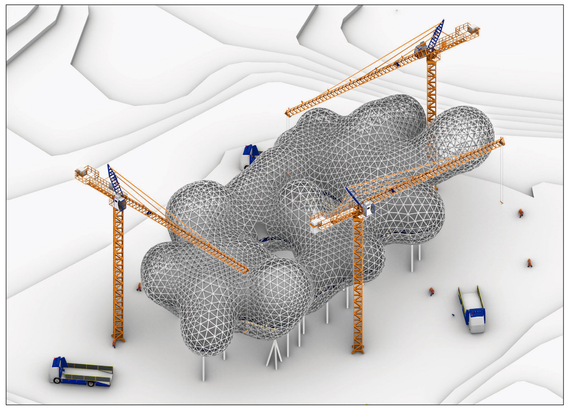
12. Steel joist are placed. At level 7.60 and 10.90m. The edges of the joist at 10.90 will held the outter structure.



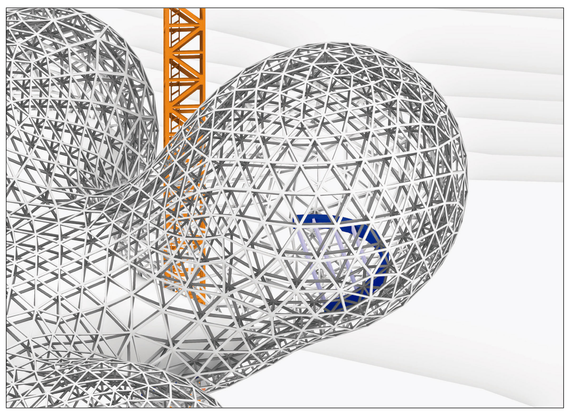
13. Olive tree pots are hanged from the beams and joists.



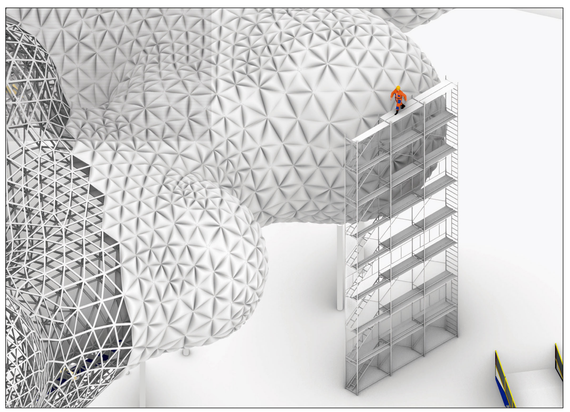
14. The outter mesh structure is built. Distance between these two meshes is 1m.
Stairs and elevators are put on place.



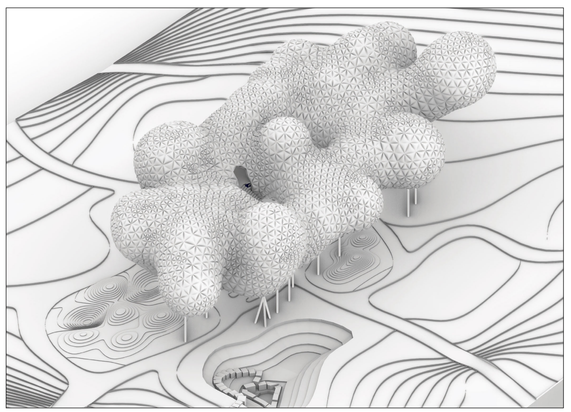
15. The upper part of the structure is finished. Slabs are placed at level +7.60 an +10.90.



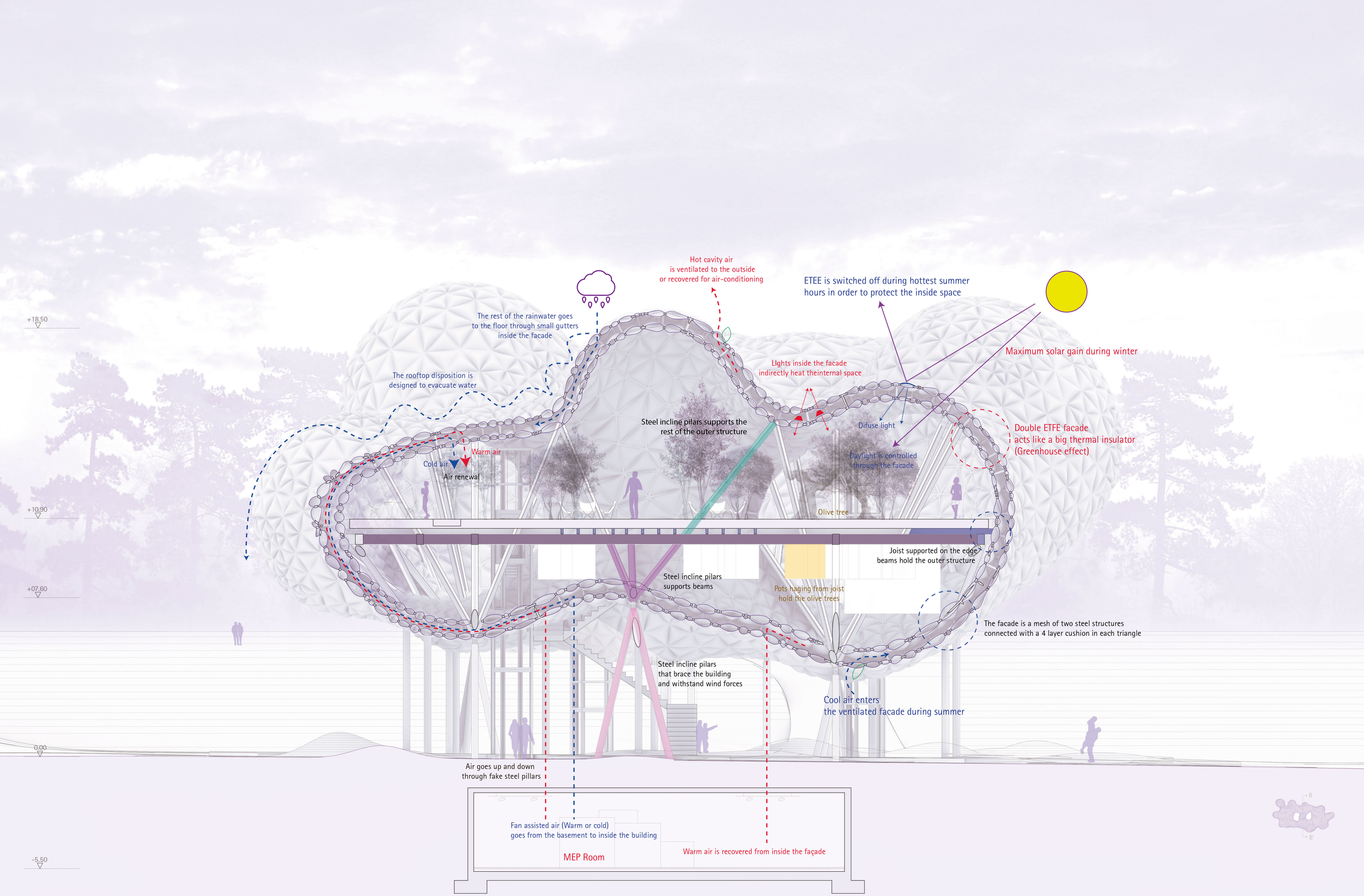
16. The beam and the joist are constructed on the viewpoint, leaning on the mesh structure.



17. Scafolding is used to place the double facade of ETFE and to fix the mep tubes to this facade.
Lights are also placed inside the double facade.



16. ETFE facade is compleated. The topography is changed. A fountain is built and lavender plans are planted.
Inside space and pavements are finished. Olive trees are brought inside the building.


+18.50
+10.90
+07.60
0.00
-5.50
Hot cavity air
is ventilated to the outside
or recovered for air-conditioning
ETEE is switched off during hottest summer
hours in order to protect the inside space
Maximum solar gain during winter
The rest of the rainwater goes
to the floor through small gutters
inside the facade
The rooftop disposition is
designed to evacuate water
LIghts inside the facade
indirectly heat theinternal space
Steel incline pilars supports the
rest of the outer structure
Difuse light
Double ETFE facade
acts like a big thermal insulator
(Greenhouse effect)
Warm air
Cold air
Air renewal
Daylight is controlled
through the facade
Olive tree
Joist supported on the edge
beams hold the outer structure
Steel incline pilars
supports beams
Pots haging from joist
hold the olive trees
The facade is a mesh of two steel structures
connected with a 4 layer cushion in each triangle
Steel incline pilars
that brace the building
and withstand wind forces
Cool air enters
the ventilated facade during summer
Air goes up and down
through fake steel pillars
Fan assisted air (Warm or cold)
goes from the basement to inside the building
MEP Room
Warm air is recovered from inside the façade
B
B'