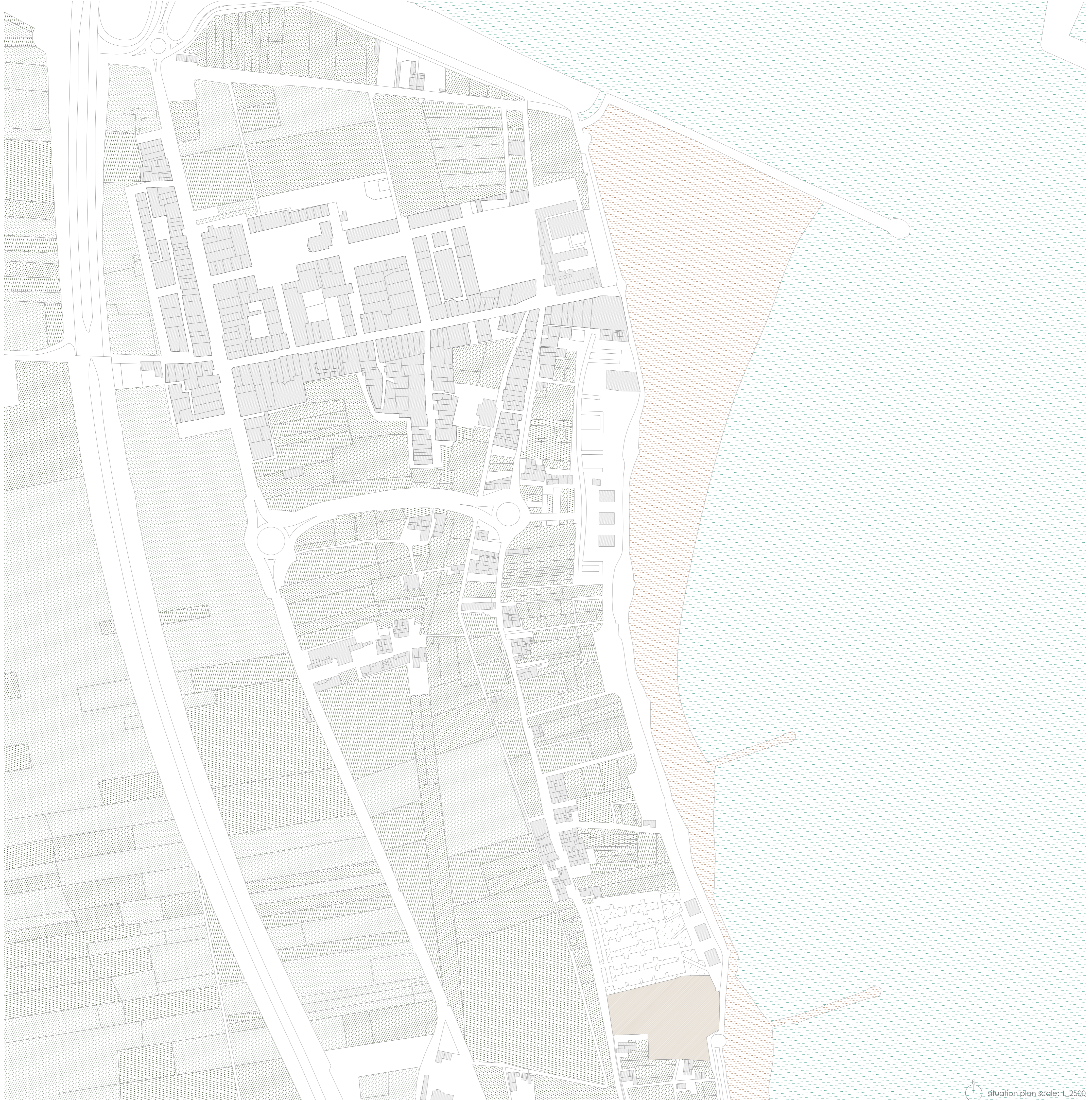
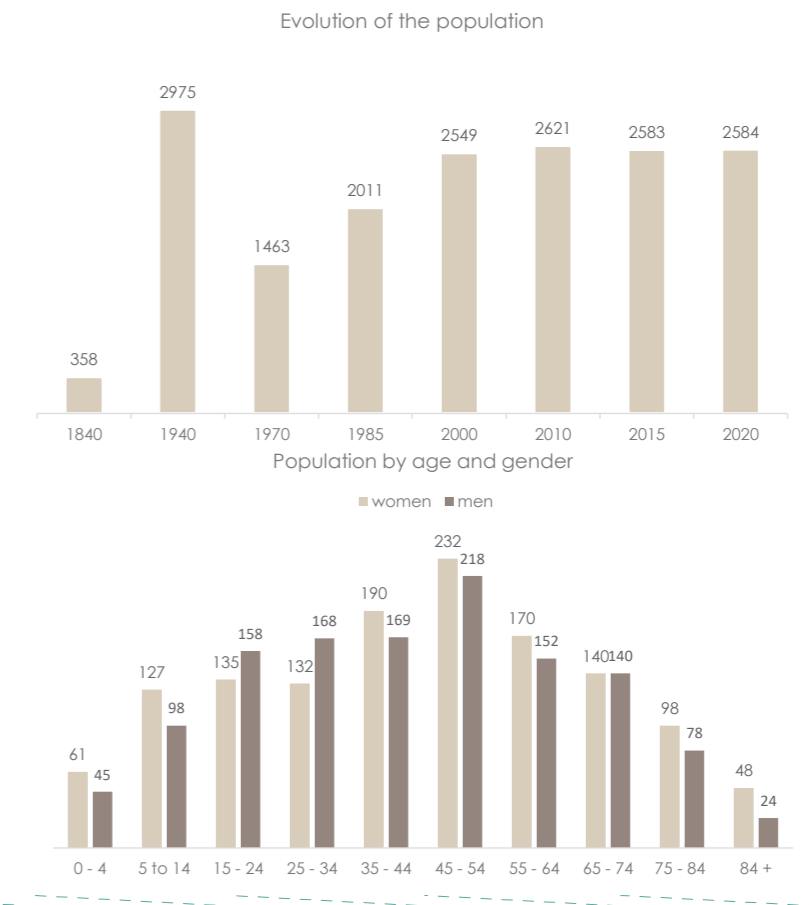
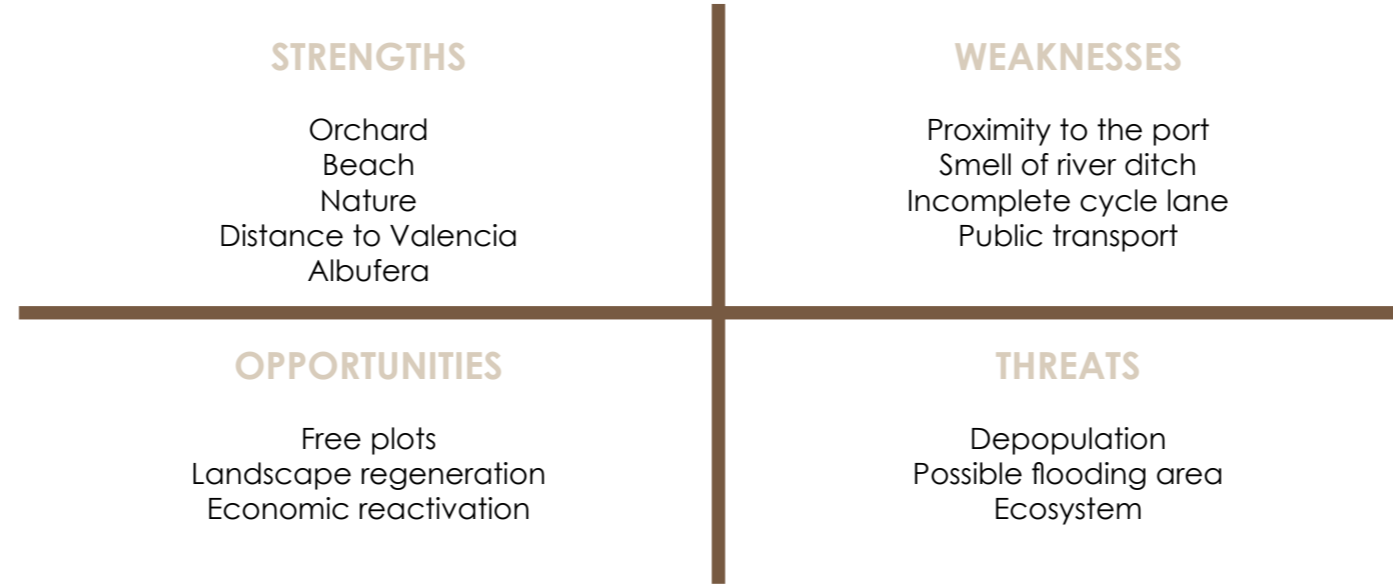


With the diversion of the River Turia, the Saler motorway was built, which connects directly with the city of Valencia, and with the expansion of the port of Valencia, the district of Pinedo was seriously affected, as the landscape value of its beach was reduced and Pinedo was pushed into a corner.

In the last 20 years Pinedo has been growing towards the beach, partly because of the impediment of growing inland due to the presence of the motorway, so internal communications have changed since the 18th century, with two parallel axes now connected perpendicularly, leading to a main internal road and a secondary road close to the sea, both surrounded by orchards.

The landscape of Pinedo is therefore very special as it is formed by an interwoven succession of different natures. Analysing from west to east, it passes through an orchard area, the CV-500 road, another stretch of orchard with important irrigation channels used to irrigate the rice fields up to the Albufera, the centre of Pinedo with buildings ranging from typical Valencian huts, farmhouses, single-family houses and even blocks of up to 6 floors. Then, the morphology of the place seeks the regeneration of dunes and forests (as it exists in the areas closest to the Saler and the Albufera), to finally end up with the beach and the sea.

According to the data on the demographic evolution of Pinedo, the population has remained constant over the last 20 years, when the natural trend should be upwards. Although this data is very common nowadays in different areas, in the specific case of Pinedo it is due, among other reasons, to the fact that it has remained anchored in the past and there are not enough services to satisfy the needs of the inhabitants, focusing on the benefit of tourists.



North arrow and situation plan scale: 1:2500

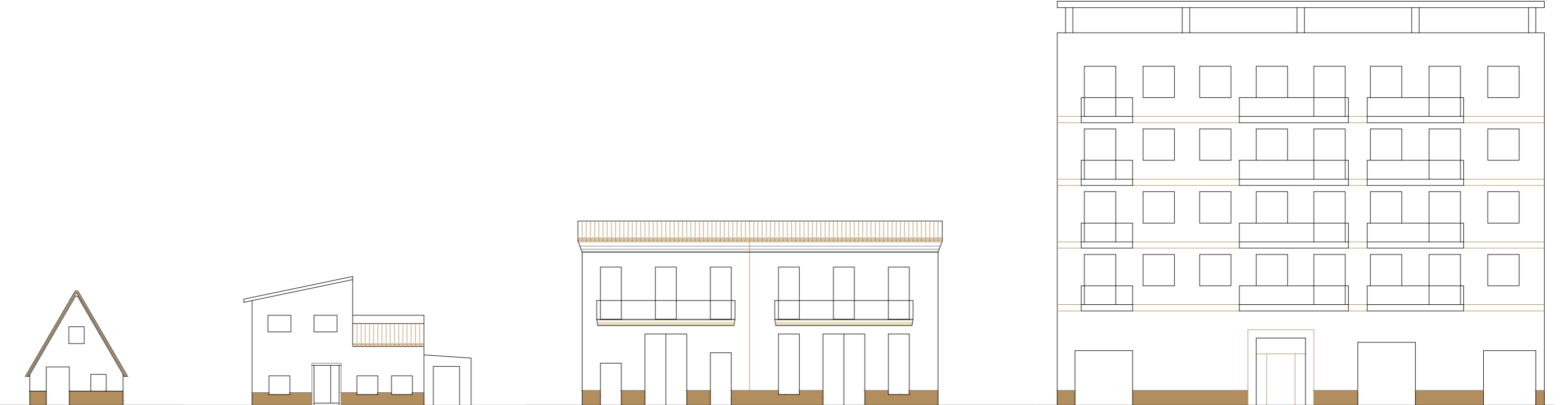
Pinedo still has some houses typical of the Valencian tradition, thanks to which it is possible to imagine the not so distant past of this district. The economic engine of Pinedo was agriculture, which defined both the landscape and the way of living and working space of the inhabitants. For this very reason, due to the mechanisation of agricultural activities, both the houses and other traditional constructions have gradually disappeared. Thus, in Pinedo there are different types of dwellings:

BARRACA: The Barraca is a small rectangular building, with a gabled roof and normally oriented in a north-south direction, where the whole family lived. The dwelling was divided into a corridor used as a kitchen, dining room and storeroom and two or three rooms. The upper part was used for silkworm rearing. The upper part of the house was used for silkworm breeding.

ALQUERIA: The Alqueria is a building where two rectangles that form a right angle are annexed and accessed through a courtyard. It consists of two floors, with the ground floor containing the rooms and "la llar", a large bell-shaped chimney. The plant was used to store the harvest and raise silkworms.

SINGLE FAMILY HOUSE: In the centre of Pinedo there are many single-family houses between party walls. They have two entrances for light and ventilation, one through the façade facing the street and the other through the backyard. They usually have two storeys, the façades are decorated with mouldings and a plinth of approximately one metre.

RESIDENTIAL BUILDING: This type of building has been built more recently in the city centre. They are usually five to six storeys high, with balconies and windows on all façades.

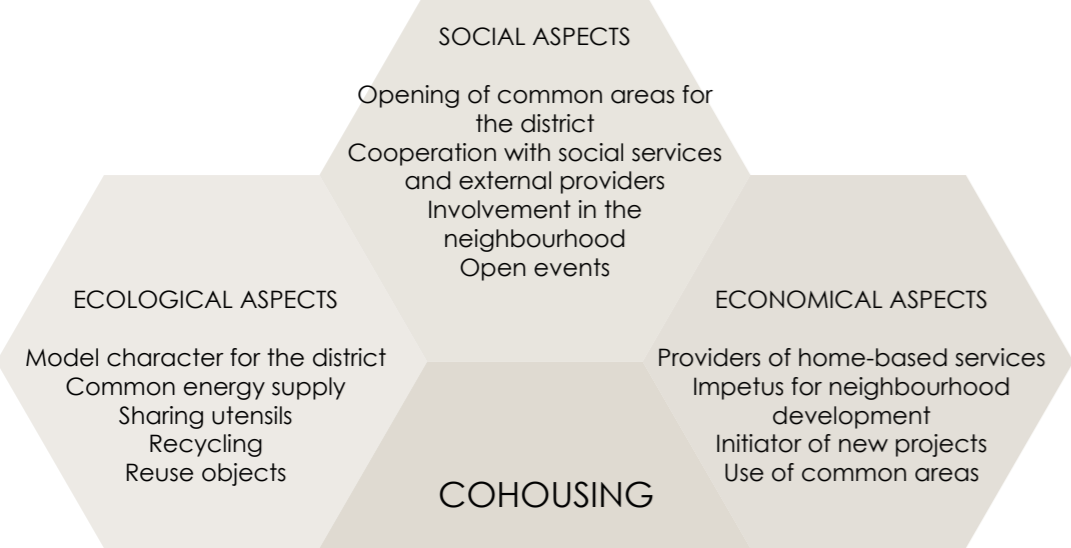
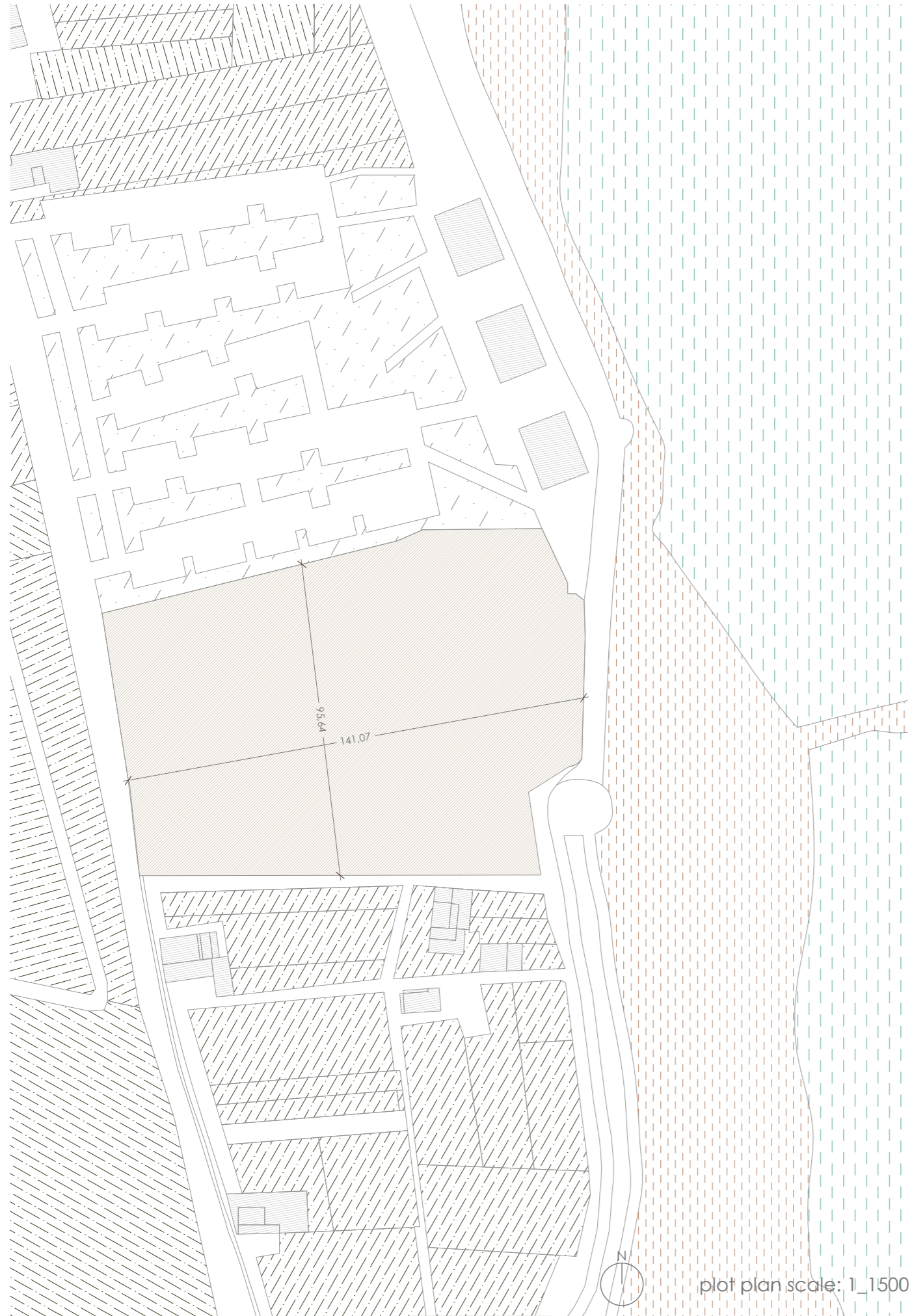




The choice of the plot is based on the analysis carried out previously and with the aim of finding an area that would represent on a small scale what Pinedo is: a zone close to an urban nucleus that, although not within it, would be well communicated, surrounded by orchards and in direct connection with the Mediterranean Sea. The location next to the seafront promenade, allows an excellent connection with the city centre and guarantees a good influx of people, on foot or by bicycle lane. It is situated two minutes by car from Pinedo, four minutes by bicycle and fifteen minutes by foot. Its area is approximately 9300 m².



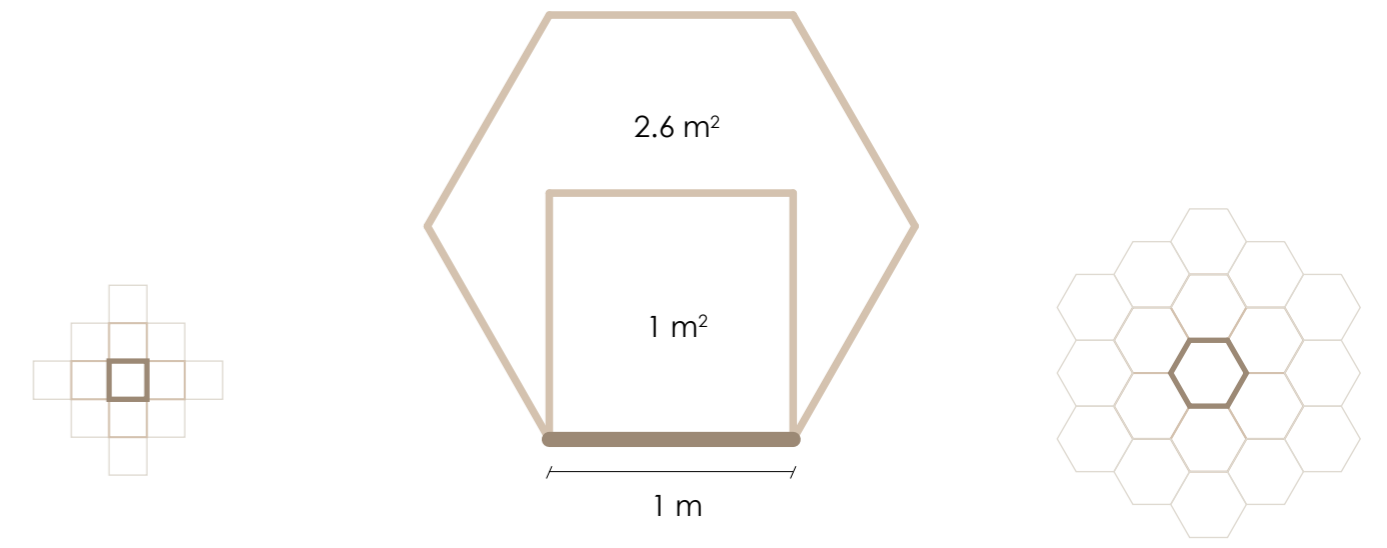
Before developing the architectural project, it is necessary to take into account the place where it will be placed and that is why there will be 3 territorial strategies: Firstly, in relation to the landscape I propose the regeneration of the classic ecosystem of the Valencian coast, that is to say to protect and regenerate the dunes and the Mediterranean forest. In addition, to reuse and reactivate the old orchards that were on the plot and surroundings and were abandoned. Secondly, to improve mobility and support the reduction of car use, the promenade should continue along the entire coast without interruption, and for daily use I also propose a new bicycle route that separates and protects pedestrians from the road. And finally, with the proposed project I want to give a new life to Pinedo, to recover the traditions of the place itself and a way of living which, although new as terminology, is the oldest of the concepts.



NATURE-CONSTRUCTION DUALITY

As mentioned above, the ecosystem of Pinedo and its nature are one of the most important points to take into account when planning. Both Pinedo and the chosen plot are surrounded by orchards, rice fields and the sea. In addition, it is proposed as a territorial strategy to regenerate both the Mediterranean forest on the boundaries of the plot and the dunes on the beach. For this very reason there is a duality between nature and construction, there is an unwritten pact where people will take care of their environment taking care of and respecting each of the parts of the ecosystem, and in the same way, nature will offer people everything they need for their survival and wellbeing.

To give form and bring all these concepts down to the plane of reality, I was looking for a geometry that would follow the laws of nature, that would also recall the culture of the 60's and 70's and that would be appropriate to the concept of today's changing family. In order for the architecture to grow as families do, I propose a hexagonal base for the whole project, based on Aldo Van Eyck's "in between" concept. With hexagons, an area 2.6 times bigger than a square of the same side is achieved. In addition, the connections are multiplied by not having only four sides to join and there is not only one directionality, the route is extended. Nature itself uses the hexagon as a way of making the most of space as it provides a greater level of intimacy, with the minimum amount of material and providing great stability as occurs in beehives or snowflakes. Following a hexagonal mesh, the project could consist of several phases, where in the first phase there are only a few dwellings and a few common spaces, a second phase where the modules are added thanks to the multiplicity of the geometry. And finally a final phase (which is the one proposed in the project), where the building is completed.

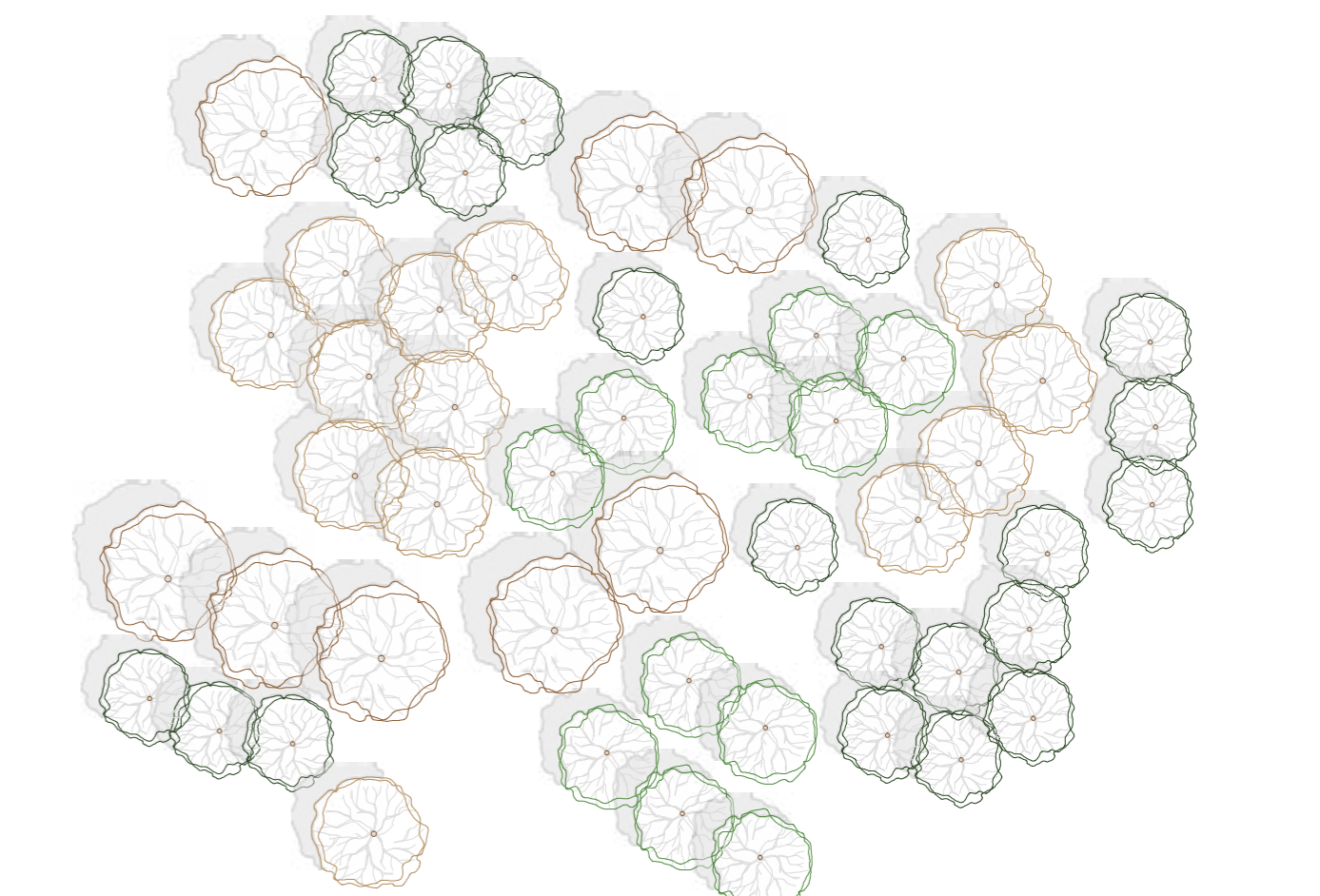
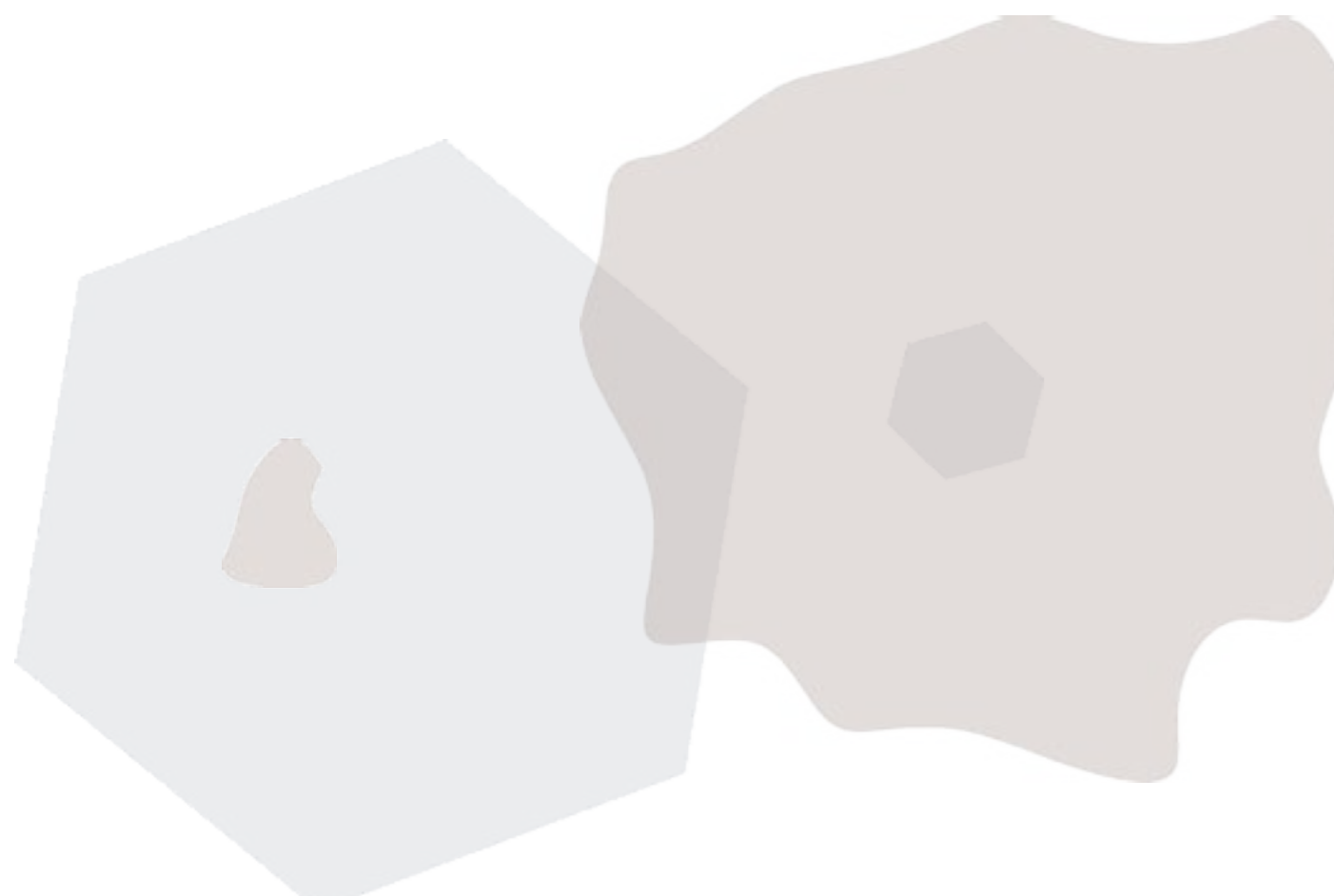


ALIGNMENT WITH THE BREAKWATER

To start the process of designing the building, I was looking for some guidelines that would help me to relate to the environment in a direct way. At the boundary of the chosen plot there is a breakwater that protects both humans and the marine ecosystem. They are used to reduce the impact of the waves on the shore of the beach and also so that the natural movements of the sand are not excessive as this would cause the disappearance of the sand on the coast and the consequent disappearance of the dunes.

MEDITERRANEAN FOREST

On many coasts bathed by the Mediterranean Sea, coastal pine forests develop, where the Aleppo pine coexists with the stone pine. This type of forest is very characteristic because of the scarce water retention of the dune soils and the strong and saline wind coming from the sea, generating a forest profile where the first line in front of the sea has twisted and sinuous specimens that protect their interior from the winds thanks to the fact that the whole adopts a wedge shape. In addition to these pine species, there are holm oaks, kermes oaks and carob trees, species that are also suitable and typical of the Mediterranean forest.



CROPS AND ORCHARDS

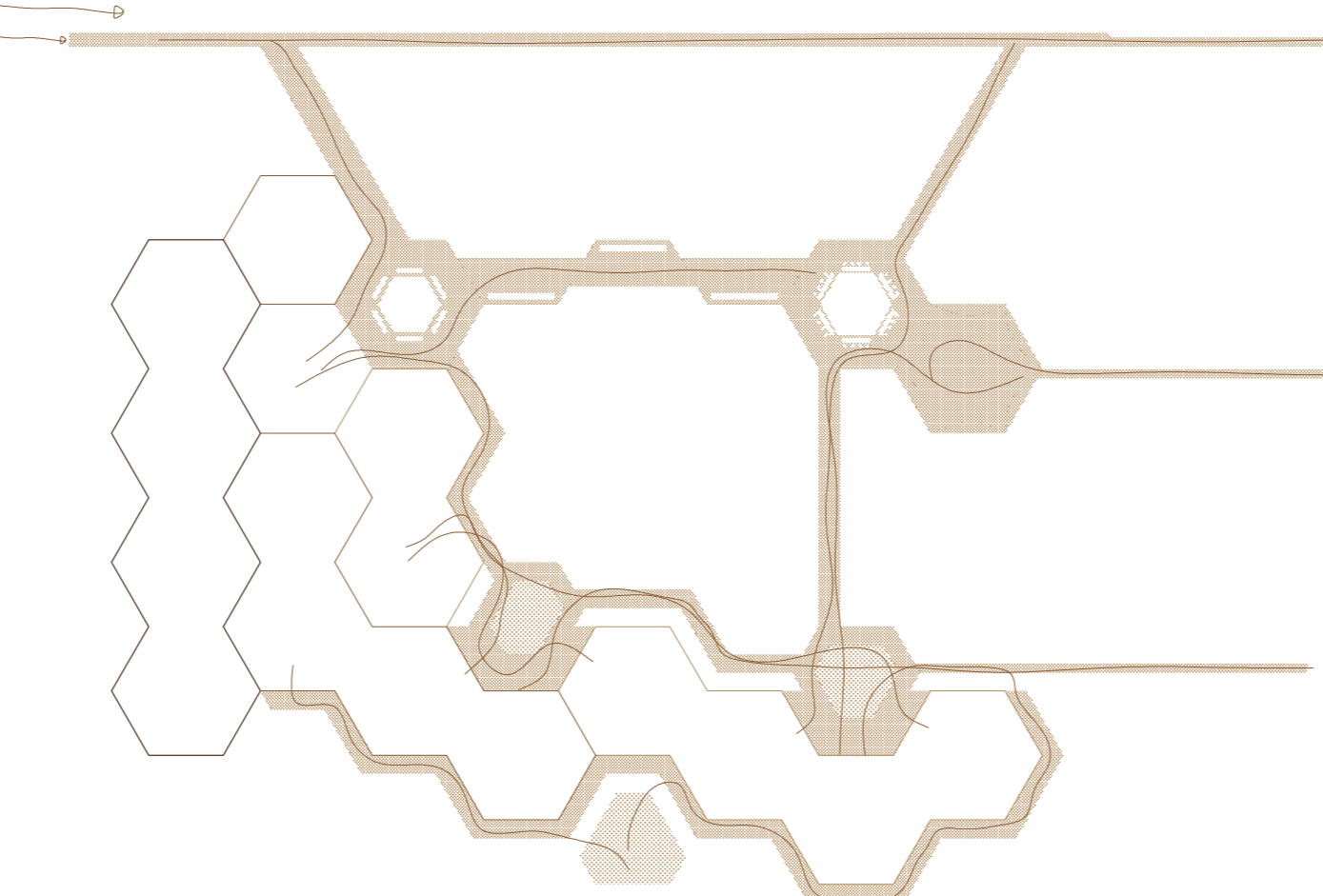
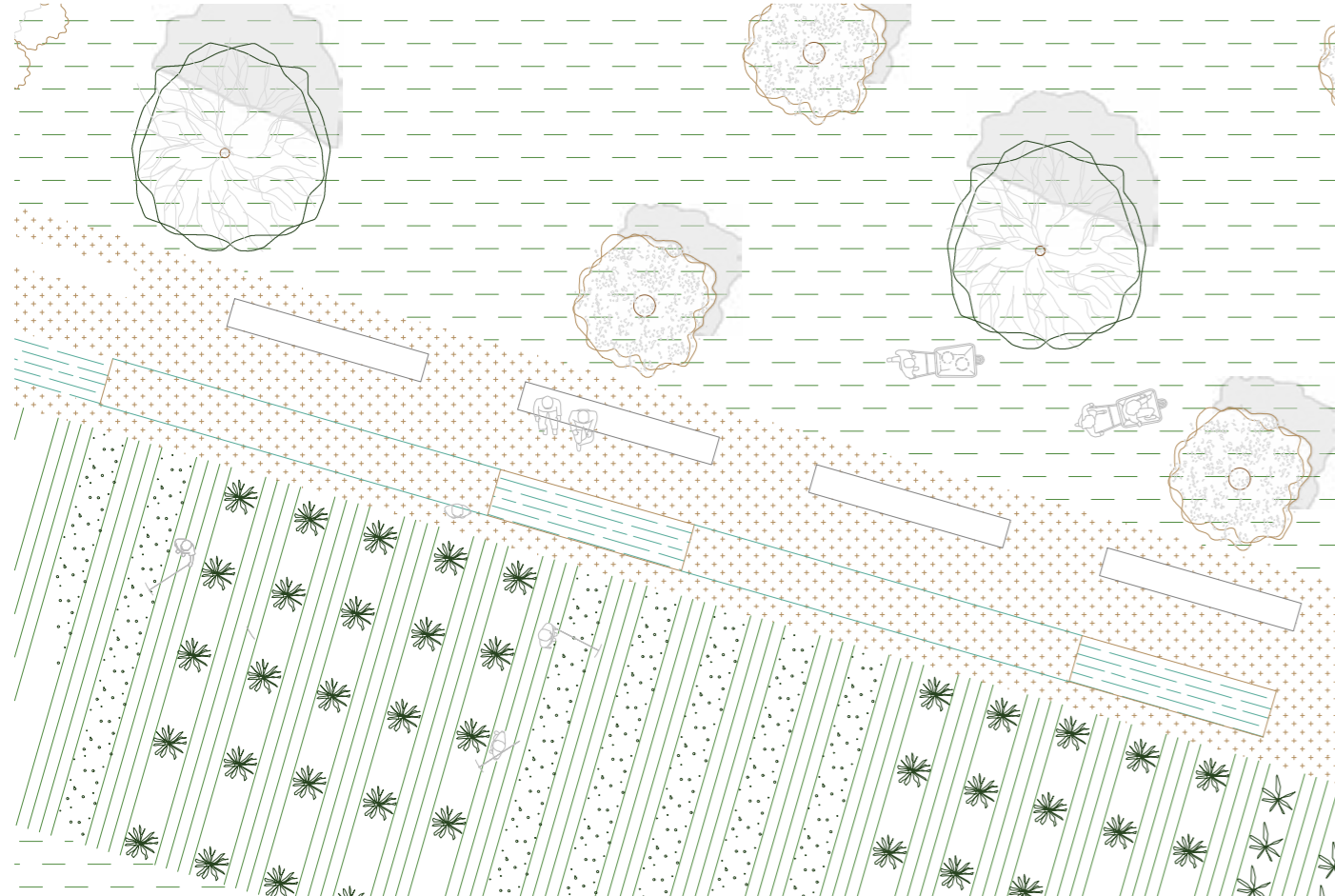
Since the project is about an intergenerational cooperative, one of the most important factors for the project is the social factor and the recovery of customs. In the southern part of the plot there are currently some abandoned crops, the recovery of these is developed as part of the project strategy, generating an activity that is part of the routine of the cohousing inhabitants. The recovery of this space consists of two parts: a vegetable garden that is responsible for supplying the community with seasonal vegetables and other typical products of the Valencian orchard. The garden with fruit trees such as mulberry, orange and lemon trees to provide local fruit. This activity encourages interaction between people of different ages, generating a reciprocal relationship in which the older ones contribute their knowledge and experience in the fields and the younger ones take charge of the physical tasks that require more sacrifice.

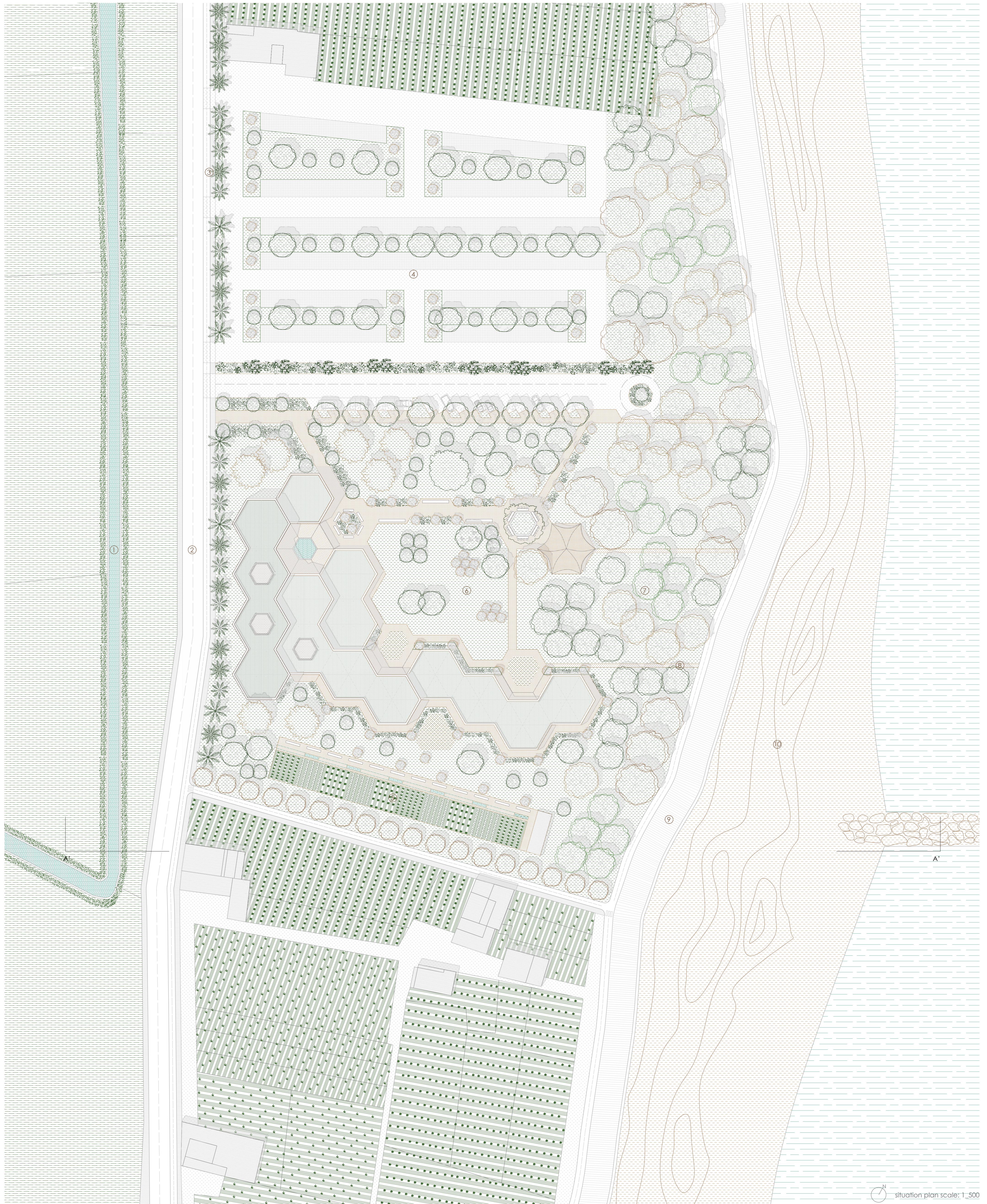
ACCESSES AND EXTERIOR ROUTES

Access to the residential complex is proposed to the north of the plot. There is an entrance for pedestrians next to the entrance for vehicles, divided by a vegetation barrier that protects people from the noise caused by the cars and the cars from solar radiation when parked. A series of pavements and vegetation lead to the entrance of the building from different interconnected points that generate the exterior paths. In addition, these paths divide the landscaped exterior into different zones and connect to the promenade with the directionality of the breakwater already mentioned.

THE HEXAGON INSIDE THE HEXAGON

The silhouette of the building is formed by a succession of hexagons that make up an organic and sinuous volume placed in such a way as to provide a façade to the street both to the west and to the south of the plot that gradually disintegrates as it approaches the sea. All the hexagons that make up the building have the same surface area, thus creating a regulating module. The side of this module is 8.4 m, so each hexagon has a surface area of 183.32 m². Parallel that, within some of the base hexagons, there are other hexagons on a smaller scale that will be used as wet and installation cores and as part of the structure. These have been strategically placed to fulfil both form and function.



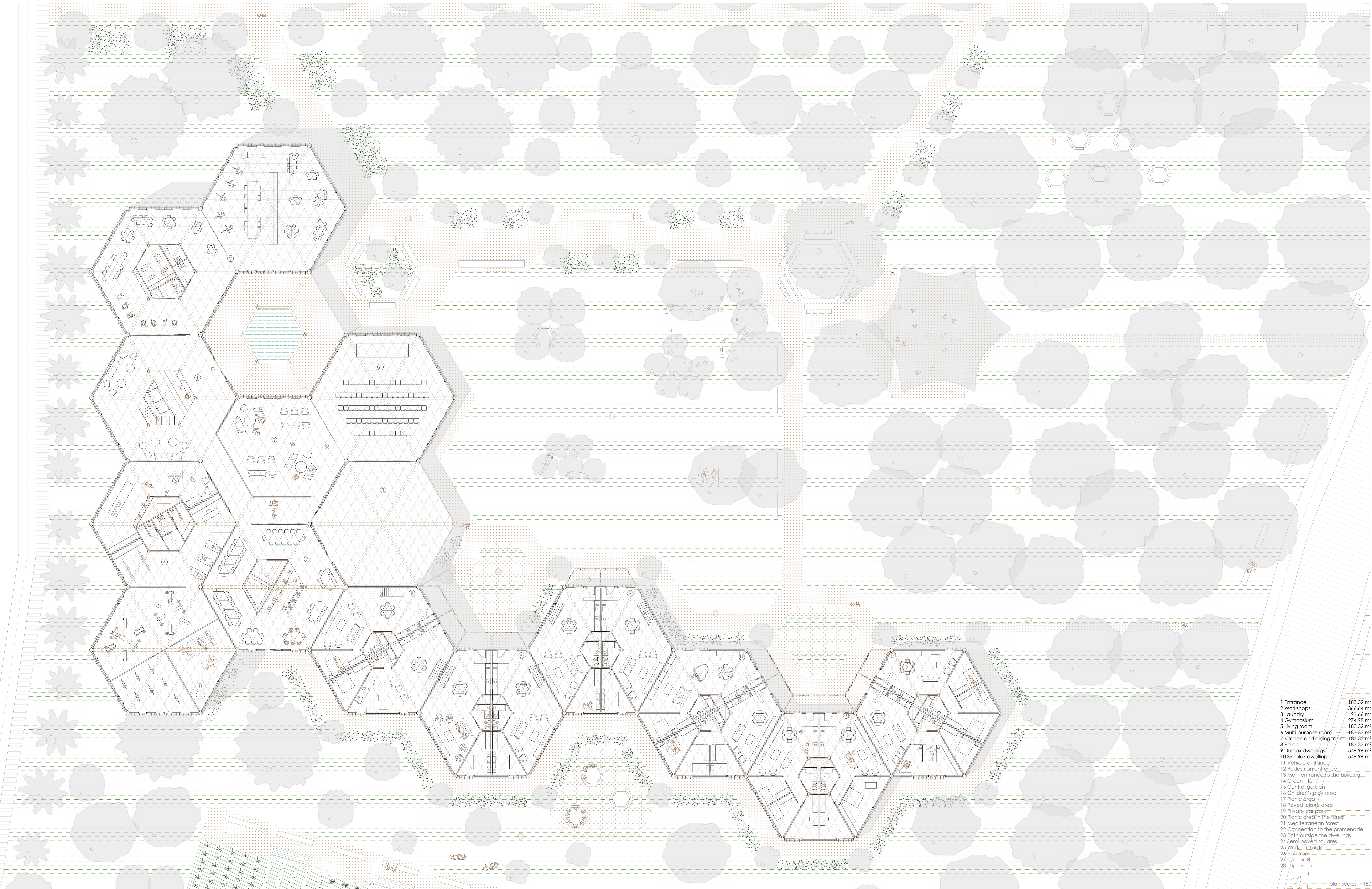


situation plan scale: 1_500



section AA' scale: 1_500

- 1 Maintenance of the traditional irrigation system
- 2 Renewal of connections
- 3 New route for pedestrians and bicycles
- 4 Reorganisation of the car park for public use
- 5 Regeneration of abandoned vegetable gardens
- 6 New social and cultural meeting place
- 7 Regeneration of the Mediterranean forest
- 8 Connection of the project with the promenade
- 9 Continuation of the promenade along the coastline
- 10 Dune regeneration

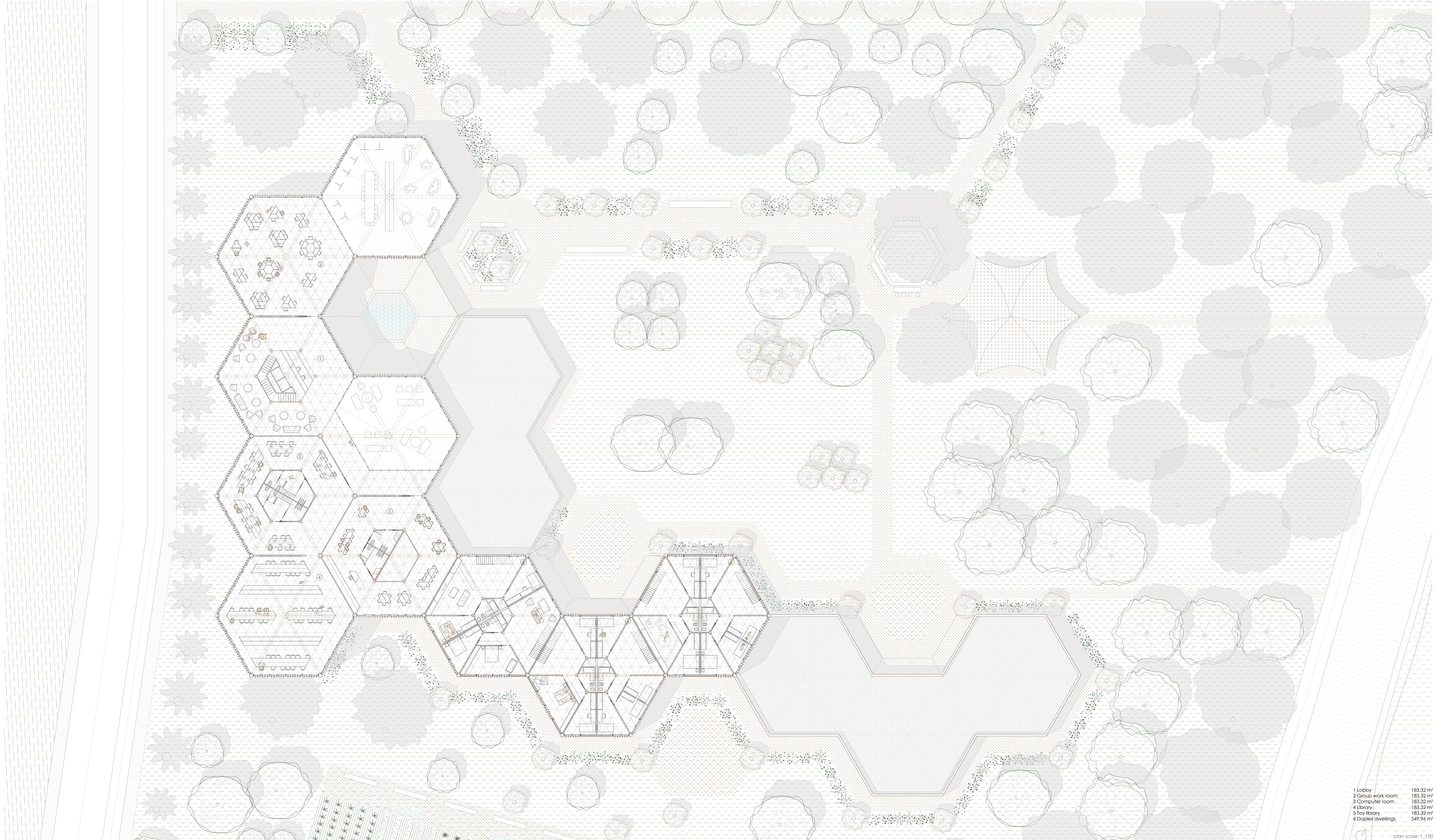


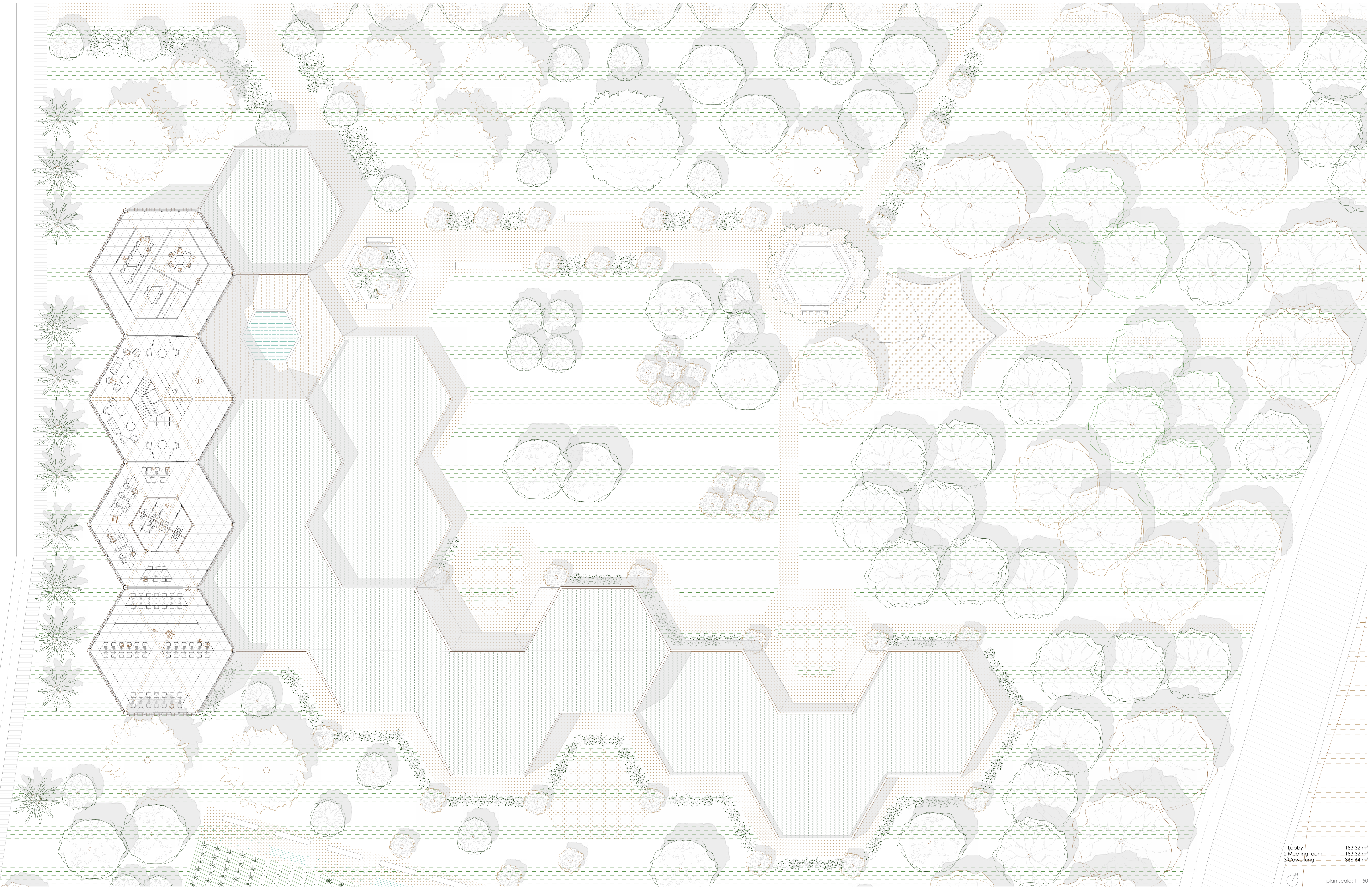
- 1 Entrance 183.32 m²
- 2 Workshops 366.64 m²
- 3 Laundry 91.66 m²
- 4 Gymnasium 274.98 m²
- 5 Living room 183.32 m²
- 6 Multi-purpose room 183.32 m²
- 7 Kitchen and dining room 183.32 m²
- 8 Porch 183.32 m²
- 9 Duplex dwellings 549.96 m²
- 10 Simplex dwellings 549.96 m²
- 11 Vehicle entrance
- 12 Pedestrian entrance
- 13 Main entrance to the building
- 14 Green filter
- 15 Central garden
- 16 Children's play area
- 17 Picnic area
- 18 Paved leisure area
- 19 Private car park
- 20 Picnic area in the forest
- 21 Mediterranean forest
- 22 Connection to the promenade
- 23 Path outside the dwellings
- 24 Semi-paved squares
- 25 Working garden
- 26 Fruit trees
- 27 Orchard
- 28 Amphitheatre

plan scale: 1=150



North elevation



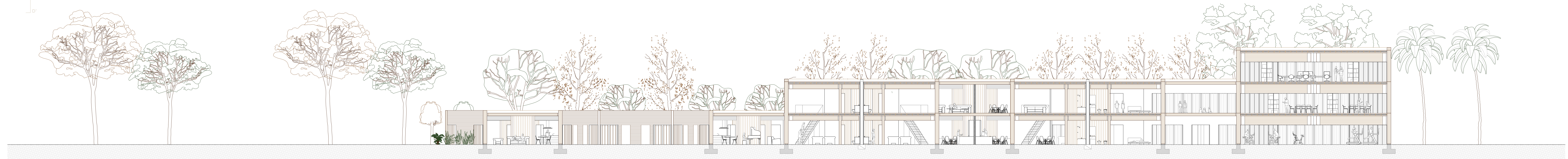
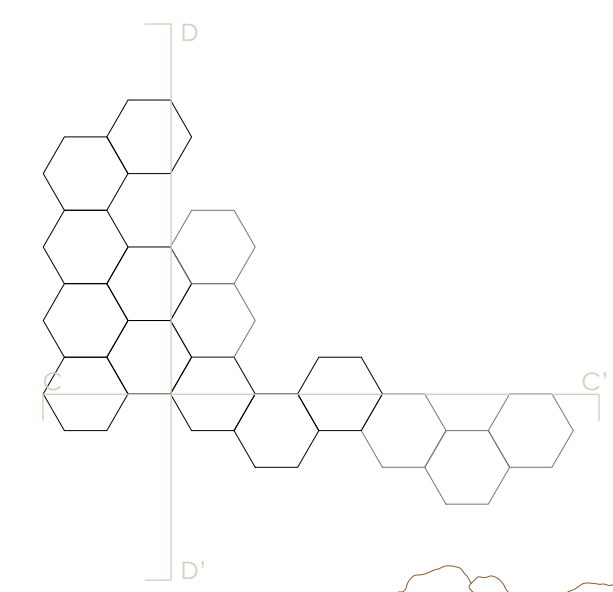
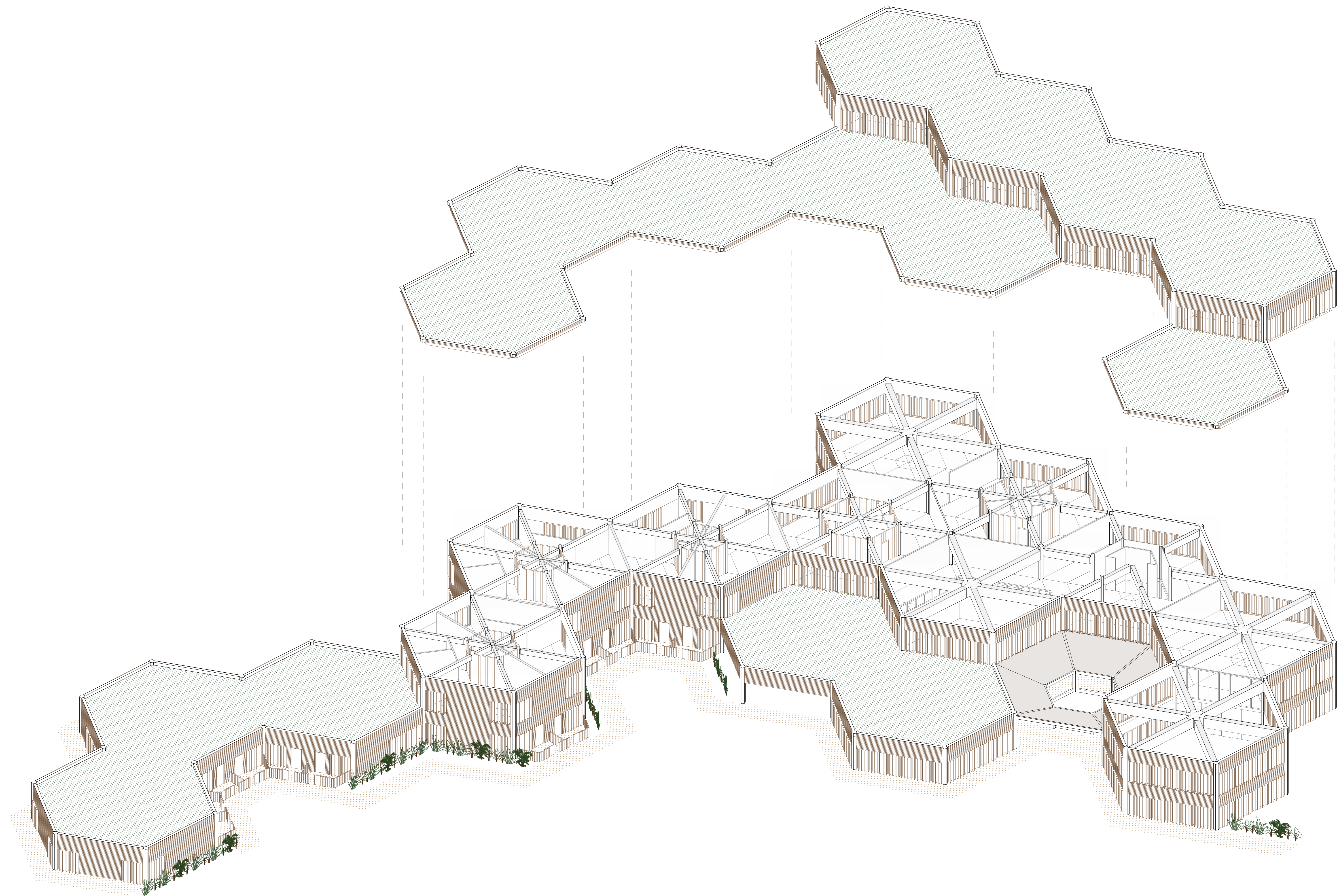


1 Lobby 183.32 m²
2 Meeting room 183.32 m²
3 Coworking 366.64 m²

plan scale: 1-150



Est elevation

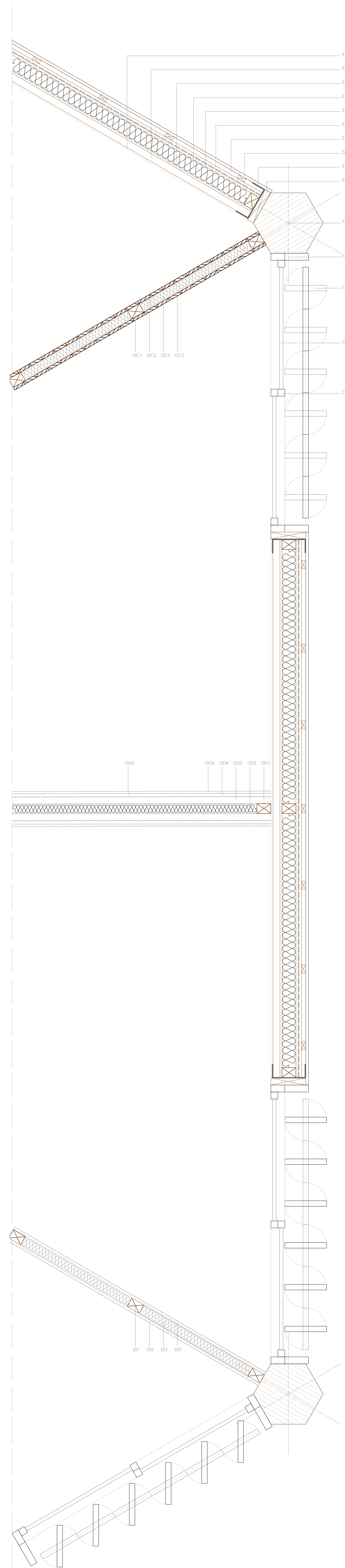


section CC'

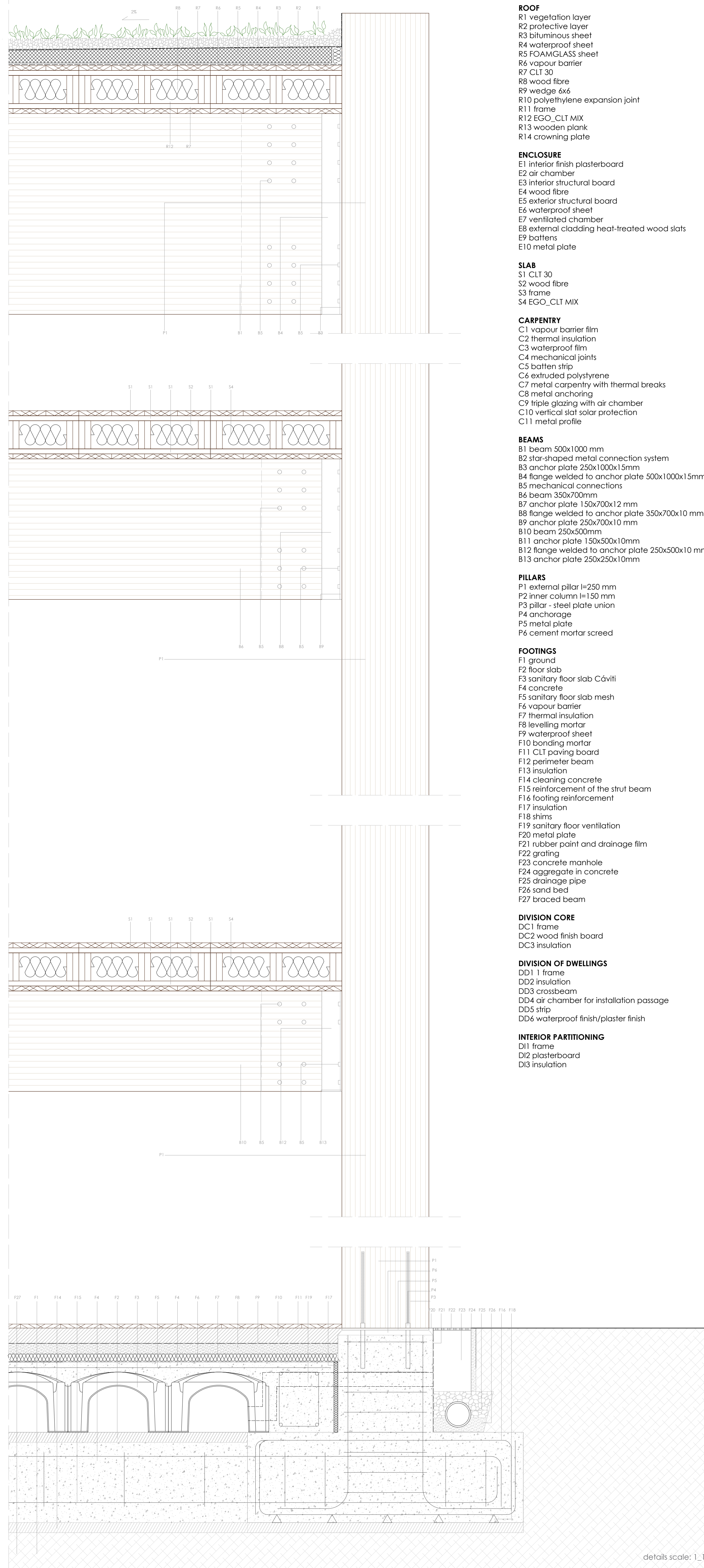
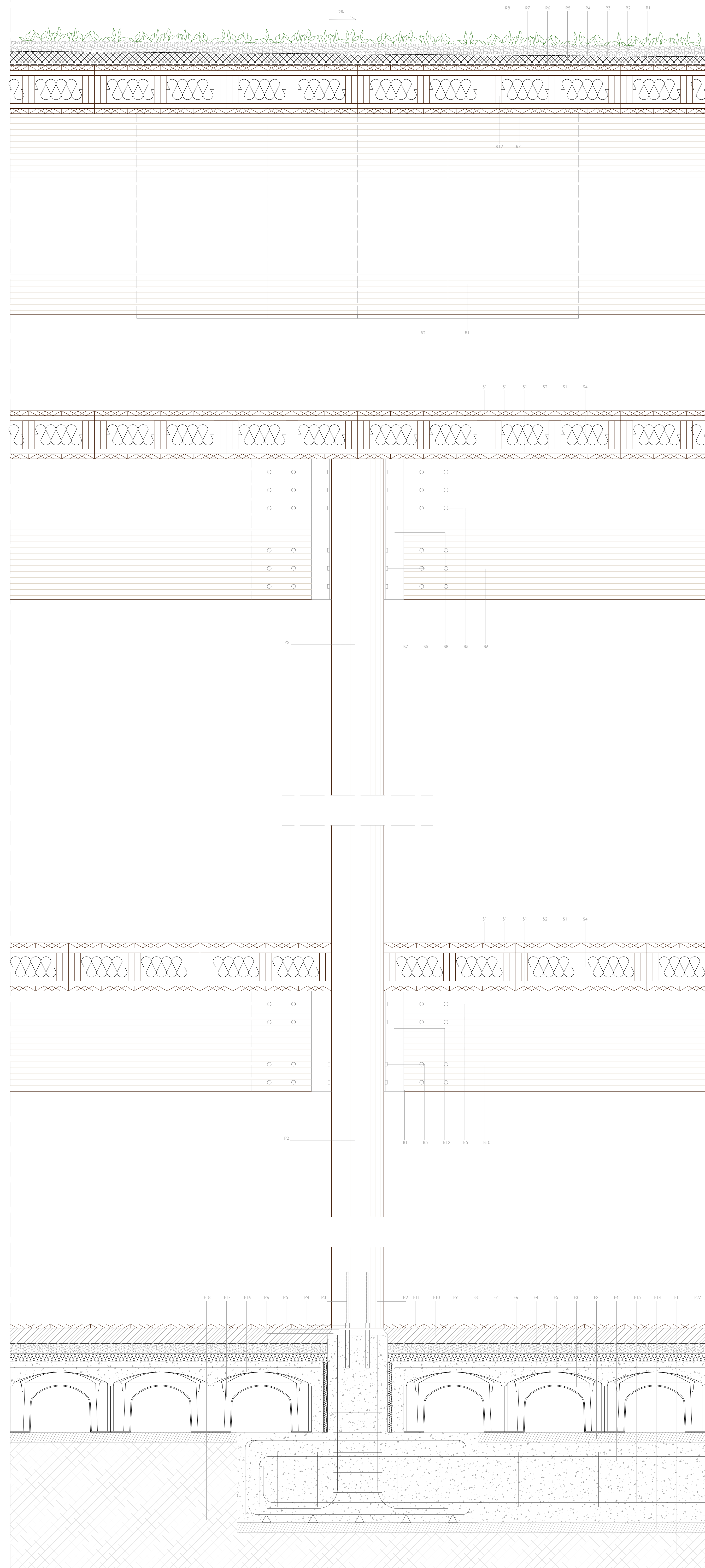
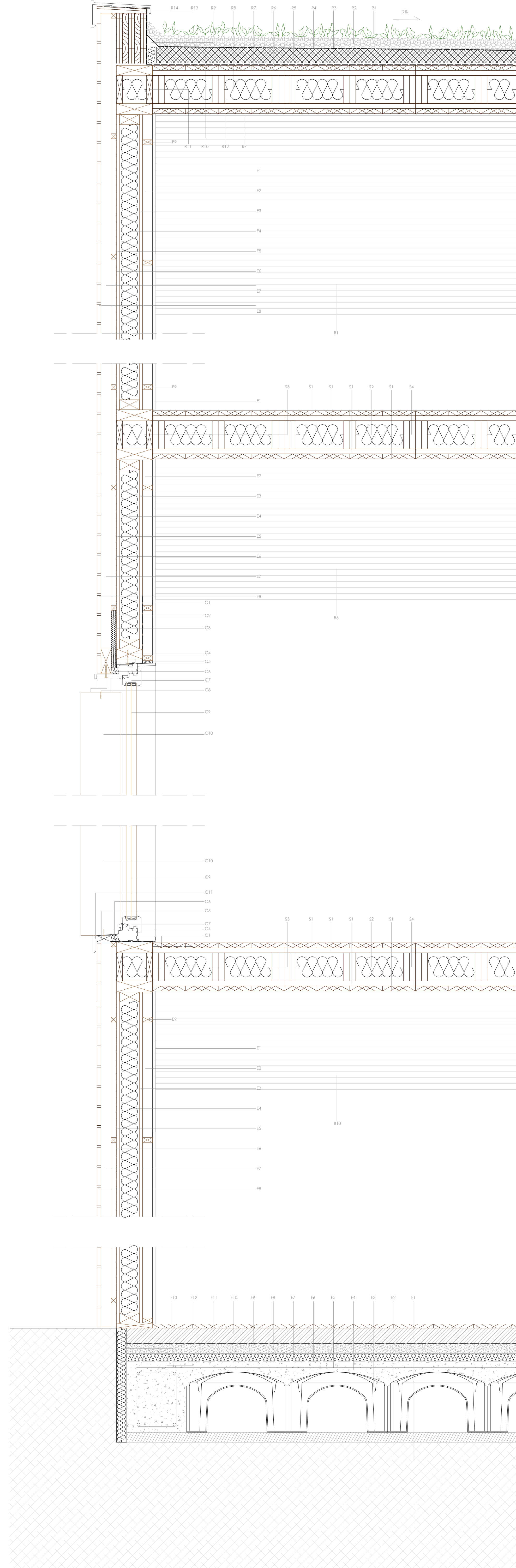


section DD'

CONSTRUCTION DETAILS



type detail in plan
detail plan scale: 1:15



- ROOF**
- R1 vegetation layer
- R2 protective layer
- R3 bituminous sheet
- R4 waterproof sheet
- R5 FOAMGLASS sheet
- R6 vapour barrier
- R7 CLT 30
- R8 wood fibre
- R9 wedge 6x6
- R10 polyethylene expansion joint
- R11 frame
- R12 EGO_CLT MIX
- R13 wooden plank
- R14 crowning plate

- ENCLOSURE**
- E1 interior finish plasterboard
- E2 air chamber
- E3 interior structural board
- E4 wood fibre
- E5 exterior structural board
- E6 waterproof sheet
- E7 ventilated chamber
- E8 external cladding heat-treated wood slats
- E9 battens
- E10 metal plate

- SLAB**
- S1 CLT 30
- S2 wood fibre
- S3 frame
- S4 EGO_CLT MIX

- CARPENTRY**
- C1 vapour barrier film
- C2 thermal insulation
- C3 waterproof film
- C4 mechanical joints
- C5 batten strip
- C6 extruded polystyrene
- C7 metal carpentry with thermal breaks
- C8 metal anchoring
- C9 triple glazing with air chamber
- C10 vertical slat solar protection
- C11 metal profile

- BEAMS**
- B1 beam 500x1000 mm
- B2 star-shaped metal connection system
- B3 anchor plate 250x1000x15mm
- B4 flange welded to anchor plate 500x1000x15mm
- B5 mechanical connections
- B6 beam 350x700mm
- B7 anchor plate 150x700x12 mm
- B8 flange welded to anchor plate 350x700x10 mm
- B9 anchor plate 250x700x10 mm
- B10 beam 250x500mm
- B11 anchor plate 150x500x10mm
- B12 flange welded to anchor plate 250x500x10 mm
- B13 anchor plate 250x250x10mm

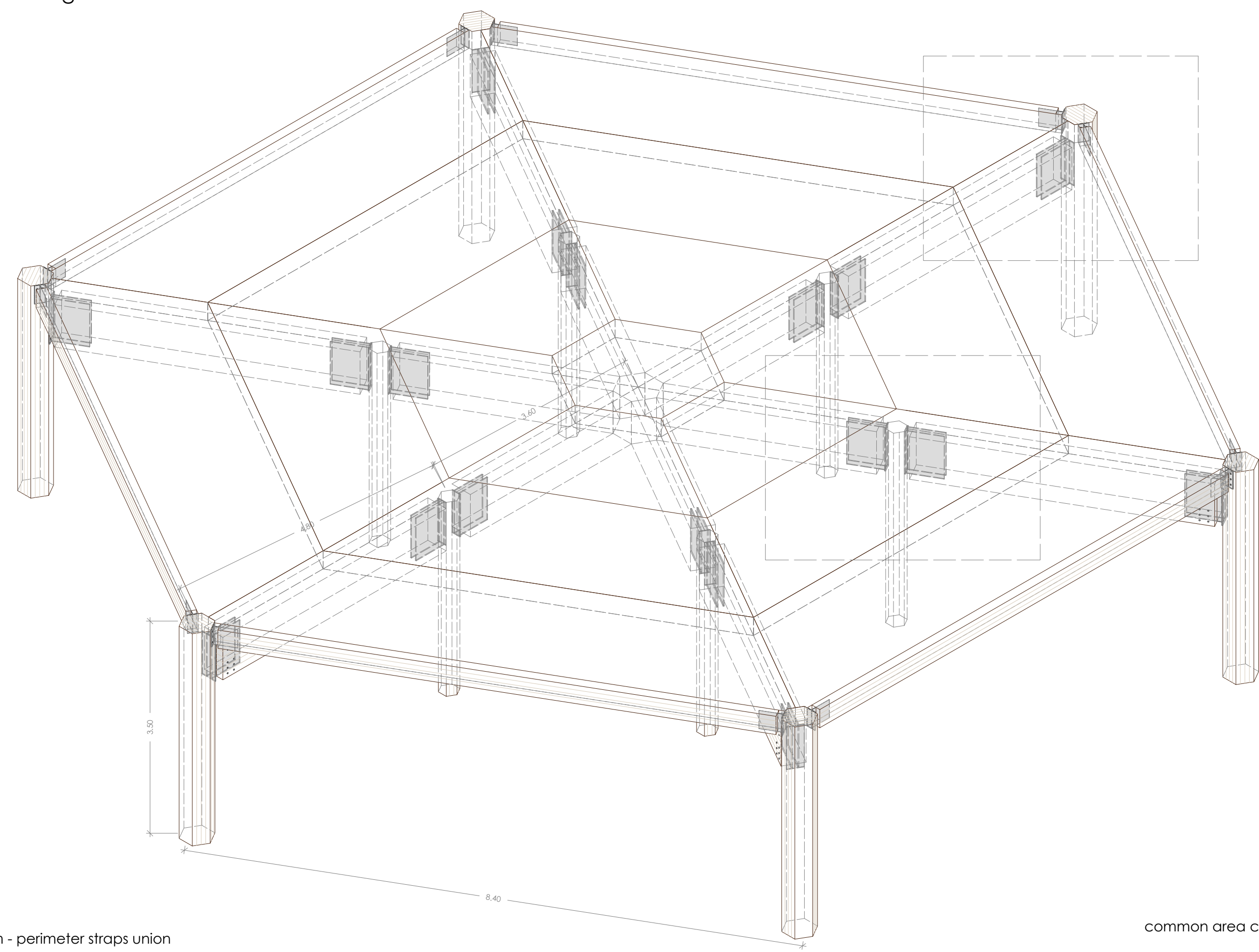
- PILLARS**
- P1 external pillar l=250 mm
- P2 inner column l=150 mm
- P3 pillar - steel plate union
- P4 anchorage
- P5 metal plate
- P6 cement mortar screed

- FOOTINGS**
- F1 ground
- F2 floor slab
- F3 sanitary floor slab C6villi
- F4 concrete
- F5 sanitary floor slab mesh
- F6 vapour barrier
- F7 thermal insulation
- F8 levelling mortar
- F9 waterproof sheet
- F10 bonding mortar
- F11 CLT paving board
- F12 perimeter beam
- F13 insulation
- F14 cleaning concrete
- F15 reinforcement of the strut beam
- F16 footing reinforcement
- F17 insulation
- F18 shims
- F19 sanitary floor ventilation
- F20 metal plate
- F21 rubber point and drainage film
- F22 grating
- F23 concrete manhole
- F24 aggregate in concrete
- F25 drainage pipe
- F26 sand bed
- F27 braced beam

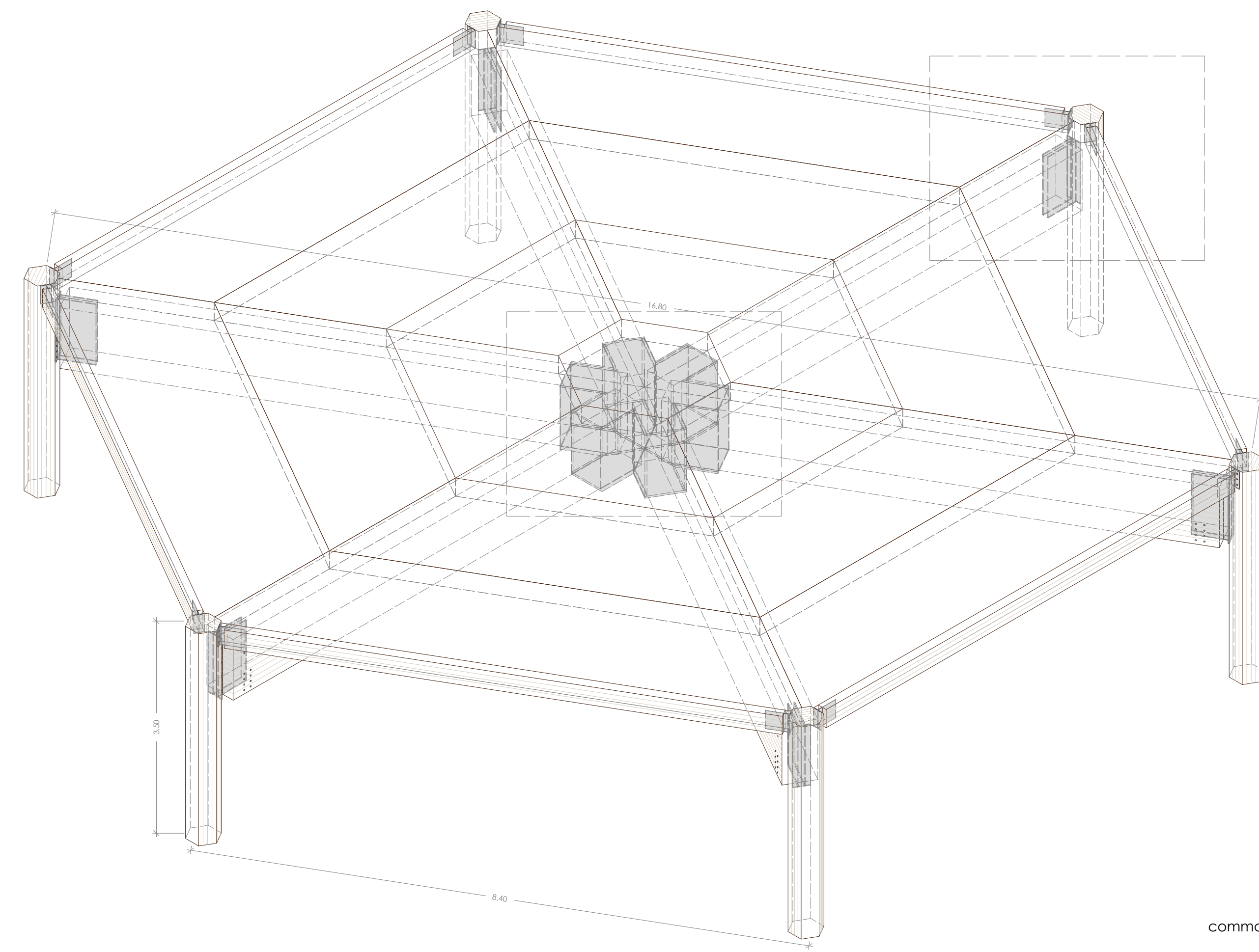
- DIVISION CORE**
- DC1 frame
- DC2 wood finish board
- DC3 insulation

- DIVISION OF DWELLINGS**
- DD1 frame
- DD2 insulation
- DD3 crossbeam
- DD4 air chamber for installation passage
- DD5 strip
- DD6 waterproof finish/plaster finish

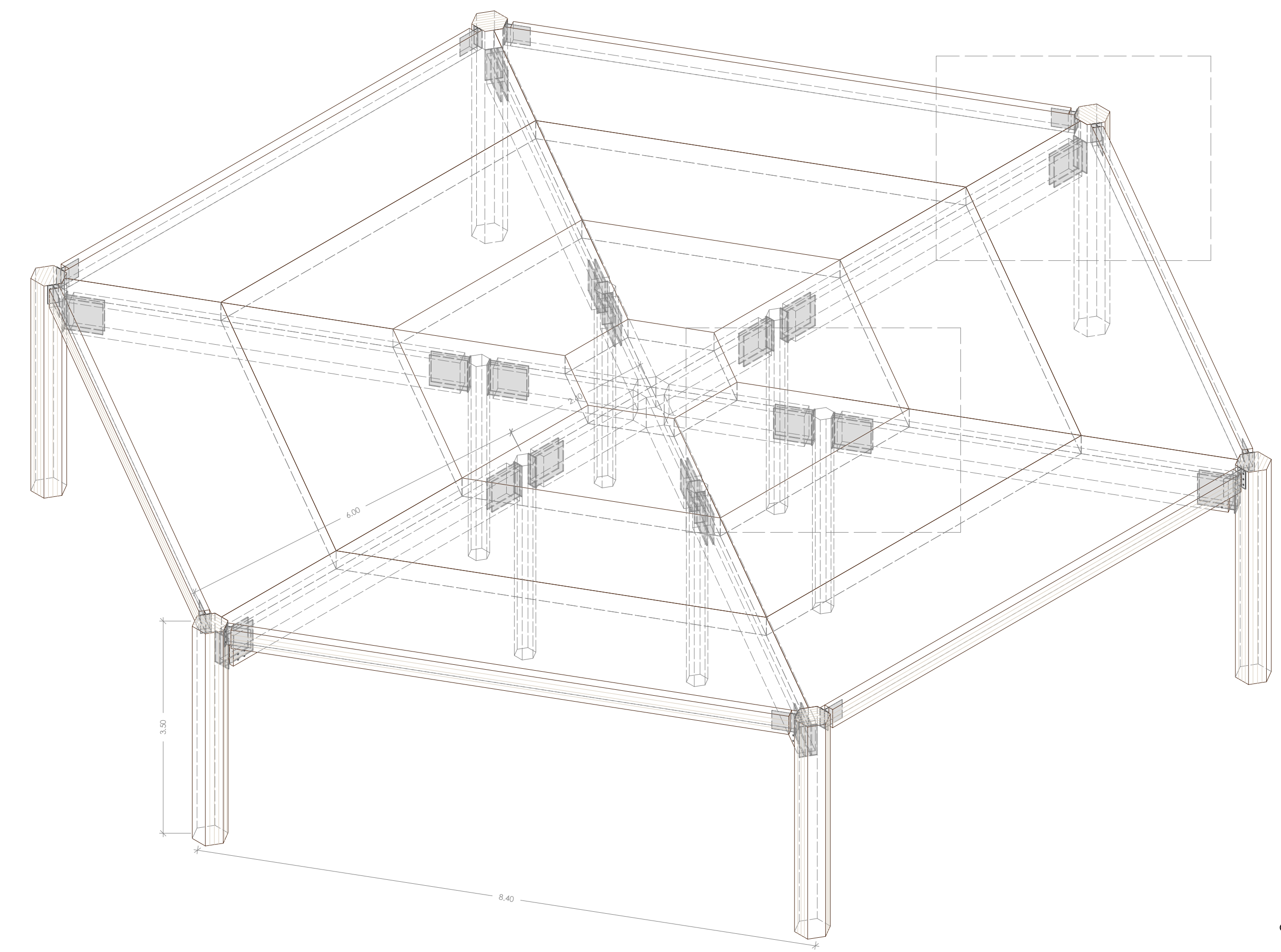
- INTERIOR PARTITIONING**
- DI1 frame
- DI2 plasterboard
- DI3 insulation



external pilar - beam - perimeter straps union

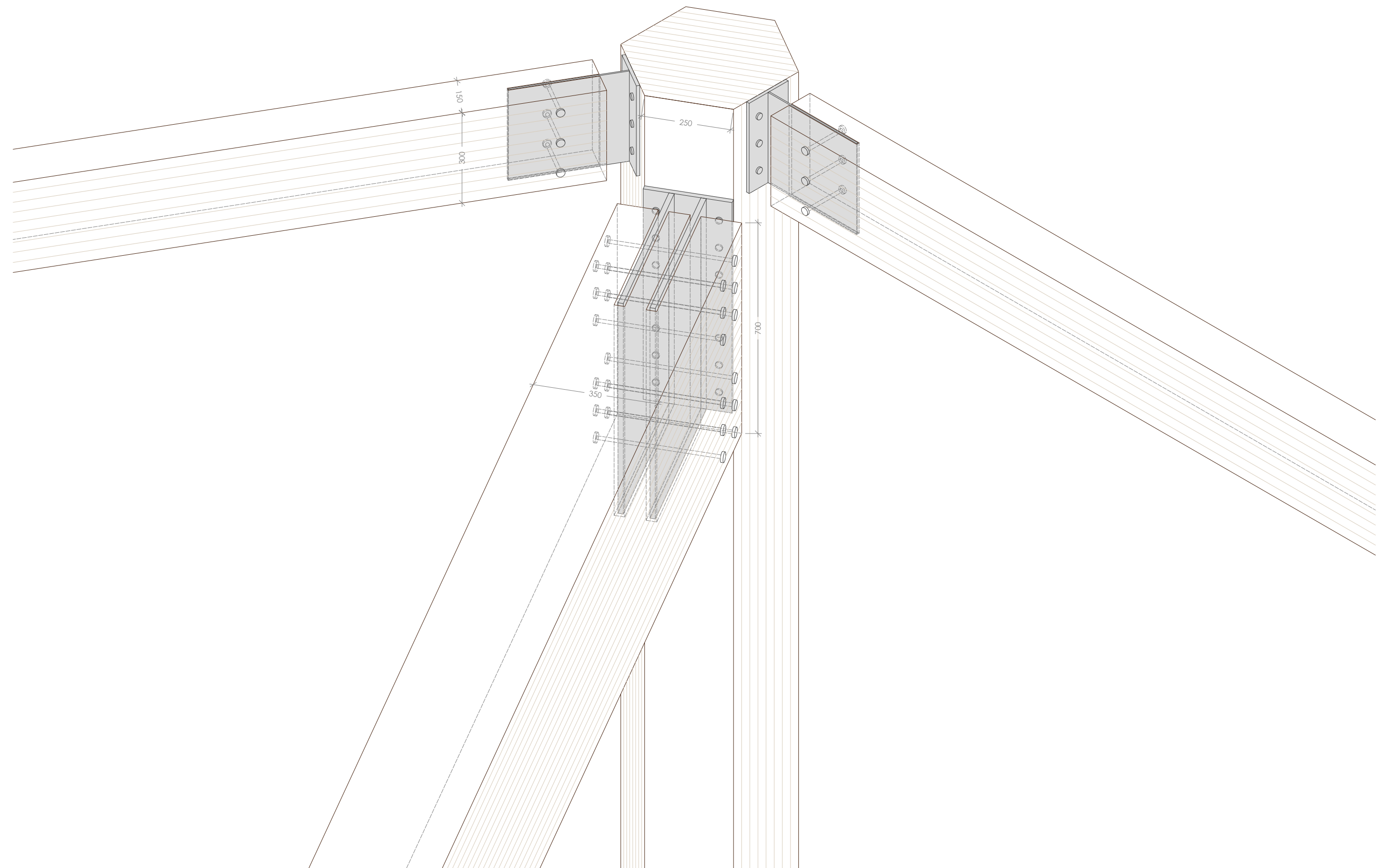


common area core

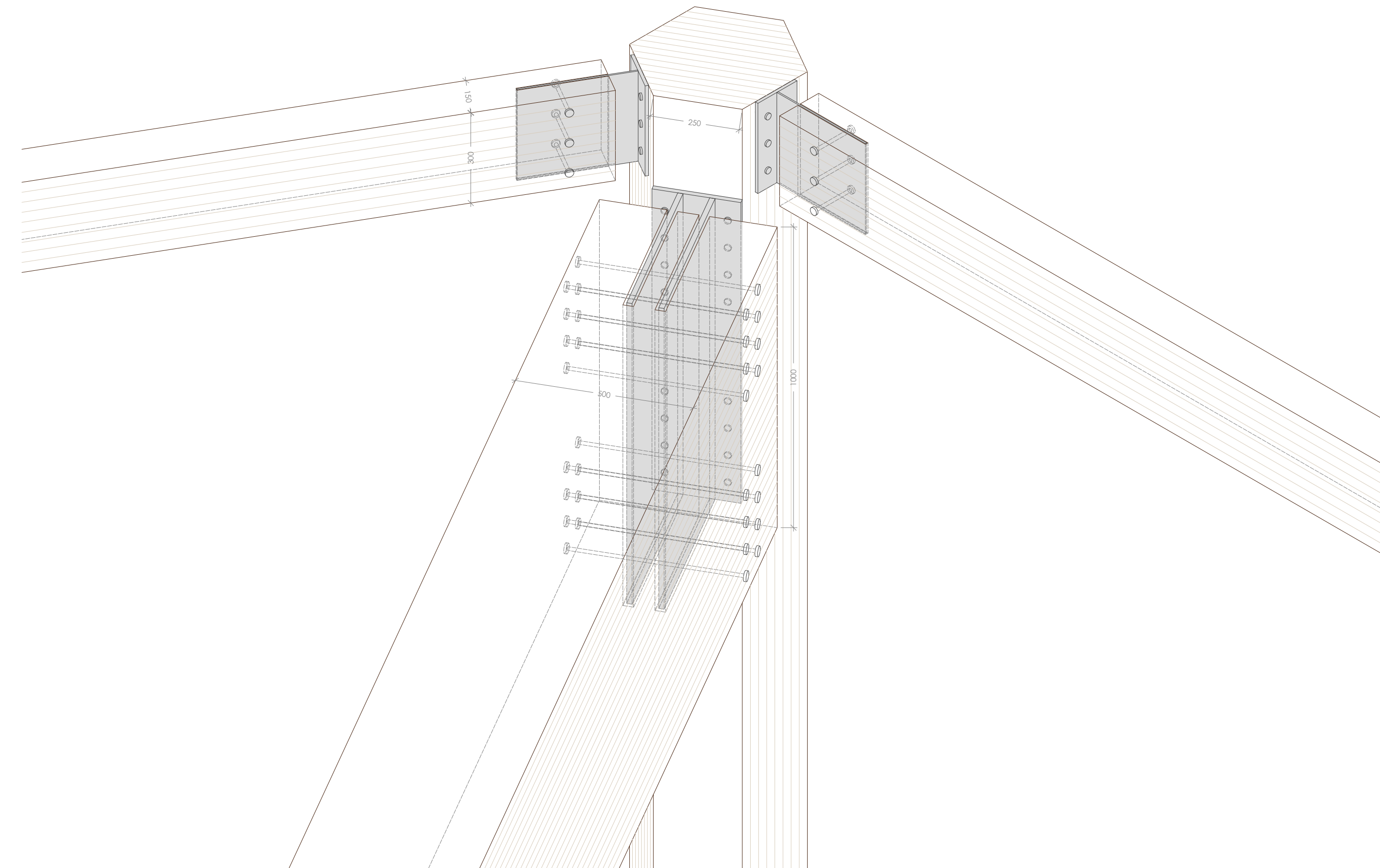


common area no-core

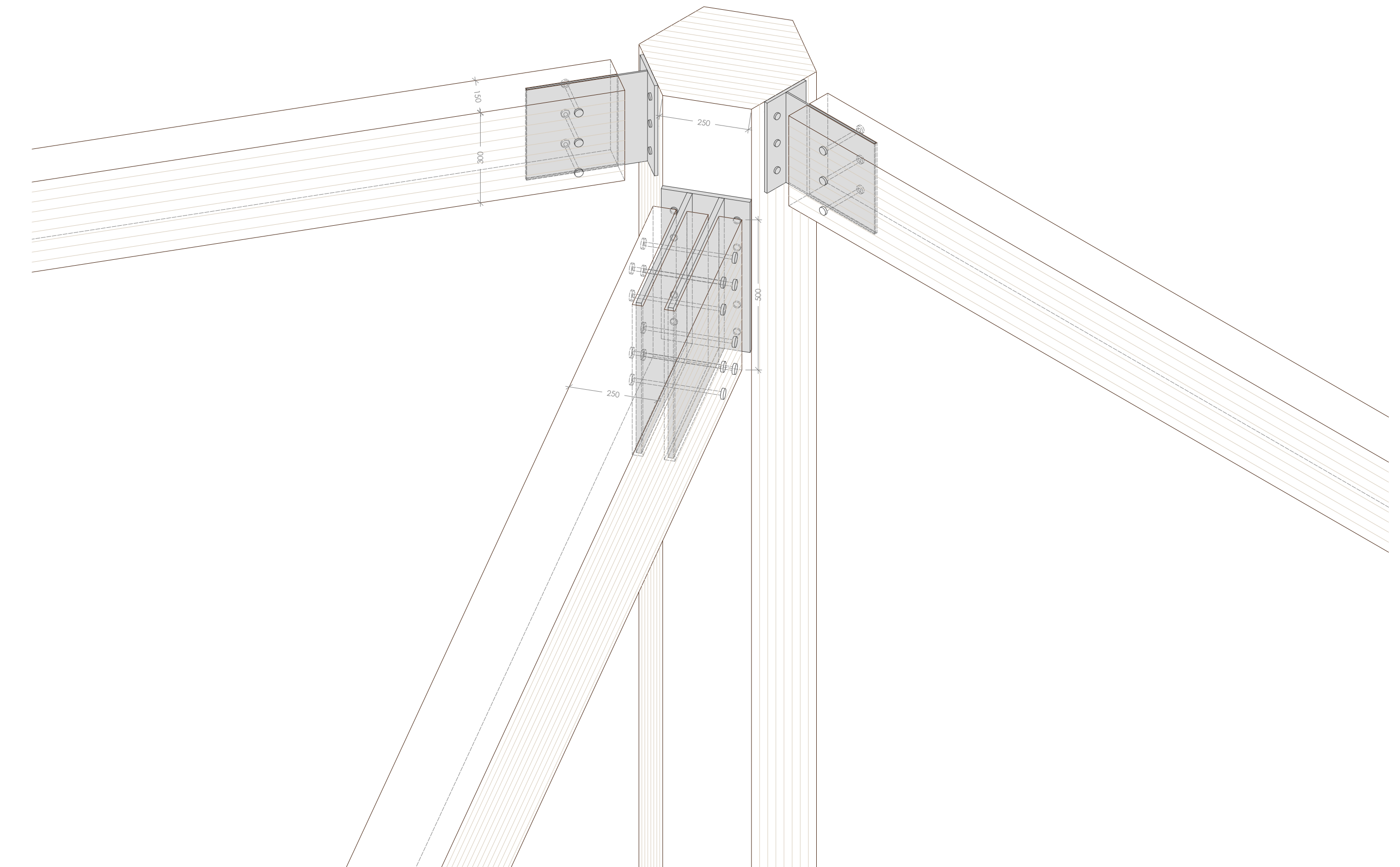
dwelling's core



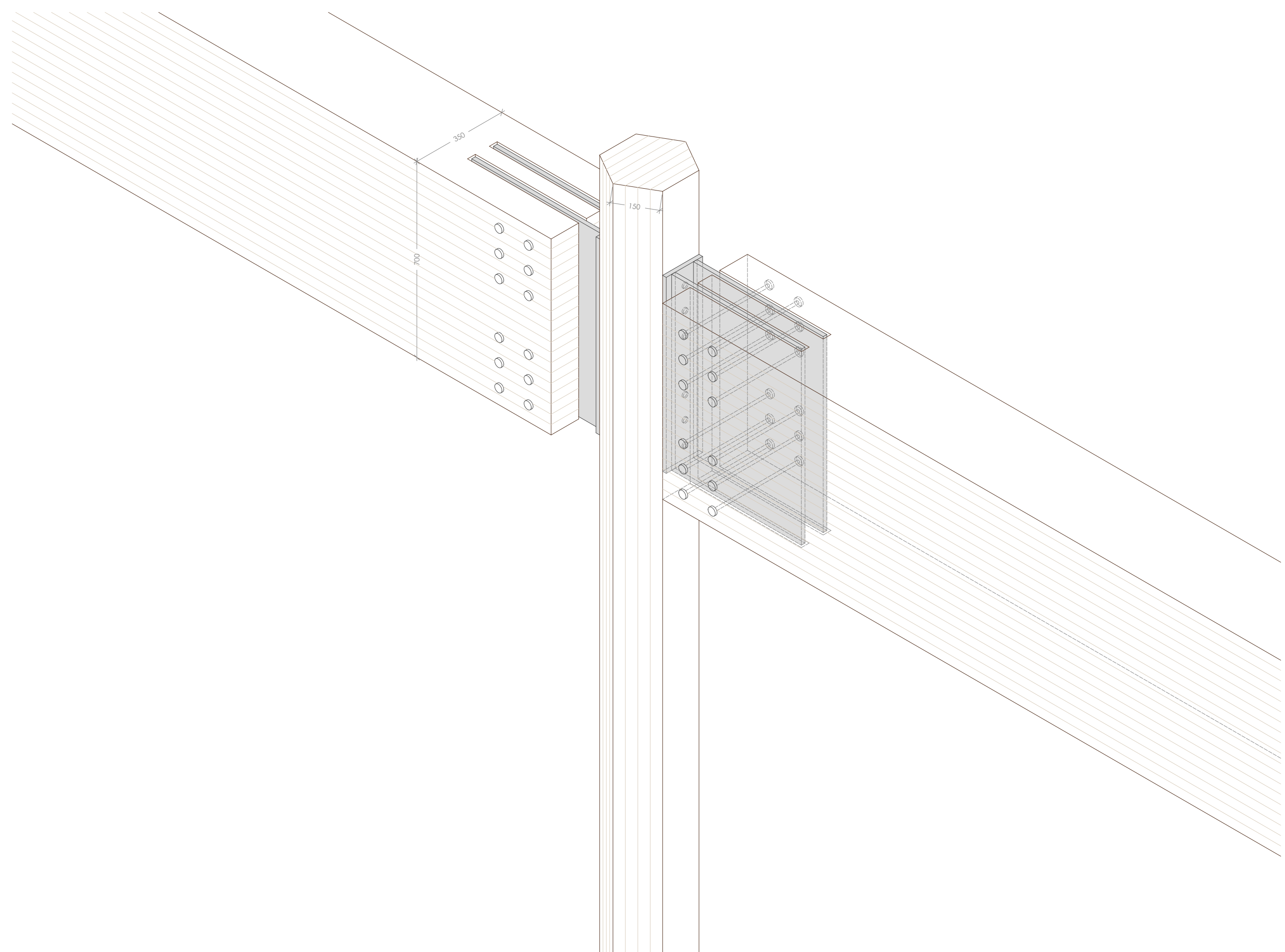
external pilar - beam union



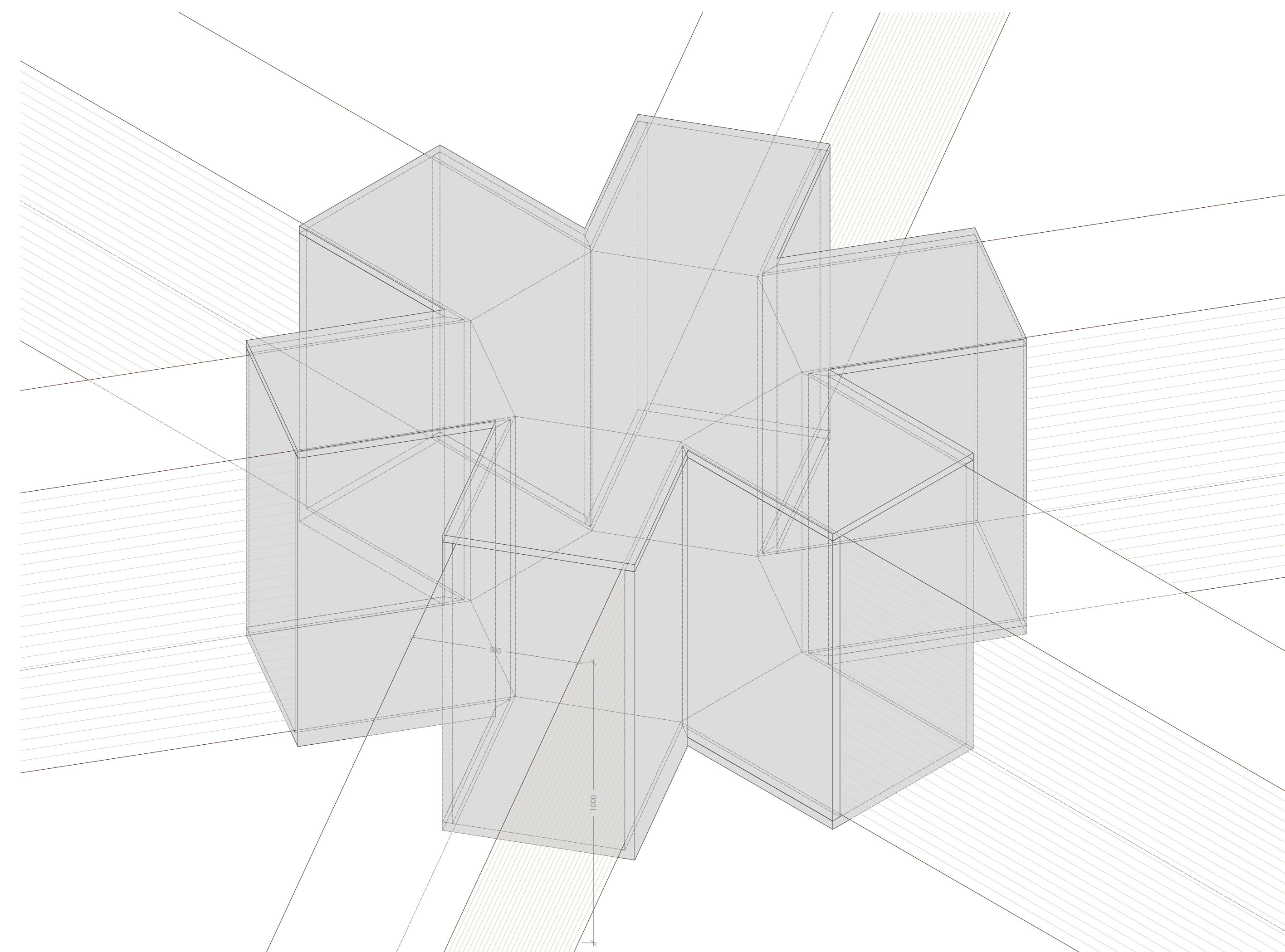
beams union



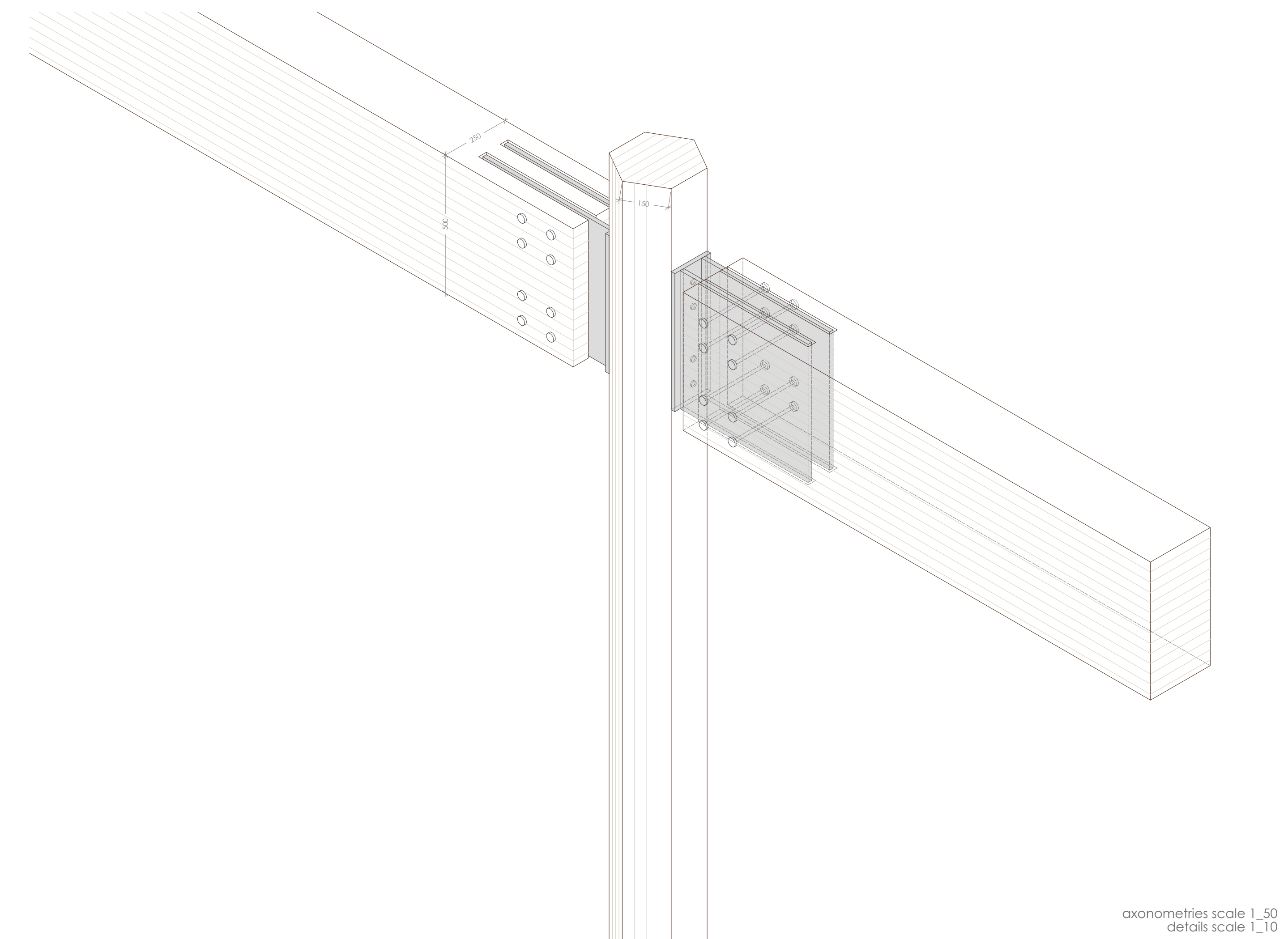
intern pilar - beam union



intern pilar - beam union



beams union



intern pilar - beam union

CO-LIFE: cohousing in Pinedo

Use overload

The building consists of two well distinct parts, first one being the dwellings, which is the most eastern part of the plot, and the other is the communal area, which occupies the western part of the plot.

According to the CTE DB SE-AE, the serviceability overload is the weight of everything that can gravitate on the building by reason of its use. The effects of the overload can be simulated by the application of a uniformly distributed load. According to the fundamental use in each zone of the building, the values in Table 3.1 are adopted as characteristic values.

The dwellings are on the ground floor and first floor, this use has an overload of 2 Kn/m2 (use subcategory A1).

The rest of the programme is spread over three floors.

On the ground floor are the workshops, the reception, a laundry, gymnasium, common kitchen and living room and a multipurpose room. As these areas are in direct contact with the ground, they are not taken into account for the calculation of the overload of use.

On the first floor is the playroom, library, computer room and group work room. The areas with tables and chairs correspond to subcategory C1 and have an overload of 3 Kn/m2.

On the third floor is the space reserved for co-working and, as it is an administrative area, its category is B and 2 Kn/m2 must be taken into account.

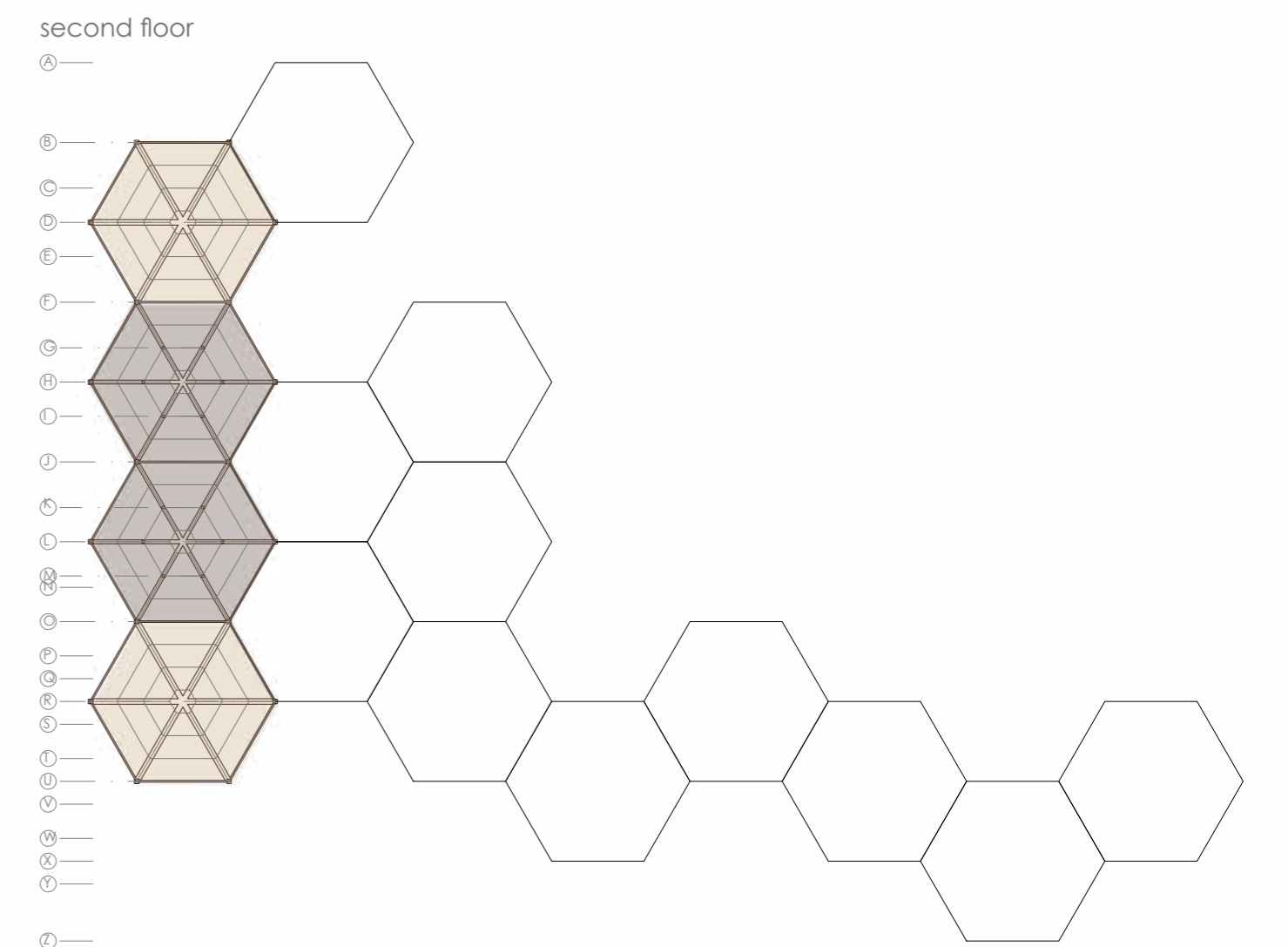
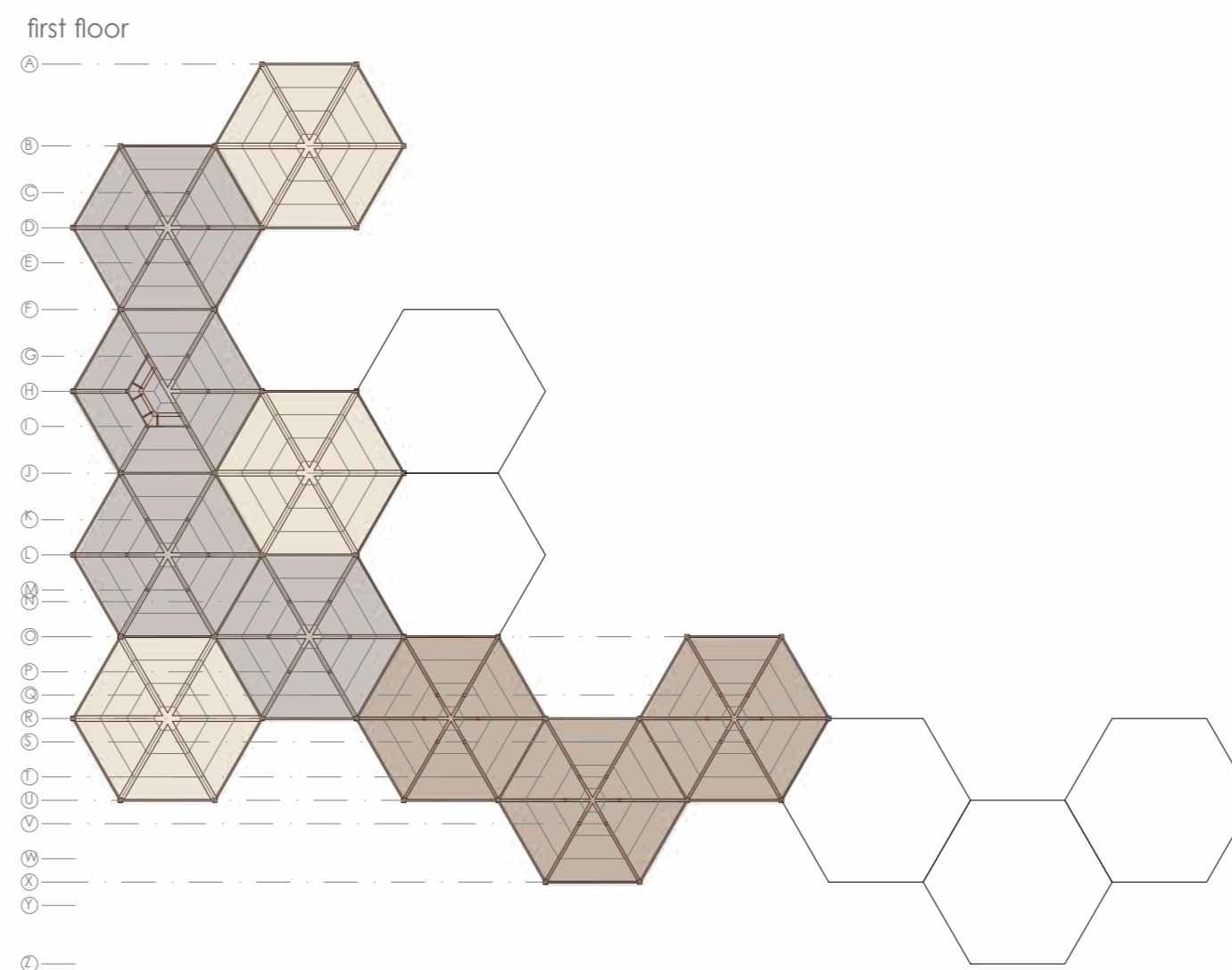
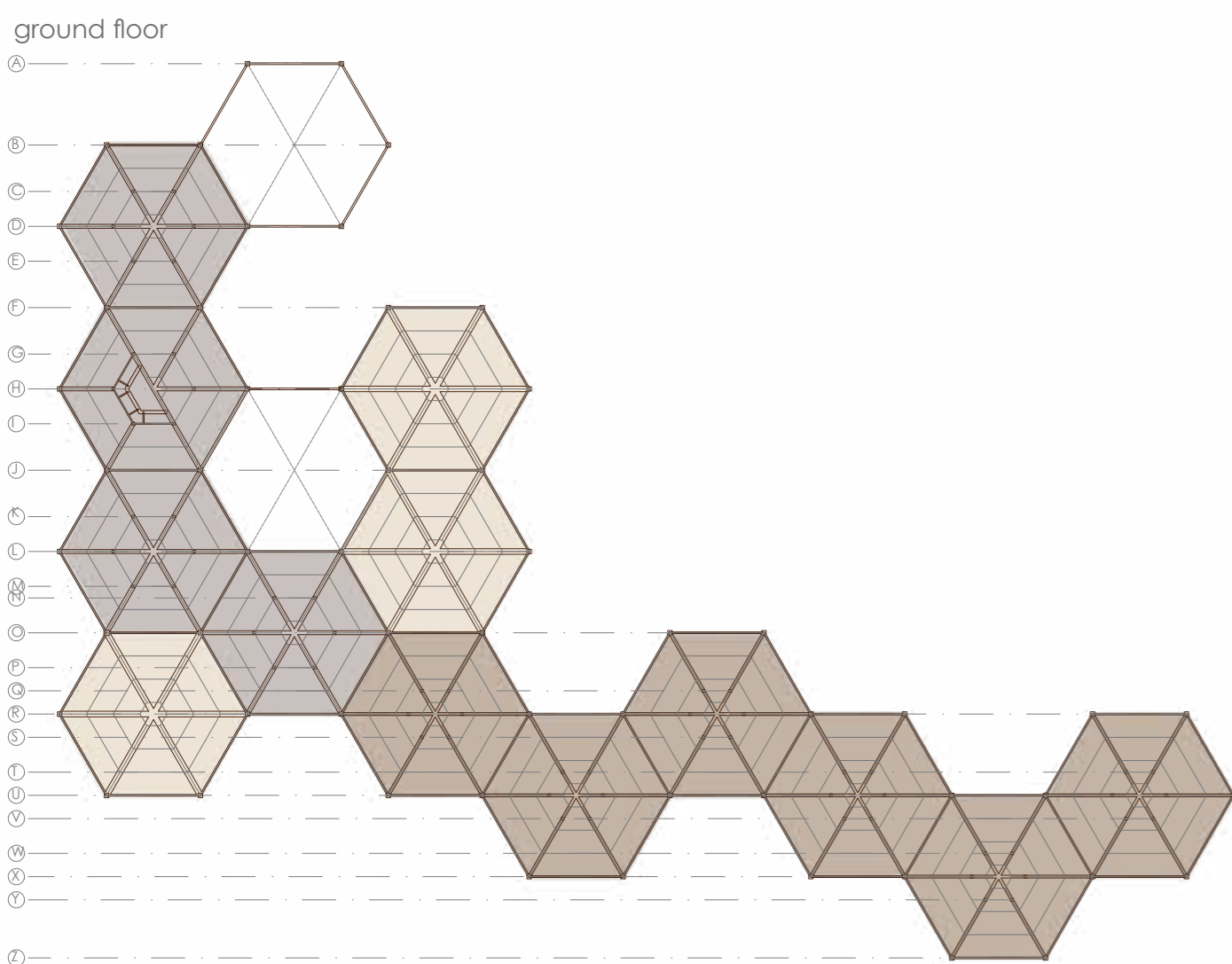
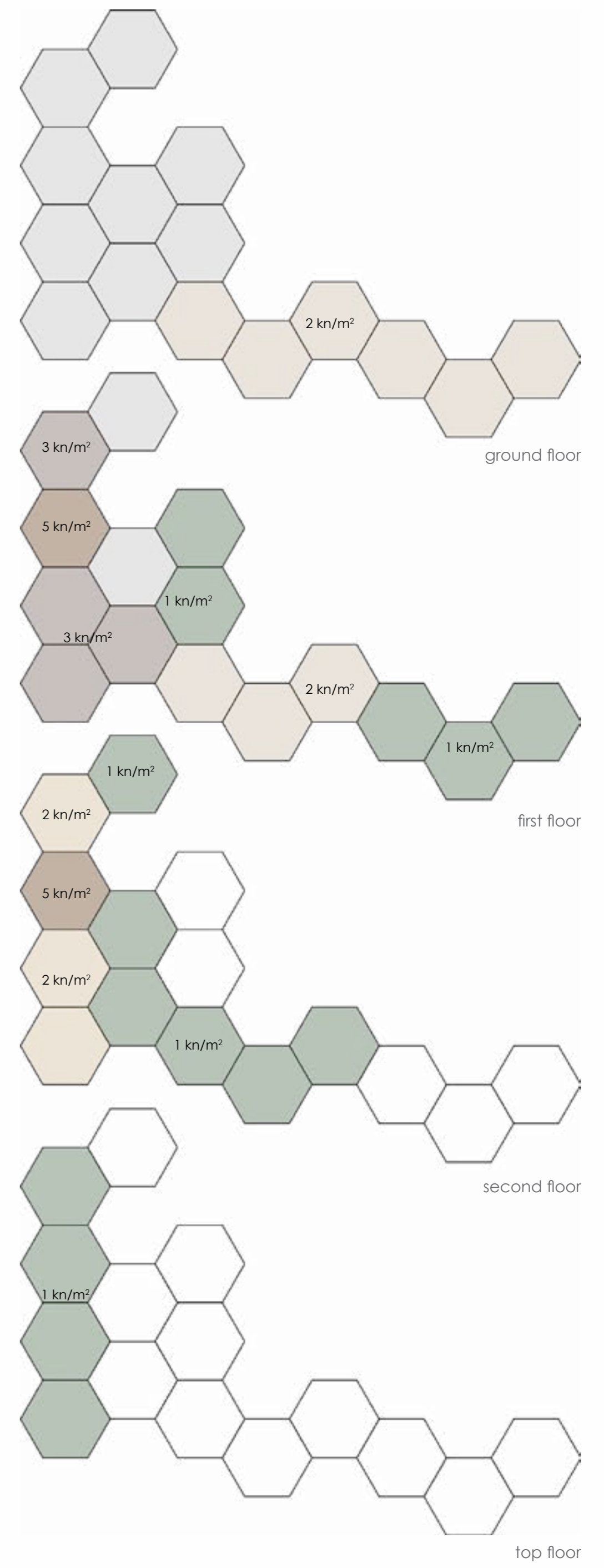
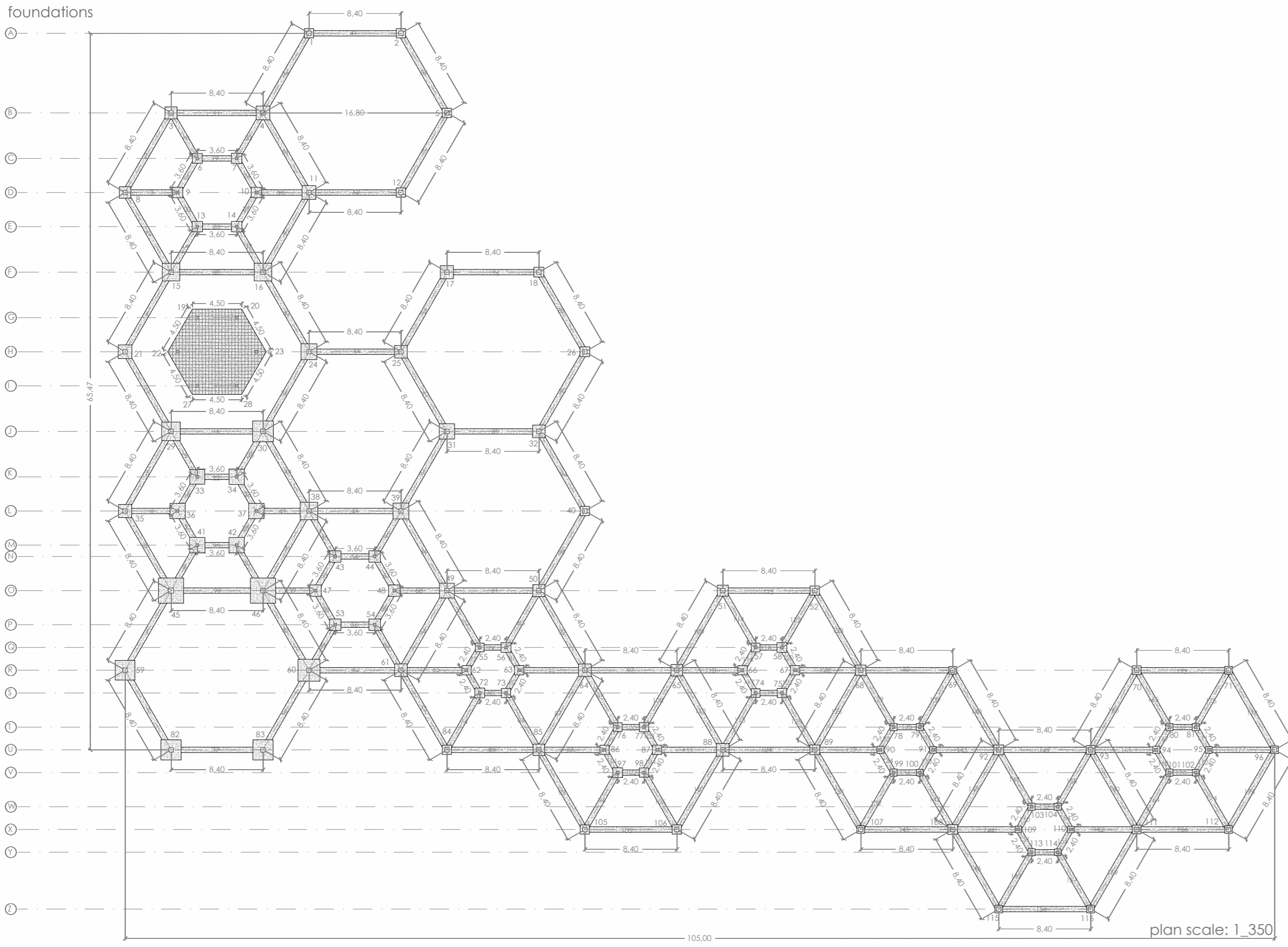
Finally, on all floors there is the lobby module with the vertical communication core, which belongs to subcategory C3 with an overload of 5 Kn/m2. In addition, on the different levels there are also the roofs, which are all landscaped, non-trafficable and with a slope of less than 20° and therefore 1 Kn/m2 of overload of use must be added, for subcategory G1.

STRUCTURE

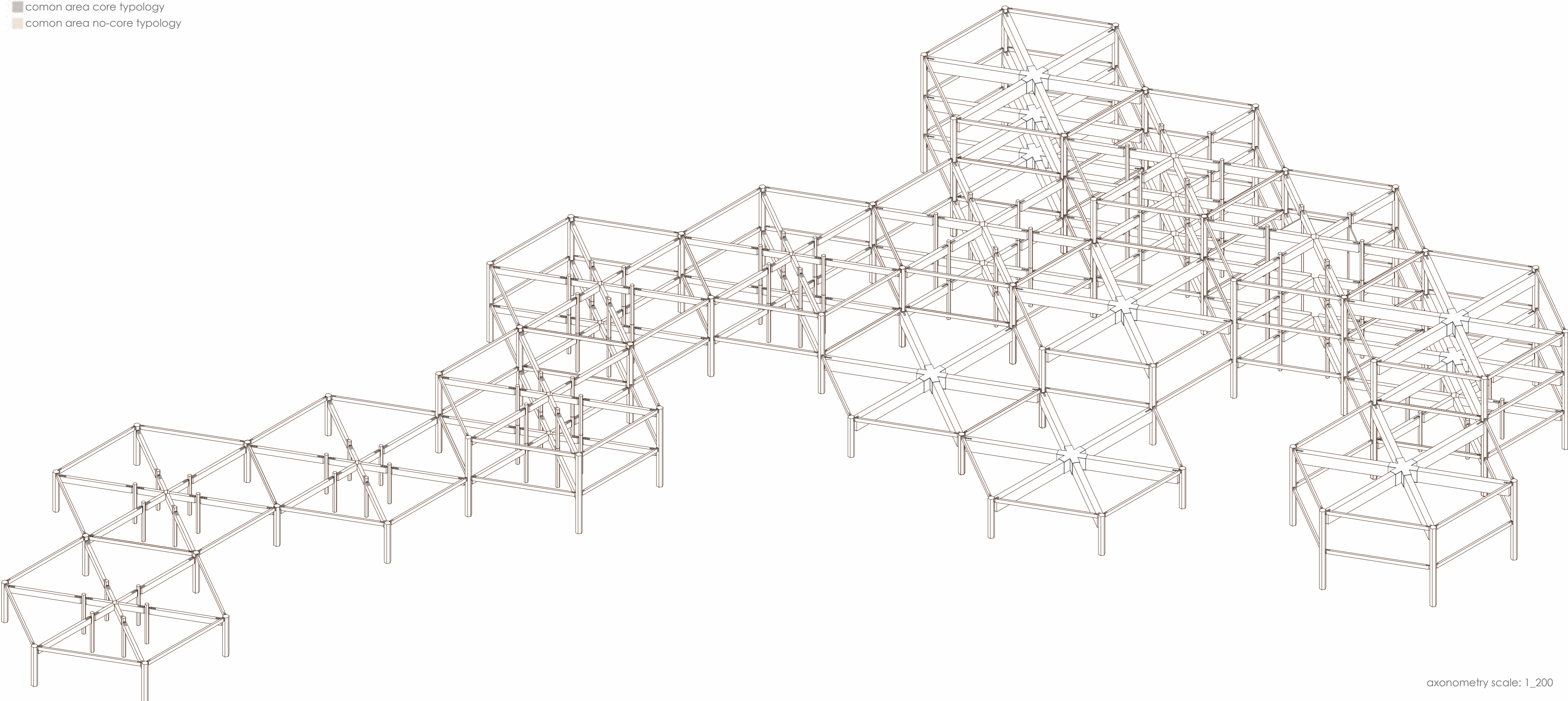
Almudena Gallino Grima

Tabla 3.1. Valores característicos de las sobrecargas de uso

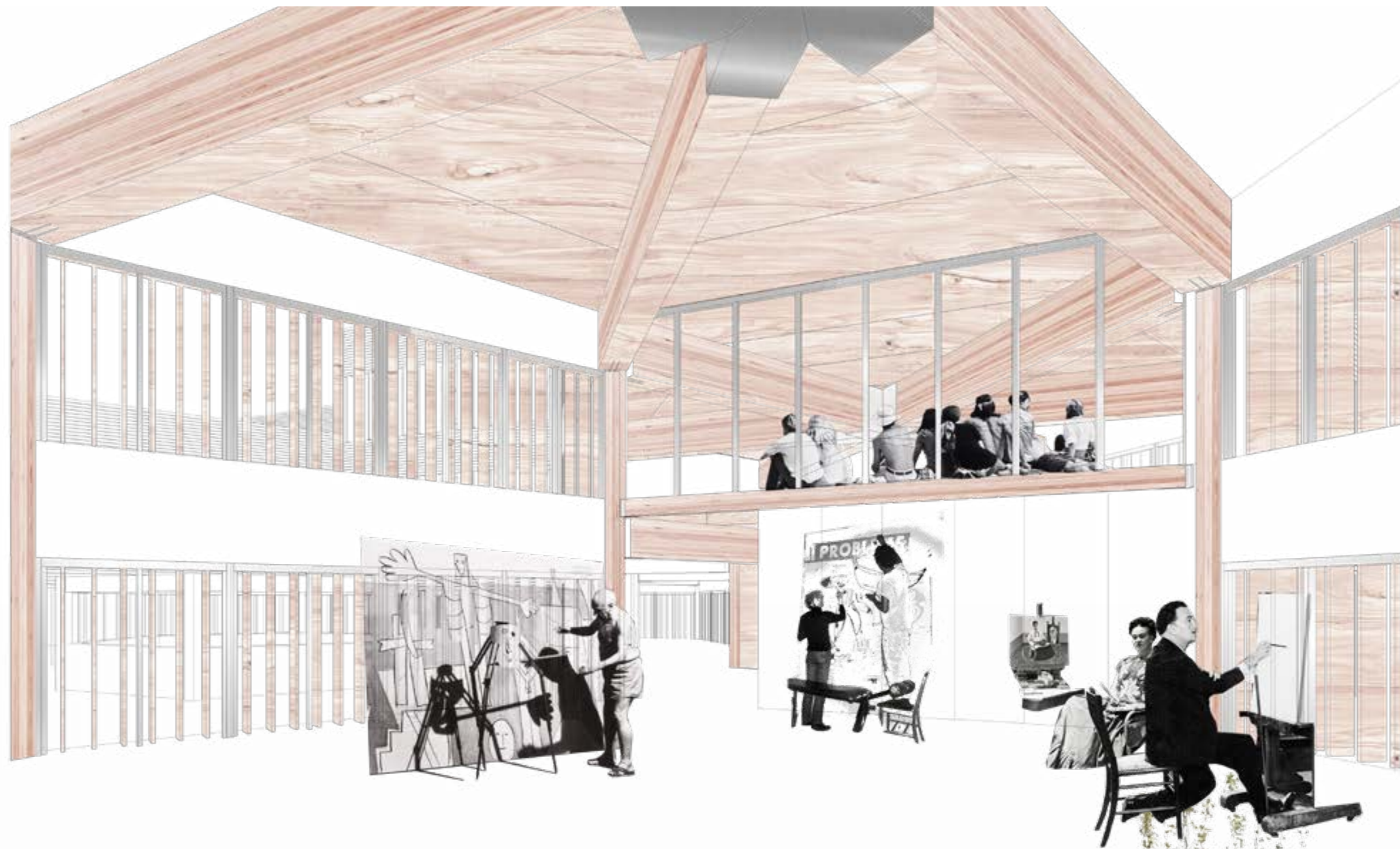
Categoría de uso	Subcategorías de uso	Carga uniforme [kN/m²]	Carga concentrada [kN]
A Zonas residenciales	A1 Viviendas y zonas de habitaciones en hospitales y hoteles	2	2
	A2 Trasteros	3	2
B Zonas administrativas		2	2
	C1 Zonas con mesas y sillas	3	4
C Zonas de acceso al público (con la excepción de las superficies pertenecientes a las categorías A, B, y D)	C2 Zonas con asientos fijos	4	4
	C3 Zonas sin obstáculos que impidan el libre movimiento de las personas como vestíbulos de edificios públicos, administrativos, hoteles, salas de exposición en museos, etc.	5	4
	C4 Zonas destinadas a gimnasio u actividades físicas	5	7
	C5 Zonas de aglomeración (salas de conciertos, estadios, etc)	5	4
	D1 Locales comerciales	5	4
D Zonas comerciales	D2 Supermercados, hipermercados o grandes superficies	5	7
E Zonas de tráfico y de aparcamiento para vehículos ligeros (peso total < 30 kN)		2	20 ⁽¹⁾
F Cubiertas transitables accesibles sólo privadamente ⁽²⁾		1	2
G Cubiertas accesibles únicamente para conservación ⁽³⁾	G1 ⁽¹⁾ Cubiertas con inclinación inferior a 20°	1 ⁽¹⁾	2
	G2 Cubiertas ligeras sobre correas (sin forjado) ⁽²⁾	0,4 ⁽¹⁾	1
	G2 Cubiertas con inclinación superior a 40°	0	2



■ dwelling core typology
 ■ comon area core typology
 ■ comon area no-core typology



axonometry scale: 1_200



workshops



main entrance



dwelling entrance



orchard