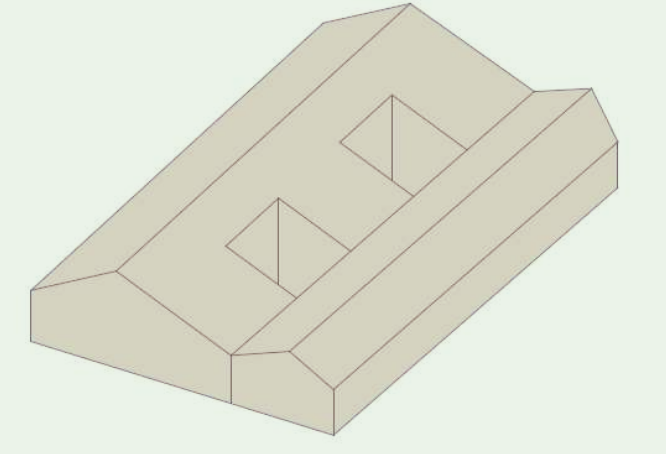
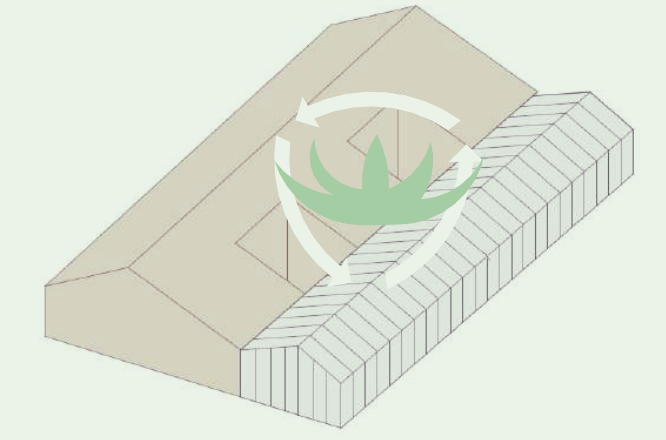


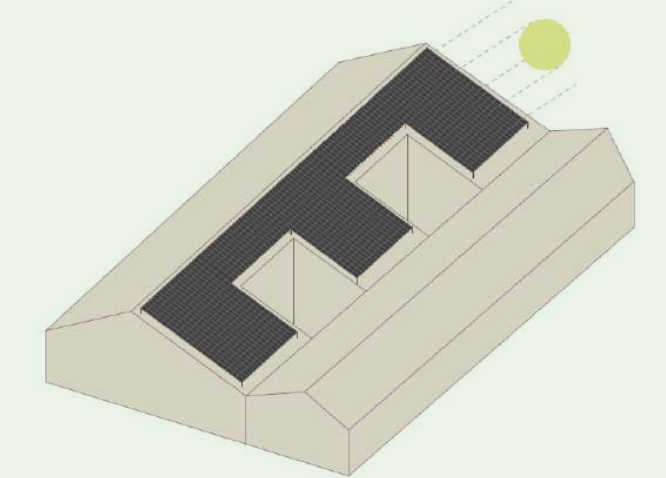
SUSTAINABLE STRATEGIES



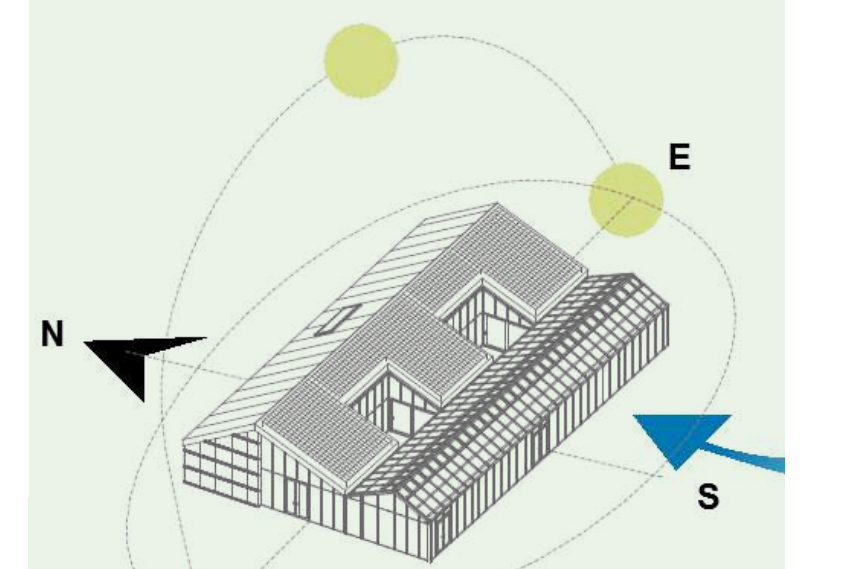
Mass
The building is placed on the existing paved area, preserving green zones for farming. The greenhouse is adjacent to maximize sun exposure and shared heat, acting as a buffer.



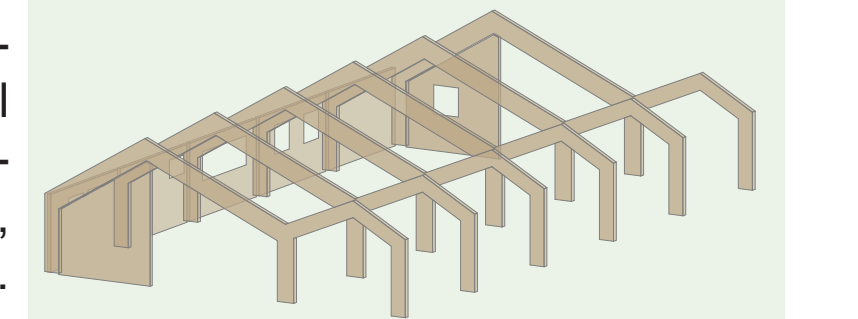
Greenhouse
The greenhouse promotes local food production, reducing the carbon footprint and enhancing community food security.



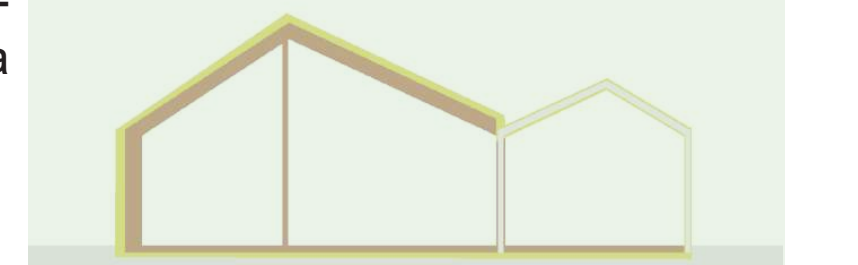
Renewable Energy
The roof, oriented 3 degrees east of solar south with a 25-degree incline, will have 64 PV panels over 77 square meters for solar energy.



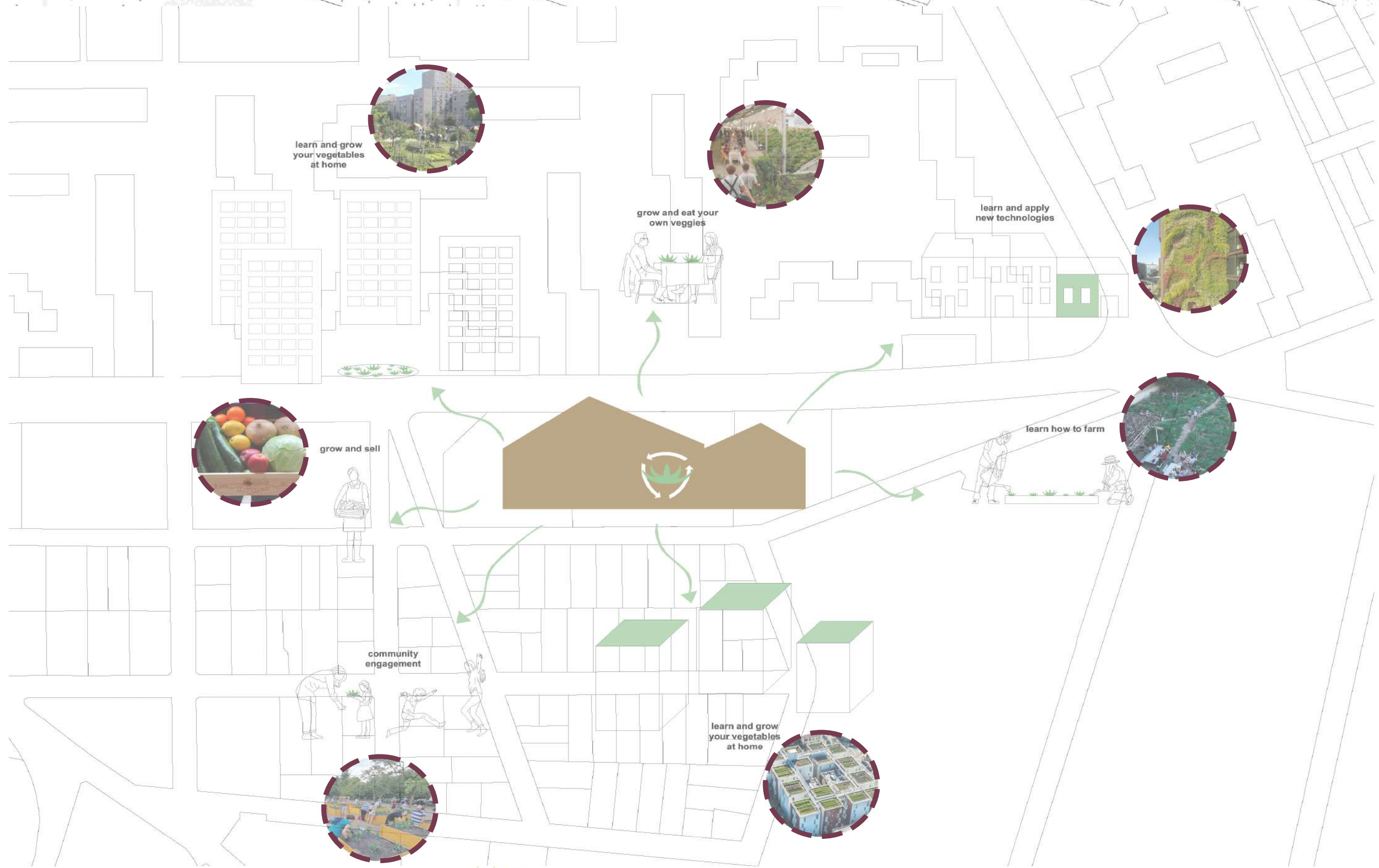
Orientation
The greenhouse faces south for maximum sun exposure. Functions needing more light and warmth are on the southern side, while those needing less are on the northern side.



Chosen Materials
Using responsibly sourced wood and hemp fiber reduces environmental impact. Wood acts as a carbon sink, and hemp provides excellent insulation and breathability.



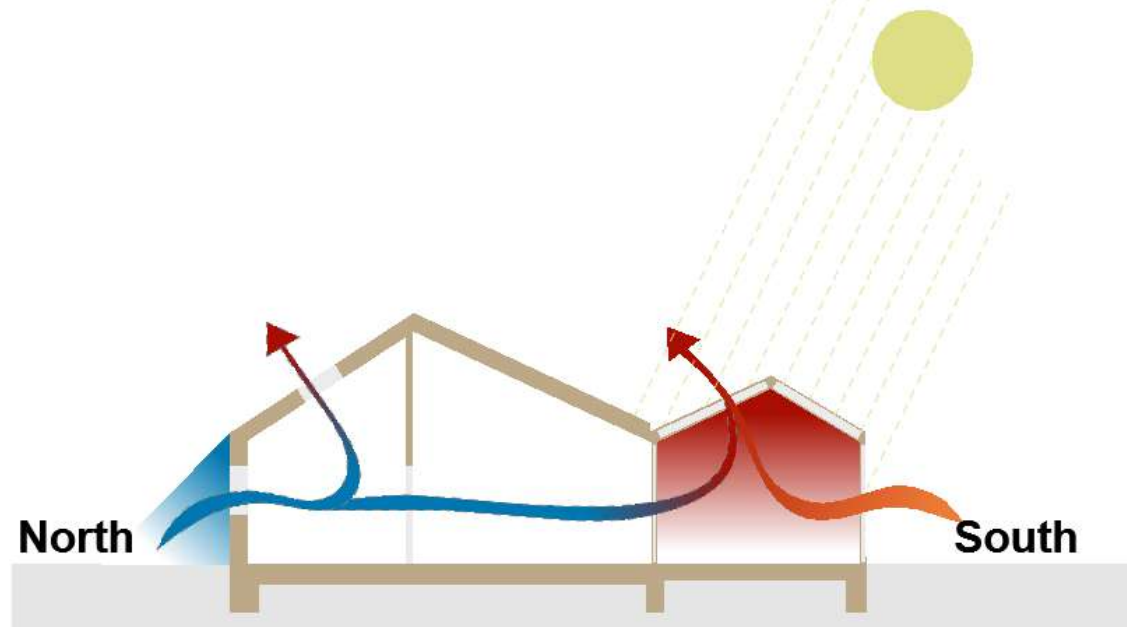
Thermal Envelope
The building's design avoids thermal bridges, and wood provides excellent insulation, enhancing energy efficiency.



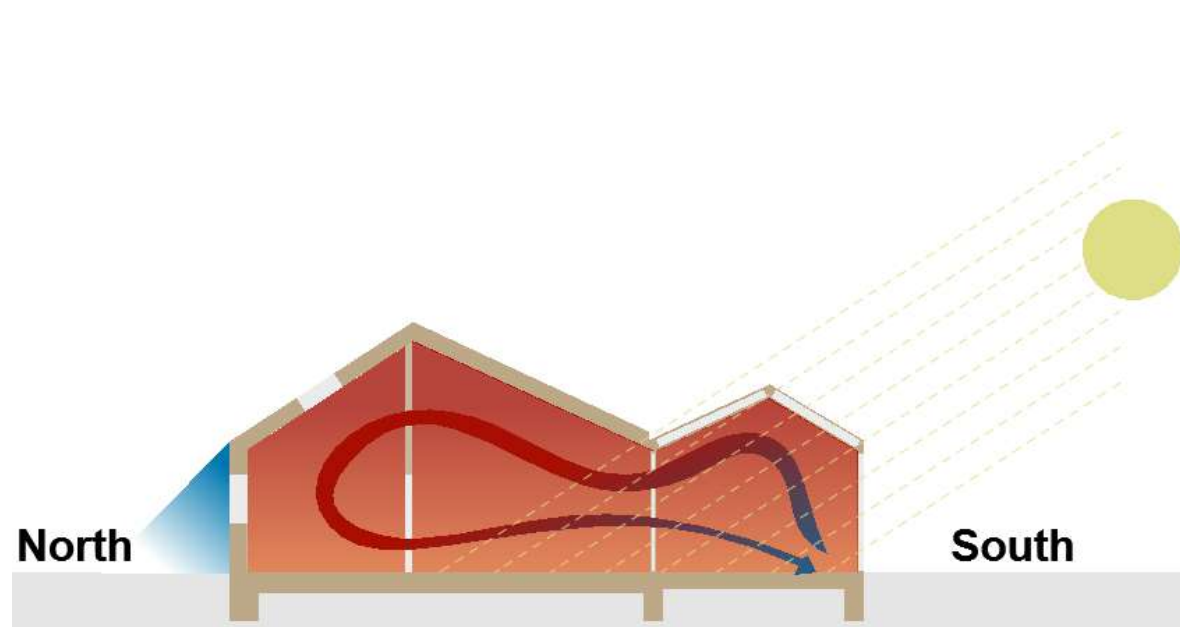
Giving the site's characteristics and the district's developing goals, this site is the perfect spot for the development of a project with the goal of boosting the community's life by introducing a communal garden and learning environment.

The project aims to unite residents through accessible gardening education and communal activities. Situated near Housing Estate buildings, the center comprises a community hub, greenhouse, and extensive vegetable beds.

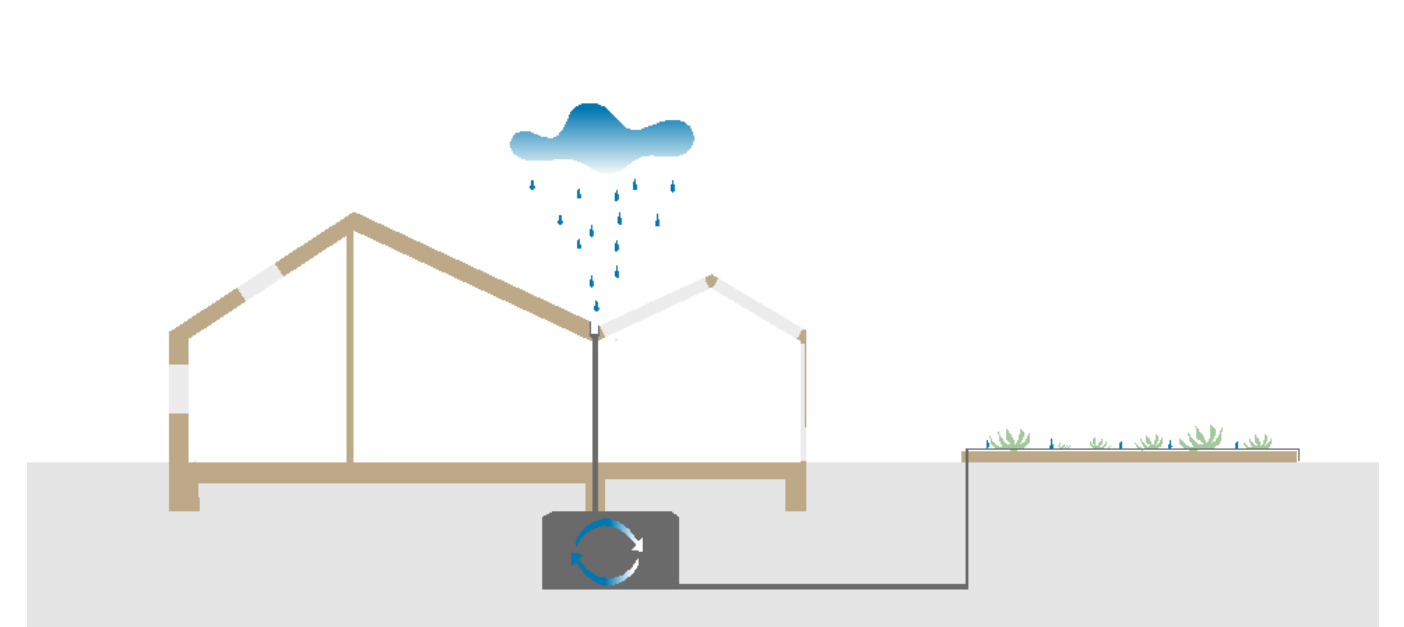
It focuses on teaching sustainable gardening, hosting workshops, and providing cooking classes to foster community bonds. Residents can engage in shared experiences, cultivating both fresh produce and a sense of connection. This comprehensive initiative strives to enhance the lives of Újpest locals through education, socialization, and a deeper appreciation for nature.



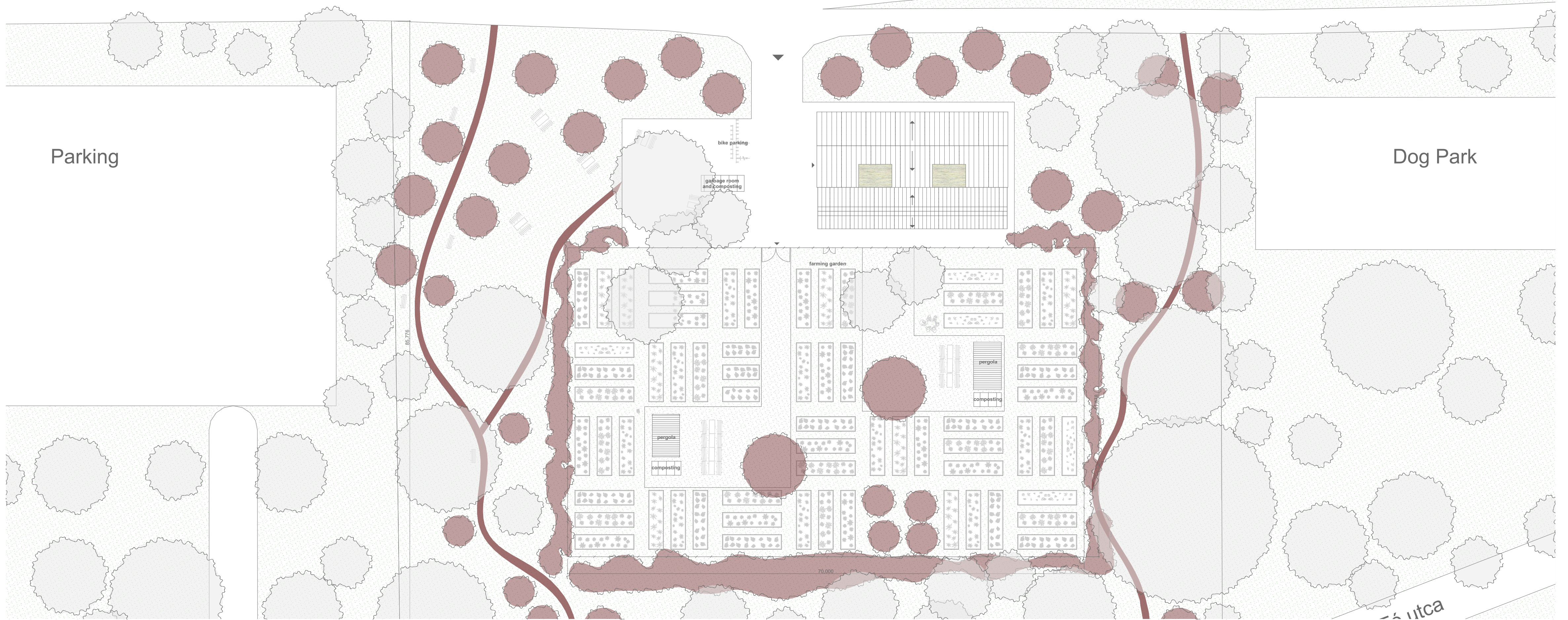
Natural Ventilation
Transom windows allow hot air to escape, promoting natural ventilation.



Water Harvesting
The greenhouse uses rainwater harvesting for irrigation and organic growing practices, conserving water and protecting ecosystems.



Microclimate
Energy-efficient design in the greenhouse, including passive solar heating and natural ventilation, reduces energy consumption and costs.



The intervention approach has the goal to maintain as much of the original site in the original state with which it was found. And that is achieved by placing the building on the already existing paved area in the site, and allowing for the remaining already green zones to correspond to the farming area.

New walk paths are supposed to go around the farming area, allowing the visitors to explore the site and access the main building through Anonymus utca on the south portion of the site.

Greenhouse placement is placed next to the main building in order to increase the sun driven on the greenhouse. And the main building will be able to use the gained heat. And it will act like a buffer zone.

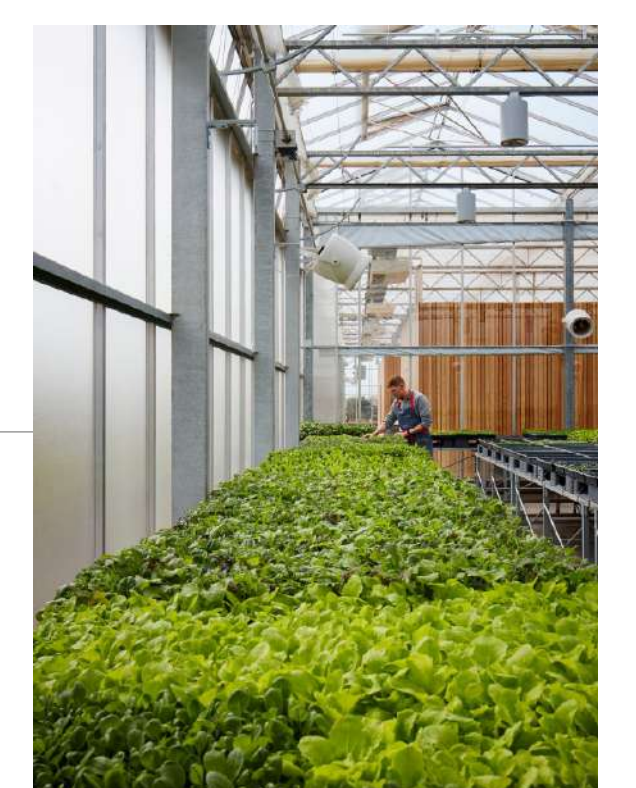
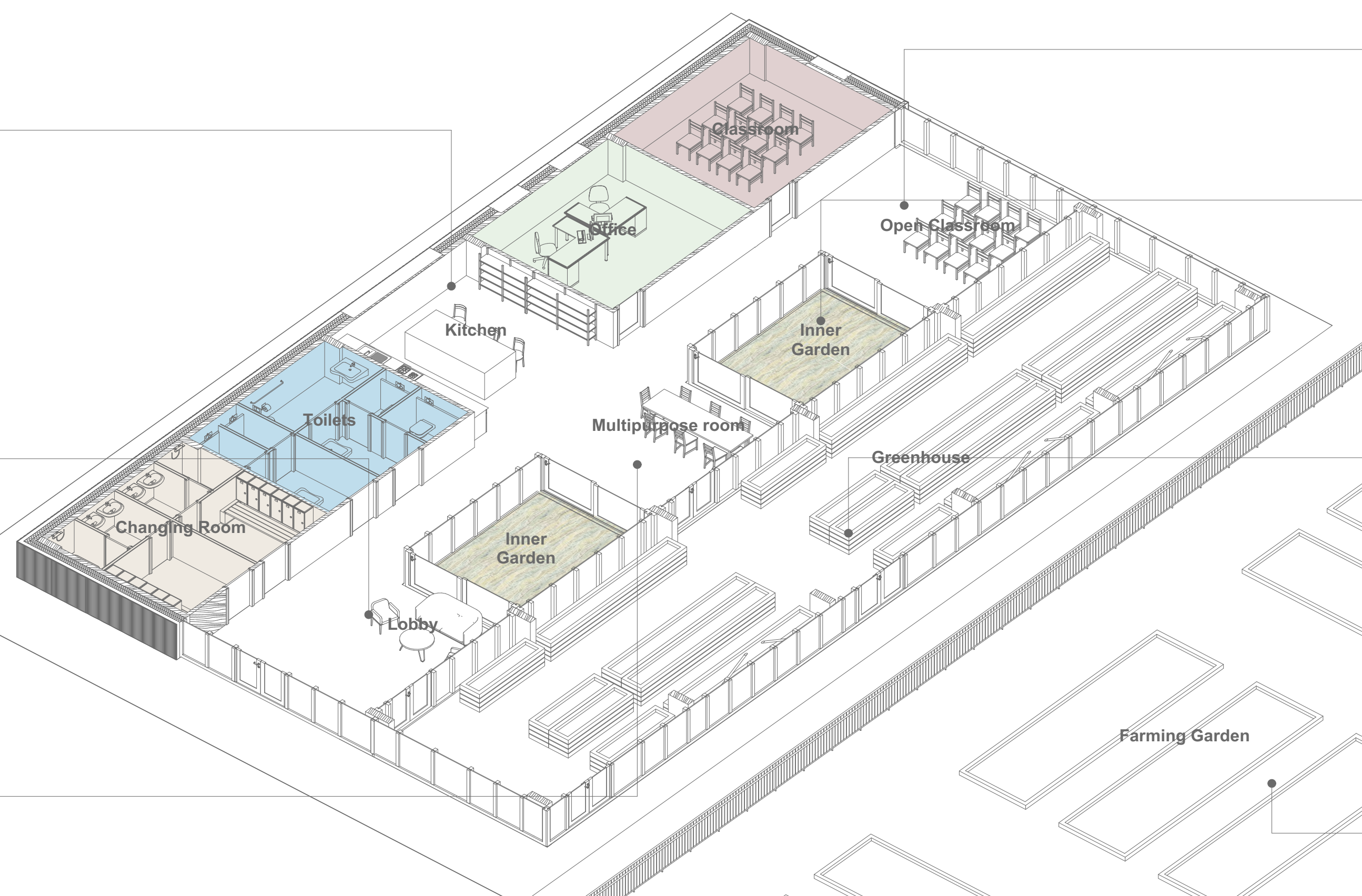
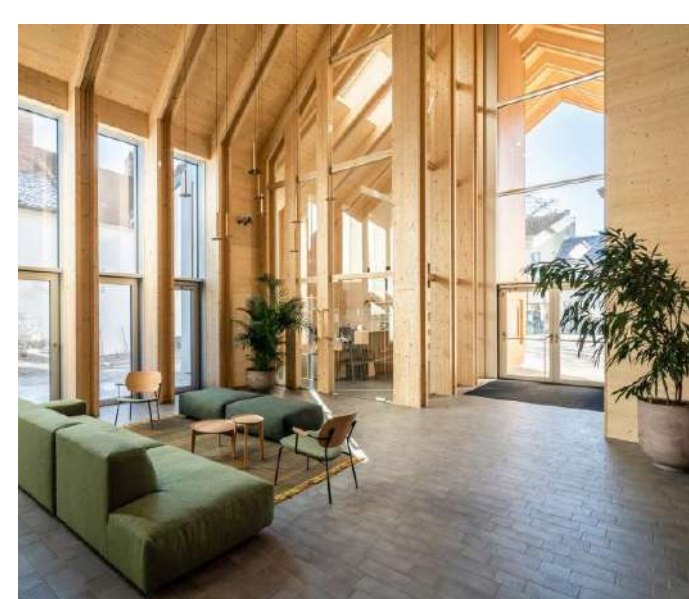
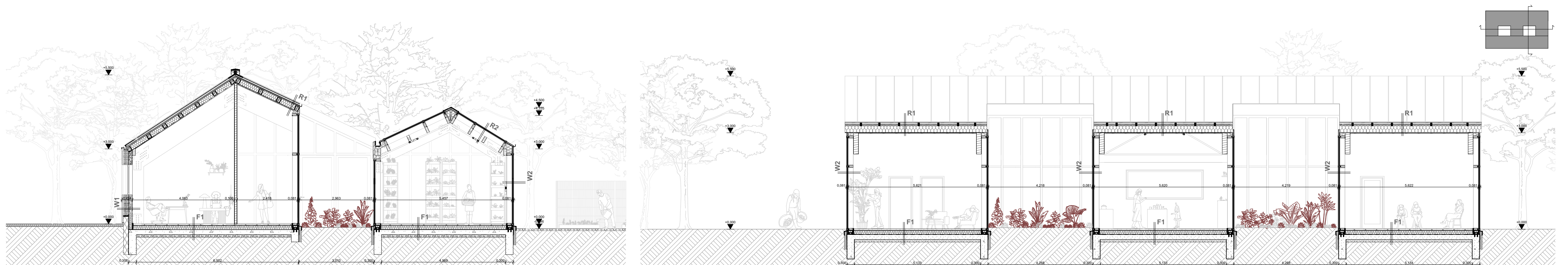
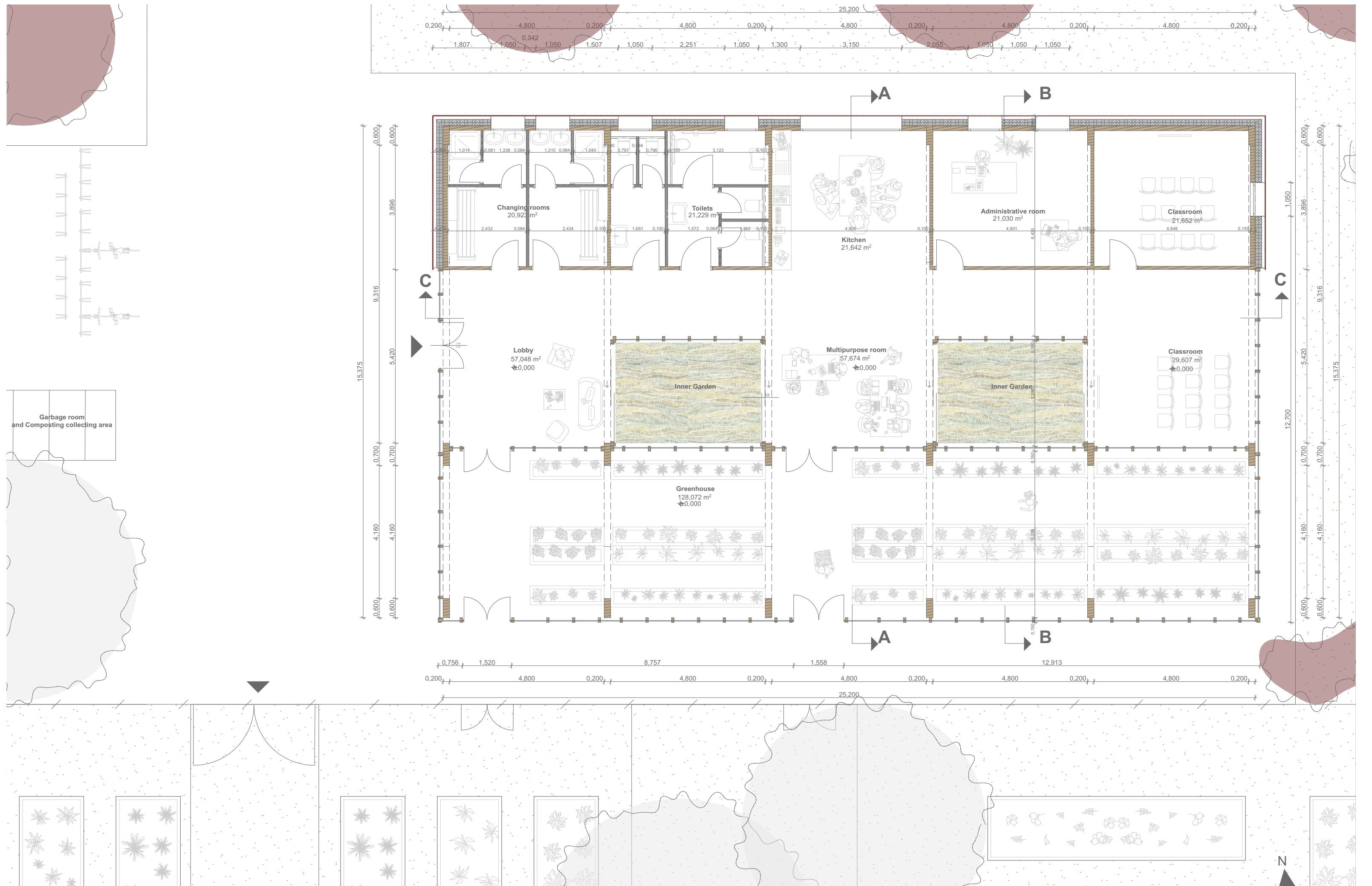
The main material used for its construction will be wood. As an attempt to communicate the closer contact with the nature and successfully provide this feeling in such an urban environment.

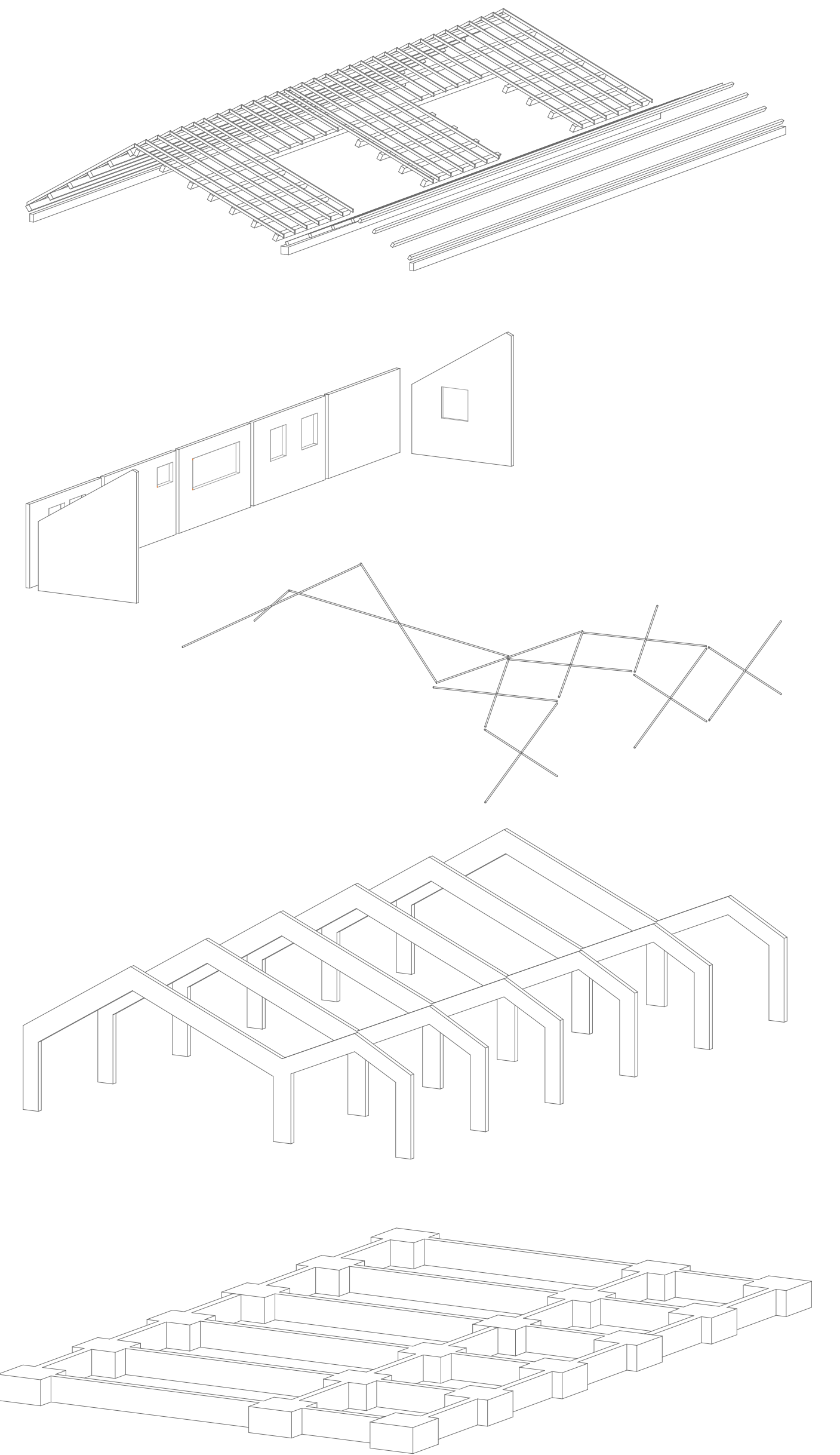
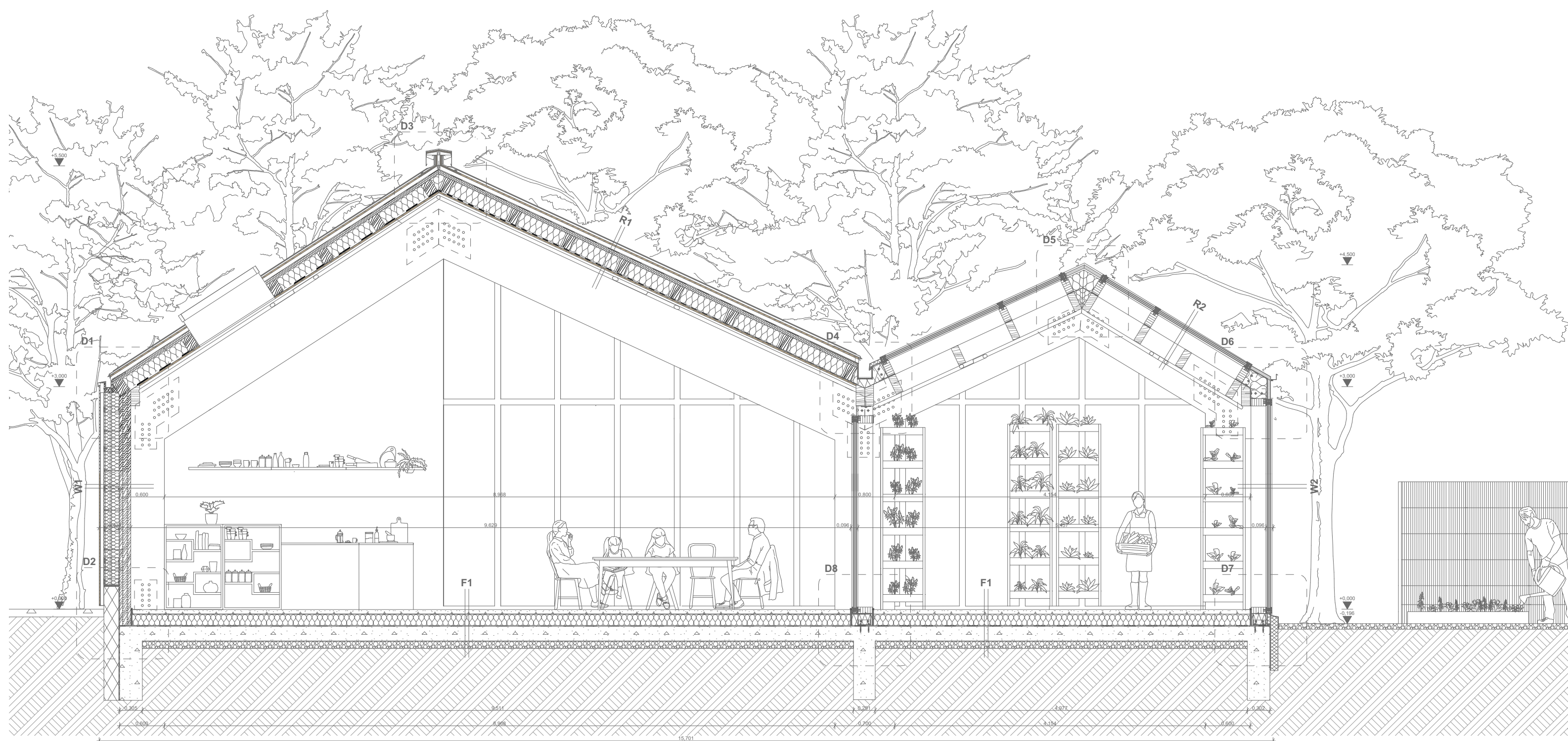
After trying different placement of greenhouse, The Greenhouse is placed next to the main building in order to use the heat gain on the greenhouse on the main building too.

And by placing the greenhouse facing fully south, it has been allowed the greenhouse to take sun all day long.

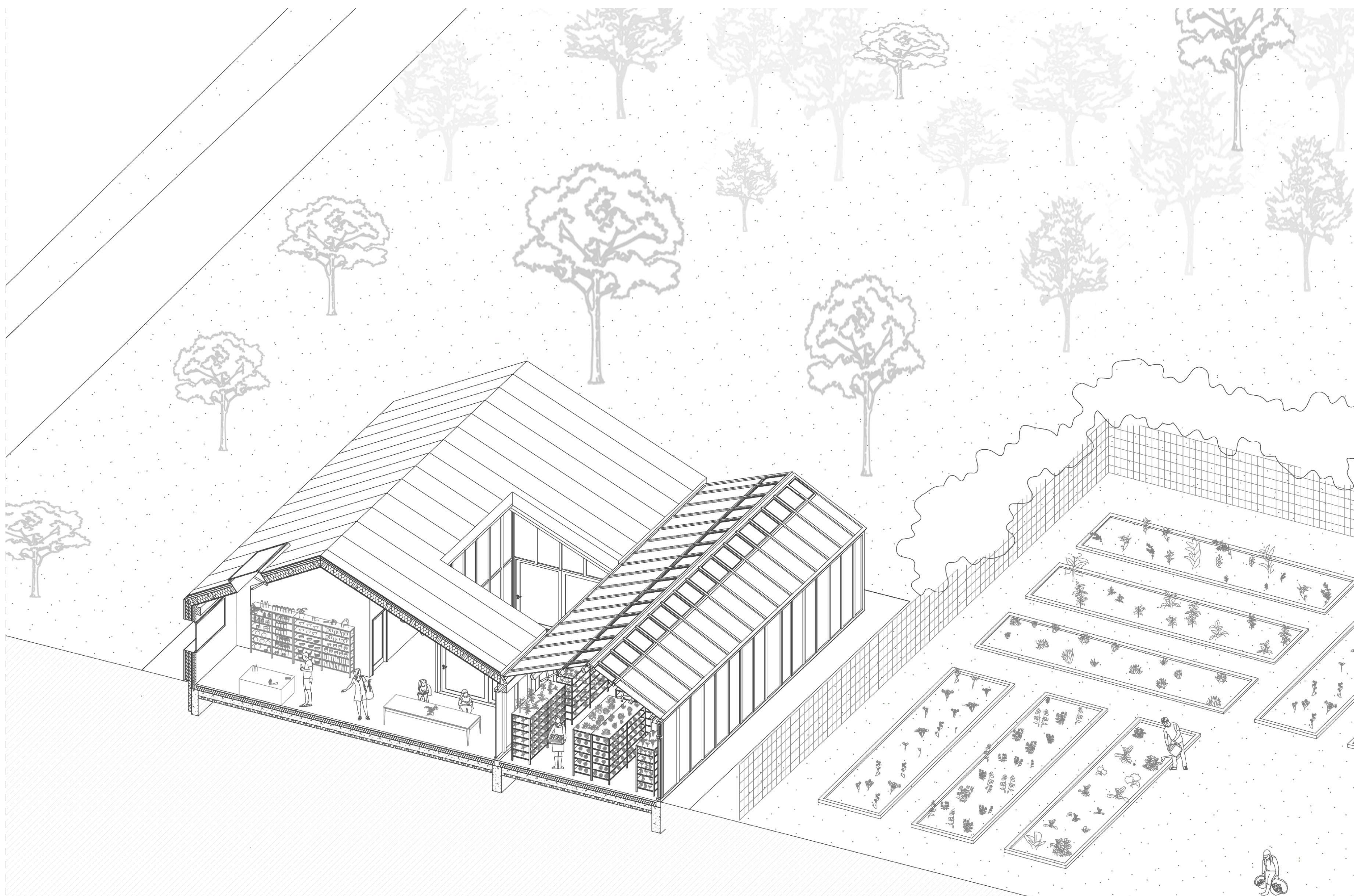
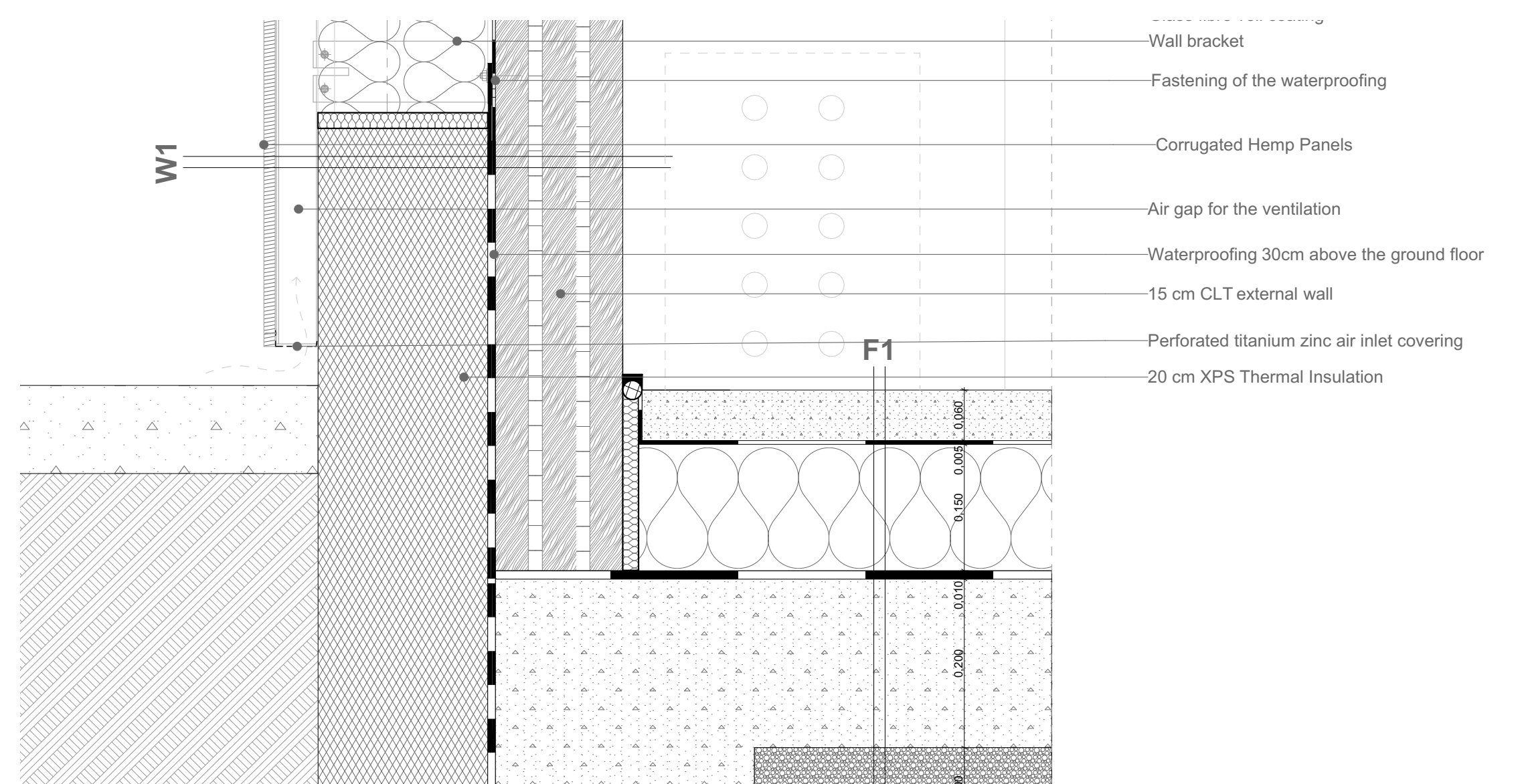
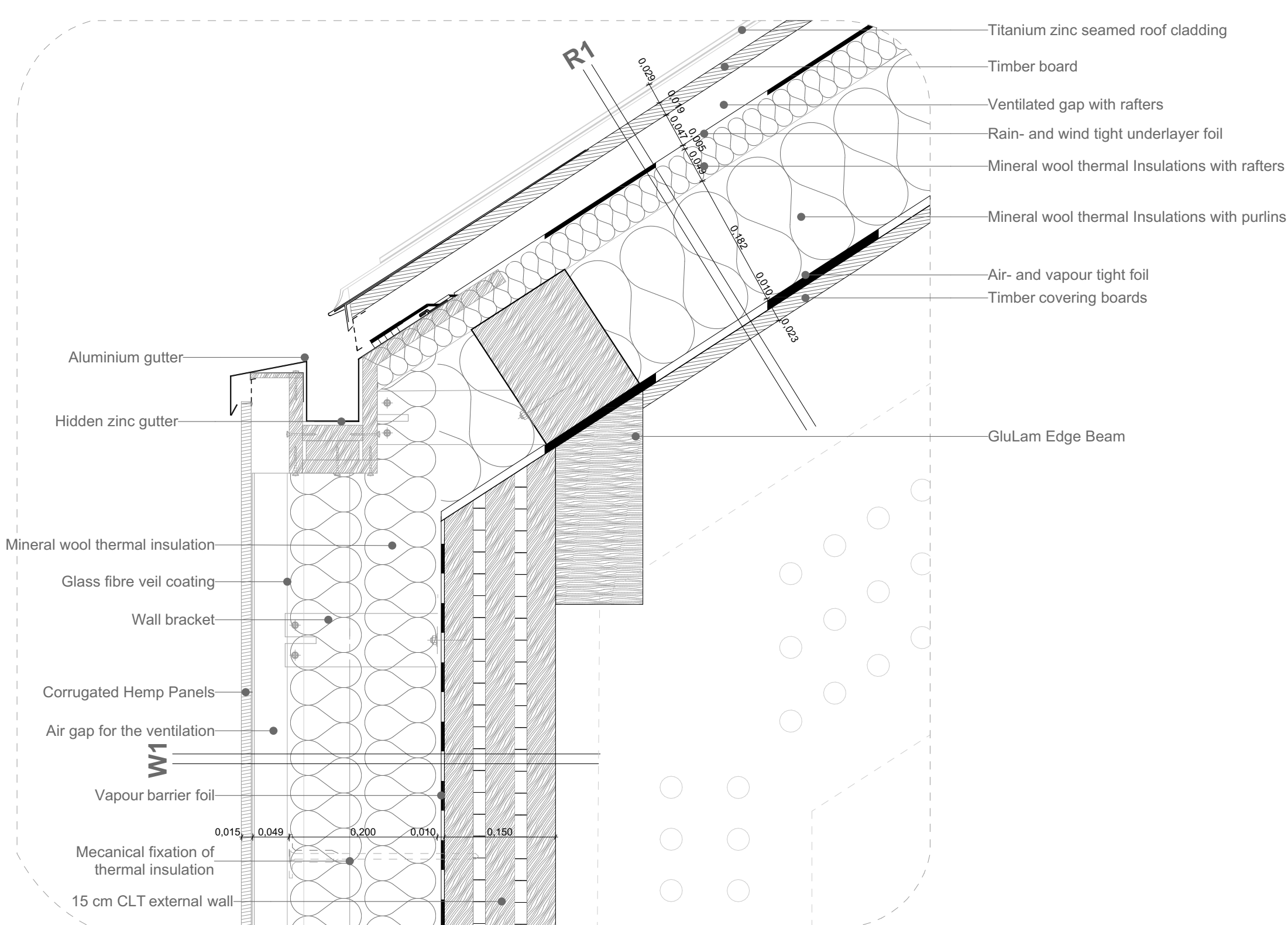
Two path was placed on the sides of the building in order to invite people walk by garden and take their attention with the vegetable garden.

The main building has 3 strong aisle, first is the functional; is fully close with timber wall and placed on the north side. The one in the middle is open public zone which has glazed facade and 2 gardens inside separating the spaces. Third one is the greenhouse which is fully glazed open space.

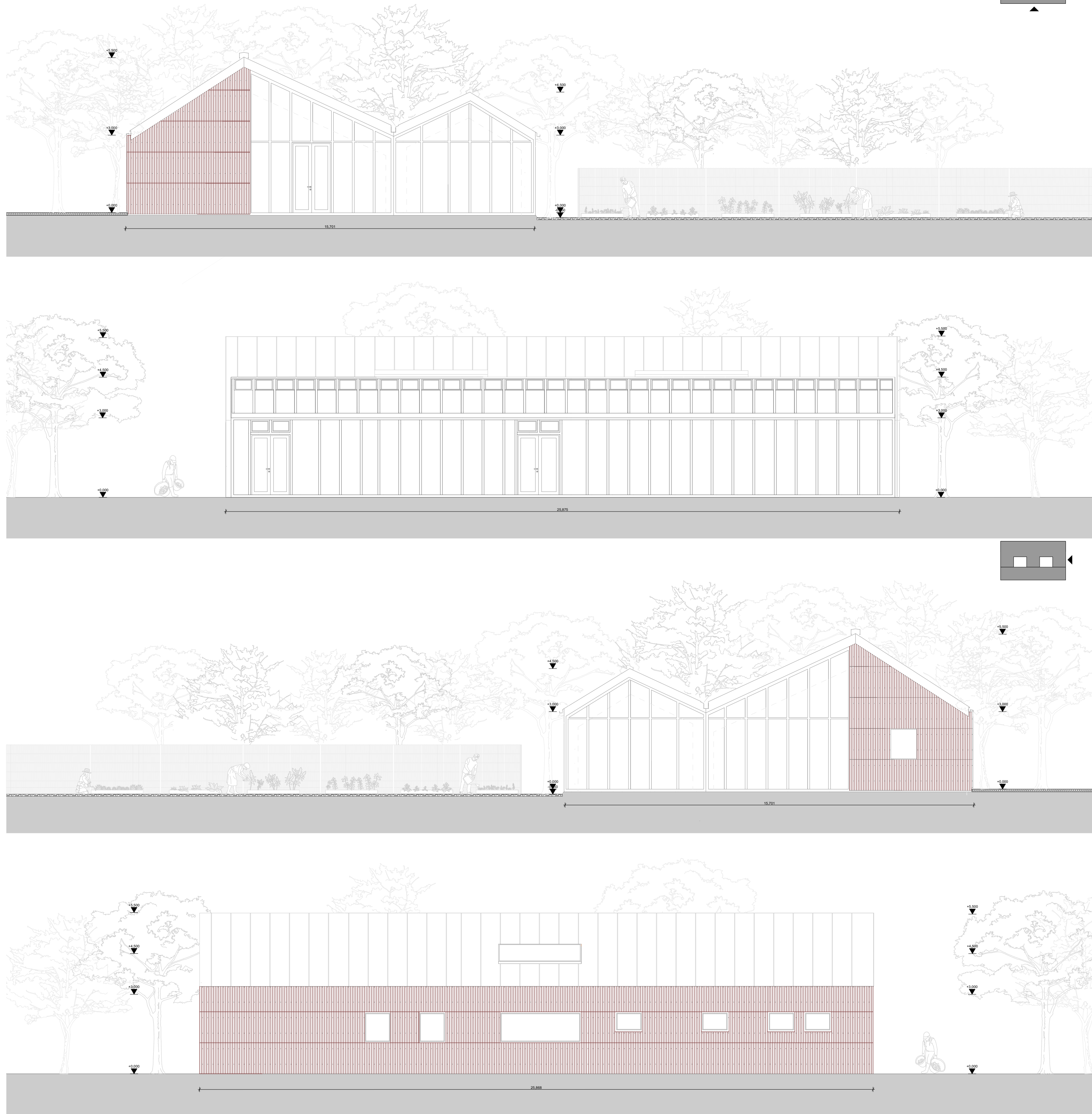




R1	Roof Layers	R2	Roof Layers	W1	Wall Layers	W2	Wall Layers	F1	Floor Layers
1 yr	Titanium zinc-seamed roof cladding with underlayer and drainage mat	Stabalux H1 Timber Curtain Roof	Triple Glazing (Coated) w/Aluminium Cover Strips	15 cm	CLT external loadbearing wall	Stabalux H1 Timber Curtain Wall	Triple Glazing w/Aluminium Cover Strips	6 cm	Polished Concrete Screenshot
2.4 cm	Timber board	1 yr	Mineral wool thermal insulation	1 yr	Vapour barrier foil	1 yr	Mineral wool thermal insulation	1 yr	PE Foil
1 yr	Wind- and straight semi-permeable underlayer foil	10 cm	Mineral wool thermal insulation	10 cm	Mineral wool thermal insulation	10 cm	Mineral wool thermal insulation	1 yr	Mineral Wool Thermal Insulation
10 cm	Rafters with thermal insulation and air gap	1 yr	Glass fibre veil coat	1 yr	Ventilated air gap	1 yr	Glass fibre veil coat	20 cm	SBS Modified Bitumenous Waterproofing
20 cm	Mineral wool thermal insulation with timber purlins	4 cm	MDF fibreboard	1.5 cm	MDF fibreboard	1.5 cm	MDF fibreboard	20 cm	Reinforced Concrete Slab
1 yr	Air- and vapourtight underlayer foil	2 cm	Corrugated hemp facade panels	2 cm	Corrugated hemp facade panels	2 cm	Corrugated hemp facade panels	15 cm	Gravel Bed
2.5cm	Timber covering boards								Soil



Közösségi Kertek | Community Garden & Educational Center | Diploma Design Project | Újpest, Budapest | İlaydanur KARATAŞ | GJ791B | Dr. Szabó Árpád



The structure of the building is composed by a double span portal frame. The spans do not exceed 6m therefore, taking in consideration the building context Timber makes for a perfect fit as the structural material for this building.

The utilization of timber not only helps in the reduction of carbon emissions but also fosters responsible forest management practices. Timber's exceptional insulating properties naturally regulate the internal temperature of the building, leading to decreased energy consumption and long-term operational cost savings.

Additionally, the warm and natural aesthetic of timber enhances the appeal of the community center, creating a welcoming ambiance for visitors. Its versatility allows for innovative architectural designs, complemented by modern preservation techniques that bolster durability and ensure a prolonged service life.

Furthermore, timber construction methods, such as prefabrication, streamline the building process, resulting in cost efficiencies and quicker occupancy.

In summary, timber emerges as a sustainable, energy-efficient, aesthetically pleasing, and adaptable choice for constructing a greenhouse community center, aligning seamlessly with environmental and functional objectives.

The part of the facade which is not translucent will be ventilated and finished with Hemp Fibre Corrugated Panels.

A hemp fibre based corrugated sheet that can be used for both exterior and interior wall cladding. Standard size 1.2m x 1.05m.

The fibres sequester carbon, locking it in and stopping it releasing back into the atmosphere, resulting in a very low-carbon product.

The high cellulose content (60 - 70%) of the plant makes it a very strong and durable material.

The sheet is bound with a sugar based resin made entirely from agricultural waste. Our hemp sheets are a natural alternative to corrugated steel, PVC, bitumen and cement.

The sheets can be used externally to form a rain screen or internally as ceiling or wall linings or other acoustic treatments. The product is natural and like timber exposed to UV the colour will lighten over time.

