

LILLY ANDREWS | PROJECT 06
CENTRO DE CIÊNCIA DOS ALIMENTOS



SITE ANALYSIS

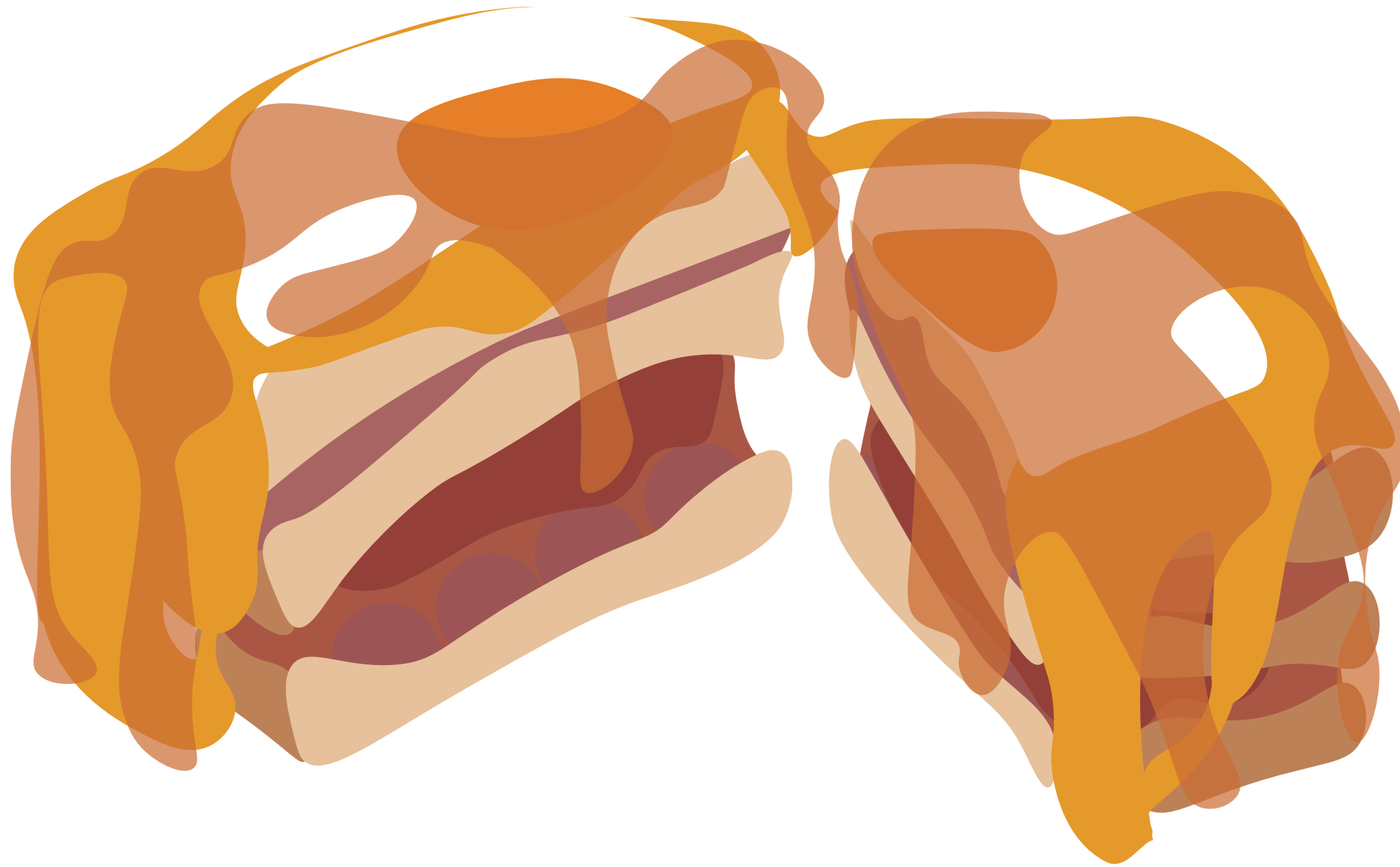
THE SÉ AREA OF THE RIBEIRA DISTRICT

The site is located in the Ribeira district of Porto. It has significant level changes due to the geography of the area, which need to be considered in this design.



SITE ANALYSIS

CULINARY TRADITIONS OF PORTO



The Francesinha and Port wine famously are the food and drink of Porto. Port wine is a rich and sweet dessert wine that typically has a high alcohol content and is served in a smaller 3oz/85ml wine glass. The Francesinha is a very meat heavy sandwich, containing ham, sausage, steak, and cheese, topped with cheese, an egg and then covered in a beer and tomato sauce.

DESIGN BRIEF

CULINARY SCIENCE IN PORTO

Porto local authorities are trying to create inscentives for skilled professionals to come back into the city. The food industry has recently seen a lot of new and upcoming technologies, like lab cultured meat and dealcoholised wines are becoming easier to find on the shelves.

However, the main challenge that these growing technologies, reffered to as “ick factor“, where people are uncomfortable with not fully understanding exactly where their food has come from.

This project combines laboratory spaces and a variety of dining experiences. Allowing the consumer to gaze into the spaces where their food is produced, and learn about the sciences behind it.



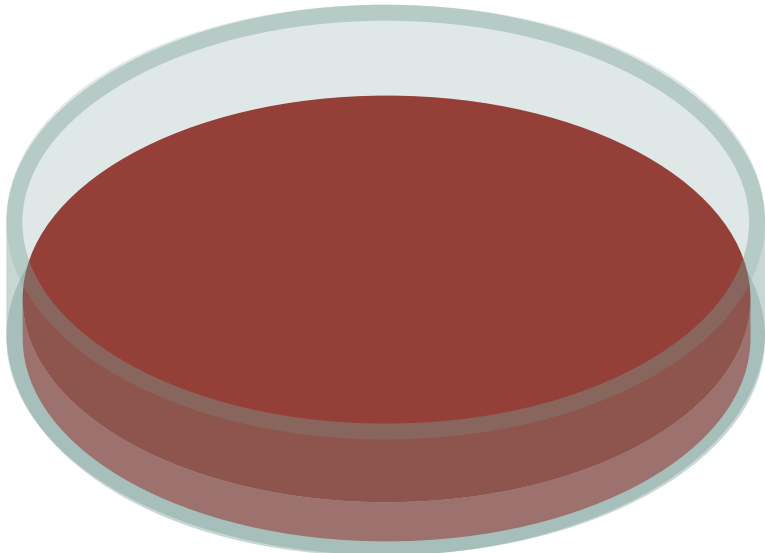
CULINARY SCIENCES

LAB CULTURED MEAT

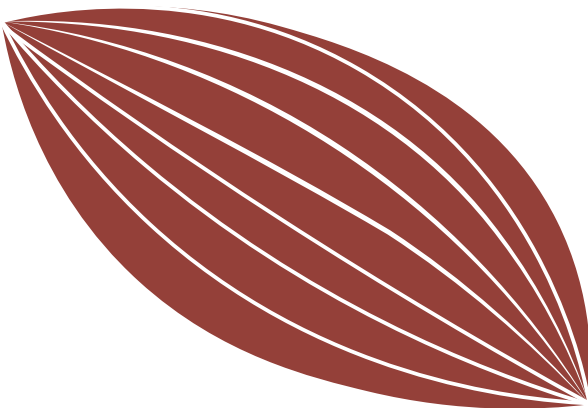
Stem cells are collected from the livestock/fish using a biopsy, which does not kill the animal.



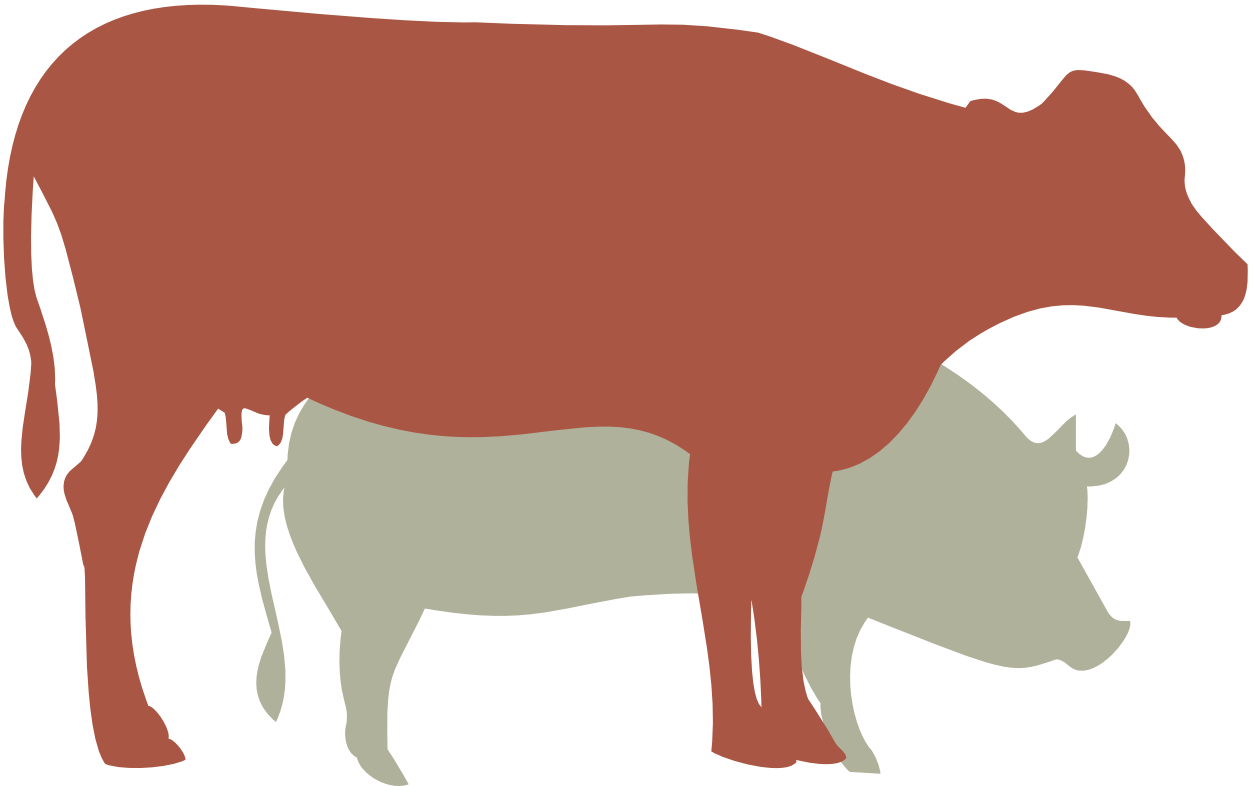
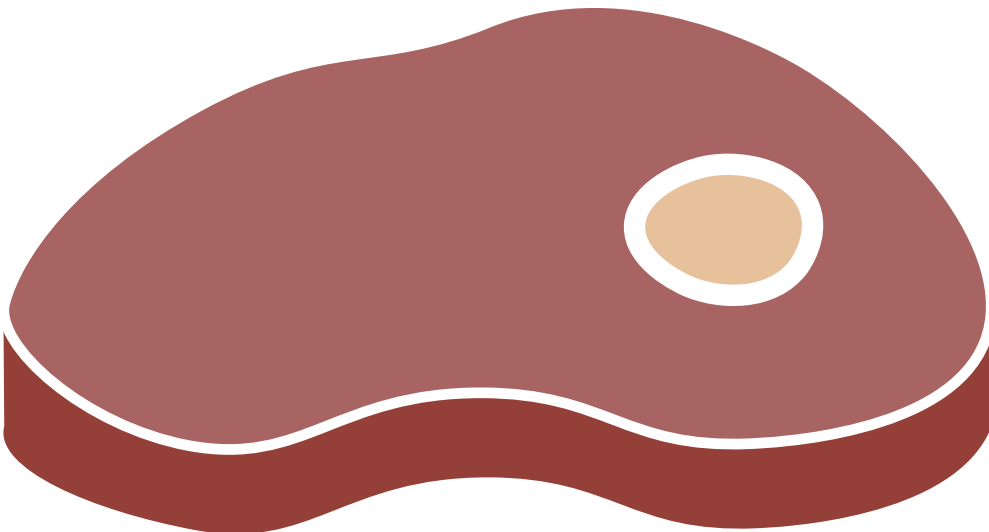
The cells are placed into a nutrient rich environment, controlled heavily by the scientists that act as their immune system.



Once the cells have multiplied enough they are put into bioreactors to grow further.



The scientists take these cells and “scaffold” them to try to imitate natural tissue formations you'd find in a cut of meat.

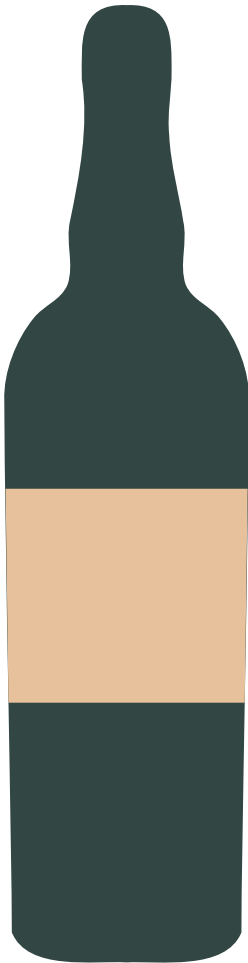
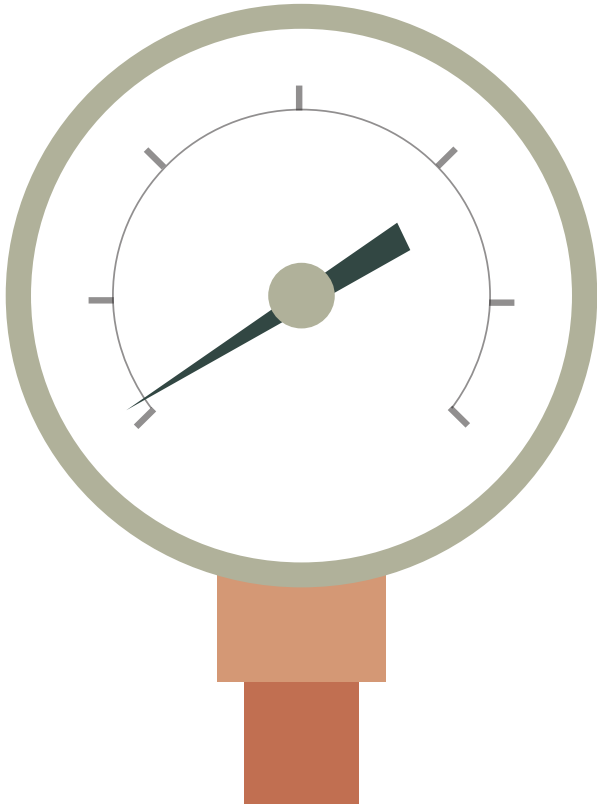


CULINARY SCIENCES
DEALCOHOLISED WINE

The wine is delivered from the vineyards,
already made.



The alchohol is extracted by vaccum
distillation, which utilises vacuums to lower
the boiling point of the contents and the
low point of evapouration for alchohol.



The wine is then bottled for consumption.

USER CLIENTS



USER CLIENTS

SCIENTISTS AND LAB TECHICIANS



The Scientists and Lab Technicians research and develop the ingredients for the food. They need well ventilated, and easy to maintain sterilised spaces, as well as discussion spaces.

For lab cultured meat, the scientists work as the immune system, therefore extra precautions and hygiene stations prior to entering the labs are necessary

Key Spaces:

- Mechanically ventilated, laboratories with non-porous surfaces that are visible by customers to show the processes of making their ingredients.
- Room With hygiene station prior to entering cultured meat labs.
- Locker Rooms to store possessions and put on lab uniforms and staff bathrooms.
- Breakout rooms to discuss ideas without needing to go through hygiene procedures to enter labs, and discuss recipes with kitchen staff and wine makers.
- Classrooms to educate groups on their profession and what they do.
- Easily changeable spaces with mostly moveable furniture to change when necessary as technology develops and food trends change.

USER CLIENTS

KITCHEN STAFF AND FRONT OF HOUSE

The chefs test and create recipes with the ingredients and the waitstaff act as a collector of customer reactions and feedback. They also need space to work alongside other kitchen staff, eg. Potwash, Line Cooks, Prep Cooks, etc .

Key Spaces:

- Open, street level market connecting higher footfall parts of the site.
- Test kitchens with mechanical ventilation with combined dining areas for taste testing.
- Restaurant kitchens visible by customers to demonstate more of the food making process.
- Pantries with walk in freezers to store produce.
- Roof top Kitchen Garden to grow herbs and seasonal vegetables.



Front of house staff interract with customers and can observe and collect valuable information to pass onto the chefs and the researchers.

Key Spaces:

- Open, street level market connecting higher footfall parts of the site.
- Restaurant kitchens visible by customers to demonstate more of the food making process, giving customers something to entertain them whilst they wait.
- Bar areas to prepare a variety of drinks.
- Plenty of walking room around tables to easily manouver around whilst carrying food and drinks.
- Cafe to serve pre-prepared foods.
- Roof Terrace Bar to serve delchoholised wine.

USER CLIENTS

CUSTOMERS

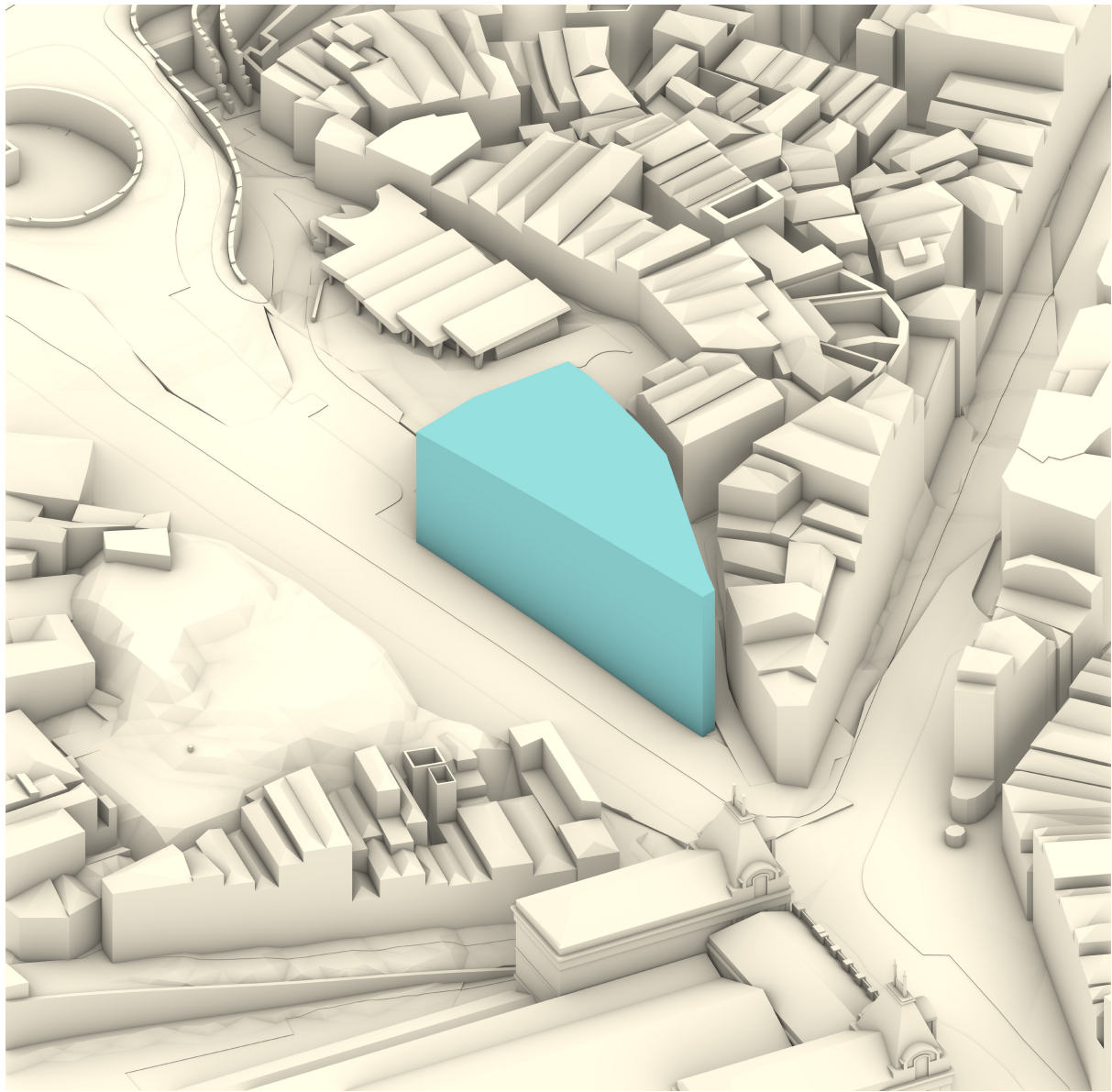
Customers make up the majority of the building's users. Commuters, tourists or locals might stop to grab lunch, dinner, a drink with colleagues, family and friends. The customers dine and try the foods grown/cooked/made. Their responses to the produce can lead to helpful feedback on what to focus on in the research and development of food and drink.

Key Spaces:

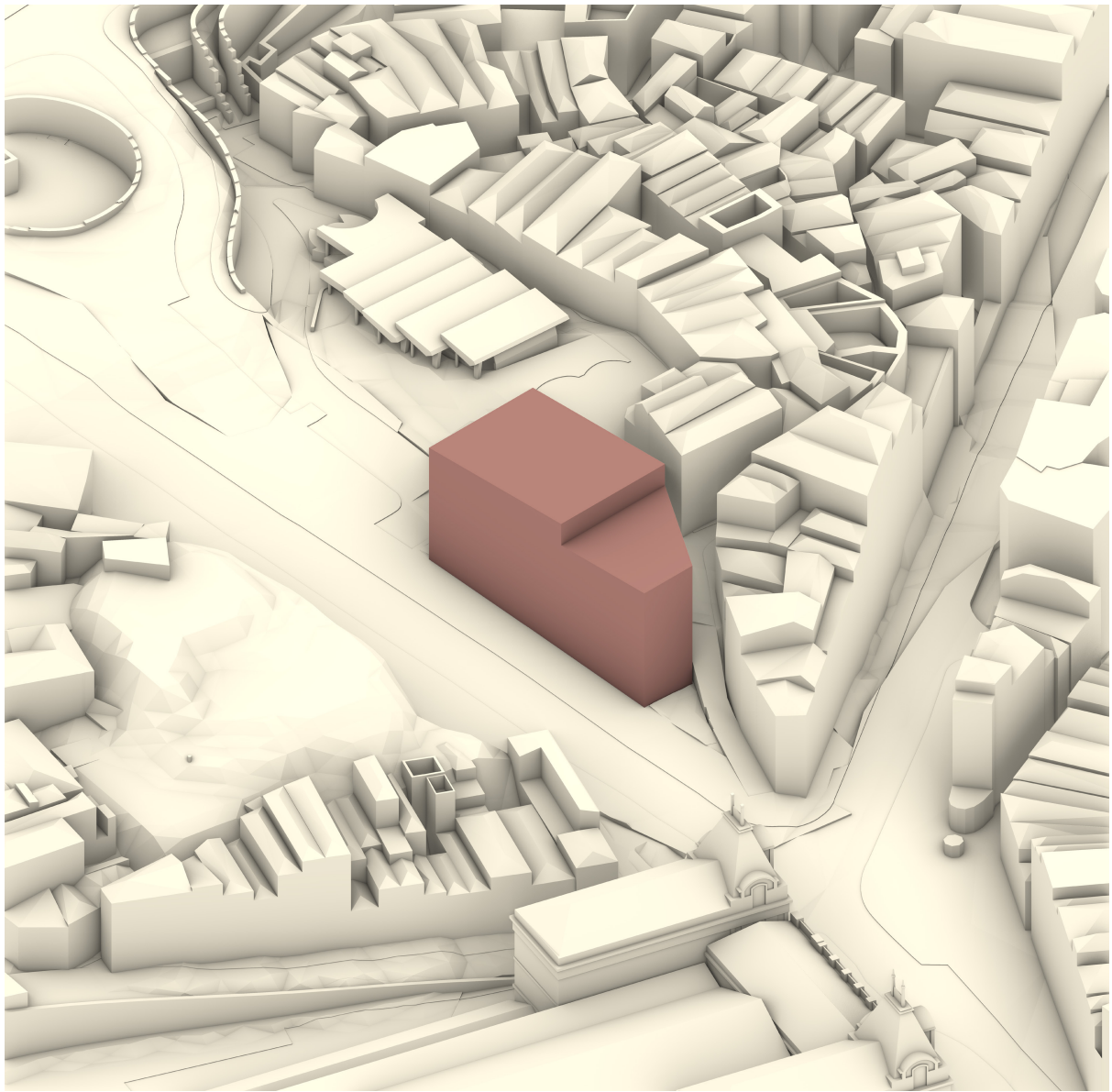
- Open, street level market with plenty of seating.
- Connected Seating and spill out areas with views of the labs and kitchens.
- Restaurants with views into the labs.
- Views of the city and nearby landmarks.
- Public Bathrooms.
- Roof Terrace.



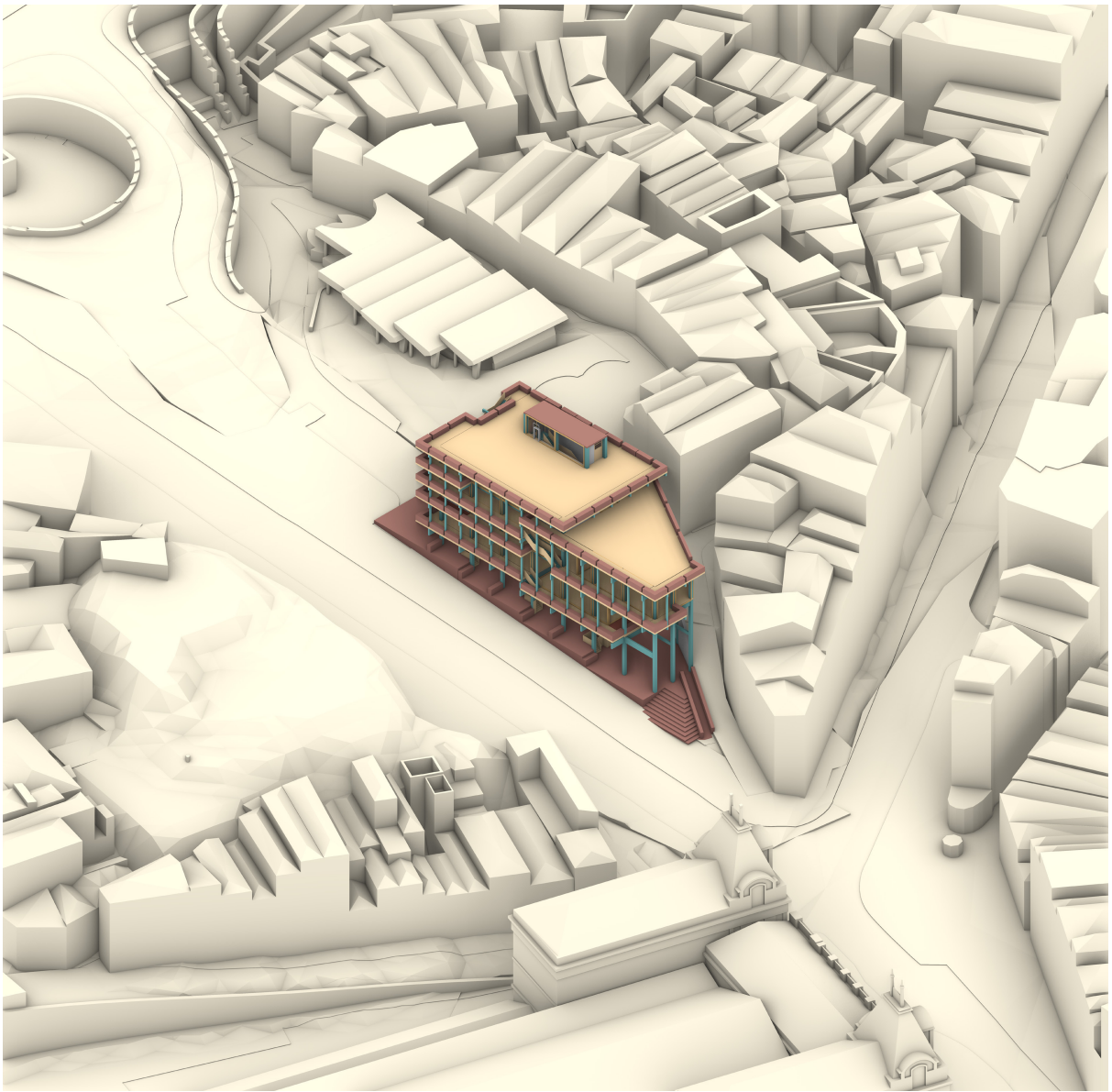
DESIGN DEVELOPMENT
A FRIENDLY APPROACH



I extruded the site to maximise the usage of the site. The market and the labs especially need a lot of floorspace.



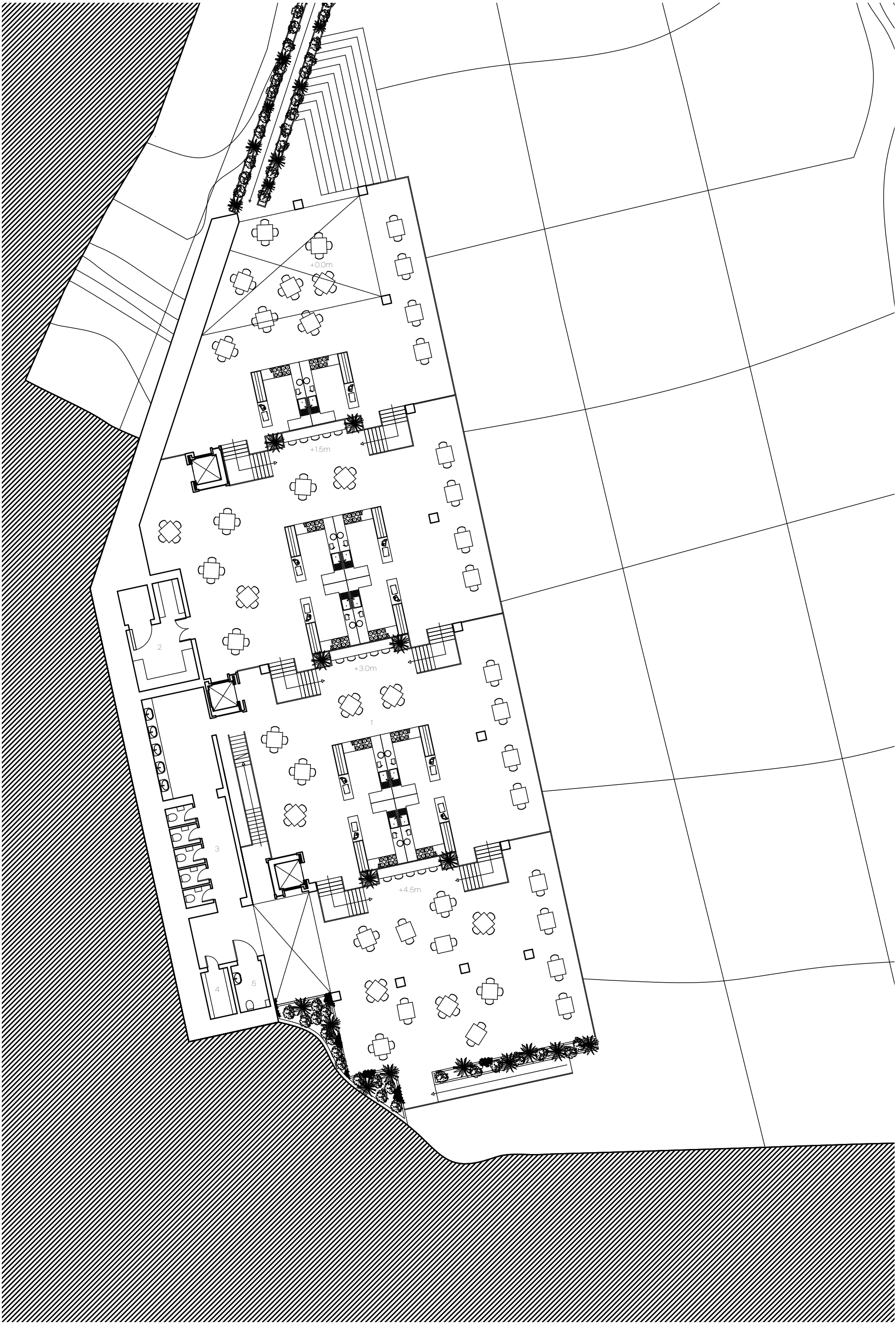
I then simplified the shape, it makes it easier to construct. I also adjusted the roof level to be lower where the surrounding roof levels drop.



Making the entire ground level an open market connected to the street creates a friendly and welcoming environment, and the balconies add depth to the facade, whilst also creating circulation routed with views of the city.



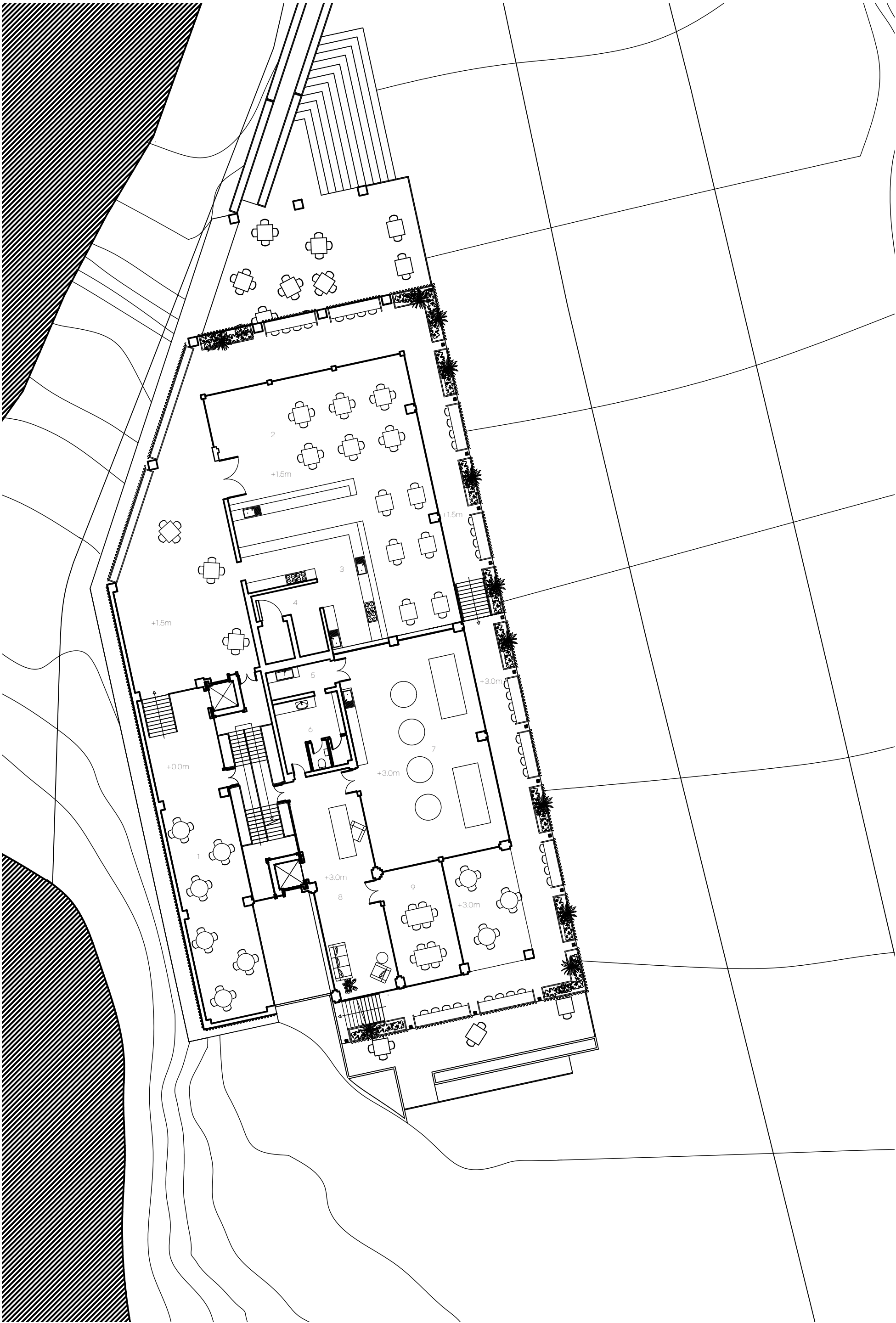
PLANS
STREET LEVEL MARKET



- 1. Food market
- 2. Food storage & walk-in fridge
- 3. Public bathrooms
- 4. Janitor's closet
- 5. Wheelchair accessible W.C.

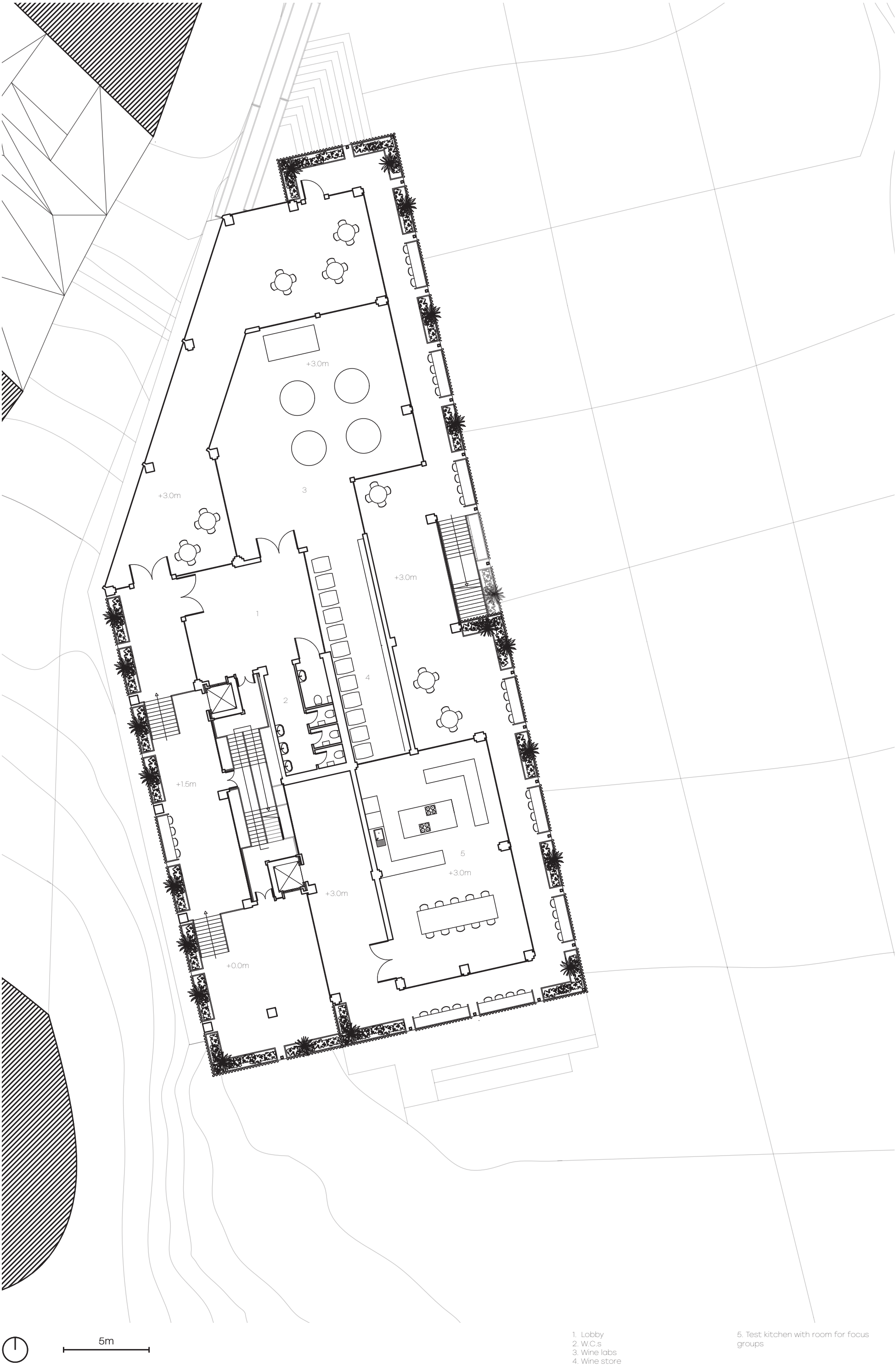
PLANS

THE CULTURE LAB AND THE RESTAURANT



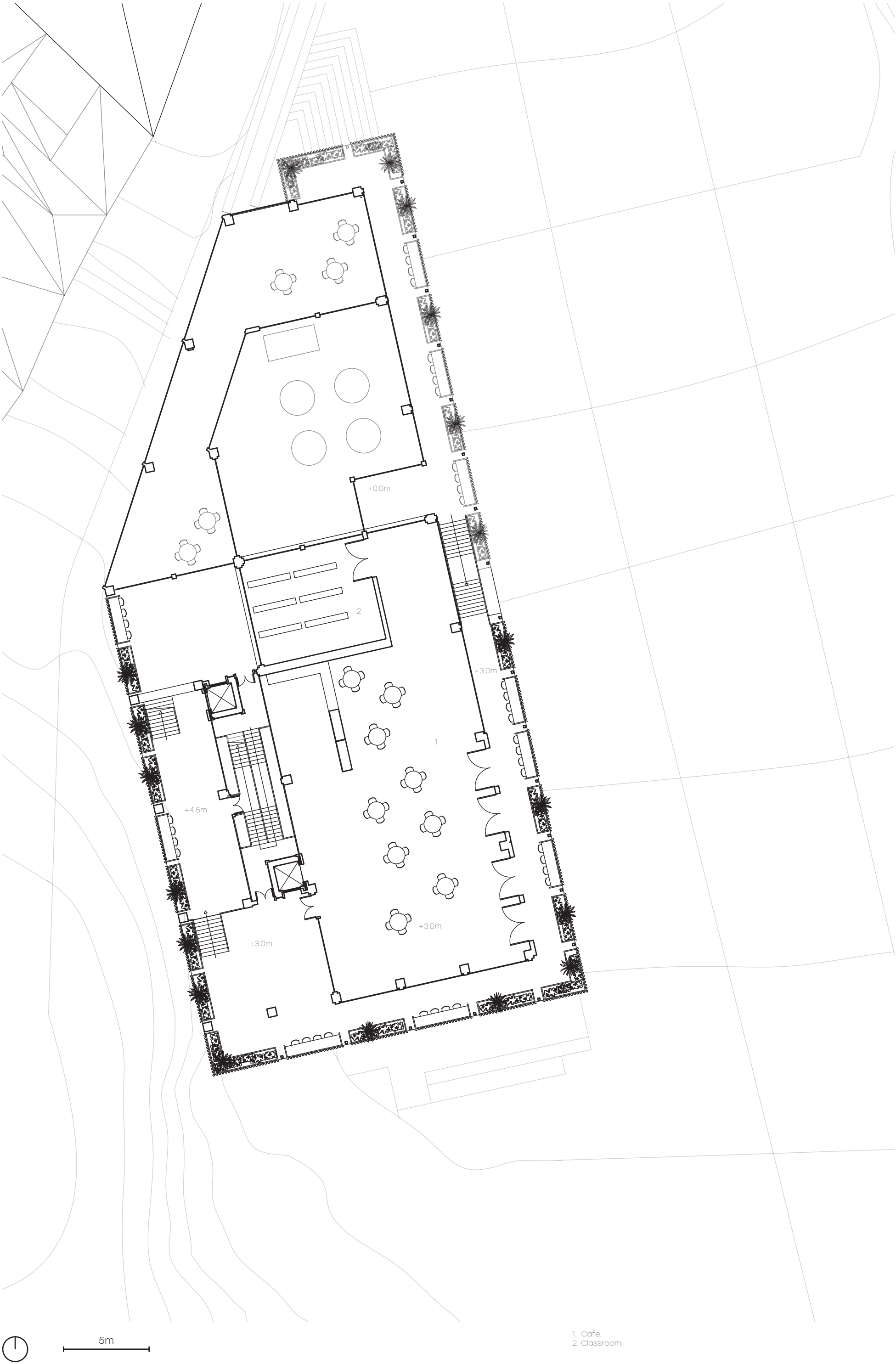
PLANS

THE PORT LABS AND THE TEST KITCHEN



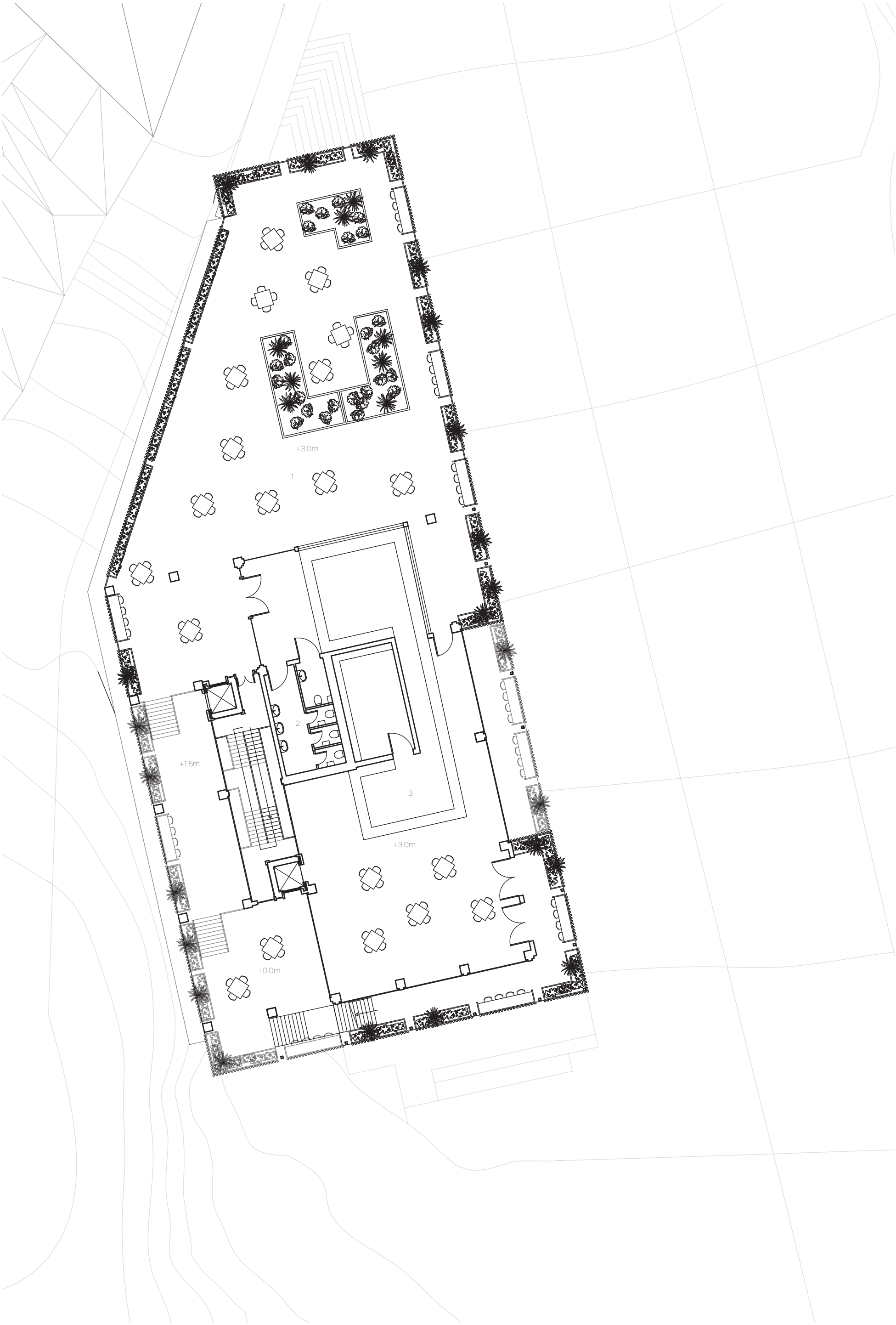
PLANS

THE CAFE AND THE CLASSROOM



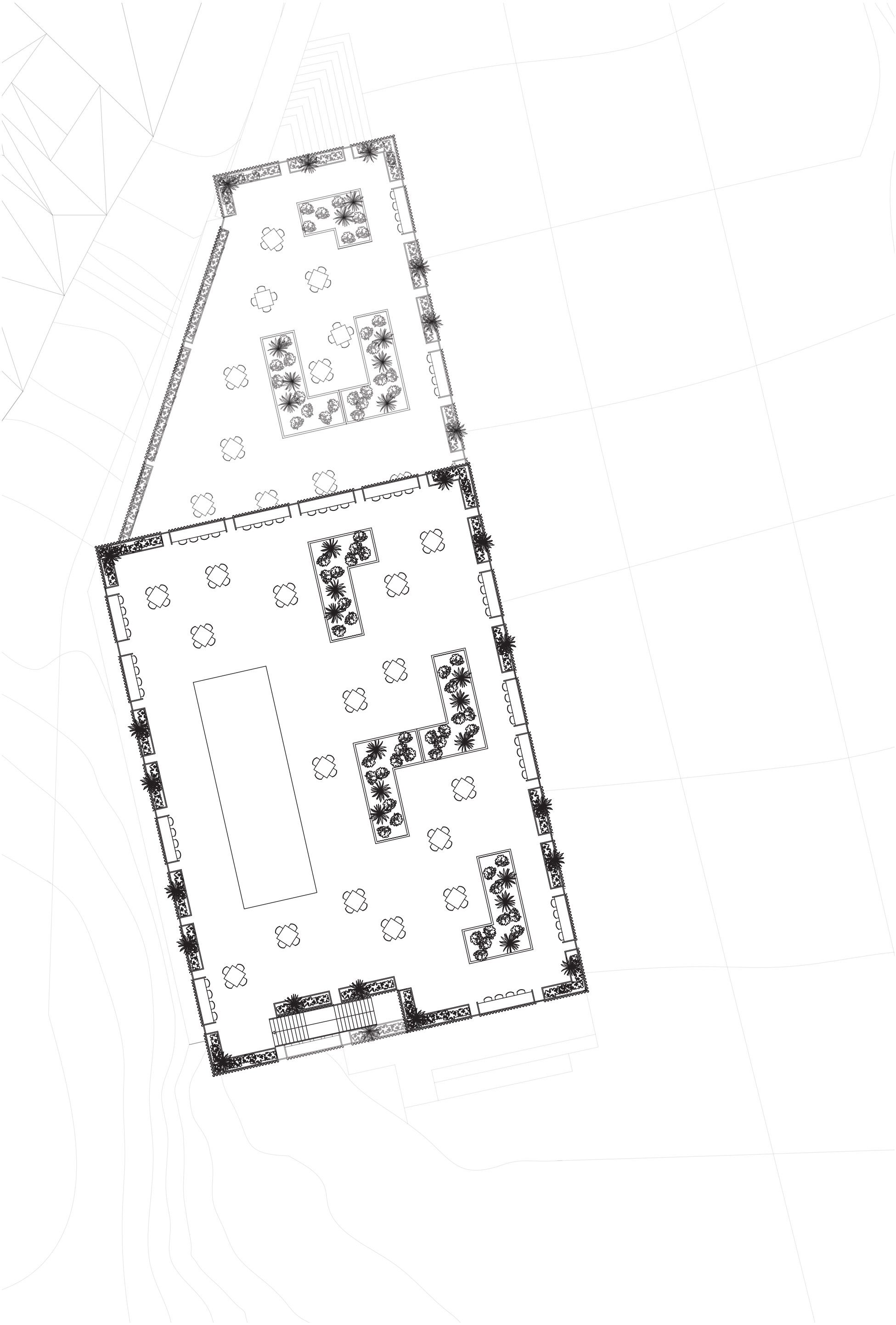
PLANS

THE ROOF TERRACE BAR



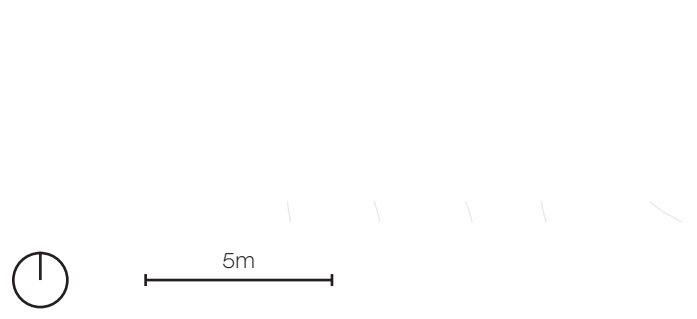
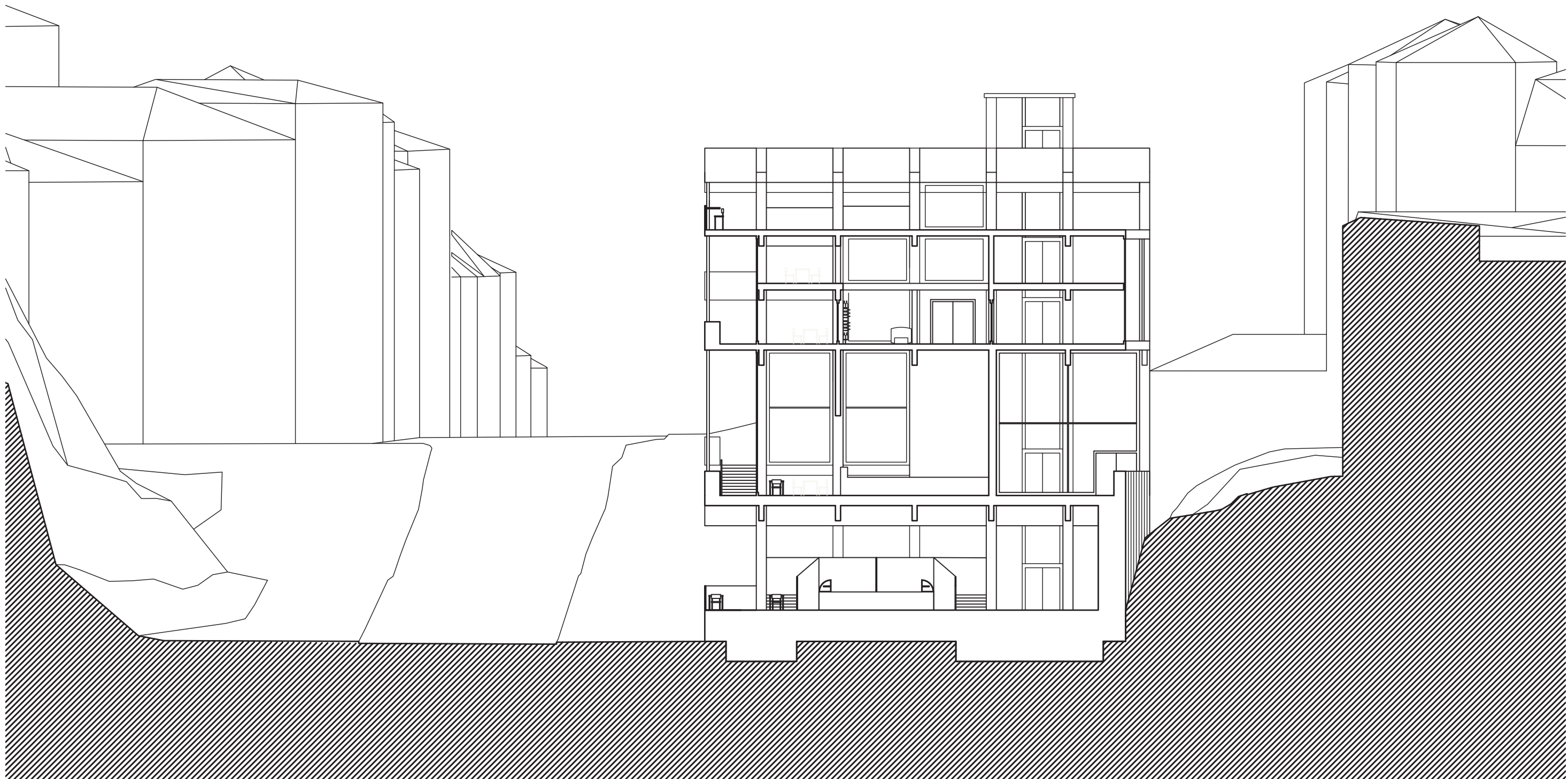
PLANS

THE ROOF KITCHEN GARDEN

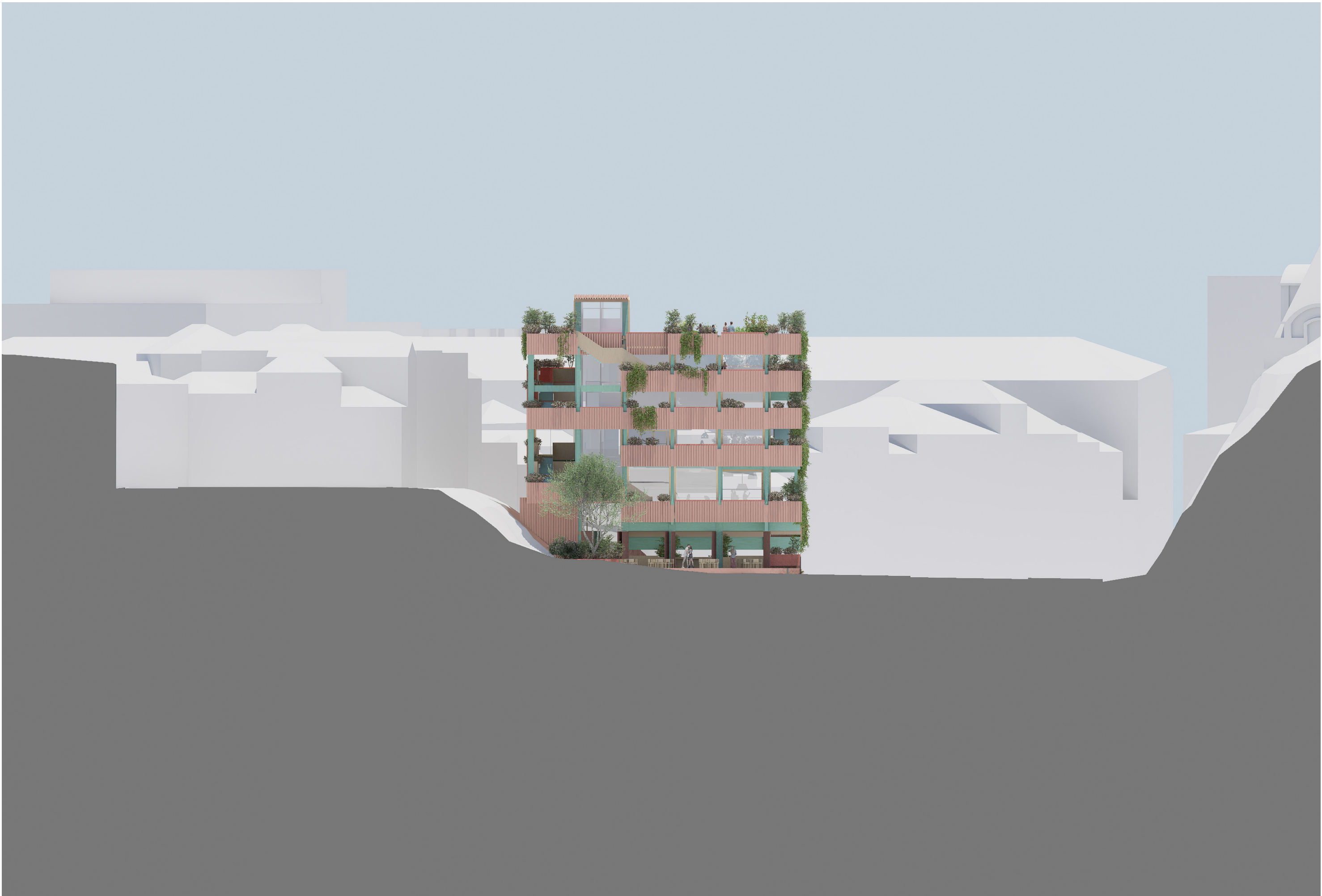


1. Roof terrace/ kitchen garden

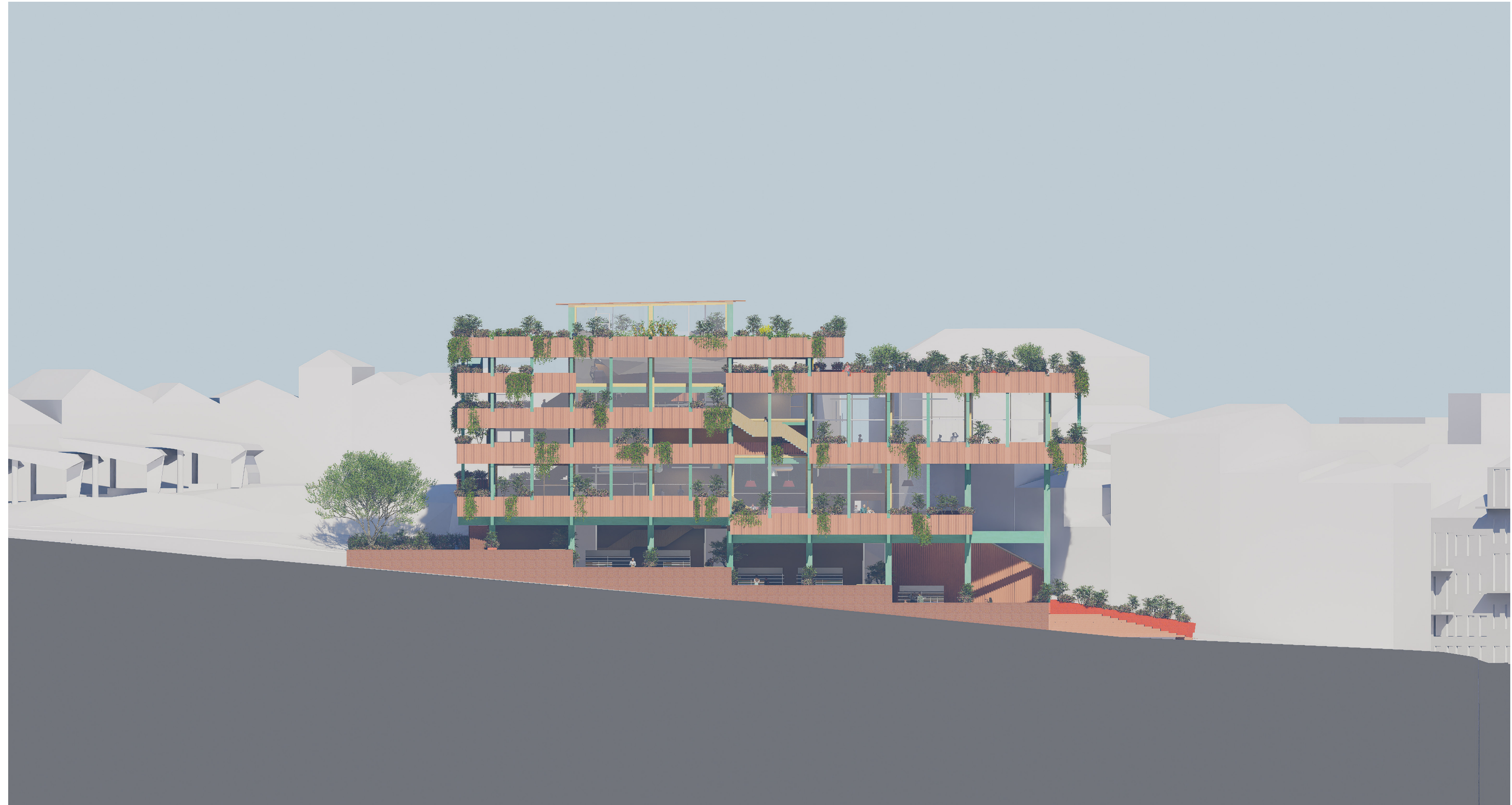
SHORT SECTION



SOUTH ELEVATION



EAST ELEVATION





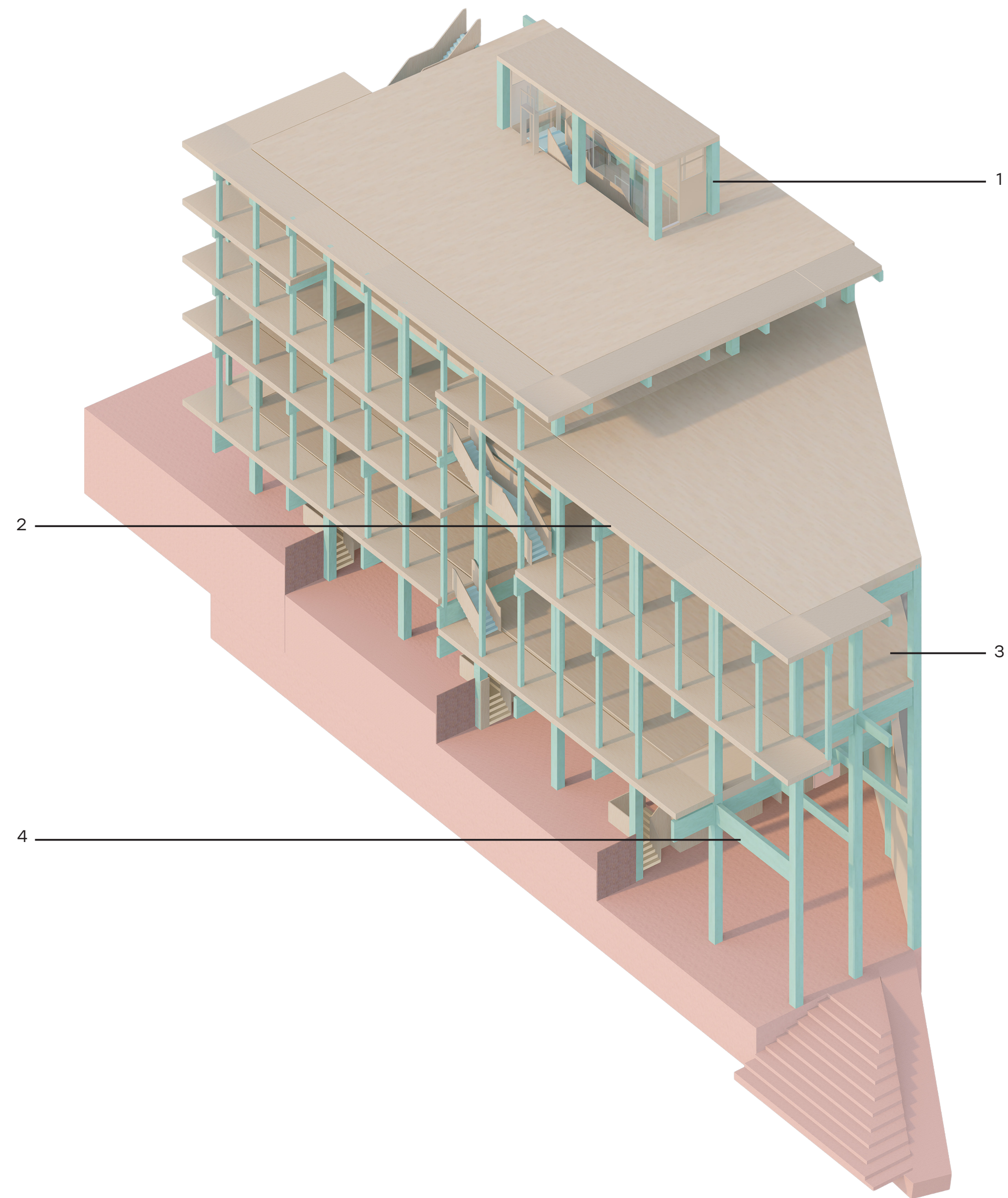










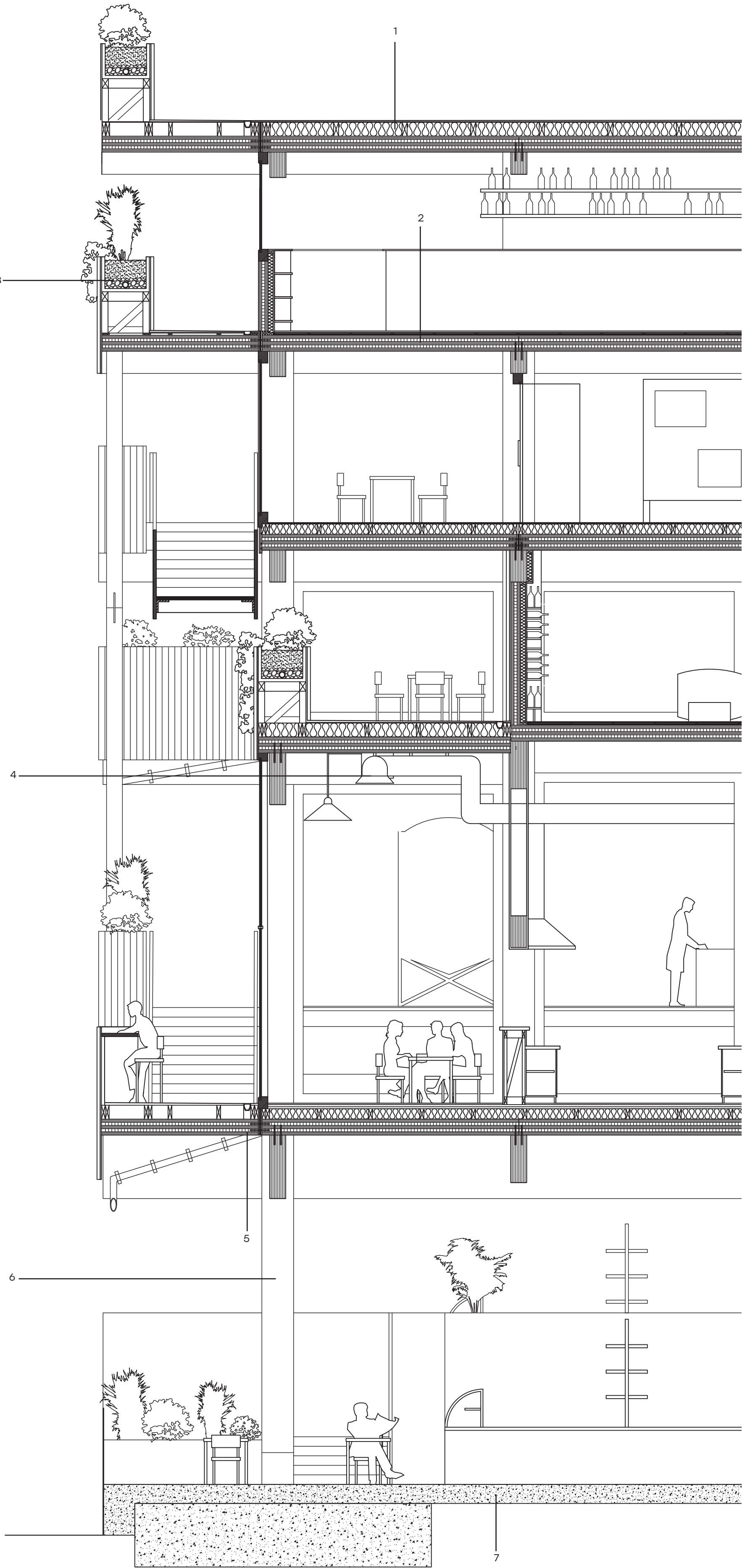


The beams at the lower levels are double the depth to allow for less columns in the open market space.

- 1. Glulam columns
- 2. Cantilevered balconies
- 3. CLT floorslabs
- 4. Glulam beams



1:50 DETAIL



1.

- 30mm screed

- waterproof membrane

- 215mm rockwool insulation and timber rafters

- vapour control layer

- 250mm CLT panel
2.

- 20mm wood flooring

- 40mm acoustic insulation

- 250mm CLT panel
3.

- planters with irrigation system.
4.

- mechanical Ventilation for busier spaces.
5.

- 250mm CLT slab with waterproofing sealant

- 20mm OSB Board

- waterproof membrane

- 30mm screed

- gutter and down pipe
6.

- glulam structure
7.

- 300mm concrete

- Shallow pad foundations