

## Grow Inside

An Integrated urban farming-culinary learning environment





<https://www.youtube.com/watch?v=vByfPsYgmcg>

### GROW INSIDE

(An Integrated Urban farming-Culinary Learning Environment)

# The Need of the Project



The need is to **integrate urban farming into interiors** — transforming unused indoor spaces into productive, sustainable, and engaging food-growing environments.

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# Why I am taking this project?

The project explores how architecture and interior design can create **experiential spaces that reconnect people with food** by integrating cultivation and culinary processes within the built environment.

## THE GAP WE EXPERIENCE



### URBAN DISCONNECTION

Modern lifestyles have distanced us from where our food comes from.



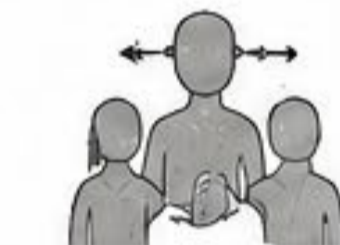
### DEPENDENCE ON EXTERNAL SYSTEMS

Reliance on external supply chains increases vulnerability and environmental impact.



### LOSS OF FOOD CULTURE

Traditional food practices and local knowledge are disappearing.



### NEED FOR HEALTHIER, MEANINGFUL SPACES

People seek spaces that support well-being, community and sustainable living.



CULTIVATION

CULINARY

### ARCHITECTURE AS A CONNECTOR

Designing interiors that bring together growing, living and sharing food in one holistic experience.

## WHAT THIS PROJECT AIMS TO ACHIEVE



### RECONNECT PEOPLE WITH FOOD

Make food systems visible, tangible and experienceable.



### INTEGRATE GROWING & COOKING

Seamlessly blend cultivation and culinary activities within interiors.



### CREATE EXPERIENCES

Design multisensory, engaging spaces that educate, inspire and bring people together.



### PROMOTE SUSTAINABILITY

Encourage local food systems, reduce environmental impact, and support resilient cities.

## What is urban farming?

Urban farming is the practice of growing, raising, processing, or selling food inside cities and suburbs using spaces such as rooftops, backyards, vacant lots, community gardens, indoor systems, vertical farms, and hydroponic setups.

## Types of urban farming

Different ways to grow food in cities using limited space.



### 1. ROOFTOP FARMING

Growing fruits, vegetables, and herbs on rooftops.



### 2. VERTICAL FARMING

Growing food in vertically stacked layers.



### 3. CONTAINER GARDENING

Growing plants in containers, pots, or grow bags.



### 4. HYDROPONICS

Growing plants without soil, using nutrient-rich water.



### 5. COMMUNITY GARDENS

Shared spaces where people grow food together.



### 6. AQUAPONICS

Combining fish farming and plant growing.



### 7. WINDOW FARMING

Growing herbs and small plants on windowsills.



### 8. EDIBLE LANDSCAPING

Using edible plants in landscapes and public spaces.

“

Designing interiors that grow more than food— they grow **connection, culture** and a **sustainable future**.

”



This project is my step towards creating spaces that **nourish both people and planet**—today and for generations to come.

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Literature Case study 01 | KONODESIGNS Urban Farm Project

Project Name : Pasona Urban Farm / Pasona Tokyo Headquarters

Location : Tokyo

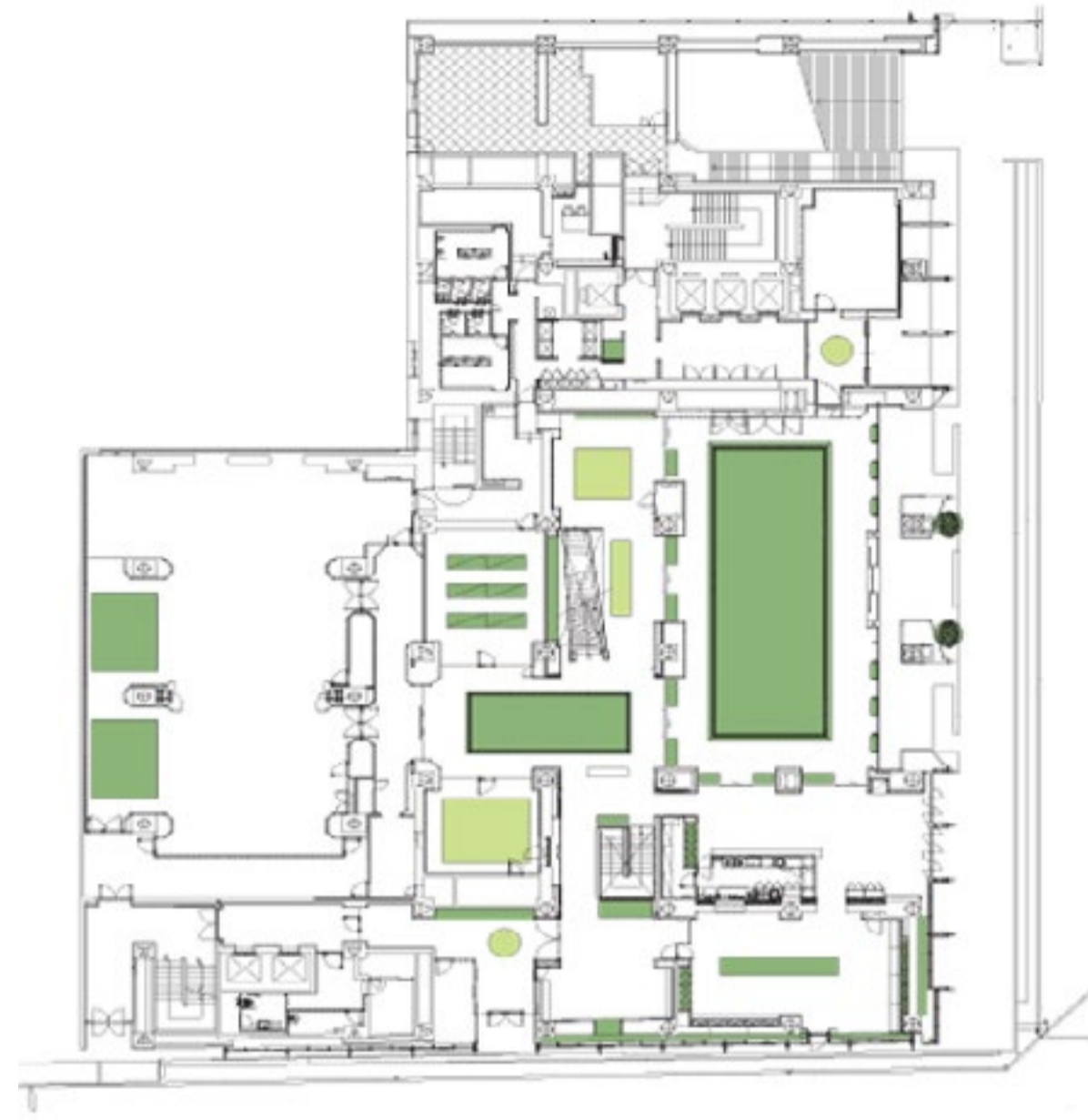
Architect / Designer : KONODESIGNS



The Pasona Urban Farm is an innovative office building where urban farming is integrated directly into the workspace. The project transforms a commercial office into a productive green environment where employees can grow, harvest, and consume food inside the building.

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Plants and fruit trees are used as spatial dividers and partitions within office interiors, blending architecture with agriculture.



Office workspaces are integrated with indoor farming systems where employees work alongside growing vegetables and plants, creating a healthier and more natural environment.



The above plan indicates integrated urban farming in spaces in different ways.



Vertical farming structures increase growing capacity by stacking crops in layers, allowing efficient food production inside compact urban interiors.



Fresh vegetables and crops grown inside the building are harvested and served directly in the cafeteria, supporting a farm-to-table system.

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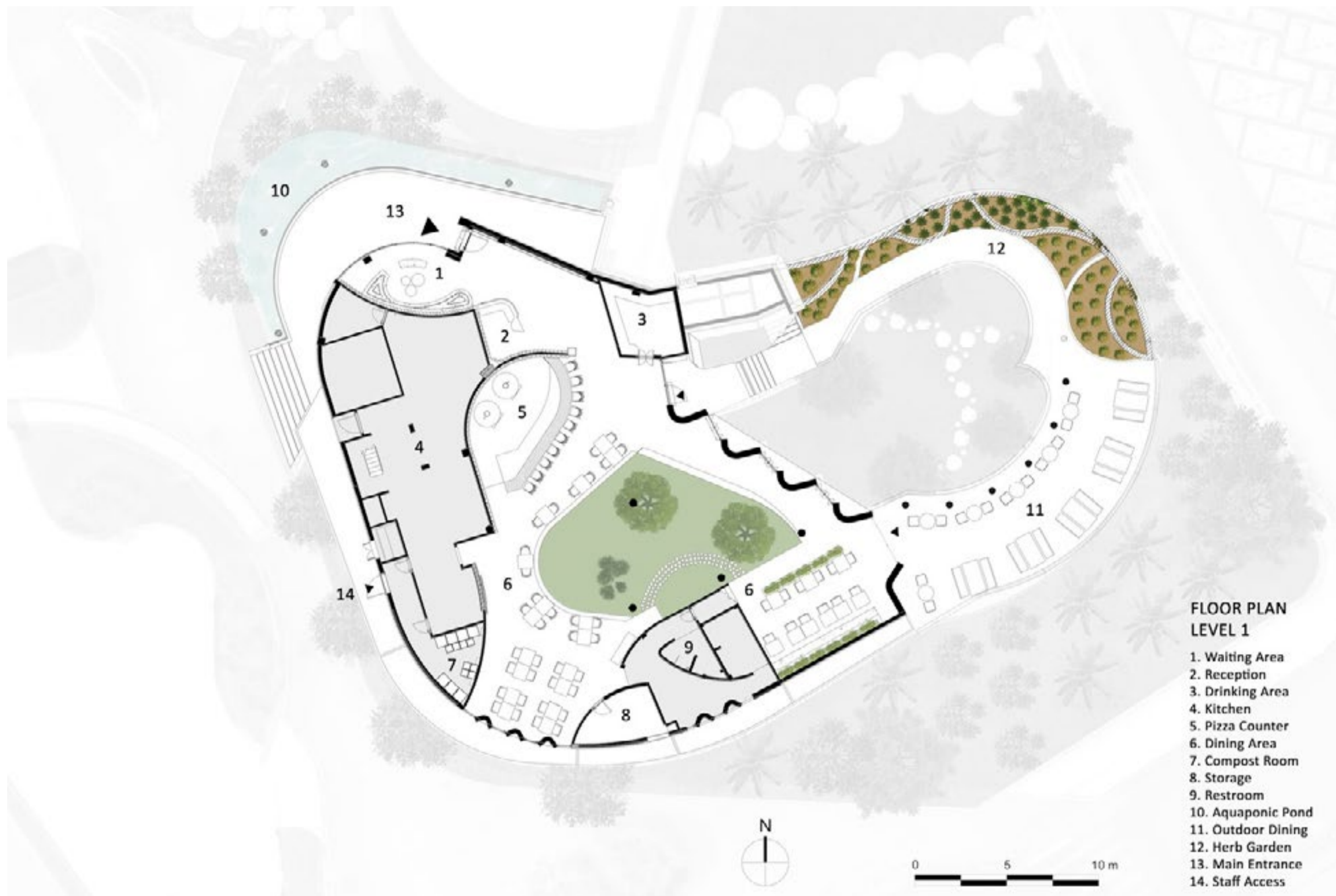
Architect: Takashi Niwa Architects  
Location: Vietnam  
Year completed: 2022  
Area: 1226 sqm



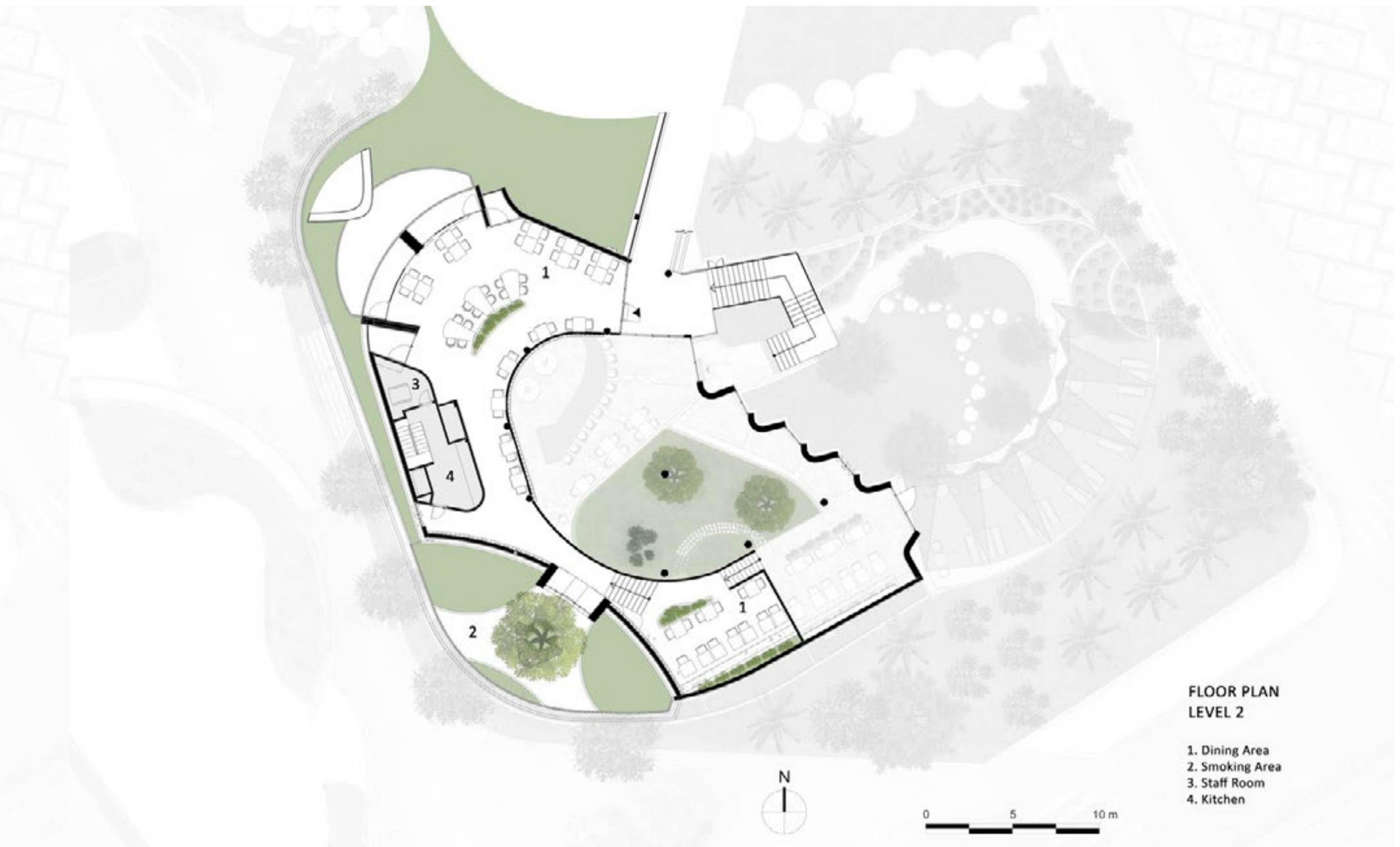
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Ground floor furniture layout



First floor furniture layout



Section



Exterior facade

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An open, nature integrated restaurant interior where exposed concrete and brick structure integrate with indoor greenery and visible kitchens to create a communal, immersive dining experience rooted in ecological awareness.



### ECO FOOD CYCLE

Hikari is a restaurant complex, so there is a large amount of organic waste from processing and leftovers, which will be collected. Workers will sort and compost to fertilize the plants of landscape. Earthworms and black soldier fly become food for edible fishes.



Kindergartners enjoy the experience of sorting and composting



Organic garden inside the restaurant

The stream, fountain, and aquaponic pond create a cooling microclimate while showcasing water harvesting, composting, and herb gardens through an interactive sustainable environment.



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Architect: Groundzero  
Location: Surat  
Year completed: 2022  
Area: 490 sqm

Swad Institute of Pastry & Culinary Arts is one of India's established culinary training centers, with a branch in Surat, Gujarat focused on cooking and baking education. It was founded in 1997 by Chef Sneha Thakkar, a culinary expert with decades of experience.



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1. Reception+waiting area
2. Studio
3. Kitchen(studio)
4. Photo Booth
5. Bakery studio(workshop)
6. Bakery studio(Industrial)
7. Culinary studio(Hot kitchen)
8. Conference room
9. Washroom(Staff)
10. Locker
11. Common Washroom
12. Faculty cabin
13. Chef cabin
14. Owners cabin
15. Workstation
16. Cabin
17. Manager's cabin
18. Pantry /Dining
19. Media room
20. Washroom
21. Enquiry cabin
22. Dry storage
23. Transitional space

Furniture layout Plan



The bakery kitchen studio is a flexible dual-space setup for workshops and bakery courses, accommodating 10 people in each studio.



The culinary studio is a fully equipped hot kitchen with individual workstations, chimneys, stoves, washing units, switchboards, and gas pipelines, supporting hands-on training for 15–20 people simultaneously.

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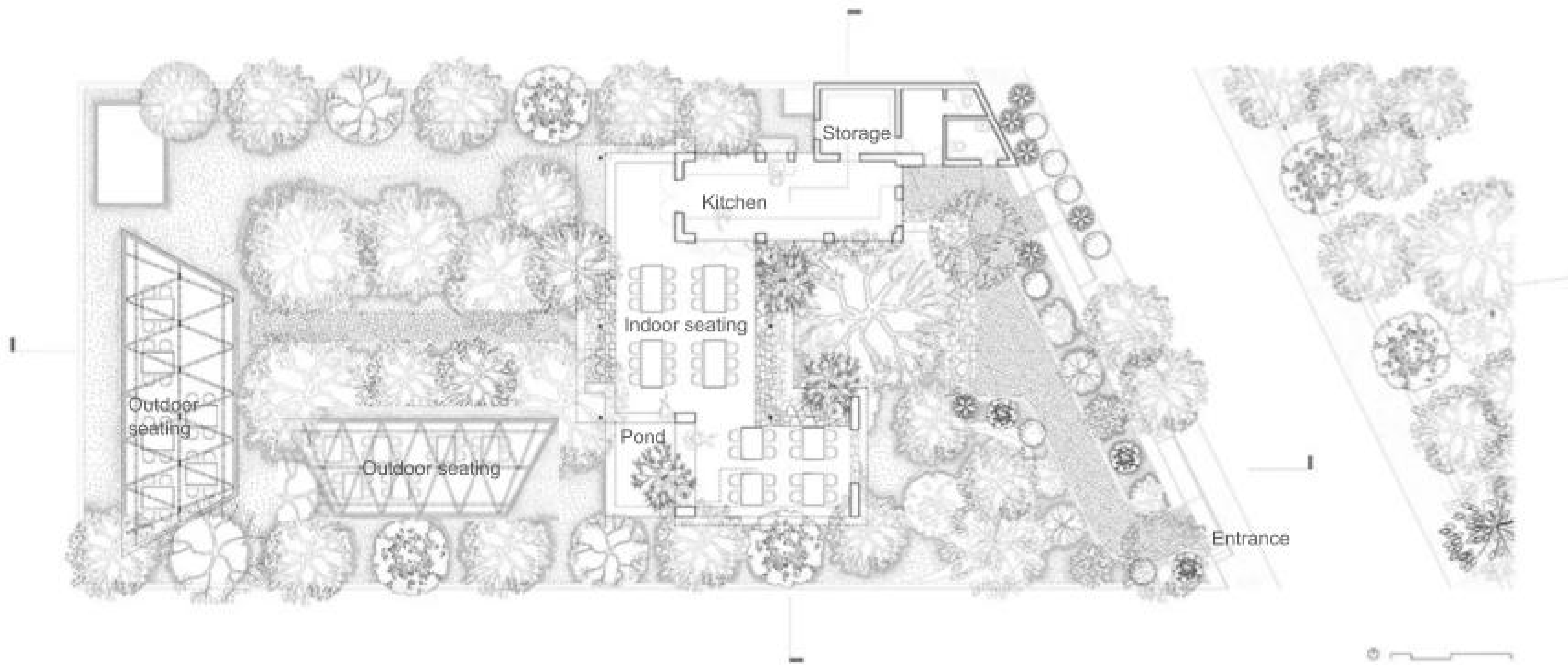
Architect: Studio Praxis  
Location: Ahmedabad  
Year completed: 2021  
Area: 235 sqm

Kamala Café is a self-sustaining community café developed with the SEWA Foundation to support women's livelihoods, where architecture seamlessly integrates with natural elements to create a sensory, nature-responsive space that fosters social empowerment and connection.



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Plan

The café is conceived as a self-sustaining social space that supports women's livelihoods while offering visitors a calm, sensory environment. The pond acts as a sensory anchor, introducing water as a cooling, calming presence that naturally moderates the microclimate of the café.



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The bakery and open kitchen function as a transparent, interactive food space where preparation and service are visible, reinforcing connection, functionality, and user engagement.

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The pop-up shop and walk-through function as flexible, nature-integrated spaces that support temporary activities while encouraging slow movement, interaction, and sensory engagement.

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# Site Justification



- Enables connection between traditional farming and urban farming practices.
- Located on primary roads, making it easy for visitors and students to reach.
- The agricultural training campus supports research, workshops, and cultivation activities.



Science centre



Agriculture university



Police station



Krishi vigyaan kendra



## Built vs open



Built space  Open space

## Road network



Primary road Secondary road Tertiary road Brts lane

## Footfall



## Land use



Residential Commercial Mixed use  
Government buildings Abandoned buildings Institutional buildings

## Traffic density



## Noise analysis



75-80 db 65-70 db 55-60 db 45-50 db

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## GROUND FLOOR PLAN



## SITE IMAGES



## ANALYSIS

### Spatial & Architectural

- Underutilized double-height space → Large volume exists but lacks functional activation and human engagement.
- Skylight without integration → Provides light but does not contribute to spatial experience or program.
- Ductless building issue → Absence of HVAC makes the space thermally uncomfortable and underused.

### Planning & Connectivity

- Disconnected built and landscape → Building and open spaces function independently, not as a cohesive system.
- Weak circulation → Lack of clear movement paths reduces user interaction across the site.
- Rigid zoning → Single-use planning limits flexibility and continuous activity.

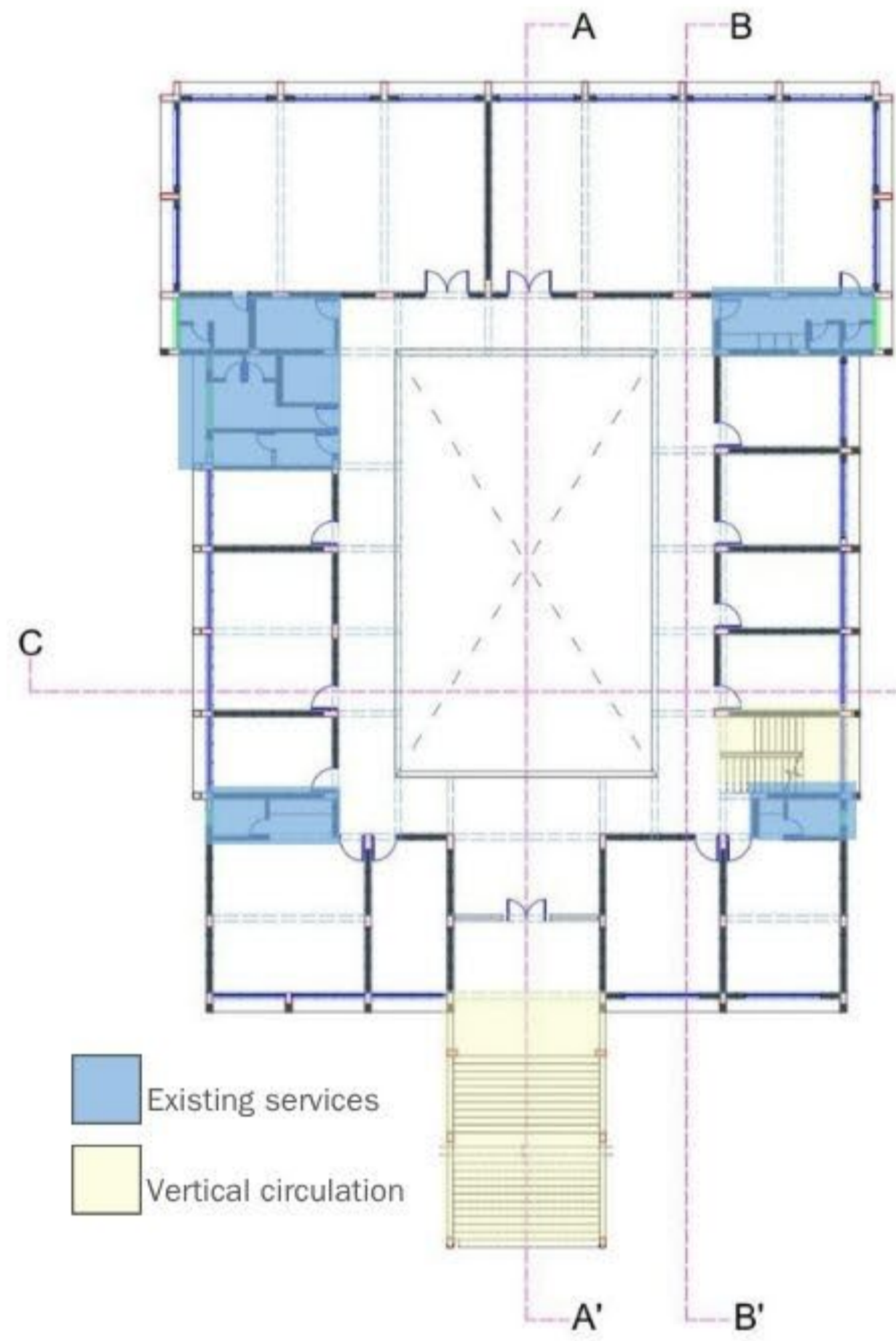
### Functional Performance

- Inactive institutional character → Functions as a closed facility with minimal public engagement.
- Lack of mixed-use programs → No integration of social, learning, or commercial activities.
- Poor user experience → Spaces are not designed for interaction, learning, or sensory engagement.

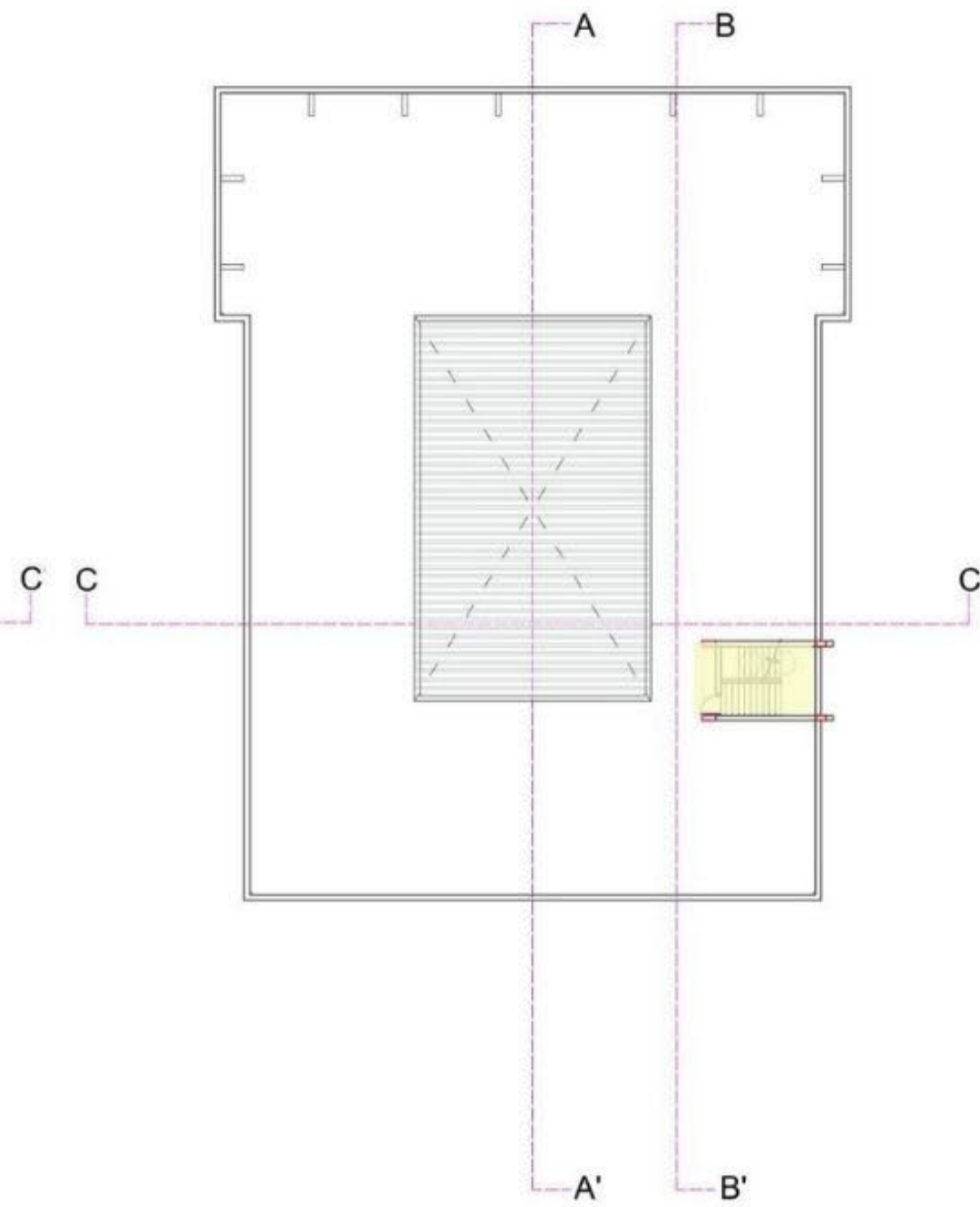
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FIRST FLOOR PLAN



TERRACE PLAN



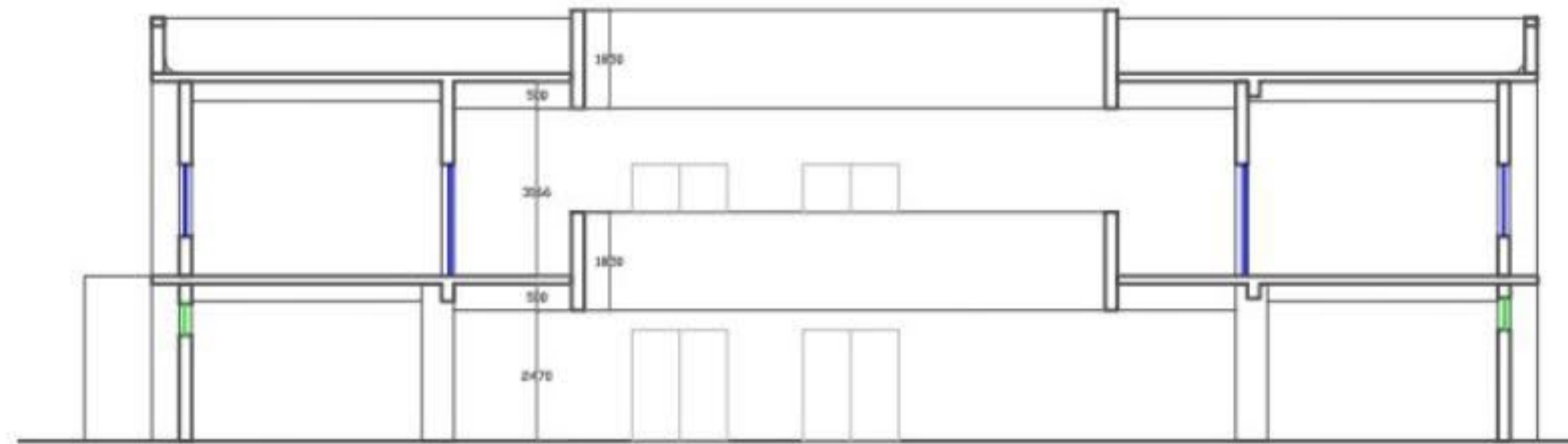
SITE IMAGES



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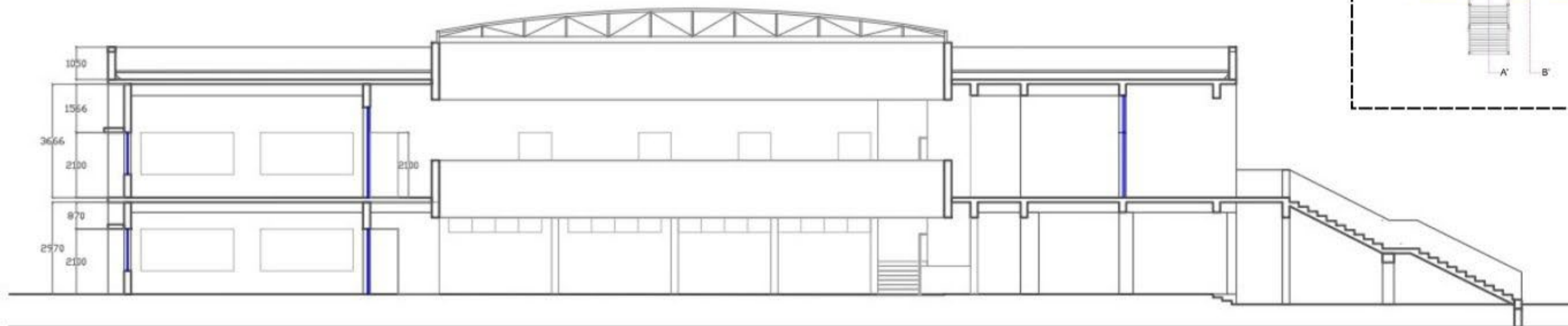
## EXISTING SECTIONS



Section AA'

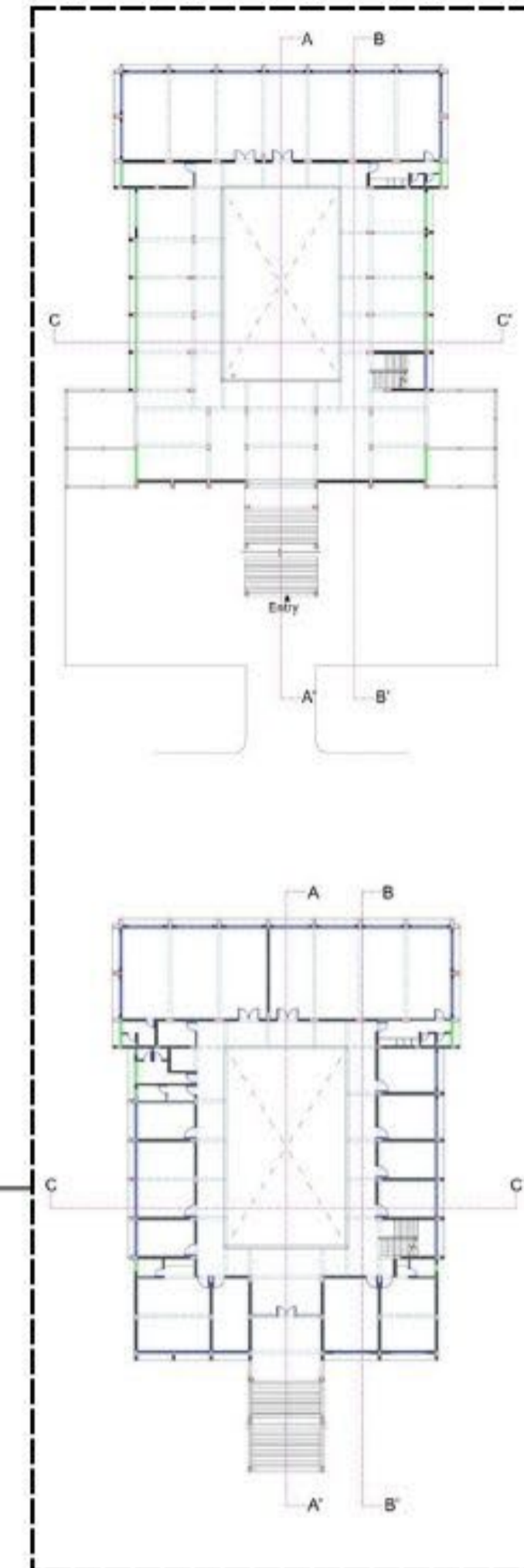


Section BB'



Section CC'

## Key plan



## ANALYSIS

### Landscape

- Non-productive open space → Large landscape remains ornamental instead of functional.
- Unused ecological potential → No integration of farming, water systems, or biodiversity strategies.

### Environmental Response

- Climate-insensitive design → Building does not respond to Surat's hot-humid climate.
- Heat accumulation in volume → Double-height space increases internal heat gain.
- Lack of passive strategies → No use of ventilation, shading, or thermal control techniques.

### Urban Context

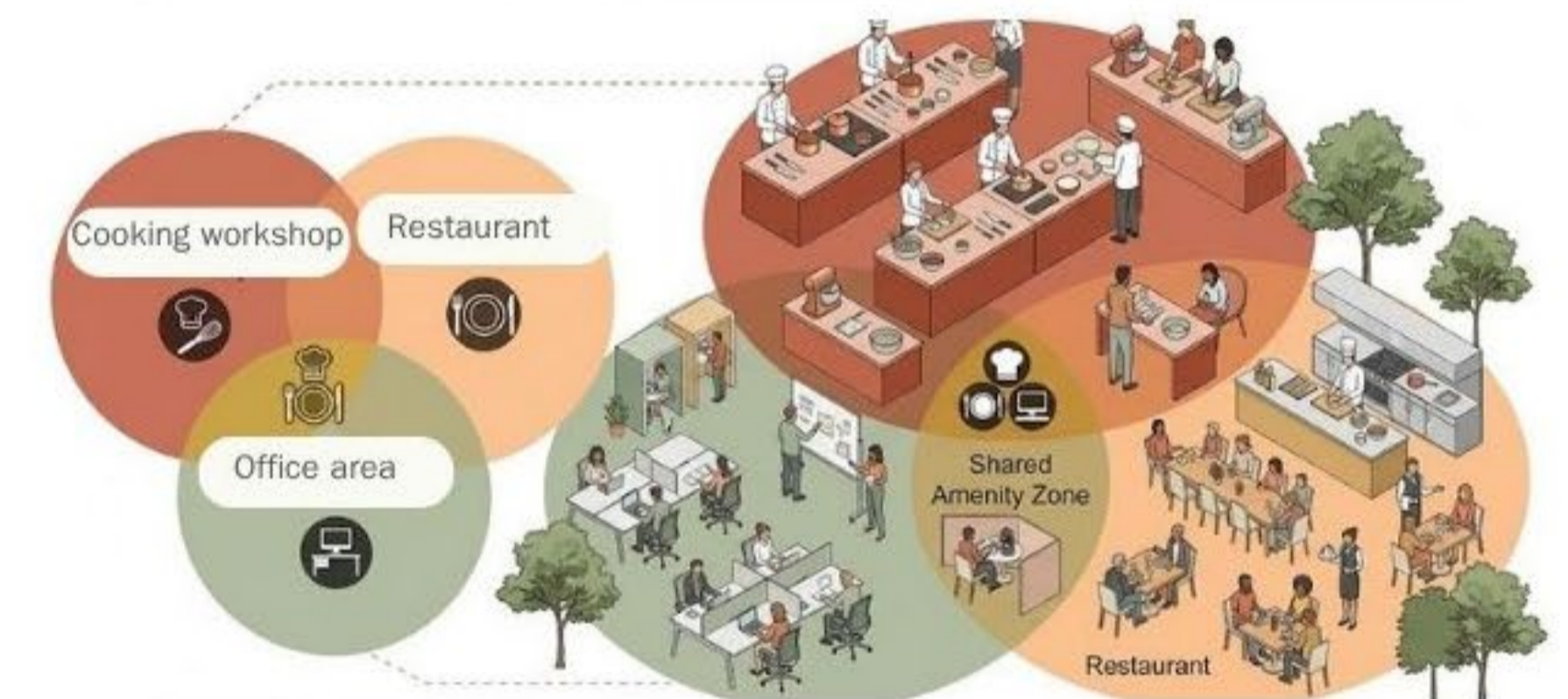
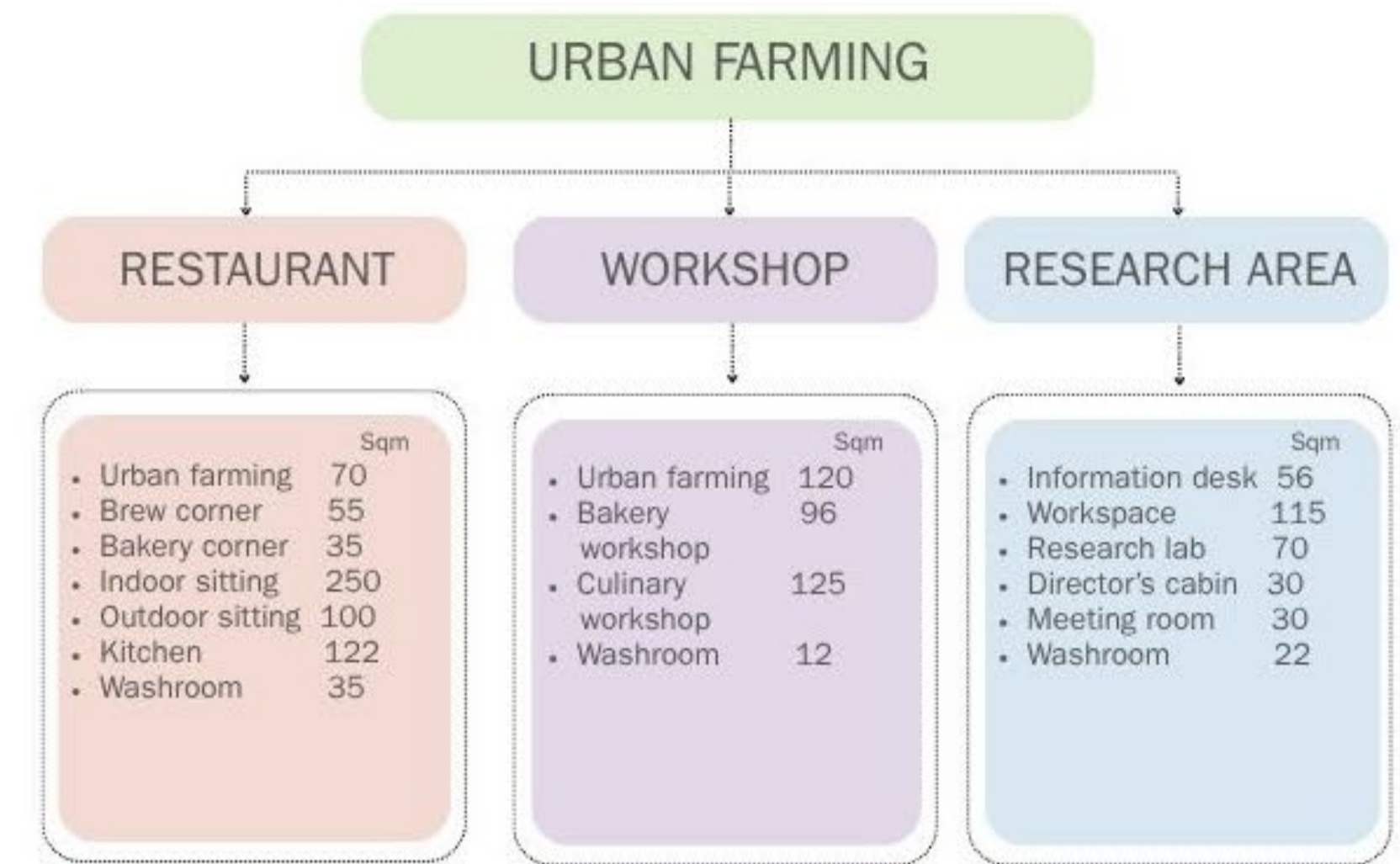
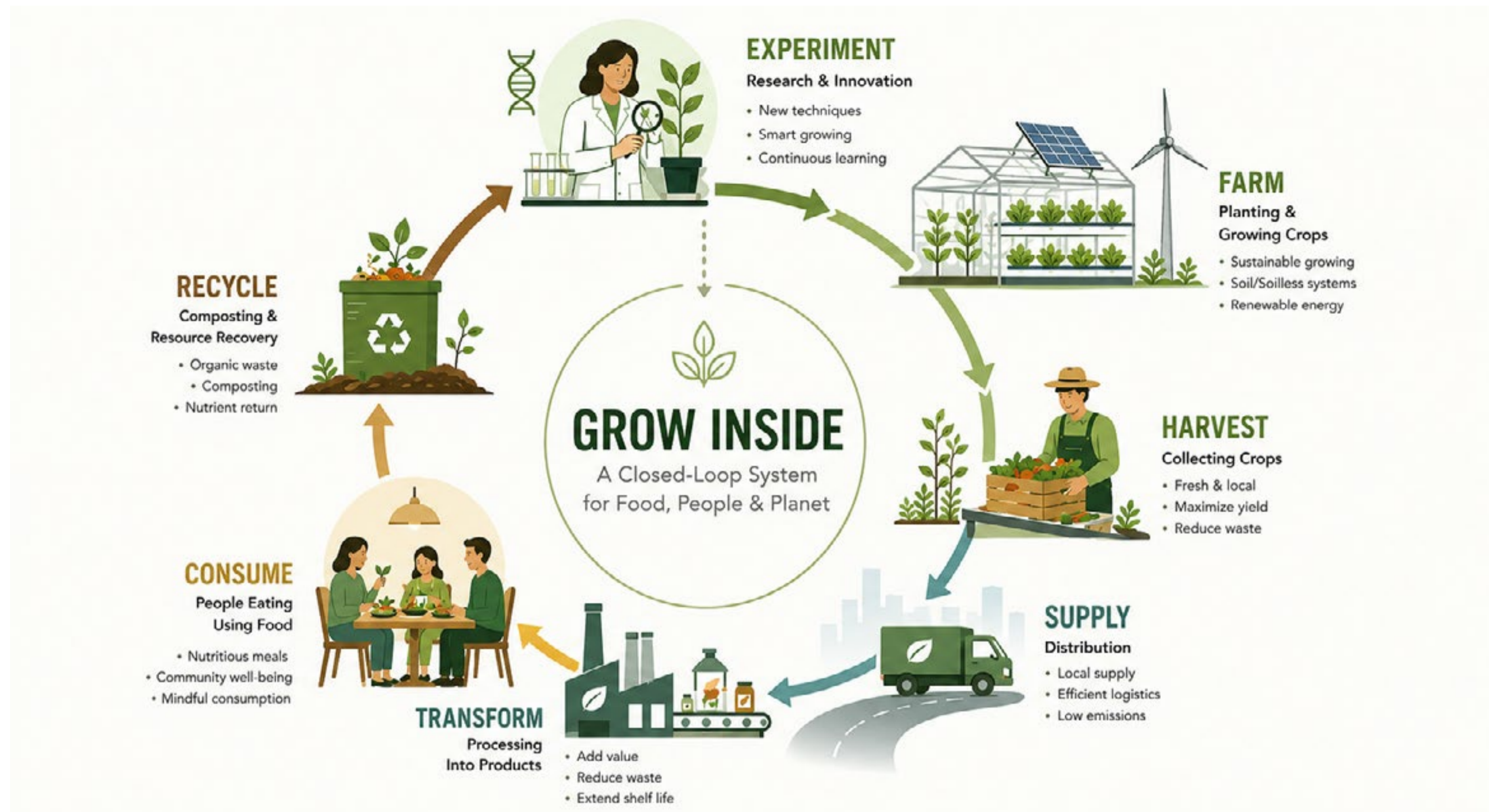
- Poor public interface → Site remains isolated despite being in an urban setting.
- Untapped community potential → Could act as a public hub but lacks identity and accessibility.

### Core Issue

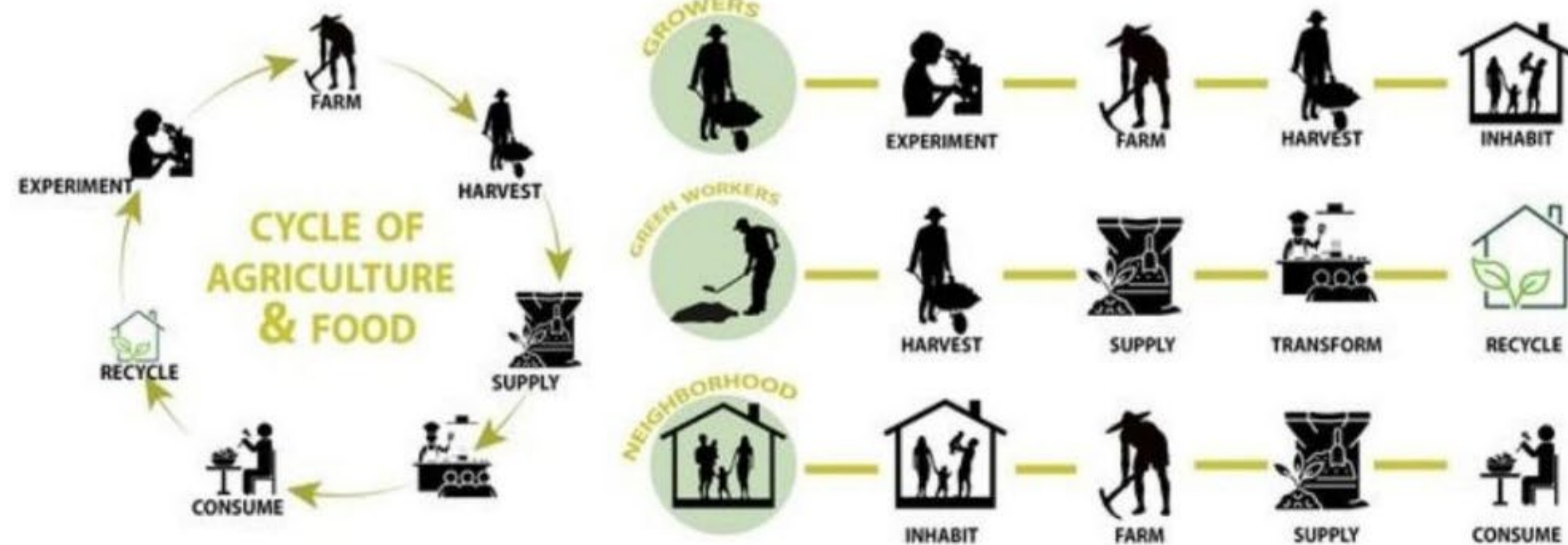
- Strong form, weak function → Good spatial and landscape assets but poor programming and integration.

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**USER GROUP**



<https://in.pinterest.com/pin/746049494558775561/>

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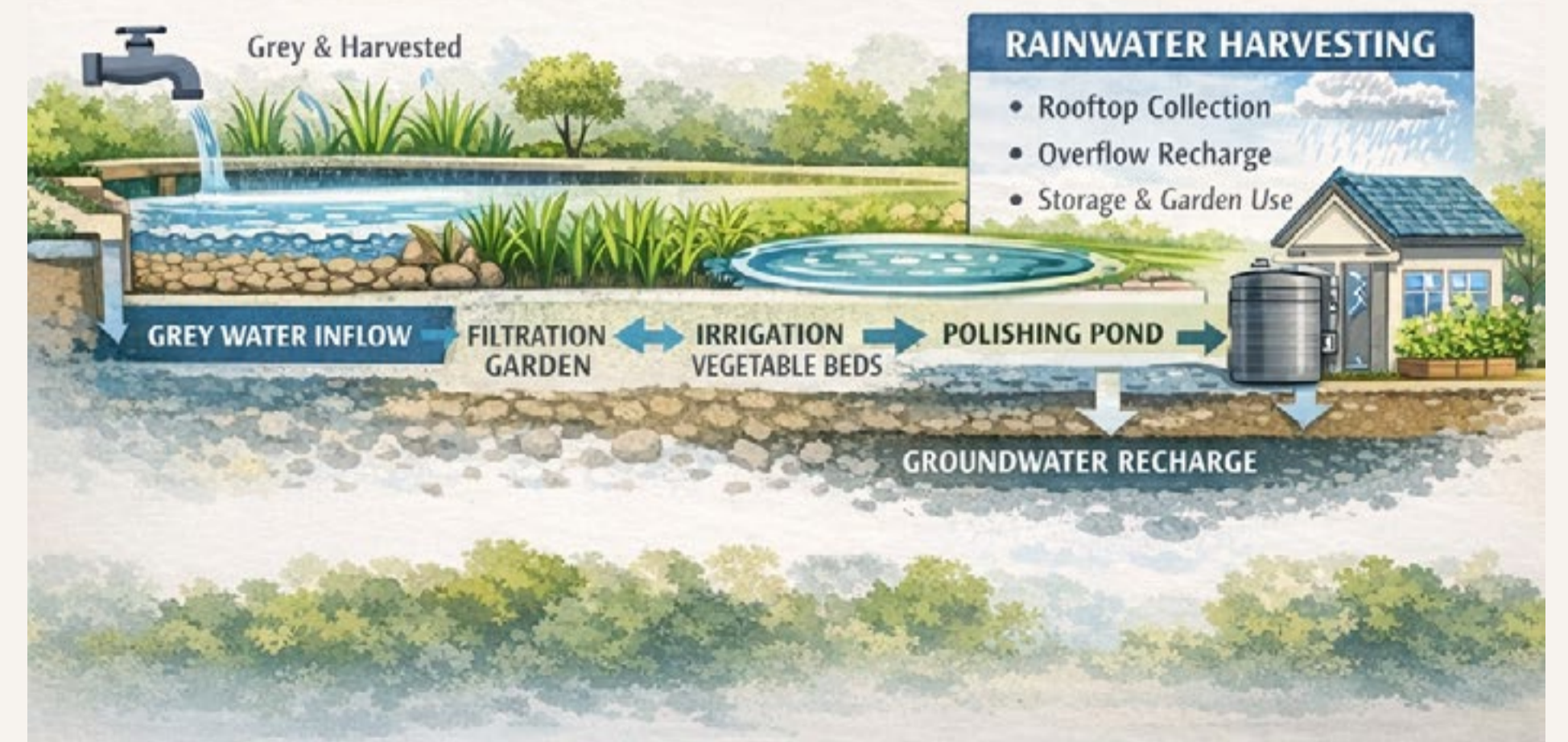
LANDSCAPE PLAN

## Closed-loop Ecological Landscape

Integrating Food, Water, and Experience.



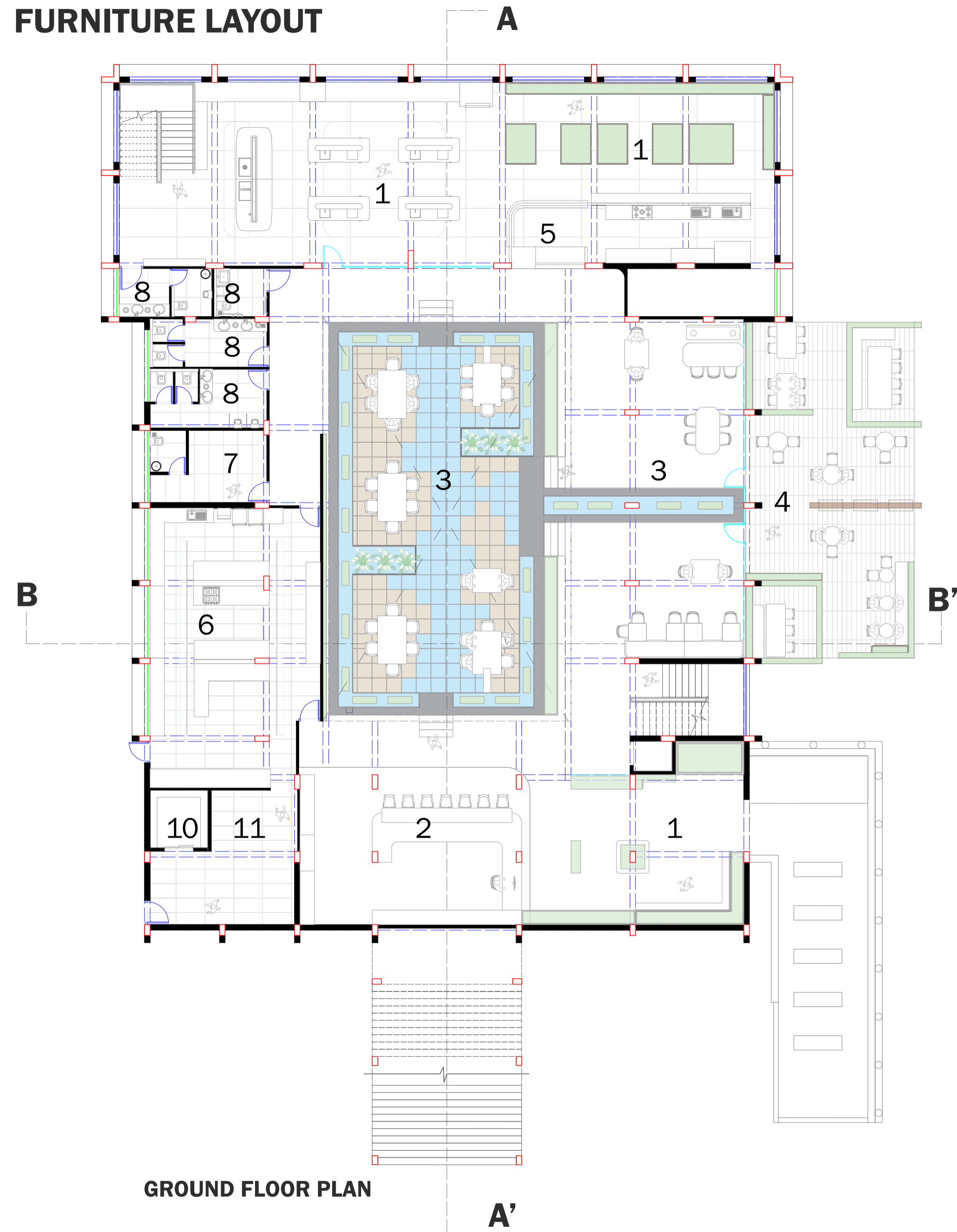
<h3>GREY WATER SYSTEM</h3> <ul style="list-style-type: none"> <li>• Bioswale Filtration</li> <li>• Gravel &amp; Reed Beds</li> <li>• Natural Water Treatment</li> <li>• Sustainable Reuse</li> </ul> 	<h3>HERB GARDEN</h3> <ul style="list-style-type: none"> <li>• Aromatic &amp; Medicinal Herbs</li> <li>• Sensory Experience</li> <li>• Low Maintenance Planting</li> <li>• Edible &amp; Fragrant Plants</li> </ul> 
<h3>VEGETABLE BEDS</h3> <ul style="list-style-type: none"> <li>• Raised Planting Beds</li> <li>• Seasonal Vegetables</li> <li>• Community Gardening</li> <li>• Organic Growing</li> </ul> 	<h3>POLISHING POND</h3> <ul style="list-style-type: none"> <li>• Final Water Purification</li> <li>• Reflective Water Body</li> <li>• Walking Path &amp; Bridge</li> <li>• Microclimate Cooling</li> </ul> 



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# FURNITURE LAYOUT



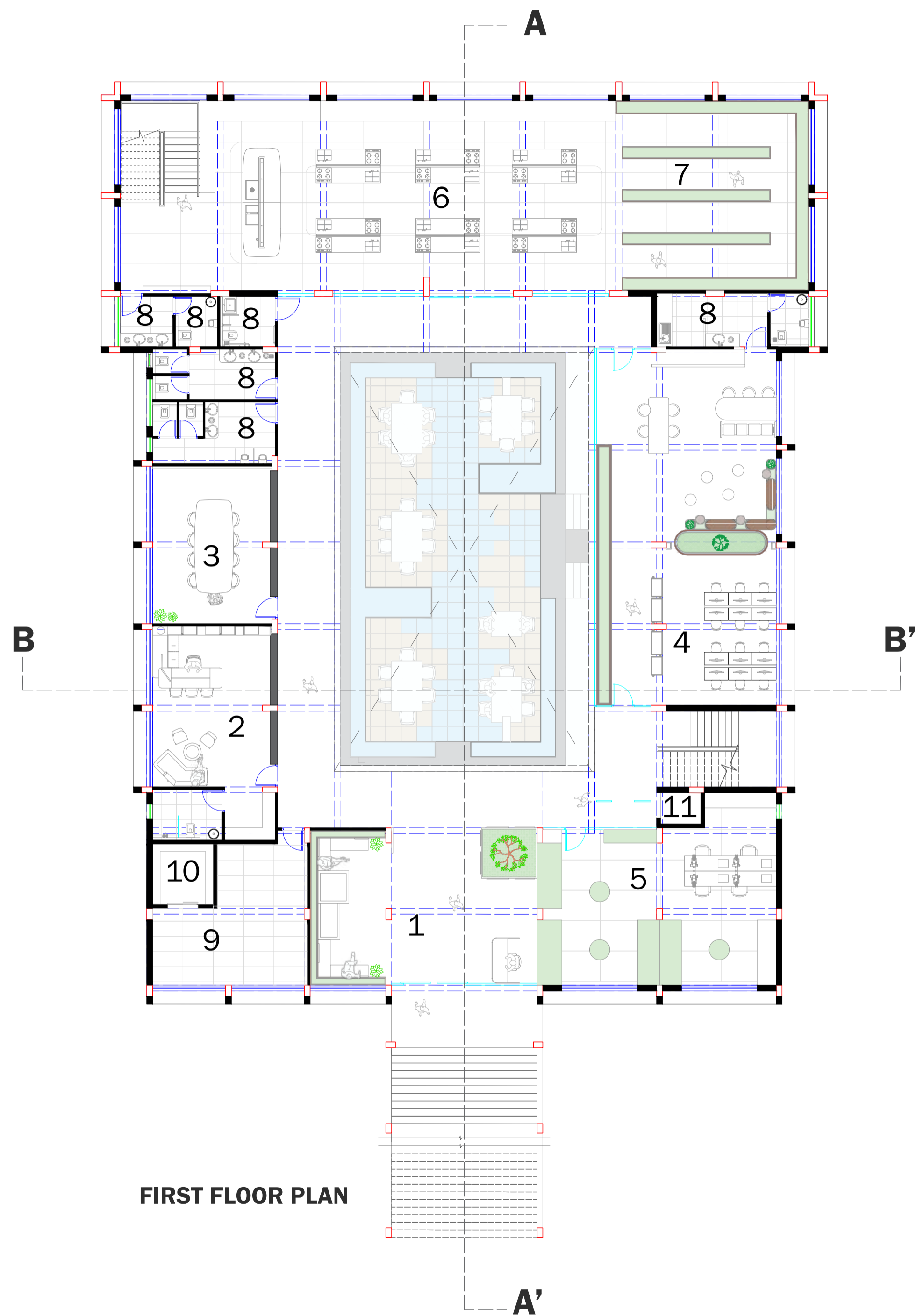
- 1 Urban farming
- 2 Brew corner
- 3 Restaurant sitting
- 4 Outdoor sitting
- 5 Bakery corner
- 6 Kitchen
- 7 Kitchen staff
- 8 Washroom
- 9 Bakery Workshop
- 10 Passenger lift
- 11 Lift

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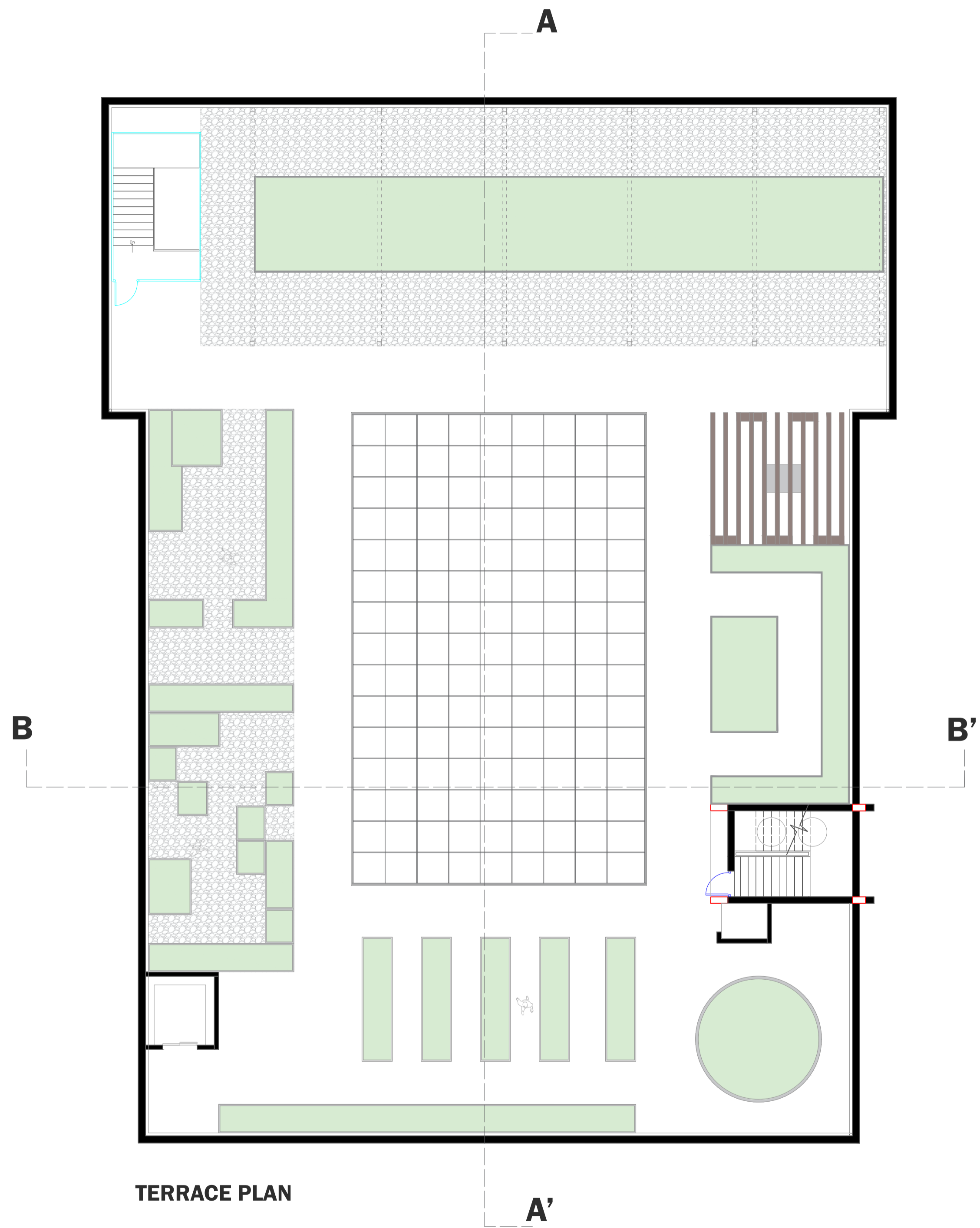
FIRST FLOOR PLAN

- |   |                   |    |                |
|---|-------------------|----|----------------|
| 1 | Information desk  | 7  | Urban farming  |
| 2 | Director's cabin  | 8  | Washroom       |
| 3 | Meeting room      | 9  | Storage        |
| 4 | Staff workspace   | 10 | Passenger lift |
| 5 | Research lab      | 11 | Lift           |
| 6 | Culinary workshop |    |                |

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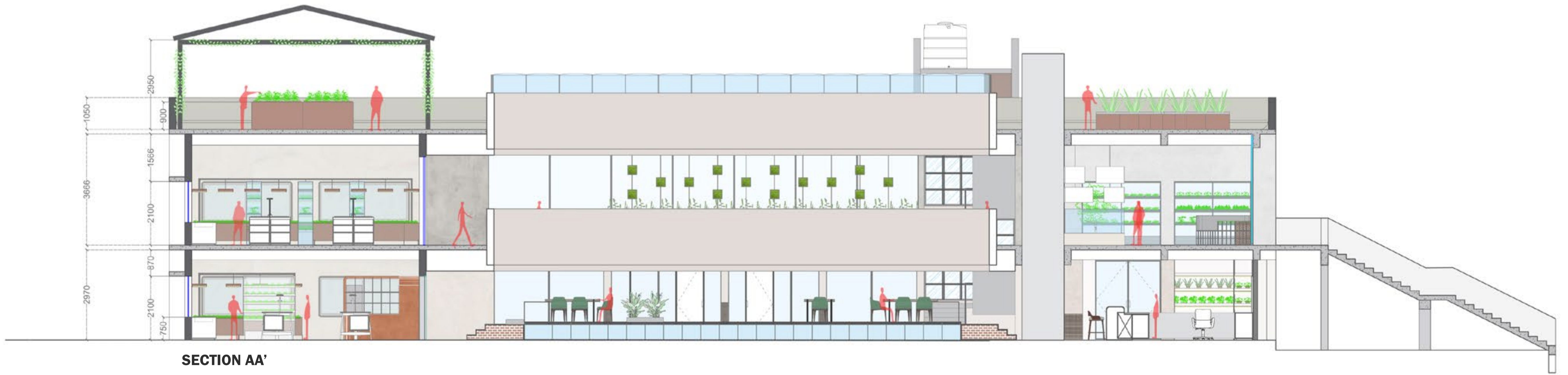
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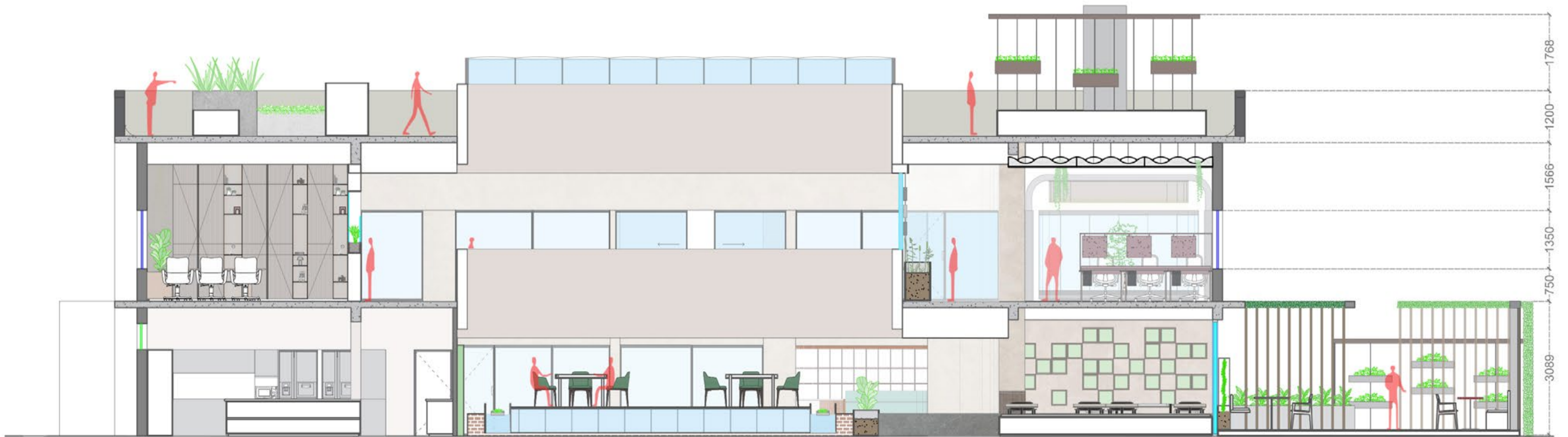
SECTION AA'

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SECTION BB'

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RESTAURANT AREA



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WASHROOM



WORKSHOP WASHROOM

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ROOF TOP GARDEN



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# Urban farming integration



Workspace area



Workshop space



Restaurant space



Passage wall

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# FLOORING LAYOUT



GROUND FLOOR PLAN

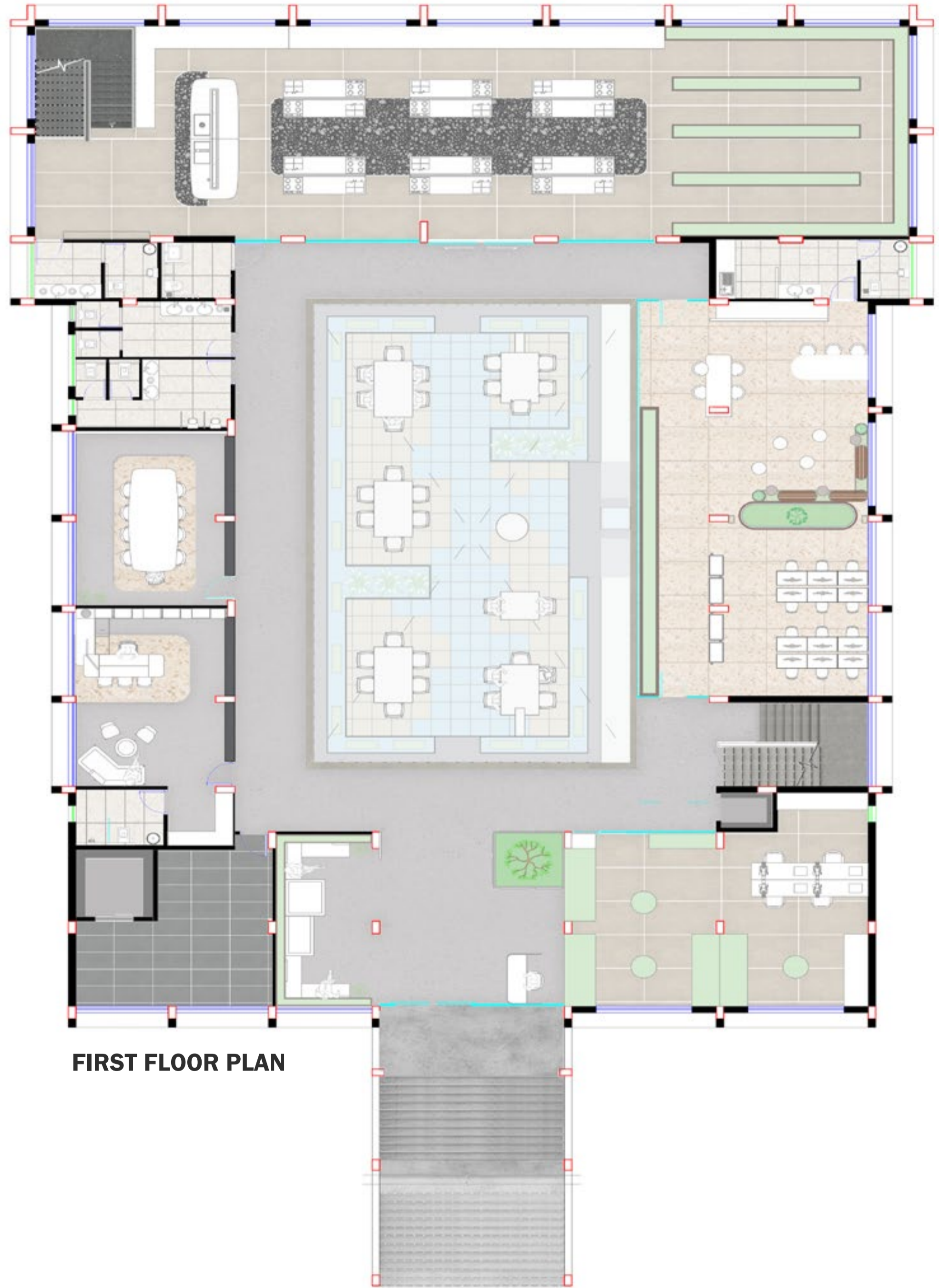
-  Microconcrete
-  Full Body tile (1200 x 600)mm
-  Black Chip Terrazo
-  Beige Terrazo
-  Full body Tile(1200 x600)mm
-  Toughened glass
-  Kaddapa stone
-  Deck flooring(200x1200 mm)
-  Porcelain tile(1200 x600)mm

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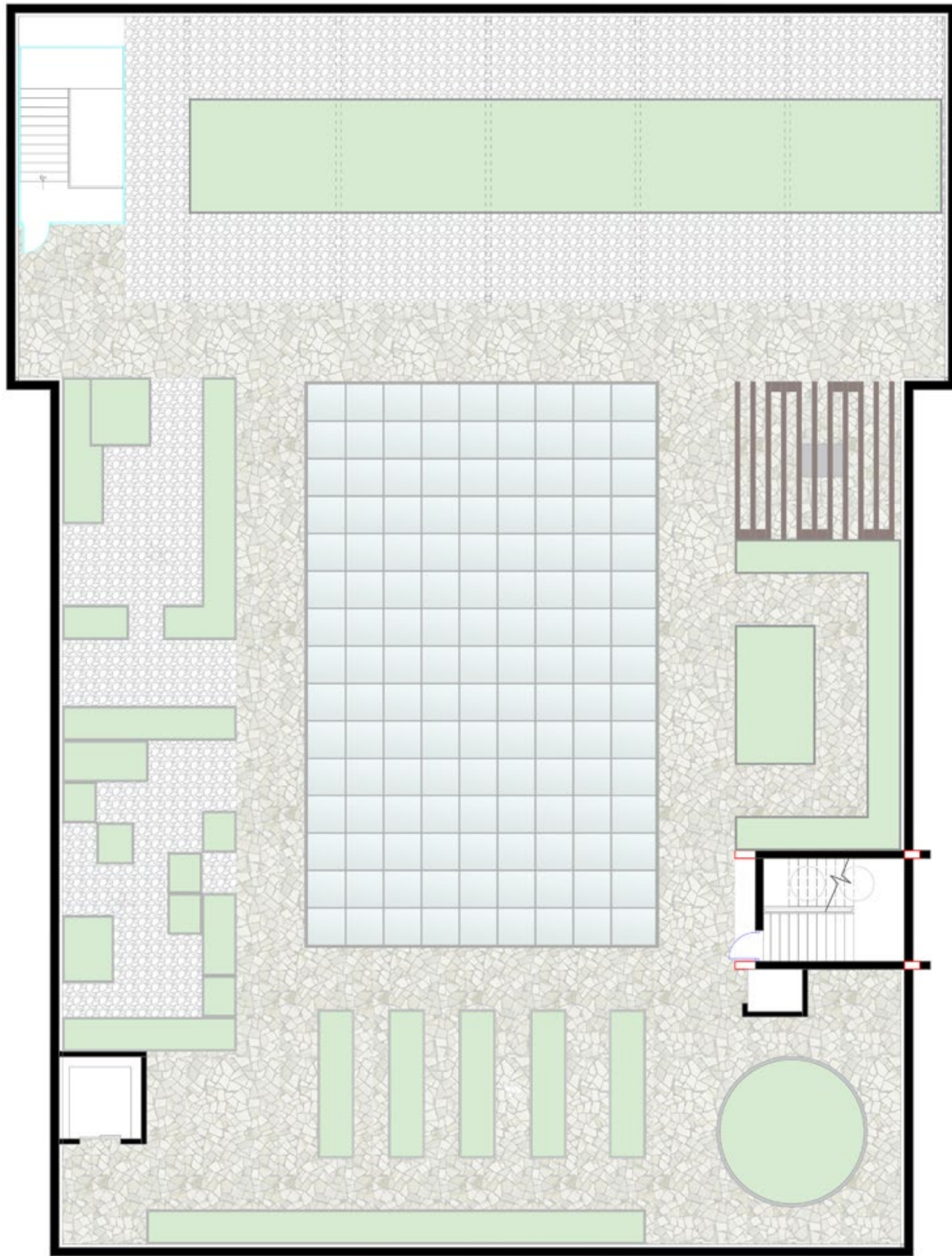
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-  Beige Terrazo
-  Full body Tile (1200 x600)mm
-  Porcelain tile (1200 x600)mm

**FIRST FLOOR PLAN**

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Stone gravel



Mozaic tile

TERRACE PLAN

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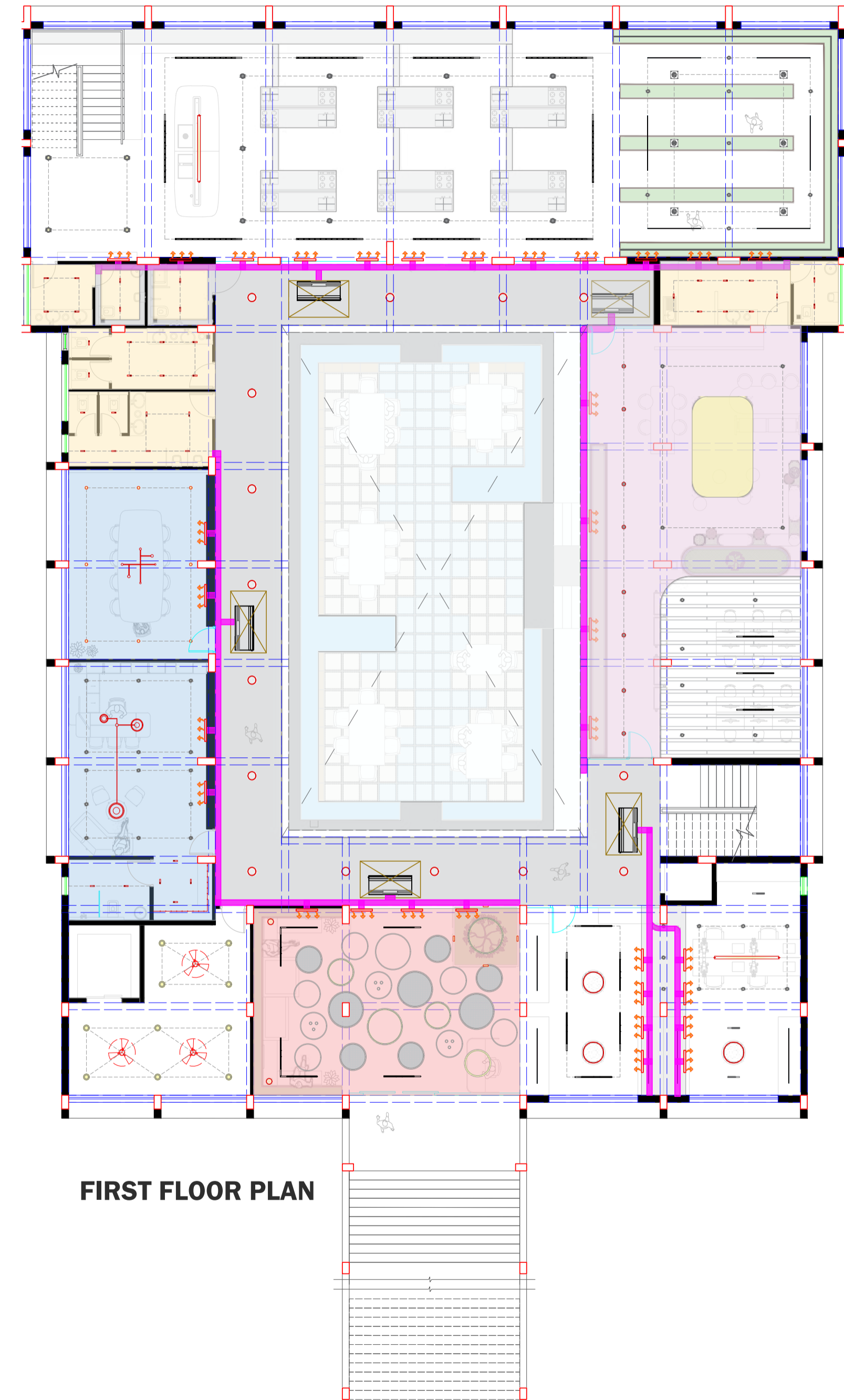


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# CEILING/ELECTRICAL LAYOUT



**GROUND FLOOR PLAN**



**FIRST FLOOR PLAN**

**GROW INSIDE**

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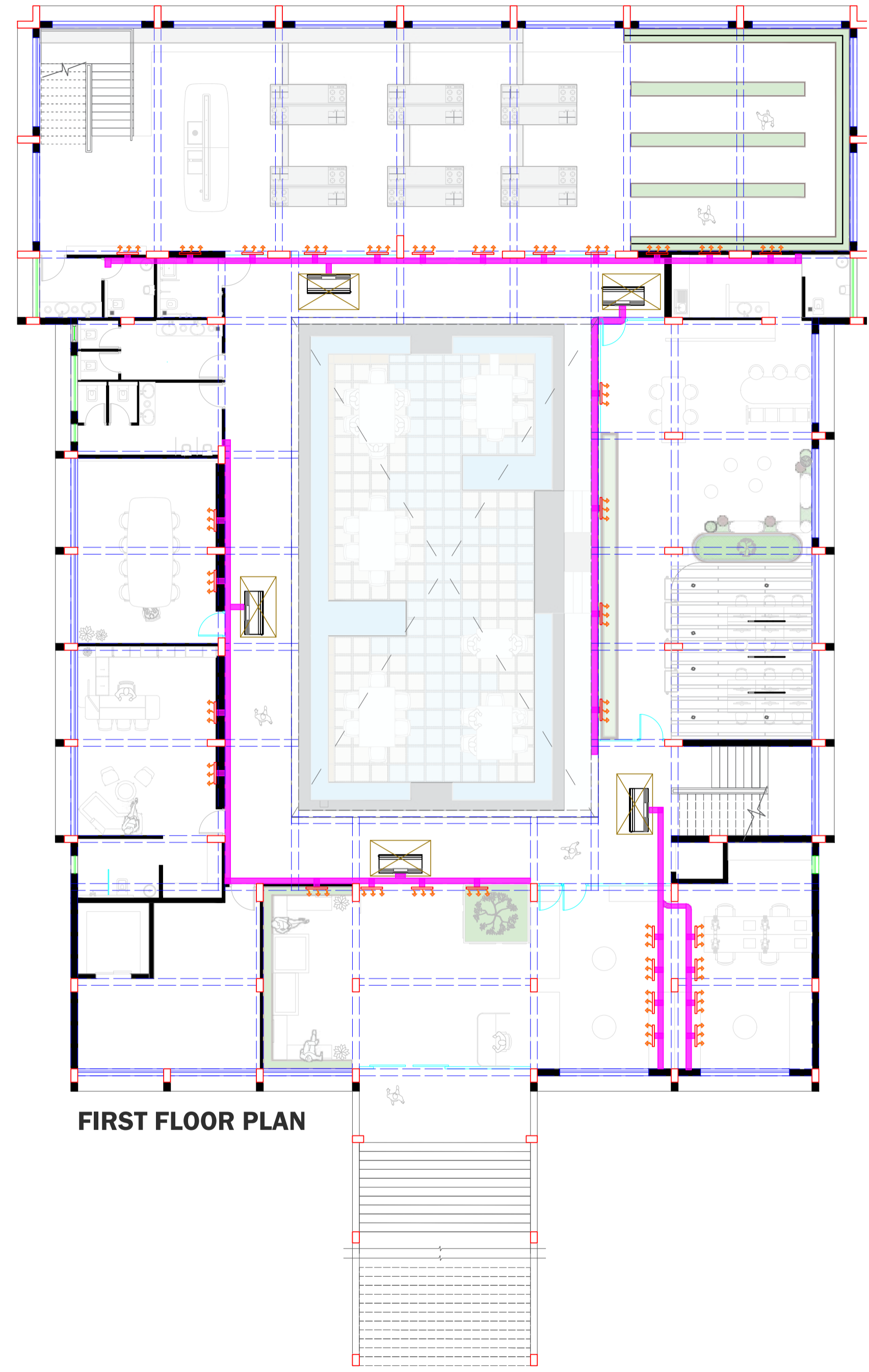
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# HVAC LAYOUT

Ductable AC system



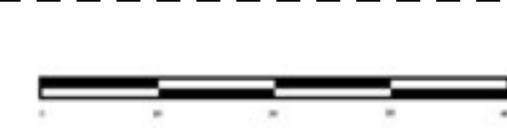
GROUND FLOOR PLAN



FIRST FLOOR PLAN

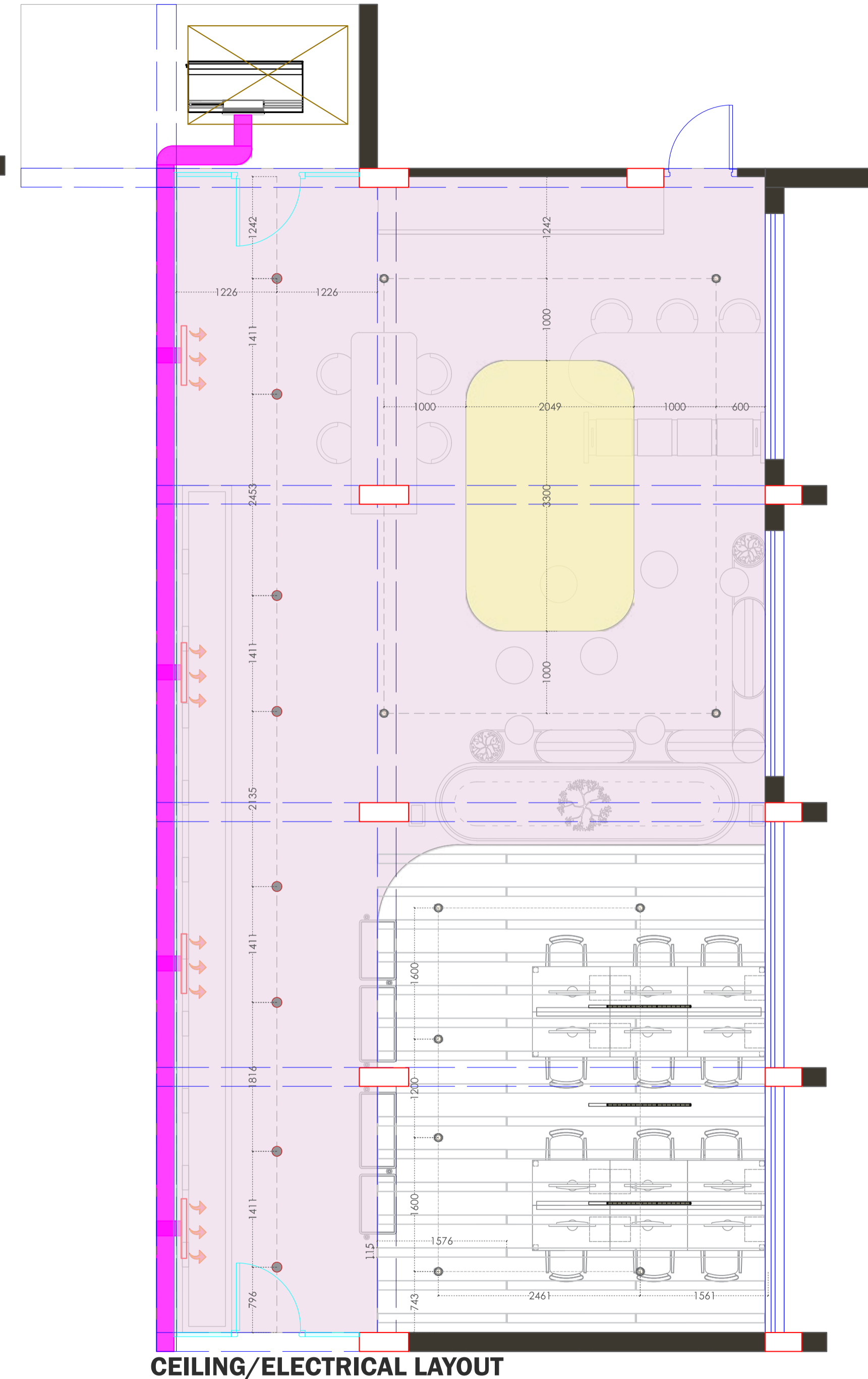
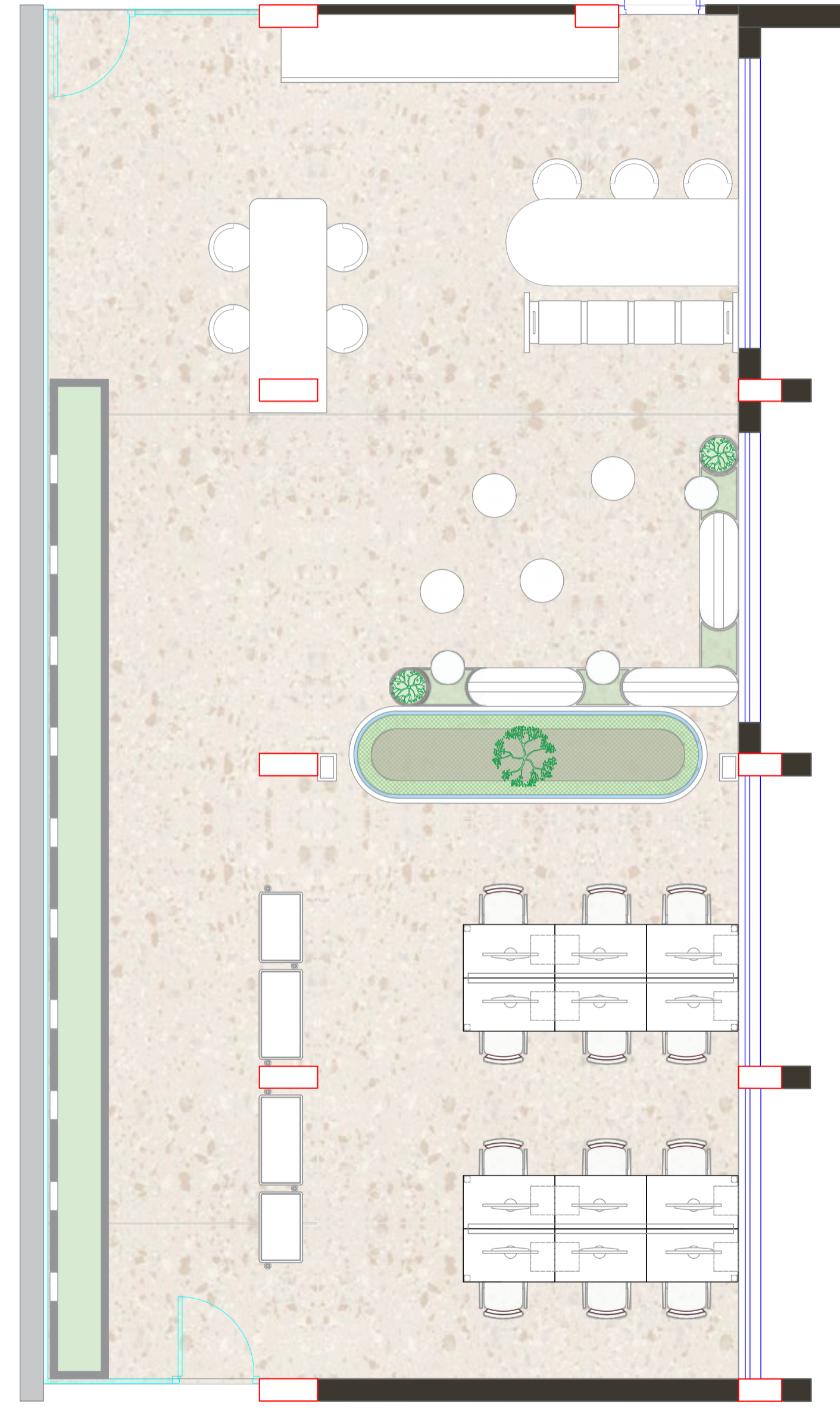
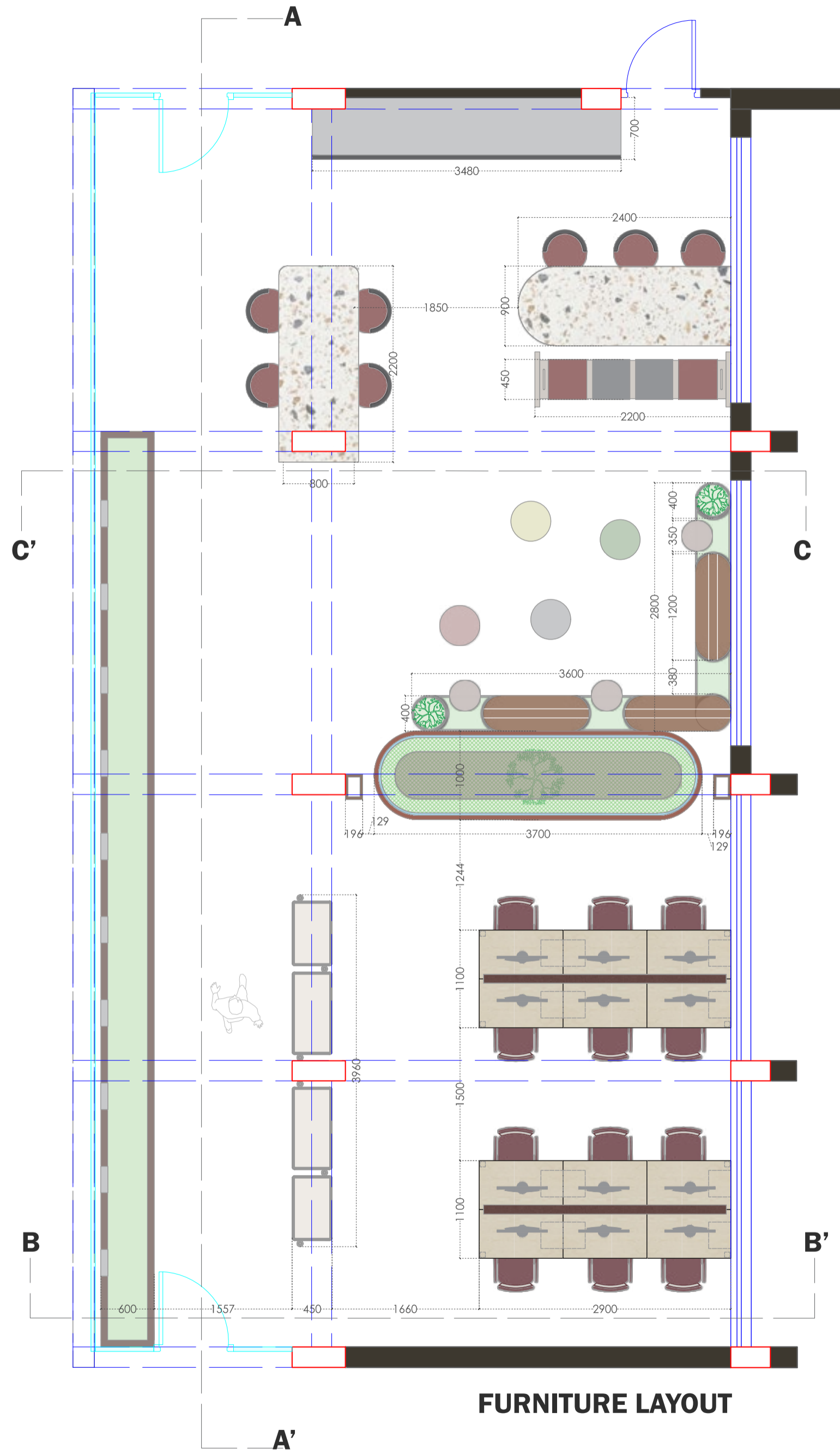
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# ZOOMED SPACE DRAWINGS (WORKSPACE AREA)



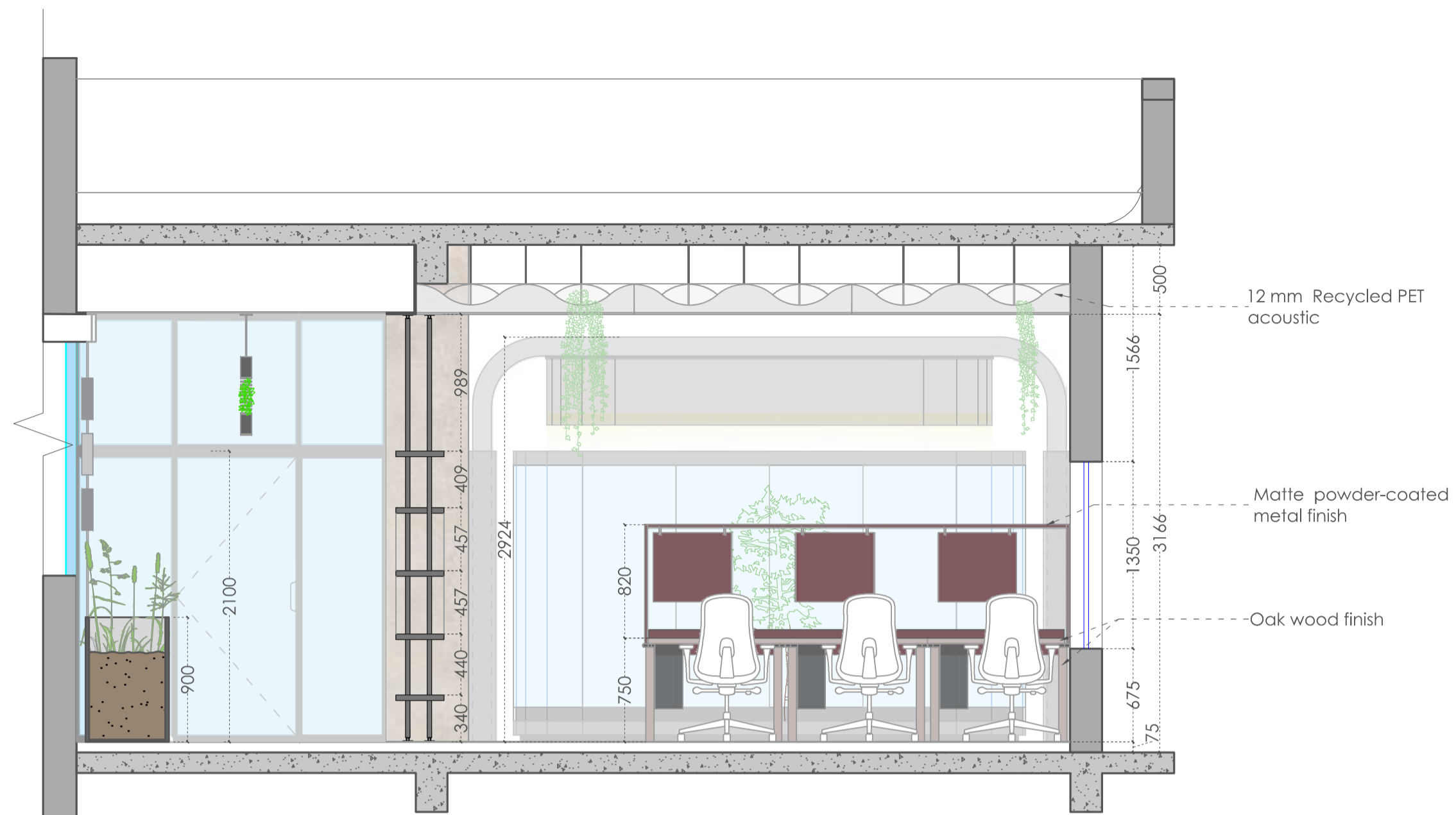
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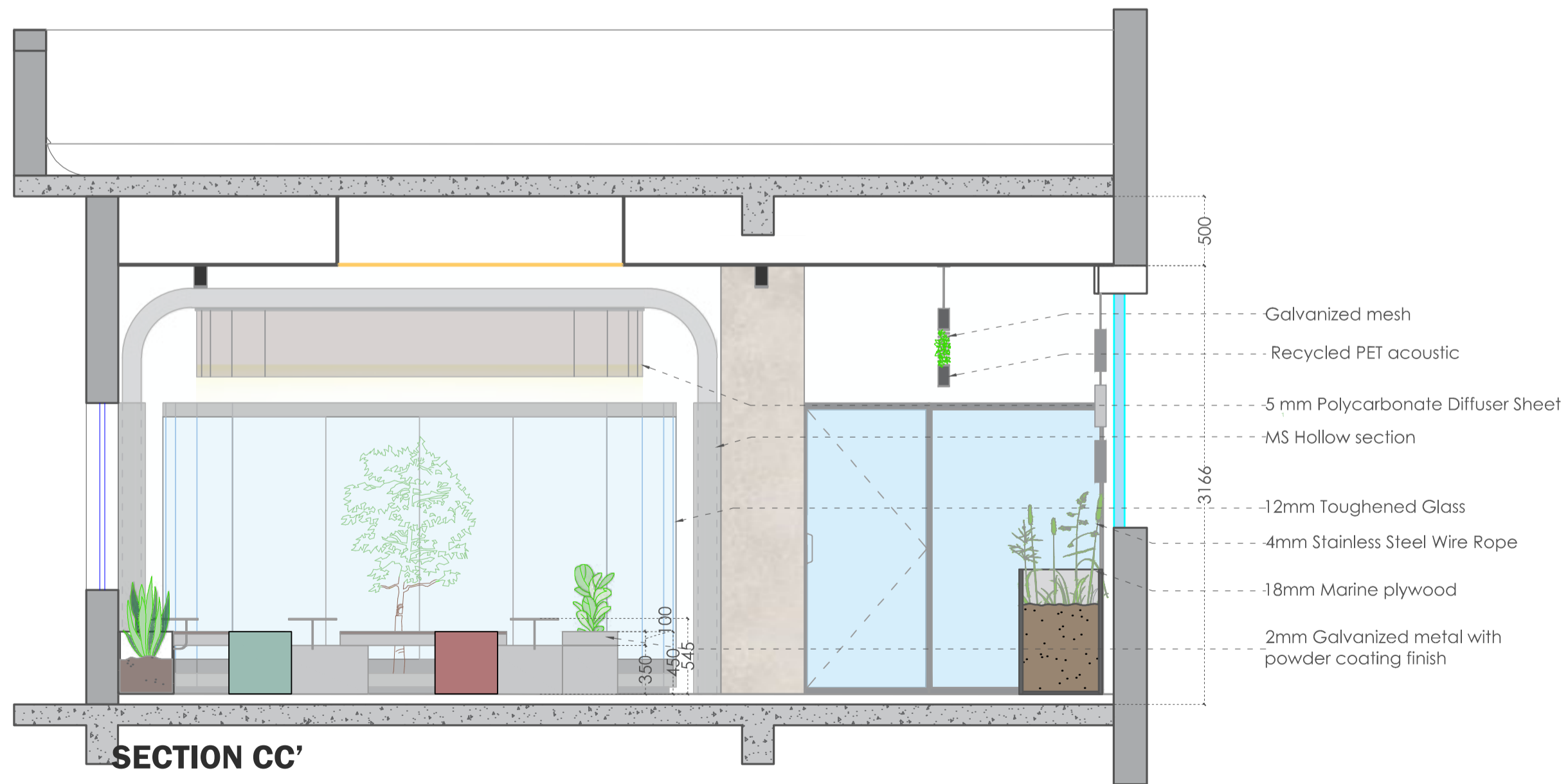




SECTION BB'



WORKDESK TABLE



SECTION CC'



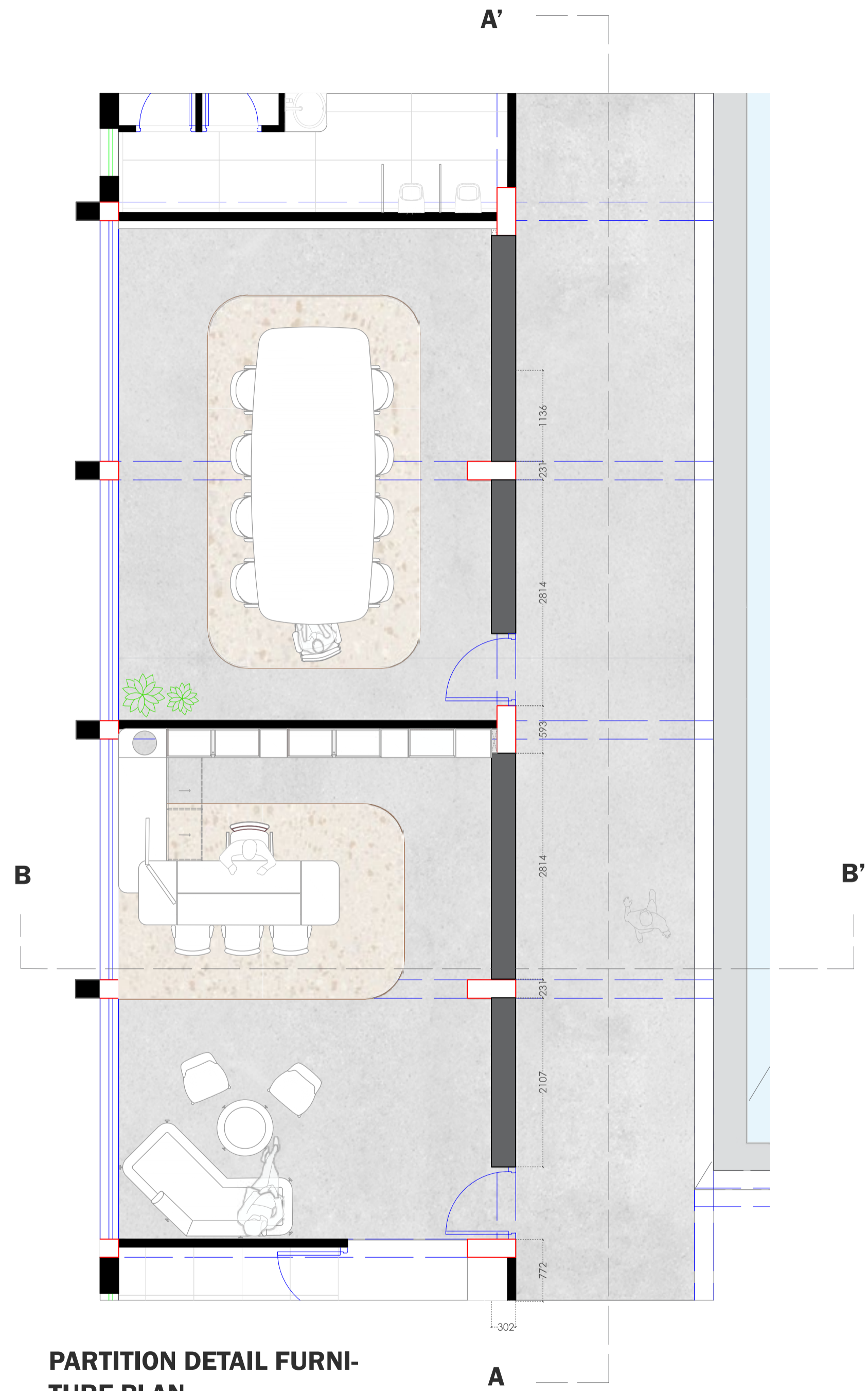
PANTRY AND INFORMAL AREA

**GROW INSIDE**

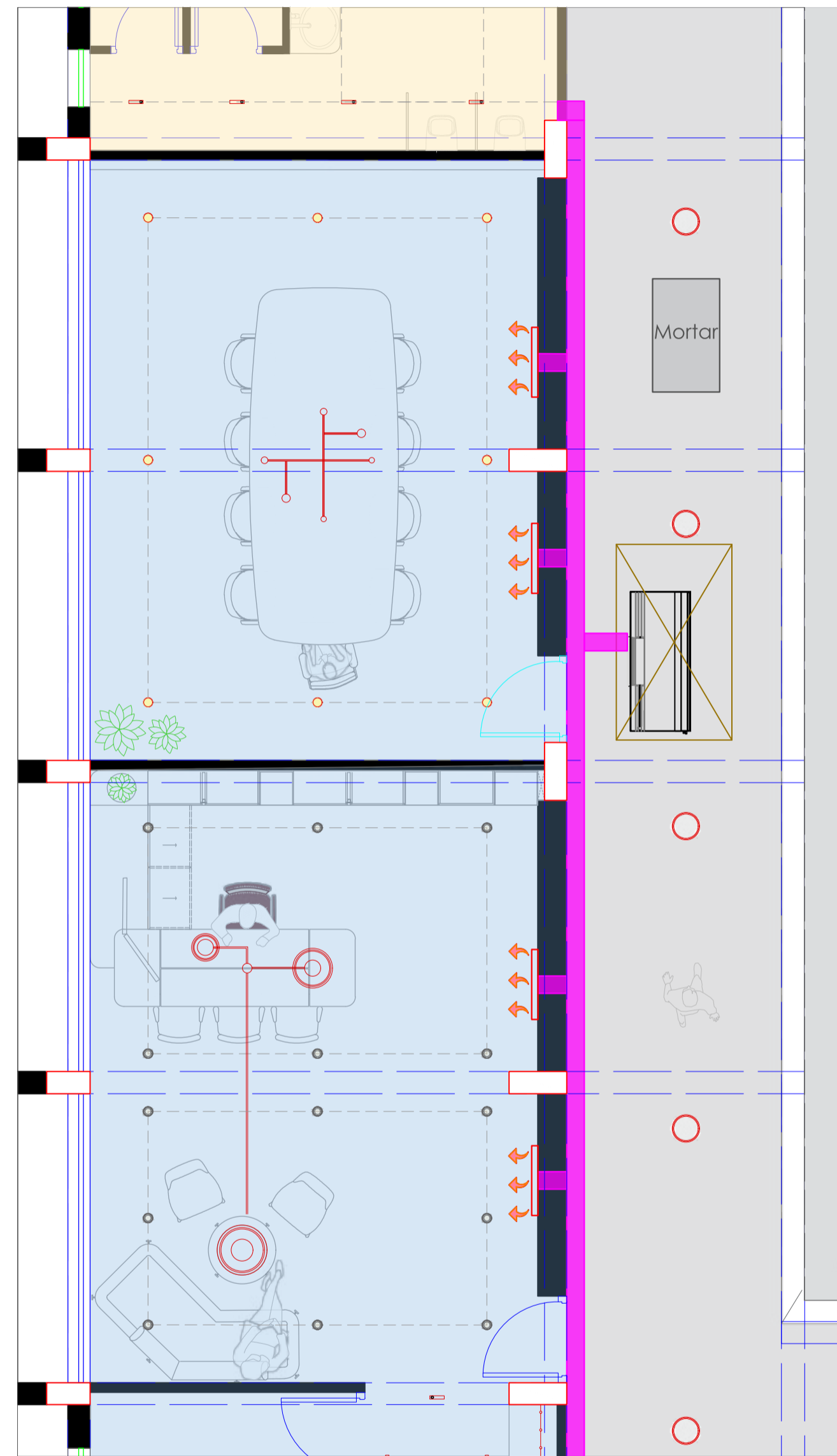
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Source: Gemini for render  
Krishi Vigyan Kendra



**PARTITION DETAIL FURNITURE PLAN**



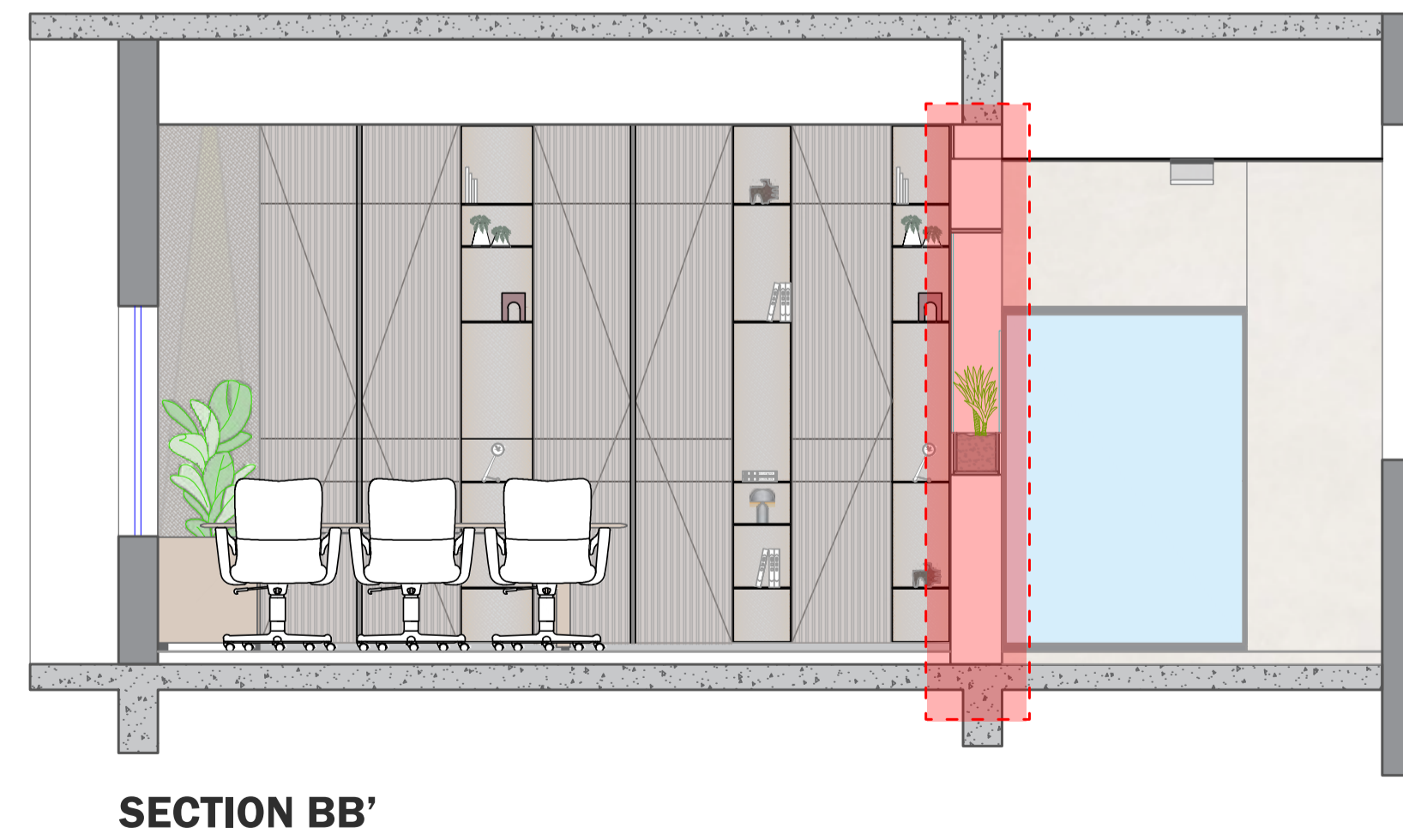
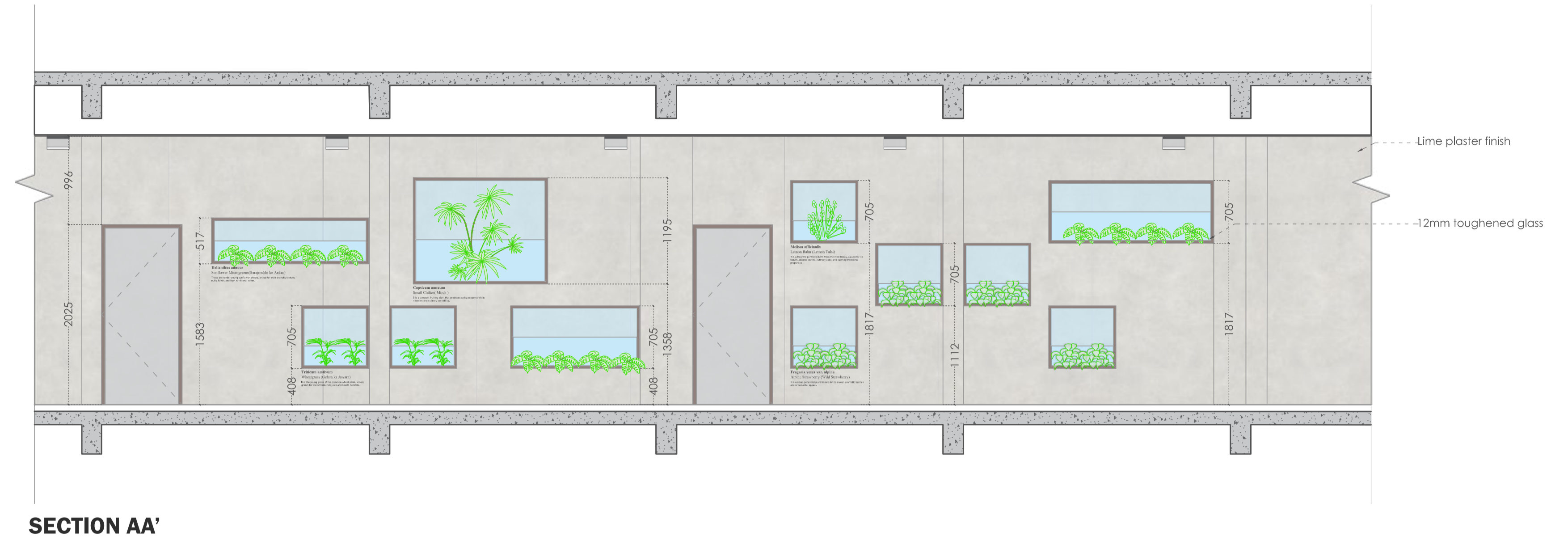
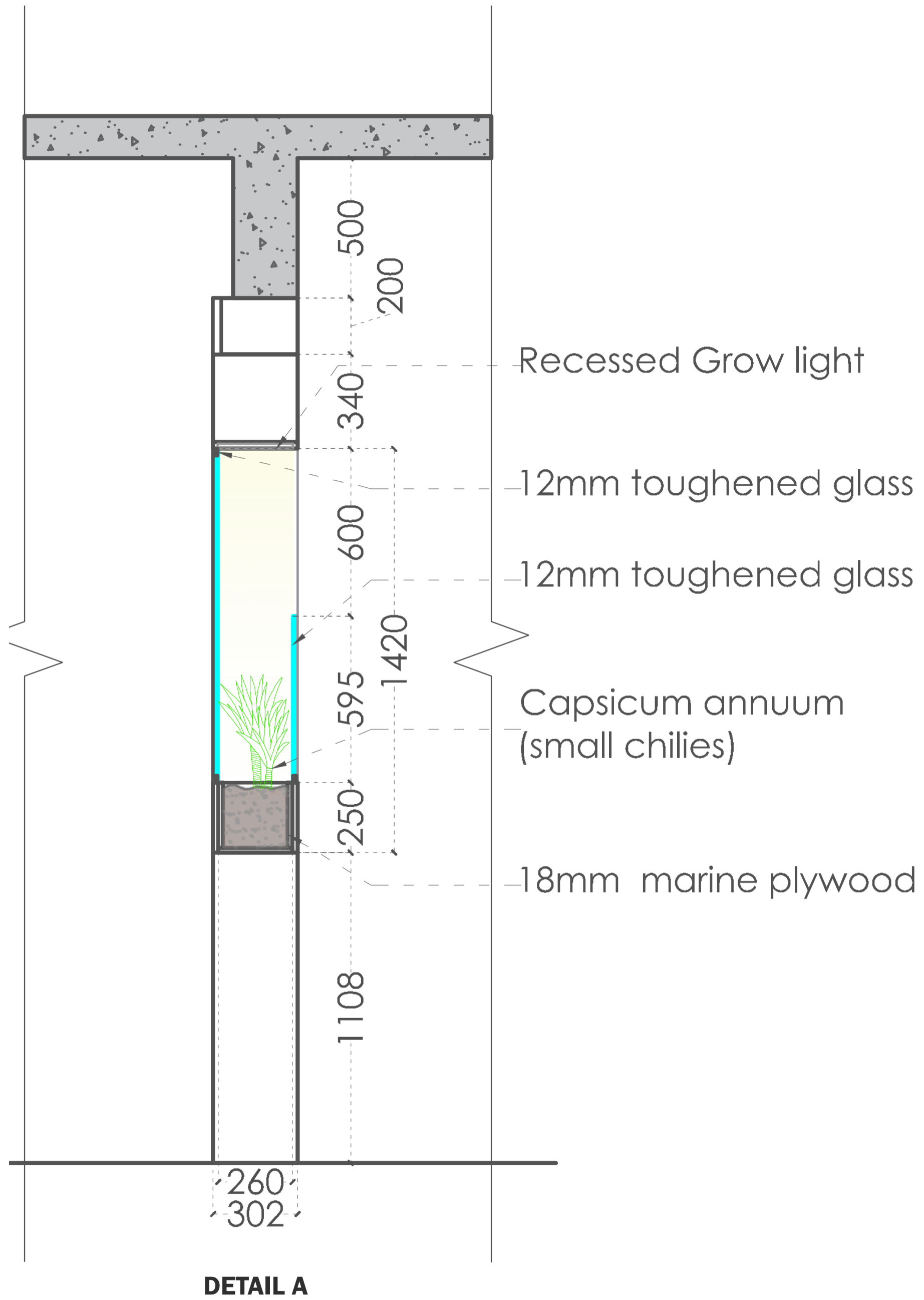
**PARTITION DETAIL CEILING/ELECTRICAL PLAN**

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**THANKYOU**

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