

# DOMUS DEI

## Cultivating Futures...

REBECCA MASSER

### BACKGROUND

Portsmouth, one of the UK's most densely populated cities, faces significant challenges for its vulnerable youth, including limited green space and high rates of antisocial behaviour. Environmental psychology suggests that exposing young adults to natural environments can reduce antisocial tendencies. Combined with the need for alternative educational pathways amid a cost of living crisis and mental health struggles which can have a knock on effect for future generations, Cultivating Futures hopes to shepherd the way to preserving our future community.

### THE INITIATIVE

Cultivating Futures aims to transform Garrison Church into a dynamic community center, addressing these challenges through alternative learning spaces. By integrating urban farming practices and cooking workshops, the project provides hands-on education in sustainable horticulture and culinary arts.

### AIMS

To foster environmental stewardship and social unity, addressing food poverty while fostering community and belonging. Cultivating Futures hopes to provide a safe, engaging environment for Portsmouth's youth to learn, grow, and thrive.

CULTIVATING FUTURES AIMS TO FOSTER AND ENCOURAGE SOCIAL UNITY THROUGH A COMMON GOAL.

### SOCIAL

### ENVIRONMENT

CONTRIBUTES TO THE ENVIRONMENT THROUGH URBAN FARMING AND RESPONSIBLE DESIGN.

### RESILIENCE

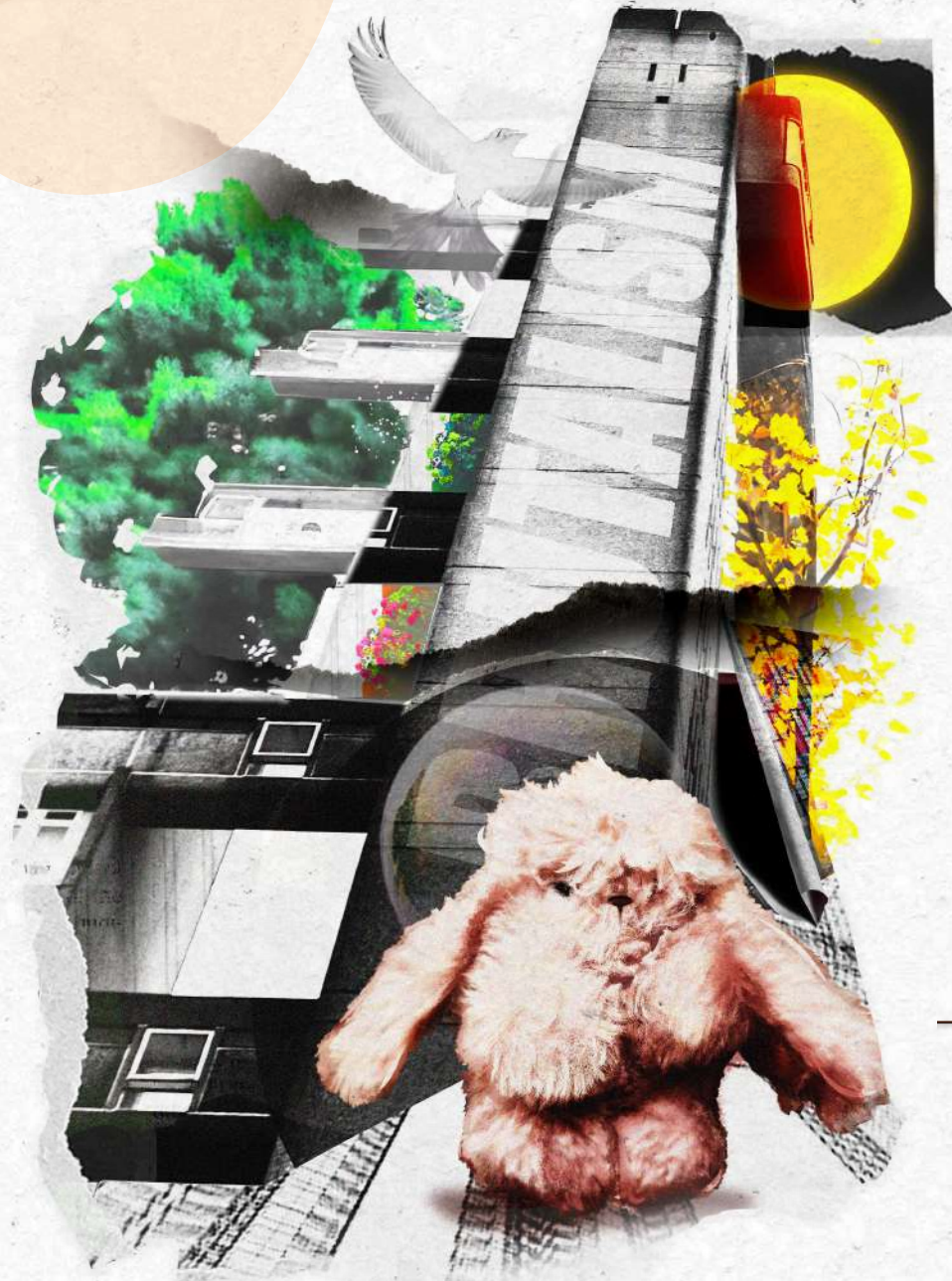
PRESERVING PORTSMOUTH'S COMMUNITY

### ECONOMIC

CULTIVATING FUTURES PROVIDES ECONOMIC OPPORTUNITIES TO THE COMMUNITY AND YOUTH OF PORTSMOUTH

### ABOUT THE DEMOGRAPHIC

Aside from students, Portsmouth's young adults include residents who grew up in the city or relocated for a variety of reasons, including family or employment. They come from a variety of backgrounds, with diverse interests and goals. This demographic may face difficulties such as making the transition from education to employment, finding affordable housing, and having access to opportunities for personal and professional growth. Moreover, mental health issues, substance abuse, and social exclusion can affect some young adults in Portsmouth, just as they do in other cities.



### LONG SECTION



SECTION 1:100

### ABOUT THE USERS

From the dedicated caretaker handing down invaluable expertise to the dedicated staff overseeing activities to the eager learners treading new pathways, each persona plays a vital role in the collective growth and sustainability of Cultivating Futures.

Together, we cultivate a vibrant ecosystem where knowledge, support, and opportunity flow seamlessly, nurturing the potential of both individuals and the community as a whole.



The Learners

BRIAN

BRIANNA



Managers and Staff

KENNY

AMANDA



The Caretaker



SHARED EXPERIENCE

COMMUNITY SPACE

GROWTH

GROWTH (LO)

CULTIVATING FUTURES

USER EXPERIENCE: FEEDING OUR MINDS

Cultivating Future fosters curiosity and learning through observation and transparency. Pathways subtly guide users, integrating growing systems, the café, and cooking workshops. With minimal partitions, the space encourages free-roaming and thought-provoking experiences, ensuring a welcoming and inclusive environment for all.

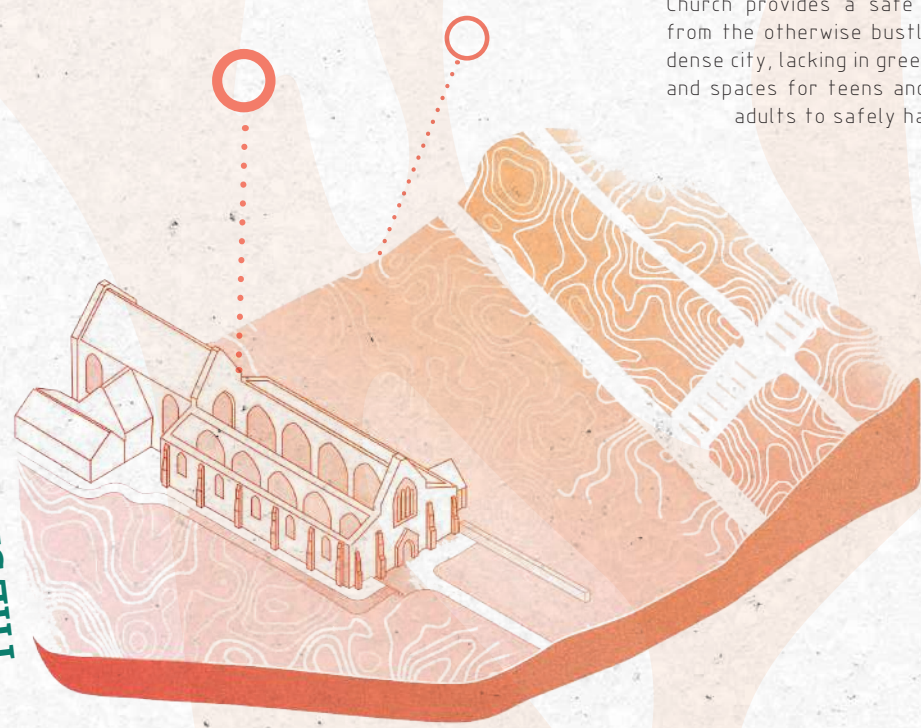


THE JOURNEY

SITE CONDITIONS

The project requires controlled conditions in order to fulfill its intended purpose. This includes appropriate positioning of the indoor garden to utilise natural sunlight and provide energy to the solar roof.

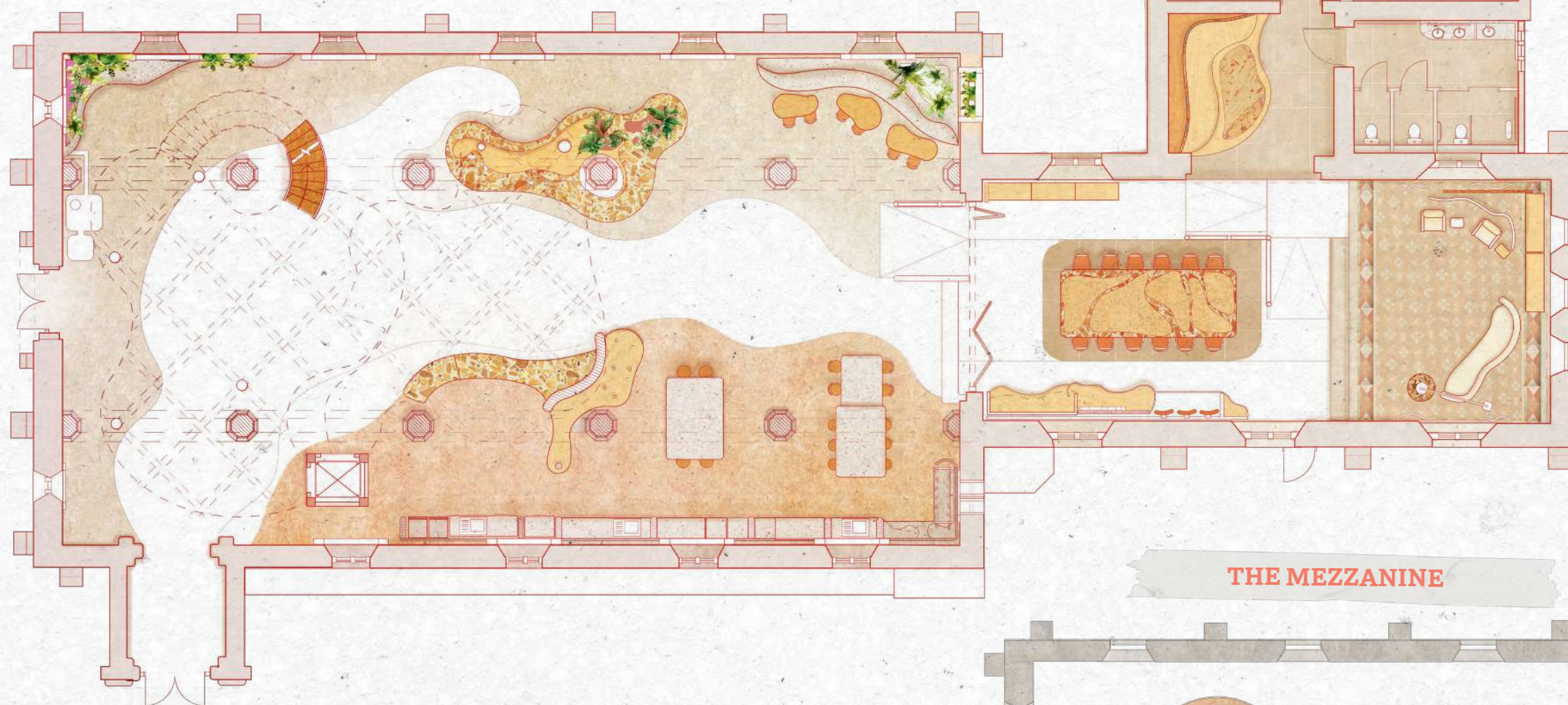
THE SITE



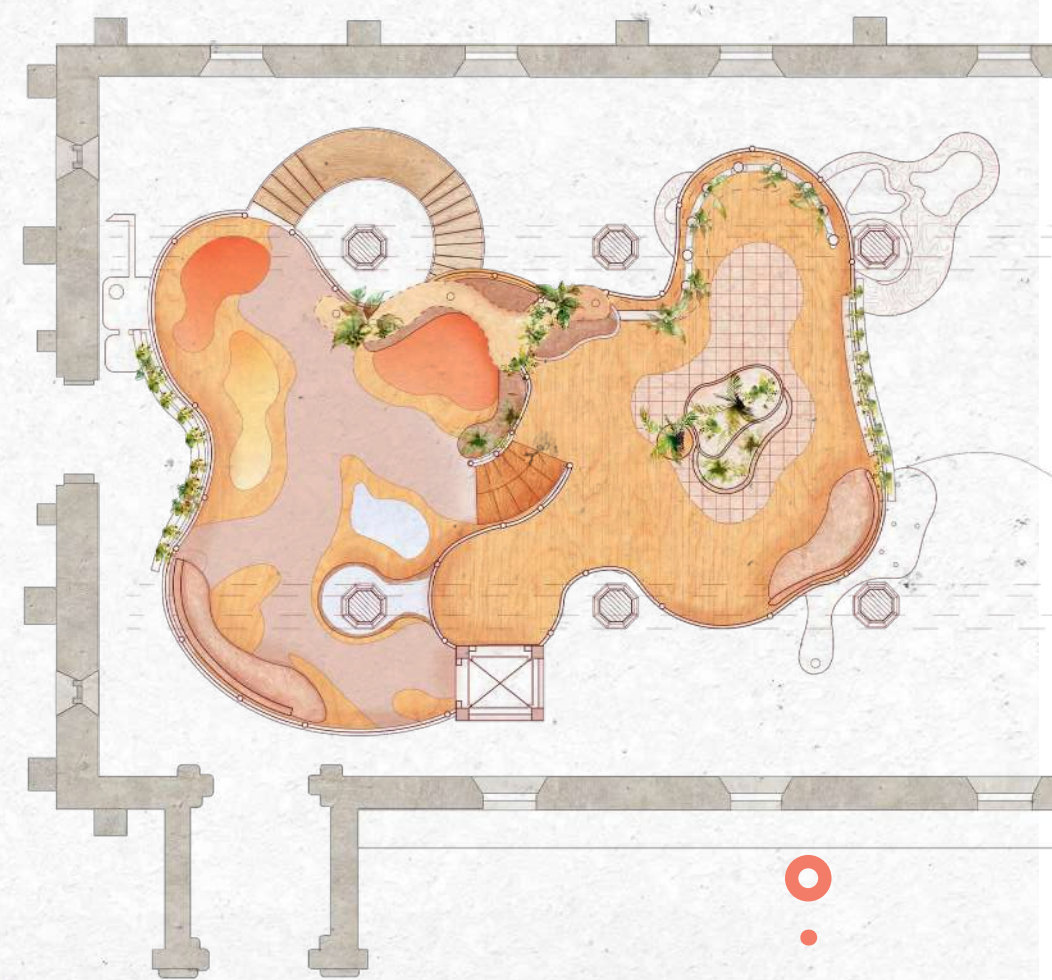
THE AREA

Nestled in a quiet corner along Portsmouth's coast, Garrison Church provides a safe escape from the otherwise bustling and dense city, lacking in green space and spaces for teens and young adults to safely hang out.

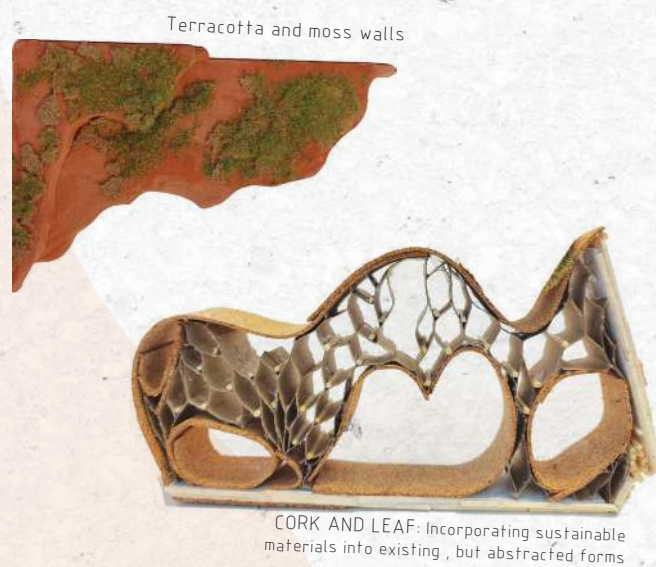
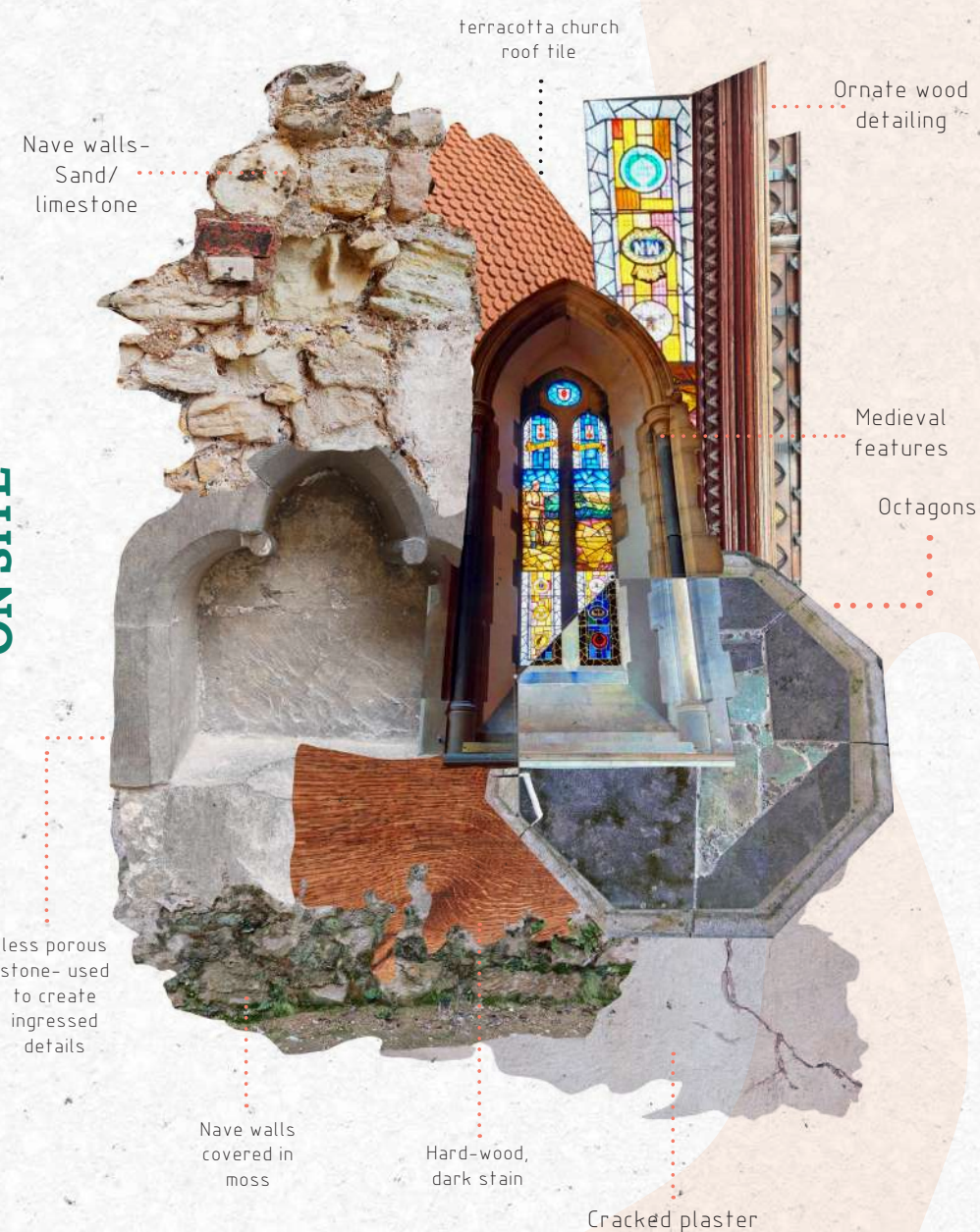
FLOORPLANS



THE MEZZANINE



MATERIALS AND DETAILS ON SITE



THE DEVELOPED CONCEPT

"Roots" has several meanings in this project. They represent the foundation of a community, the actual roots of plants, and the paths they produce. Roots grow deeper and stronger as they mature, symbolising the gradual building of communal relationships and the skills learned within the various workshops. This notion emphasises the necessity of laying a firm foundation for Portsmouth's adolescents by encouraging resilience and growth.



REVIVING SYMMETRY



REFINED CONCEPT MODEL



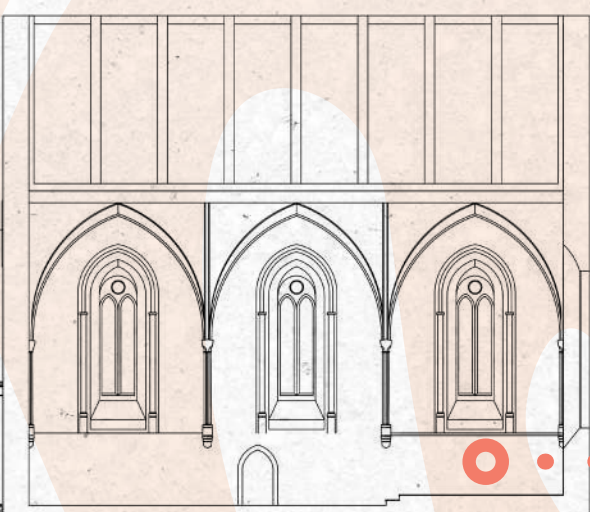
ROOTS AND BONDS

This concept model, inspired by roots and constructed with a wire mesh, woven copper wires, and clay, mimics the terracotta materials found on site. It was pivotal in developing the final design by providing a foundation for the mezzanine prototype.

ROOFLESS NAVE



CHOIR AND SANCTUARY

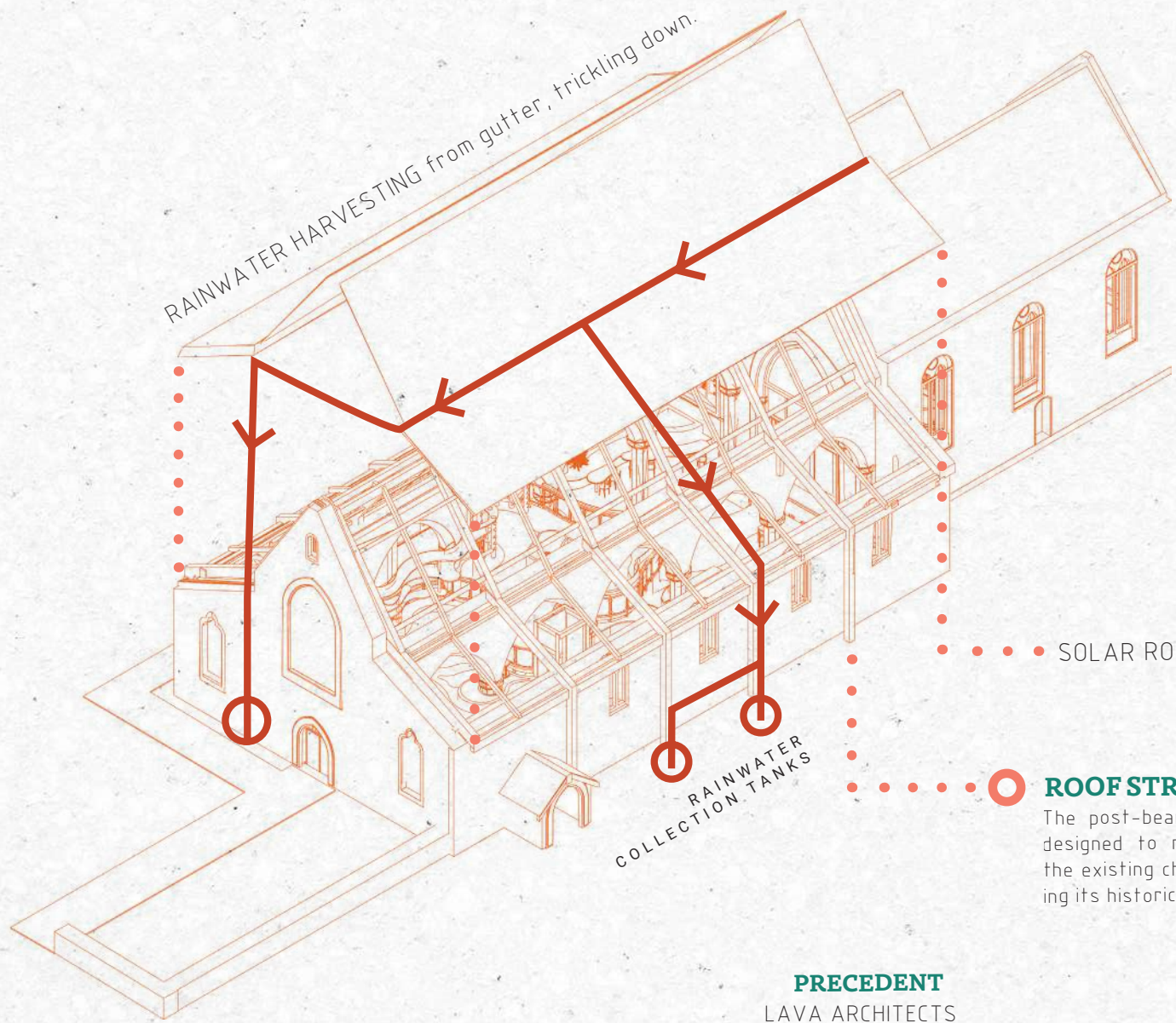


STAINED GLASS, LAYERS, ROOTS, ILLUMINATING PATHWAYS

MEZZANINE PROTOTYPE MODEL







**ROOF STRUCTURE**

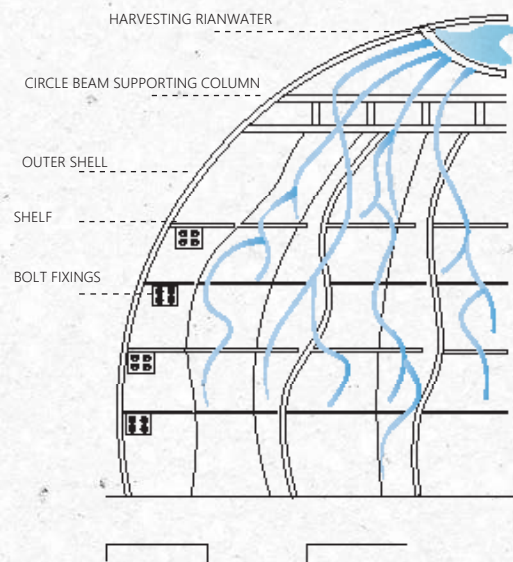
The post-beam structure is designed to minimally touch the existing church, preserving its historical features.

**PRECEDENT**  
LAVA ARCHITECTS

The pavilion's design incorporates flowing, curved forms resembling petals, creating a sense of fluidity and movement. It effectively catches rainfall at the top of a semi-sealed dome, which then trickles down through a series of containers, providing hydration to the plants below.



WITHIN THE FLOWER



**PRECEDENT**

**TRANSLUCENT SOLAR PANEL SHEETS**

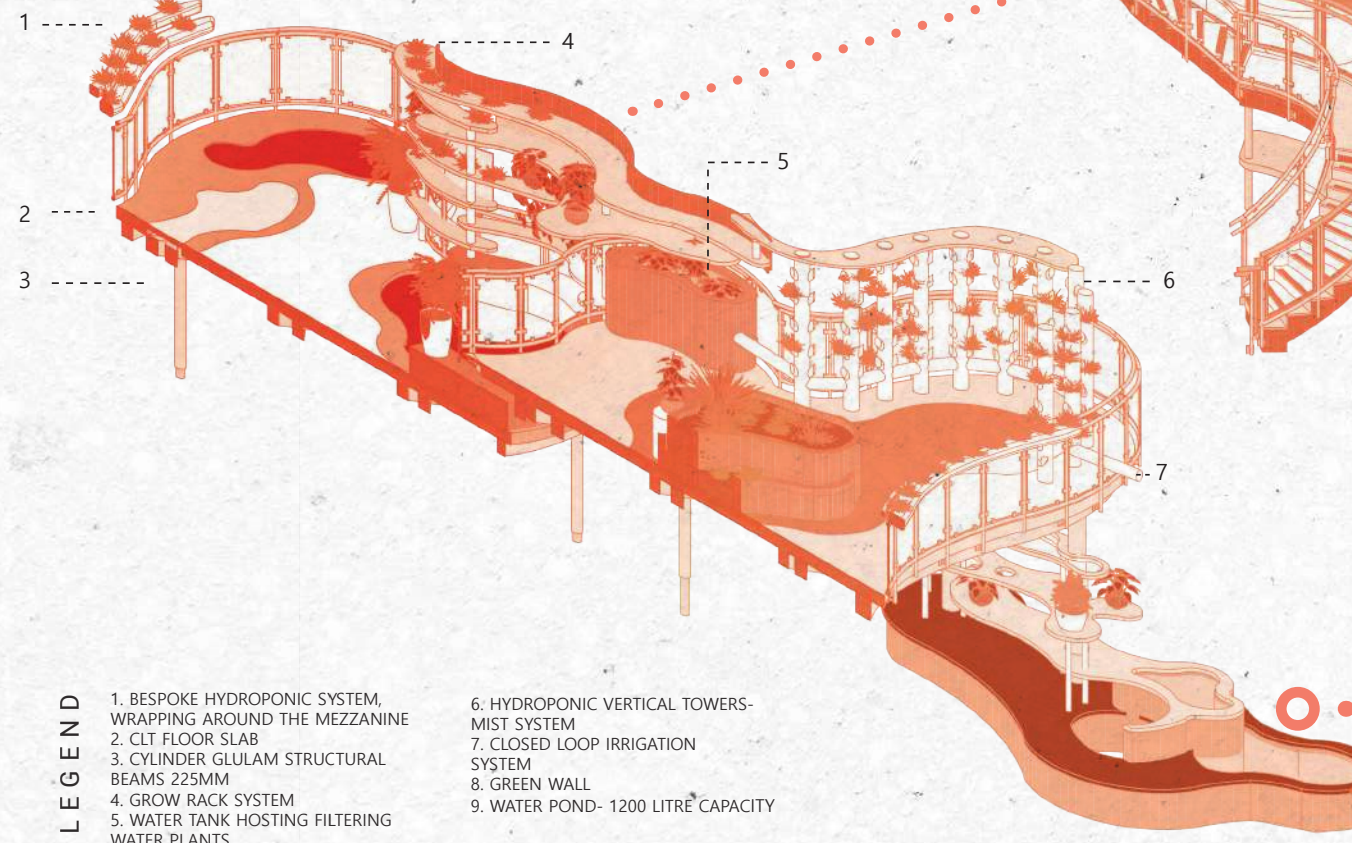
The Netherlands pavilion uses sustainable solar panel sheets by Marjan van Aube, providing a Moiré effect and lightweight, easily transportable skylights for a sustainable roof design. These solar sheets will be implemented into the design of the roof.

Marjan van Aube studio



**GROWING WITH VARIETY**

The top of the mezzanine is designed to host a variety of innovative methods for growing produce. This includes hydroponic vertical towers (6), which are highly effective for cultivating crops like strawberries, lettuce, and tomatoes. Additionally, there are grow rack systems (4) that maximise space and yield a high volume of produce. Complementing these are green walls (8) which enhance air quality and reduce noise within the otherwise echo-prone site.



**LEGEND**

- 1. BESPOKE HYDROPONIC SYSTEM, WRAPPING AROUND THE MEZZANINE
- 2. CLT FLOOR SLAB
- 3. CYLINDER GLULAM STRUCTURAL BEAMS 225MM
- 4. GROW RACK SYSTEM
- 5. WATER TANK HOSTING FILTERING WATER PLANTS
- 6. HYDROPONIC VERTICAL TOWERS- MIST SYSTEM
- 7. CLOSED LOOP IRRIGATION SYSTEM
- 8. GREEN WALL
- 9. WATER POND- 1200 LITRE CAPACITY

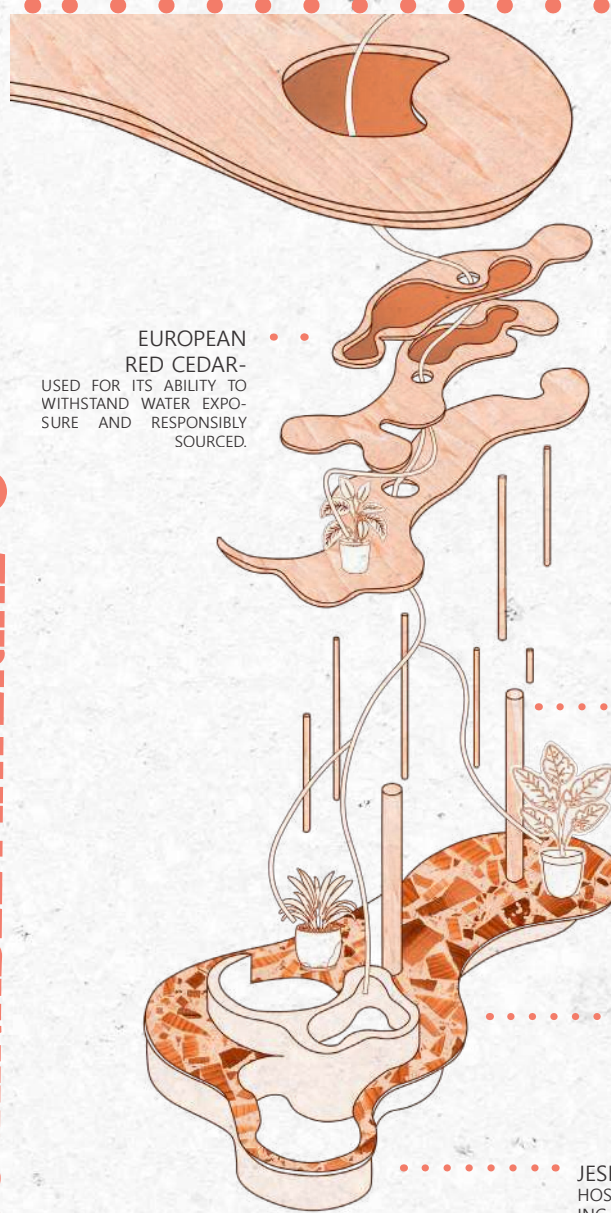
**DETAIL AREA**

**TRICKLE DOWN**

**ABOUT**

This design element ties back to the concept of trickling water through various layers. It is crucial as it incorporates a water recycling mechanism, ensuring minimal water waste. Water trickles down from the mezzanine floor into plant trays and then into an artificial pond below, where it is pumped back up, creating a continuous cycle.

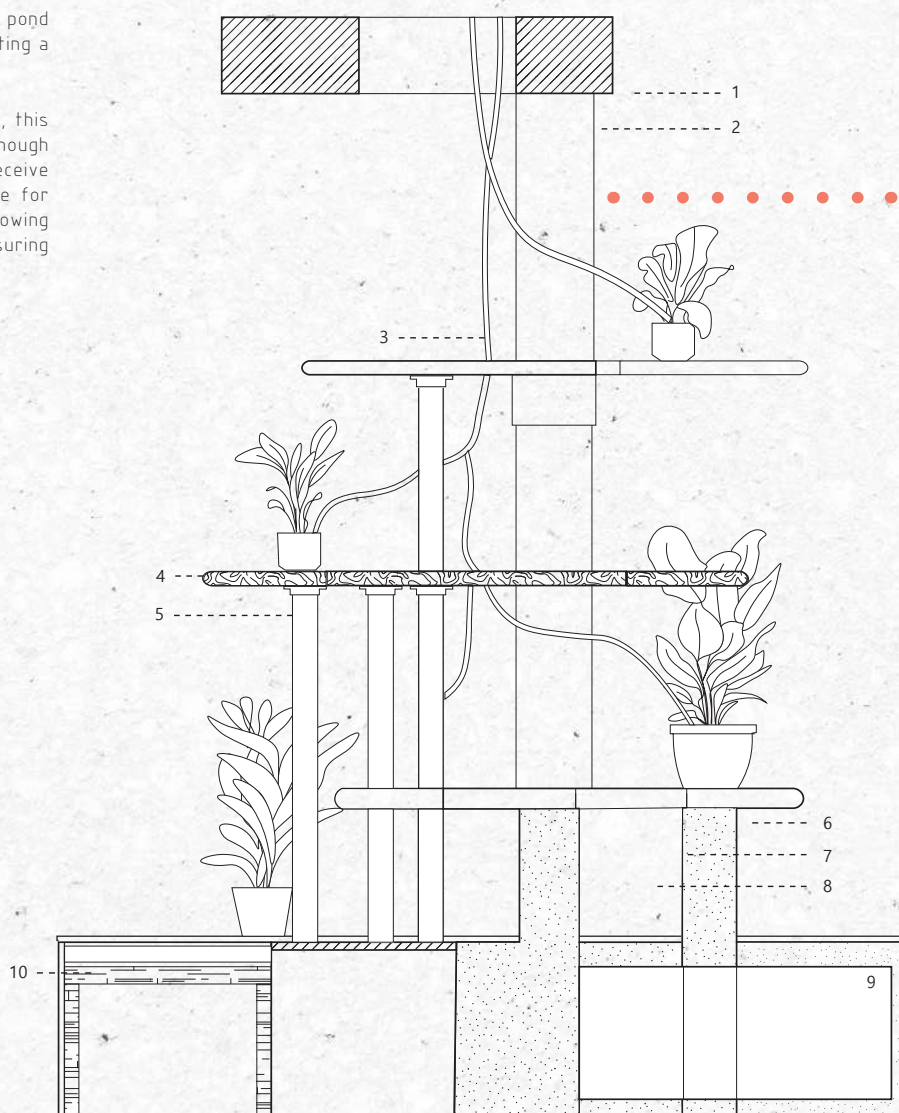
Positioned beneath the mezzanine floor, this feature is strategically located far enough eastward to allow the plants below to receive ample sunlight. However, to compensate for areas with limited natural light, UV growing lights are installed under each shelf, ensuring optimal growth.



**SUSTAINABLE MATERIAL**

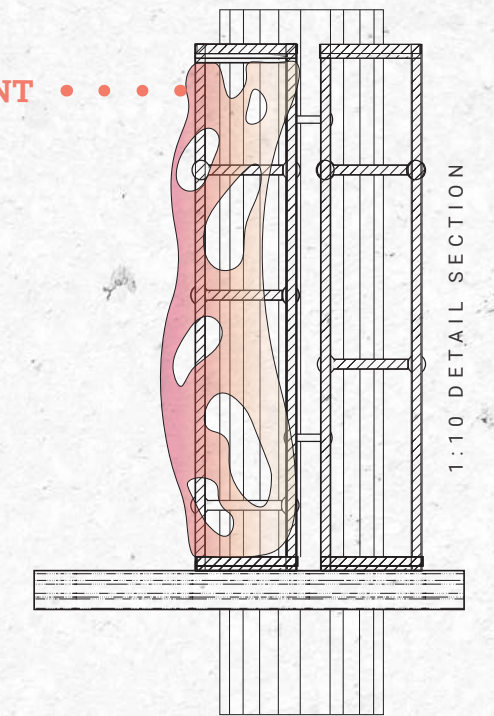
**LEGEND**

- 1. MEZZANINE FLOOR
- 2. STRUCTURAL MEZZANINE COLUMN
- 3. WATER TUBES
- 4. RED CEDAR TIMBER SHELF 50MM
- 5. TIMBER UPRIGHT POST 257 MM DIAMETRE + STEEL BASE PLATE CONNECTION
- 6. 200MM JESMONITE CAST POND WALLS
- 7. WATERPROOF MEMBRANE 2MM
- 8. HYDROPONIC POND
- 9. WATER TANK - 1200 LITRE CAPACITY
- 10. PLYWOOD BENCH FRAME



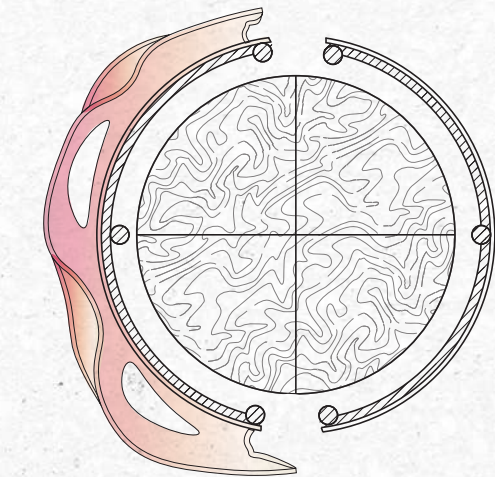
SECTION 1:20

**TRANSPARENT DETAIL**



**TO GUIDE**

**FUNCTION:**  
To guide and secure the water tubes as water trickles down from mezzanine to pond.



1:5 DETAIL PLAN

**AGAR BIOPLASTIC SAMPLES**



Coloured using natural dyes- Beetroot and maddar powder

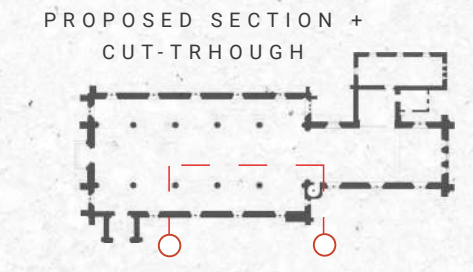
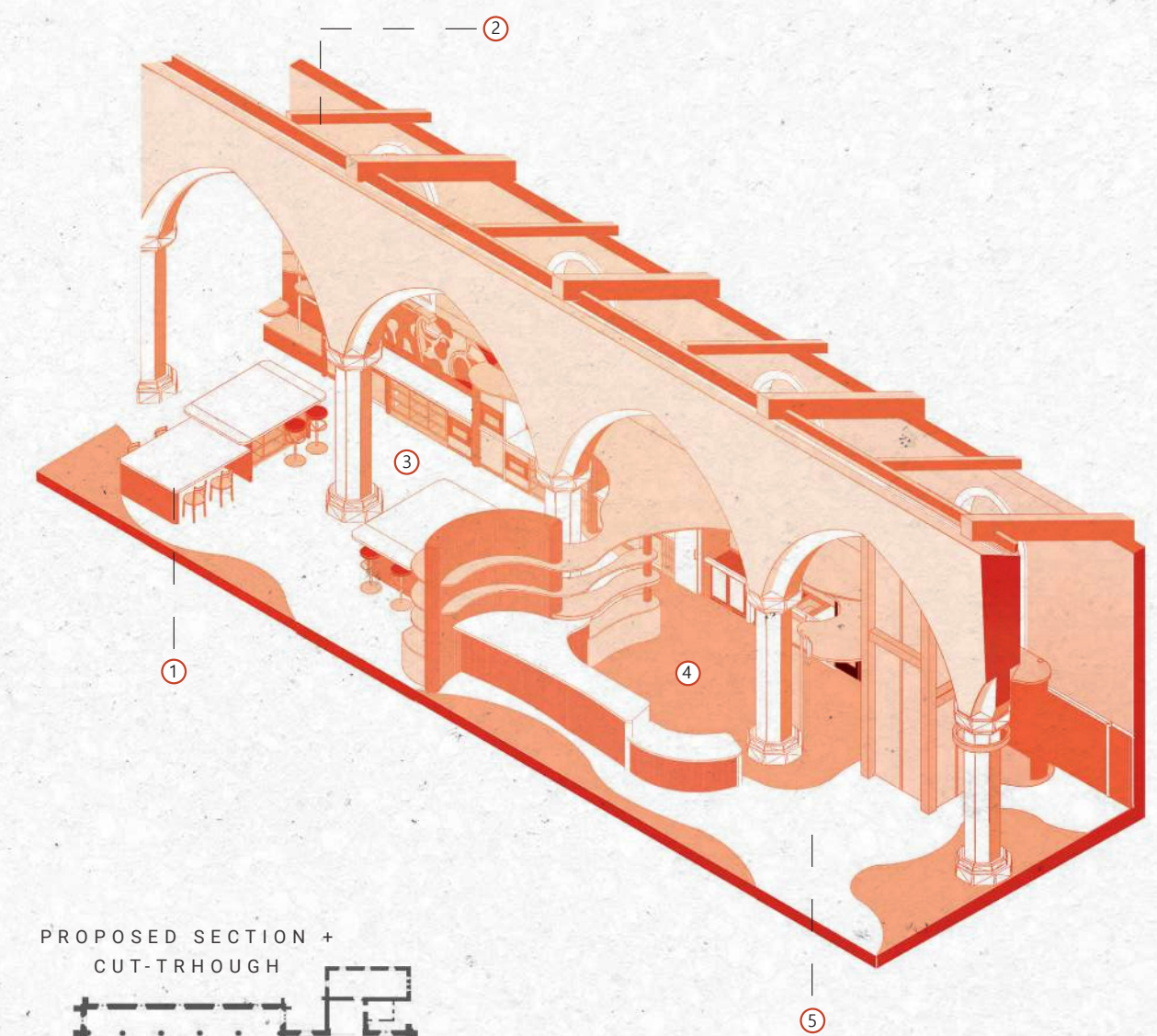




PERSPECTIVE RENDER- The Dining Room



SECTION 1:50



- LEGEND
- 1. DISABLED ACCESS WORKSHOP AREA
  - 2. CLOAK ROOM AND REST AREA
  - 3. UTILITY
  - 4. CAFE
  - 5. PASSENGER LIFT ACCESS

## Workshop + Cafe

The workshop area is a dynamic space designed to foster active learning and interaction with the broader community. As this community grows, so do the skills acquired through the workshops hosted here. The space is thoughtfully designed with practicality in mind, equipped with all necessary utilities and equipment to support both the café and kitchen workshops.

In this workshop kitchen, volunteers teach young adults how to cook with the produce they have grown on site, providing valuable hands-on experience. When workshops are not in session, the space doubles as additional seating for the café, accommodating more customers throughout the day. Ultimately supporting the Cultivating Futures initiative.



LONG SECTION 1:50

## DINING AND RECREATION

The Dining Room, located in the Choir and Sanctuary of the church, serves as the community's central hub, celebrating efforts from planting to cooking. Designed to evoke togetherness, playfulness, safety, and serenity, it balances practicality with respect for the church's historical Victorian tiles. The minimal design contrasts with the bustling Nave, creating a welcoming environment.

PERSPECTIVE RENDER- The Cooking Workshop





# THE MEZZANINE

The mezzanine is a key feature within Cultivating Futures, representing the project's potential and growth. It is meticulously designed to weave around the existing structure of the Garrison Church, leaving little impact on the historical site while preserving its rich heritage.

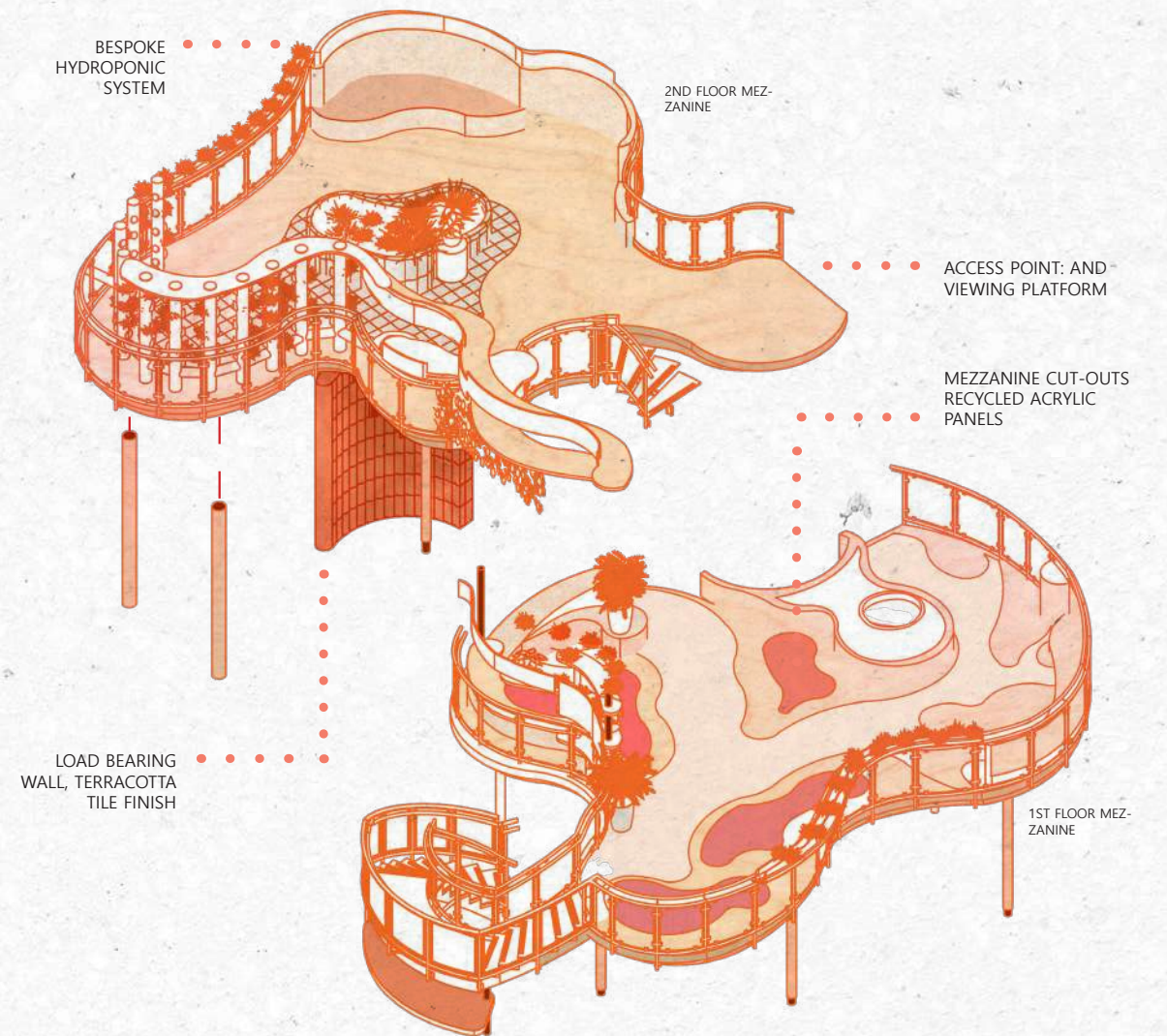
This thoughtfully designed mezzanine leads visitors through twisting and turning pathways, creating a meaningful journey that sparks the learners' curiosity at each turn. Visitors to the mezzanine engage in passive learning through observation, supporting the project's hands-on workshops.



PERSPECTIVE RENDER - Second Floor Mezzanine



PERSPECTIVE RENDER- First Floor Mezzanine



## FINELY CRAFTED MODEL

This model encapsulates the essence of the concepts explored throughout "Cultivating Futures", from roots to layers. A pivotal design element is the mezzanine floor, which features glass cut-outs that illuminate the space below, casting vibrant, coloured light and creating dynamic impressions on the path beneath. This illuminated mezzanine represents a transformative moment in the project, shifting from initially organic and sculptural ideas symbolising growth enveloping the site to a design that balances practicality with a sense of wonder, not only capturing the beauty of the design intervention, but weaving and connecting these experiences with Garrison Church.

