

# Epiphyte

## Introduction

An epiphyte is an organism that grows on the surface of a plant and derives its moisture and nutrients from the air, rain or from debris accumulating around it.

Similarly to an epiphyte, my design will "grow" a new interior on the inner surface of the original shell structure of Knight and Lee. My design is aiming to create a new biophilic discovery centre on Palmerston Roads in Portsmouth. I want to use my design to raise awareness of the natural world and its diverse ecologies. I want to re-engage young people with books and reading, while also offering a space for diverse multi-generational communities to learn and socialise. It is a space of activism, that promotes respect and encourages changes in behaviour. It will offer a space that is embodied in a world that is increasingly digital.

## Brief Collage



My concept is to revive our libraries, starting with a new discovery centre in Portsmouth. Knight and Lee is a perfectly open space to bring the concept to life and raise awareness of the natural world and its diverse ecologies. Using Biophilic Design and the benefits it has on human life this Bio-Discovery Centre will be a magical place that can re-engage people with books and reading again.

## Site Plan

### Legend

Knight and Lee

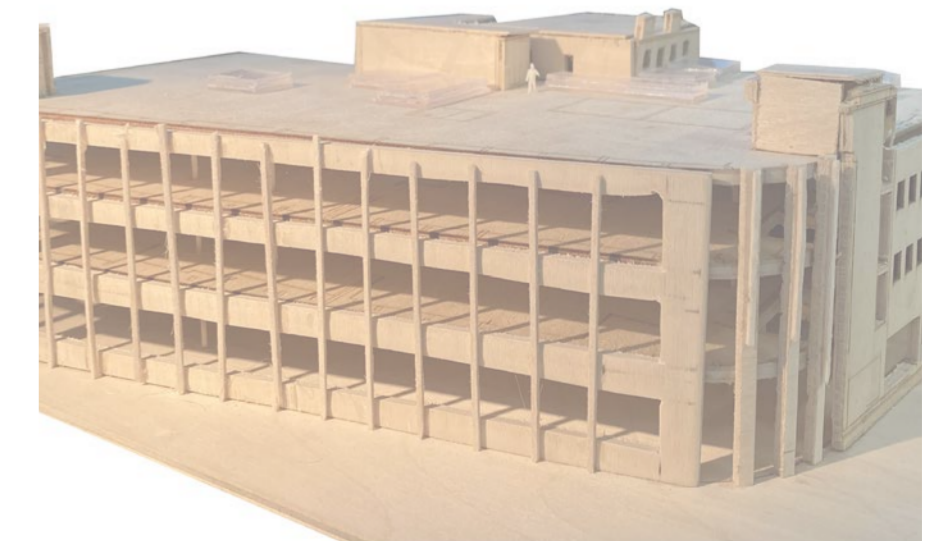
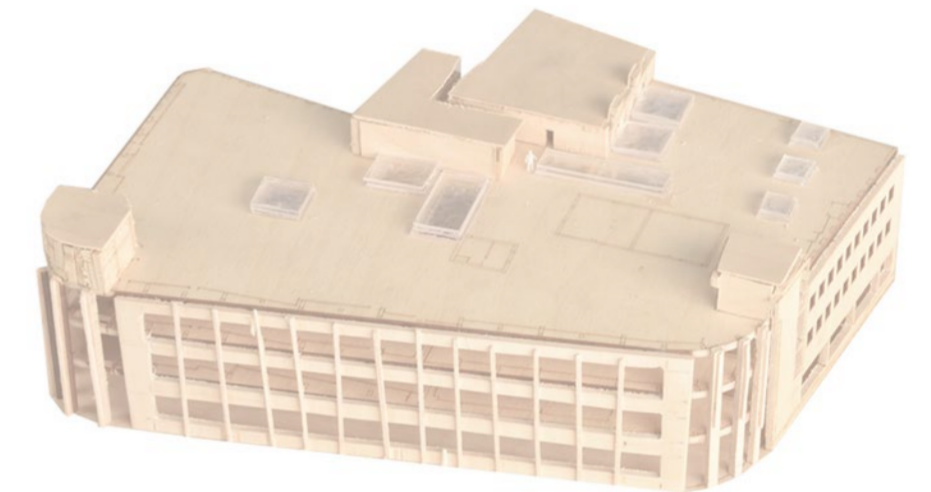
Debenhams

Commercial Buildings

Residential Buildings

Bus Stop

Car Park

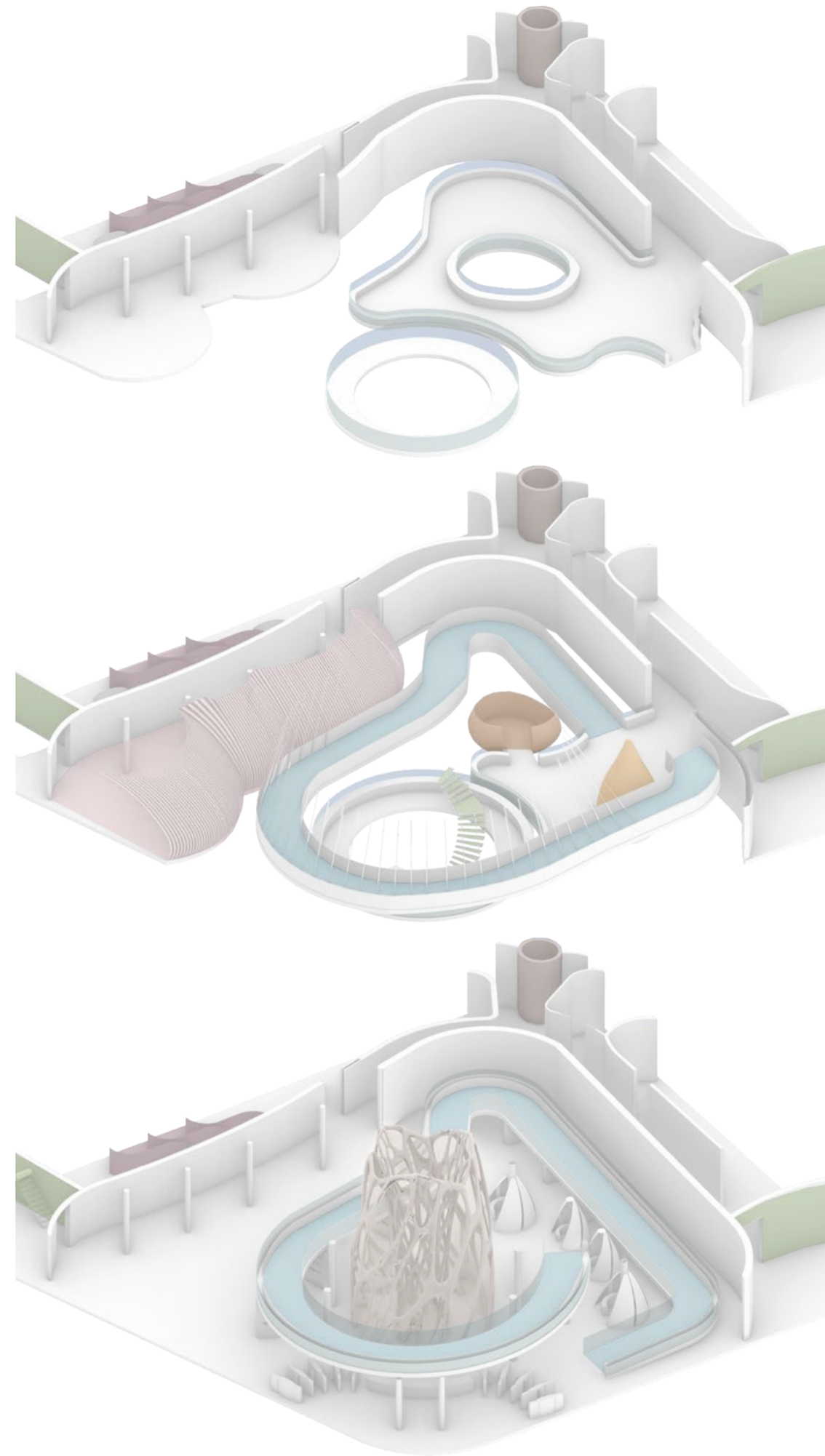


# Epiphyte

## Design Development

The materials are organic and sustainable. The most widely utilised material within the design is mycelium, both as a structural and surface material. It is highly versatile. I have used it to create the central core structure, bookshelves, lighting and leather for the upholstery. Biophilic design led the way for most of my materials, be it through direct experience of nature, indirect or experience of space and place. This can be seen through the natural textures, colours and designs, more so with the biomaterials used like mycelium.

Mycelium Core Collage

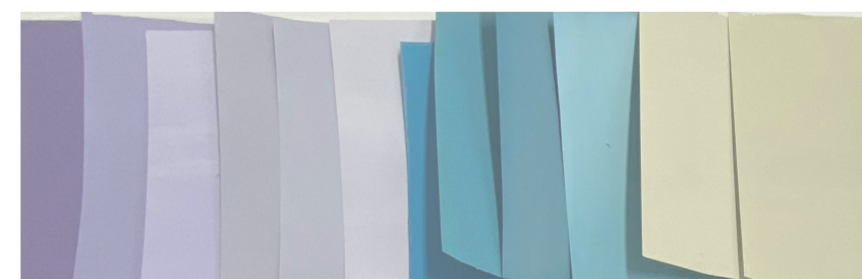
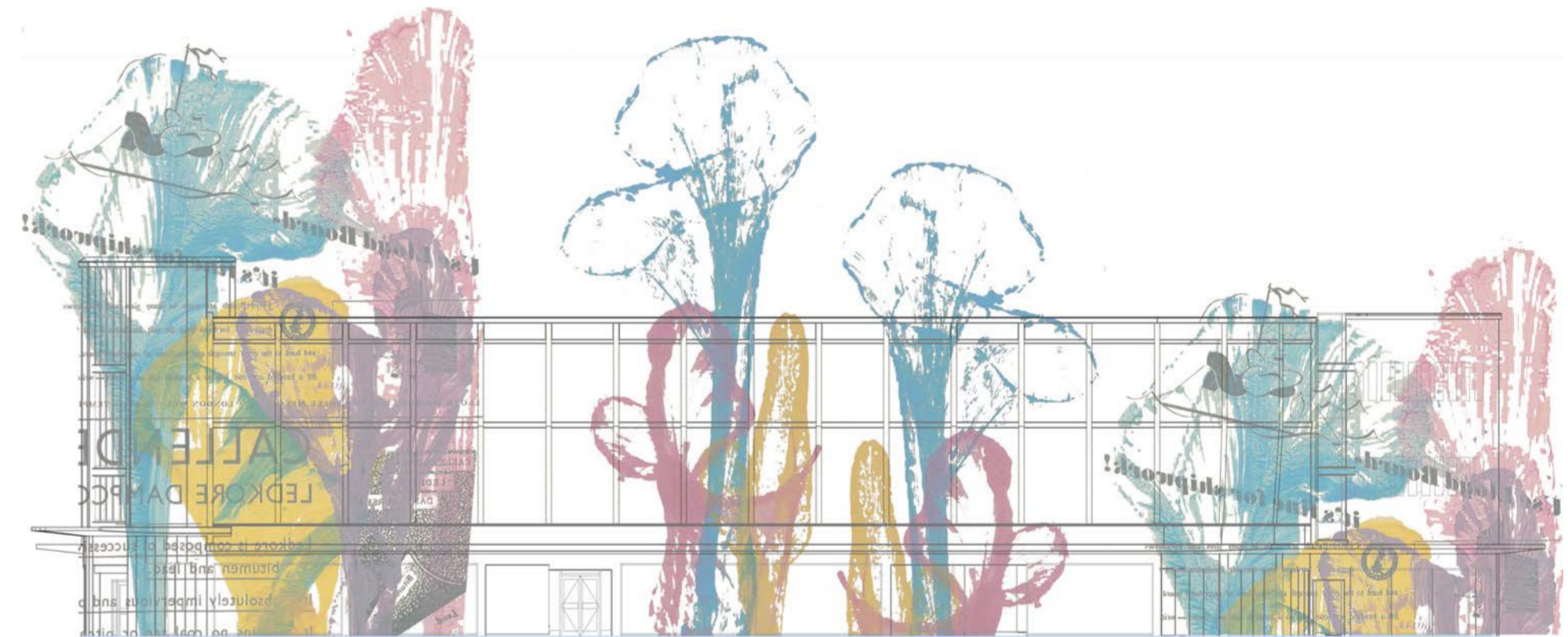


- |   |                |   |                  |
|---|----------------|---|------------------|
|  | - Lift         |  | - Ramp           |
|  | - Stairs       |  | - Office Space   |
|  | - The Nest     |  | - Study "Sh"room |
|  | - Sensory Seed |  | - Core           |

## Concept Modelling

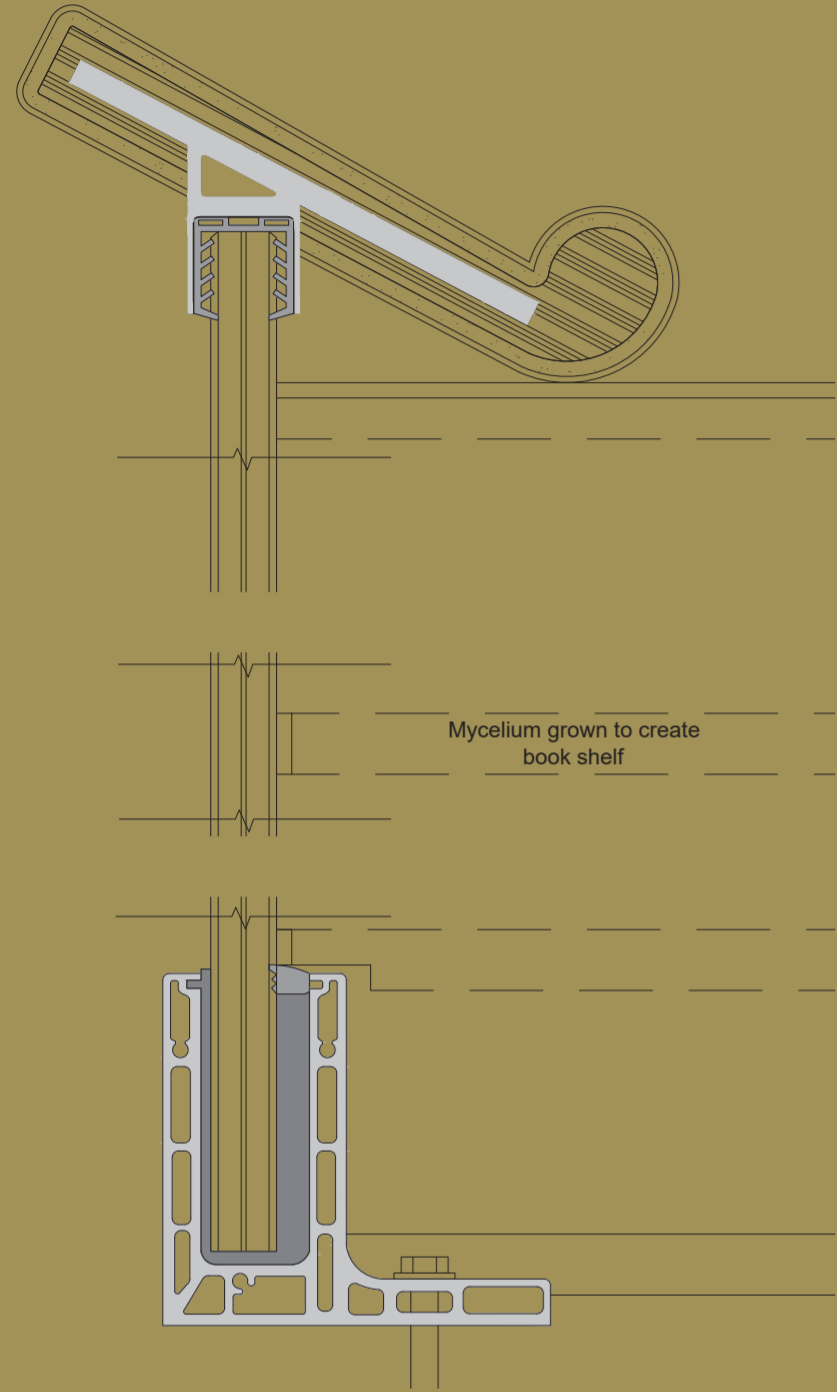


My main inspiration and precedent was nature itself. I looked at different plants, coral and fungi primarily, each unique. When developing the colour palette I found it was important to go beyond the colours people think make up nature. I tried to think of a botanical garden. The pops of purple, pink, yellow and blue that the flowers bring, make the scenery



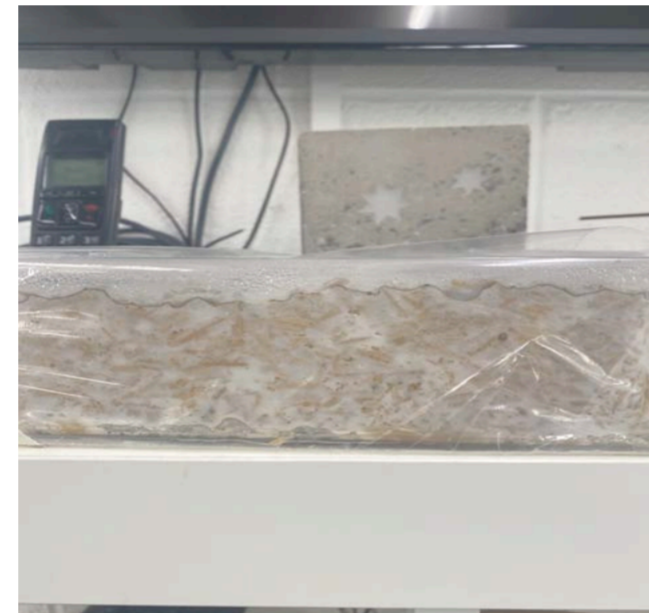
# Epiphyte

## Material Exploration

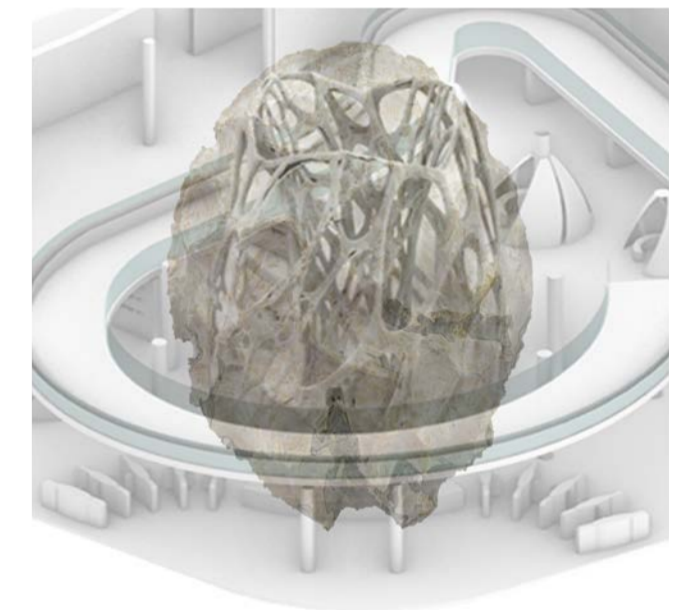
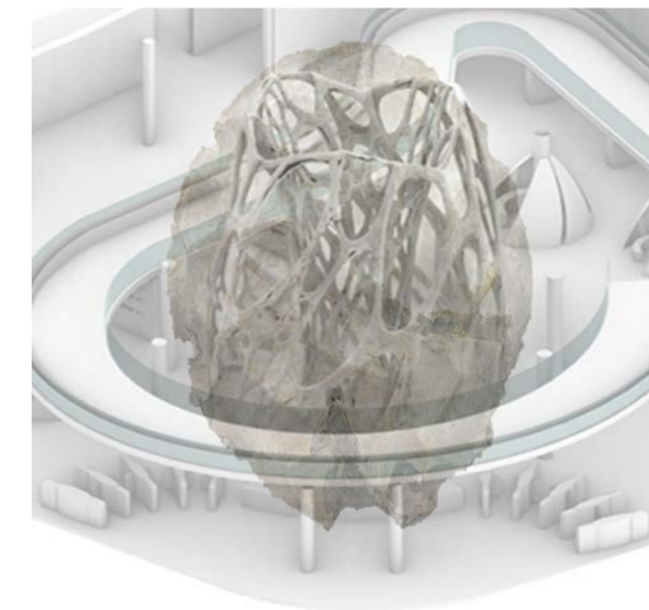
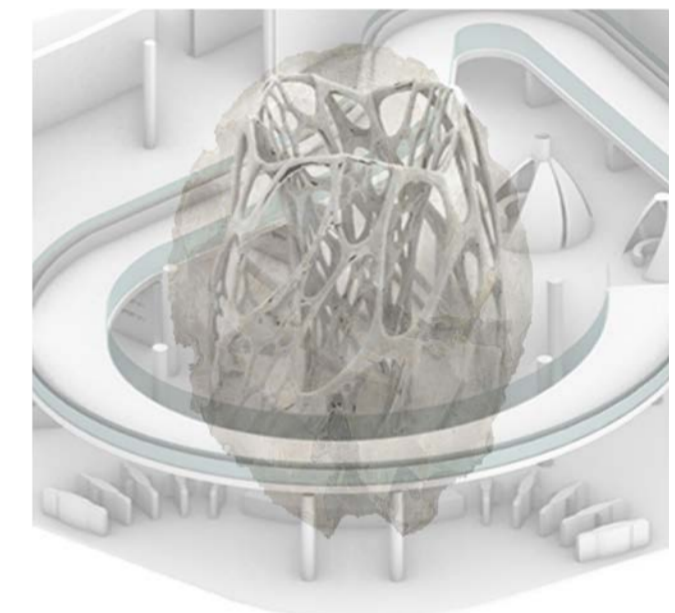
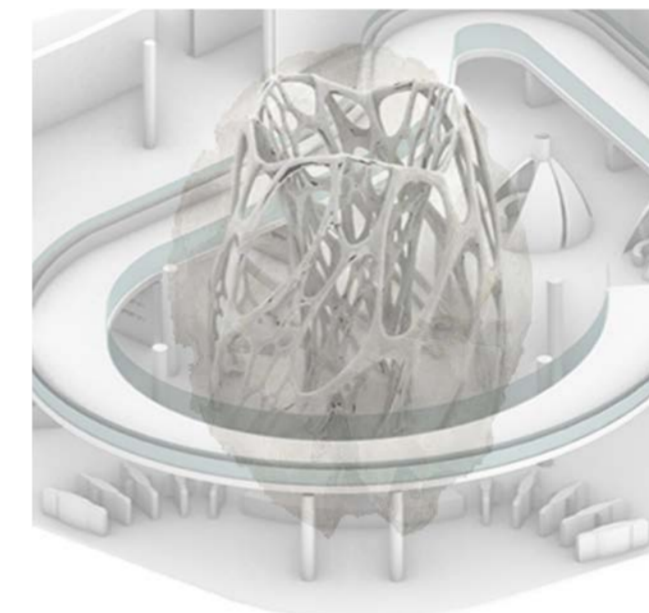
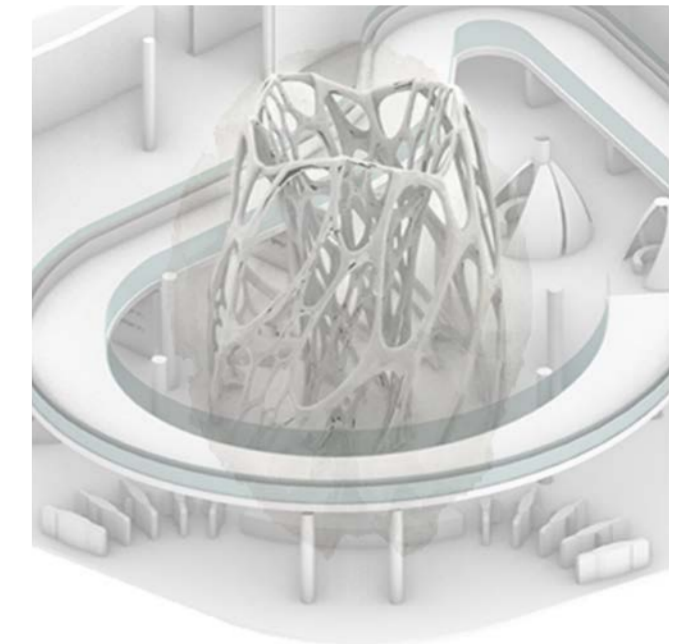
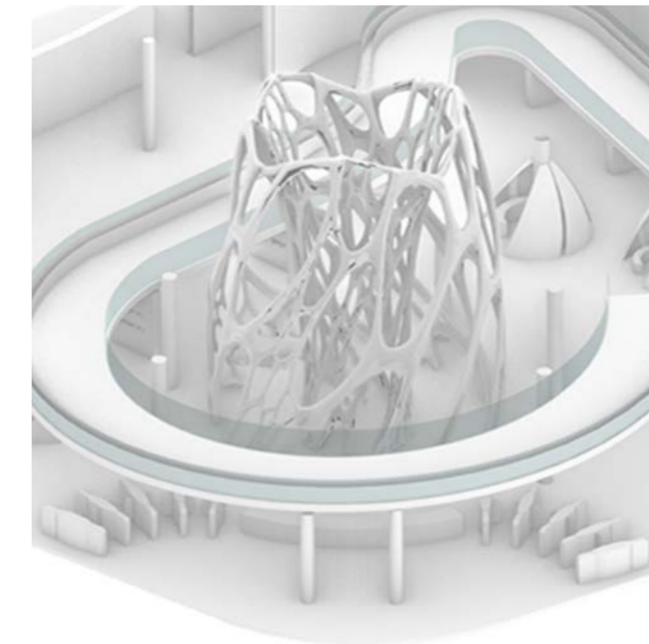


Mycelium is part of the fungi kingdom and is the network of threads, from which mushrooms grow. As fungi are neither animal nor plant, these versatile organisms are a critical part of ecosystems and the natural processes of decay and renewal. I was set on making my own mycelium brick. I mixed straw, flour and mycelium together and packed it into my volume tightly. Unlike humans, who take in the food source before breaking it down, mycelium works the other way around. Hyphae can be used to eliminate contaminants that might otherwise not be biodegradable. The first bit of growth started on day 3, but it wasn't until day 8 till the mycelium took over all the straw. The last day of growth, I let it dry out for a couple of hours before baking it.

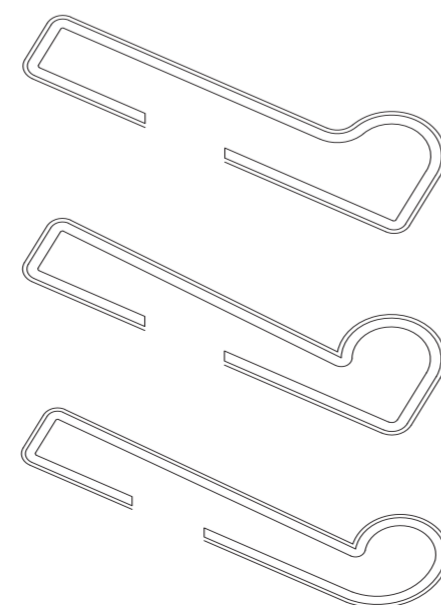
Mycelium Growth Process



Mycelium Core Structure



Handrail Development



Mycelium Leather



I looked at mycelium leather for my furniture and handrails. It has been used to create clothes and accessories, making it a perfect for the upholstery. Mycelium leather is made with a process called the rolling aerial mycelium method.

Adjacent is a QR code to my blog, where I showed the process of making a mycelium brick and experimenting with different ideas.



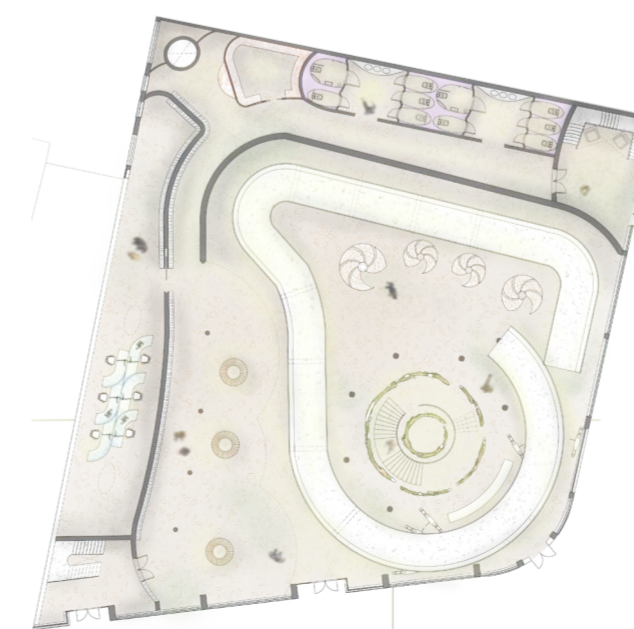
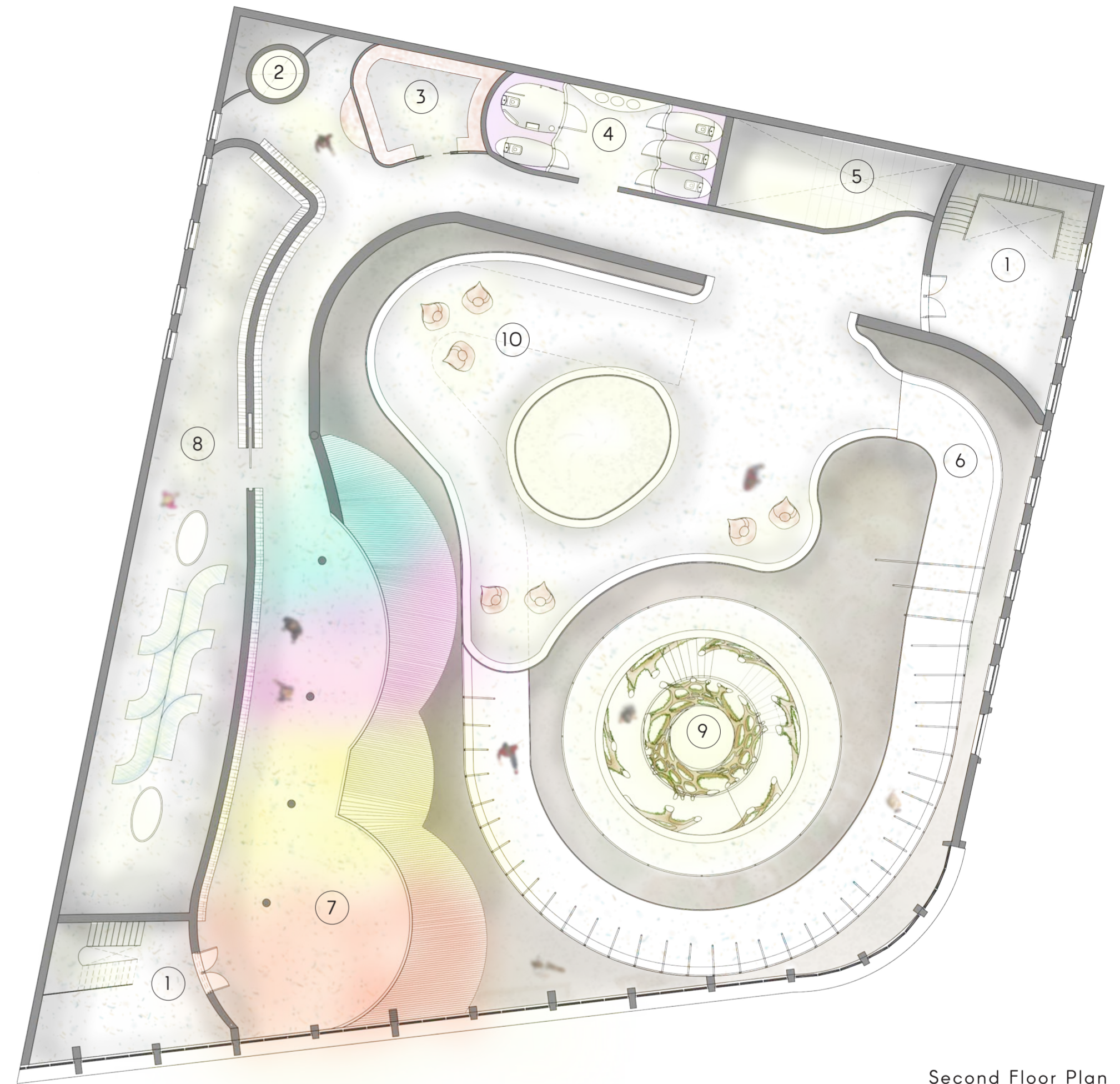
# Epiphyte

## Plans and Serial Views

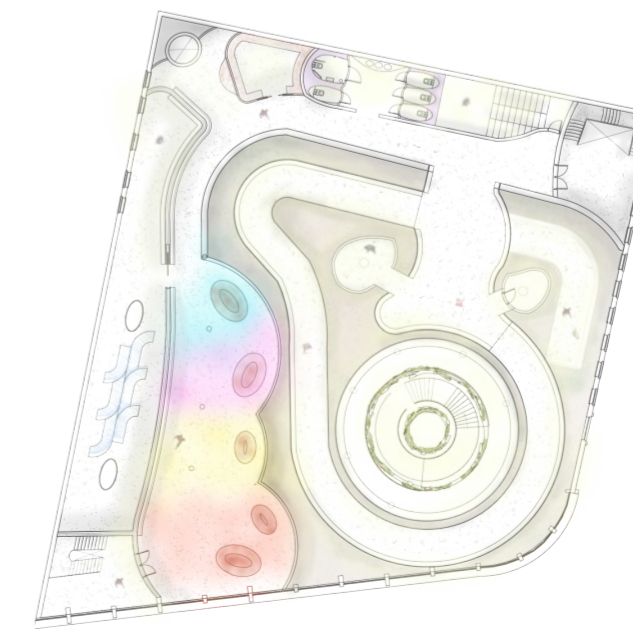


### LEGEND

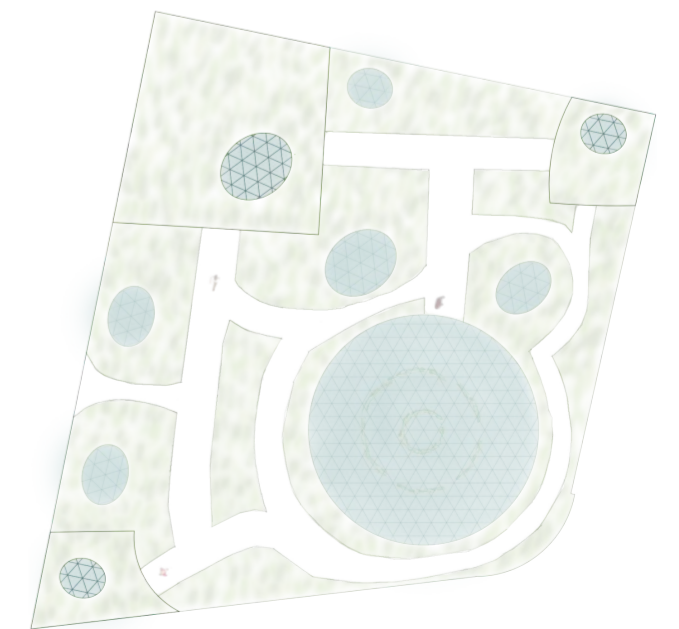
- ① - Stairwells
- ② - Lift
- ③ - Storage
- ④ - WCs
- ⑤ - Lecture hall
- ⑥ - Ramp
- ⑦ - Study "shh" room
- ⑧ - Office Spaces
- ⑨ - Core
- ⑩ - Open Reading Space



Ground Floor Plan



First Floor Plan



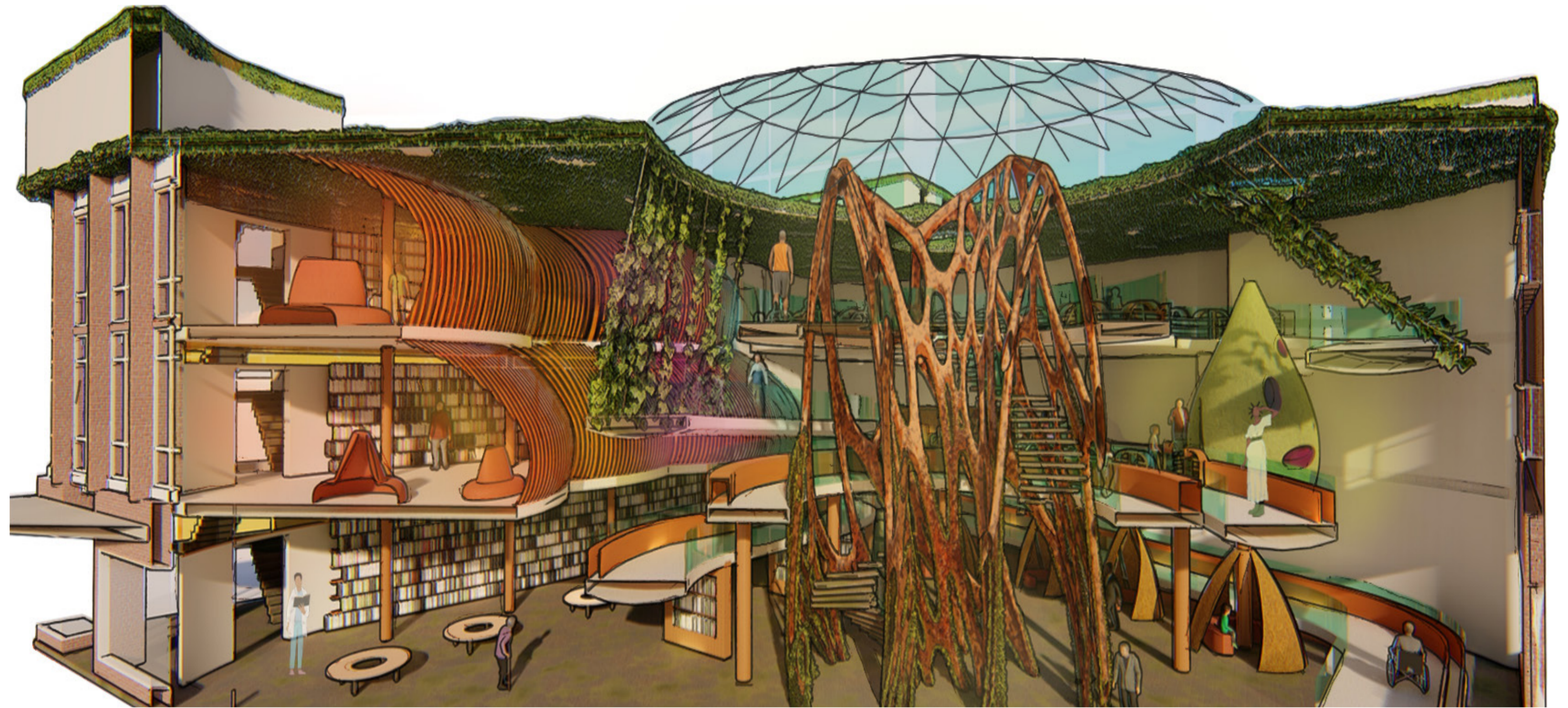
Roof Plan

# Epiphyte

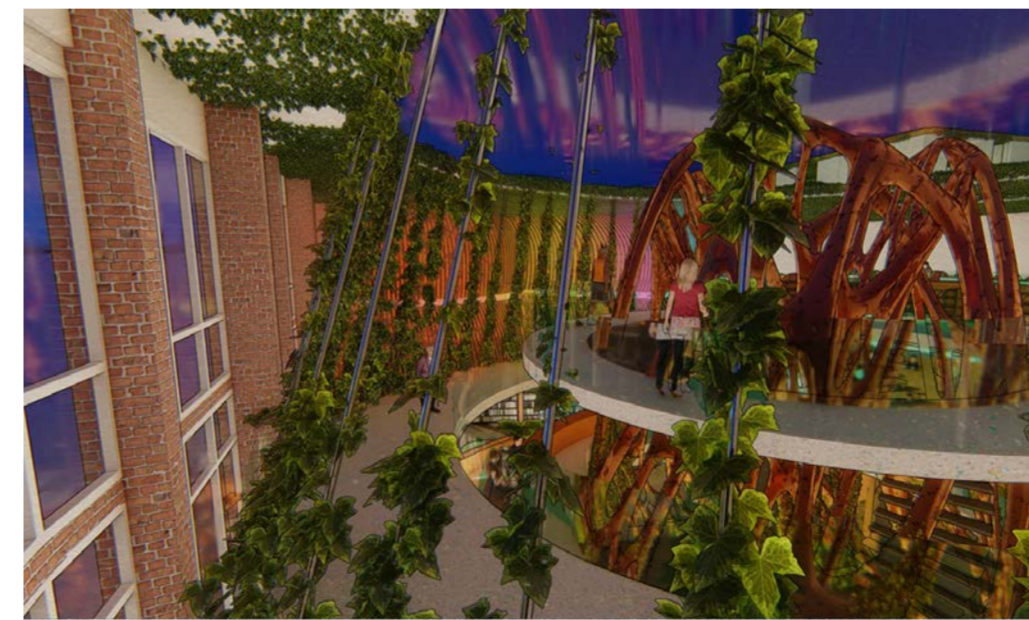
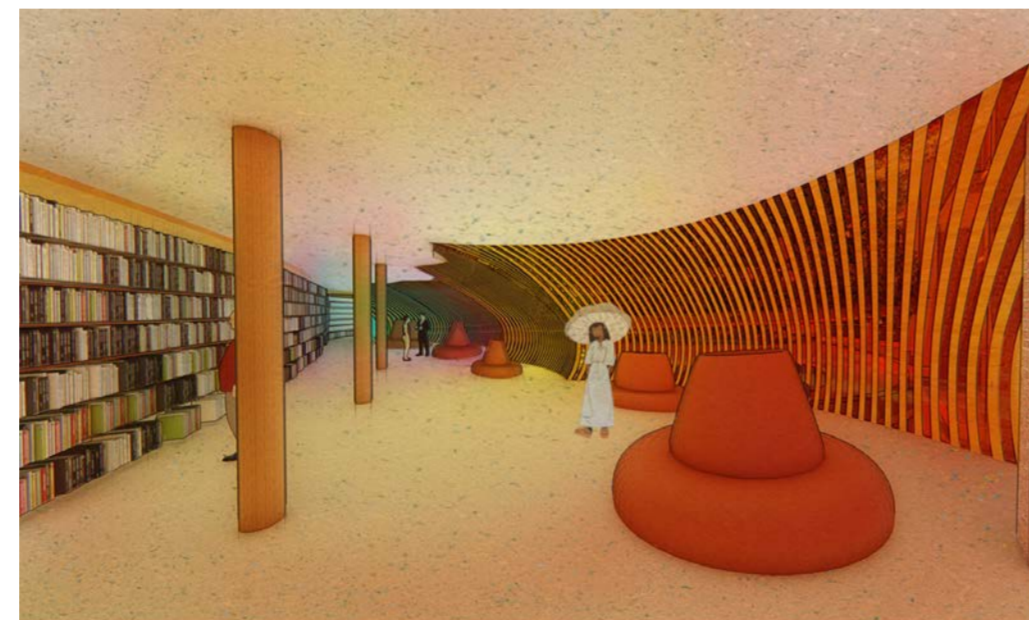
## Sectional Perspective

The Epiphyte Discovery Centre is an educational library focusing on helping people connect to learning and reading. The building's design aligns with a biophilic ethos to benefit the quality of the user's life and interaction with education. My finely crafted drawing shows the open space and centre of my design. The ramp flows through the space taking the users to the second floor while circling the core structure. This creates central circulation and ventilation. The main atrium shown allows fresh air to come in and lets natural light reach all building areas.

Brief Collage



Serial Views



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The first bit of growth mushroom.