

BIOMATERIAL HUB: A SENSORY EDUCATIONAL ENVIRONMENT

EXPLORING BIOMATERIAL, CREATING, AND CONNECTING



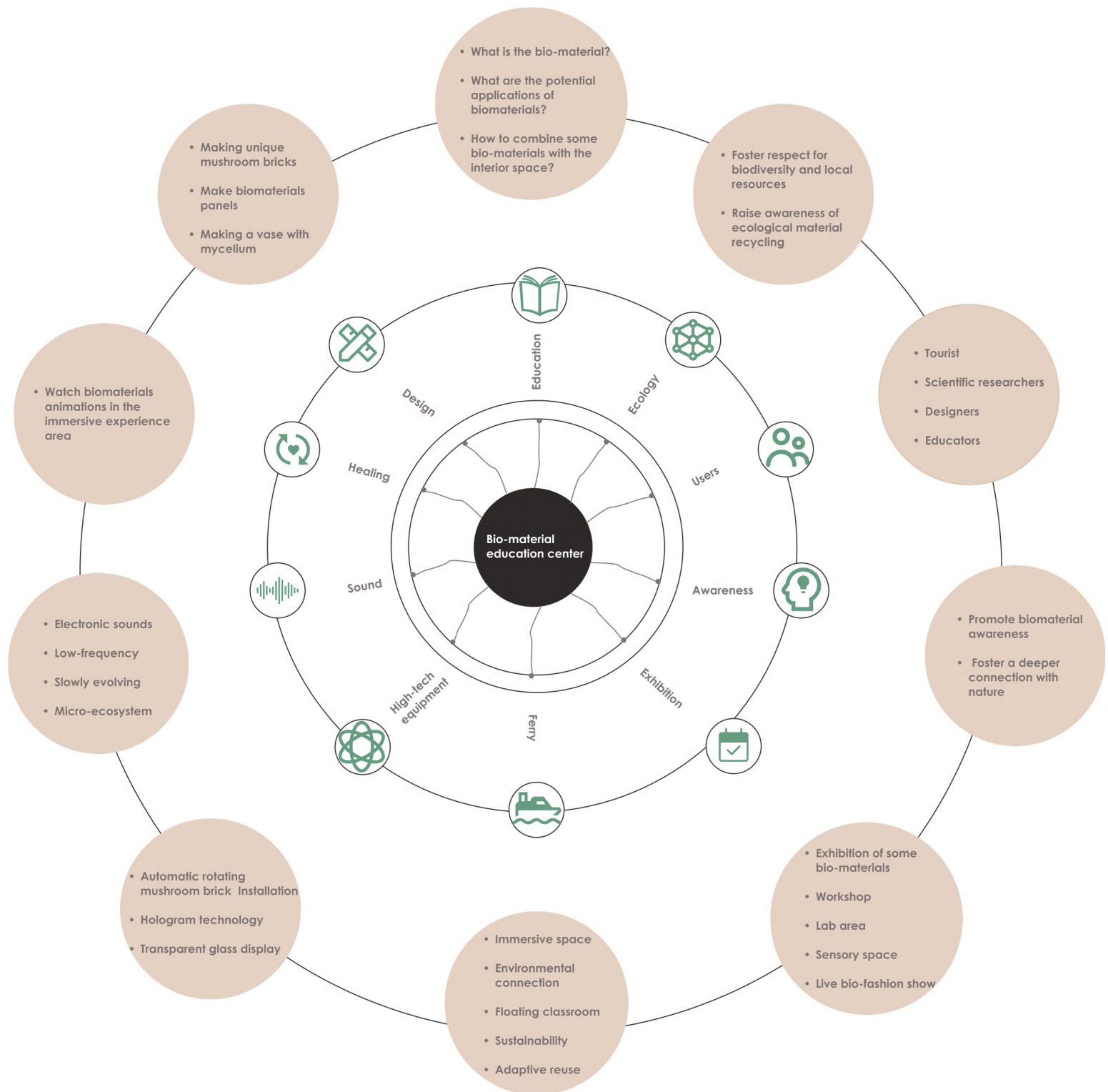
My concept is this floating, autonomous biomaterials education centre addresses the climate emergency by promoting sustainable innovation and collective action. My site is called Renfrew Ferry and is docked at Clyde Riverside in Glasgow. The ferry travels between Glasgow and nearby cities every six months as a mobile climate lab—sharing knowledge, gathering insights, and returning with new ideas. Its focus on biomaterials fosters inclusive, community-led responses to the climate crisis.

Addressing the Climate Emergency, this project promotes climate action using bio-materials, including mycelium, moss, and hemp—sustainable biomaterials that grow locally in Scotland. These low-impact resources offer regenerative alternatives to conventional materials, supporting carbon reduction and community-led ecological design.

The design method offers an immersive, multi-sensory experience that explores low-impact design through local biomaterials. Visitors can craft mushroom brick panels, participate in hands-on workshops, and attend biomaterials fashion performances. The Biomaterials Laboratory Tour encourages reflection on sustainability and ecological responsibility.



The center of the automatic mushroom brick installations

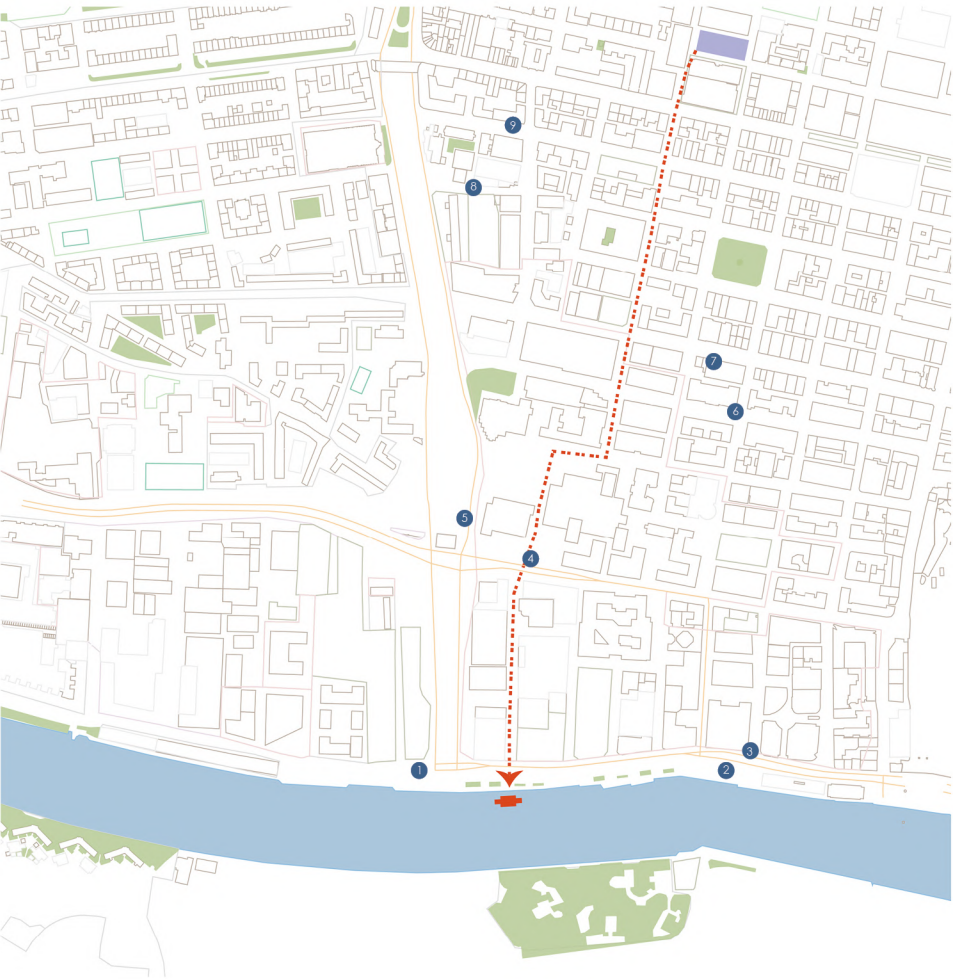


Biomaterials Workshop area

SITE

Renfrew Ferry

25 Anderston Quay, Glasgow G3 8BX



Nearby transportation

- ① Cheapside Street bus station : X19, X4, X7, 500
- ② James Watt Street bus station
- ③ York Street bus station
- ④ Marriott Hotel bus station
- ⑤ Anderston train station
- ⑥ Blythswood Street bus station
- ⑦ Douglas Street bus station
- ⑧ Charing Cross train station
- ⑨ Bath Street station

GSA Reid Building

19 minutes

Ferry

● Bus Stops area

■ Renfrew ferry



The interior of the ferry



The exterior of the ferry

USERS



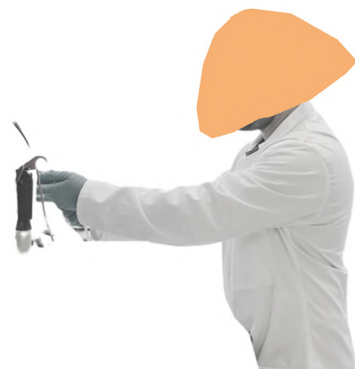
Tourist



Retired people



Community Workers



Ecological materials researcher



Design student

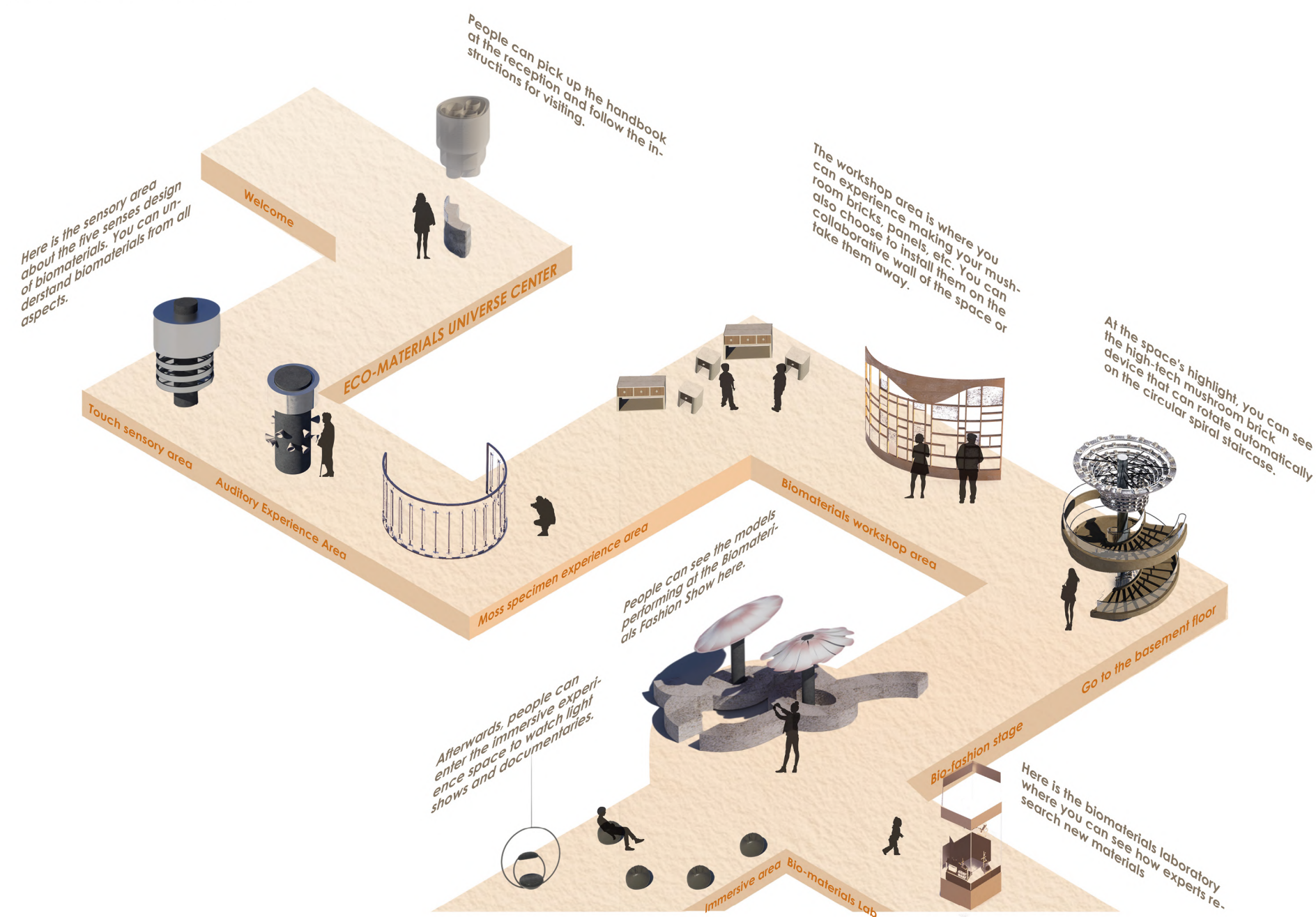


Educator

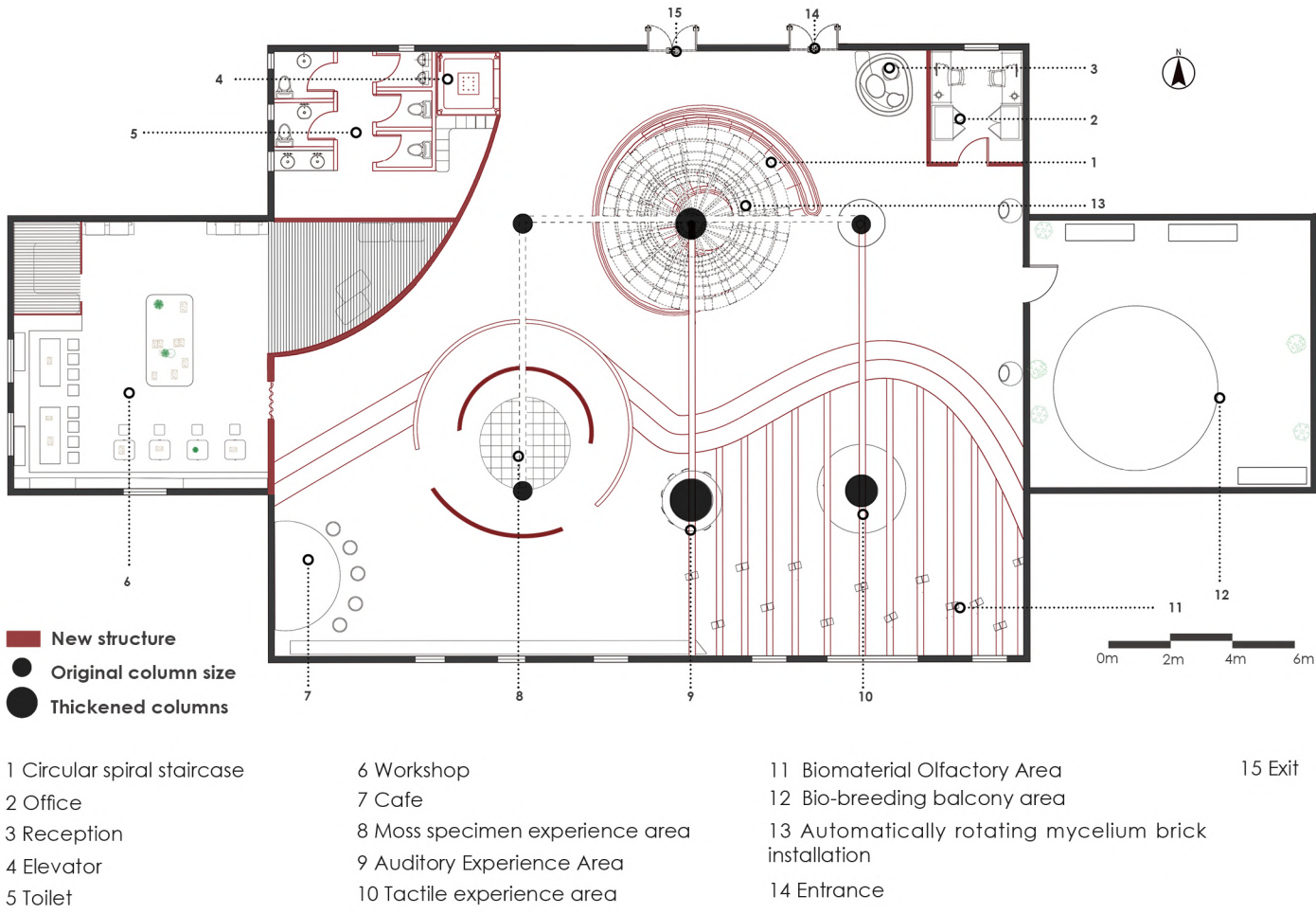
CONCEPT COLLAGE



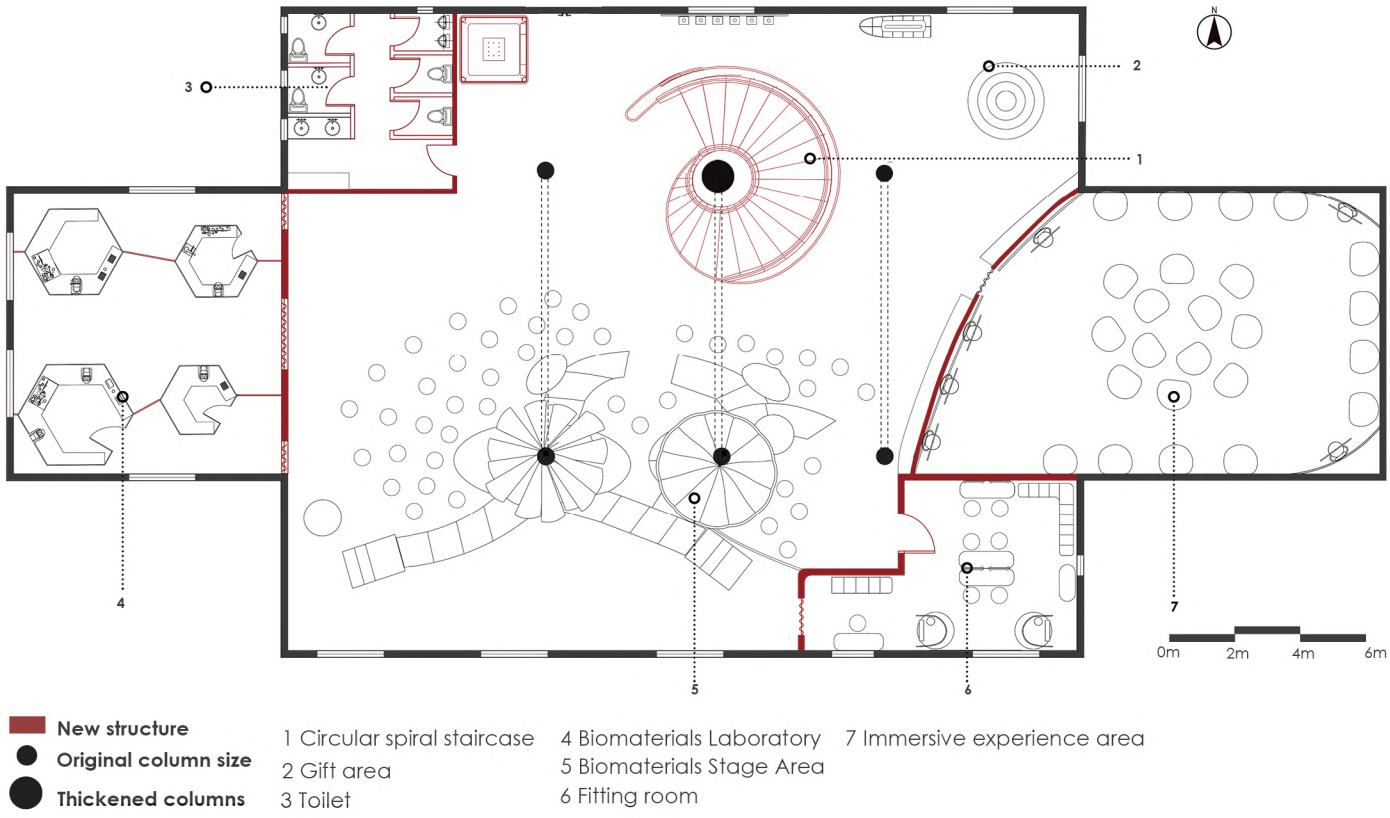
USER'S JOURNEY



GROUND FLOOR PLAN



BASEMENT FLOOR PLAN



FLEXIBLE STAGE



Mode 01
Separate mycelium modular stages
The stage is split for lectures or temporary exhibitions



Mode 02
The direction in which the stage can be split and spliced
Edge of stage connection
The stage is combined to meet the needs of biological fashion scenes or symposiums

FACILITY

This place has two types of visitors: **temporary visitors** and **member visitors**. The difference is that in some spaces, the time that temporary visitors can stay is limited.

Open hours
Monday- Friday 09:00 - 21:00
Saturday 10:00 - 17:00
Sunday Closed

Temporary Visitors
Temporary Adult: £15
Student: £7
Child ticket (5-16 years old): £6

Membership
Individual annual: £60/year
Student annual: £40/year
Family annual: £80/year

Temporary Visitors

- A Workshop area (Half an hour)
- B Bio-breeding balcony area (5 minutes)
- C Biological stage performance (15 minutes)
- D Biomaterials Laboratory (10 minutes)

Member Visitors

- A Workshop area (one hour)
- B Bio-breeding balcony area (10 minutes)
- C Biological stage performance (30 minutes)
- D Biomaterials Laboratory (20 minutes)
- E: You can get a trial pass every six months to join the ship's biomaterial tour to other cities.

BASEMENT FLOOR



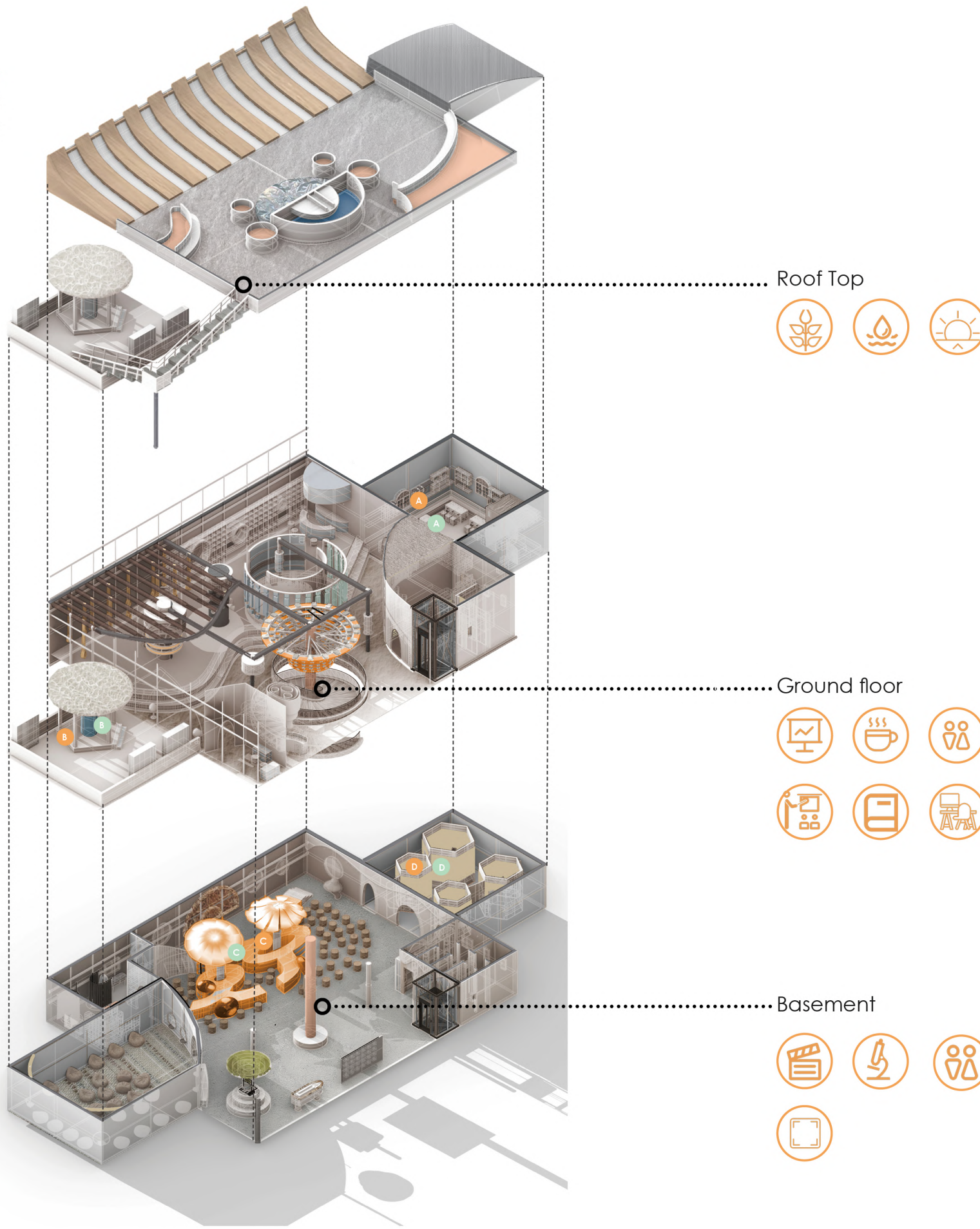
Biomaterials fashion show stage

Welcome to the Mycelium Biomaternal Stage, hosting fashion shows every 15 minutes from 11 a.m. daily. With seating for 40, guests can sit or stand to enjoy the innovative designs. The mycelium-built modular stage easily adapts to different events.



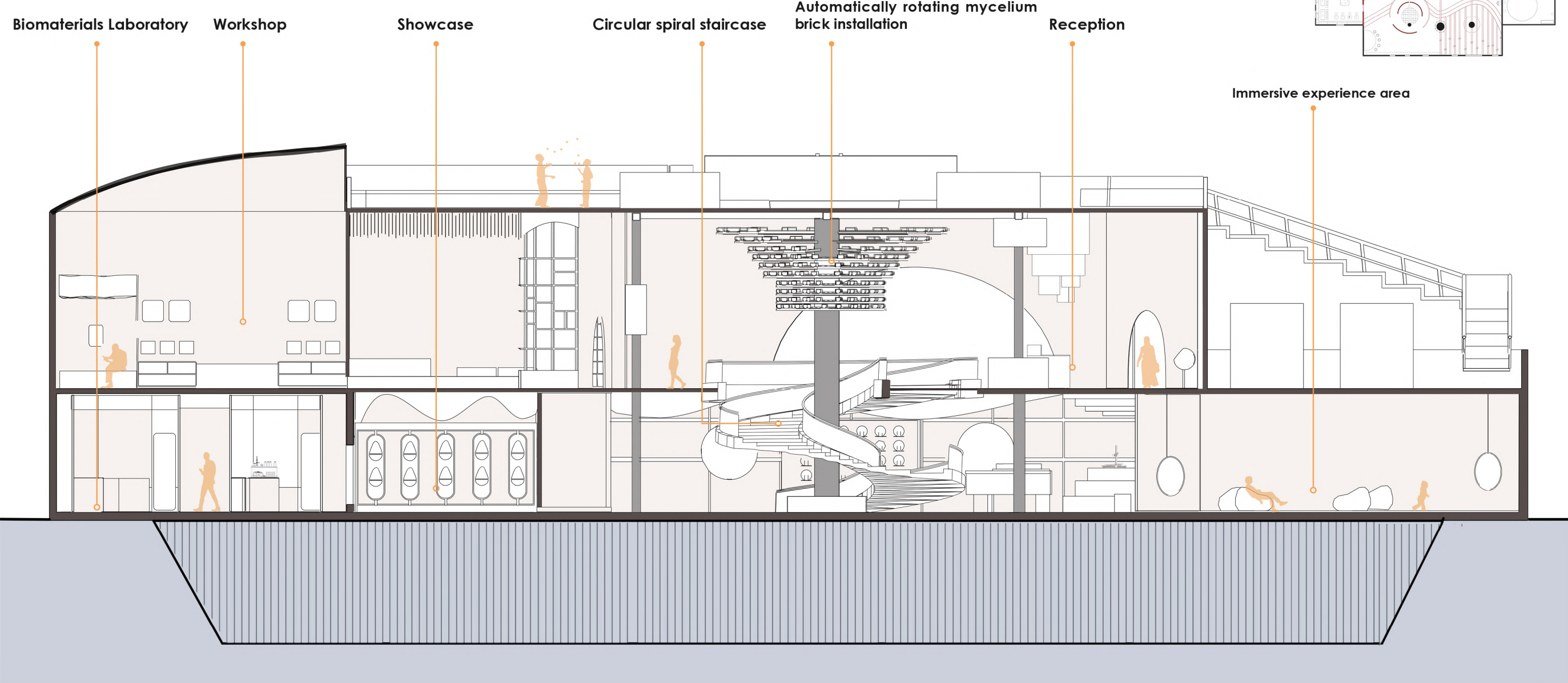
Immersive sensory area

The immersive space showcases the visual beauty of biomaterials, enhanced by ambient sounds like forest streams and birdsong. Every 30 seconds, the environment shifts to reveal over 40 species of fungi, mosses, and related life forms.



SECTION PLAN

AA SECTION 1:100



GROUND FLOOR



Tactile Experience Area



Auditory Experience Area



Moss Specimen Area



Workshop



1

After the bio-materials fashion show, you can also go to the immersive experience space to watch some light exhibitions and film screenings about biomaterials.

2

After walking down the circular stairs from the ground floor, you will see the stage for the show using mycelium biomaterials. You will see the latest bio-dresses designed by many fashion designers.

3

The space on the far right is the biomaterial research laboratory. You will see how professionals conduct research and operations, making the experience more interactive.

BIOMATERIAL HUB: A SENSORY EDUCATIONAL ENVIRONMENT

In the concluding segment, I displayed an animation of the biomaterial narrative education space and a 1:50 scale physical model, presented in a storybook-style format to enhance spatial storytelling. Additionally, I experimented with recycled dried mushrooms to explore their material potential.

ANIMATION



This animation illustrates an immersive biomaterials education center where people engage in sensory experiences by crafting mycelium panels and performing on a biological stage.

Please scan the QR code

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

EXPERIMENTAL PROTOTYPES



01 Prepare dried mushrooms



02 Melt the glass wax



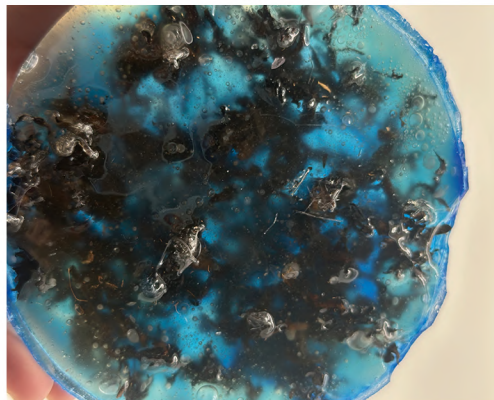
03 Mix glass wax and dried mushrooms



04 Shape the outcome



Melt the glass wax



Shape the outcome

STORYBOARDS



A



B



C



D



E



F