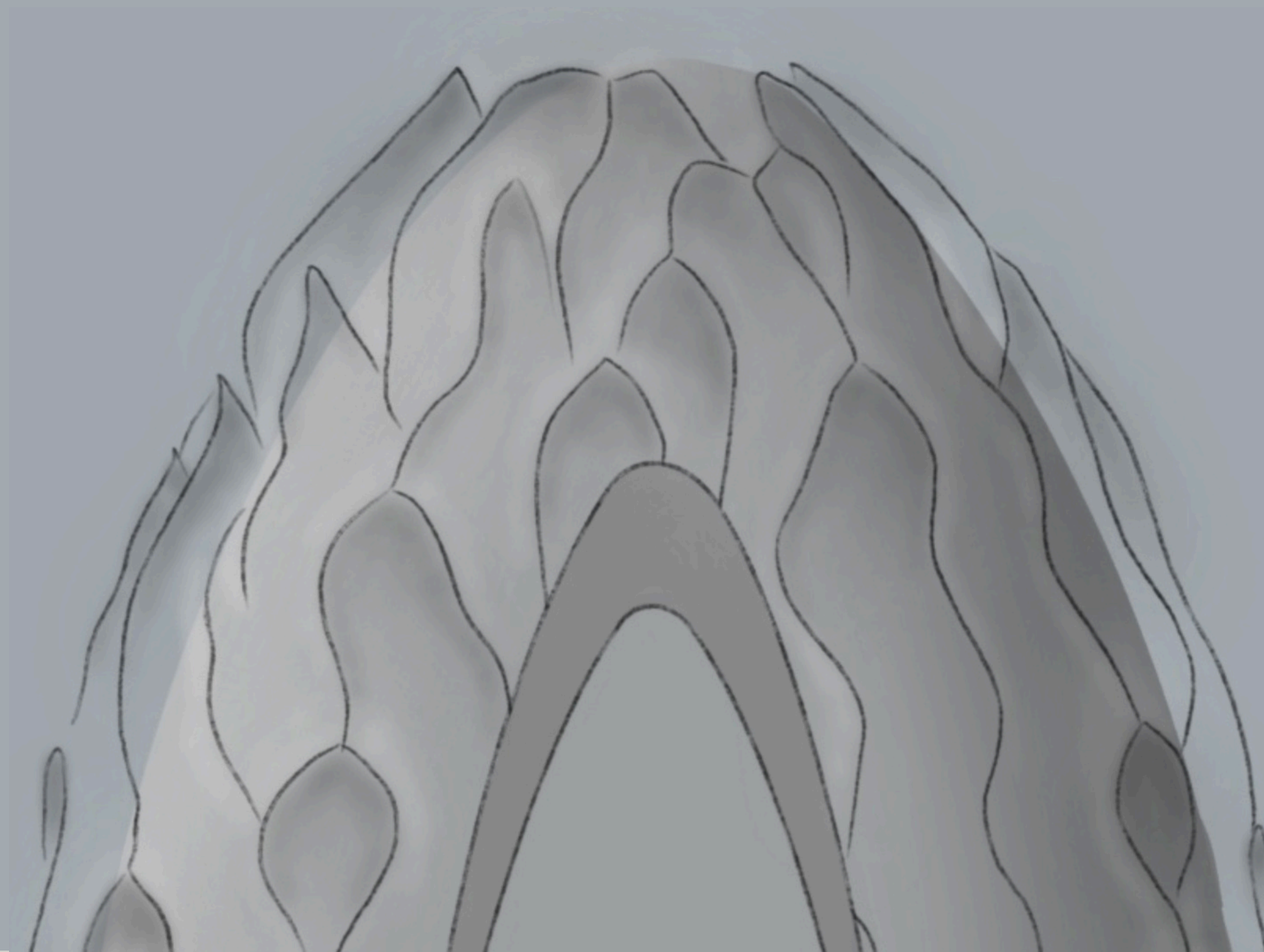




# Bloem



# Problem Statement

About 1 out of 8 people suffer from mental health issues like burnout or depression.



\* World Health Organization (WHO)

## Existing solutions are either...



**Simple Solutions**  
Lack experience or  
privacy



**High-end wellness  
pods**  
Expensive and bulky



# SWOT Analysis

**S**

- Unique combination of soundproofing and relaxation
- Flexible experience

**W**

- High material and construction costs
- Maintenance and hygiene

**O**

- Growing awareness of employee wellbeing
- Interior design and furniture suppliers seek for new concepts

**T**

- Competition from existing pods or spaces
- Customer price sensitivity

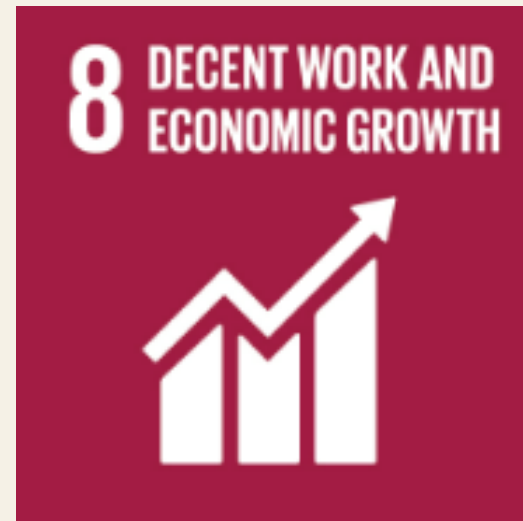
# Sustainability of Bloem



**SDG 3:**  
Supports stress reduction



**SDG 8:**  
Improves productivity through rest spaces



**SDG 11:**  
Creates healthier indoor environments



**SDG 12:**  
Uses recyclable and biodegradable materials



**SDG 13:**  
Low-carbon material selection



**Cork**  
Recyclable, biodegradable, excellent insulation



**Hemp**  
Breathable, moisture-regulating, insulation



**Wood**  
Renewable, stores carbon

# Ethics

## Engineering ethics

- Following the IEEE Code of Ethics: safety, honesty, and responsibility
- Ensuring proper ventilation in the capsule
- Designing for safe and easy user exit at all times
- Using safe materials and low-voltage systems
- Being transparent about what the product can and cannot do

## Marketing Ethics

- We promote relaxation and well-being — not a medical solution

## Environmental Ethics

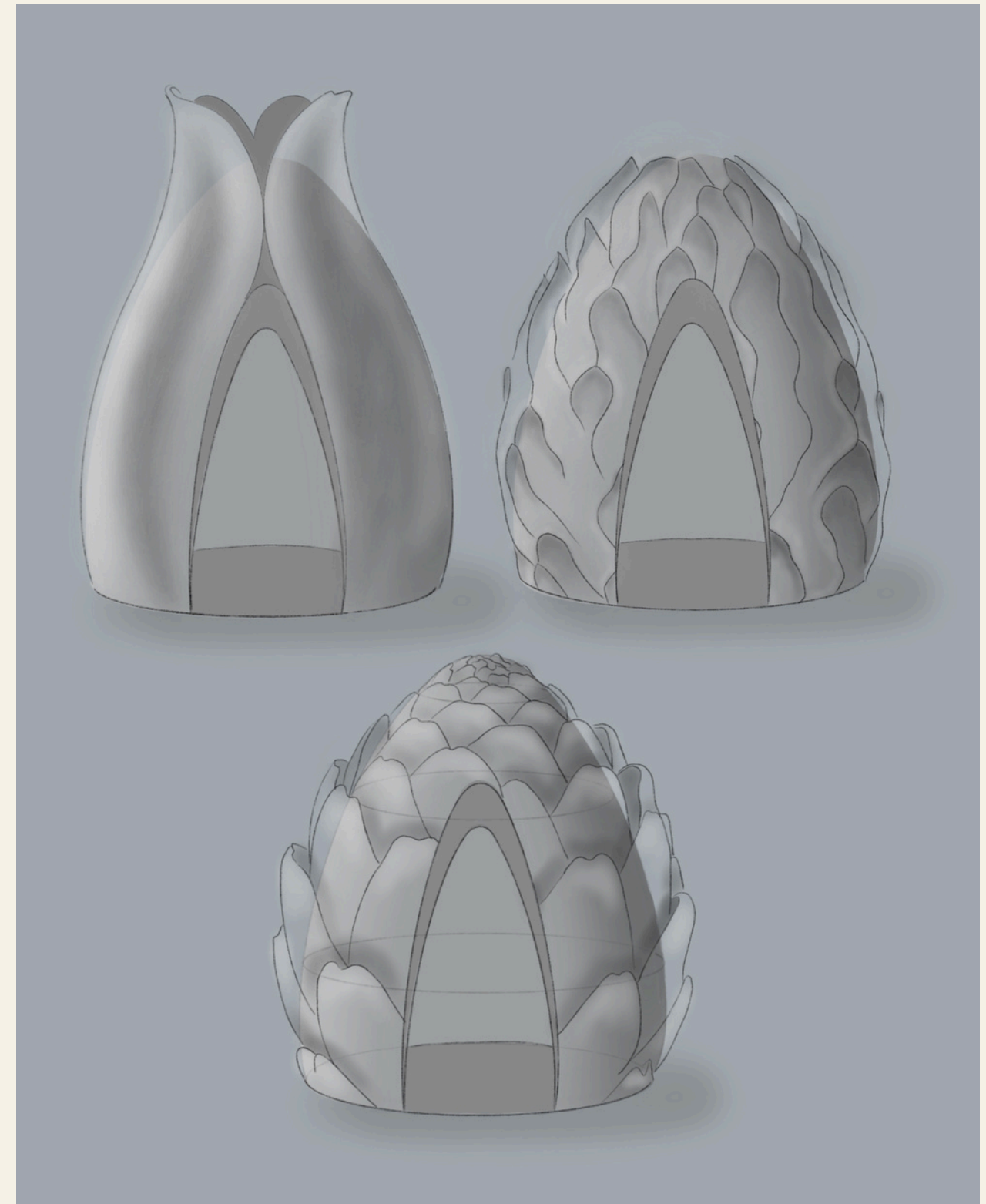
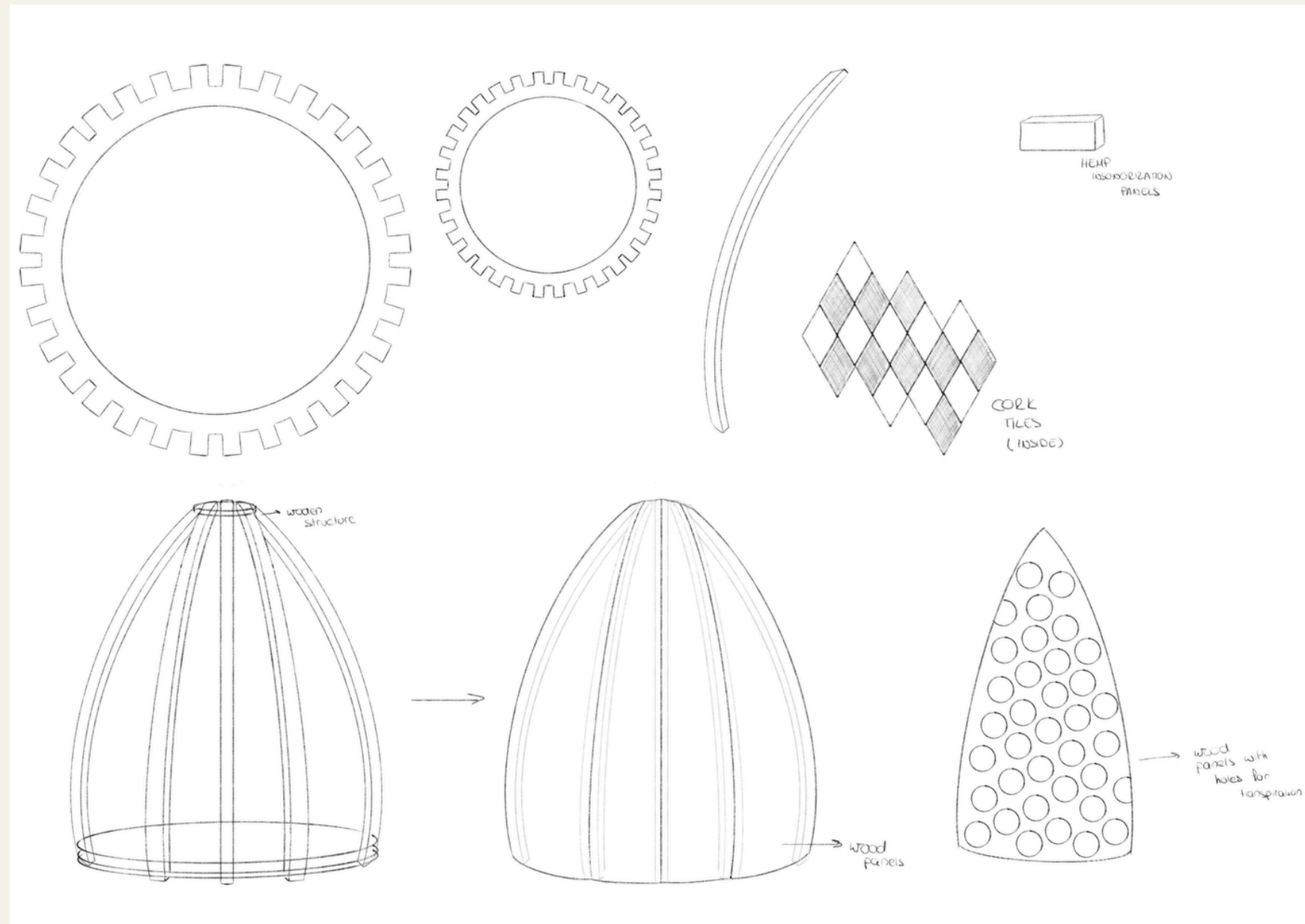
- Cork, hemp, and wood

## Liability

Compliance with European regulations:

- Low Voltage Directive (electrical safety)
- EMC Directive (electromagnetic compatibility)
- General Product Safety Directive (overall safety compliance)

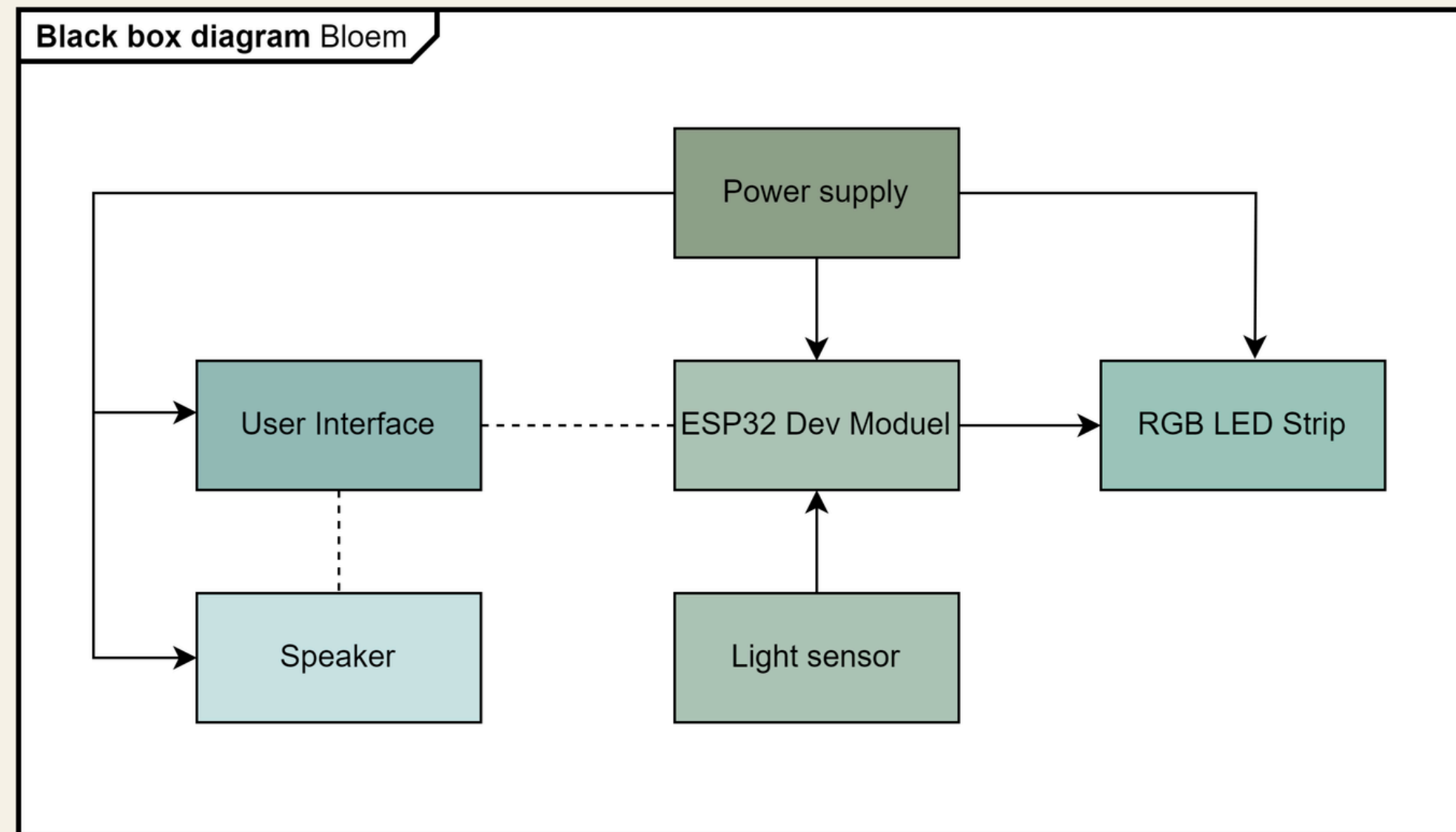
# Solution design



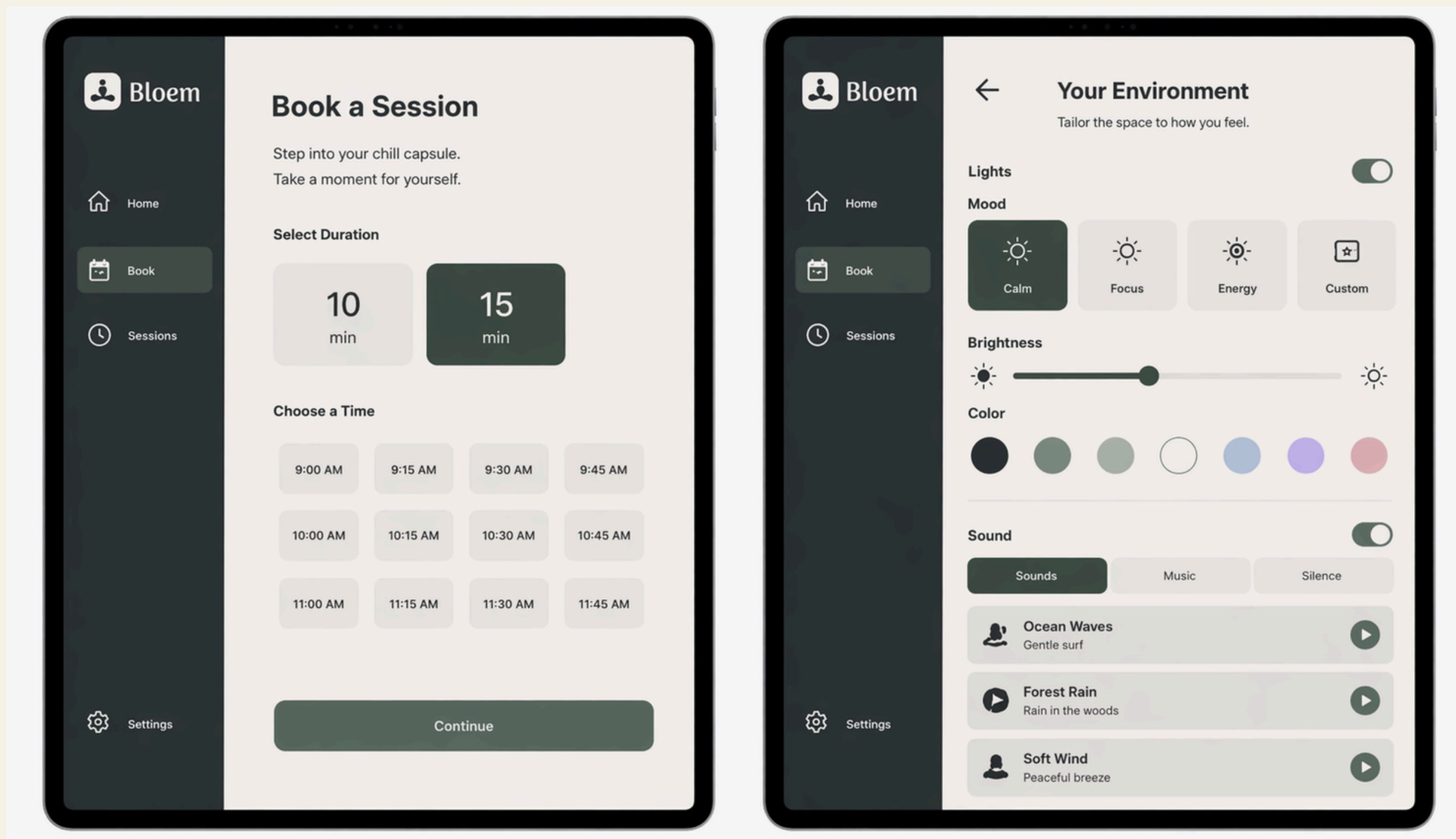
# Smart system hardware

## Main hardware components:

- 12V Power Supply
- Buck Converter
- RGB LED Strip
- Light Sensor
- ESP32 Dev Module
- Speaker (Bluetooth)
- Tablet



# Smart system software - Application drafts





## Conclusion

- The capsule combines hardware, lighting, and audio into a unified relaxation space.
- Future improvements: further development of hardware and software components.

