



# Healing Cocoon



Team 6





**Hanna Kaczmarek**

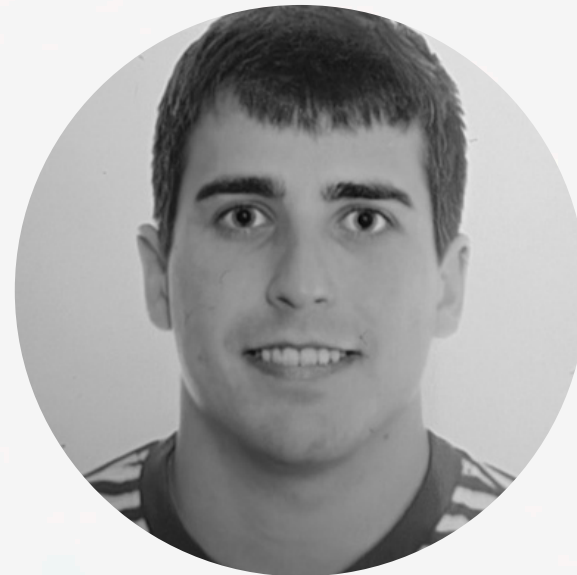


**Anouc Goedhart**



**Kemal Yilmaz**

# **Our Team**



**Daniel Aagaard Pérez**



**Julie Bonnet**



**Ronja Kruse**





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# Project overview

designed for  
waiting areas

safe feeling

Turning fear into  
sense of wonder



Scent

Visuals

Sound



# The Problem

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Fear

Stress



Anxiety

Overstimulation

Loss of  
comfort





# Solution



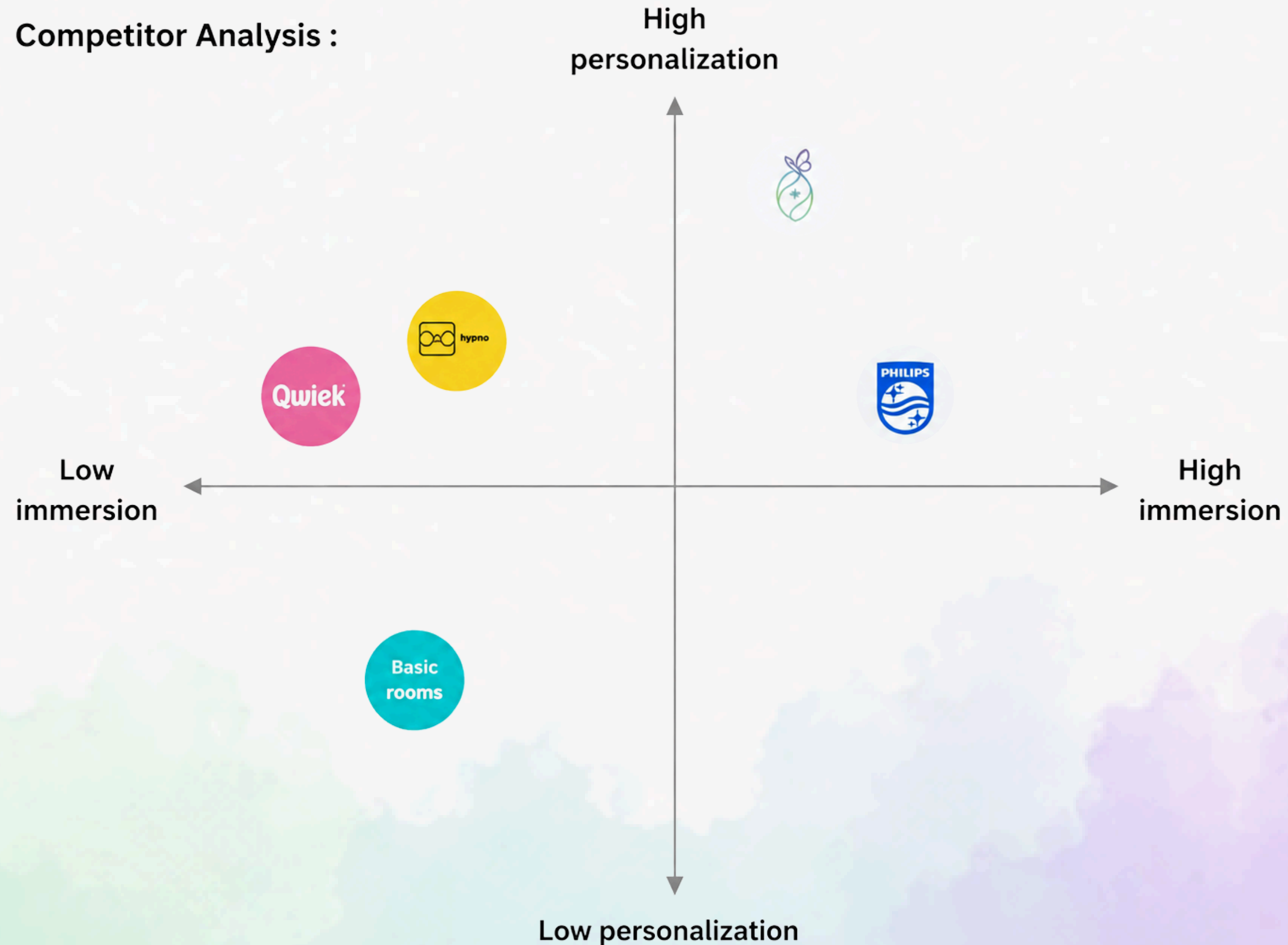
-  **Immersive 180° projection**
-  **Calming audio & scent**
-  **Wheelchair accessible**
-  **Safe & comforting environment**



# Marketing

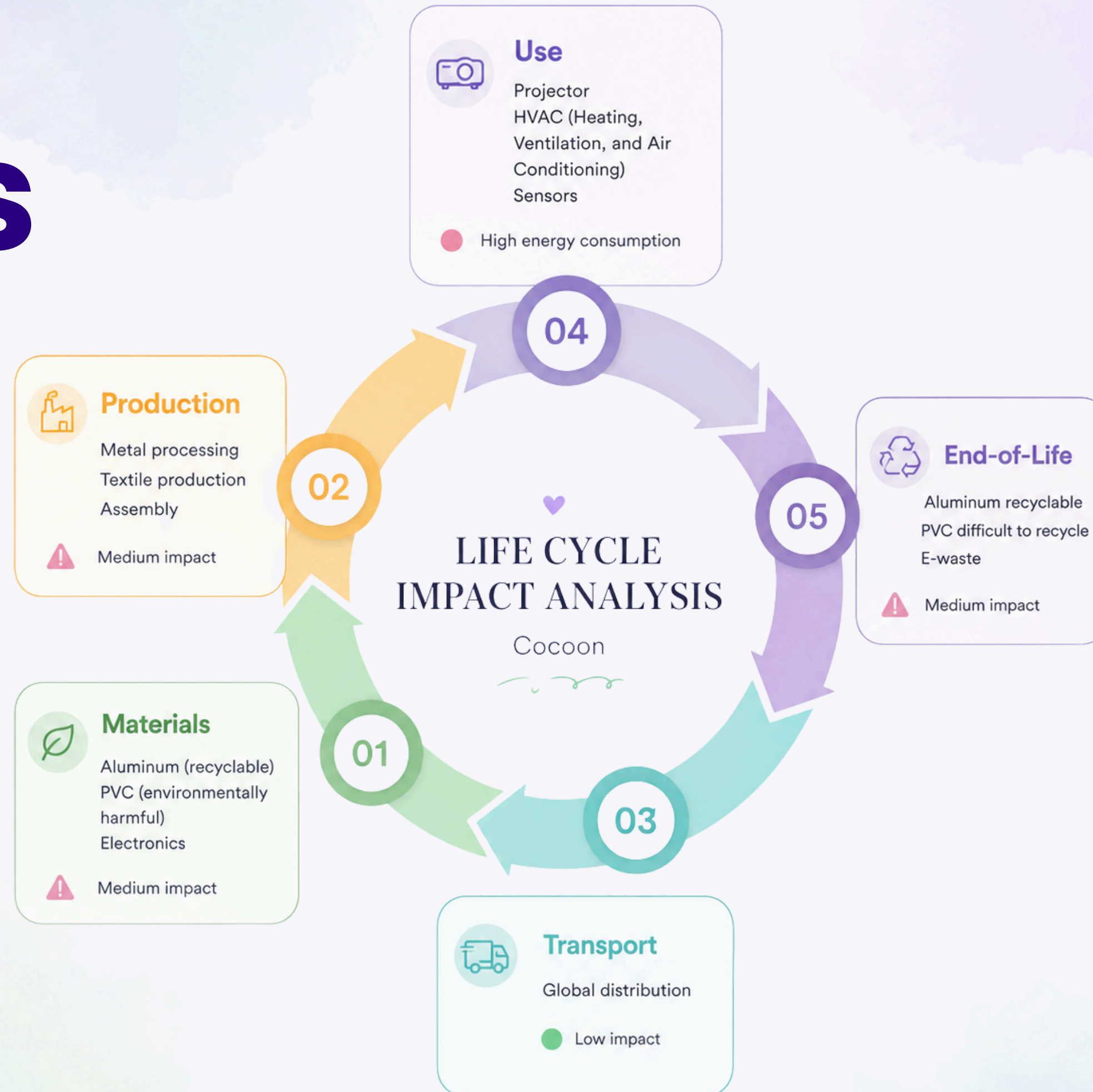
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Competitor Analysis :





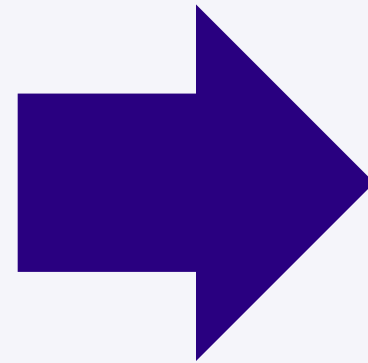
# Ethics





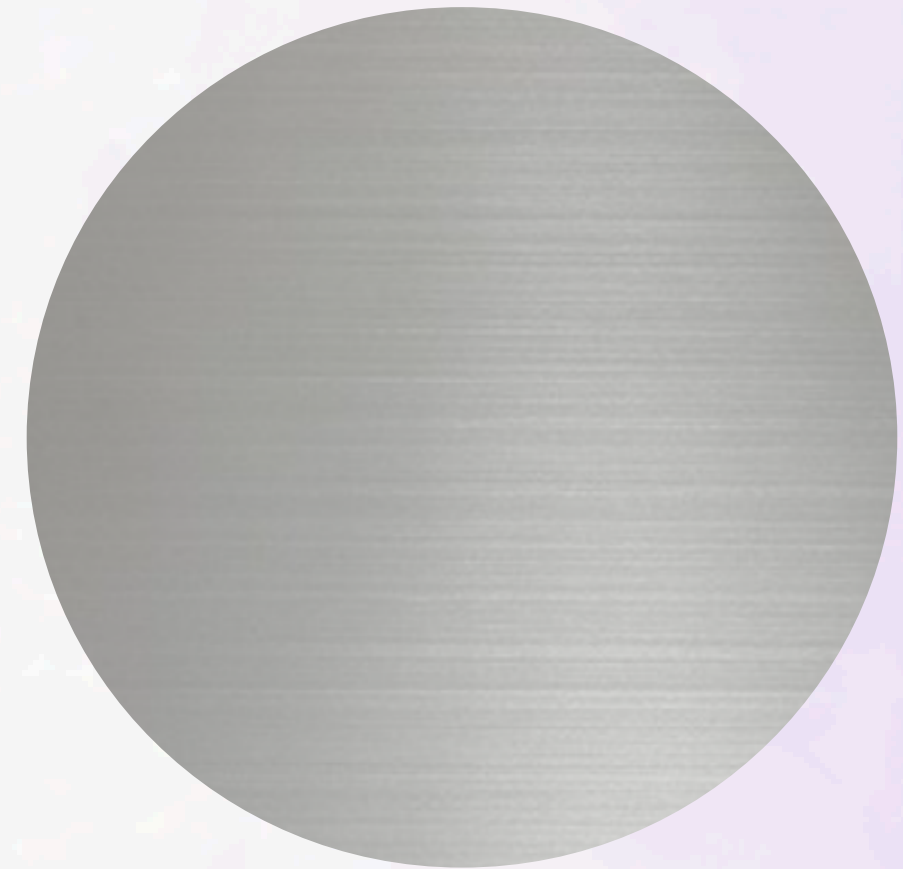
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# Development





# Old

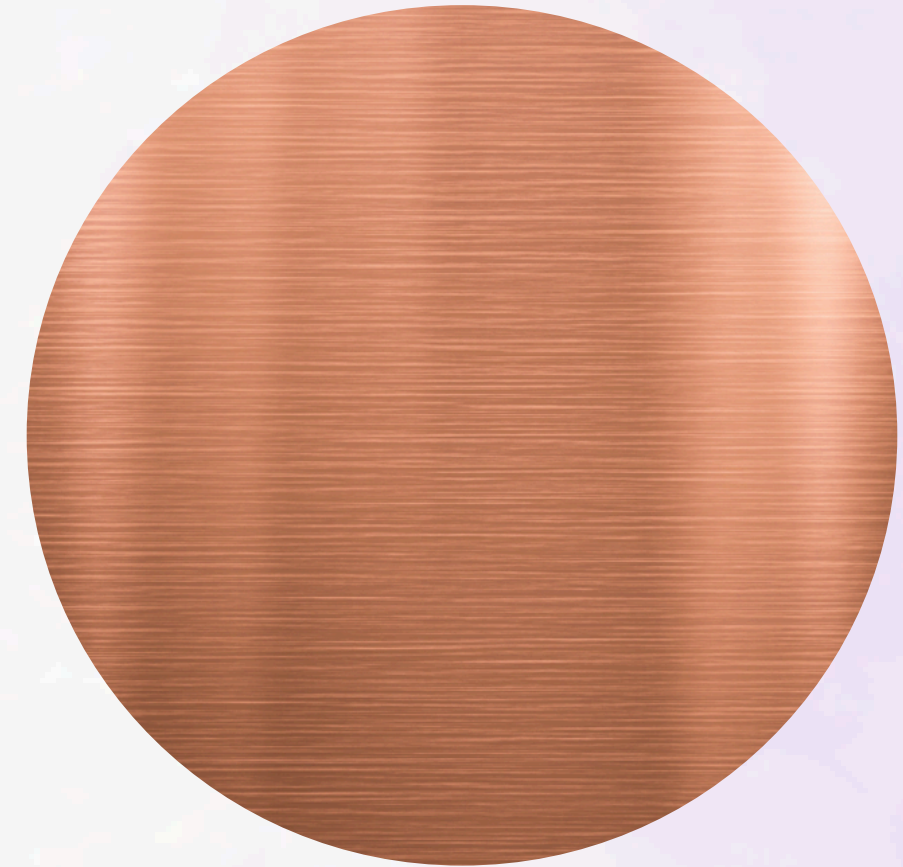


-  Immersive 180° projection
-  Calming audio & scent
-  Rotating chair
-  Built in display





# New



-  Immersive 180° projection
-  Calming audio & scent
-  Wheelchair accessible
-  Safe & comforting environment





# Simulations

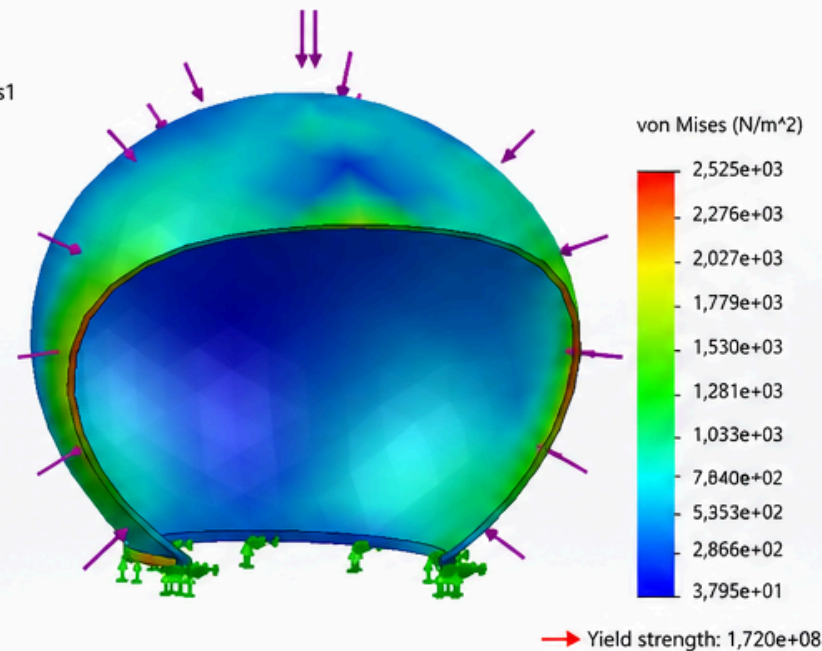
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## STRUCTURAL VALIDATION

SOLIDWORKS Static Simulation Results

### 1. STRESS ANALYSIS (von Mises)

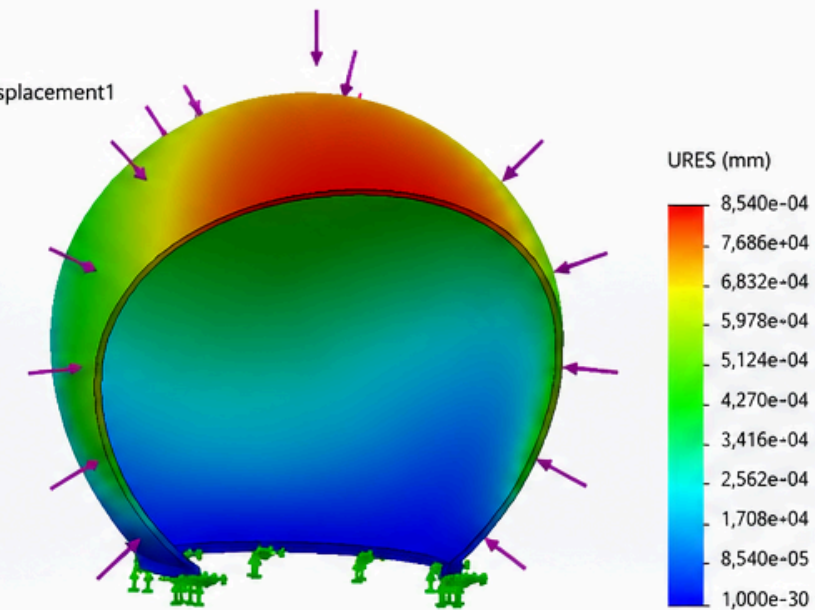
Model name: Part2 niet goed  
Study name: Static 3(-Default-)  
Plot type: Static nodal stress Stress1  
Deformation scale: 1,46997e+06



- Max stress:  $2.5 \times 10^3 \text{ N/m}^2$
- Yield strength:  $1.72 \times 10^8 \text{ N/m}^2$
- The stress values are **far below** the material yield strength.
- This means the structure remains **safe** under the applied load.

### 2. DISPLACEMENT ANALYSIS

Model name: Part2 niet goed  
Study name: Static 3(-Default-)  
Plot type: Static displacement Displacement1



- Max displacement:  $8.54 \times 10^{-4} \text{ mm}$
- This value is **extremely small** (smaller than 0.001 mm).
- Because the displacement is so low, the cocoon **barely bends** or deforms.



### CONCLUSION

The simulation demonstrates that the cocoon design is **structurally safe** and **highly rigid**. Both stress and displacement values are **extremely low** compared to the material limits, meaning the design can withstand the applied forces **without significant deformation or failure**.

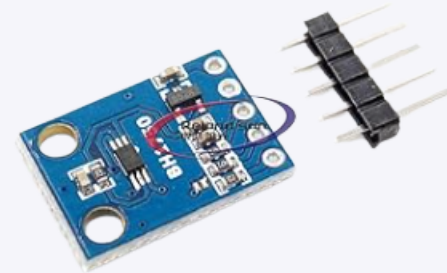




# Hardware



**Air Humidity  
and Temp  
Sensor**



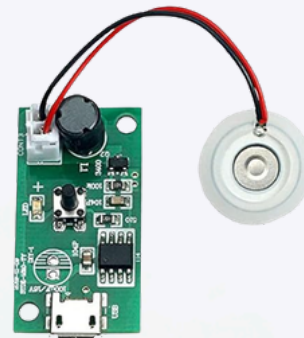
**Light  
Sensor**



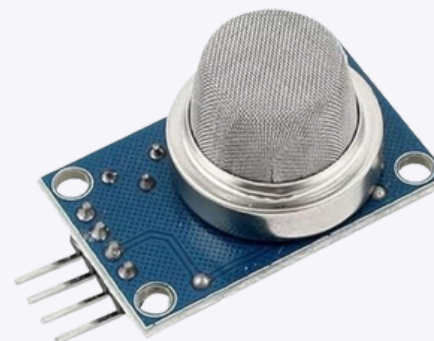
**Projector**



**ESP32  
DevKit V1**



**Scent  
Sprayer**



**CO2  
sensor**



**Speaker**



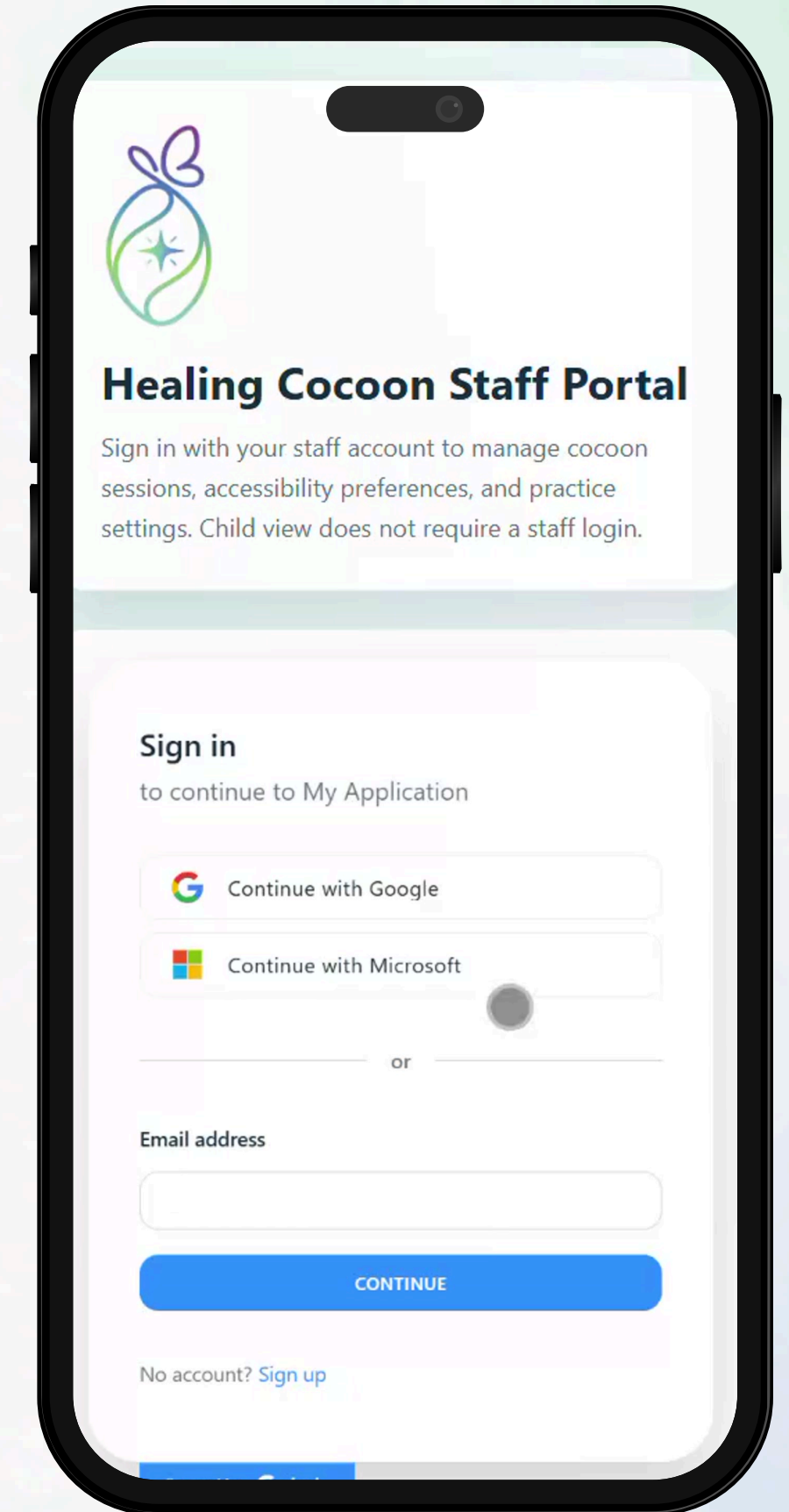
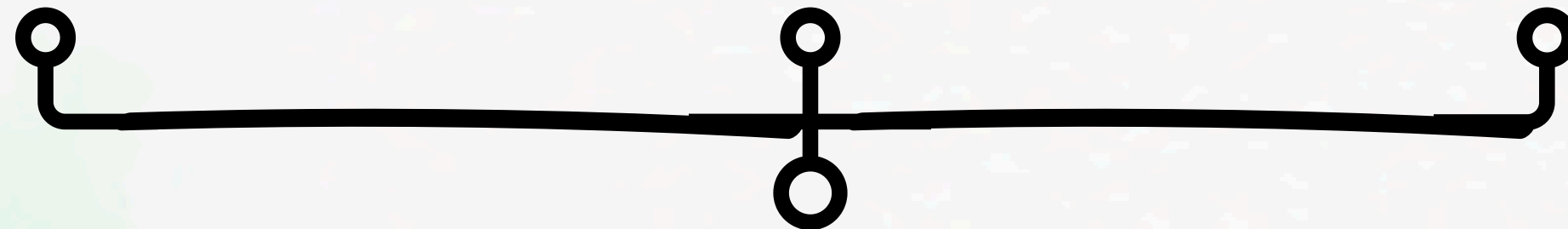


# App

## Frontend

## Backend/API

## Database





# Sustainability

**SDG:**



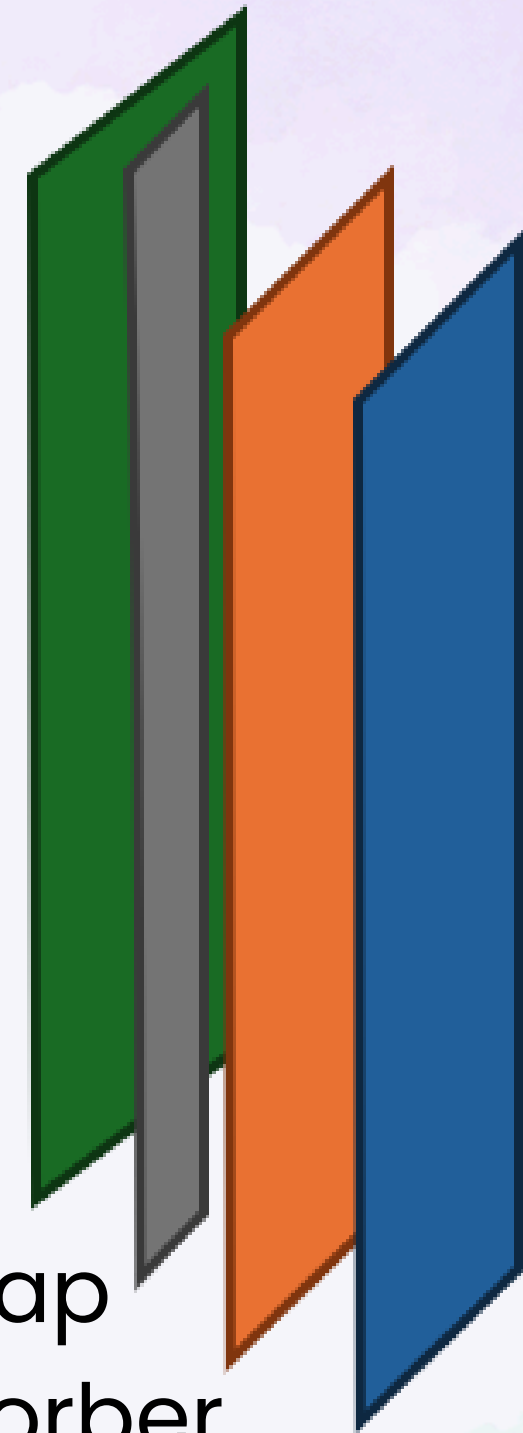
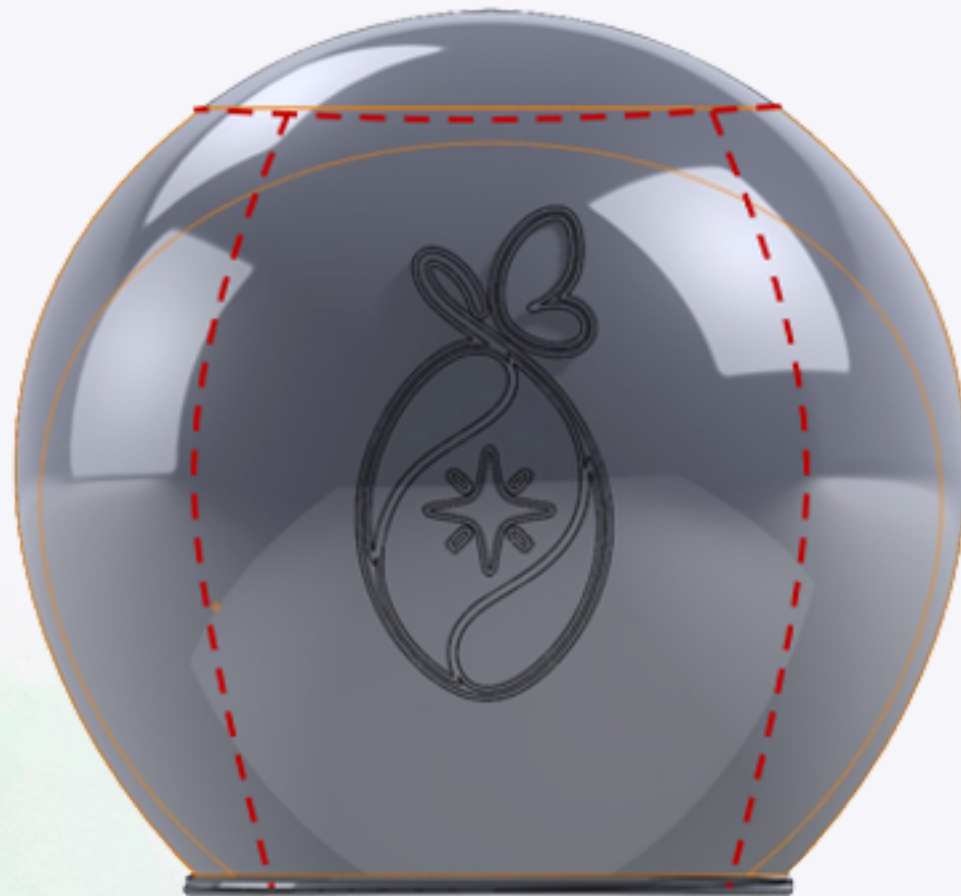
- Local Portuguese suppliers → min. transport distance
- Selecting robust materials → long service life
- Smart construction method → air gap for sound insulation





# Materials

- Suitable for healthcare environments
- Easy to clean and maintain
- Recycled & recyclable



Brass panels  
Aluminium & air gap  
Acoustic absorber  
Antimicrobial fabrics





# Packaging



Compostable or usable as craft material



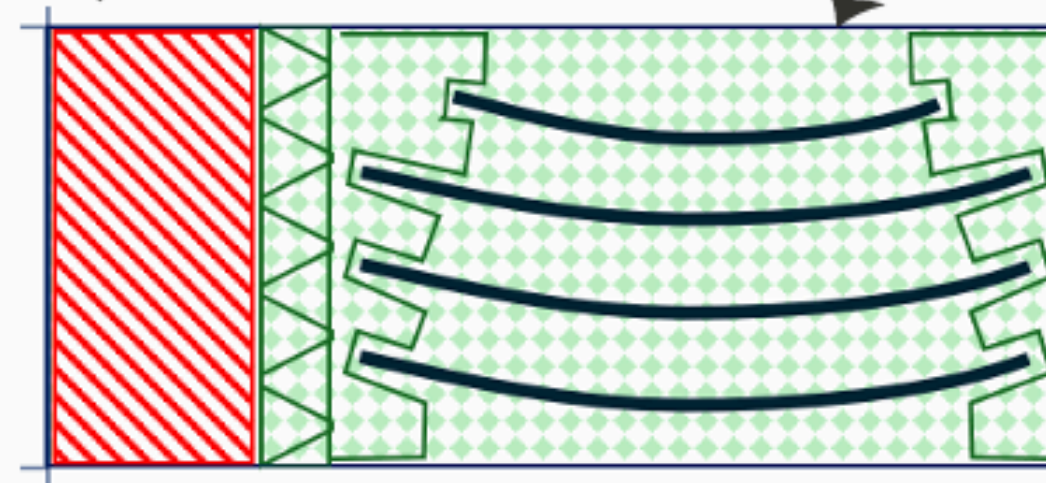
Hardware system box



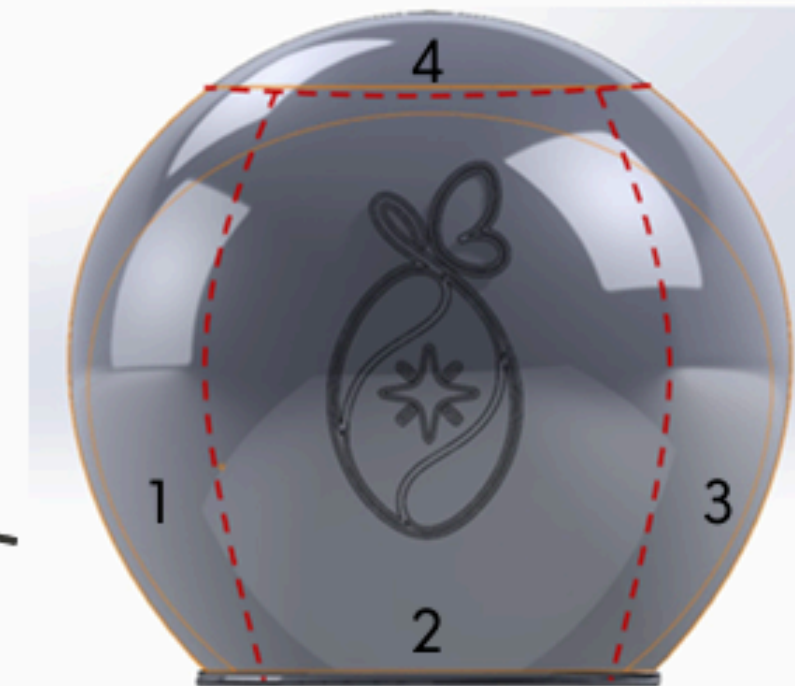
+ cushioning material



Top view of the inside of the main box



The cocoon is transported divided into 4 parts



- Corrugated cardboard insert
- Hardware system box
- Cushioning material
- Part of the Cocoon





# Communication

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## Designed for children

Healing Cocoon creates a safe and immersive environment that helps children feel calm, comfortable and in control.





**Reduce stress and anxiety**

Calming audio and scent stimulation promote relaxation.

**180°**

**Immersive 180° experience**

A full visual environment that turns fear into wonder.



**Wheelchair accessible**

Designed for comfort, accessibility and every child.



## HEALING COCOON

**Turning fear into a sense of wonder**

A multisensory cocoon that helps children feel safe, relaxed and empowering during medical treatments and therapy.



Scan to access the app

Based in Porto, Portugal

+351 912 345 000

hello@healingcocoon.com

healingcocoon.com

## How it works

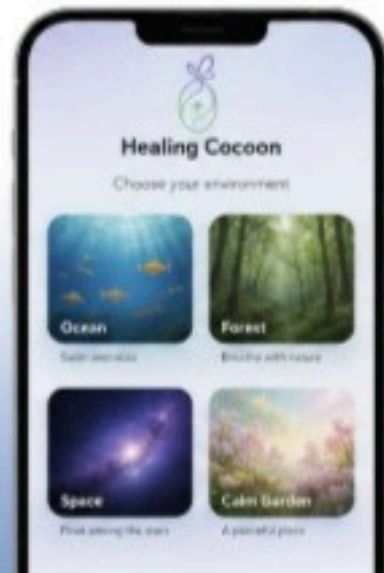
- 

**Scan the QR code** to access the Healing Cocoon app.
- 

**Choose an environment** from pre-programmed modes fitting the child's needs.
- 

**Start the session**

Relax and enjoy an immersive experience designed to reduce stress and fear.







# Healing Cocoon

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