

Coastal Echoes

Presented by Annie, Xincheng, Huarui, Stella

Table of Contents

Introduction

Product Video

Product Design

Quality of Build

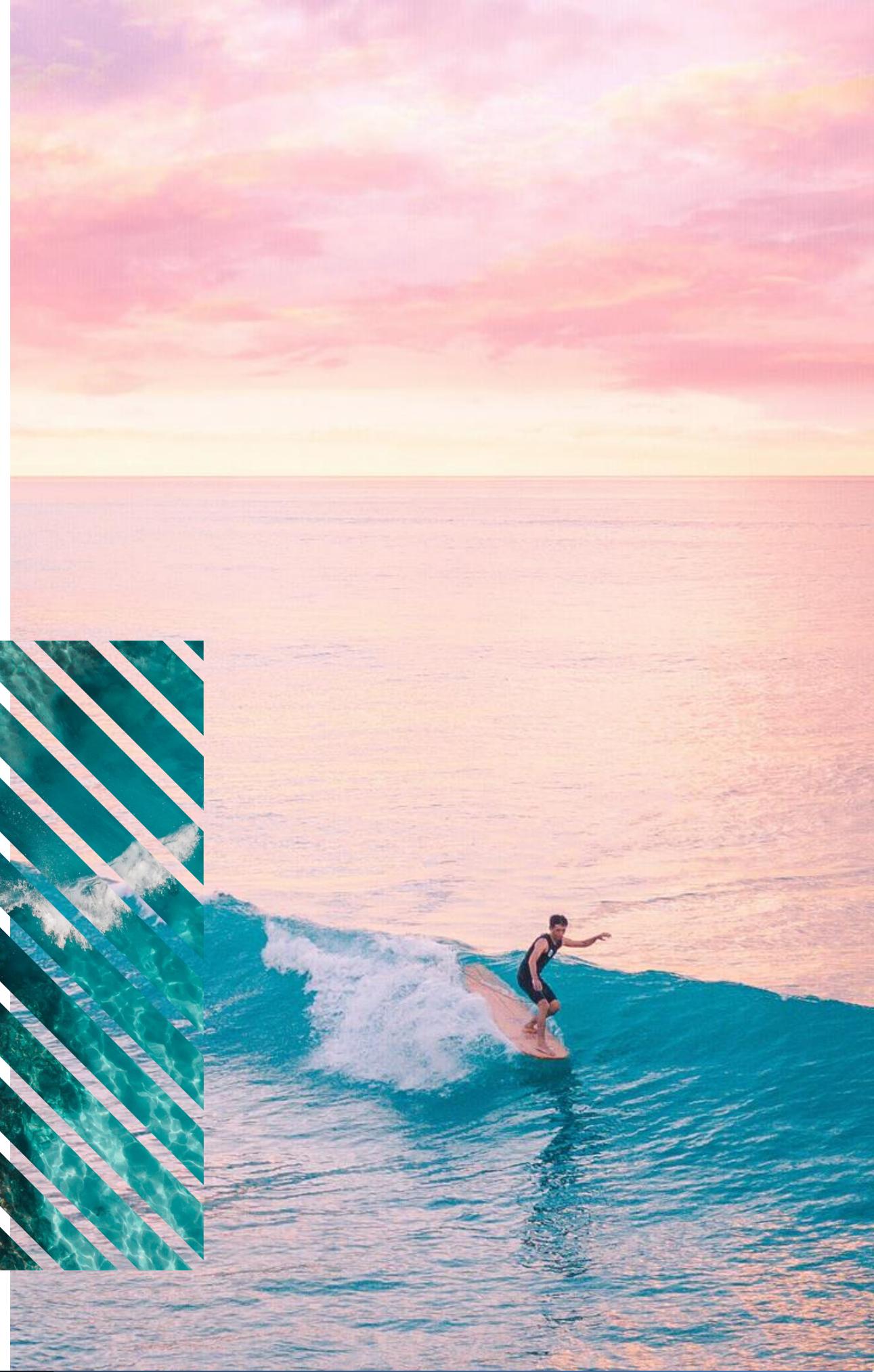
Costing & Market

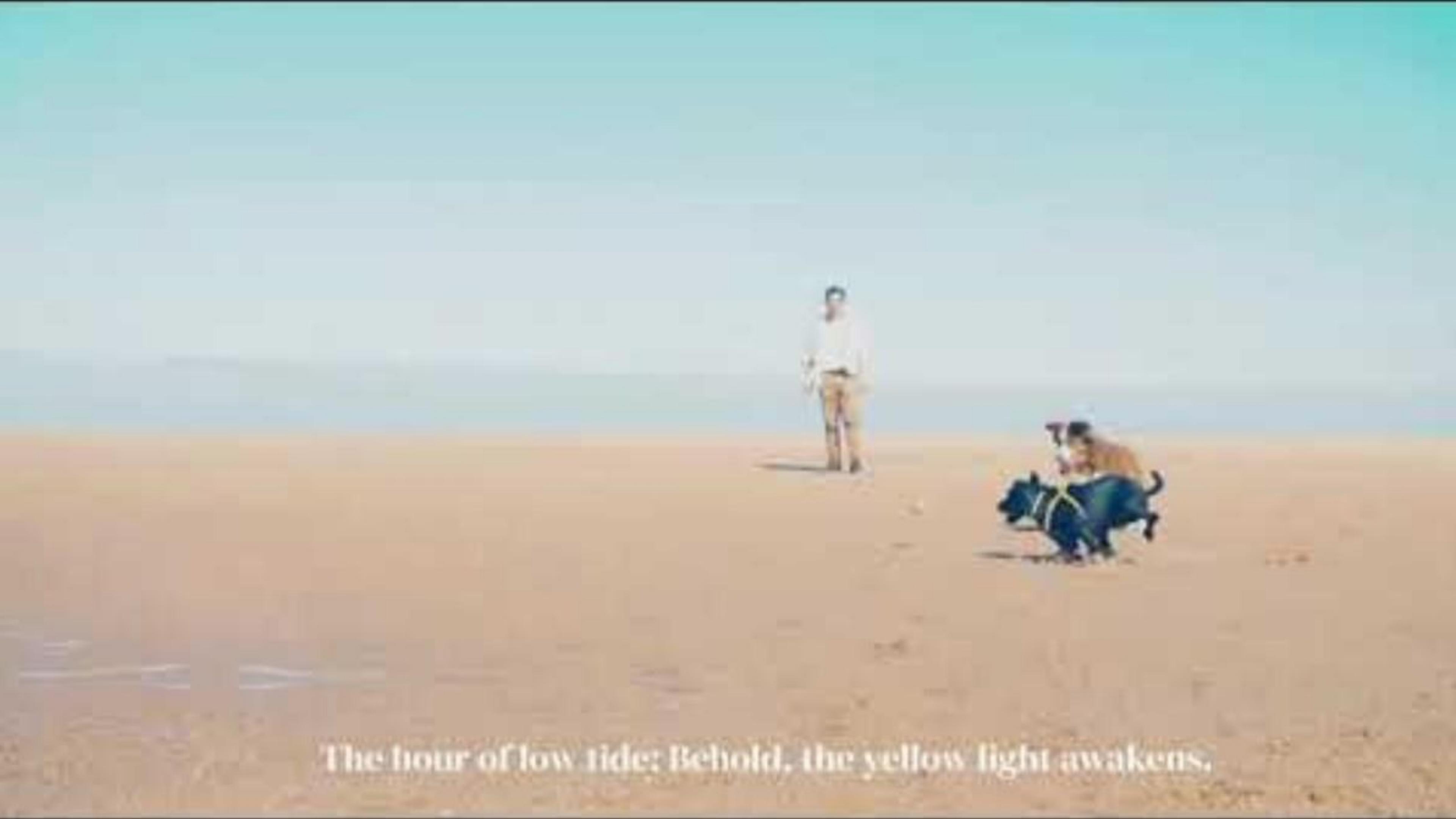
Future Improvements

Introduction

An Ornamental Internet of Things device that **reminds people to visit the seaside.**

This device displays real-time wave data and tide conditions to help users determine whether it's suitable to go to the beach or engage in related water activities."





The hour of low tide: Behold, the yellow light awakens.

Scenarios

Varied states of the sea surface in different times and scenarios.



Tides on Beach



Wave/wind Speed

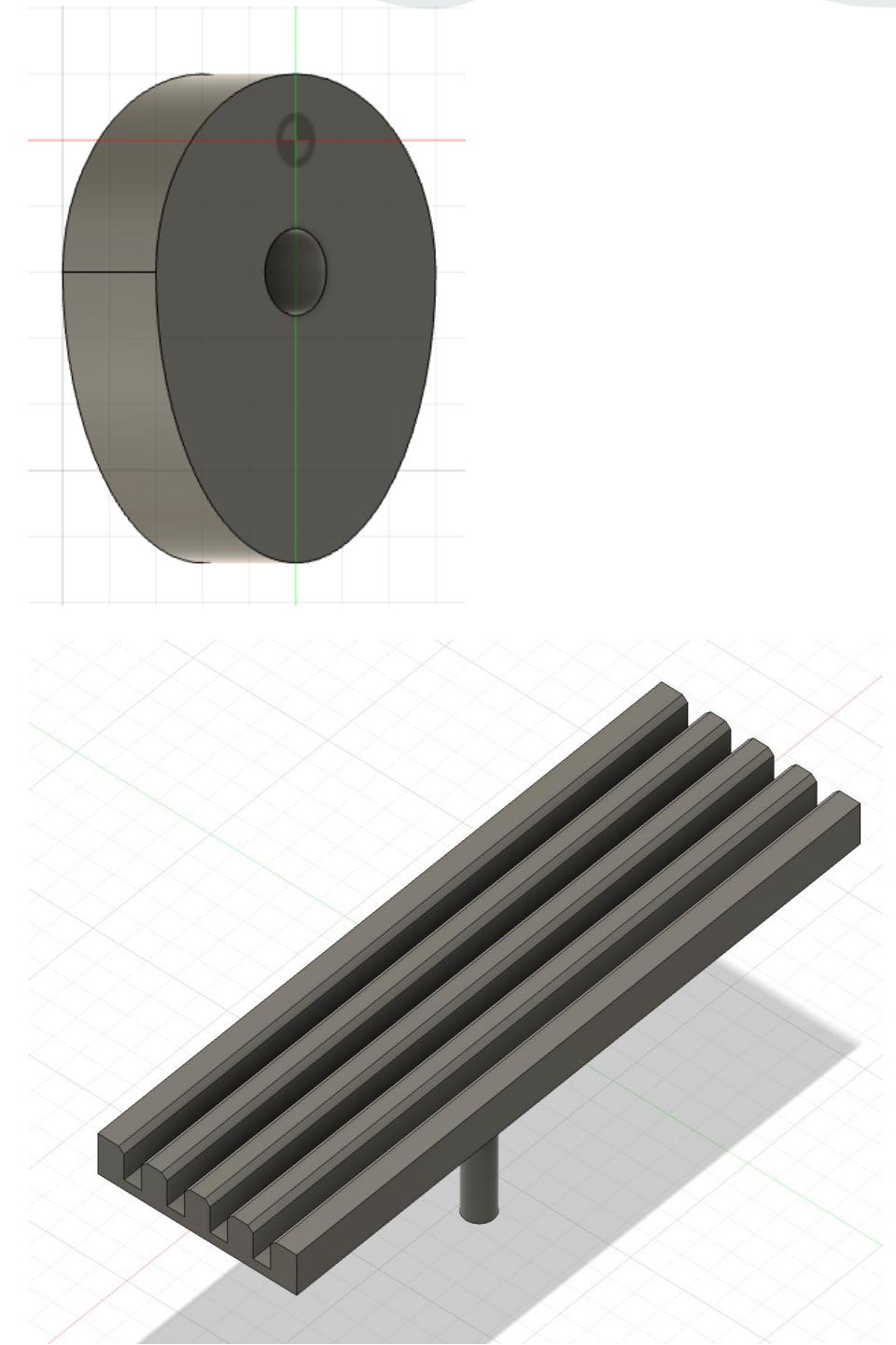
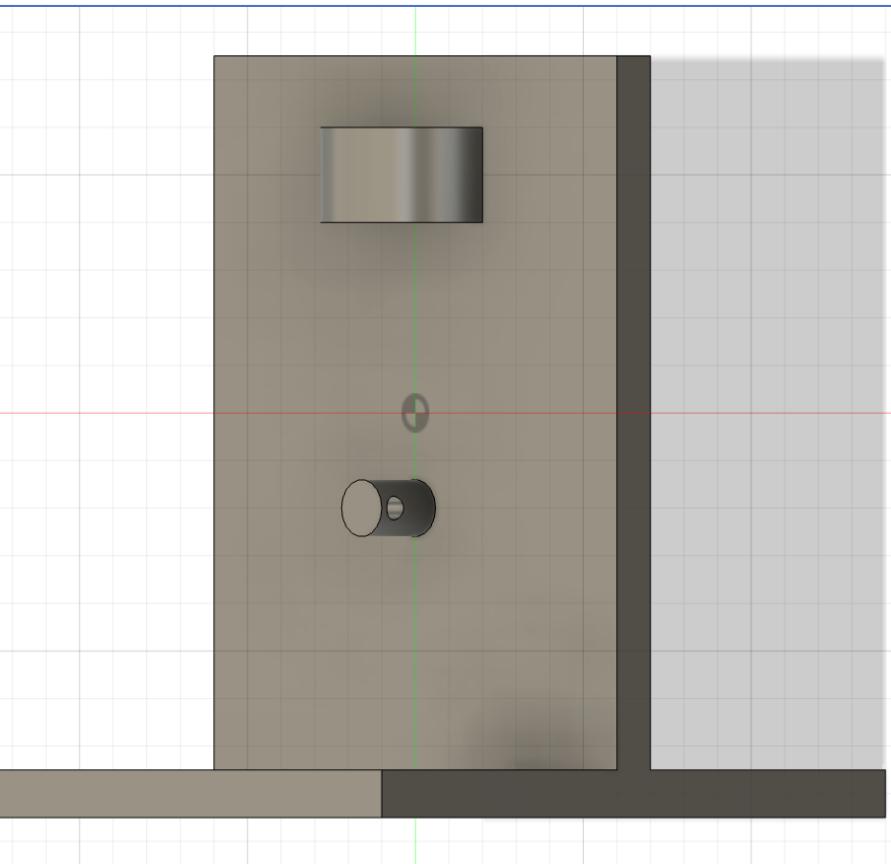
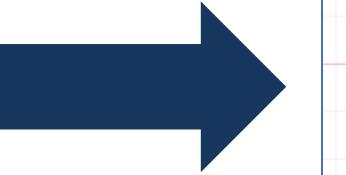


Times and visual effects of the day
(Blue tears)

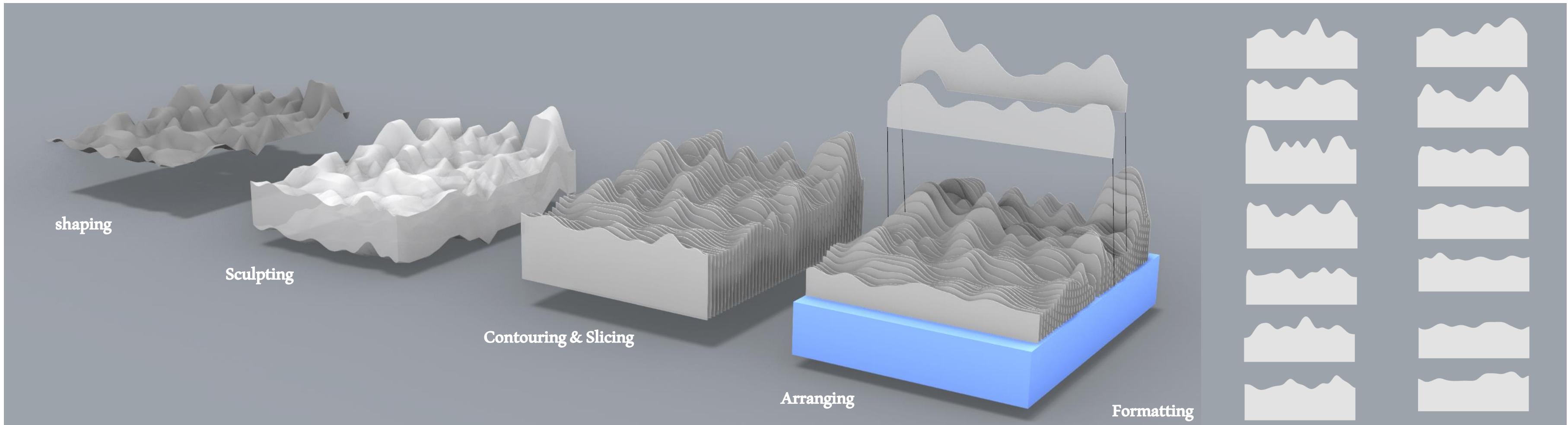
Physical Device Design

How to make the wave moves?

A basic wood mechanism: **Cam and Follower**

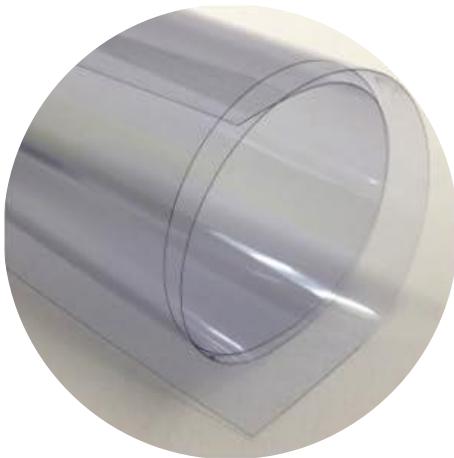


Prototype Design

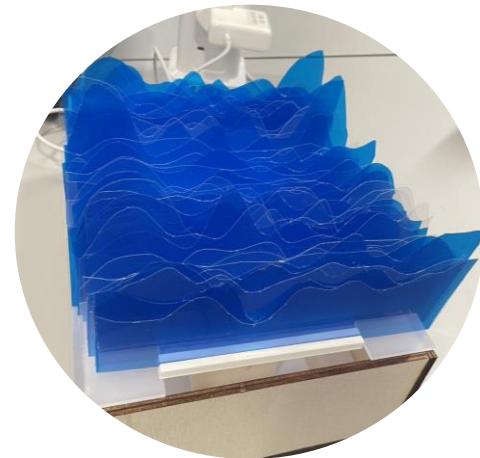


Prototype Design: Material Alternations

1. Waves materials
2. Wave slot holder
3. Enclosures



Clear & Blue Acetate



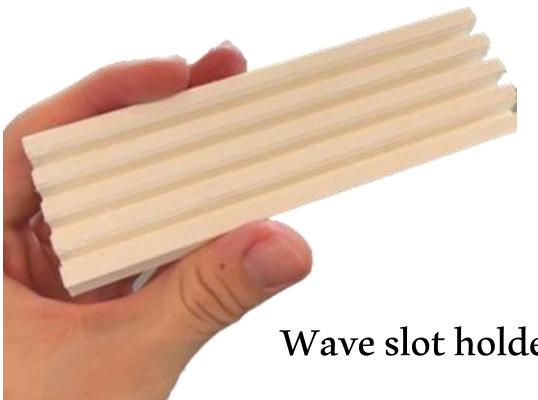
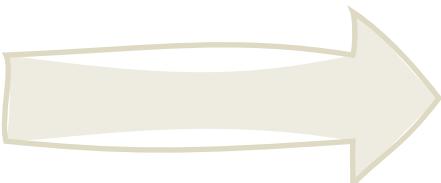
Translucent Acrylic Board with old
acetate wave slots

 AUTODESK®
FUSION 360™

Building tools



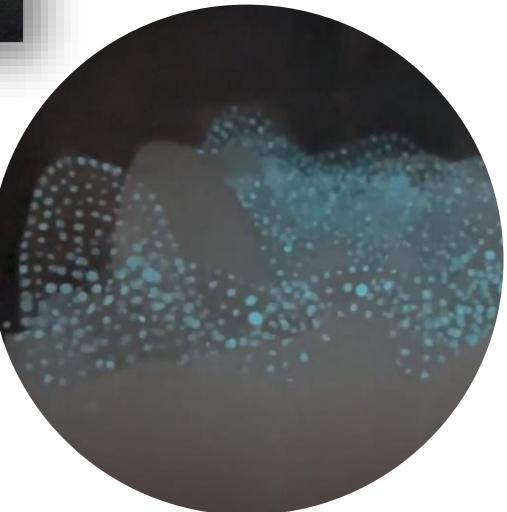
Water corrugated board



Wave slot holder
changes from 1mm to
3mm



3mm Translucent Acrylic

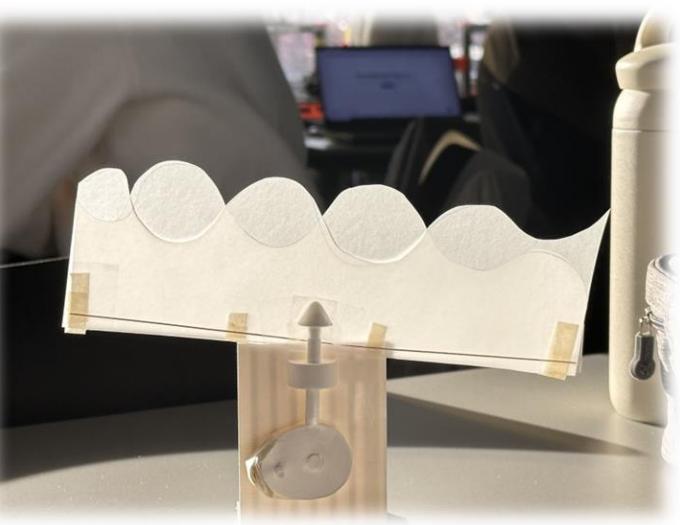


Florescent paint

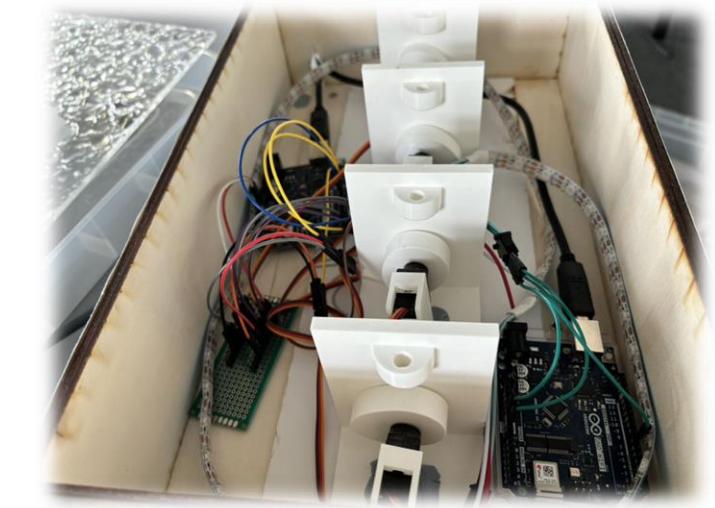
Prototype Progress: Assembling



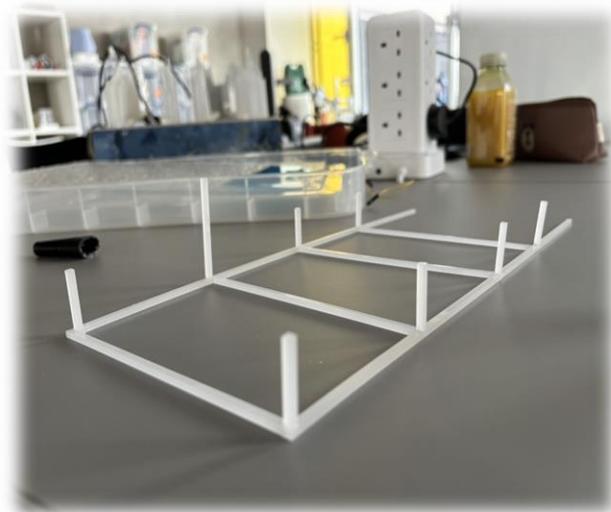
Base



Initial transmission device



Final transmission device +LED strip



Prevent shaking & displacement frame



Final Waves + Lid



Initial Waves

How the device works

Our device is capable of changing lights and wave speeds based on tides and wind speeds.

Tide:

- a. When the tide value is low (-), the light is yellow, representing the beach at low tide.
- b. when the tide value is high (+), the light is blue, representing the seawater overflowing the beach.
- c. When the tide value is higher than the positive value 2, Flashing blue light alerts people to danger due to high tide levels .
- d. All color mode transitions are gradients.

Wind Speed:

- a. When the wind speed is high, the waves shake violently
- b. Waves rock slowly at low wind speeds



HIGH TIDE VALUE



LOW TIDE VALUE



DURING GRADIENT

Target User & Markets

Seashore forager



Surfers and Swimmers



Fishermen and Boaters



Coastal Residents



Costing Ideas

Product Highlights:

- ✓ Design
- ✓ Functionality
- ✓ Competitive Pricing

| Coastal Echoes | Description | Cost (£) |
|------------------------|------------------------------------|-------------|
| Material Costs: | 3D printing | 10 |
| | Laser Cutting | 4 |
| | Soft Décor | 13 |
| | Hardware components | 28 |
| R&D Cost: | Design & Testing & Assembly | 10 |
| | Certifications and Compliance | 10 |
| | Software & Hardware Development | 15 |
| Profit Margin: | | <u>0.15</u> |
| Summary: | | Amount (£) |
| | Total Direct Costs | 90 |
| | Profit Margin | 100.00% |
| | Profit Amount | 80 |
| | Total Cost Including Profit | 180 |

Market Price: £ 180

VS



Tide clocks Storm

Market Price: £ 58.25

Website Link: [Click](#)



Wind Speed Monitoring

Market Price: unknown

Website Link: [Click](#)



Wind Monitor Display

Market Price: £ 80

Website Link: [Click](#)



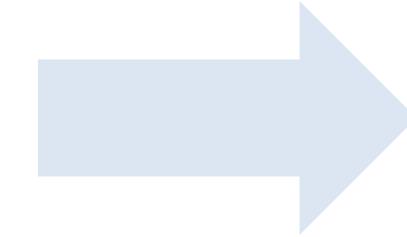
Tide Monitor

Market Price: unknown

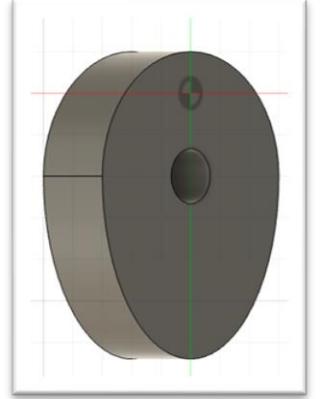
Website Link: [Click](#)

Future Improvement/ Modification

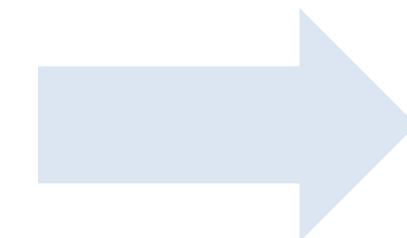
Abrading Servo



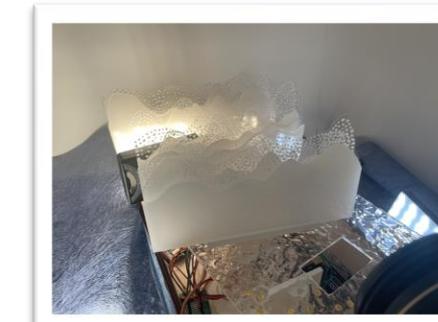
- Re-design: Tighten up the parts
- After-sale service: Repair & Maintenance



Customizing Colour



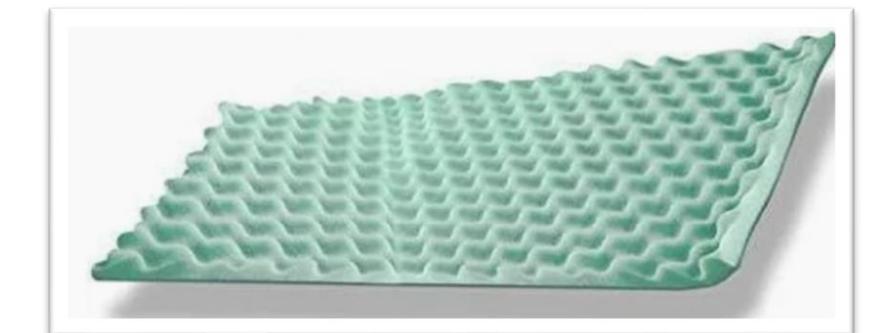
- LED light: Full lighting/ Partially lighting
- Acrylic board: Blue/ White/ Transparent



Insulating sound



- Add soundproofing materials
- Acoustic Foam/ Sound Damping Sheets





Thank you!

Demo & Q&A