DESIGN ENGINEER

Bettina Sosa Röhl

PORTFOLIO

Bettina Sosa Röhl
Design Engineer

INTERESTS

Product Design, Web development, Sustainability, Generative design, User experience, User interaction, IoT.

IDEATION

Quick sketching

Keyshot

Fusion 360

Solidworks

Mind mapping

PROTOTYPING

Laser cutter

3D printing

Cardboard

Blue foam

Woodwork

CNC cutter

DESIGN

Illustrator

Indesign

Photoshop

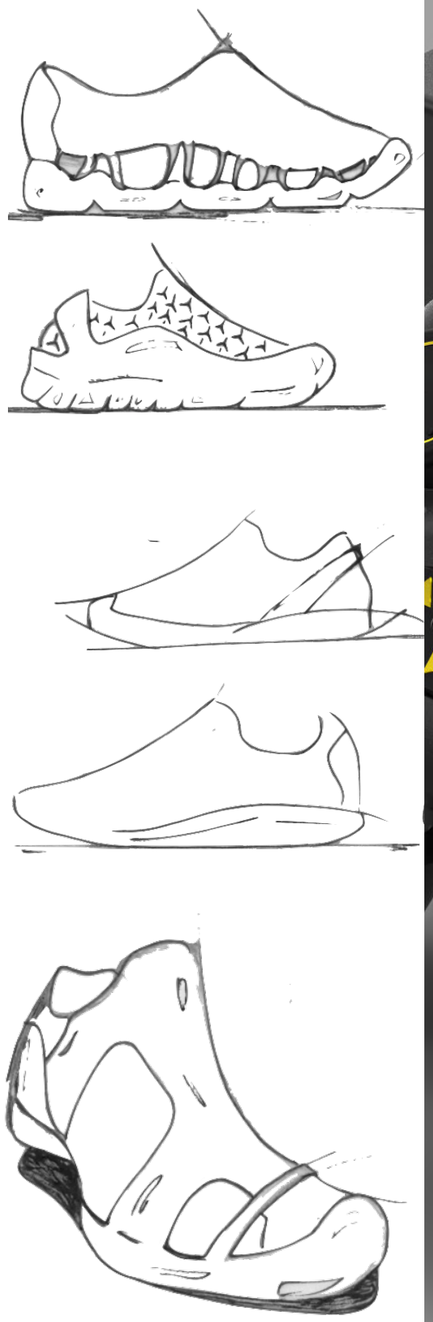
Sketch

XD

Premiere Pro

01

Future sustainable Design



02

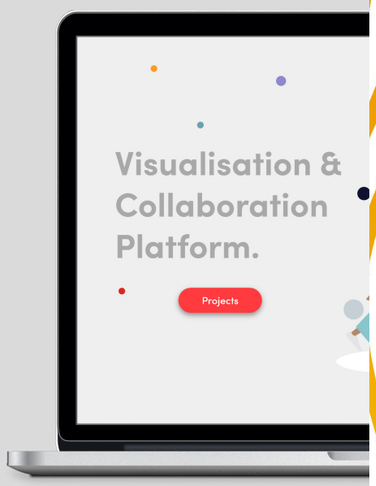
Product Design

03

Packaging Design

04

UI / UX Design

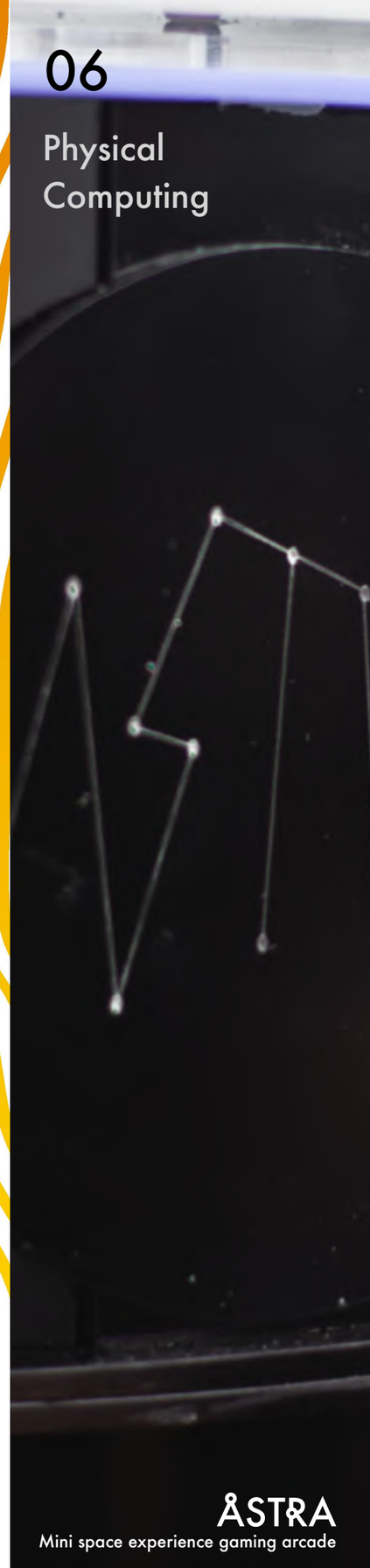


05

Artwork

06

Physical Computing



AXO

Potato footwear for Mars

ANDROMEDA

Video game controller for VI

StackeRs

Sustainable packaging for baby products

VCP

New concept for educational platform

Collection of some of my posters and drawings

ÅSTRA

Mini space experience gaming arcade

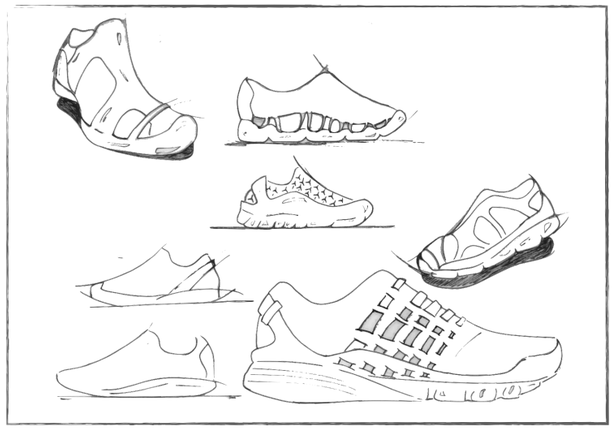
AXOwear

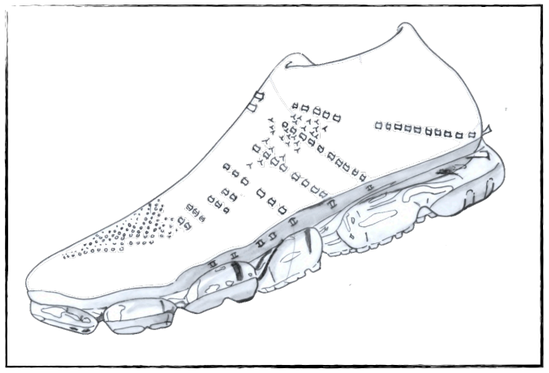
Much of the conversation about Mars has focused on topics such as terraforming, architecture, crops & space flight. Whilst these are all extremely important things to consider, the matter of what will a **Martian colony wear** in the everyday seems neglected.

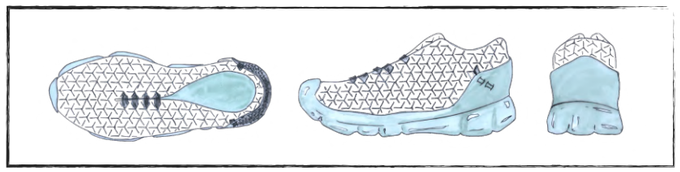
Mars resources are extremely scarce, there is solar energy, soil, CO2 and little more. **Potatoes** have been recognised as an **ideal** vegetable to grow **on Mars**, they are nutritious and grow in very harsh conditions.

This research led us to focus on creating clothing from potatoes. Using ingredients either derived from potatoes or available due to another system by-product on Mars. Due to a different gravity and manufacturing constraints, garments on Mars will need a complete redesign. After breaking due to wear the clothing can be composted in the soil, creating a fully circular economy.

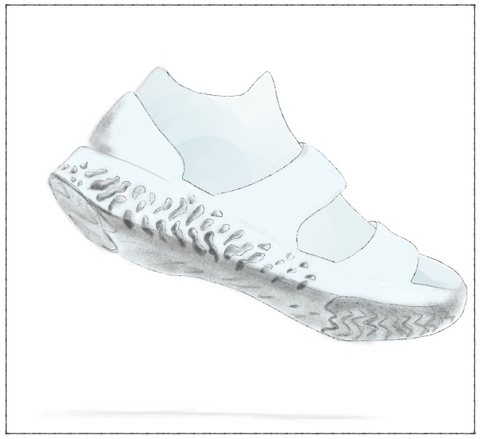
Potato starch can be made rigid, soft, extruded into yarn or 3D printed. To showcase the potential of the material, the focus of the project is now to produce a **monomaterial, potato shoe for Martians.**

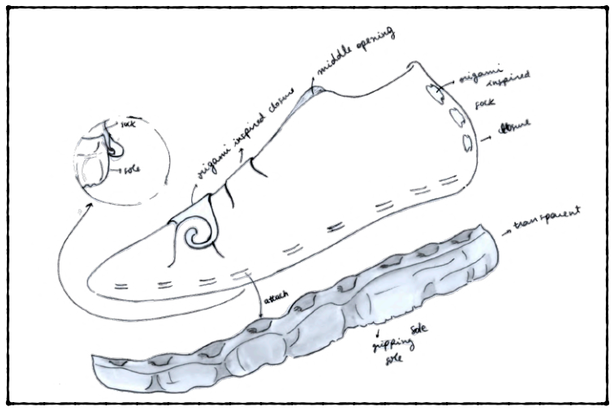


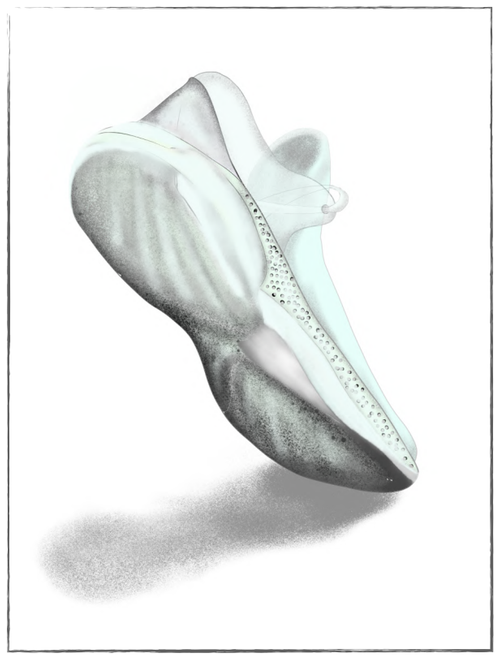




CONCEPTS

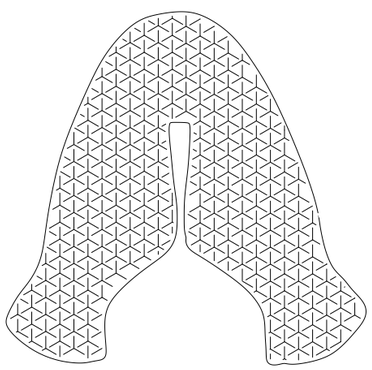




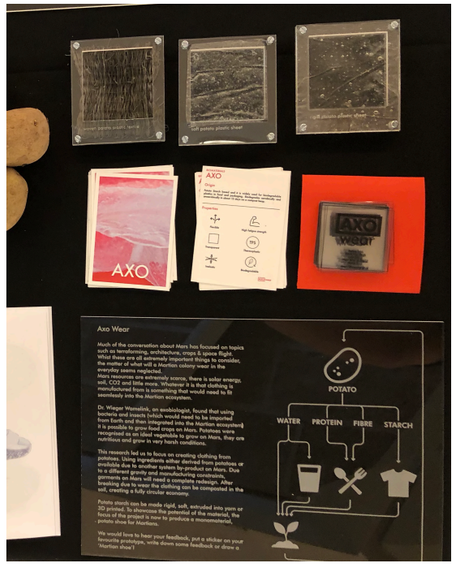


GROUP
PROJECT /

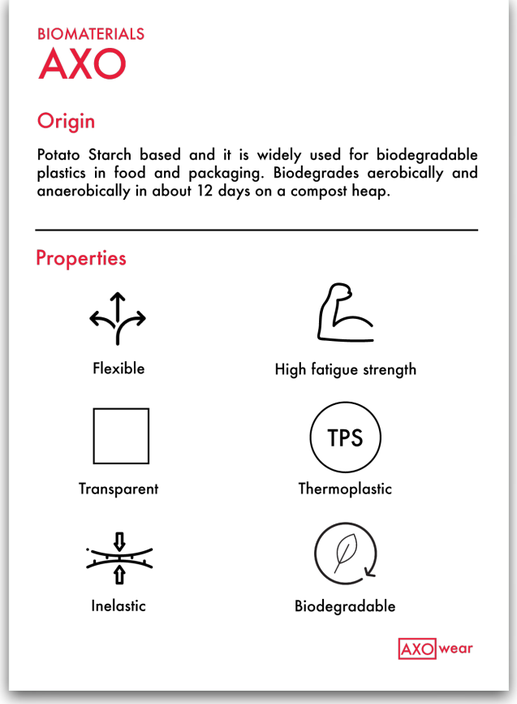
Future sustainable Design



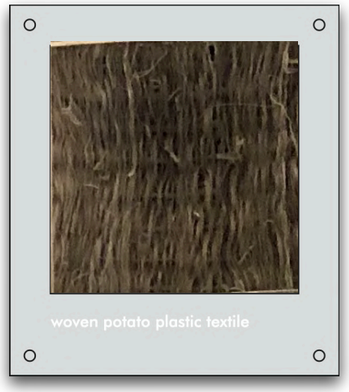
AXOwear



Pictures of the project exhibited at the **Design Museum London** on the 7th of February.



Material card



Material sample

Business card

the DESIGN MUSEUM

ANDROMEDA

Product
Design

A video/audio game controller to make digital entertainment more approachable to those with visual impairments.

GROUP
PROJECT /

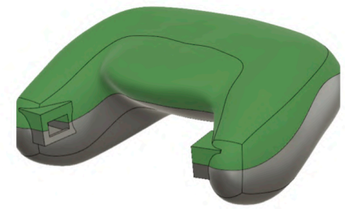
ANDROMEDA

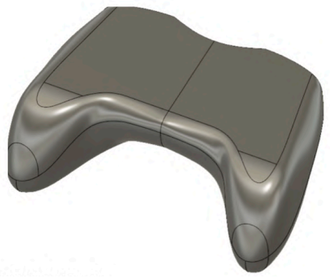
Inspired by big players in the industry we performed several iterations in the form of our controller. Using blue foam for fast prototyping and validation

Approach to prototyping

CAD

WORKS LIKE CAD





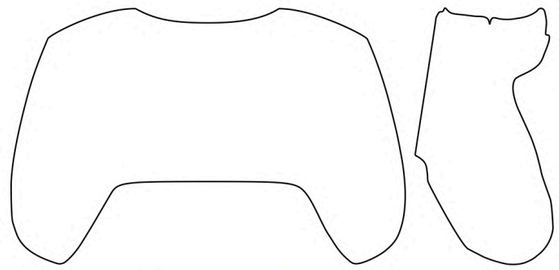
FEELS LIKE CAD

ERGONOMICS

INITIAL FORM

FINAL FORM

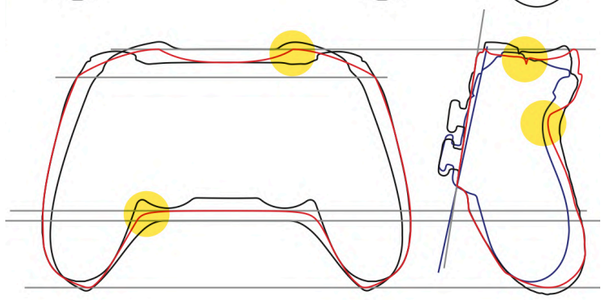
ERGONOMICS COMPARISON AND INSPIRATION



M31

XBOX ONE

DUALSHOCK 4



DEVELOPMENT

TOP VIEW

TACTILE LOGO

3D logo on a de-bossed ring to enable users to feel the Andromeda brand and create a tactile association.

ANALOGUE STICKS

Asymmetrical analogue stick layout for identifiable variation in the controller layout. Rubber skin with for tactile grip during gameplay with a high contrast accent ring for easy identification for users with lo vision.

BUTTONS

Traditional button layout with the high contrast labels corresponding with North, South, East, and West for intuitive control that can be identified by audio during gameplay.

D-PAD

A simple yet classic D-Pad design for traditional gameplay and compatibility with 3rd party consoles. High contrast accent symbols for easy identification for users with low vision.

HAPTIC MAPPERS

Rubber rings with two integrated haptic motor drivers on each side to provide haptics vibrations that correspond to directions during gameplay and allow for variable information to be communicated (i.e. intensity, speed, damage)

AUDIO JACK

Integrated 3.5mm audio jack to allow users to use their preferred headset to experience the binaural sound in the audio games.

PACKAGING

RESEARCH

Packaging design that takes into consideration the visually impaired is still a rare phenomenon. The amount of Braille found in packaging is lacking, making most products undistinguishable. Besides pharmaceutical products which require to include it by EU law since 2010.

DESIGN CONSIDERATIONS

- Embossed silhouette
- Braille description
- Intuitive to open no need for external help
- QR codes to scan for voiceover explanation
- Clear and easy opening and closure system

USER INSIGHTS

- Braille
- Intuitive design
- Textures
- Easy to open and close without tearing apart

MATERIALS

PAPERBOARD: 1MM THICKNESS
ADHESIVE: STARCH-BASED

Easier to recycle than cardboard with only one layer of material. Excellent rigidity and foldability attributes. According to ISO standards, paper-board is a paper with a grammage above 250 g/ m2. It is lightweight, easy to cut and handle.

PRODUCTION PROCESS

PAPERBOARD: 1MM THICKNESS

1. Dyed paperboard provided to the factory.
2. Printing QR codes, Braille, and labels on paperboard.
3. Emboss Braille, QR codes, and labels.
4. Cutting and creasing to produce the blank.
5. Adding the closure magnet.
6. Gluing paperboard.
7. Quality checks.

On the final assembly line the controller holder will be put in first the user manual on a gap on the side. Finally the accessory holder will be placed on the gap left by the controller at the front of the controller holder. The packaging has been designed to use the minimum amount of material without compromising accesibility. The box will have padding on the inside sides to preserve the controller. The box will be closed with a magnet situated at the tip.

StackeRs

Brief,
Create a **sustainable** alternative to package **baby products**

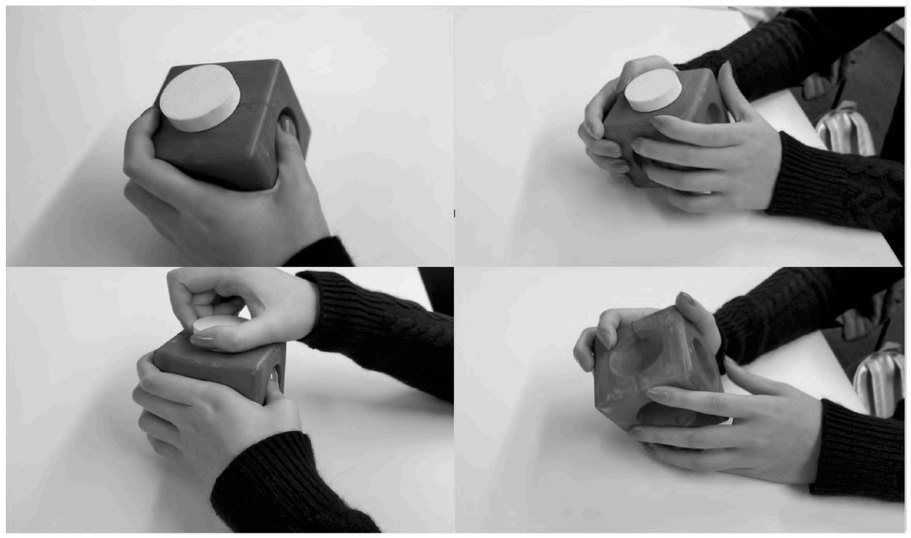
A sustainable packaging that aims to tackle single use plastics for baby bathing products.

StackeRs is a squeezable cube that can be reused as a toy. They are stackable and encourage parents to keep and collect the packaging so that the kid has more cubes to play with. They come in four different colours depending on the type of bathing product.

CASE STUDY

packaging = toy

- Users have busy daily routines and find recycling inaccessible and inconvenient.
- Users search for cute, colourful, childlike branding - ‘baby-like’ themes draw them in emotionally.
- Trend for sustainable packaging and taking care for your child's future.



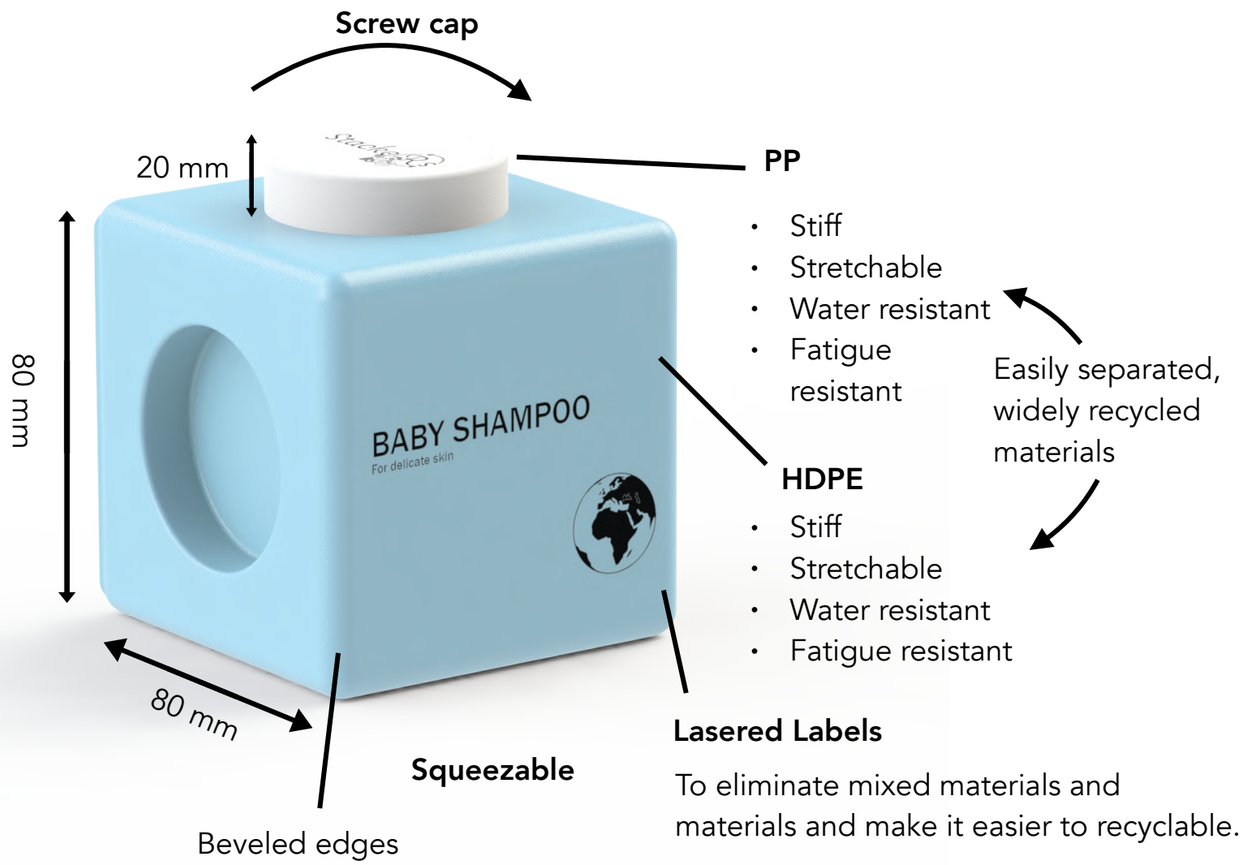
GROUP
PROJECT /

Packaging Design

StackeRs

Packaging specifications /

- Extrusion blow moulding
- 500 ml capacity
- Range of products
- Attractive price



SCENARIO /

01 USE IN BATH

Parents can use the **squeezy** bottle in the bath with their children like any other soap bottle until the product contained inside finishes.

02 RINSE OUT

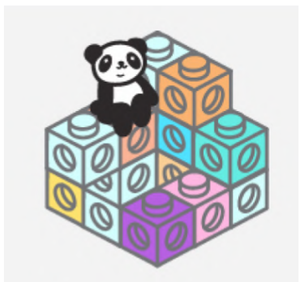
The empty container should be **rinsed** out thoroughly and left to **dry** completely before attempting to engage in any further use.

03 PLAY

We want to **encourage reuse over recycling**. Building block toys are versatile and timeless - children play with them for more than **3 years.**

04 STACK

Users are encouraged to see the toy as a **collectible** and develop a sense of brand loyalty. With our entire range of products, the blocks are **easy to stack and store**.



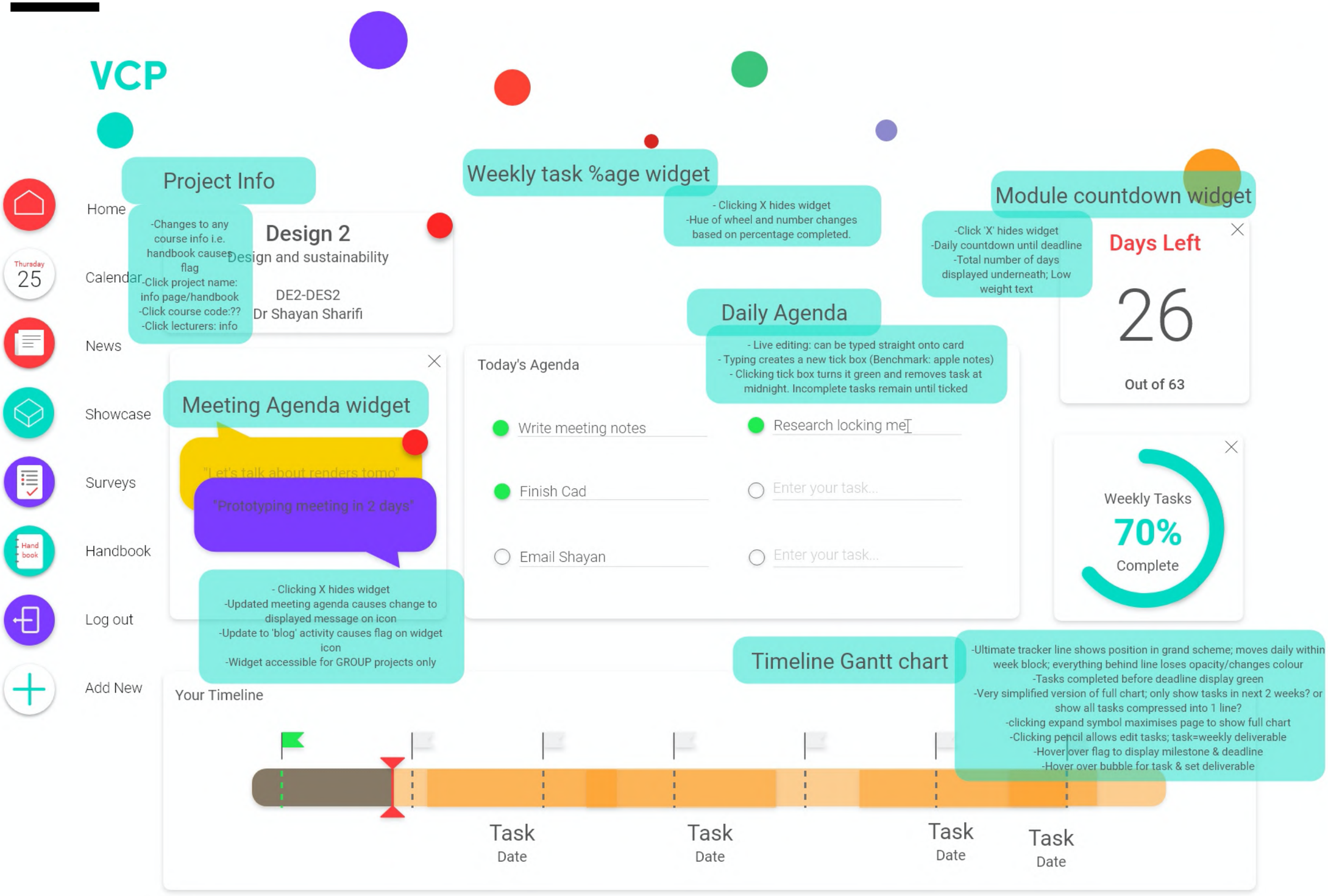
VCP

A new educational platform designed to the specifics of students.

UI and UX design of the platform. Inspired by the psychology around studying and student feedback. Taking a close look into fluidity, practicality and visual identity.

UI / UX
Design

VCP


VCP
Project Info
-Changes to any course info i.e. handbook causes flag
-Click project name: info page/handbook
-Click course code:??
-Click lecturers: info
Design 2
Design and sustainability
DE2-DES2
Dr Shayan Sharifi
Weekly task %age widget
- Clicking X hides widget
-Hue of wheel and number changes based on percentage completed.
Module countdown widget
-Click 'X' hides widget
-Daily countdown until deadline
-Total number of days displayed underneath; Low weight text
Days Left
26
Out of 63
Home
Thursday
25
Calendar
News
Showcase
Surveys
Handbook
Log out
Add New
Daily Agenda
- Live editing: can be typed straight onto card
- Typing creates a new tick box (Benchmark: apple notes)
- Clicking tick box turns it green and removes task at midnight. Incomplete tasks remain until ticked
Today's Agenda
Write meeting notes
Finish Cad
Email Shayan
Research locking me
Enter your task...
Enter your task...
Meeting Agenda widget
"Let's talk about renders tomo"
"Prototyping meeting in 2 days"
- Clicking X hides widget
-Updated meeting agenda causes change to displayed message on icon
-Update to 'blog' activity causes flag on widget icon
-Widget accessible for GROUP projects only
Weekly Tasks
70%
Complete
Timeline Gantt chart
-Ultimate tracker line shows position in grand scheme; moves daily within week block; everything behind line loses opacity/changes colour
-Tasks completed before deadline display green
-Very simplified version of full chart; only show tasks in next 2 weeks? or show all tasks compressed into 1 line?
-clicking expand symbol maximises page to show full chart
-Clicking pencil allows edit tasks; task=weekly deliverable
-Hover over flag to display milestone & deadline
-Hover over bubble for task & set deliverable
Your Timeline
Task
Date
Task
Date
Task
Date
Task
Date

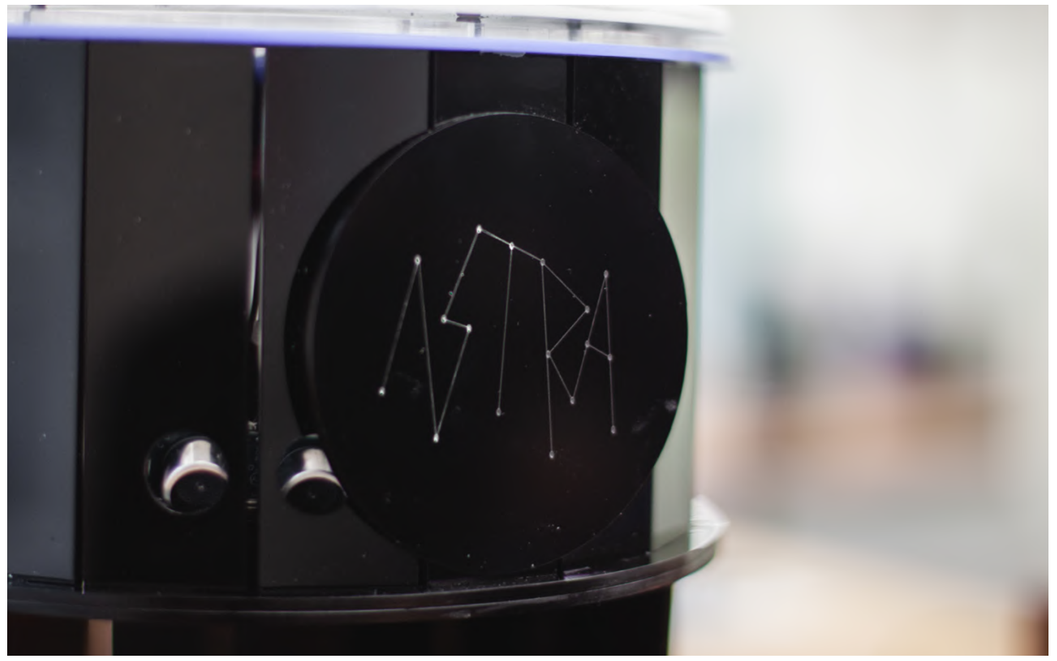
Artwork

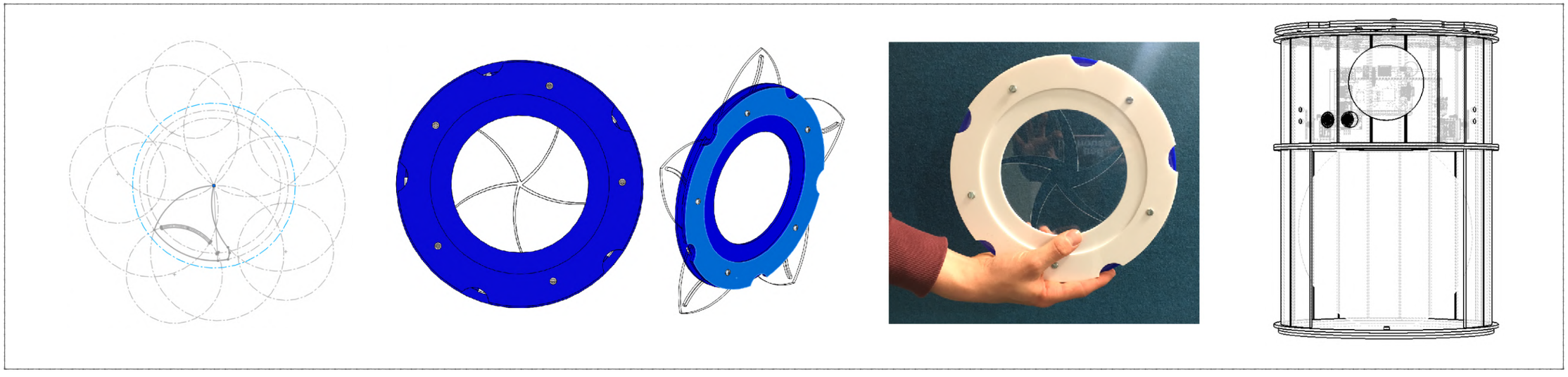
Pattern used in the department's student handbook

Fashion sketching

ASTRA

Physical
Computing





A small space themed arcade console. Using a hologram to project the game. Its aim is to generate curiosity and entertainment to the user.