DESIGN & INNOVATION

The Open University

STUDENT EXHBITION CATALOGUE 2022

The Open University

DESIGN AND INNOVATION 2022

U101

T217

T317

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OPEN DESIGN

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INTRODUCTION

This is the fifth year that the Open University Design Group have invited entries, from across all stages of study, to an exhibition of student work. In these pages you will see work that reflects the diversity of OU design students. All of the work you see here has been done in response to briefs set within the design modules. This year we asked students to submit a main image plus working images either showing detail or design process alongside a description of their work.

Each year design staff vote on the entries to choose winners from each stage of study and one overall winner - this is a hard task as there are always so many good ideas and designs to choose from.

We hope that you enjoy this catalogue which brings all of this work together.

The OU talks in the shorthand of module codes. If you are not familiar with the modules you need to know the following:

U101 Design Thinking is a 60 credit Stage 1 entry module, there are no formal qualifications required to study it as the OU has completely open entry.

T217 Design Essentials is a 60 credit Stage 2 module further developing design skills. T218 is a cut down version of T217 for engineers.

T317 Innovation: Designing for Change is a 60 credit stage 3 module that is taken not only by design degree students but also students from engineering, business and computing.

Open and enjoy!


U101

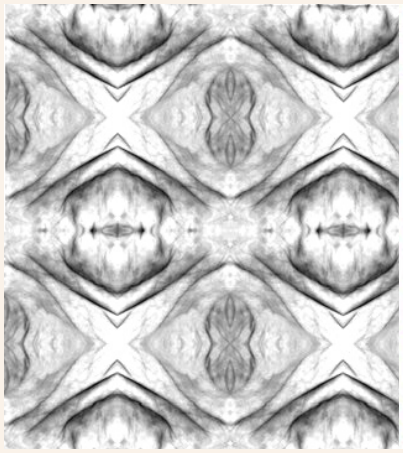
OUR PLANET

AISHA
YOUSUF

I decided to choose the palm of my hand as this is where the most complex of lines appear, one branch leading on to many more, creating a mini system of pathways that span over the whole hand.

This area of my hand interested me the most, because of the resemblance of the overall structure of a tree, (which has a trunk and branches, - all of which form part of a system that not only sustains itself but sustains life as part of a greater eco-system).

Nature has always been a trigger for my creativity from very young. This picture attached made me reflect on the climate change crisis that humanity is currently facing, like the mass deforestation in the Amazon Rainforest.



Creatively, I enjoy making flower arrangements and I love gardening because it makes me feel happy and connected to nature. I have always been fascinated by the beautiful, symmetrical patterns visible in nature and the vibrant colours.

I have chosen my favourite plant in my house, an orchid. I used my iPhone to capture the image (also attached) using a white background, to accentuate the intricate features and allow the colours to appear more vibrant. I increased the exposure, and decreased highlights a little; I also increased the contrast and decreased the brightness to allow the minor details to show.

I have made praying gesture with my hand because it represents me and my humility- it represents a sign of asking, begging, praying, helping, etc. In my daily prayers, I use this gesture to beg forgiveness and offer thanks to my God.

This was my first TMA, so there was no problem statement at this stage, however with my design I handled the problem of global warming and how our hands can stop this. This delivers a universal message to us all about how our World as we know it is dying through our own irresponsible ways.

SEE YOU AT THE TOP!

ALEXANDRA BODEA

Llanberis Mountain Rescue Team deals with between 185 and 210 incidents every year. ‘See you at the top!’ game’s purpose is to raise awareness about the dangers of climbing Snowdon while entertaining the players.

The game audience is formed of hikers who intend to climb Snowdon, but the game can be played by anyone.

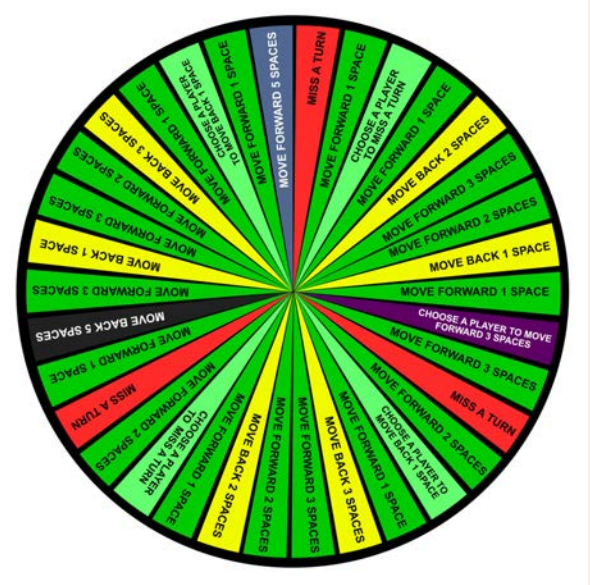
The board game is a printed magnetic sheet that builds up in a mountain shape. My first prototype was a mountain made out of cardboard, but it was hard to transport. Having a board that builds up to make the transportation and the storage easier.

The counters have a magnetic base, so the game reassembles the action of climbing a mountain.

To play the game, each player chooses a path and a counter. Each player takes turns and spins the wheels. The player does the action the wheel indicates. To make the game more entertaining, there is a strategy mechanism too. On the wheel, there are actions such as 'Choose a player to move forward/backwards'.

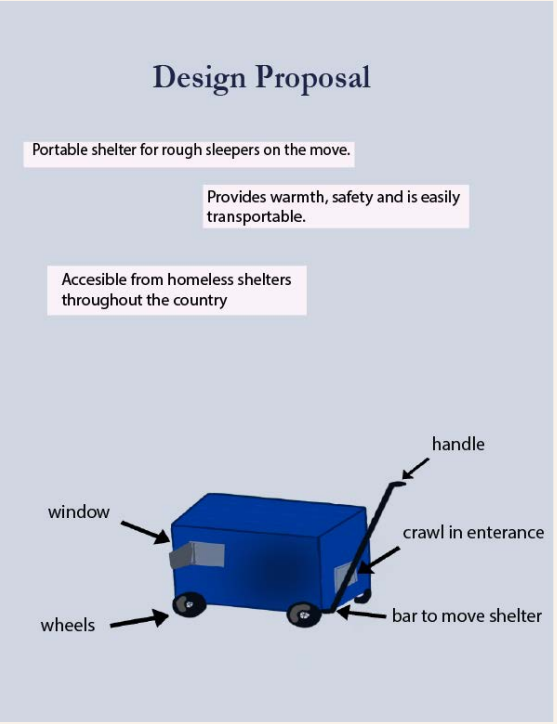
Because the main purpose of the game is to be educational, on the board, there is information about the dangers of climbing Snowdon, the paths and their difficulty, what a safety kit must contain, and alarming statistics to trigger emotions and sensibleness.

Climbing Snowdon is one of the activities I enjoy. Unfortunately, every time I do it, I meet people that are not correctly equipped or hurt. I ideated the game because I believe that the number of incidents would be significantly lower if the hikers would be prepared for the adventure.



PORTABLE SHELTER

AMY HUTCHINSON



My project was to create a portable shelter aimed at the homeless. A shelter that can be moved but also provide warmth and safety. My portable shelter is accessible to rough sleepers throughout the UK. The shelter can be obtained at local homeless shelters which process involves filling out the relevant form. My problem statement is - How might I design a portable shelter aimed for the homeless that is weather resistant and ensure the safety of the user and their belongings?

In England alone, there was a report of over 2,000 rough sleepers recorded in 1 night. Homeless people experience rough sleeping on the streets and it impacts them greatly.

Through my research, I found out that someone who is rough sleeping needs a shelter that provides safety, warmth and sustainability.

My design process started off with carrying out research into what shelters are available and also an interview with a previous rough sleeper. I generated my ideas by holding a creative session. Then choosing the best ones I narrowed it down to my favourite.

I created various sketches and created a sketch digitally online to get an understanding of how I wanted it to look.

My design process started off with carrying out research into what shelters are available and also an interview with a previous rough sleeper. I generated my ideas by holding a creative session. Then choosing the best ones I narrowed it down to my favourite. I created various sketches and created a sketch digitally online to get an understanding of how I wanted it to look.

My proposal is a portable shelter that is easily accessible for the homeless throughout the country. It provides the right safety and storage for their belonging but is also big enough to comfortably sleep and transport.

My design addresses the problem by providing a warm, safe and longer-lasting shelter for people without a roof over their heads.

I am 22 years old and from Scotland. I have always had a passion for design and decided to take the plunge and start studying at the OU.

During the module I wanted to gain a better knowledge of the design process and also gain confidence in myself. I currently design and sell wall prints through my website. My passion lies in graphic and product design so hopefully, after graduation, I aspire to have a career that can involve both of them.

AROUND THE WORLD IN 80 DAYS

ANASTASIA CHUPINA

This board game is a perfect way to spend an evening in a family circle or play with friends, perfect for children and English learners.

It is designed to teach correct judgement of weather conditions and appropriate choice of clothes. This board game is designed for 2-4 players. It consists of a map, 4 sets of tokens 6 pieces each, and 80 cards.

The map is printed on a sac, which can be used to store the game pieces, and is convenient to carry around and play outdoors. The map shows 6 climate zones: winter forest, mountains, city, desert, beach, and rainforest.

Each zone clearly shows the temperature and weather conditions (emoji).

There are 60 cards of clothes, that can only fit to 1-2 climate zones. You can tell which zone they fit to by the emojis and the temperature on the face of the card. 20 cards are called gear, and they can fit to any zone.

Tokens are used to mark the climate zone that you managed to claim. To win you need to claim all 6 zones first.

U101

RIVER FLOWS IN YOU

ANASTASIA CHUPINA

This T-Shirt is branded with my pseudonym and a stage name: Ana Banana. I am a pianist and music has always been a very important part of my life. There's a condition called synesthesia, when you visualise sounds through colours and shapes.

The drawing I made represents how a person who has synesthesia percepts the music. It's like a colourful river, that flows into your heart.

That's why I cited the name of a famous piece by South Korean pianist Yiruma 'River Flows In You', which is one of my favourite. I chose the rainbow palette to represent the music as a universal language. The print is placed in the area where the heart or soul is usually pictured or imagined to be.

The drawing of hands complements the shape of a woman's body, as it may seem that the hands are holding the chest.

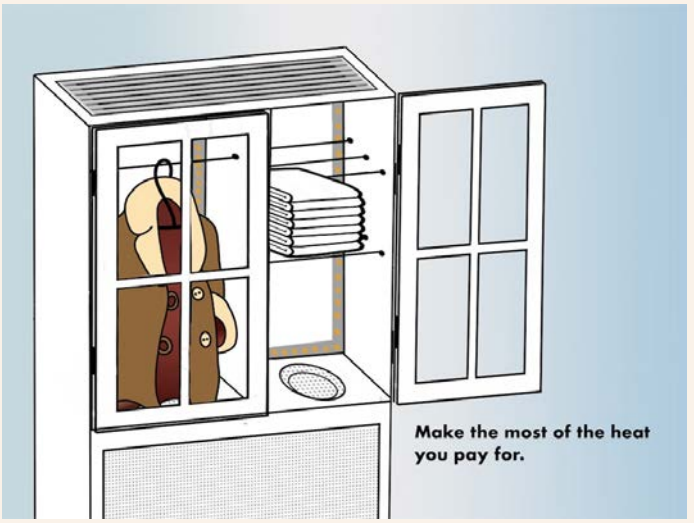

X Ana Banana X
design & wear


'River Flows In You'

U101

WARMDROBE

ANASTASIA CHUPINA

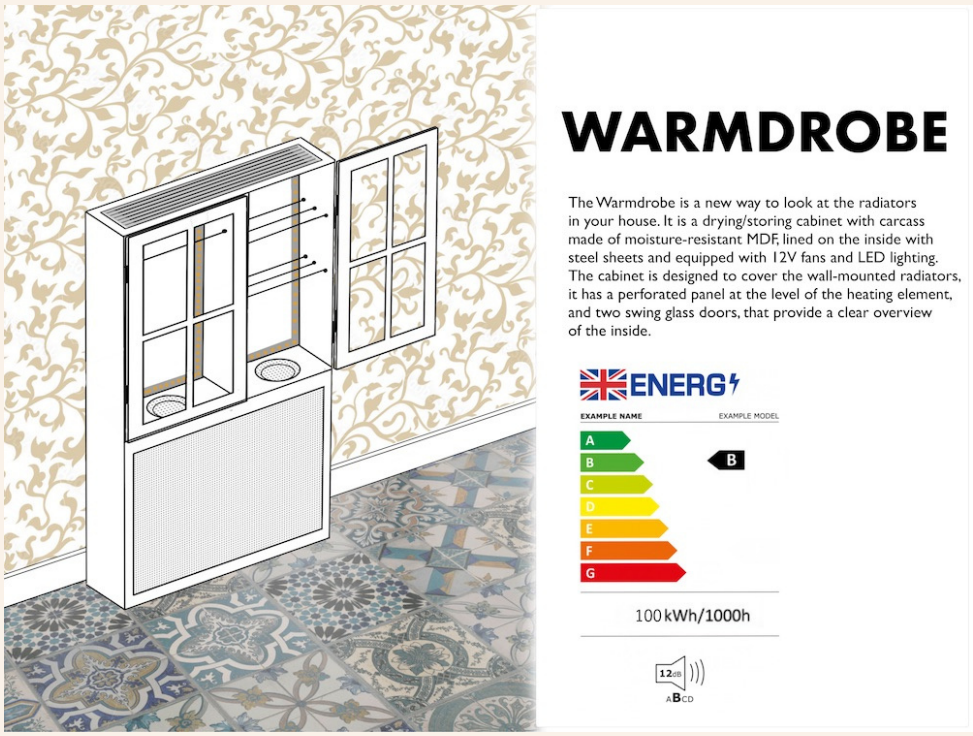


The Warmdrobe is a new way to look at the radiators in your house. It is a drying/storing cabinet with carcass made of moisture-resistant MDF, lined on the inside with steel sheets and equipped with 12V fans and a 60W LED lighting strip.

The cabinet is designed to cover the wall-mounted radiators, it has a perforated panel at the level of the heating element, and two swing glass doors, that provide a clear overview of the inside.

It is not just an elegant alternative to impractical radiator covers, it's a multifunctional home appliance which dries out wet and damp clothes during the cold season when the heating is on; is used as storage during the hot season when the heating is off; serves as a protecting cover of hot radiator surface.

Perfect for households located in cold climates, homes equipped with wall heating panels, safe for children and pets.



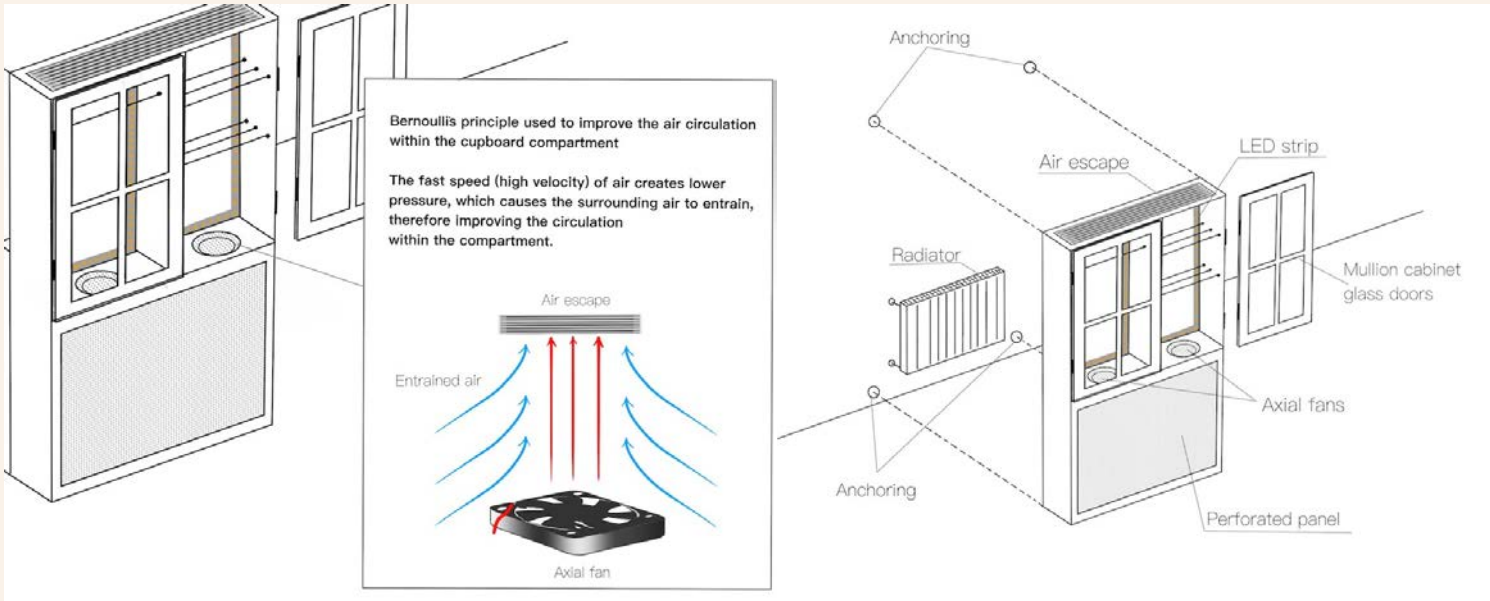
Key features of the design:

+ Multifunctional

+ Energy efficient

+ Easy installation

+ Style



THE EARLY BIRD'S STRONG COFFEE

ANASTASIA
KKAMA SURFARO

Description of project: To create a T-shirt design based onobservations of my hand showing a story and a gesture.

My starting point was to study and focus on a particular feature, a burn scar and the symmetrical connection to a beauty spot on the opposite side.

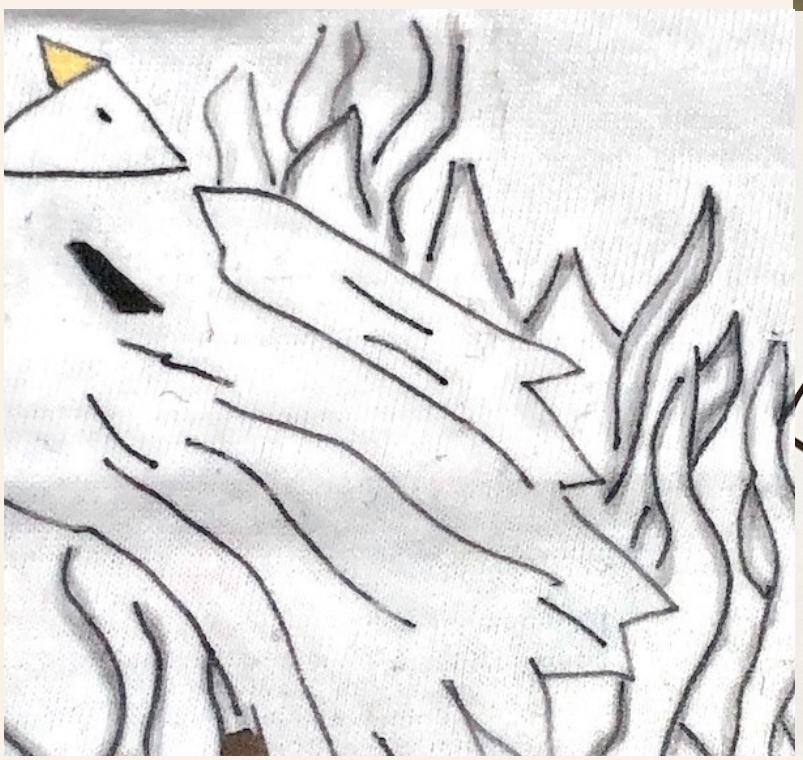
By using the technique of line drawing and tracing I was able to show movement within my composition. I used the idea of jagged sharp edges, to represent flames, connected to my burn scar.

Using principles of symmetry and repetition of the fingers, allowed me to transform the image of my hand into a completely different object which was the bird.

To progress, I combined two of my concepts: the bird and a thumbs up hand gesture, with the hand holding, a cup, the bird coming out of it and wings representing flames/steam. The coffee in the cup is a play on the word 'Strong'. The image is central and the main focus of the T-shirt, representing an early rising from a cup of steamy strong coffee.

My skin tone for the hand, brown for the coffee, shading for the outline of the steam, were used to compliment the overall image,
showing contrast.

Once I was happy with this design I used the barcoded image with the
word approved to seal the project and show its completion.



THE BUS SHELTER OF THE FUTURE

ANDREW ALLEN

In TMA04 we were given the subject of shelter, to design and engage with other students. I designed mine in Cad software called Pcon planner.

It includes all the features I wanted to put in my real shelter. This includes a roof garden, lighting, childrens area, wifi and more.

My problem statement is 'How might we redesign the bus shelter to be bright, clean, attractive, and warm that will encourage the public to use buses more frequently?'

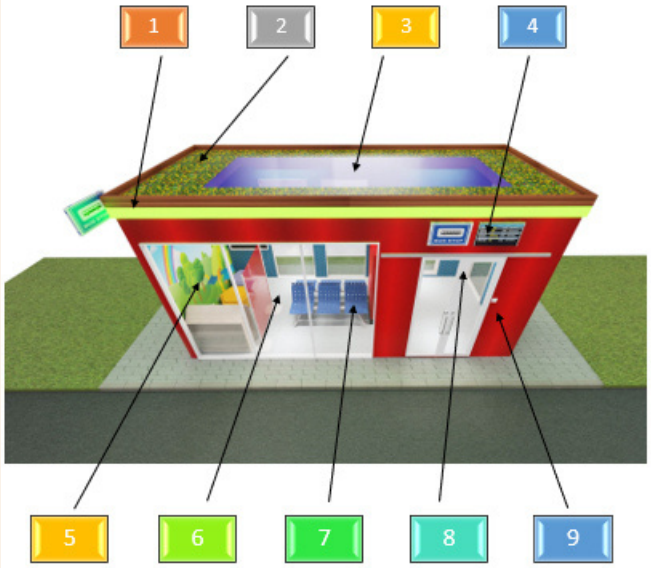
I think everyone hates the cold, dark bus shelters and want them changed.

I spent a large amount of time researching bus shelters. Often, I would take a walk and study my local bus shelters, sometimes taking a camera to take the ideal shots for my homework.

Other times I would take a notepad out with me, take notes and a few quick sketches. I noticed the shelters just lacked seating, warmth, lighting and really could do with state-of-the art technology being spent on them.

I decided to design a bus shelter for the future and for future generations. I wanted to design a new improved bus shelter that can be warm, bright and light to encourage more people to use the buses. Bright pictures were designed by schools and a flower garden for bees.

Design Proposal Features – the latest in bus shelters

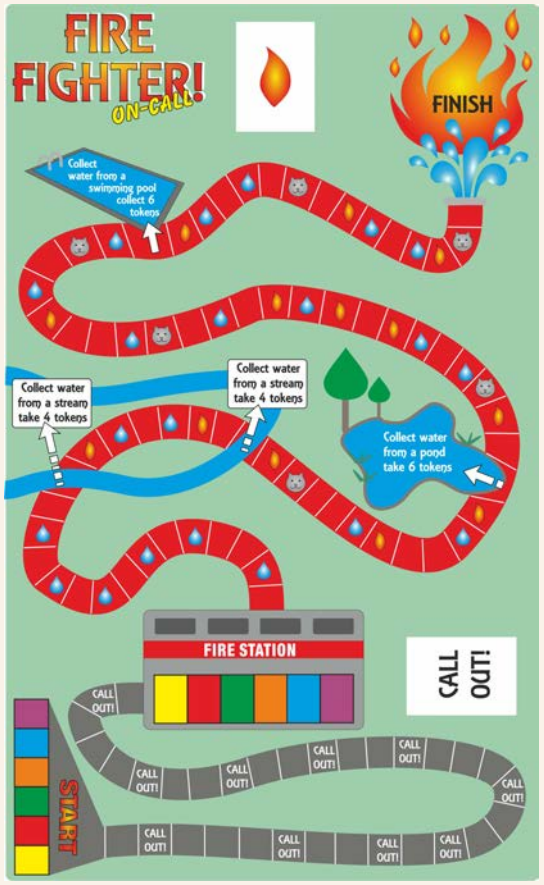


The latest in bus shelter design to encourage people back onto buses again in warmth and safety. I was looking for something warm and plenty of things to keep the little ones from not being too bored while waiting.

1. Illuminating lighting to let the bus driver know there are passengers to collect.
2. Environmentally friendly wildflower ceiling meadow for bees and butterflies.
3. Coloured glass ceiling to let in light and see the flowers, bees, and butterflies.
4. State of the art Wi-fi bus timetable.
5. Play area for younger children to keep them busy while waiting.
6. Bright and large windows for light. Warm carpeting inside.
7. Comfortable seating and food/drinks machine.
8. Wide sliding doors for large buggies and chairs on both sides.
9. Swipe sensor to open doors. Can only open with bus pass.

FIRE FIGHTER! (ON CALL)

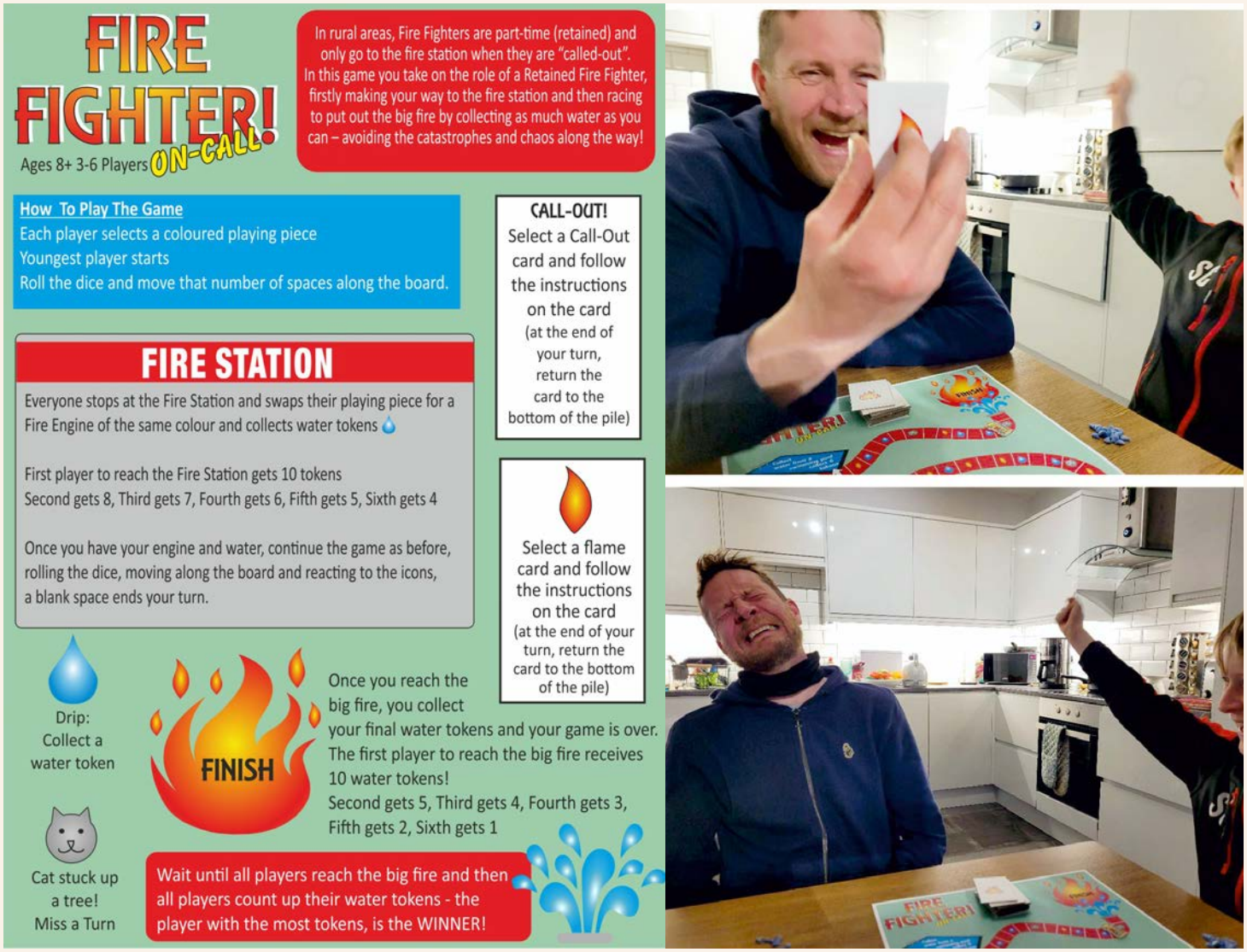
CARRIE CALDOW



You are a Retained Fire Fighter, you need to get to the Fire Station, collect your Fire Engine and then race to put out the big fire by collecting as much water as you can - avoiding the catastrophes and chaos along the way!

The Winner has the most water (and puts out the fire).

The design remit for TMA03 was to design and refine a board game based on a "Service" we had researched. My dad had been a Retained Fire Fighter and therefore it was fitting for me to choose this service. I researched the service by asking my dad questions about the key actors, components and actions of the Retained Fire Service and his detailed answers led to me noting ideas for a potential game.



Once I had created a rough prototype, I tested it on my family. From their feedback I was able to refine the game further. My 11 year old son suggested the playing pieces should be Fire Engines (buttons I bought from ebay) so I incorporated them into the game. The chaos and catastrophes were created to keep the game fun!

You lose turns and being sent back to the fire station because of rescuing cats stuck up trees, getting lost and running out of fuel. The water tokens are droplets of water that I made out of fimo clay. I made the rules card match the board game so that they were easy to understand.

PROBLEM SOLVING IN DESIGN

CHARLOTTE RICKWOOD

Automated pillboxes use lights and sound to alert the user that it is time for medication. This is not suitable for the deaf and or blind who cannot see the lights or hear the sound making them completely reliant on someone to tell them.

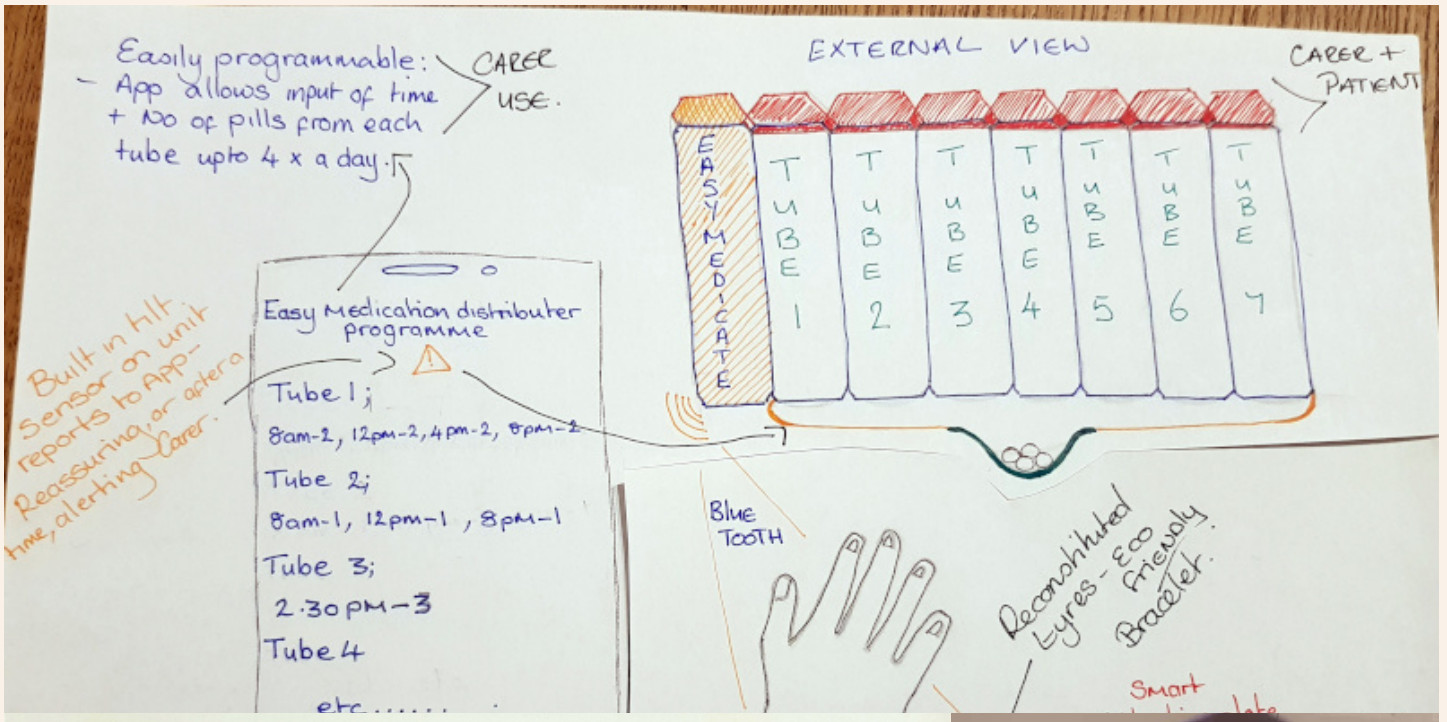
The design works by connecting a smart bracelet with an automated pillbox and App. The App programmed by the relative/carer signals the release to the pillbox at the correct time, which in turn sends a signal to the bracelet which vibrates alerting the user.

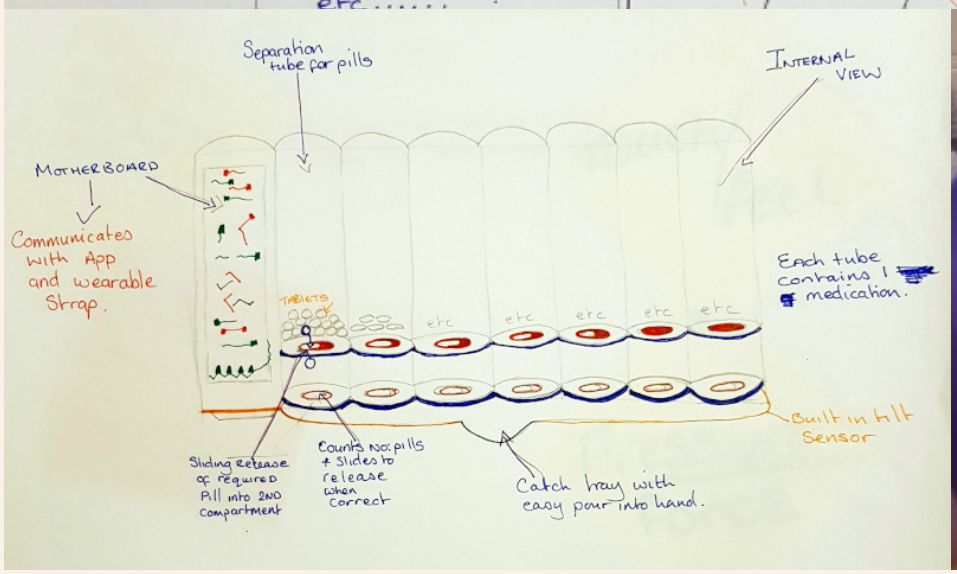
Having witnessed my husband struggle to remember the correct times to take medication I researched Pillboxes and found several automated systems that dealt with the issue with the use of light and sound alerts. With a nudge from my tutor, I turned to Haptic's.

A Creative session produced the idea of wearable items with vibration as the alert. The idea for a bracelet was developed with universal usage in mind.

I propose to add to an existing system which will create a larger user base and support a wider range of users. .

My design will support blind and or deaf users in the use of electronic medical devices enabling them to medicate safely and continue to be independent.





FACE MASK STRAP CUTTER

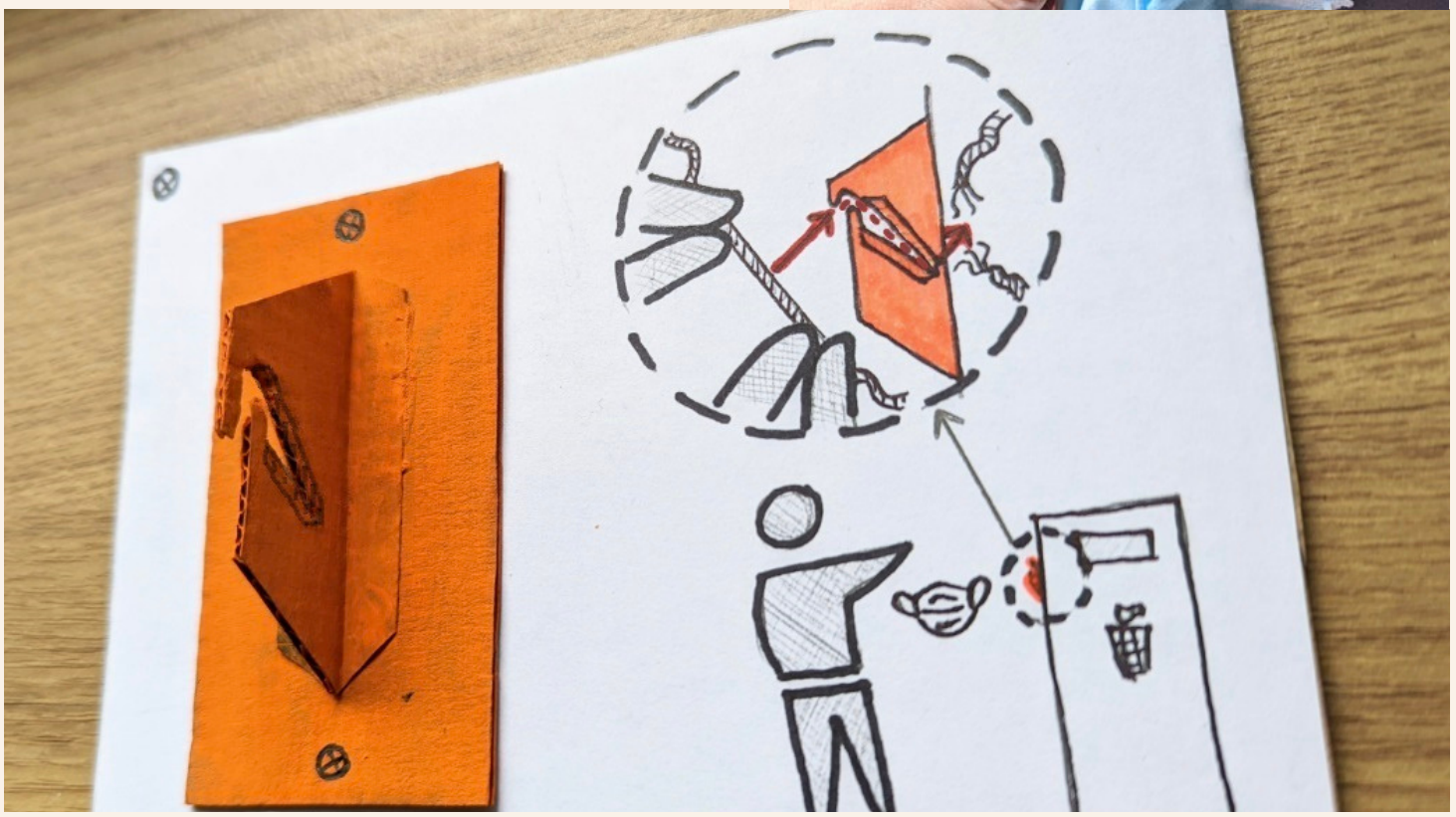
CHRISTIE LINFORD

My research focused on debris created by humans entering the environment, which is an enormous global issue. PPE (specifically face masks) exacerbated this during and after the global pandemic. I held a creative session to tackle the issue of face mask straps creating a serious entanglement risk to wildlife.

The aim was to design something convenient and safe to allow for wildlife friendly disposal of face masks when in public spaces, which is also my problem statement. The outcome, after refining the ideas proposed, was a face mask strap cutter that can be fitted to public bins.

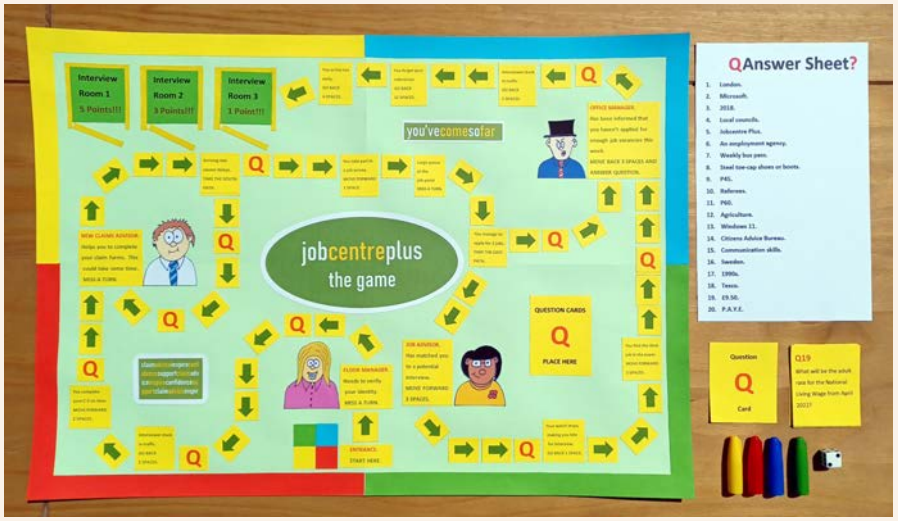
My design is environmentally friendly (recycled plastic), includes instructions (using illustrations to reach a wider range of users).

It does not require any redesign of existing bins, it's safe (only a mask strap can enter) and can be fitted at a height that allows differently-abled users to access it.



JOBCENTRE PLUS: THE BOARD GAME

DAVID LARGE



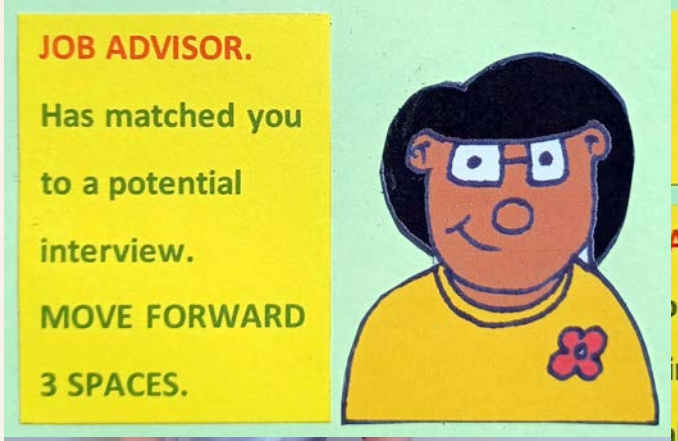
This is a dice board game for 2-4 players. Players will encounter employment related questions and squares which will have different outcomes. The game features four jobcentre employees which I designed based on real job roles within Jobcentres. The game encourages replayability through a league table format as players will end each game with either one, three or five points.

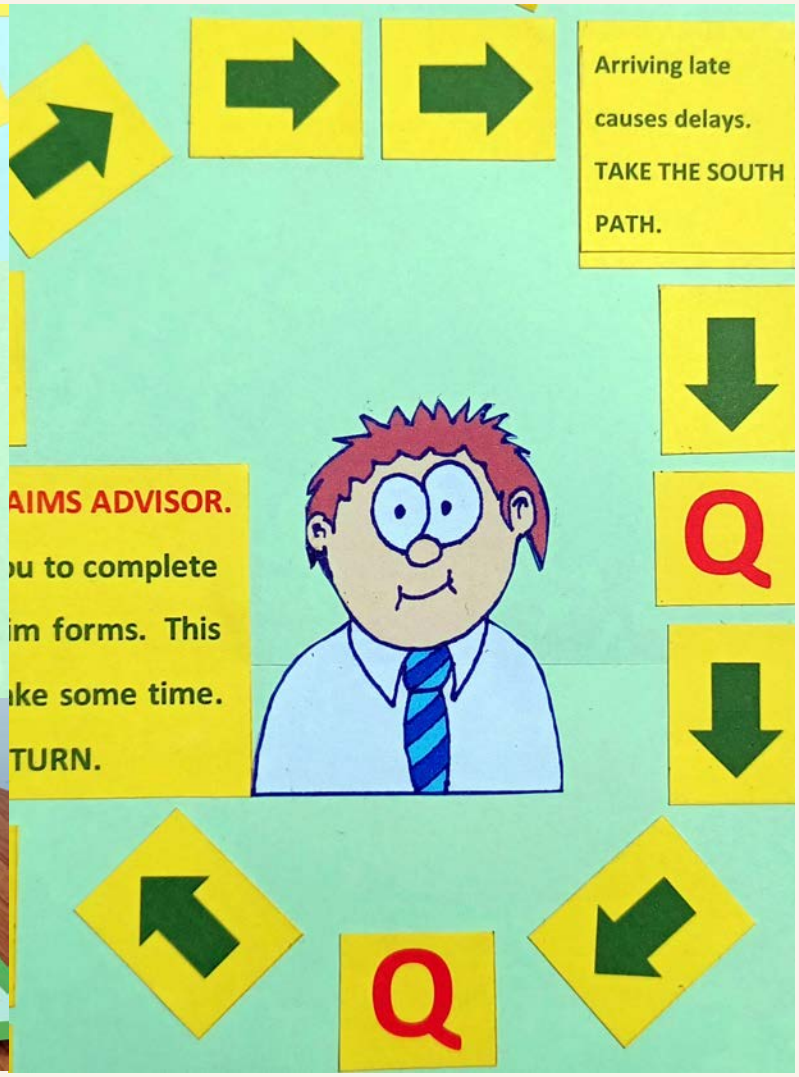
How can we help and assist the large numbers of people that lost their jobs because of the Covid pandemic?

How can we help those that are not comfortable or able to use the online services of Jobcentre Plus? Can we raise awareness of local face to face services?

I conducted my research by visiting my local Jobcentre Plus office and speaking directly with members of staff about their job roles and the services they provide at a local level. This inspired me to generate my initial idea of creating a board game based on the layout of local Jobcentres and the members of staff that members of the public will meet whilst using their local services.

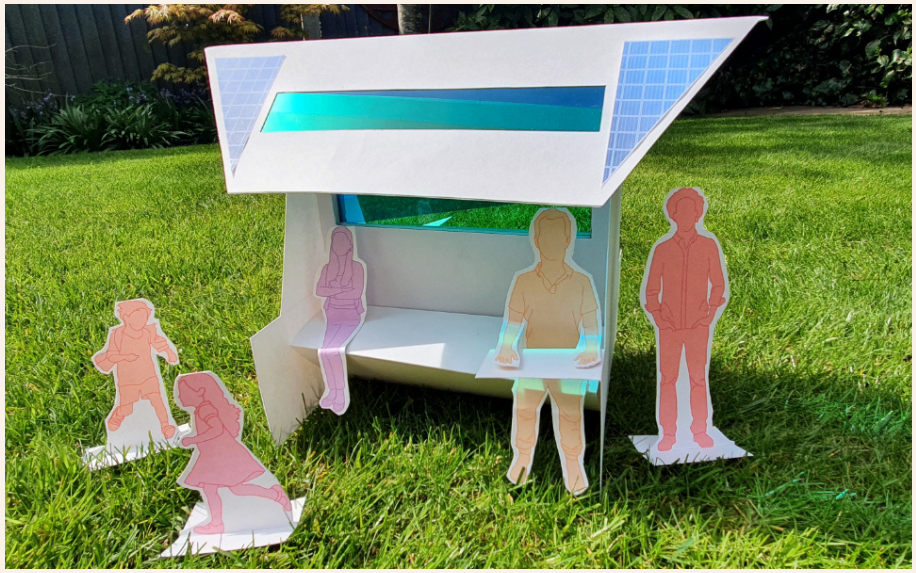
My board game allows people to have an enjoyable and challenging experience. The game demonstrates that there is an alternative to trying to tackle everything on your own online and informs of the many services that can be completed sustainably through local Jobcentre Plus offices.





CO-NECTAR SHELTER

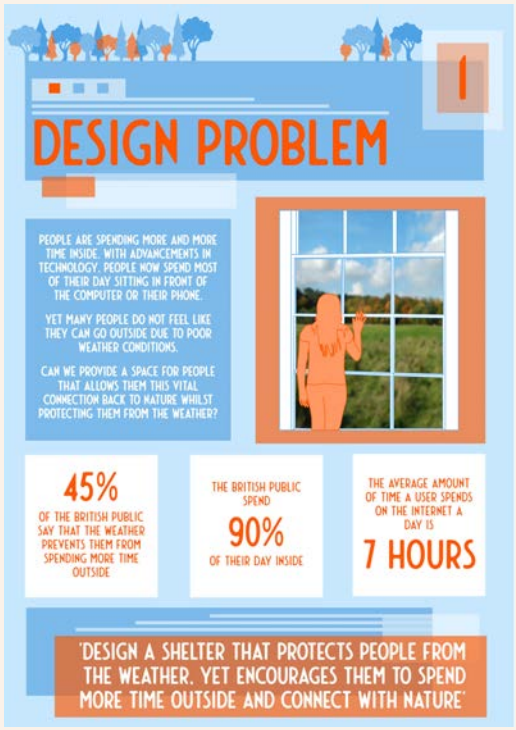
ESME MAGNIER

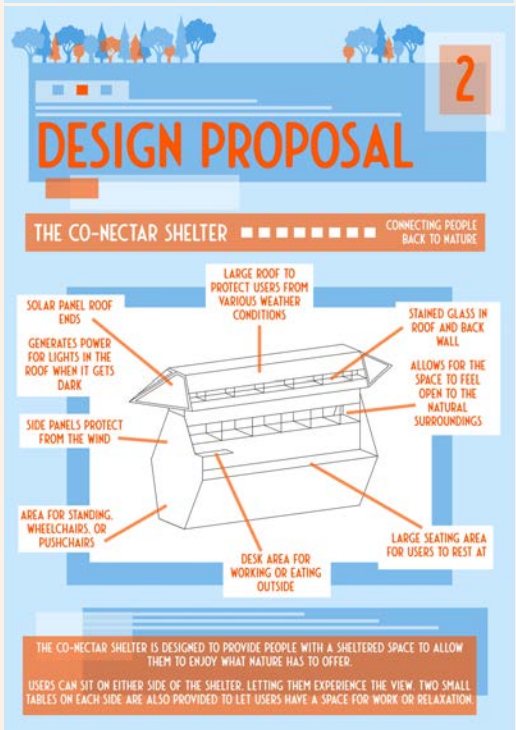


My problem statement was ‘Design a shelter that protects people from the weather, yet encourages them to spend more time outside and connect with nature’. I feel this problem relates to many people, especially as many of us have spent much time cooped up inside due to the pandemic. Initially, I started my research looking at shelters in a range of different contexts from COVID-19, refugees, and the weather which is the area I focused on.

While extreme weather conditions are one route I could have focused on, I decided to look at protecting people from more general weather to encourage them to spend more time outside. Ideas were generated by holding creative sessions with others, then refining my ideas though various prototypes.

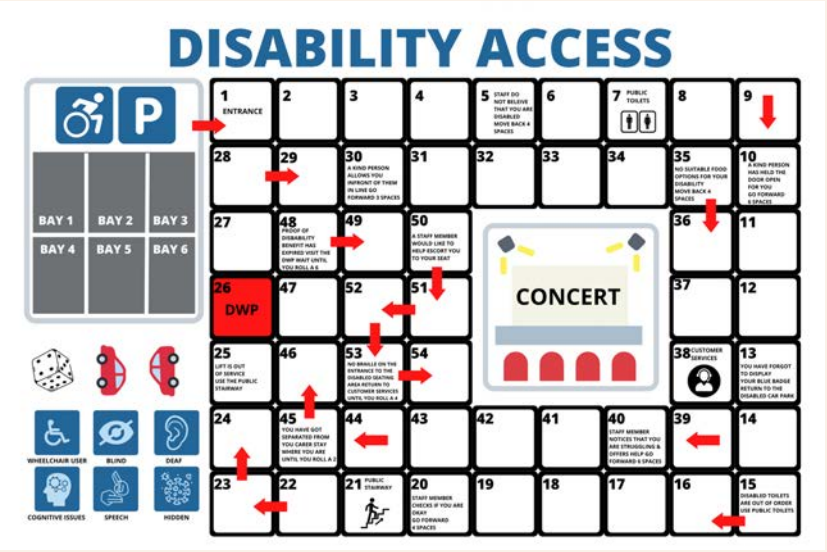
My solution is The ‘Co-Nectar’ Shelter, aiming at connecting people back to nature. It is a sheltered bench area with standing room and tables for people to work or eat at. The stained glass allows for sun and to allow users a full view of nature around them.





DISABILITY ACCESS

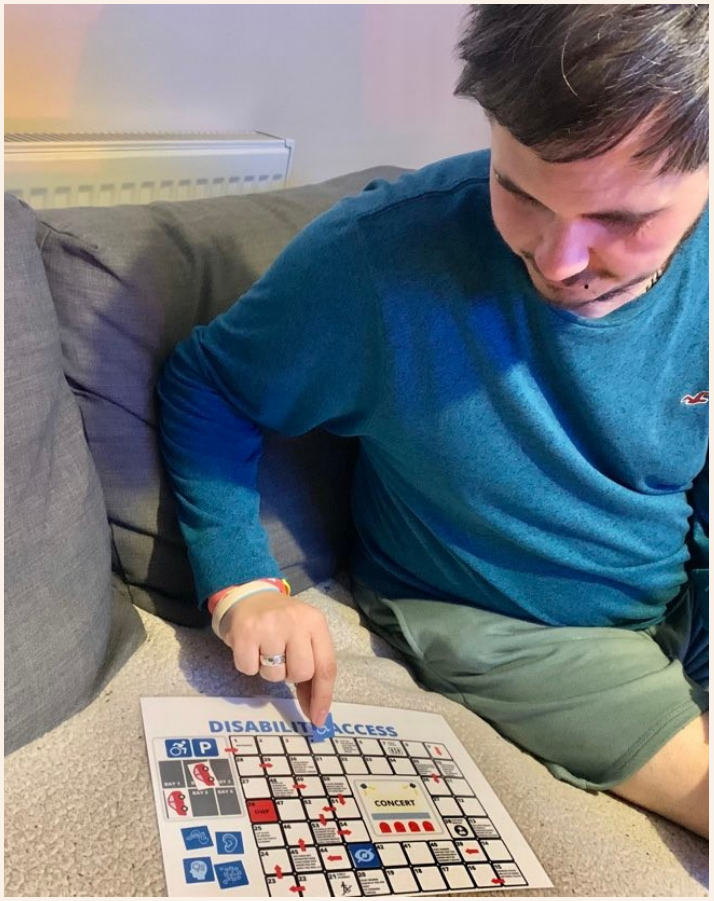
JESSICA
HEATHER

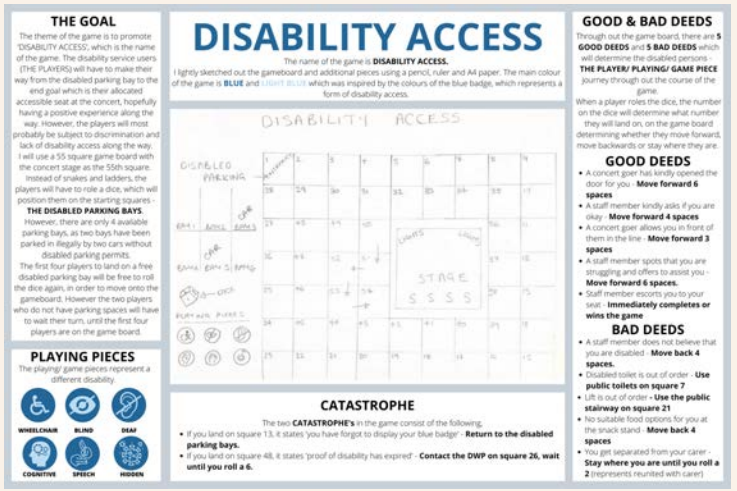


The goal of the game is to promote 'DISABILITY ACCESS', which is the name of the game. The disabled service users (THE PLAYERS) will have to make their way from the disabled parking bay to the end goal which is their allocated accessible seat at the concert, hopefully having a positive experience along the way. However, the players will most probably be subject to discrimination and lack of disability access along the way.
As a disabled person, I often find it difficult to navigate public events. For example, attending a concert. Not all employees at public events have been trained on accessibility and disability rights.

As an employer, it is their duty to educate all employees on the rights of people with disabilities, services more accessible and inclusive for the disabled community.

To create the prototype boardgame, I needed to find the essential building blocks of a public service. Therefore, helping me to design and construct a game communicating to those with an interest in the service. However, when thinking about public services as a person with disabilities, I began to focus on bad examples of service design within other public services, where disability access may not have been designed appropriately with a disabled service user in mind. As I have sadly fallen victim to discrimination and lack of disability access, I felt I needed to analyse public services that I have previously attended.





The mechanics, actions and components of the game help to address the problem. For example:

GOOD DEEDS within the game will represent the kindness of strangers towards disabled people as a whole, as well as when employees have been trained on accessibility and disability rights.

BAD DEEDS within the game will represent the discriminating behaviour towards the disabled service user, not all employees having the correct training with regards to disability rights and lack of accessibility.

Furthermore, I decided to identify how a lack of disability access can impact a disabled service user's experience at public events leading to CATASTROPHE element.

THE GAME/ PLAYING PIECES are 6 different disabilities, a wheelchair user, a blind person, a deaf person, a person with cognitive issues, a person with a lack of speech and a person with hidden disabilities that will move around the game board representing the many disabled services users that will attend public events.

SPORT SHOE SHELTER

JULIA BALCERZAK

The Gore-Tex material and waterproof zipper allow to keep the shoes outside in harsh weather conditions. Retractable hooks for attachment to window or balcony frames.

The suction cups prevent the bag from slamming against the window in the wind. Metal vents let shoes breathe. Adjustable straps for portability function.

How might we provide effective storage for sport shoes, outside of the house, protecting from harsh weather conditions, with the added value of portability?

Sports shoe protection for athletes who travel and about with their stinking shoe and want them keep dry and clean at all times.

The most rewarding part of collecting information was the creation of own survey on storage, travelling with sports equipment, sending to specific groups of athletes and seeing clear results.

With the process of storm braining, OU cards, random input etc. sketches were created. In the process of selecting the best idea, tables with criteria were used. Finally, the criteria developed in based on Dieter Rams' principles were used to evaluate the previously selected project.

The designed sports shoes protection supports and helps athletes to cope with unpleasant situations and solve the problem of storing their smelly shoes.

The design would be suitable and advantageous for use anywhere in the world.

U101

INFLATABLE SANDBAGS

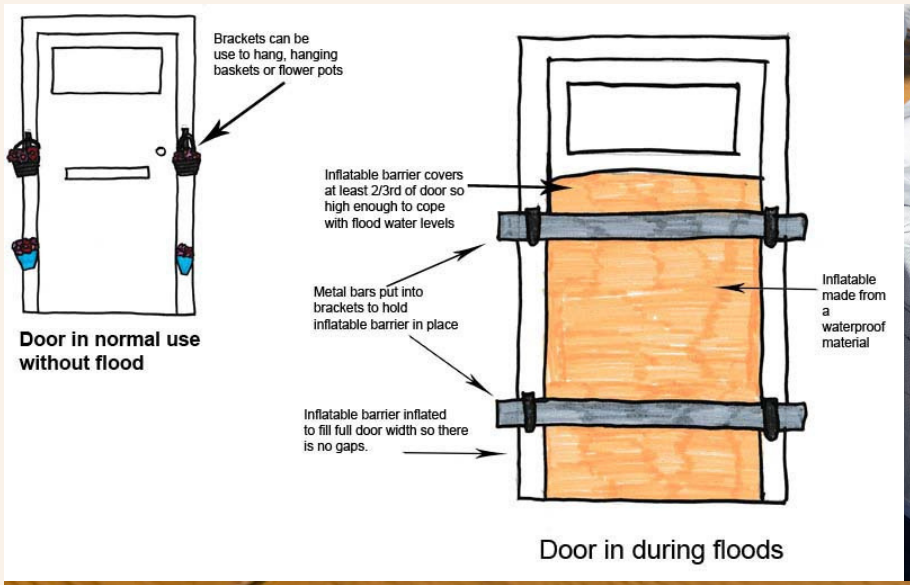
KAREN HIDDLESTON

For this assessment, we had to choose a design problem and design a prototype to solve it. I chose the following as my problem statement: Design a solution that is cost effective and easy to put in place to reduce the risk of flood water from damaging businesses and homes.

I decided to tackle this as it is an issue that is close to home. We have a tidal river that runs through our town centre and when there is heavy rainfall, the river bursts its banks causing damage to local businesses and housing in the area. I began researching existing solutions to the problem such as Sandbags, Watergates and the local council's plan. As part of the assignment, I had to put together a design team to help me to come up with 10 design solutions. I then ranked each design to gauge its effectiveness and then chose one to develop further and began to make a scaled model version of my prototype.

My prototype is of a waterproof bag that you inflate to fully fit inside your door frame so that there are no gaps.

Then 2 metal bars are put in front of it to keep it in place. The bag is easy to use and store as once deflated it can be folded up and put in a cupboard.



SILVER BUS SERVICE

KATIE BENN

I created a bus service inspired board game where players roll the dice to move around the board. However, there are some obstacles in the way, these can move players back spaces or make them miss their next turn. The first player to land on the finish space wins the game.

I created my board game as I felt it is a fun way to teach children some of the positive and negative things that can happen while travelling on a bus. I also felt this could simply be a fun family game that can be played, while bringing family members together.

Firstly, I researched different board games, the layouts, how the game is played and any components within the games, I then played these games to better understand the game play. Throughout my design process I created new aspects of the game, then played with my father and then work colleague, requesting feedback as we played. I would then build on their feedback and create new aspects and modify the game step by step.

My game could be re-designed to play online, where it could be played in primary schools or at home. It could also be made into a floor game, where the game is printed onto a movable carpet, players roll a foam giant dice and move around the board as counters.

Detail 1 Community Bus Stop– If a player lands on the traffic light space they must go around the community areas (the shops in this image),this can sometime be a longer route.

Detail 2 Diversion– The diversions in the game can be tricky sending players back down the board, if players are unlucky they could get stuck looping around the diversion.

Detail 3 Bus Stop Cards – Players pick up a card if they land on a bus stop, there are many bus stops placed around the board. The cards move the players forward or backwards one or two spaces.

HIT THE ROAD

LEON PHILLIPS

‘Hit The Road ‘ is a board game for up to four players. Based on the music industry.

How can we see the inner workings of the music business? I’ve been in this industry for 45 years and like many musicians and technicians, was made redundant during the pandemic. I wanted to highlight the business in an informative and fun way in the form of a board game for musicians and everyday people to enjoy.

I broke down the ‘journey’ a band can take to make it in the industry, from starting out, to creating a fan base, creating their product, and becoming famous.

I used such markers as audience size, size of venue, the acquisition of professional equipment production and crew, and various key events that highlight (or hinder) success.

The goal of the game is to be the first one to get a gold disc, headline a major festival, have a million streams etc.

There are many mishaps along the way

POSTED!

LOUISE
MELMOTH

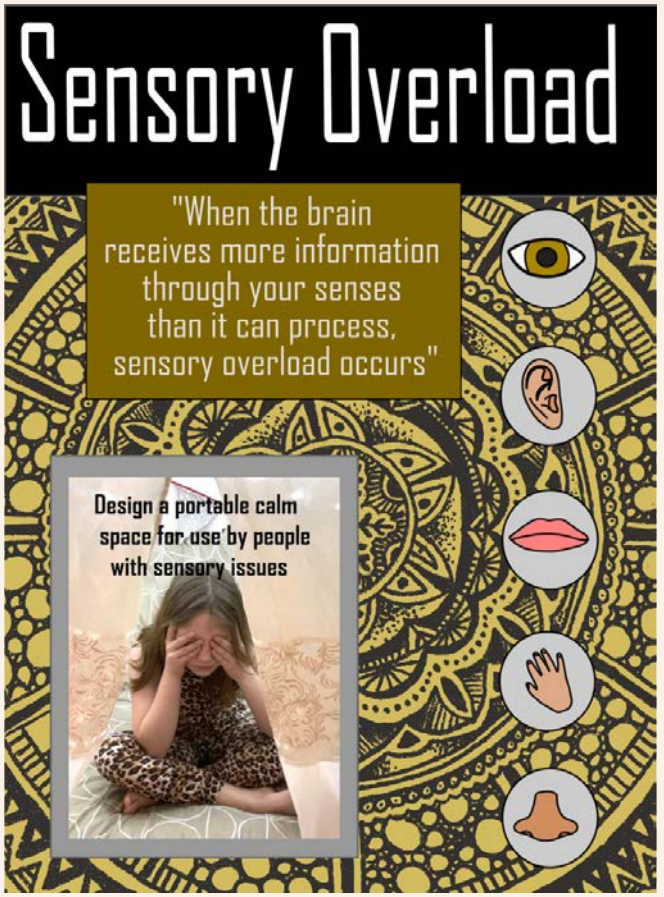
I chose to look at Royal Mail as I'm a postie. I wanted the game to be as fun for the players as possible so I really wanted to make the game interactive and include actually posting the letters so I used a building in the centre of the board for this purpose. I really enjoyed learning how to create the graphics for this game.


Welcome!
Royal Mail


Welcome!
Royal Mail

PORTABLE CALM SPACE

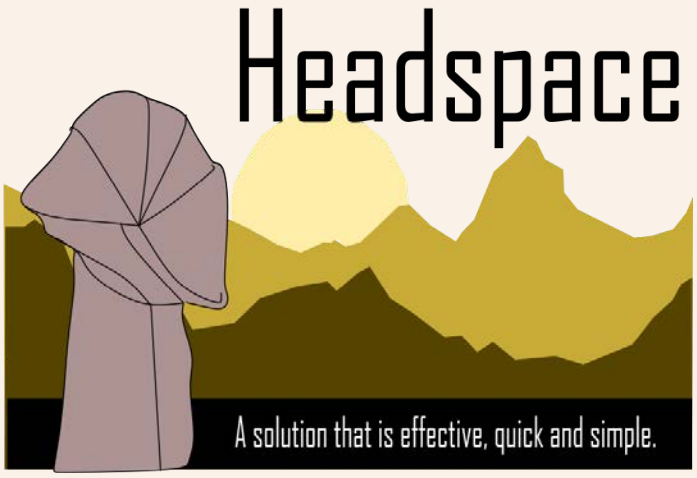
LOUISE MELMOTH



I chose to look at something practical that could be used in order to help someone with sensory issues calm down when in public.

I felt that something fixed may be abused so went with portable, and I believe that it should be quick and not draw too much attention. It's amazing what a little extra head space can do in these situations.


A Portable headspace for sensory overload
A fabric cloak that can be worn as a normal garment or carried easily within a bag. When sensory overload occurs, the hood can be brought over to give headspace - a space to breathe and calm down.
This can be used with noise-cancelling headphones / scents / lights.
Smells Noise Loud Lights
Busy Stress
Smells
Busy
Lights
Busy
Lights
Smells


Headspace
A solution that is effective, quick and simple.


Sensory Overload can lead to not going out anymore.
In order to return to calmness, it's important to have a little
Headspace
A simple cloak which can be worn or carried in a bag and put on when needed.
Headspace
And Breathe...

BUG SOAP

Overall Winner

LOUISE MELMOTH

An obvious solution to the plastic consumption caused by body wash is to use soap, but many of our children are not even offered this. I chose to look at ways in which we could alter this. The obvious solution is a hard soap, but these tend to go slimy and become unpleasant. I looked at ways in which to ensure this doesn't happen through adequate drainage, then attempted to make the product as attractive to children as possible. I did this by having a novelty soap holder, with shaped soap, attractive packaging and including an educative free gift collectible card. I really enjoyed creating a whole product in this assignment and learning so much about creating graphics!

U101

THE CIRCULAR TENT

MEGAN BIRKINSHAW

My design project is an easy-to-build, recyclable/biodegradable tent that can be used by festival-goers, homeless individuals, and refugees alike in situations where they may not make use of their temporary shelter for long periods of time. My design aims to combat the waste accumulated from abandoned tents.

'How might we reduce the environmental impact of temporary shelter used by festival-goers, homeless individuals, and refugees?'
My problem statement aims to address the issue of vast amounts of tents ending up in landfills/incinerators, after being abandoned by individuals using them on a temporary basis.

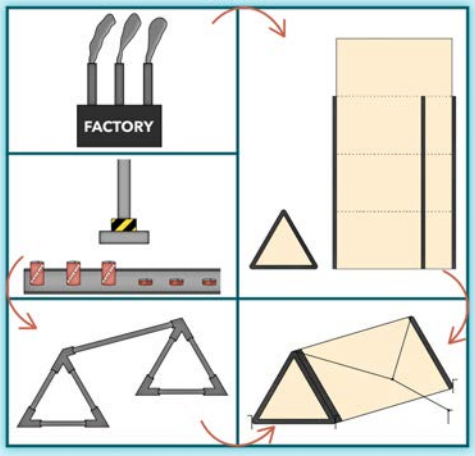
Upon finding out that 250,000 tents are abandoned at festivals annually, I decided to investigate why individuals might not take their belongings home with them - with the overwhelming consensus amongst peers suggesting that the difficulty of building/dismantling their tents resulted in them giving up with the process and leaving them behind. This information told me that tents need to be easier to build (as well as biodegradable/recyclable, should they continue to be abandoned).

My resized, redesigned tent uses biodegradable fabric sourced from waste CO2 from large factories; and recycled/recyclable aluminium cans to create the tent poles/stakes.

Building/dismantling the tent is simple, encouraging users to reuse their tents; while the life of the tent is 'circular' should it be left behind.

"How might we reduce the environmental impact of temporary shelters used by festival-goers, homeless individuals, and refugees?"

- 90% of an estimated 250,000 tents left behind at festivals each year end up in landfills/incinerators
- Most tents are made from nylon or polyester - both of which are made from non-renewable sources, and are not biodegradable



Recycled aluminium cans create recyclable tent poles/connectors	CO2 collected from factories creates bioplastics to create a biodegradable tent fabric	Simple components create an easy to build/dismantle temporary shelter

DESIGN PROPOSAL IN USE

Recycled-aluminium tent poles and connectors easily screw together

The long-lasting, sturdy frame created can be recycled again and again after use

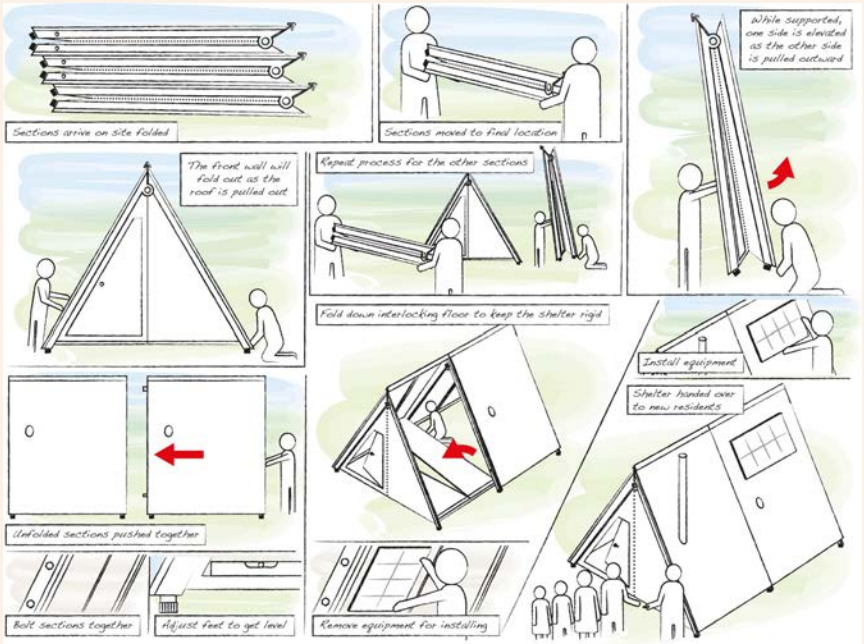
Simple, biodegradable tent net produces a safe, comfortable shelter

This redesigned, resized tent uses sustainable materials in it's production, with less materials required to provide a small but comfortable temporary shelter for festival-goers, homeless individuals, and refugees. Should the tent be abandoned, it's components are easily recycled/biodegraded

U101

FOLDING MODULAR REFUGEE SHELTER

MATT CHAPMAN



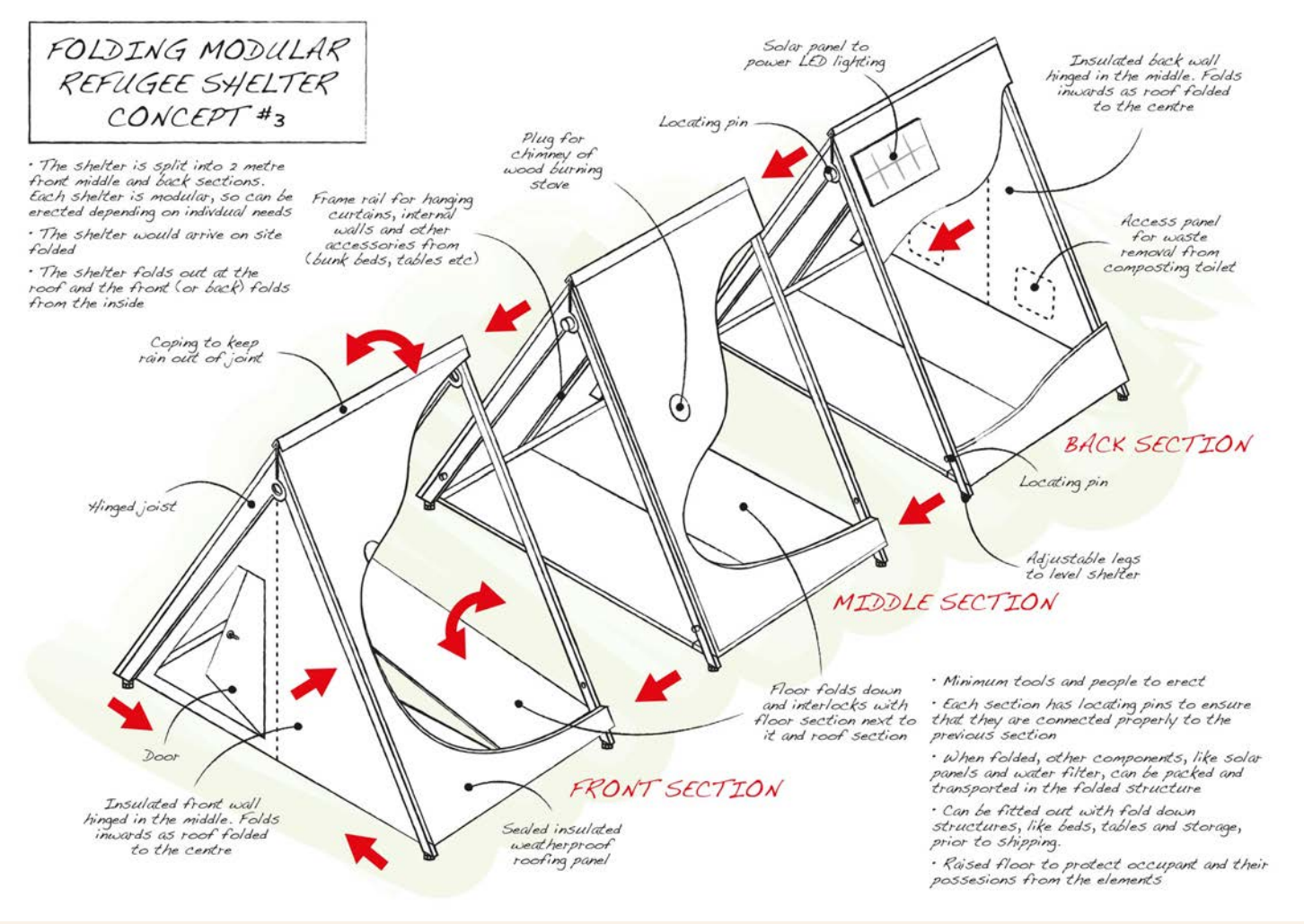
My Project is for a modular fold out shelter, the floor folds down to make the structure rigid.

Rails/channels on the inside of the roof allow equipment and facilities to be stored in the structure during transit, that either fold down or are installed to the structure once on site.

The problem I tackled was to design an emergency shelter for displaced people, that was more comfortable, secure and robust than the solutions that are currently used. People displaced by war or natural disasters are affected by the problem, which can have a negative impact on their health and well-being.

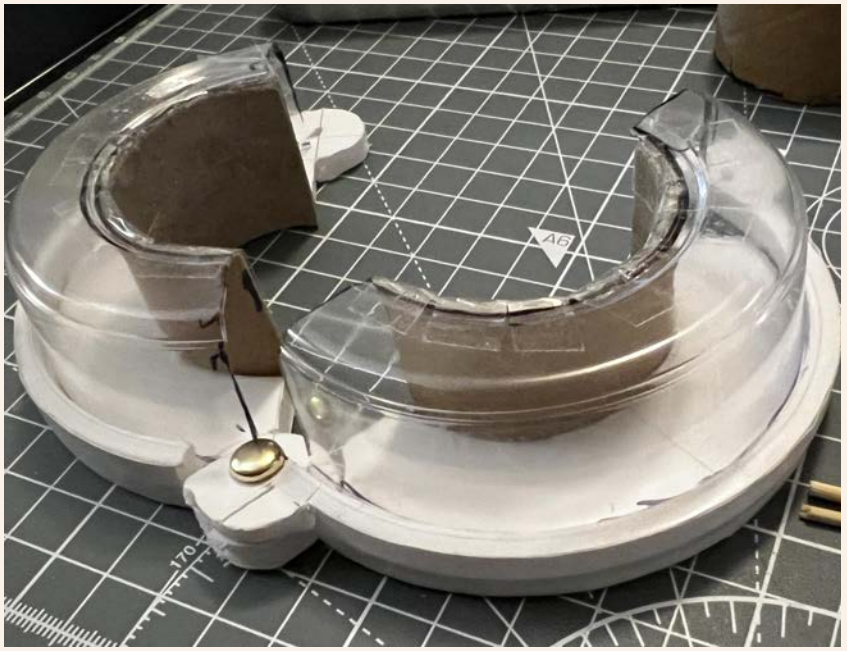
For my research I looked at different aspects of the theme of Shelter and was drawn to the issues that refugees face, due to the scale of the problem and the current solutions provided. I held a creative session to get a wide and varied range of ideas for the problem and evaluated each one using a matrix to select the idea that I then developed using the same criteria, reflection and story boards.

My final design is for a modular fold out shelter, that can be easily erected by a minimum amount of people, tools and time as possible, offering a safe, secure and dignified place to live for displaced people. The shelter could be adapted for a variety of scenarios and circumstances.



SKIP HAZARD LIGHT

MATT
CHAPMAN



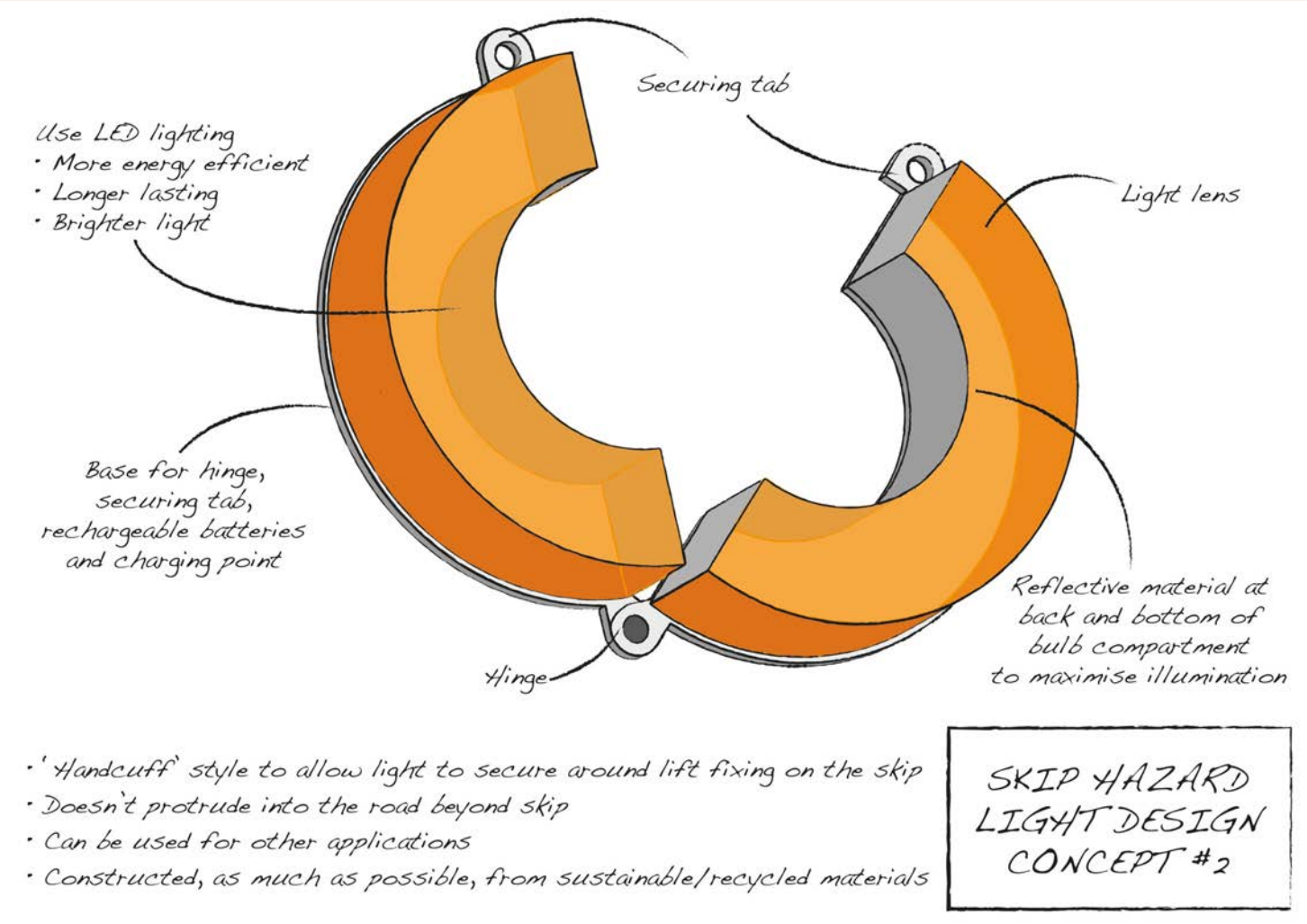
My project is a hazard light for skips and works by locking around the lifting point of a skip to keep it secure from theft and stop it from protruding into the road and avoid being hit by passing vehicles.

The problem I tackled was to design a different light that is attached to a skip, that is less likely to be hit by a vehicle or stolen. People hiring skips, residents, hire companies and road users will experience this problem, either through fines, loss or damage to their property.

To address the problem, I first looked at existing products on the market to see what solutions were available and how these products solved the problems I had identified.

To generate my initial ideas, I held a creative session to get a wide range of different solutions. I selected my idea by using a matrix of how each idea solved the different problems I had identified and refined my idea based on the same criteria.

My final design fits around the lifting point of a skip like a handcuff. By fitting around the lifting point like this, the light is secure from theft and does not protrude into the road, so is less likely to be hit by passing vehicles.



U101

SPACE CLEANERS

PETROS
ANTONIOU

Space Cleaners is a hybrid physical-digital board game played by 2-4 players of all ages. Each player becomes a cleaner at a space station.

The aim is to become the most efficient cleaner and to clean the most rooms of the station while trying not to run out of supplies.

For this particular project, I researched and analyzed the various actors, actions and components characterizing the cleaning services at a high security. This information, coupled with creative decisions and the introduction of game mechanics led to an interactive process of creating prototypes and testing them with various groups of users. The final prototype is the end-result of 4 previous design cycles.

I decided to set the board game in space since the sense of wonder and unlimited possibilities that sci-fi humanism offers are a constant source of optimism and inspiration for me.

A major goal for this game was to create a hybrid digital-physical gameplay. This was achieved by creating a companion website with a custom algorithm that provides the users with prompts and instructions. This feature was developed using HTML, CSS and Javascript and was uploaded to my personal server. The players of the game can access it during game-play via their mobile phones.

The main goal behind this feature was to add an additional technological element to the gameplay without destructing the players from the classic board game experience.

This fusion of low and high technology was further reinforced by the style of the illustrations that were created for this game. The companion website is accessible via:

https://ou.petrosantoniou.gr/

MINI TRAIN VENDING MACHINE

RACHEL RYDERSMITH

Problem Framing the train or mini train vending machine is that the trolley, has had a lot of history, and travels through the aisles of the train whereas the idea of the mini vending machine, is not to replace the trolley, but to, be used as an extra smaller static version, the aim is to provide extra comfort on the journey. The design is a compact smaller version of a full-sized vending machine.

Desirable point 1

The desirable appeal to this machine is that, once you have tucked in your luggage on the train, you can then be seated, with a snack bought from the mini vending machine.

Desirable point 2

The point of the comfort aspect of the vending machine is that it is within easy access, no need to wait, and a quick snack is provided, easily.

Desirable point 3

Similar to a large superstore, where self-checkout is an easier option, to get what you need and go, the mini vendor is a similar, item on the move. The design would be a desirable aspect of the user experience.

U101

REHABILITATED LOW-IMPACT DOG SHELTER

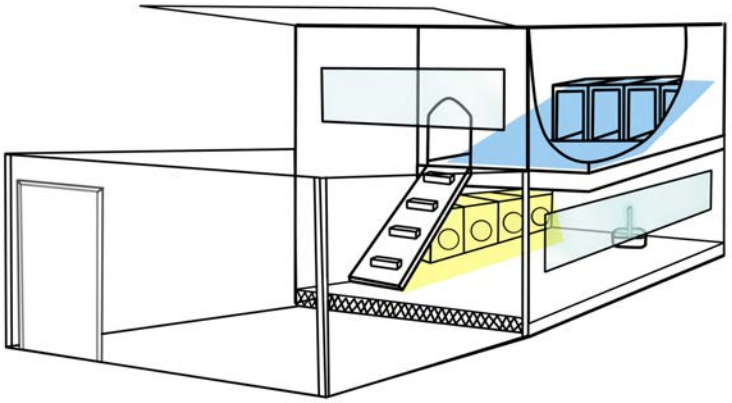
REBEKKA ELLIOT

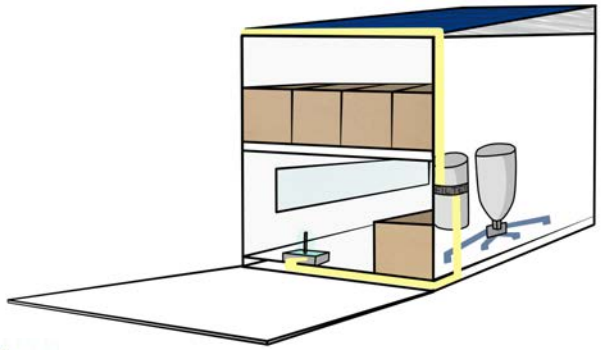
This low-impact shelter is made from bamboo, sheep's wool, and cardboard. This build aims to reduce running costs while providing various social areas to foster and encourage social interaction. Volunteers can focus on improving shelter dogs' emotional welfare using an auto-feeder and water fountain.

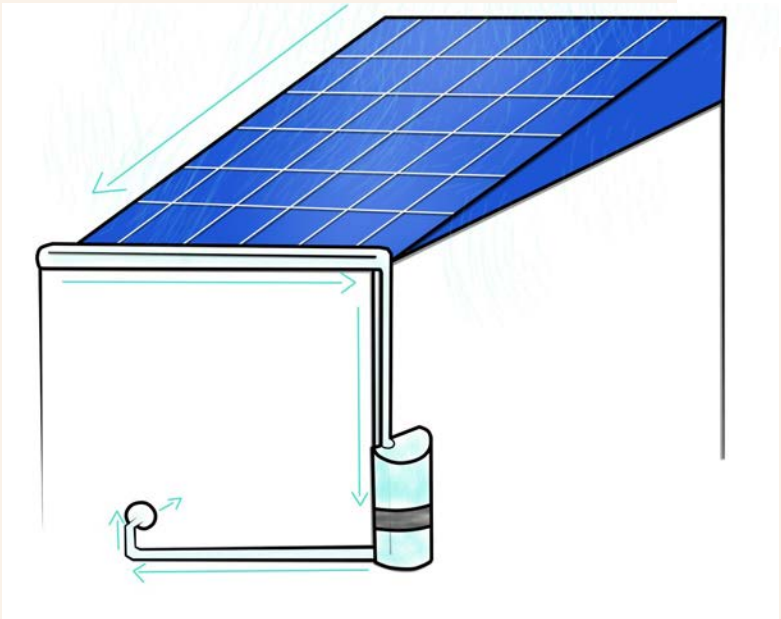
To address the problem, this shelter focuses more on the dog's emotional needs as their physical needs are automatically taken care of by the shelter's automated services which are run by solar power.

Creating a pack between stray dogs will fulfil their social necessity and encourage positive behaviour.

In traditional shelters, dogs are kept for an extended period in isolated cells imposing a high demand for their physical needs. Many dogs consequently suffer adverse effects from living like this.





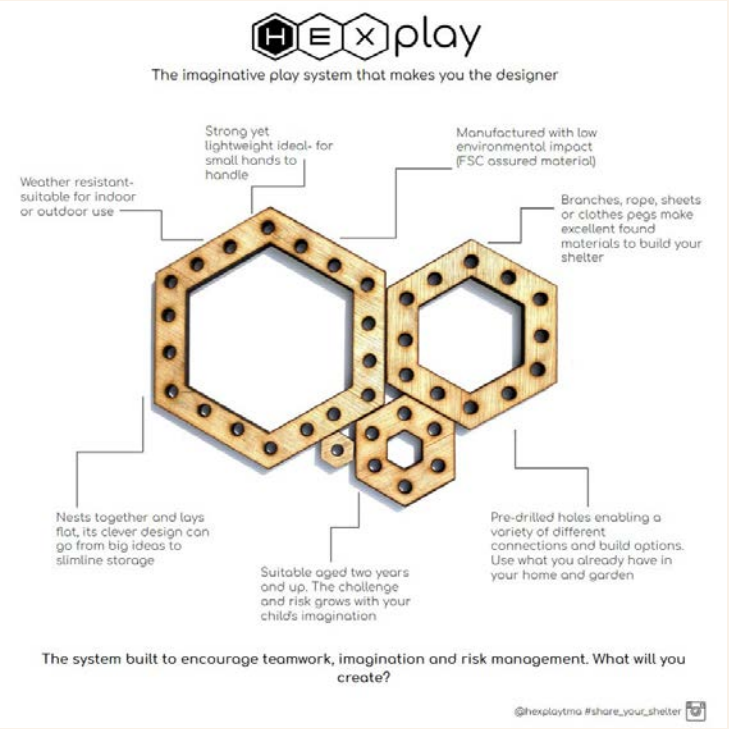


Once I had decided I wanted to investigate creating a shelter for an animal, I began researching different types of animals until I landed on the idea of creating a shelter for a dog.

I researched current shelter layouts and shelters used in a home environment to generate ideas. After a creative session, I used the ideas formed to create a two-story cabin which gave the impression of a home and a dog kennel.

HEXPLAY

SARAH DOWLEY



The HexPlay system is designed to support children to create a play shelter by looking at what objects they already have around them and using them in different and creative ways both indoors and outdoors. HexPlay promotes exploration of structure and materials while encouraging teamwork, imagination and risk.

The system needed to be mindful of parents' concerns for safety while supporting the child's need for independence. My Brief was: How can I create a system that encourages children to build their own shelter whilst exploring teamwork, imagination, and risk management?

Inspired by Gever Tully's Ted talk 'Five dangerous things you should let your children do.' I was curious to know the importance of play on children's development. Further reading in the open university's library and online, as well as first-hand observation and interviews cemented my understanding of Gever's ideas on the importance of learning from controlled risk.

Considering how to minimise waste in production, I took inspiration for the shape from nature and honeycomb's tessellation.

HexPlay is a system of varying sized plywood frames that can be used independently or combined in different combinations.

The holes in the frame create an opportunity for children to attach a variety of objects to securely create a shelter, promoting imagination and understanding of risk.

LIFE LESSONS

SHARMINI
PULANTHITAN

My project contained four phases. The first phase involved observing my hand features and gestures, photographing them, and editing the photographs using the GIMP App.

During the second phase “Design concept phase” I used the elements studied in Block 1 to create my three compositions. I asked my family and friends which one they preferred out of the three and used this one to transfer to a T-shirt.

I transferred my second composition to T-shirt but when I received my results it become clear that my tutor preferred my first composition.

This involved the repeated use of two fingered “Peace or Victory” gesture to form a mountain of kind acts I strive to perform during my lifetime. I used a pencil, coloured marker pens and foot ruler to produce my design on a sheet of A3 paper.


Life Lessons
Kindness
Honesty
Hard work
Helpful
Enjoy Life
Responsibility


Life Lessons
Kindness
Honesty
Hard work
Enjoy Life


Life Lessons
Kindness
Honesty
Hard work
Helpful
Enjoy Life
Responsibility

MY T-SHIRT DESIGN

STACEY DRABBLE

My project is the T-shirt I designed during U101. It features my left hand, with an ink smudge on the side, holding a graphic design pen and writing the word 'design'. The gesture, colour and text unify to convey the story of my passion for both traditional and digital art.

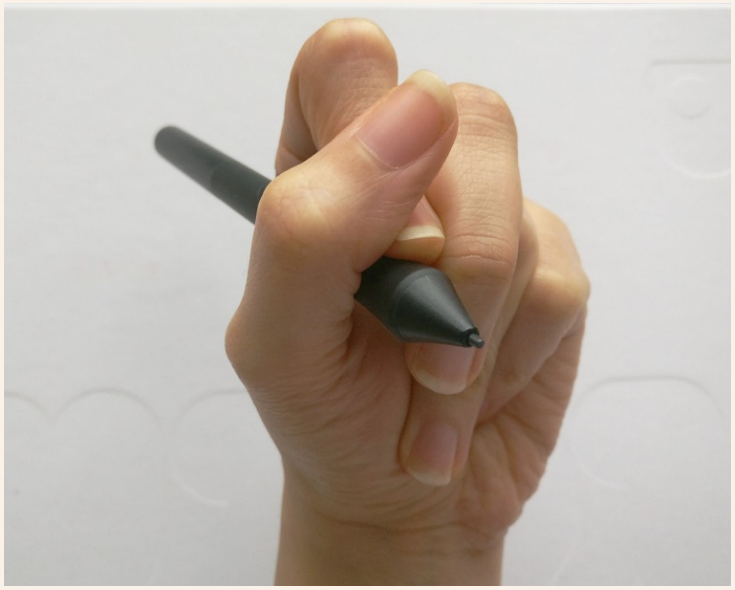
The assignment was to create a T-shirt that tells a story with a gesture, feature and text.

I aimed to convey my passion for both traditional and digital art. When I create designs, my left hand is often smudged with ink.

I chose to hold my graphics pen as the gesture, experimenting with angles to showcase the ink smudge as the main feature, I'd handwritten the word 'design' in matching colours to emphasise the story.

I wear my T-shirt design often, I'm proud of how it turned out, the print is crisp and the colours are vibrant.

It is my favourite T-shirt and I have been asked by curious members of the public about the design to which I happily reply "I made this myself!"



BIBLIO

TARA DUNCAN

We were instructed to identify and research a service and create a board game based on this. I chose the Library because it is a resource that I use regularly and believe is essential yet is underutilised in this country.

I hoped to create a game for the whole family, therefore my board and game pieces are simple, bright, colourful, and inviting.

I used a combination of my own graphic designs and photographs acquired from the internet of characters that I believed would be appealing to children and adults.

Players move around the book themed board collecting library book tokens, aiming to be the first to fill their library card. If they roll a 2, 4 or 6 they have to collect a Biblio card and follow the instructions

Biblio

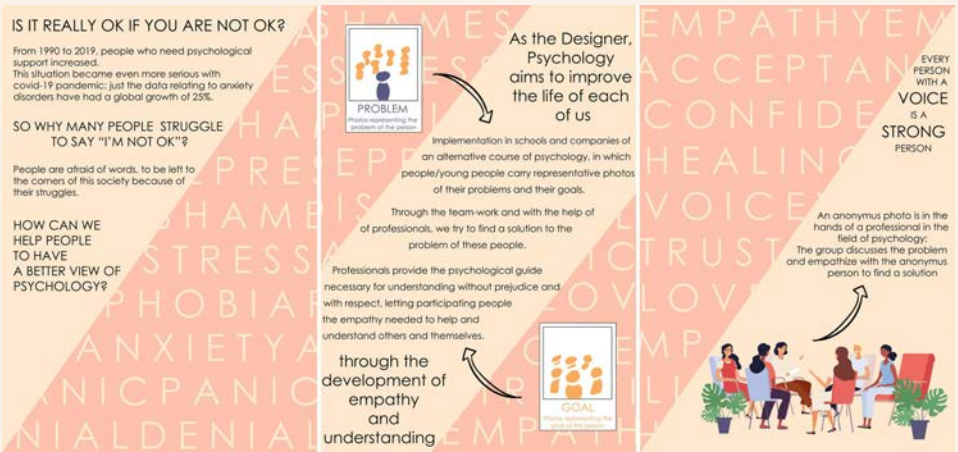
A library game
by Tara Duncan

We were instructed to identify and research a service and create a board game based on this. I chose the Library because it is a resource that I use regularly and believe is essential yet is underutilised in this country. I hoped to create a game for the whole family, therefore my board and game pieces are simple, bright, colourful, and inviting. I used a combination of my own graphic designs and photographs acquired from the internet of characters that I believed would be appealing to children and adults.

Players move around the book themed board collecting library book tokens, aiming to be the first to fill their library card. If they roll a 2, 4 or 6 they have to collect a Biblio card and follow the instructions.

SHELTERS OF THE MIND

VANESSA MALZANNI



My project consists of three posters. The first represents the problem or way in which the words/behaviors of others afflict us. The second represents the proposal of a solution. Groups of people gather and identify in the situation also thanks to the help of professionals (psychologists). The last shows how collaboration has positive effects.

The problems concerning Mental Health are many and can afflict anyone at a certain point in his life. However, many people are ashamed to speak. Sometimes they are pointed out as "different", "weak" and suffer bullying, it doesn't matter if they are looking for help.

The theme assigned for this project was the shelters, and our mind must be a safe place like a shelter. I decided to support both themes because there was no real prototype to build (I wanted to challenge myself). Talking to people allowed me to take this concept and transform it into something that I think can be constructive both for those who suffer from this condition and for those who don't know what it is.

As designers, we aim for improving people's lives. This is a goal that Mental Health also has. This proposal aims to create an empathic and understanding bond with the person and situation of someone else, making them think about what can be changed and how.

IS IT REALLY OK IF YOU ARE NOT OK?

From 1990 to 2019, people who need psychological support increased.
This situation became even more serious with covid-19 pandemic: just the data relating to anxiety disorders have had a global growth of 25%.

SO WHY MANY PEOPLE STRUGGLE TO SAY "I'M NOT OK"?

People are afraid of words, to be left to the corners of this society because of their struggles.

HOW CAN WE HELP PEOPLE TO HAVE A BETTER VIEW OF PSYCHOLOGY?

EVERY PERSON WITH A **VOICE** IS A **STRONG** PERSON

An anonymus photo is in the hands of a professional in the field of psychology;
The group discusses the problem and empathize with the anonymus person to find a solution

As the Designer, Psychology aims to improve the life of each of us

Implementation in schools and companies of an alternative course of psychology, in which people/young people carry representative photos of their problems and their goals.

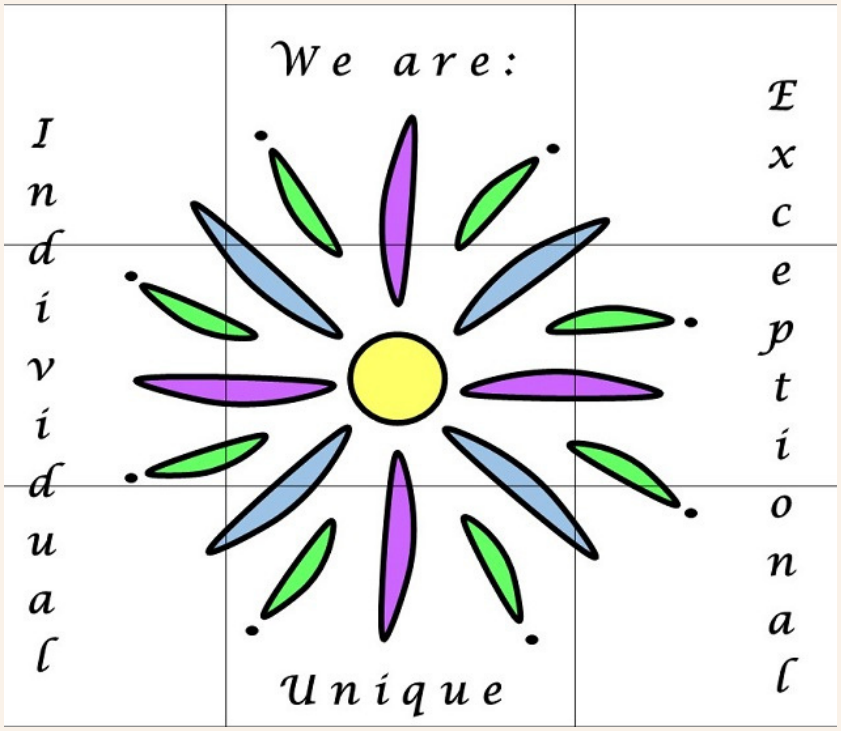
Through the team-work and with the help of of professionals, we try to find a solution to the problem of these people.

Professionals provide the psychological guide necessary for understanding without prejudice and with respect, letting participating people the empathy needed to help and understand others and themselves.

through the development of empathy and understanding

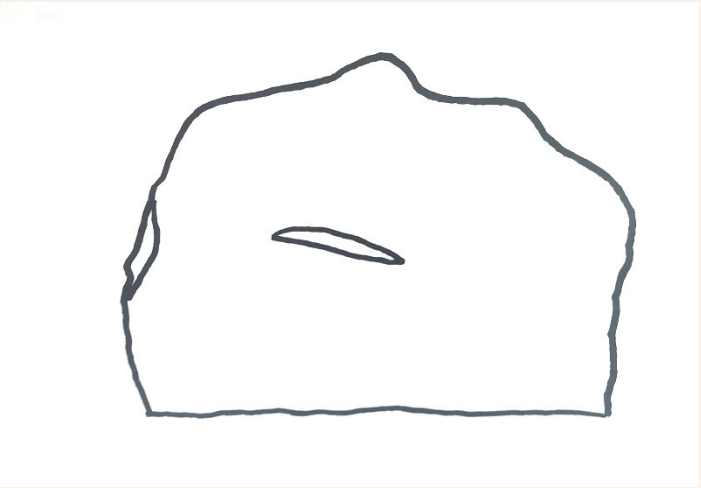
UNIQUE FEATURE DESIGN

VARSHA PANKHANIYA



My T-shirt design is based on a unique scar shape on my hand. The objective was to create a design focused on one feature. I chose to keep the actual scar shape rather than make it abstract. I digitally produced, printed then transferred this design onto the t-shirt.

The main design processes of creating my design were using: the basic cycle of design, rule of thirds, unity, emphasis and dominance, proportion and rotational symmetry. By including relevant text, I feel this completes the design well.



The process involved examining the features of my hand, choosing then photographing one dominant feature. I then printed and traced it using thick outline pen. I scanned this and using PowerPoint cutting freeform tool I ‘cut’ the shape out.

Using this one piece as a template, I copied it multiple times adding colour, line weight to give dominance and resizing.

The final shape consists of rotational symmetry, positioned centrally using a grid for even spacing. Although there was no problem statement for this TMA, there was criteria to be met. I feel my design meets and addresses the requirements well.

By implementing balanced colours, spacing and text I created this final image. The scar shape is relevant to me, but the message is relevant to everyone.

U101

BUS SHELTER EXTENSION

VARSHA PANKHANIYA

Based on the theme of shelter, I researched various options and decided to work on bus stop shelters. The rationale behind my design proposal was to work with local shelters and see how I could improve the structures already in place to make them more realistic and approachable financially.

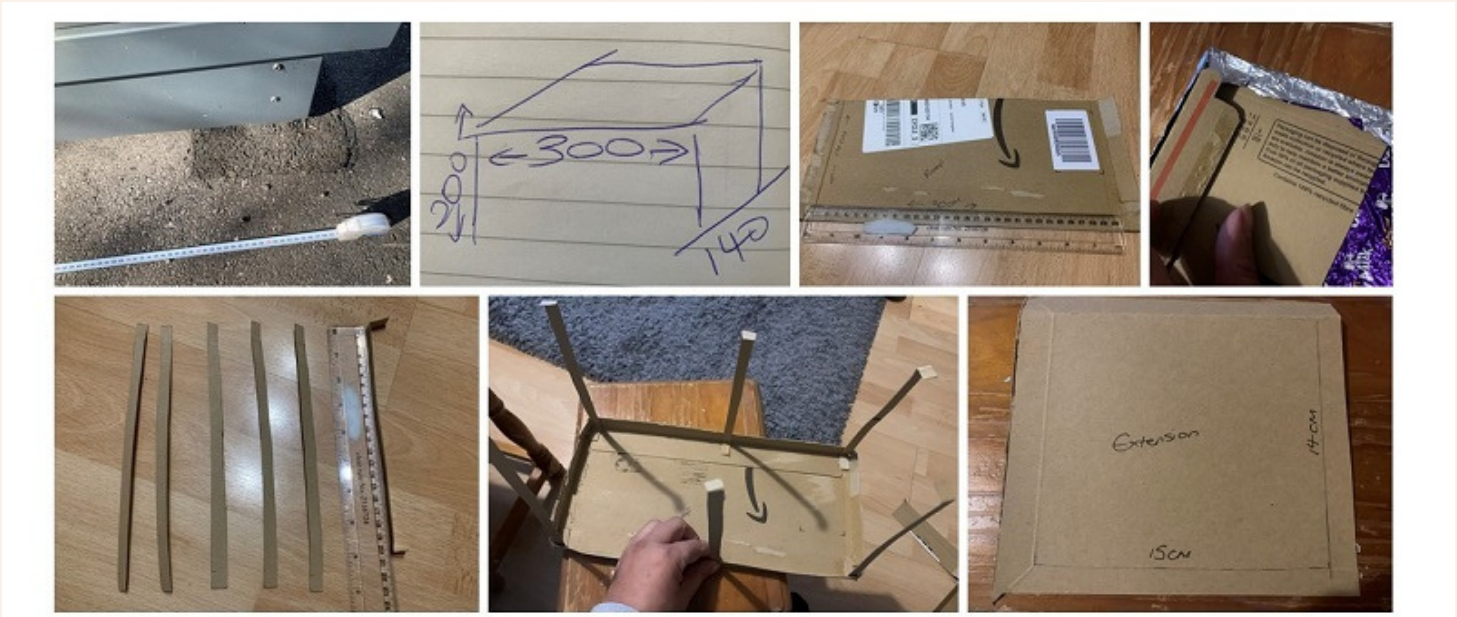
My problem statement is 'How might we redesign or improve bus shelters in the UK to better accommodate a wider user group'. I chose to specifically focus my design improvements on pram and wheelchair users as they have less space to manoeuvre within bus shelters, particularly at peak times.

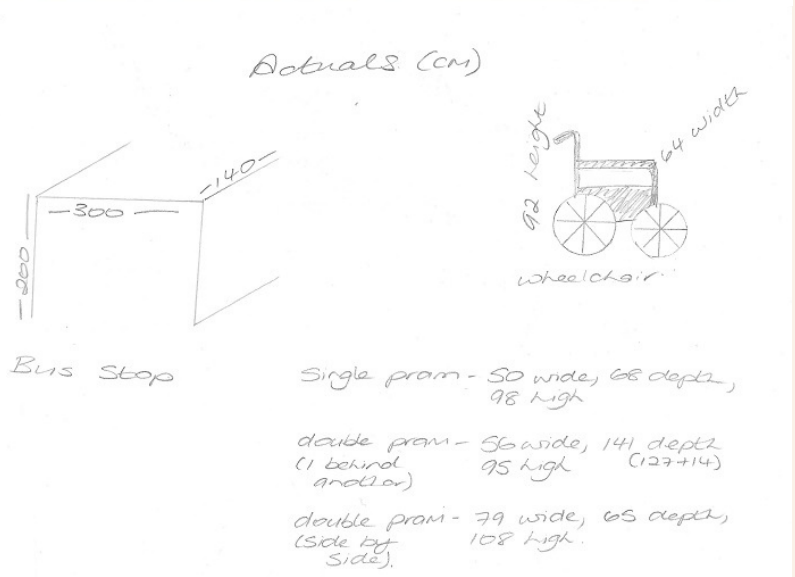
My design process involved researching by visiting a few local bus stops and then focusing on one. I made observations within and around it by taking measurements, notes and photos/sketches.

I then researched measurements of wheelchairs and different types of prams to consider in my design. I engaged in an online student brainstorming meeting sharing ideas with peers. I then chose my features and created a 3D structure to scale where 1cm = 10cm actual.

My design addresses the problem of lack of space. It provides easier access by having the extension open at the front and back.

Folding chairs provide more space and there is a designated priority area for specific user groups. Solar panels power sensor lighting/USB sockets inside making it environmentally friendlier.



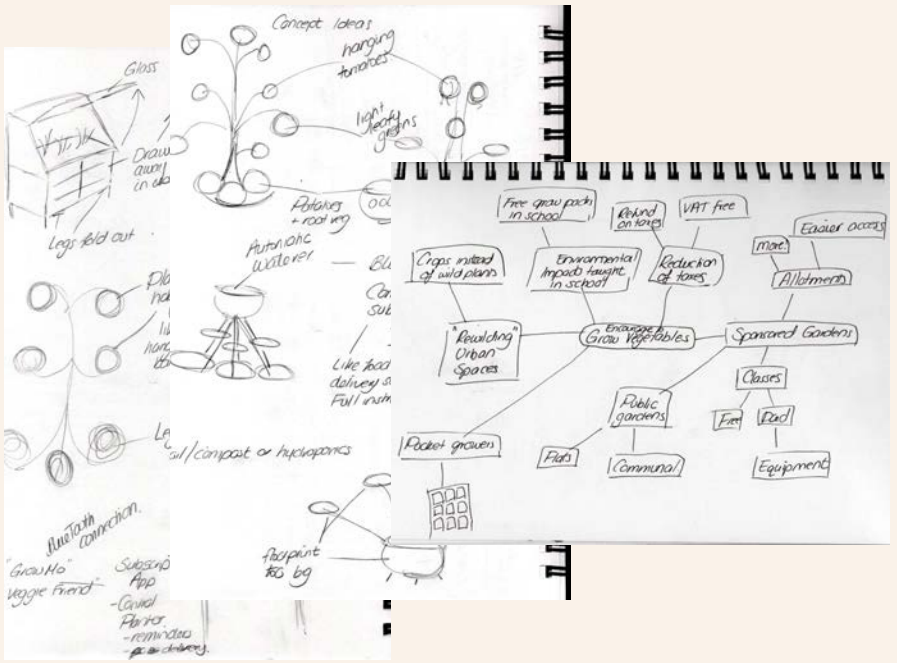


T217

T217

GROW MO' VEG

CJ
MICKEY



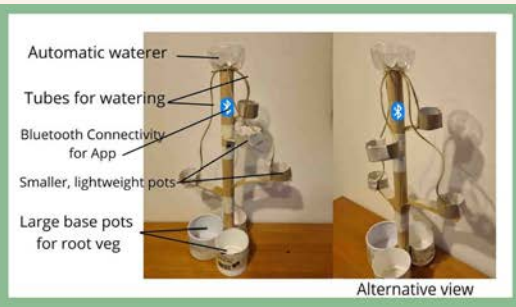
A free-standing grower that enables people with small spaces to grow anything from herbs to lettuce to carrots and potatoes. It is connected to an app via Bluetooth, has an automatic waterer and includes monitoring and reminders.
To design a product and/or service that enables and encourages people with small urban or suburban outdoor spaces, such as apartment balconies or patios, to grow their own vegetables with minimal impact on the environment and utilize recyclable or renewable sources where possible.

Process: I utilized surveys to gauge why people who lived in small spaces didn't grow more of their own food after which I spent time doing some in-person research by exploring garden centers to see what was already available.

I was inspired by a wooden tree with bowls stuck over the ends to create an elegant tree that would be stable and could grow more than just small vegetables.

In Use: My invention addresses the issues of availability of space as it makes use of vertical space. It also makes growing vegetables simple with the integrated sensor/bluetooth/app system that helps to monitor the growing.

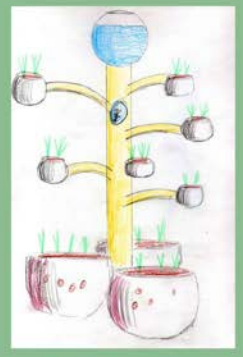
The built-in waterer limits the amount of time people need to remember to water their vegetables meaning that they are more likely to succeed.



GROW MO' VEG

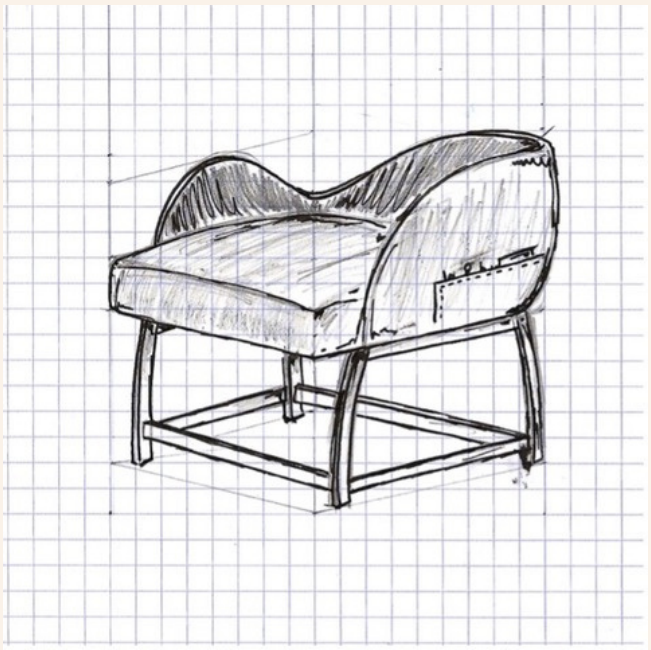
"Your solution to small-space vegetable growing, made easy"

Intuitive app and integrated Bluetooth



Built-in waterer
Grow everything from tomatos to potatoes

GUITARIST'S ARMCHAIR



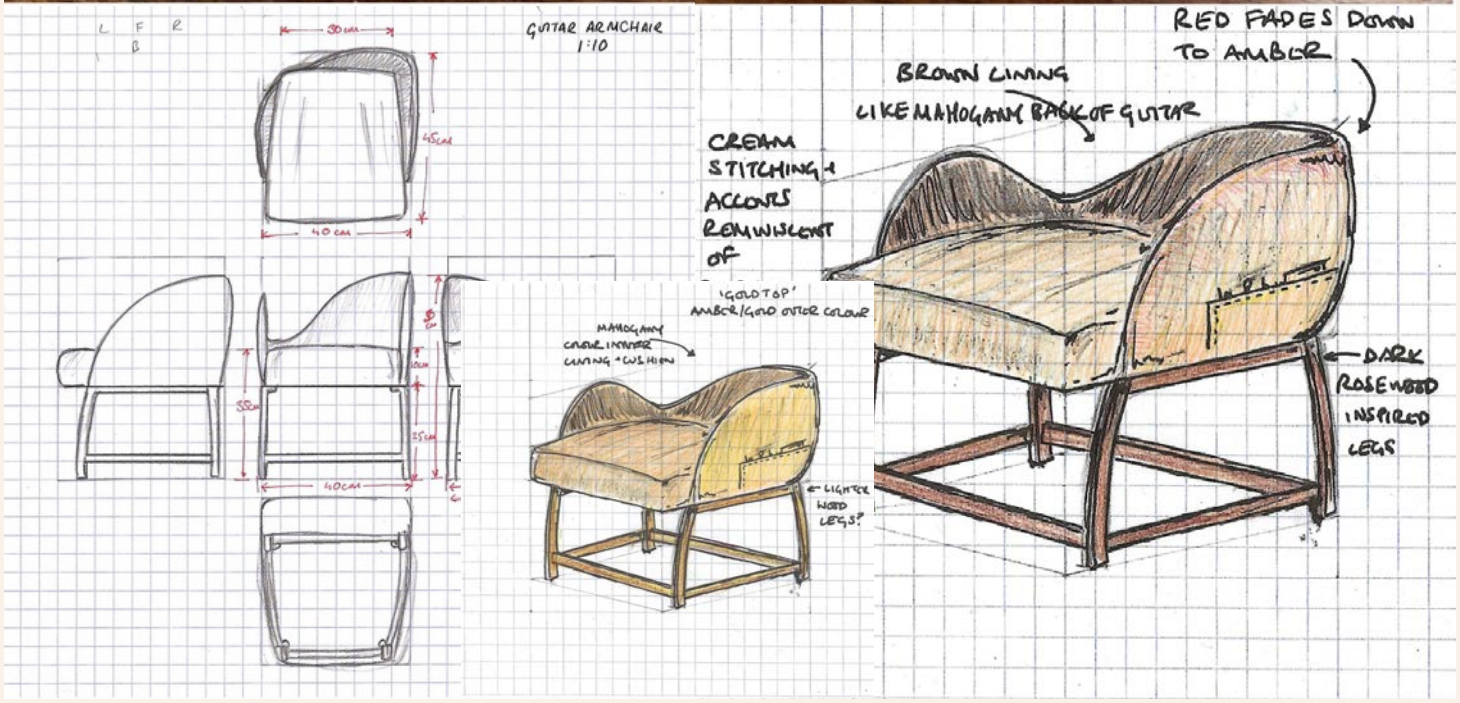
JAMES STITT

My design submission is from TMA01. The design brief was to create a chair for a specific purpose and target audience. I chose to base my design around guitar players. As a guitarist myself, I can find it difficult to find a chair that provides back support and sufficient clearance in the arms to let a guitarist play sitting down.

Most times when playing sat down I would use a stool as it offers no intrusion for the arms, but nothing in the way of back support, so my back can get sore after a while.

My design is informed by the above needs to function as an armchair with sufficient support, but also be comfortable for guitar players to be sat in when playing.

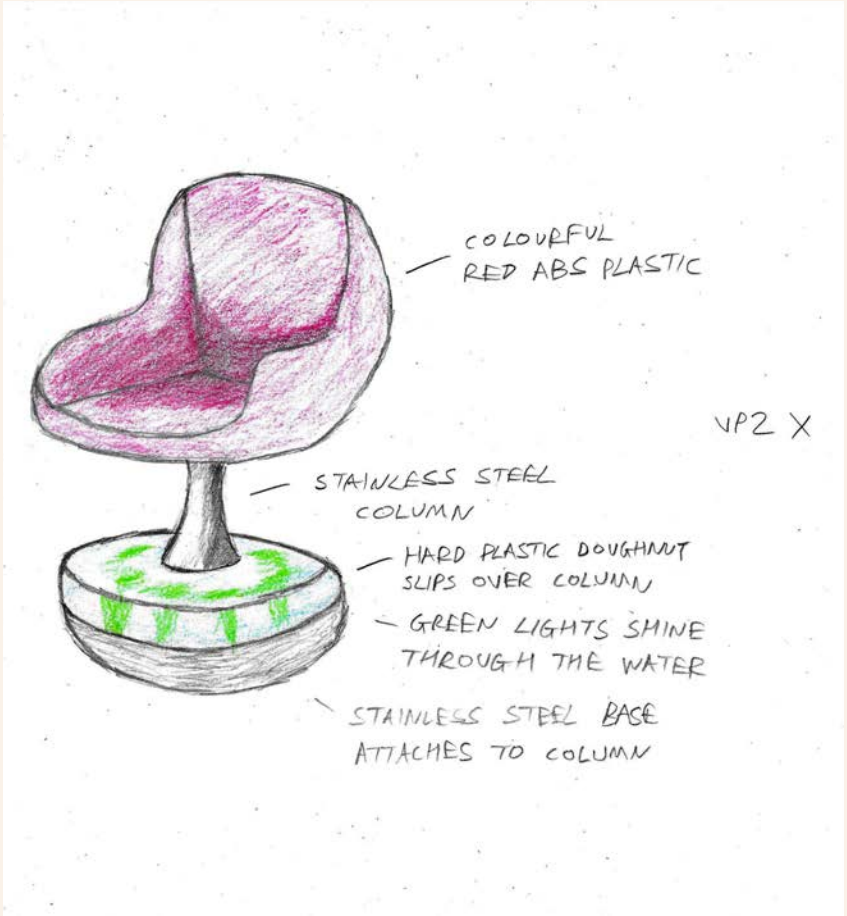
The profile of the chair is also informed by the body shape of a Gibson Les Paul electric guitar. Giving it an asymmetrical, funky aesthetic with a strong association to the guitar without it being overtly for guitarists, and a chair that can fit in any living room.


L F R
B
30cm
45cm
40 cm
55cm
40cm
GUITAR ARMCHAIR
1:10
RED FADES DOWN
TO AMBER
BROWN LINING
LIKE MAHOGANY BACK OF GUITAR
CREAM
STITCHING
ACCENTS
REMINISCENT
OF
'GOLD TOP'
AMBER/GOLD OUTER COLOUR
MAHOGANY
COLOUR INNER
LINING + CUSHION
← LIGHTER
WOOD
LEGS?
← DARK
ROSEWOOD
INSPIRED
LEGS

T218

WOBBLE CHAIR

JOSHUA
DUNNING



Wobble chair is a fun chair that can tilt and spin in any direction without complex levers or mechanisms.

This fun chair strengthens core muscles but is also ideal for chilling.

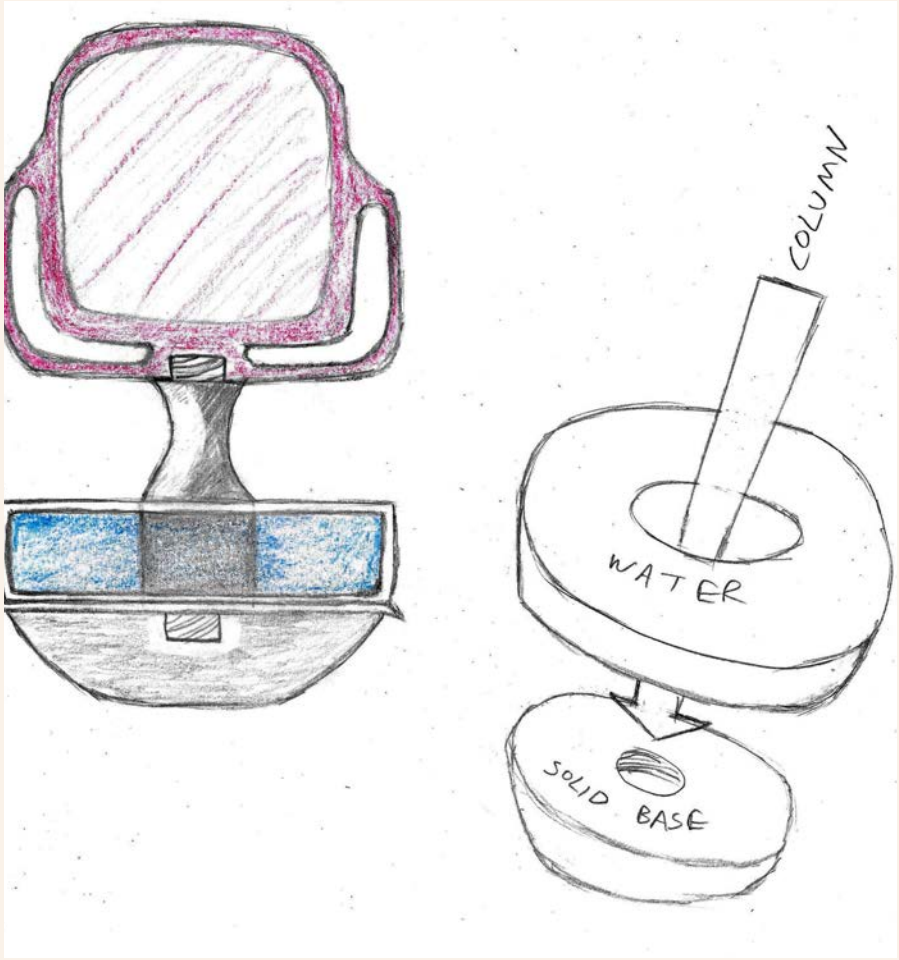
Inspired by self righting ocean buoys.

The chair can swivel and lean in any direction without complex levers or mechanisms.

On top of the sturdy base is hard, clear plastic. This is filled with water. If the user is heavier or desires less wobble, then more water is added.

Colour changing LED lights shine through the water to give a funky appearance.

Take the chair camping by unscrewing the seat from the base and column. The water filled doughnut slips off the column for easy filling.



THE POP-UP KITCHEN COUNTER

KARL BYFIELD

Prototype model of the Pop-up counter with removeable worktop.

Goal: Provide a solution for a small kitchen which either frees up or increases countertop space.

Context: With an abundance of kitchen equipment and gadgets designed to make lives easier and more efficient, comes the problem of their encroachment onto countertops.

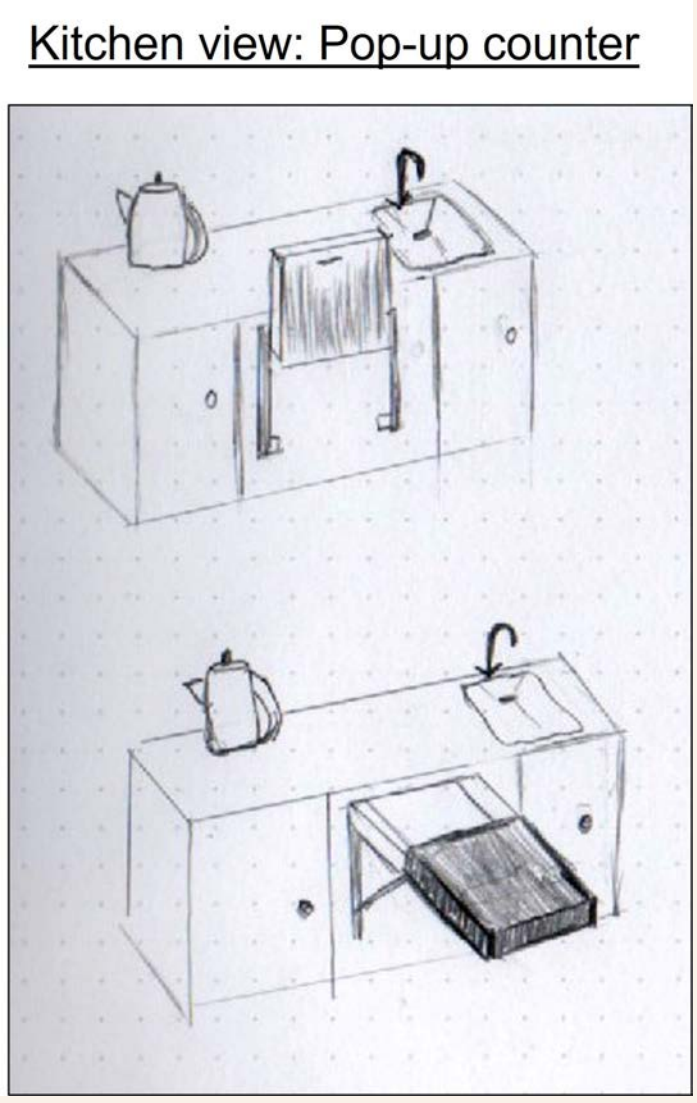
Spacious kitchen counters disappear quickly when frequently used or bulky kitchen equipment becomes impractical to put away.

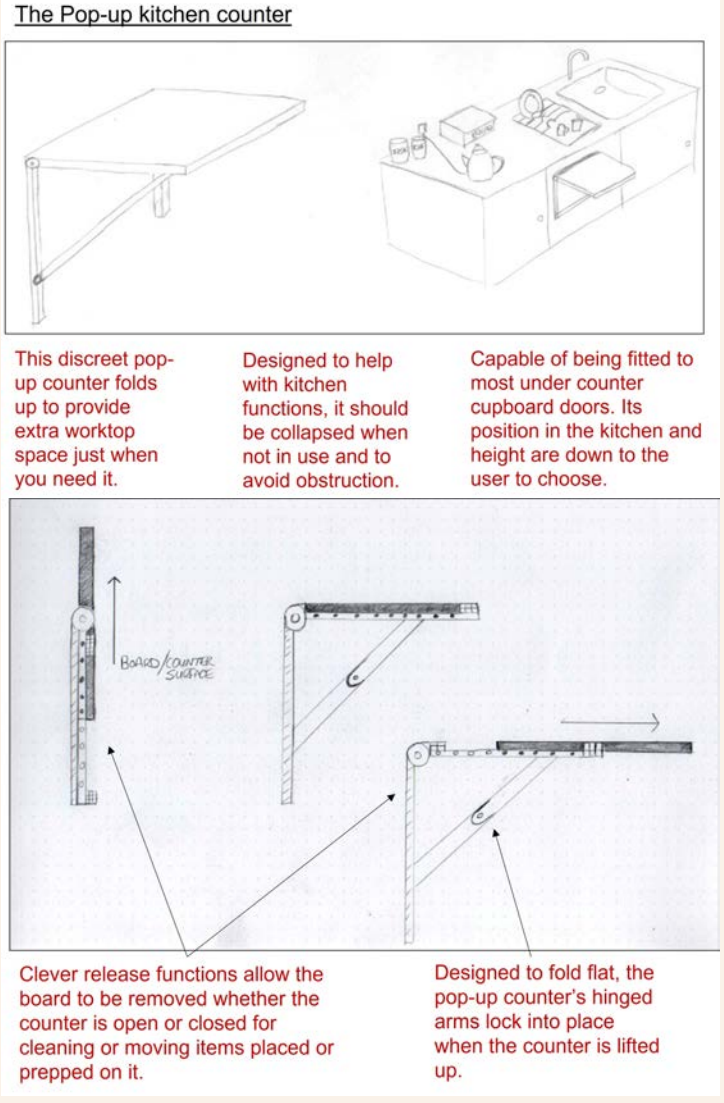
The kitchen is frequently a location for various and regular low to high-risk activities by adults and children, each with potentially wide-ranging mental and physical challenges. Any product should help simplify kitchen operations and be reliable, easy to use and durable enough to cope with multiple types of users (adult, child, physically impaired).

Any ideas need to meet certain kitchen guidelines for safe use and be made from a material that is appropriate for its intended function and aesthetically pleasing.

Users: An exploration into how kitchen worktop spaces are used, by whom, showed that the variety of kitchen environments, choice of equipment on offer, and the personal interpretation of how a kitchen was used, were as varied in number and in configuration possibilities as there were users. One message was clear though, they all wanted more worktop counter space.

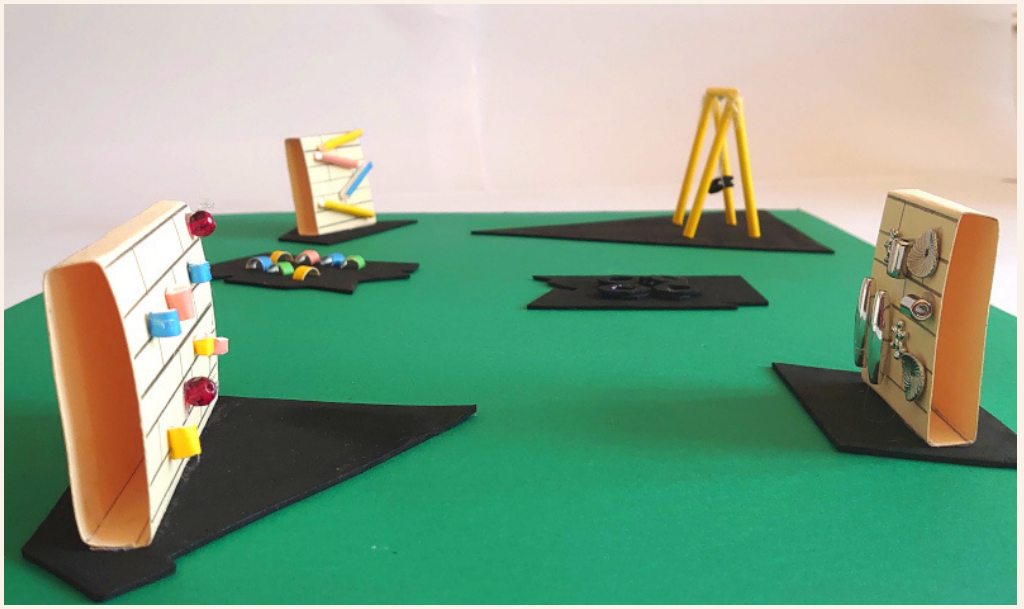
Solution/Idea: The Pop-up counter aims to deliver a tangible and quick increase in a kitchen's worktop capacity, when needed, simply by lifting one side of the device and locking the arms in place. Designed so that it can be installed at the height and in the location of the kitchen the user desires, makes the Pop-up counter very user-friendly and adaptable to future user needs.





THE RUBBISH PARK

KELLY WILSON



The project was created for a national park. The idea was to design play equipment outside the visitor centre to engage children in sustainability, landscape and conservation. The project teaches children that we can be more resourceful with our waste and live more sustainably which will benefit conservation and landscape.

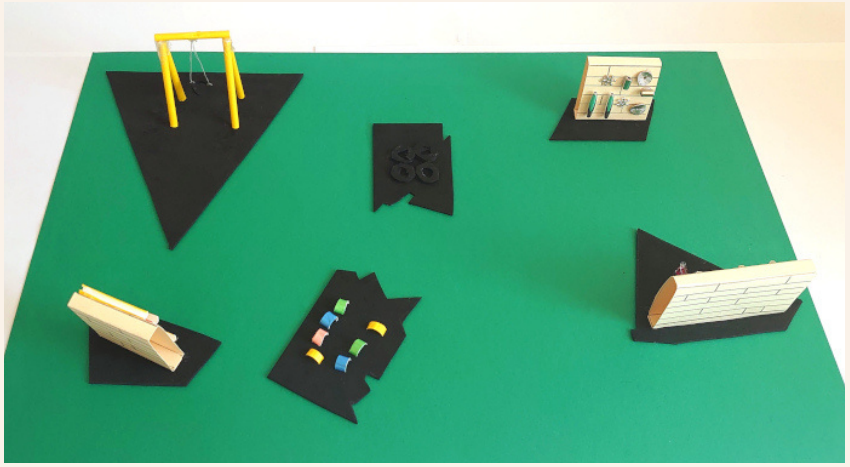
Problem statement - How can I create play equipment to engage children in sustainability, landscape and conservation.

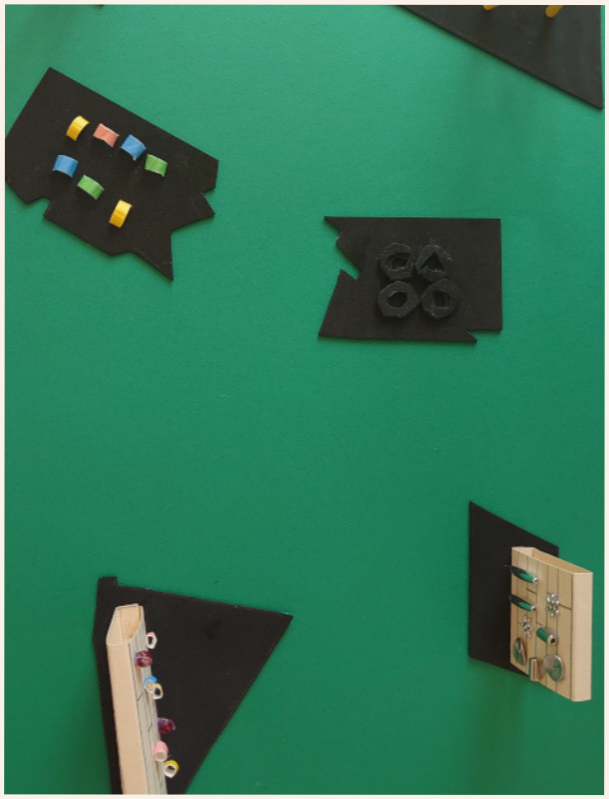
Everyone experiences the problem, the world as a whole is facing issues relating to climate change and we as mass consumers are not helping the situation with the need to buy new products and build on green land which in turn is harming the environment by causing mass waste, pollution and increasing carbon emissions.

I researched activities children enjoyed and looked on the market for current play equipment. I generated ideas by associate thinking, adaptation and gathering information. I used a selection matrix to score concepts. The rubbish playground received full marks as it uses waste products. Once selected I looked at the layout design of the concept. I created the random shapes which the play equipment stand on by using visual emergence after throwing matchsticks.

There is no need to spend huge amounts of money to entertain children or to increase carbon emissions in the manufacturing and processing of new materials, we have waste products that could be used more resourcefully.

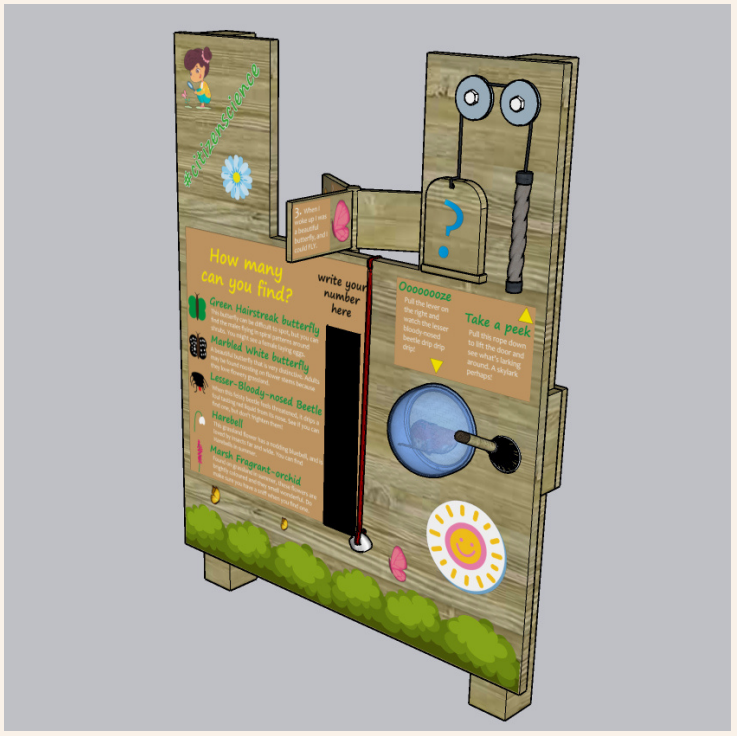
The rubbish playground will help people think about the things they throw away and be more mindful about our environment.





T217

CITIZEN SCIENCE BOARD



MICHELE PAINI

Project detail:

An exhibit for children visiting the new visitor centre area at Ditchling Beacon. It contains several interactive elements about the native species; a beetle that drips blood from its nose when a lever is pulled, a skylark viewing window with a ‘pull rope reveal’, and a rotating triple board explaining the butterfly life cycle.

There is also a citizen science activity for cataloguing the number of species you find on the reserve.

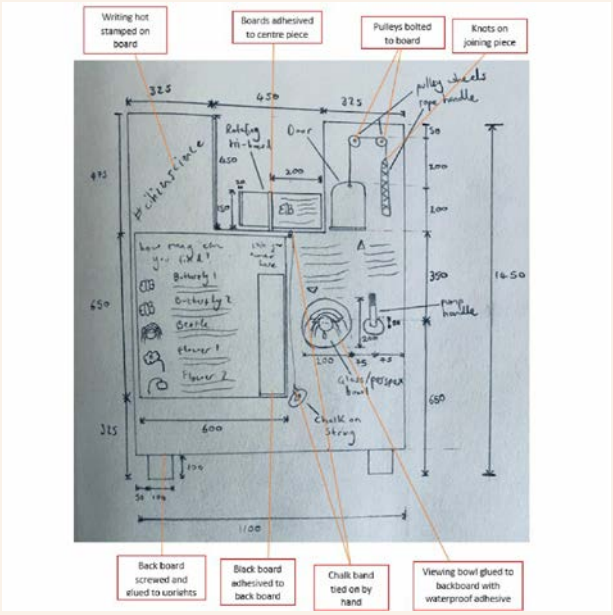
Problem statement:

Create an engaging exhibit that children can interact with, that encourages them to think about conservation, sustainability, and the landscape in a positive way.

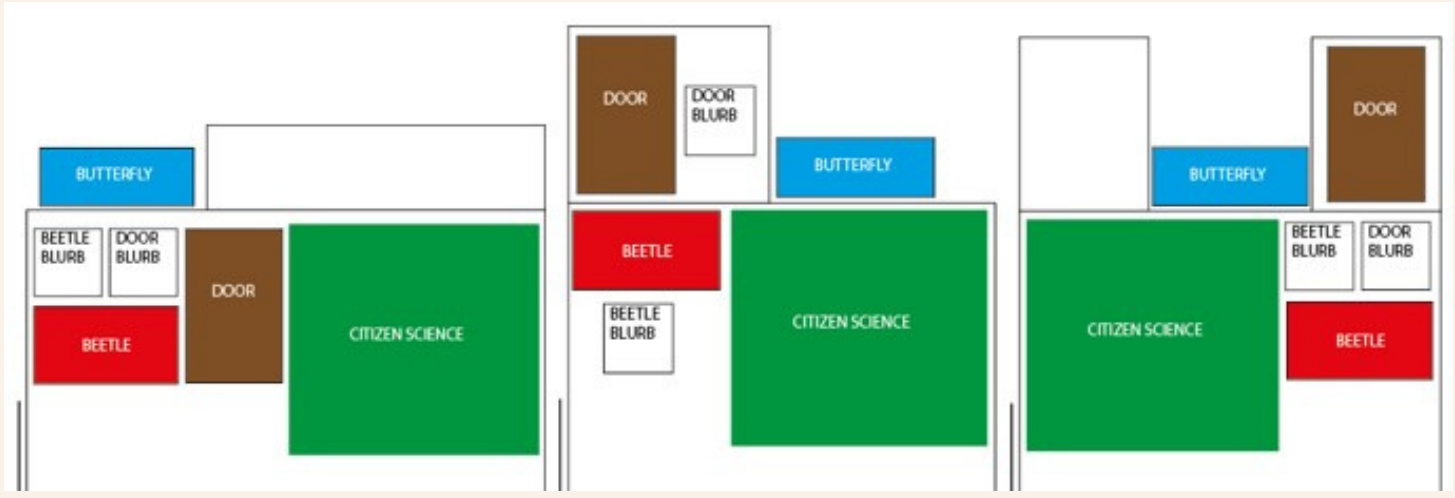
The exhibit should be something that children can physically interact with in some way, that is fun, educational, and inspirational.

My process:
I visited the reserve for observations and a user trip and did user research on materials perception. This culminated in a mood board to set the tone for the process.

I sketched five ideas, using a combination of associative thinking, and thinking while sketching, and after selecting one to develop, used spatial thinking exercises to choose a layout.
A detailed materials assessment selected materials and jointing methods, and the final concept was made using SketchUp.

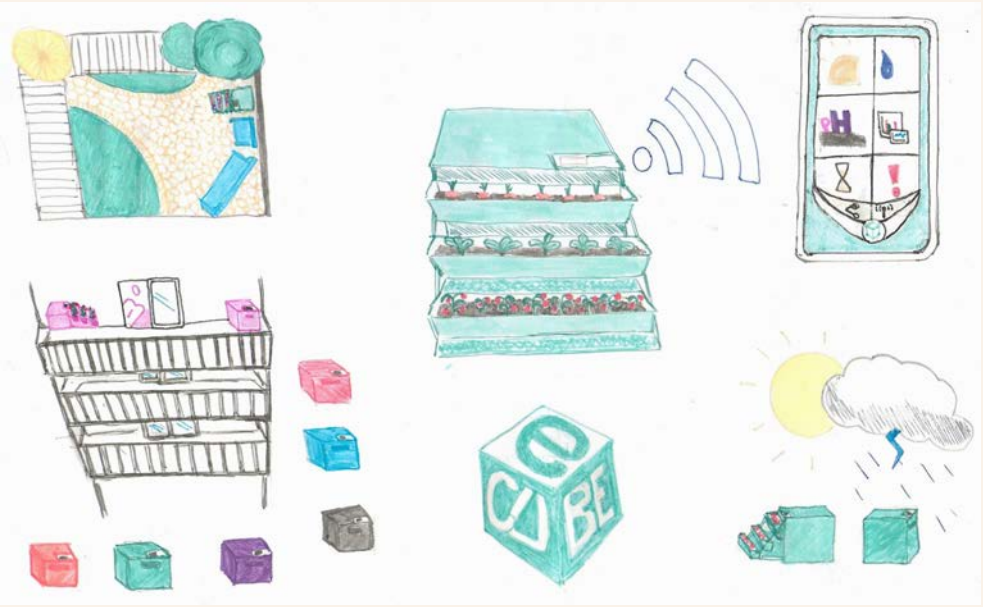


In use: My design gives young children something fun to do at the reserve. They will immediately engage with the interactive elements in a tactile way that both entertains and educates. The citizen science activity then teaches children that they can have fun while being part of a joint conservation effort.



E-CUBE

STEPHANIE SPRUCE



The e-cube is as a compact system that simplifies growing vegetables. It opens out to reveal three ‘troughs’ that can pivot on a hinge, keeping them level. The sensor tests for pH, moisture and light levels through probes that are located in the supporting arms of the ‘troughs’.

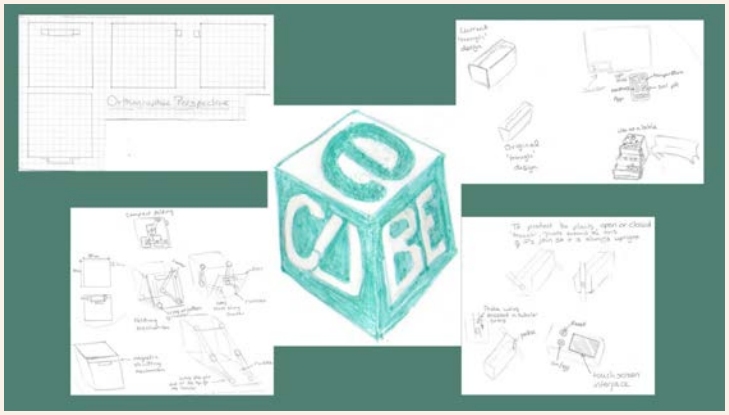
To create ‘a product to encourage and enable people living in towns or cities to grow their own vegetables’, the design centred around limited space and time often experience these circumstances.

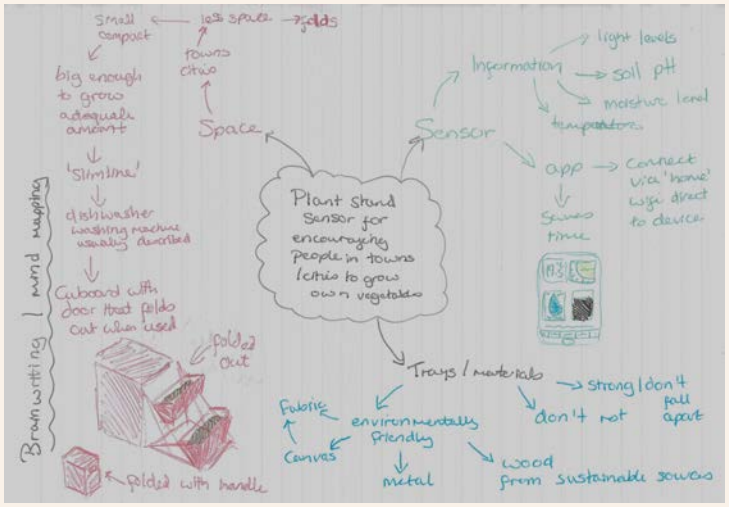
The-cube offers a compact system to save space and the sensor combined with an application to save time.

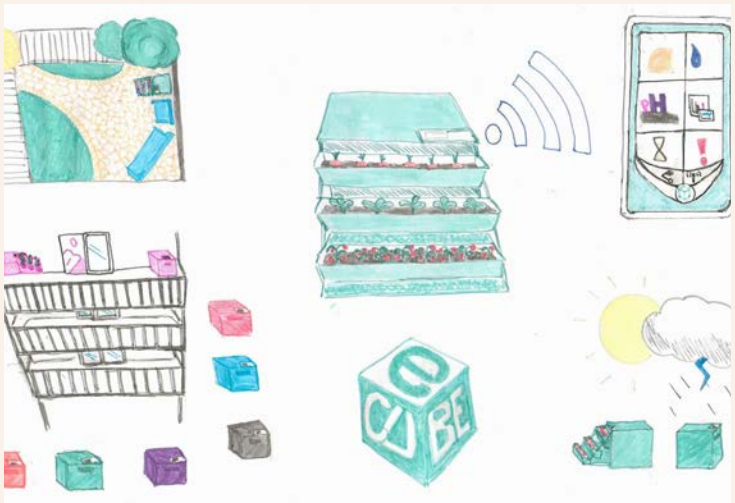
Starting with research into current designs, for example, plant stands revealed they saved space, but offered little more; whilst traditional sensors offered information but only in person. Experiencing a user trip and creating user personas helped clarify what was needed.

Ideas were then generated through creative-problem solving techniques and following experienced designer's methods. The final idea was selected using selection matrices with and without datum. The design then evolved through sketches and prototyping.

The e-cube has a compact design allowing users to maximise space. The sensor and application provide real time information accessible at any time using the user's local Wi-Fi to transmit information. The e-cube inspires those who believe time and space are an obstacle to growing their own vegetables to try.







THE KETTUMBBELL

THOMAS MOLNAR

Project Detail:
The Kettumbbell combines the functions of a Kettlebell with the multiple functional capabilities of a dumbbell, to make a versatile fitness product that can be used for various home-workouts by various users. By combining the two pieces of equipment into one product, it would reduce the space needed for storage.

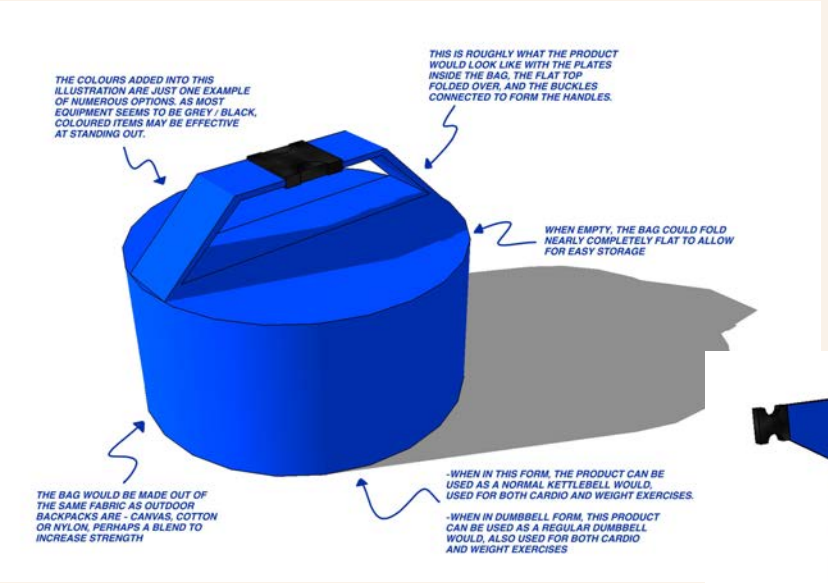
Problem Statement:
With the pandemic forcing gyms to close, many turned to home-workouts to improve their fitness, expanding their collections of at-home equipment. However, the issue that arises is that to have a variety of weights to perform a variety of workouts with, it requires an extensive, and expensive collection of equipment.

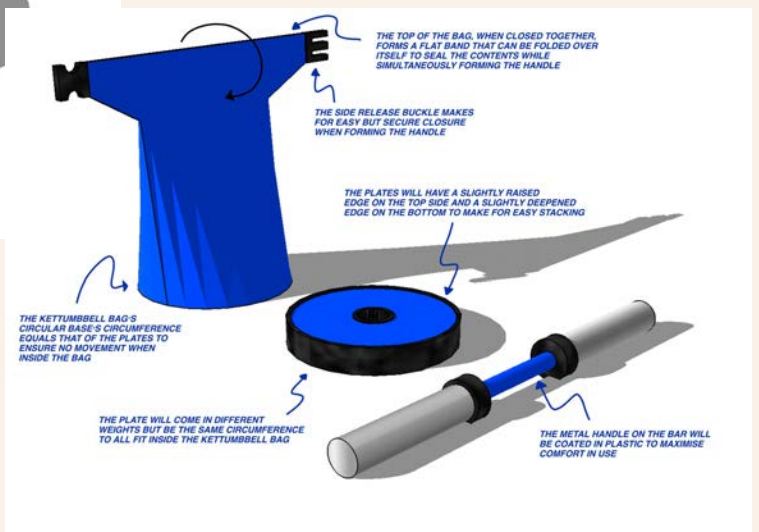
My Process:
I researched numerous pieces of fitness equipment that have become popular additions to peoples' home gyms, finding that the most successful designs focused on being compact, and combining multiple pieces of equipment into one.

I took a user-trip and asked questions to a home-gym user, finding that workout routines are limited due to having single-function equipment and limited access to equipment. After digitally modelling the design, I sewed a rough prototype out of scrap fabric.

In Use:

The Kettumbbell comes in separate pieces, a bar, weighted-plates, and a bag (inspired by roll-top backpacks). The plates can either be fitted onto the bar, forming an adjustable dumbbell, or stacked and placed inside of the bag, which can be folded into the shape of a classic kettlebell.






T317

T317

THE PERCHING STOOL

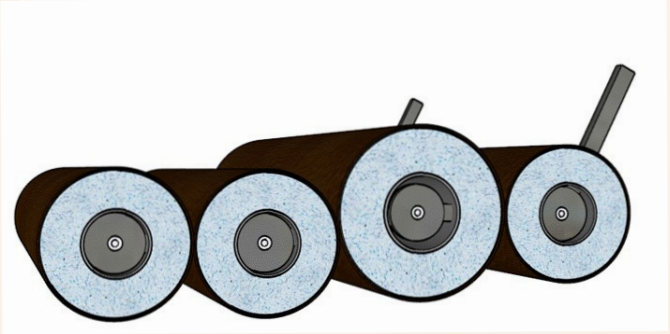
ANDREW WESTWOOD

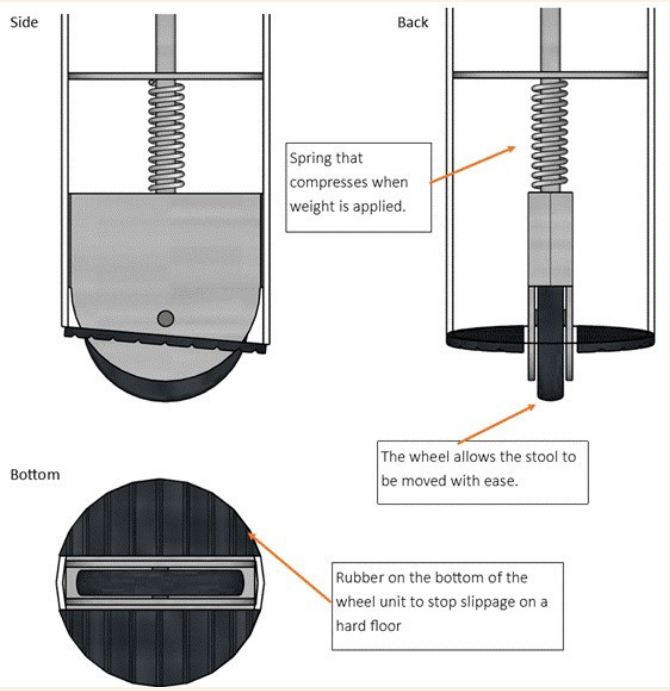
Problem

The current design of the perching stool is lacking in its execution of both practicality and comfort. As this product is for use by disabled or elderly people, I wanted to vastly improve the useability, comfortability and maneuverability of a product that is designed to be used frequently as an assistive tool.

My Process

I carried out research around perching stools, what they are used for and what the services are in relation to them. I came up with several ideas with the view to design something more practical. I first took each of the problems and tackled them individually, I then merged a few designs together. This allowed me to create my own interpretation of a perching stool and after tweaking different aspects of it I arrived at my final representation.





Description

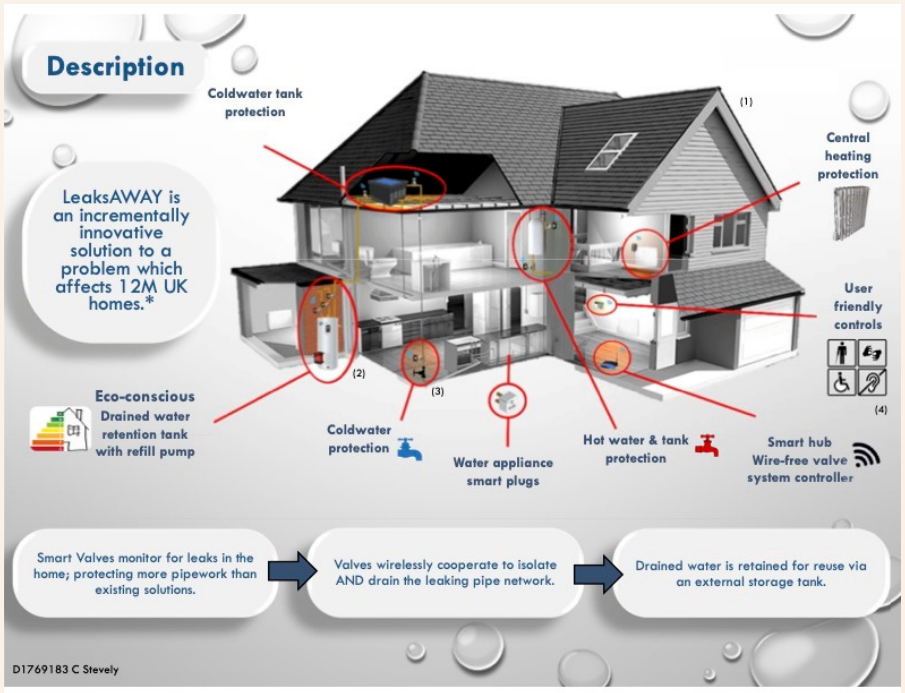
My Design brings together recycled material and simple technology into one unit. It is fully adjustable, and the bottom wheels are on springs so when weight is applied it grips to the floor. The main body is made from recycled plastic covered in natural latex foam and the fabric cover is made from sustainable apple leather.

<u>Use</u>

This redesign addresses all the problems with the current perching stool on the market. It is comfortable and adjustable to the individual user. There is a footrest, which the currently available model does not have, and the maneuverability has been vastly improved with the addition of wheels that include a safety feature.

'LEAKSAWAY' PROTECTION SYSTEM

CRAIG STEVELY



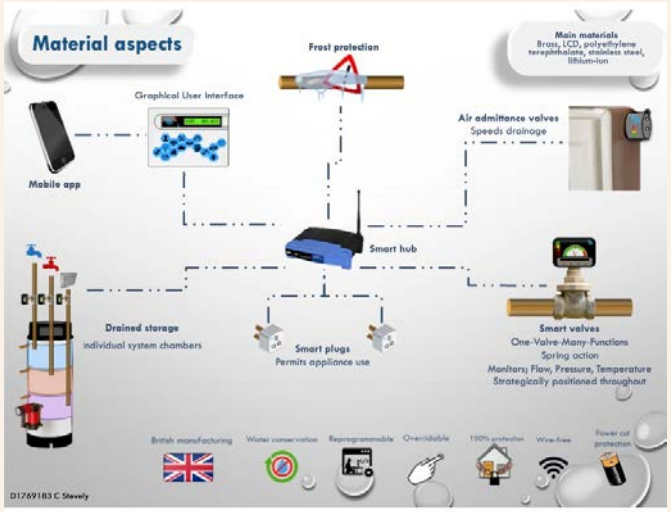
How does your project work? LeaksAWAY autonomously detects and diverts leaking water from more domestic plumbing pipework than existing solutions by monitoring behaviour of potable water systems and, most innovatively, the central heating system.

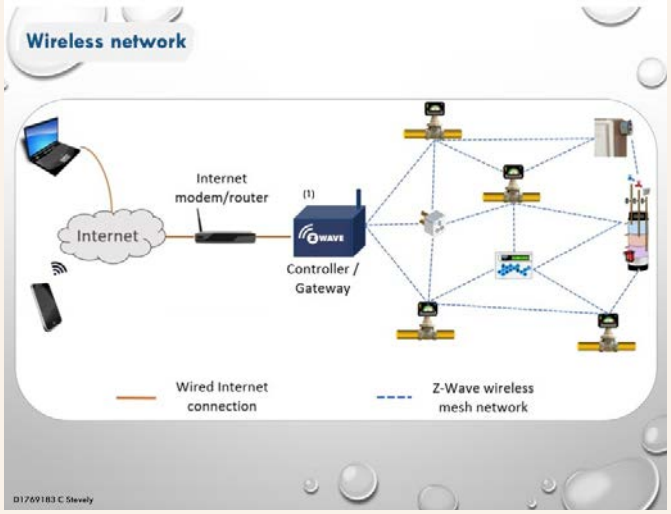
During a leak, the system directs specific Smart-Valves to stop the water supply and others to divert leaking water to an external tank for water recycling.

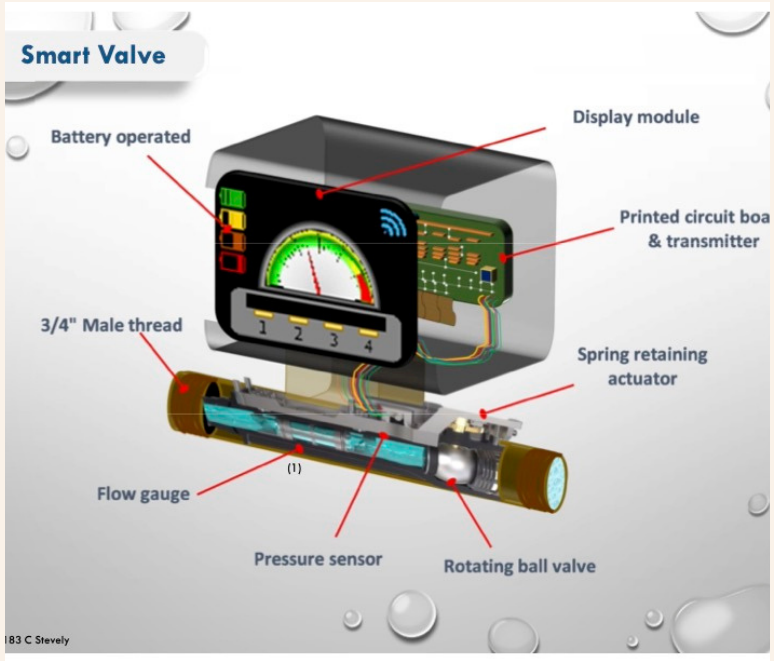
What is the problem you tackled within the brief? Unrestricted leaking water destroys properties. Although existing leakage solutions exist, diffusion has been tentative and offer no central heating protection. Through constructive discontent, LeaksAWAY introduces multiple relative advantages never before seen in one individual system. Who experiences this problem? Holiday homes, unoccupied homes, rentals, working families, vulnerable occupants. How does it impact them? Elderly, disabled, technical layperson may lack ability to respond.

What research did you do? Primary research explored accessible stakeholders through Plumber-wholesaler visits, surveys and contact with prospective users and trade experts. Secondary research investigated existing precedent/patents & inaccessible stakeholders through online research and industry literature/regulations. How did you generate your initial ideas?

Brainstorming, Associative thinking, and Lateral thinking including Morphological analysis, and SCAMPER checklists, helped conceptualise solutions. Design-Thinking & Design-Management systematically explored prevention, detection and diversion solutions. How did you select and refine your idea? Selection/evaluation matrices were compiled using criteria from technical feasibility checklists, and relevant Innovation Frame aspects which would influence EMA/project success.



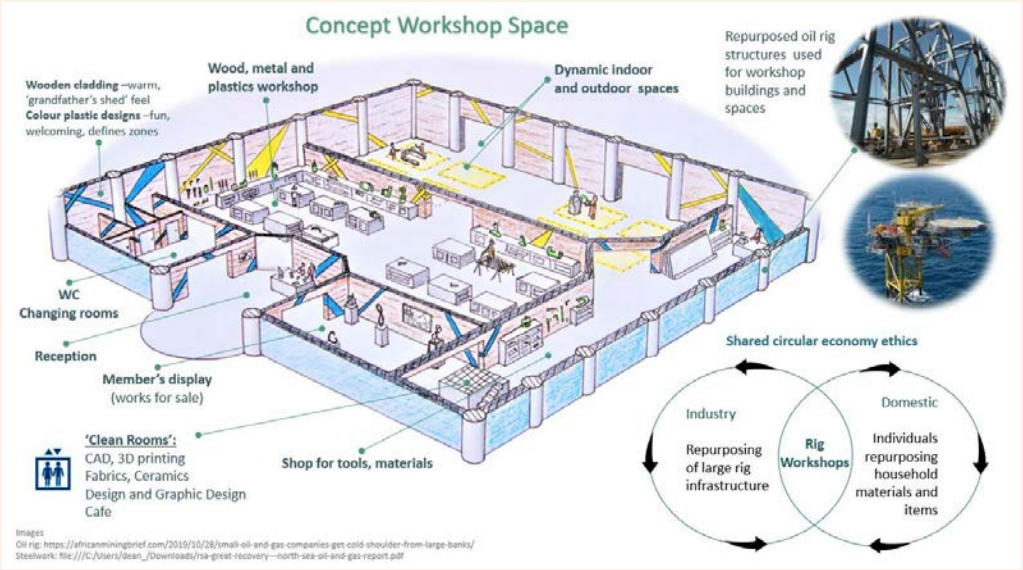




What is your proposed intervention? How will your design address the problem? LeaksAWAY is controlled by an autonomous logic-based operating system. Potable water flow is permitted for 30secs before the system intervenes and drains.
Pressure dropping below 1Bar in the central heating will initiate system draining.
Override functions are built in for extended water use during bathing and washing/dishwasher.

RIG WORKSHOPS

DEAN
PARSONS



Rig workshops are public workshop spaces where people can meet, learn, and share design and making skills from various disciplines. The workshops are created from decommissioned oil rigs.

The ethics of sufficiency promoted by individuals learning, sharing, and remaking at the workshops synthesises with industry's' growing desire to operate within a circular economy system.

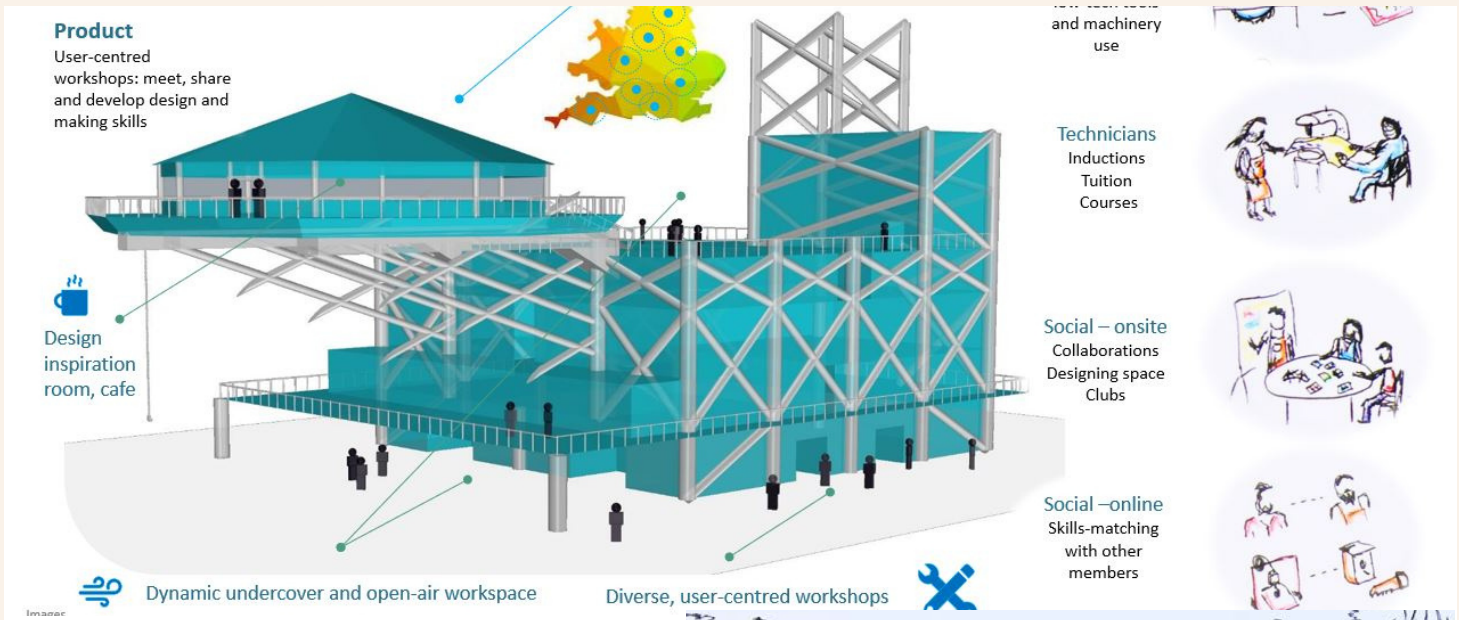
Problem Statement: Many people desire to learn design and making skills, but are restricted by various social contexts:

Formal: Workshops and tuition exclusive to specific education and career paths
Personal: Limited space and/or finance to accommodate equipment at home
Public services: No nationally available infrastructures. Limited existing facilities to share interdisciplinary skills
Process: Research Video interviews and questionnaires with various creative acquaintances confirmed the problems existed and identified constructive discontent.

Concept generation The focus was to design for solving ‘micro-questions’; design-making questions easily answerable in-person ‘in the moment’, harder to answered online or remotely.
Concept selection Weighed evaluation matrix, technical feasibility checklist and ethics matrix. An innovation frame project review, ‘innovation scoop’ of previous concepts, further interviews, various sketches, drawings and CAD models assisted with concept refinement.

In Use

The rig workshops act as a service system throughout the UK, providing accessible facilities and expertise within the public domain to help individuals develop design and making talent. A membership-based service provides tuition, product services, various makers clubs, online skills-matching, and a system of accrediting equipment use and progress to a CV.



T317

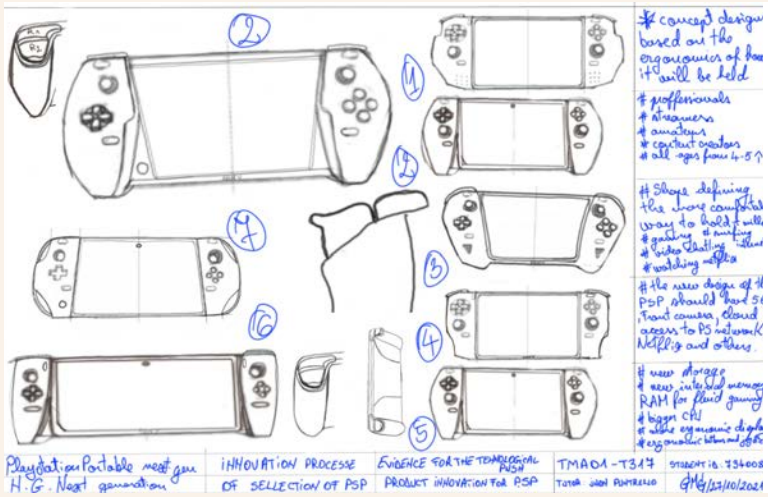
PLAYSTATION PORTABLE NEXT GENERATION DESIGN

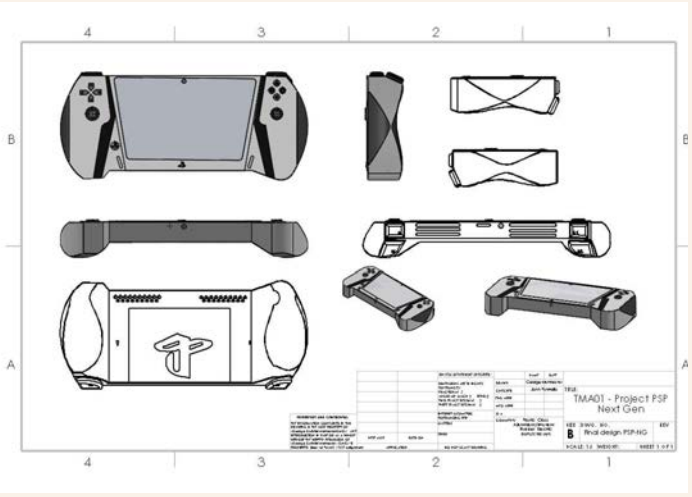
GEORGE GABRIEL MUNTEANU

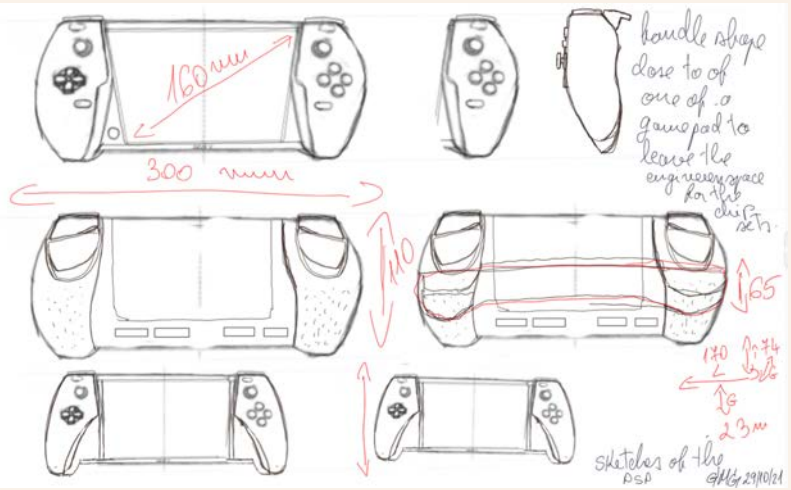
New Generation Technology for portable Playstation console to provide the service of Playstation 4 Games and PlayStation NOW games. This new design incorporates the new technology of GPU: 8 RDNA 2 CUs, 1.0-1.6GHz (up to 1.6 TFlops FP32) RAM: 16 GB LPDDR5 on-board RAM (5500 MT/s quad 32-bit channels) Storage: 64GB eMMC base, 256GB and 512GB NVMe PCIe Gen 3 SSDs available.

The technology exists and PlayStation and Sony can adapt the moderboards to the cast and screen design that has been created for this project.

The innovation of the Design is to provide access to services such as Playstation Plus and NOW to the Portable Design that can store games and play them remotely at a high frame rate for content creators and Design professionals in the Entertainment industry.

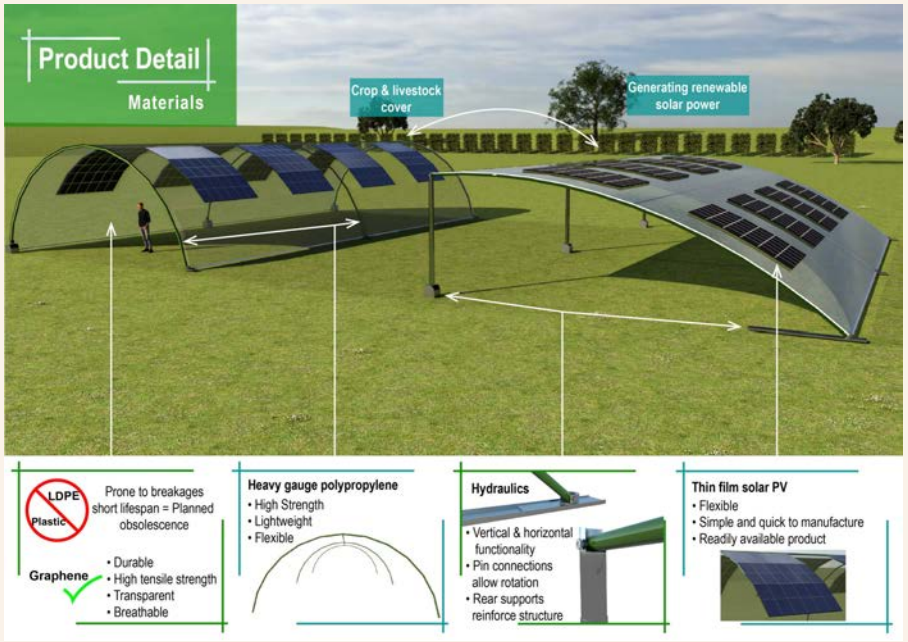

PlayStation Portable next gen
H.G. Next generation
INNOVATION PROCESSE
OF SELLECTION OF PSP
EVIDENCE FOR THE TECHNOLOGICAL PUSH
PRODUCT INNOVATION FOR PSP
TMA01-T317


TMA01 - Project PSP
Next Gen


160 mm
300 mm
handle shape close to of one of a gamepad to leave the engineering space for the electronics.
110
65
170
74
16
23 mm
Sketches of the PSP
@MG 29/10/21

AGRI-SOLAR

JAMIE
DONALDSON



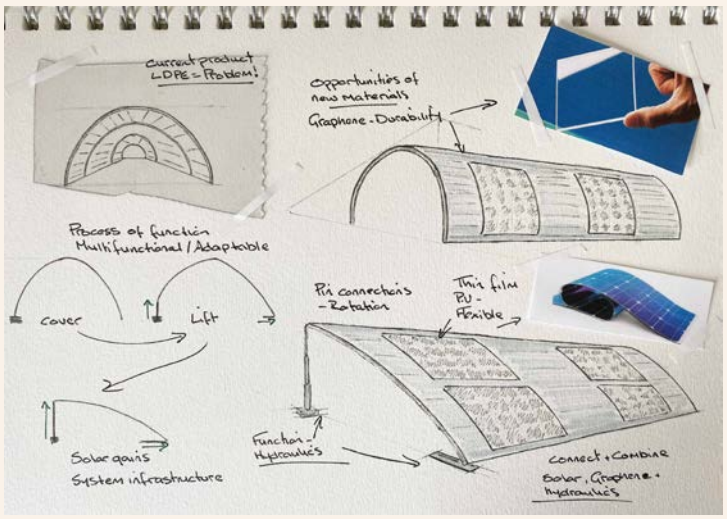
The Agri-solar tunnel is an adaptation of the commercial poly tunnel where development first focused on the material aspects, replacing the obsolescence LDPE plastic with the developing new material of graphene, providing better transparency and improved material properties of high tensile strength and breathability. Seasonal usage allowed opportunities to increase resource productivity, where with hydraulics the product reconfigures into a solar array system at an angle that will optimise irradiance.

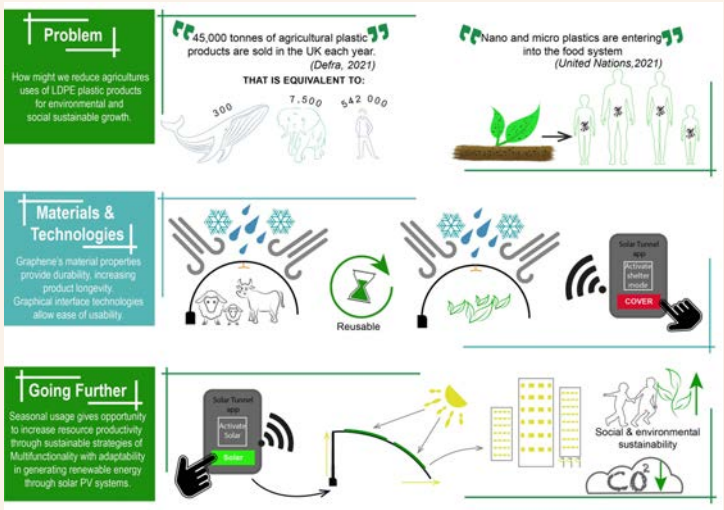
The requirements of the brief aimed to reduce the number of agricultural plastics consumed within the industry and maximise product usage for sustainable growth, where current constraints of disposal regulations have caused an on-site bioaccumulation of nano/micro plastics leading to toxicities within the food chain posing harm to public health.

Research through interviews an observation within farms found the difficulties of not only disposal, but the continuous reapplication for the current single use/short term products required on a seasonal basis. This generated initial ideas by focusing on concepts of sustainability through durability and longevity for a reusable design that could remain situated on agricultural land.

Further ideas to maximise usage used adaptability, increasing the resource productivity through multi-functionality.

The durability and longevity, the product will contribute to reducing short-term plastic manufacturing and consumption within a linear lifecycle and provide a reusable design, which can remain safely in fields along with generating renewable energy that will further increase environmental and social sustainability through lowering air/water/soil pollutants.





T317

CUTLERY COMBO: CLEAN & STORE

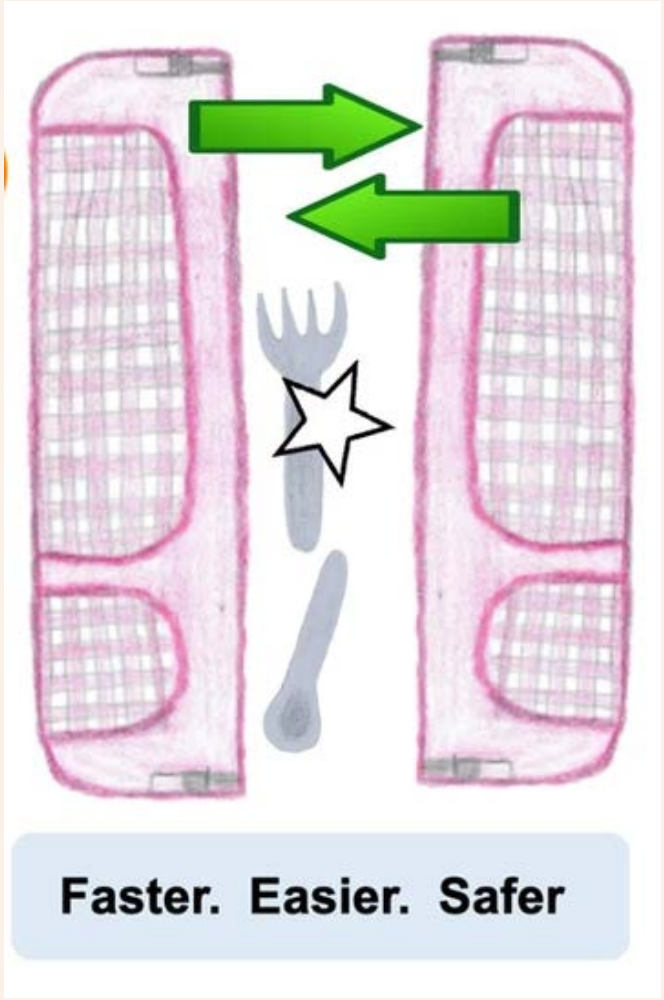
JOSHUA DUNNING

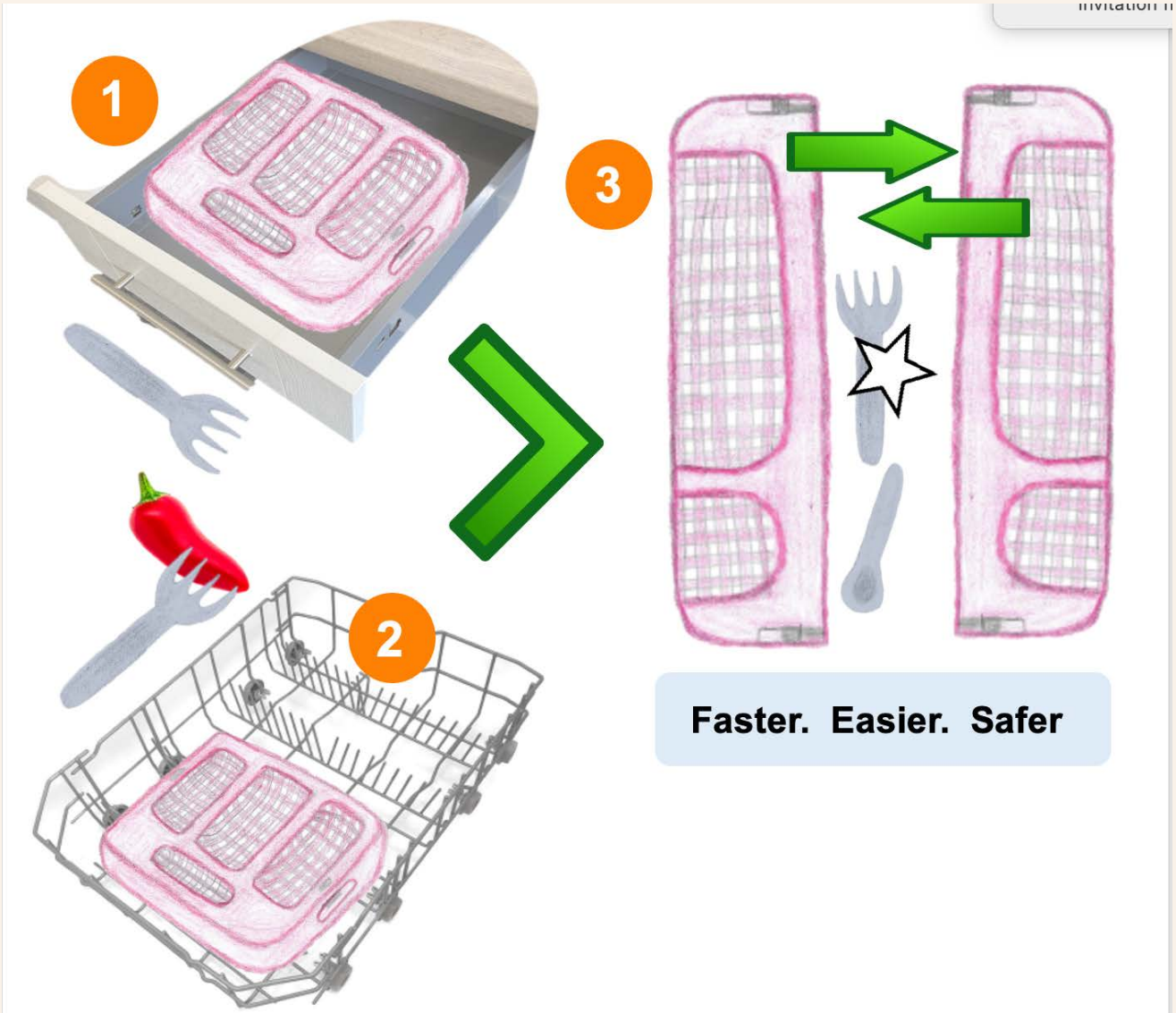
At a fork in the road? Cutlery Combo is the washable cutlery drawer tray- a stylish, quality product that will last. The 2x trays click together to form a cage during dishwashing.

Materials- Fully recycled Polypropylene (Food and dishwasher safe). Strong, durable and lightweight.

People- Benefits everyone including wheelchair and arthritic users. Save time, effort and money. Give your friends kitchen envy and improve safety.

Context- In domestic and professional kitchens. Dishwashers save power and water which is better for people and planet.





1) Keep cutlery organised in your kitchen drawer. Choice of colours available to suit your style. No more crumbs in the drawer. Rubber feet mean no sliding around.

2) Meanwhile, keep the other tray in your dishwasher for dirty cutlery. No sharp points to fall on. No mess. No cuts.

3) As cutlery is used, the drawer empties and the dishwasher fills up. Then click the two trays together in dishwasher, placing the cage in any orientation. After washing, give a shake if necessary and squeeze the convenient handles to separate. The process repeats. Cutlery kept organised. No sorting. Save time.

CONTACTLESS BIN

Highly Commended

JUAN TORRES

The contactless bin allows the user not to touch food waste at any point whilst handling it. It consists of two containers: a kitchen caddy to keep inside the house, and a main outdoor bin, collected at kerbside.
When connected, it seals and drops the bag to the main bin.

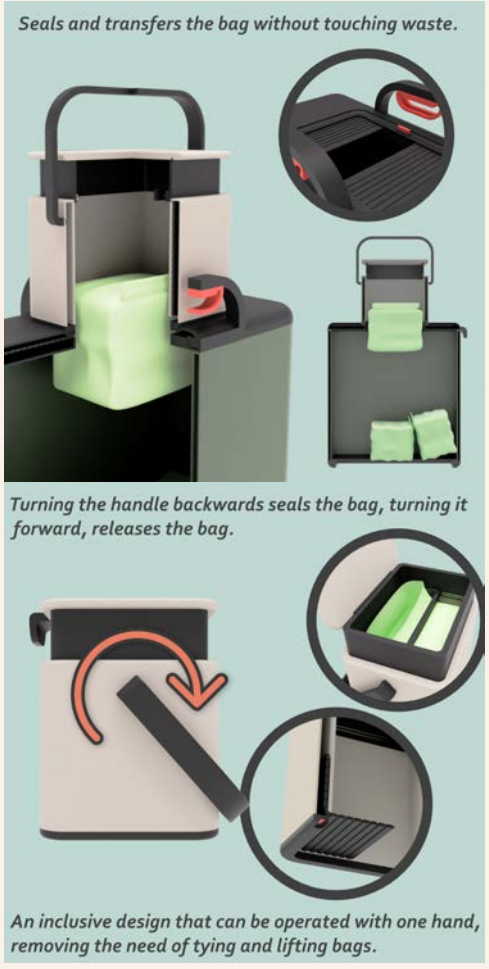
The development of the contactless bin was inspired by the issues faced when storing food waste by households, mainly concerned with hygiene: leaks, smells, and vermin. The goal of this innovation is to encourage households to recycle food waste, by removing the obstacles that might prevent them from doing so.

Surveys to family and OU students were used to find the problems that households might face when recycling food waste, including family members outside the U.K. to explore how other cultures manage waste.

The initial concepts were generated using divergent thinking activities, such as SCAMPER prompts, brainwriting and diagrams.

Associative thinking, new technologies and materials also helped to generate or develop ideas. A selection matrix helped choose the final idea.

The chosen idea has the potential to improve the lifestyle of UK. households, satisfying the essential needs of hygiene and tidiness. The design also adapts to the current services of waste management, giving it the potential of being widely diffused without the need of infrastructural changes



VISUAL TRACKING MAGNIFIER "ECOVTM"

NICHOLAS PROWSE

B211242X
Annual Design Show and Competition

Description – Project detail

Summary of the concept and main benefits

New portable magnifier, with a lens with higher % recycle fraction of current supply for people aged 18 - 80. Helping people mitigate difficulties of a dyslexic nature with reading paperback or hardback books, and allow higher recycling of the lens compared to (Coil, 2020b).

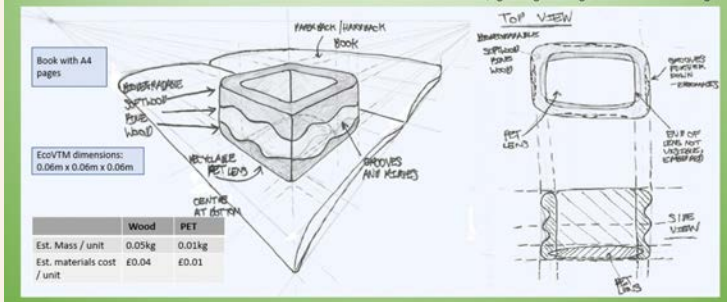
Ergonomic features.

Portable since total mass: 0.06kg.

Aesthetic.

Pinus Taeda wood is biodegradable, PET recyclable.
PET lens magnifies text upto 1.5x

Low materials costs, ignoring wastage from manufacturing.



	Wood	PET
Est. Mass / unit	0.05kg	0.01kg
Est. materials cost / unit	£0.04	£0.01

Figure 1 – Main image: Concept design "EcoVTM". Own drawings. Calculations using data from (Ansys, 2020)

Word count: 51

B211242X
Annual Design Show and Competition

Description – Problem statement

Summary:

A new or redesigned portable and ideally more environmentally friendly product, helping people aged 18 - 80 mitigate difficulties with reading of a dyslexic nature.

For reading with physical (paperback or hardback) books.

Representation of context:

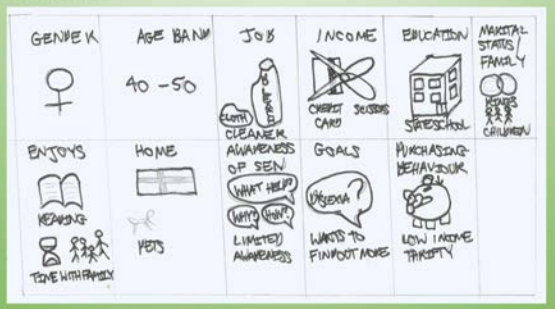
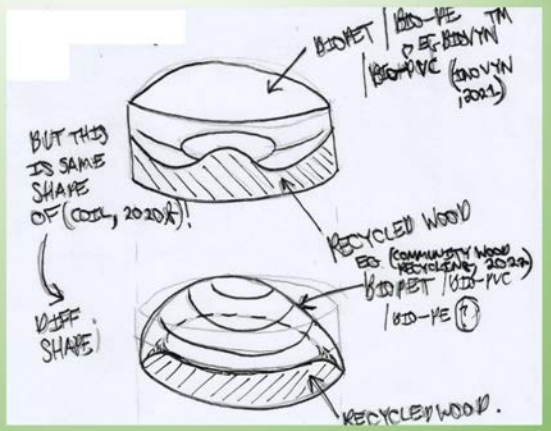


Figure 2 – Detail 1: Representation for context of problem – Completed persona for female parent aged 40 to 50. Own drawing.

Word count: 32

Description – Process - 1

Figure 3 – Detail 2: ECDM Idea 4. VTM using primary generator. (Coil, 2020b; Community Wood Recycling, 2020; Inovyn, 2021). Own drawing.



- User research identified that portability, end of life, and sustainable materials are important.
- Focus was on materials with higher % recycle fraction of current supply (Ansys, 2020).
- (Omar, R. et al, 2021a) states VTMs gave the best improvement compared to other aids.
- Selection matrices used for comparison of ideas.
- Lens: Recycled PET chosen as optical quality and low density.
- Frame: Pinus Taeda chosen as biodegradable and low density.
- Figure 3 shows the idea that was taken forward before development.
- This would be an incremental innovation.

Word count: 71

B211242X
Annual Design Show and Competition

Description – Process - 2

- Figure 4 shows development work

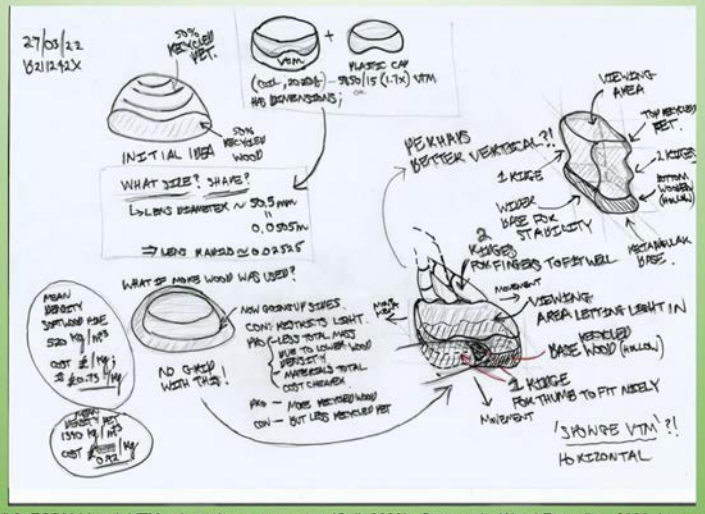


Figure 4 – Detail 3: ECDM Idea 4. VTM using primary generator. (Coil, 2020b; Community Wood Recycling, 2020; Inovyn, 2021). Own drawing.

Word count: 5

T317

NATURAL CLEANING MAT

OWEN HARRISON

This product is a door mat, designed to remove mud from dogs and cats when they come in from outdoors. Market research was conducted in the form of surveys and discussions concluded that many pet owners are regularly frustrated from their pets bringing mud from the outdoors into their home.

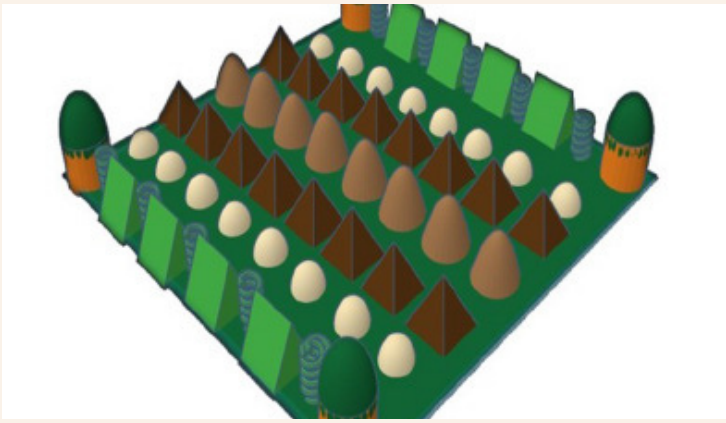
By redesigning the existing ineffective door mat using design, creative thinking and introducing sustainable materials, this could improve the lives of animals and their owners, mainly addressing the Product Detail Focus element of the problem.

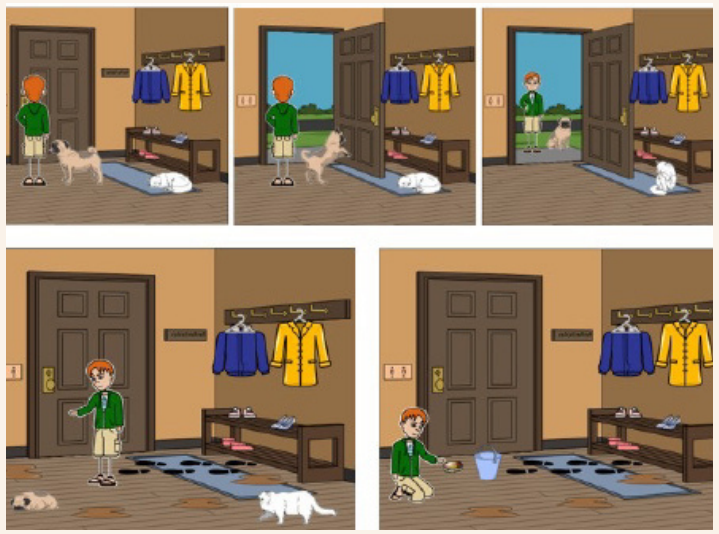
Using constructive discontent, YouTube and Google research, iterate and heuristic methods, consumer surveys and user trips, provided me with eight potential concepts that would meet the design brief. Comparing these concepts using a selection matrix narrowed it down to three designs, from which the Natural Cleaning Mat was selected.

This product innovates by using various materials to make the mat effective at removing mud from most breeds of pets. The vision is to address the problem of mess created by pet dogs and cats, especially during wet weather. Pets have access to gardens, which have large areas of grass lawn, which in the rain become wet and muddy.

Pets have access to gardens, which have large areas of grass lawn, which in the rain become wet and muddy.

When pets come in from the garden, invariably with mud on their paws and clinging to the fur underneath their body, resulting in muddy paw prints everywhere in the home.

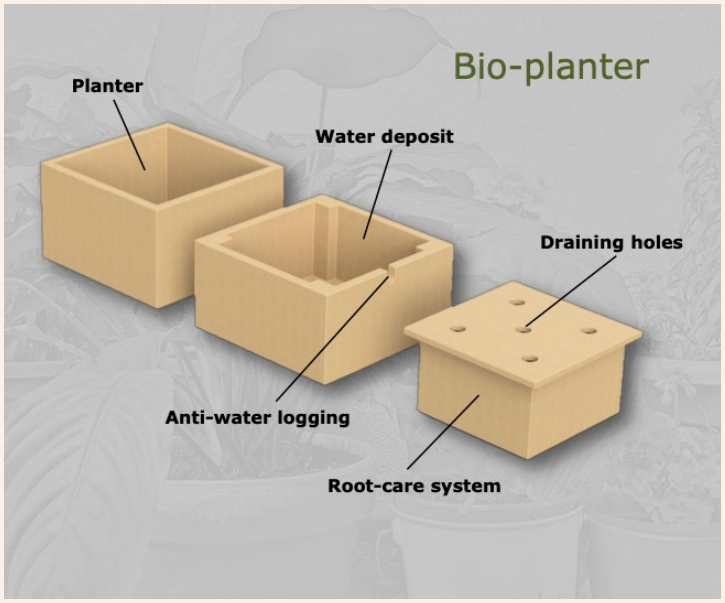




T317

BIO-PLANTER

RAMON ANTELO GARCIA



Bio-planter is a flower pot designed to take care of your plants.

.- Made of Hempcrete.
.- 100% Natural material.
.- Anti-fungus.
.- Frost resistant.
.- Durable, anti-cracking.
.- Lightweight, easy to move.
.- Draining base with water deposit.
.- Exclusive Root-care system helps to transplant without damaging the roots.
.- Inspired by nature, for nature.
.- Recyclable.

Problem statement:

Due to the porosity of the terracotta, the micro roots penetrate the pores and adhere to the pot, which makes the transplanting process difficult without damaging the plant. When it comes to medium-large size pots, this problem is increased due to the weight of the pot itself, since terracotta is relatively heavy.

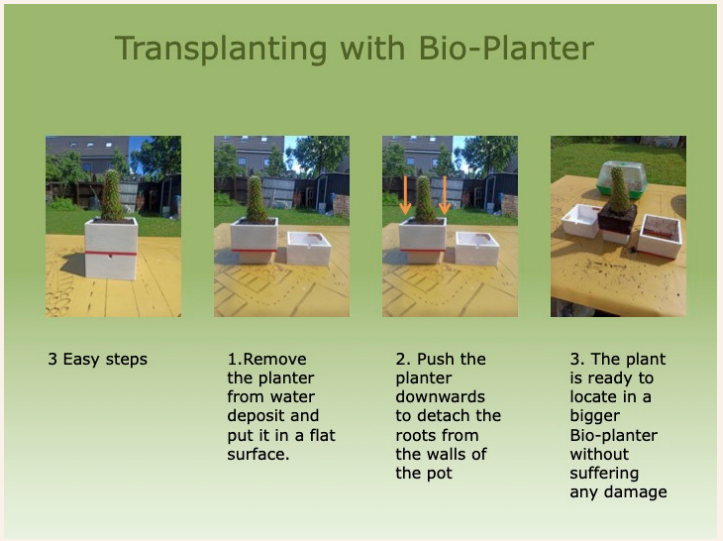
Process

The first ideas for the project arose from a personal dissatisfaction with terracotta pots. Their characteristics make them ideal for caring for plants, but problems arise at the time of transplanting (dirt, stress and damage to plants...). After speaking with several colleagues, they also identified the same problems as me, and that was the starting point. The use of fully sustainable materials has been a priority throughout the design process.

In use

Transplanting steps

.- Remove the pot from the deposit
.-Place the planter on a flat surface
.- Push the pot downwards to detach the roots from the walls of the pot.
.- Locate the plant in your new Bio-planter.
.- There is no dirt and the plant or cactus has not suffered stress.



CARBON FOOTPRINT TRACKER

RUTH
PEPPER

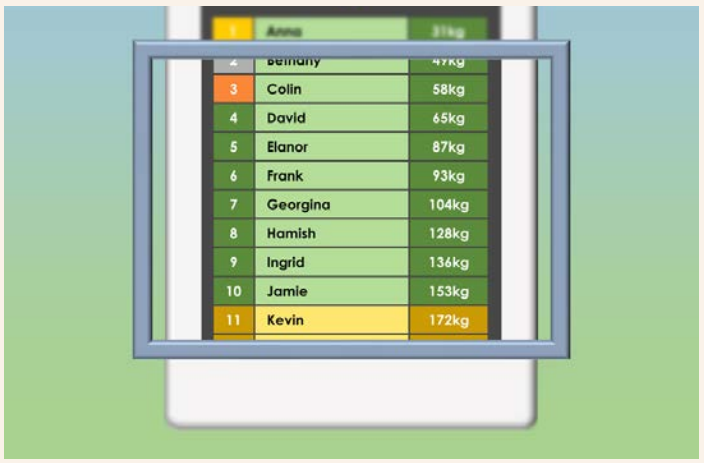
The mobile application allows users to calculate and monitor their carbon footprint. Users record their daily activities, and the application provides them with personalised advice on how to reduce their environmental impact. Users who are proactive in reducing their footprint can earn rewards such as discounts, vouchers, or charitable donations.

According to SEPA, household waste accounts for over 2 million tonnes of the total waste produced within Scotland alone, causing nearly 6 million tonnes of carbon dioxide. Household waste is a big problem within the UK, and it can be difficult for consumers to estimate or monitor their environmental impact.

boards, problem framing, storyboards, information searching, user trips and observation, and conducting focus groups. Techniques such as the Innovation Landscape Matrix, evaluation criteria and selection framework were then used to evaluate and select design ideas to explore further. In addition, methods such as information searching, wireframing, and conducting design workshops and state-of-the-art reviews were used to refine the final design idea.

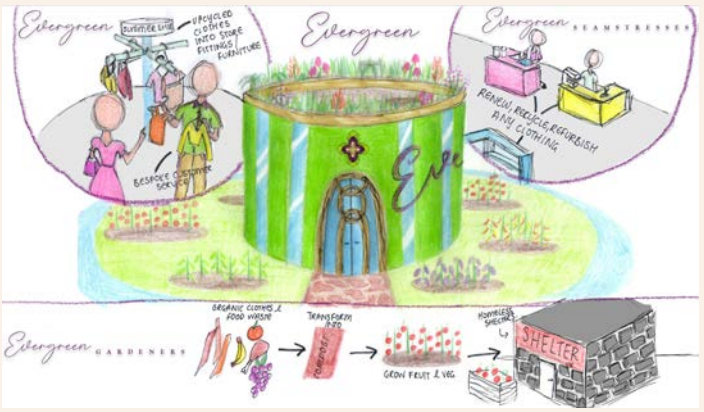
The application helps users reduce to their carbon footprint and make sustainable choices by providing advice and motivation. Users footprints are ranked each week between their friends, within their countries, and worldwide.

Users who reduce their carbon footprint are rewarded with points which can be used to support sustainable organisations



EVERGREEN

SIMRANJEET KAUR



Project Detail

Evergreen is a clothes “superstore” where clothes are transformed into different uses. It has three main operations; “Evergreen” where donated clothes are resold, “Evergreen seamstresses” who work onsite to refurbish and tailor clothing, “Evergreen gardens” where food and organic clothes waste are made into compost to grow fruit and vegetables.

Problem Statement

“Fast fashion” – replicating clothes from high-end catwalks which are quickly produced for retail stores. Consumers are enticed into being the trendiest fashion icon around - producing 92 million tonnes of waste per year. The goal; “Fashion that can stand the test of time and reduce the negative impact it creates”.

Process

The main forms of research were user trips, face-to-face sessions, information searching and “state of the art” which highlighted the problems and opportunities within fast fashion. Initial ideas were generated through; morphological analysis, primary generators and more.

The techniques took one idea and iterated it. The best three out of eight ideas were put into a selection matrix. Evergreen was not the highest scoring but it showed the most potential to overcome its weaknesses.

In Use

Consumers will buy clothes and wear them to their fullest extent. Evergreen can repair clothes on site which will allow customers to get more wear.

Recycling and upcycling clothes will keep Evergreen costs and prices at a reasonable level; increasing customer loyalty allowing fast fashion companies to rethink their strategies.

The Open University

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