



# CATALOGUE 2019

DESIGN AND INNOVATION STUDENT  
EXHIBITION



# CONTENTS

Introduction	4
Overall winner - Most innovative idea	6
Winner - Level 3	8
Joint winner - Level 2	10
Joint winner - Level 2	12
Winner - Level 1	14
Highly commended	16
Highly commended	18
Highly commended	20
U101 - Design thinking	22
T217 - Design essentials	36
T218 - Design for engineers	36
T317 - Innovation: designing for change	45

# INTRODUCTION

The Open University celebrates its 50th anniversary this year. Design has been taught at the Open University from the beginning, and since 2010, we have been offering a degree in Design and Innovation which enables students to combine design studies with complementary subjects from other disciplines towards either a BA or a BSc. Around 2000 students each year are studying design at the OU.

Design is, conventionally, taught through studio practice and hands on work and the challenge for the OU was how to teach design to students in their own homes and workplaces. The result is a unique approach to design learning which focuses on developing students' abilities to identify and solve problems and to use design thinking in a wide range of situations. From the beginning our modules have also had a strong emphasis on sustainability, user centred design and design for social good. Like any other design school, assessment of learning is based on project work, resulting in the work that you see in this exhibition.

Design at the OU has also always been at the forefront of innovations in teaching delivery, using opportunities that new technologies have presented to develop new ways to help students to learn and interact. Our students now use an online studio space, OpenDesignStudio, in which they can share and comment on each other's work and curate their portfolio of design work.

If you would like to know more about the Design and Innovation degree at the Open University, you can find out more by visiting the OU prospectus at:

<http://www.open.ac.uk/courses/qualifications/q61>

**Overall winner -  
Most innovative idea**

**Rebecca McFleet**

**T317**

**WC-Sphere - Product design**

The jury selected Rebecca's work as the overall winner because of the innovative and well-communicated idea presented and how Rebecca tackled the difficult problem of sustainable human waste disposal in a thorough yet creative way.

The design for a human waste disposal unit that improves on hygiene through an automated flush system makes clever use of body weight to automate the flush system and removes the need for a separate flushing mechanism.

This is a complete redesign of the traditional shape and structure of a toilet for the flush system to work and enables a rethink of the traditional form of the toilet.

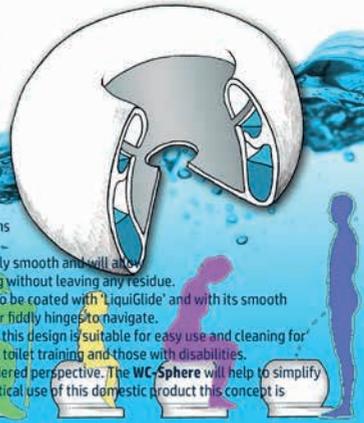
Consideration has been given to sustainable materials and the user experience and offers a complex and well realised design that has potential for development.

The visual detail and information in the poster communicate a sophisticated thought process and unique idea.

Looking at an alternative approach to human waste disposal in an effort to improve user experience, hygiene, learnability and sustainability of bathrooms in domestic households.

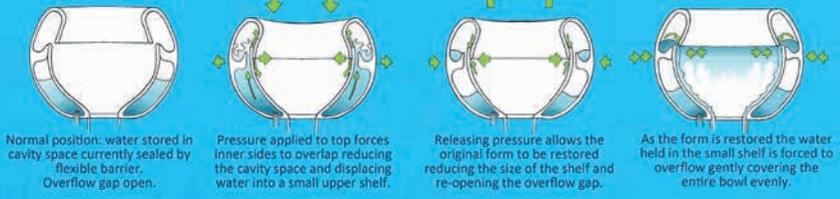
# WC-SPHERE

human waste disposal unit



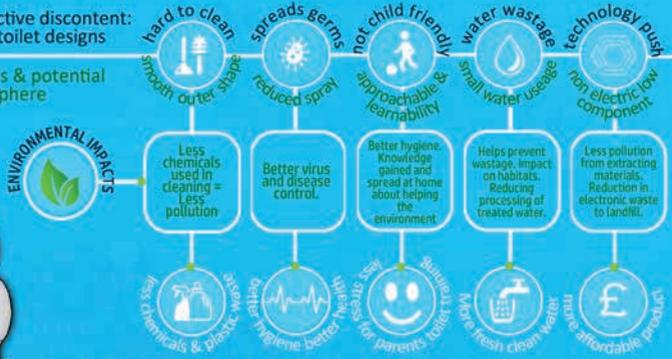
- WC-Sphere** is designed to help improve bathroom hygiene and make cleaning easier. It has an automatic rinse action activated by the users' body weight. This will require no additional interaction from the user making it a relatively hands free interaction reducing the spread of germs and bacteria due to toilet spray or physical contact.
- This design incorporates 'LiquiGlide' technology making all surfaces extremely smooth and will allow any soiling to move down the inner walls and through the waste pipe opening without leaving any residue.
  - The body will be constructed of moulded ecoplastics. The outer body will also be coated with 'LiquiGlide' and with its smooth minimalist shape will be very easy to simply wipe clean; no fussy pipe work or fiddly hinges to navigate.
  - With the user group of this project being refined to family it is important that this design is suitable for easy use and cleaning for hygienic reasons. The reduced complexity of this task will also aid children in toilet training and those with disabilities.
  - It is also intended for this design to fulfil a more sustainable and more considered perspective. The **WC-Sphere** will help to simplify a growing race for technology for technologies sake. By focusing on the practical use of this domestic product this concept is striving for user centred design and sustainable innovation at its core.

### How the water will move:



Constructive discontent: current toilet designs

Solutions & potential of WC-Sphere



T317 Rebecca McFleet G26R3450 bexmcfleet@gmail.com

Winner - Level 3

**Audrey Buchan**

**T317**

**Cocoon - Inflatable  
insulating Jacket**

The jury selected Audrey's design concept as the winner because it showed a strong awareness of current developments in materials to combat issues of sustainability through low impact design.

The idea creatively explores the use of new sustainable materials as an alternative to the current materials used in similar products, micro fibres, that are adding to the pollution issues.

Use of the latest research for growing textile fibres has been cleverly considered by using mushroom leather alongside a simple unobtrusive method for achieving the insulation. Further ideas are also environmentally aware through the aesthetics of the jacket which use natural dyes and textures.

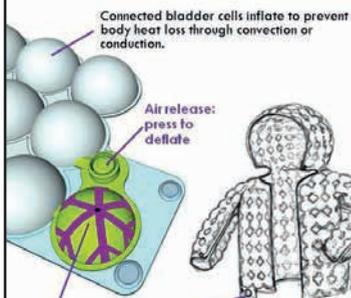
The idea for a 'blow up' jacket allows the wearer to control how insulating the jacket is when worn and is inventive, creative and forward thinking in a fast fashion market that is saturated with waste products.

# cocoon

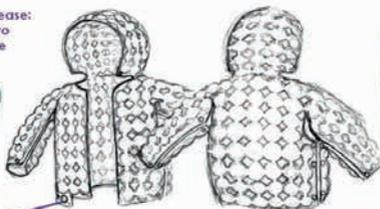
## inflatable insulating jacket

the sustainable alternative to synthetic fleece

- Insulates the body using air
- Made from sustainable natural materials
- Fully biodegradable under natural conditions



Air pump button on waistband: push to inflate bladder to desired level  
User-customisable insulation suits every environment.



**Internal air bladder system**  
Made from PHB biopolymer synthesised by bacteria using waste methane. Fits between jacket outer and lining. Removable for repair – patch kit included.

### Problem context: microfibre pollution

- Synthetic fleece fabric made from non-biodegradable plastic.
- Tiny microfibres shed during fleece manufacture, washing, disposal.
- Microfibres in wastewater and landfill run-off pollute waterways.
  - Marine animals consume microfibres, often fatally.
- Humans consume microfibres in seafood, water, salt, beer.

Jacket outer made from mushroom-derived leather. Can be grown to desired size and shape.

Dyed using pigment-forming bacteria. Requires no harmful chemicals.

Unique 'embossed' patterns on outer textile inspired by nature.



Audrey Buchan – B6644389 – T317 [countchocula@hotmail.co.uk](mailto:countchocula@hotmail.co.uk)

**Joint winner - Level 2**

**Claire Lambert**

**T217**

**Inn-vert-ed - An  
inclusive, multi-sensory  
experience design**

The jury selected this design as a joint winner because Claire has created an inclusive design concept that addresses the social, physical and psychological needs of a wide range of users to improve experiences of visits to a National Park.

This multi-sensory experience is intended to address issues of inclusivity for visitors to a National Trust SSSI at Ditchling Beacon.

This site is a natural protected open space with wildlife, flora and fauna that are protected. Ditchling Beacon is also the site of an iron age fort so has historical significance. With sweeping views over the countryside and varying terrain, it is a popular site for walking and experiencing nature.

The design takes a multi-sensory approach to providing an inclusive experience through touch, smell and visual stimulation while educating users about the site.

The design integrates effectively into the environment without imposing on it and has been beautifully illustrated.

## The Brief

Human Centred  
Inclusive for those with physical  
and sensory disabilities  
'Hands On' Fun to use  
Fostering a sense of connection with nature  
Acknowledging the history of the site  
Engages missing users  
Made from natural materials  
with zero waste at the end of its life  
Easy to maintain

# INN-VERT-ED Design

Innovation: Inclusive, green, educational, social

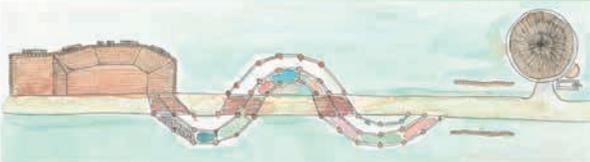


## The Design

An accessible, sensory experience  
at Ditchling Beacon.

Visitors can get up close to nature, experiencing  
'barefoot' walkway that weaves around the South  
Downs Way, alongside a wheelchair friendly path  
way with 'barehand' boards.

The Iron Age round house is the ideal play house  
and introduction to sustainable building materials  
(getting their hands dirty by weaving their own  
wattle wall and throwing some mud at it!) while  
nodding to the historical importance of the site  
All leading to the Hillfort viewing platform  
and stunning 360 degree views across  
Sussex and the  
English Channel.



Sustainable Design At Ditchling Beacon; Engaging Missing Users  
Claire Lambert Y1336576 T217 2017/18 [clairelambert@outlook.com](mailto:clairelambert@outlook.com)

**Joint winner - Level 2**

**Barry Coughlan**

**T217**

**The 'Slimline Bathroom Storage Unit'**

The jury selected this idea as a joint winner because this is a simple and effective solution which is both inventive and sophisticated and very well communicated.

Developed following research into the issues of limited space around sinks in small bathrooms, for storing essential items and products, this slimline storage unit is sleek and unobtrusive and removes the need for a flat surface on which to place products or a larger storage cabinet.

The design provides a more context appropriate solution to storage for small bathrooms and addresses safety issues by enabling items such as medicines and razor blades to be concealed from children in a hidden drawer.

The ease of fitting the unit has been considered and hygiene is addressed through easy to clean surfaces and the simple aesthetic allows the unit to fit into a wide range of bathroom styles.

Bathroom Storage  
 Part 2: Concept  
 Part 3: Material  
 Part 4: Production  
 Part 5: Use & Disposal



**Context:**  
 The bathroom sink is one of the most commonly used places for human activity which includes brushing our teeth, washing our hands, personal hygiene processes etc. We as humans use this room from a young age all the way up till old age. It is very much part of our daily lifestyles with multiple visits to the bathroom every day. Small bathrooms require a certain amount of storage space to ensure hygiene is maximised, whether that is in the form of hand soap or toothbrushes, towels, toilet paper for example. However, research shows that small bathrooms spaces are often very limited in space for such items, particularly the sink area.



This slimline unit which is space conscious. It maximises storage space around the sink area of a small bathroom where certain products are required to be present for personal hygiene reasons. It is made mainly from recyclable plastic meaning it has a low environmental impact. It is widely user-friendly to span a wide age range and across ability levels, as it has a simple push release latch on the door. Hygiene perspective, the use of UV light cleaning technology while the unit is closed, can promote the reduction in the number of bacteria and organisms on your toothbrush. It is highly adaptable due to the use of a Zintec back panel for a connection to magnet clips, meaning you position which items you require to suit your own lifestyle. The hidden storage feature in the bottom of the unit with a simple cover to keep medicine or razors blades out of the eyeline of younger children, ensures that safety measures are also firmly in place. Installation of this unit merely requires a 3M VHB tape, meaning there is no requirement for tools or screw to fit.

**Sam Bowes**

**U101**

**Recycling Dog Waste  
into Bio Gas and Compost'  
System Design**

**Winner - Level 1**

The jury selected this poster as the winner because Sam was able to produce an overall concept that addressed environmental issues from several angles on what is a challenging subject and communicated this very effectively through physical prototyping.

The purpose of this project was to select an existing issue and design a potential solution through rough prototyping.

The prototype idea that has been selected is an age-old problem of dog waste disposal into landfill from dog waste facilities and bins. Additionally, the current issue of the need for sustainable energy has paved the way for this inspirational idea for an alternative, renewable, source.

The idea of collecting dog waste material in specifically designated bioplastic bins utilizes household waste disposal systems maximizing current systems whilst avoiding problems with single use plastic.

This winning idea is communicated through a simple prototype that effectively communicates how the way this system could work.

**For UI01 - TMA 02 the task was to explore a design problem, frame it and design a prototype as a proposed solution.**

As a lifelong dog owner, I used to wonder, what happened to all the dog waste? Through my research during TMA 02, I discovered that this was being sent to landfill. Through problem framing, I began to explore ideas on how dog waste could be encompassed into a resource instead of going to landfill through the creation of a product & a system using a circular economy.

**This is my design concept for a product & system that addresses my problem frame of "Reimagine a system that reduces the amount of dog waste that ultimately ends up in landfill."**

My proposed design solution was to incorporate a designated national bin and bag system, for dog waste only. The dog waste bin itself being made of a bioplastic, with compostable bags. The system would compose of a brightly coloured home bin and bags, so that people can correlate the waste to the correct bin. The waste in bins would then be collected at the same time as other recycling collections, where it would be sent to an industrial composter to kill off harmful bacteria and to produce compost or to be turned into bio-gas for energy production.

The design solution, is intended to be operated daily at the bin level, and weekly with recycling collections. The proposed solution would be for all homeowners with dogs, accommodating this new system, where bags and bins could be provided by local councils for free or for a minimal cost, to encourage a circular economy and to stop the waste going to landfill.



Samantha Bowes - B3178075 - [contact@samanthabowes.com](mailto:contact@samanthabowes.com)

**Highly commended**

**Andrew Larsen**

**T317**

**Barracozi - Festival Chair**

This prototype design for a portable festival chair is commended by the jury because Andrew has been imaginative in adapting a product to give it more options for use and has styled the aesthetic to give it greater market appeal.

The current issue of abandoned tents and chairs at festivals is adding to the growing mountain of unnecessary waste products that needs to be resolved.

The idea for this multi-purpose product is to encourage longevity of use and lessen the likelihood of it being left behind as a single use item before its end of life and impacting on landfill.

The development of the design taken from the archetypal picnic chair gives it greater functionality, addresses issues of strength and safety and explores its aesthetic appeal both through its shape and form and through its decorative appeal.

This clever design goes beyond its original purpose of a portable chair, functioning also as a sleeping mat and picnic rug and is a viable solution which could be used in number of contexts.



*There is a need to increase the mechanical integrity of camping chairs used at music festivals, together with user value, so that they can become regarded as a must take home item.*

Andrew Larsen T217 Pl:F2170878

# BARRACOZI

andrewlarsen@hotmail.co.uk



BARRACOZI offers high levels of comfort, protection and is highly adaptable. Its self inflating sleep mat technology enables it to provide a comfortable mattress, a waterproof picnic rug, a load cover and a highly effective chair, dematerialising the leisure market.

Why is BARRACOZI better?

- There are very few mechanical components
- It is very strong and extremely stable
- It is virtually unbreakable
- Materials used are UV stable
- It is easily customised to suit user values

How does BARRACOZI have a positive effect on the environment?

- It is light weight so reduces environmental cost of transportation over traditional models
- It is responsibly manufactured with low material wastage (Designed around fabric stock sizes)
- Cottage industry manufacture facilitates low product miles
- It can be incorporated into ISO 20121 2012 Sustainable Festivals
- It is repairable and used environmentally responsible materials

#### POTENTIAL MARKETS FOR PRODUCT DIFFUSION



**Highly commended**

**Denise Mummery**

**T217**

**Fun to Learn - Interactive  
Education Boards for Children**

The jury selected Denise's idea for these interactive learning boards because of the creative approach to the design of the boards that will both engage and educate children in the environment in which they will be used.

The idea applies effective use of vibrant colours and shapes that reflect the surrounding environment and which will appeal to children encouraging them to engage with the boards and learn about their surroundings.

Building on current methods used in museums for interactive learning boards and exhibits, the design creatively explores the use of visual and audio methods that appeal to children.

The board designs are thoughtful in addressing wider issues such as pollution and littering as well as educating on the flora and fauna of the setting. They enhance the user experience of national parks by encouraging children to apply their learning in the context of the park and further afield.

# FunToLearn

## Explore the outdoors



### 4 Interactive learning boards aimed at children:

**Board 1:**

- Plastic Pollution
- Taking your litter home

**Board 2:**

- Animals
- Bugs
- Birds

**Board 3:**

- The Water Cycle
- Your Carbon Footprint

**Board 4:**

- Conservation
- Sustainability
- Recycling

**Ages 4  
and older**

This nature inspired exhibit is to help young people learn all about the outdoors and just before they embark on an adventure with the family. The boards would be located at the foot of the mountains in a National Park, or at the entrance of a popular nature trail and reserve.

Its interactive features are designed to attract young visitors and hopes to instill basic and vital environmental knowledge taught to them through some fun recordings that is activated via a big red button and a single speaker that are positioned on the interactive leaf-shaped board.

Topics include: wildlife, habitats, animals, bugs and birds, advice on taking care of the natural world and helping to preserve the beautiful outdoors.



**Highly commended**

**Patrice Belton**

**U101**

**Let's Make Vis'tory -  
Road Safety for Cyclists**

The jury commended the complex exploration, thought process and ideas produced by Patrice which show design ideas based on good research, communicated in a well-balanced poster.

Each stage of Patrice's design process is communicated in this commended poster. The initial problem is how to keep cyclists safe on the roads with other traffic and ensure greater awareness and protection against accidents.

The range of ideas explored shows both logical and innovative thinking and addresses both the individual and wider legislative responsibilities that could be developed through campaigns, improvements to the highway code, mirror systems, visibility clothing and cycle friendly road layouts.

The solution proposed has been refined to bring together several of these ideas to redesign the way that cycling is addressed within our society. The visual communication and balance of this, with the use of catchy slogans and visuals in the design engages the viewer.

# LET'S MAKE VIS'ITORY!!

## 1. Framing the problem

'Road safety' challenges for Cyclists!



WE DON'T TAKE  
OUR LIVES  
INTO OUR OWN HANDS



WE PUT THEM  
INTO YOURS  
BE A RESPONSIBLE  
DRIVER



## 2. Concepts - generating ideas

Three design concepts – to improve road safety for Cyclists!

### 1. CYCLE / PEDESTRIAN FRIENDLY ROAD LAYOUTS

This illustration was created using colour blocking adapted from 'Safe 04' in Microsoft Paint to configure and prototype a new layout for a typical 'busy' city road in the UK.

The new design aims to reduce high-speed collisions caused by cyclist and motorist collisions, and/or cyclist and pedestrian collisions.

This should therefore help to improve harmony in the freedom of travel on public roads, as colour-coded indicators are encouraging more careful spacing of cyclists and other road users, safely.



### 2. RAISE AWARENESS

#### - SAFETY CAMPAIGNS AND SOCIAL MEDIA

Use technology rapidly advances, so does the ability to reach and influence society on a global scale. Therefore using vital information through such channels could raise awareness and save lives.

#### - COLOUR-CODED HI-VIS AMENDMENT LAW

This would apply to all cyclists on an individual scale, based on their level of experience and road safety knowledge.

Neon-Red = High Risk / Learner Riders  
Neon-Orange = Cautionary Risk / Intermediate Riders  
Neon-Blue = Reduced Risk / Advanced Riders

### 3. MANDATORY LAWS FOR BICYCLE MIRRORS AND INDICATORS TO BE FITTED AS STANDARD

I believe it is in the interest of cyclists, that EVERY 'Highway Code' (Worldwide) be amended to include 'mirrors, high visibility clothing and indicators' as standard requirements for cycling. Especially when used on public roads.

It should also be lawful for bicycle manufacturer to include these components as standard when designing and selling bicycles.

"If YOU CAN'T SEE my mirrors, I am UNDER YOUR CAR (\*..\*)"



## 3. Proposal - A practical and legislative design

### 1. New Highway Code amendments:

#### 1. Overview (59 to 71)

These rules are in addition to those in the following sections, which apply to all vehicles (except those in the [motorway section](#)). See also [You and your bicycle](#).

#### 59b Clothing: You should wear:

- Experience appropriate 'high-visibility jackets', must be worn at all times, when using bicycles on public roads (see also [Law BIKE req: 5, 10, 15'](#))

{{(Law BIKE req: 5, 10, 15: (All public road) cyclists must undergo (a standardised) compulsory basic bicycle training (CBT) and obtain certification to clarify level of experience; cyclists must also wear compulsory colour-coded Hi-Vis jackets during road use and learner (L) plates where necessary )))}

It's time to be **SEEN**  
and **HEARD!!**



Things to do before I die 'Bucket List':

1. Dress up like a clown? 'Check'

2. Pretend to be a car? 'Check'



WHAT MUST A GUY DO TO GET NOTICED AROUND HERE??

### 2. HI-VIS COLOUR-CODING:

Neon-RED = High Risk / Learner Riders

Neon-ORANGE = Cautionary Risk / Intermediate Riders

Neon-BLUE = Reduced Risk / Experience Riders

### 3. SAFETY CAMPAIGNS AND SOCIAL MEDIA BLOGS:

Using social platforms (e.g. Facebook, Twitter etc.) to engage with cyclists, families and road users, to share critical dialog, spread awareness and champion road safety.

# U101 - Design thinking

U101 is the starting point for the Design and Innovation degree at the Open University. This first level module develops students' capacity to finding and solving complex problems with creative design solutions. The module is presented online, each of the four blocks of study correspond to the different levels at which design thinking can have an impact on our lives: individual, group, social and global. Through a mix of academic and practical work students develop an understanding of design, acquire design skills and build a portfolio of design work in response to set projects. The work shown in this exhibition presents the outcomes of some of the projects that students are asked to engage in during their first year of study



# Abigail Demaine

U101

## How might we attract more awareness to the effects of ocean acidification?

This design concept takes the environment as its focal point. It provides interactive, fun and educational lessons to primary school children so that they can learn how the things they do affect the Earth and the ocean.

HOW MIGHT WE ATTRACT MORE AWARENESS TO THE EFFECTS OF OCEAN ACIDIFICATION?



**TEACH** CHILDREN THE **CAUSE** OF OCEAN ACIDIFICATION  
HOW IT CAN **EFFECT** THE OCEAN  
AND WHAT CAN BE **DONE** ABOUT IT

SO WHAT HAVE WE LEARNT TODAY?

WE NEED TO WALK MORE, WALKING IS BETTER THAN DRIVING TO CUT DOWN OUR CARBON EMISSIONS.

AS THE CORAL REEFS DIE THEN THE FISHERS MIGHT DIE AND THAT AFFECTS THE ECONOMY.

CORAL REEFS ARE BEING DESTROYED FROM OUR CARBS AND ENERGY USAGE.

MY DESIGN PROPOSAL IS TO CREATE LESSONS TO BE TAUGHT AS PART OF A ROAD SHOW THAT WOULD TRAVEL AROUND TO PRIMARY SCHOOLS. THE IDEA IS TO MAKE THE LESSONS INTERACTIVE, FUN AND EDUCATIONAL TO TEACH CHILDREN HOW THE THINGS THEY DO CAN AFFECT THE EARTH AND THE OCEAN. THE CHILDREN WILL GO HOME AND TELL THEIR FAMILY AND FRIENDS ABOUT WHAT THEY HAVE LEARNT AND SHOW THEM THE CHANGES AND SWAPS THEY CAN MAKE. THE FIRST POSTER WAS DESIGNED TO SHOW WHAT KIND OF THINGS WOULD BE TAUGHT IN THE LESSONS AND TO SHOW A LINK BETWEEN CORAL REEFS AND TEACHING SO THAT PEOPLE UNDERSTAND THE INTENTION THROUGH THE USE OF IMAGES AND TEXT.

WHEN DOING MY RESEARCH IN TO OCEAN ACIDIFICATION IT SURPRISED ME HOW MANY PEOPLE KNEW THAT CORAL REEFS WERE DYING BUT HAD NO IDEA WHY. I WANT TO GET MORE PEOPLE TO BE AWARE OF HOW THE THINGS THEY DO AFFECT THE PLANET AND HOW THEY CAN MAKE A CHANGE FOR THE BETTER. THE SECOND POSTER (BOTTOM RIGHT) WAS DESIGNED TO GIVE INFORMATION AND A BRIEF VISUAL OF THE EFFECTS WE HAVE ON THE WORLD.

**HOW MIGHT WE ATTRACT MORE AWARENESS TO THE EFFECTS OF OCEAN ACIDIFICATION?**

- FOSSIL FUELS EMIT CO<sub>2</sub>
- CO<sub>2</sub> IS ABSORBED IN TO THE OCEAN
- THE OCEAN REACTS AND BECOMES WARMER KILLING THE CORAL AFFECTING THE GROWTH OF SHELLFISH AND DESTROYING THE HABITAT OF OTHER FISH

ABIGAIL DEMAINE  
MODULE: U101  
PI: E8364449  
CONTACT: 07491238730

# Anna Campbell

## U101

### Mindful Maps – one stop away from feeling your best

This design proposal is for a smartphone app which aims to make emotional health accessible and affordable. It encourages users to take digital breaks and participate in activity to improve their well-being. It works with a user's journey planning app to make suggestions for locations and services nearby considering time constraints and budget.

U101 DESIGN SOLUTION

# MINDFUL MAPS

ONE STOP AWAY FROM FEELING YOUR BEST

Mindful Maps is a smartphone app that works in association with the users normal journey planning apps to help encourage everyday technology users to take digital breaks and participate in activity that is good for their well-being.

Once downloaded, the app will recommend locations and services nearby the users current (or planned) destination that are good for them: such as hairdressers, cafe's and parks. Users can tailor these suggestions to suit their time constraints and budget, making improving their emotional health accessible and affordable.

Mindful Maps integrates seamlessly into the users daily life, working with smartphone technology to help to educate the user about the importance of taking digital breaks and offering practical ways to improve their emotional health, breaking down the rising technology related mental health incidents one journey at a time.

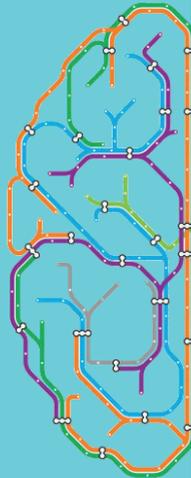
Because emotional health is a journey not a destination.



**95%**  
of people use an internet connected mobile device when commuting. Why not make your journey good for you with Mindful Maps?

**FREE TO USE  
S0301/SQ MI  
JOIN US NOW  
COMMUTE WELL**

Available on the **App Store**



PI: F6292660 · ANNA CAMPBELL · annactalk@gmail.com

# Anna Ward Pointing

U101

## Homelessness Awareness Day for schools

This design proposal addresses the problem of homelessness. Through a Homelessness Awareness Day for schools, children are educated about the extent of the problem by taking part in a variety of activities.

**Homelessness Awareness Day for schools**

ANNA WARD-POINTING  
anna524@open.ac.uk  
Pt: H19819453  
U101

**FACT:**  
More than 5% of children from high income countries drop out of school. Many of them will experience HOMELESSNESS.

**What does an annual homelessness awareness day aim to achieve?**

- Develop life skills such as financial management and cooking.
- Offer psychological support to young people suffering from bullying or problems at home.
- Raise awareness about the issue of homelessness from a young age through a dynamic and interactive approach.

**What will the children be doing?**

- **Plant and harvest** - students will learn how to grow vegetables.
- **Cookery** - using the vegetables harvested, students will learn how to make soups and other dishes to be donated to their local soup kitchen.
- **Watch/participate in plays** - raising awareness and learning about the issue.
- **Bring and buy sales** - all profits will go to a homeless charity.
- **Donations** - students will be given the opportunity to donate old clothes and toys.
- **Speakers** - students will be given talks by people with first-hand experience with homelessness.

**FACT:**  
Homelessness has gone up by 83% in the last 5 years. Many of these people are not registered as homeless.

*Educating children to educate themselves and help others*

# Eleanor Marsh

U101

## apparel – Your wardrobe in the palm of your hand

In this design, users can see and select their clothes in a virtual environment. It enables more efficient storage of clothes as not all garments need to be visible. It also allows for sharing between friends and benefits people who might find trying on clothes difficult for mobility reasons.



### apparel

your wardrobe in the palm of your hand

The Apparel Smartphone application allows you to see and select your clothing without having to physically interact with your wardrobe. Using the camera in your smartphone, Apparel captures images of you in your clothes which are stored in the app. Categories and data / tags are assigned to each garment and then used to browse and search your clothing.

**DESIGN PROBLEM:**  
Design a way that clothing can be seen and selected easily and efficiently.

**CONTEXT:**  
In standard wardrobes it is hard to see what you have to wear. Clothes hung on rails and stacks of folded items are not in full view or easily accessed. Wardrobes can be hard to keep arranged and tidy. If the organisation inside is not maintained when removing clothes this leads to difficulty putting items away tidily and the mess escalates.

**FEATURES:**

- Turn your device into an interactive mirror and virtual wardrobe.
- Add and browse the contents of your wardrobe wherever you are.
- Share clothes; give friends access to your wardrobe, they can pick and borrow items (and you can do the same with theirs).
- Get outfit suggestions, inspiration and see your favourites.
- Post selfies and share looks to social media, ask your friends' opinions and get advice on outfit choices.
- Virtually try on outfits from your favourite online stores and order from within the application.

**BENEFITS:**

- Makes deciding on an outfit quick and easy as you do not have to try on a thing!
- This could appeal anyone with a smartphone, but might particularly benefit those that find trying on clothes difficult (such as the elderly or disabled).
- Storage inside the wardrobe could be improved and streamlined as you no longer need to see clothing to browse items.
- Aids the selection process; gives suggestions which can be tailored by season or weather, holds a memory of your favourite outfits and can match items & recommend complimentary garments.
- Application could generate revenue from sponsorship and advertising from online retailers.
- Has potential to be linked to other smartphone applications (such as weather / calendar / social media) providing opportunity for additional functionality and integration of the design.

Module U101 - TMA02  
Design Thinking: creativity for the 21st Century  
Eleanor Marsh - A2849050 eleanor.marsh@digital-doll.com

# Gail Everett

## U101

### Distressed? De-stress - Design for emotion

In this design, a publicity campaign supported by a website provides resources for couples who are in a failing relationship but need to live together. The website allows the sharing of ideas and experiences through curated content and gives access to moderated forums and live chatrooms, and also links to relevant counselling organisations.

## U101 • Design for Emotion

The brief for this task was to identify a problem, frame it, and propose a design solution relating to the general theme of "Design for Emotion". I chose to look at negative emotions and think about how design could change them, and decided to tackle the problems facing couples who have no option than to co-exist in the same environment, whether they wish to or not. My research revealed that many people are in relationships which are failing, and I felt that if I could devise something with the potential to facilitate solutions, it could have a positive effect on many lives.



I decided that the best way of proceeding would be to combine two of my ideas into an integrated design solution.

The major factor in this campaign would be a free access website, along with printed publicity in which the design would work as a billboard, poster or flyer, providing awareness and directing people to the new site.

Once online, the site user would be presented with a range of options, laid out clearly, with the opportunity for people to investigate suggested ideas, add their own ideas and solutions which have worked for them, and discuss their difficulties with other site users, either via moderated forums, or live chatrooms.

Additional links would be provided for those who feel they have exhausted their viable options and now require external intervention. The website solution could also have the potential to be extended to the development of an app.

Both the printed matter and the website would employ "user-friendly" fonts, to appeal to the emotional side of the viewers, and I felt that keeping to a restricted colour palette would provide good contrast and avoid competing with the message.



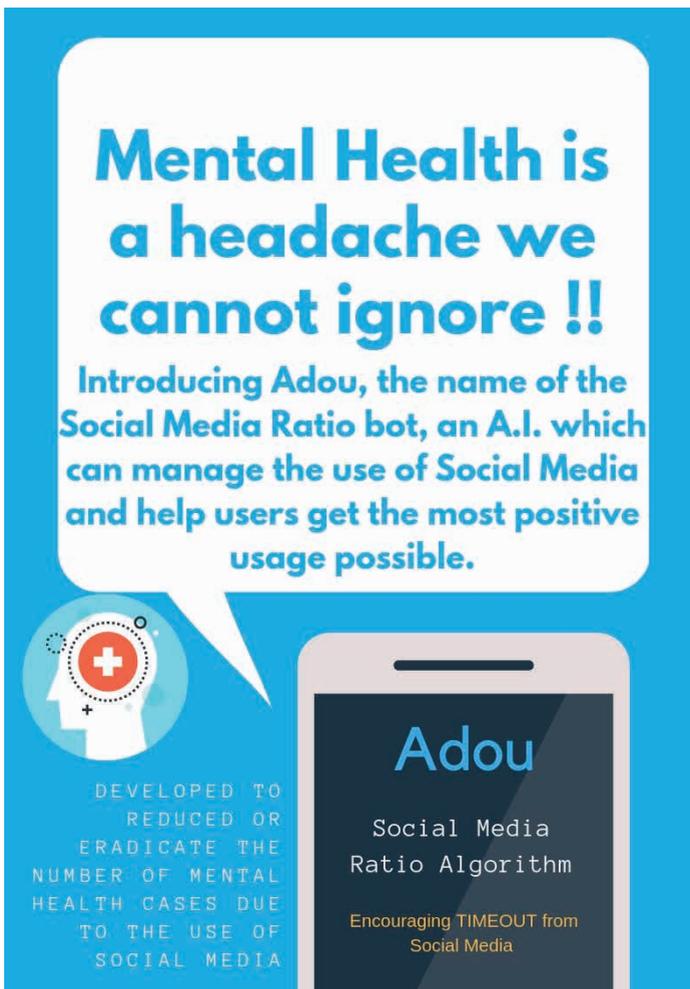
Gail Everett • F185048X • gfe2012@btinternet.com

# Hashim Ruan

U101

## Mental health is a headache we cannot ignore

Social Media use can negatively impact on mental health. An Artificial Intelligence supported design is proposed to manage users' engagement with Social Media to promote well-being.



**Mental Health is a headache we cannot ignore !!**

Introducing Adou, the name of the Social Media Ratio bot, an A.I. which can manage the use of Social Media and help users get the most positive usage possible.

DEVELOPED TO REDUCED OR ERADICATE THE NUMBER OF MENTAL HEALTH CASES DUE TO THE USE OF SOCIAL MEDIA

**Adou**  
Social Media Ratio Algorithm  
Encouraging TIMEOUT from Social Media

# Julie Brayford

## U101

### Gender Identify Clinic - Board game

The game design aims to help players learn about their choices of NHS services in gender transformation. The game is based on deep experiential research. The game is proposed to be played in transgender workshop contexts.

**Module U101 TMA03 Design, play and evaluate a board game**  
Julie Brayford G2063098 [juliebrayford@virginmedia.com](mailto:juliebrayford@virginmedia.com)

For TMA03 we were asked to design and make a prototype for a board game based on a service. As the parent of a transgender person I chose the service provided by the Chalmers Gender Identity Clinic in Edinburgh as the focus of my game. Research allowed me to learn more about what options a transgender person has available to them and also to consider the different ways a game can be used.

**Context**  
I chose to design a game specifically to promote social engagement within a supported workshop context and to reflect the reality of what an individual may expect when using the service of the Gender Identity Clinic. It could be used as an icebreaker activity, or one leading on to further discussion or more focused activities. The game is designed for 2 – 6 players, aged 17 and upwards (as this is the age from which individuals are able to be referred to the clinic). Professionals may choose to use the game with younger groups as they deem appropriate.

**Significant features**  
I researched appropriate symbols and colours in order to create something that was respectful to the transgender community. All the elements of my game use the colours of the transgender flag or, in the case of the counters, the LGBT flag. The illustrations used on the game board were created by my son (©Miles Rozel, <https://gunkillustration.weebly.com/about.html>).

**Basic Game Play**  
Play starts at the GP space as all referrals to this clinic must come from the GP or other health professional. Players move clockwise around the board following instructions on any of the spaces they land on. The spaces with instructions include actions to demonstrate:  
• waiting time (miss a turn or go back)  
• decisions made by the individual (spinner to determine yes/no response)  
• decisions made by health professionals (cards with possible decisions selected at random)  
The players journey ends when they arrive back at the GP space as individuals will need to receive ongoing care.

The game is comprised of a game board, instruction booklet, a dice, a hexagonal spinner and clinic assessment and panel decision cards (shown left).

Decision making cards reflect the fact that some decisions are out of the individual's control and add variety to game play.

# Natalie Goodwin

## U101

### Letter delivery: a family game

This game engages a wide range of players in experiencing the postal delivery service for themselves and potentially stimulate discussion about the future of this service.

### Letter Delivery: a family game (5+)



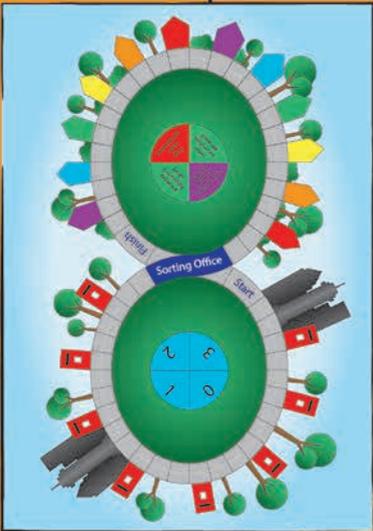
Cards and playing pieces



Game board



Mid game play



The game board is a circular track with a central sorting office. The track is divided into six colored sections: red, yellow, green, blue, purple, and orange. Each section has a corresponding color-coded house and a spinner. The track starts at a 'Start' point and ends at a 'Finish' point. The sorting office is in the center, with a 'Post Box' and a 'Post Office' nearby. The board is surrounded by trees and houses.

**Tasked with creating a board game** that represented a service within our local community, I opted for letter delivery. The postie with their van is a well known figure in many communities, across the country, making it a fun theme that could engage a wide group of people. The board game could also be utilized as a conversation starter about the questionable future of letter delivery in the UK. Email and text continue to rise in popularity but the postal service is still vital for some.

**Key elements:**

- The game board is split into two halves, representing the collection of letters, and then the delivery.
- The playing pieces are vans which you drive around the board.
- There are six different colours of letter cards to add vibrancy and fun to the game.
- Mission cards mean that players are all collecting different coloured letter cards.
- Spinners provide additional elements of luck, making for an exciting part of the game play.
- Resource cards add in strategy, allowing the player to gain an advantage or disadvantage another player. They also add in real life scenarios a postie would find themselves in such as 'Deliver to a Neighbour' or 'Flat Tyre'.

**How to play:**

Roll the dice to drive backward or forward to land on a Post box. Once there, spin the numbered spinner to determine how many Letter Cards to pick up. Once you have collected this in Letter Cards which match your Mission Card, drive to the Sorting Office to discard any extras.

Now you must deliver your Letter Cards to their corresponding coloured houses. Once on a colour of house you must spin the second spinner but beware of a dog in the garden – you will not be able to enter the property to deliver your letter!

Utilise your two resource cards at any time in the game. Will you give your opponent a 'Flat Tyre' causing them to miss a turn, or 'Stay for a Cuppa' to deliver all cards of that colour all once? The first player to deliver all of their Letter Cards and reach the Finish space is the winner!



Natalie Goodwin    ngoodwin91@sky.com    zx310512    U101: Design thinking: creativity for the 21st century

# Robert Mulholland

## U101

### Justice and Jury - Board game

This design is a fun and simple board game using ideas of crime and policing to move around the track.

**GAME PLAY DEEDS**

- CONGRATULATIONS** - you have reached the End
- GOOD DEED** - Police Escort, move forward 4 spaces
- GOOD DEED** - Provide good evidence, advance 6 spaces
- TIME TO JUDGE** - move another player Forward or backwards 4 spaces
- TRY YOUR LUCK** - Heads (carry-on), Tails (Miss a Turn)
- BAD DEED** - Your held up in a robbery, miss two turns
- BAD DEED** - Miss a turn whilst you hide & call the police
- Catastrophe** - You have been wrongly arrested - Go back to the start

**RULES**

Welcome to **JUSTICE AND JURY**, the board game that is based around the justice system. From a law abiding citizens point of view. Justice and Jury basis its mechanics around Resource Management, Dice rolling, Tile-laying & a little bit of luck.

The main goal of the game is to be the first person to reach the 72nd tile, closing the case. Players progress through the game by rolling the die, moving forward by that number of tiles. Along the way, players will be required to action 'deeds'. These deeds vary and have both positive and negative consequences. Such 'deeds' can be seen on the accompanying deeds card.

The coin is to be used if and when a player lands on the 'Try Your Luck' deed tile. Players will flip a coin and act as per the requirements of the deed.

The 'deeds' are recognisable through a pictured image. Should a player land on these tiles, they should refer to the corresponding image shown on the deeds card and act accordingly. Landing on the Judge tile should see that player obtain the power to move any other player either forwards or backwards by four tiles.

**\*BEWARE\*** Players should try and avoid the 'catastrophe' tile. Landing on this tile will see that player arrested and sent back to the start.

**\*BE-VERY-UNLUCKY\*** If, at any point during the game a player should roll a '3', that player is required to move backwards by 3 tiles.

Each player will use a different counter. The game comes with x1 coin, x1 die and x4 counters, meaning the game is designed to be played by a maximum of four players (minimum of two).

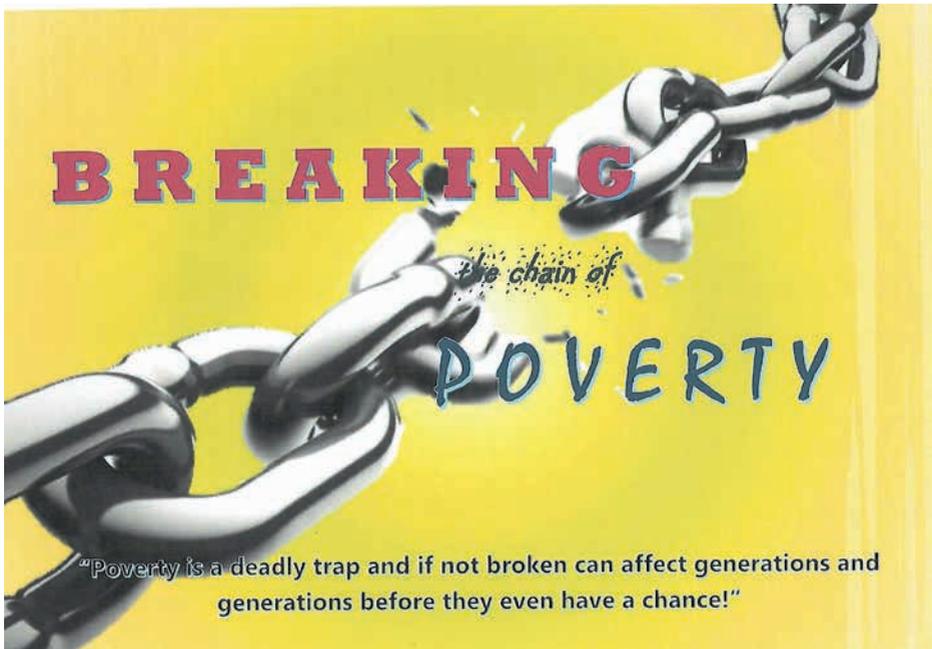
Robert M. Mulholland  
PIE F7003062 - Mulholland@boardbook.com  
U101 - TMA 03

**Rowena Dalziel**

**U101**

**Breaking Poverty - Campaign**

This campaign poster calls for addressing 'poverty' as a priority area under the UN's sustainable development goals.



# Rukhsana Ali

## U101

### Delay! The transport game for risk takers

This game exposes players to the often stressful experiences associated with traveling on the London Transport network. It aims to allow players to laugh about the shared experiences and maybe in conversation, learn from others' how to deal with unfortunate events when journeying.



**Delay!**  
A transport game for risk takers

For TMA 03 I designed a board game based on the London transport network. The idea behind the game was to give users a sense of travelling on the network and in particular the stresses that can arise from events caused by the interaction of the actors who use and operate the network and the infrastructure comprising the network. It does this by presenting various events which may arise from this interaction. The game seeks to help people talk about the stresses of their journeys in order to psychologically process them, introduce people to the experience of using the London transport network, and to be fun!

Players have to complete a transport journey in the shortest possible time and each player chooses a transport pod and corresponding coloured clock for their journey. They see this to 50 minutes which is the Google estimated time for their journey. During the journey they encounter opportunities to add to or take away minutes to this time through their interactions with Travel cards and Network cards which present situations such as a delay being caused by the wrong type of rain! The player can then choose to accept the delay (or potential gain) caused by the situation or seek to avoid it or risk increasing it by using a minute spinner.

The players move along the transport track according to the number they throw with the dice. They don't have to stay on the same coloured track. When they reach the central circle they move in an anti-clockwise direction until they land on one of the stations. The game ends when all the players have reached a central station. The winner is the player with the least minutes on their clock.

Rukhsana Ali (G4313422) rukhsanaali1@googlemail.com U101

# Thelma Babbs

## U101

### Allotment antics - Board game

This appealing and educational game challenges the players to successfully maintain an allotment from sowing to harvesting crops for one year. Testing the game showed lots of excitement around determining the winning gardener.

*Design of "Allotment Antics" board game*

U101 Design thinking:  
creativity for the 21st century  
Thelma Babbs  
C5770015  
tsbabbs@yahoo.co.uk

The brief was to design and test a board game whose theme was based on my experience and that would represent a service to society. The problem was to create an absorbing game that would appeal to a range of age groups.

I chose to base my game on acquiring an allotment and maintaining it for the first year.

Allotments provide a service to society as they:

- preserve and maintain green spaces within built up areas,
- provide a soakaway in times of heavy rain (reducing flooding),
- protect and promote biodiversity,
- provide a community and opportunities to make friends,
- boost mental and physical health,
- give opportunities for lifelong learning, and
- promote sustainability by growing fruit and vegetables locally so reducing food miles.

My final game, Allotment Antics, is a game for two to six players. The main strategy is selecting which crops to grow and ensuring there is room to sow them. Points are collected when a crop is harvested, a few more are gained when finishing. The winner is the player who has the most points at the end; this is not necessarily the player who finishes first - an aspect liked by the testers.

The final prototype of the game was tested multiple times with varying numbers of different players and enjoyed each time. The hazard cards created much entertainment with some players 'bouncing' back and forwards between the hazard squares. The excitement kept going until the end when the players totted up their points to find the winner.

**Waiting List**  
While on this players can gain Hazard Avoidance cards.

**Seed Catalogue and Rules**  
The latter gives details of available crops, sowing and harvesting seasons and the points the harvested crops are worth.

**D3 Dice**  
Two of these are used on the waiting list and one from the preparation area onwards.

**Crop Cards**  
The card backs are coloured according to the type of crop (soft fruit, fruit tree or seeds). On the front the top left colour shows the season when they should be sown or planted and the bottom right colour shows the season when they should be harvested.

**Preparation Area**  
Players collect crops and equipment for their plots.

**Inner Track**  
This consists of the four seasons where players get to sow and harvest their crops and take their chance with the Hazard cards.

**Plots**  
Each player has a plot where they sow their crops (a maximum of 6 seed crops, one fruit tree and one soft fruit) and then subsequently harvest them.

**Hazard Cards**  
These are picked up when a player lands on a Hazard space. The player may be moved forwards, backwards, miss or gain an extra turn or lose crops.

**Equipment Cards**  
The players can collect a shed, watering can, strimmer, hosepipe and net.

**Playing Pieces**  
These are colour coded for each player. More than one can fit on a square.

# T217 - Design Essentials T218 - Design for Engineers

Design Essentials takes a broad look at the designs which are all around us, considering how designers have used their skills to translate ideas and needs to create such designs as potato peelers, chairs, bicycles and buildings. In this second level module students learn about the essential skills and practices that designers use to create detailed design solutions. The module develops students' ability to identify opportunities for design, meet the needs of potential users and create and communicate new design solutions. The work shown here demonstrates students' skills in the research, planning and development of design projects as well as the ability to translate design ideas into well-specified products.

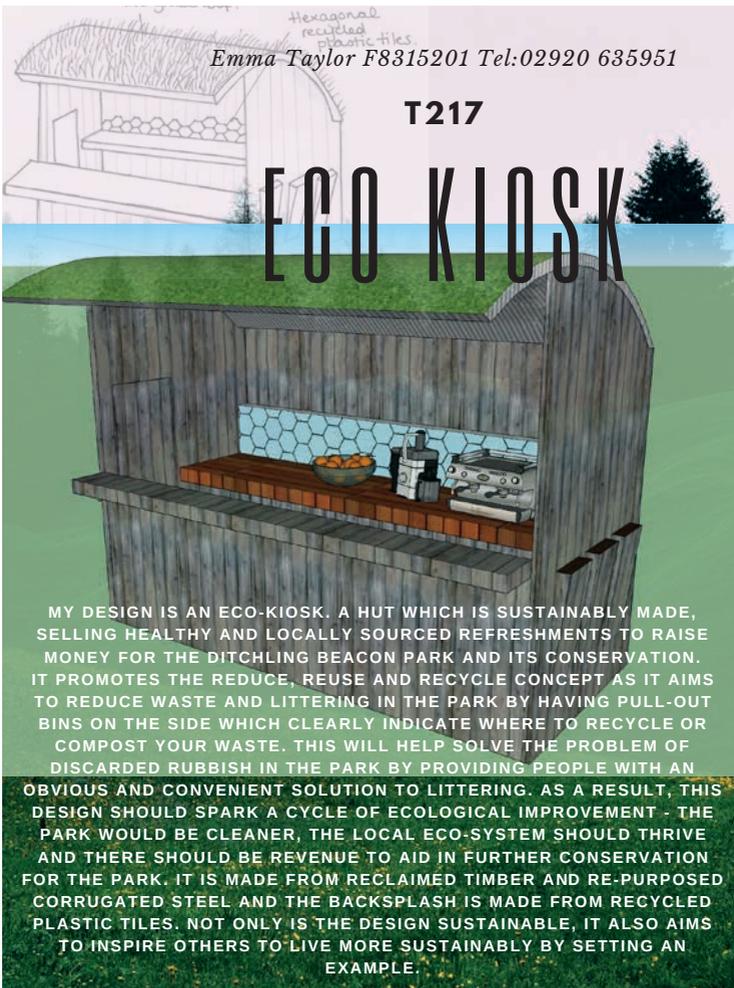
Based on selected teaching materials from T217 Design Essentials, this module is presented for students on the Engineering Design pathway of the BEng.

# Emma Taylor

T217

## Eco-Kiosk - Site specific design

This design responds to a brief around litter and refreshments in the Ditchling Beacon National Park. It offers a solution in a form of a multifunctional kiosk made out of natural and recycled materials sympathetic to the surrounding environment.



# Iain Chantler

T217

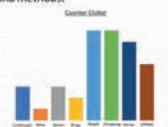
## Hidden storage for small kitchens

This concept design addresses user needs of maximising storage space in a small kitchen. It proposes to reduce kitchen clutter by equipping underutilised space with the innovative horizontal slot storage that fits under the kitchen units.

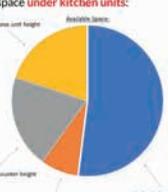
**Hidden Storage**  
Maximising Small Kitchens

Iain Chantler  
T217 - G450155X  
iain.chantler@gmail.com

**Research:**  
My research (detailed user surveys) revealed that small kitchens struggled to effectively store **wide, flat items** within **accessible locations** and methods:



Additionally, I found small kitchens generally had under utilized/ empty space **under kitchen units**:



This created a product design brief with specific criteria over location, size and product types to store.

### Kitchen Clutter?

Store Items



Remove Clutter

- horizontal slot storage
- attached **under** kitchen units
- **hidden** with hinged openings



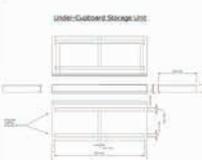
**STORE ITEMS HORIZONTALLY**  
Chopping boards, baking trays etc. slot in horizontally.



**SEAMLESSLY HIDDEN**  
Hinged frontage hides the storage from view. Modular fixings allow for any traditional under-unit mounting to attach, seamlessly integrating the storage in to existing kitchens.



**INBUILT LIGHT FITTINGS**  
This storage affixes under counter units in space traditionally left empty/used for lighting. Pre-cut lighting fittings retain this functionality

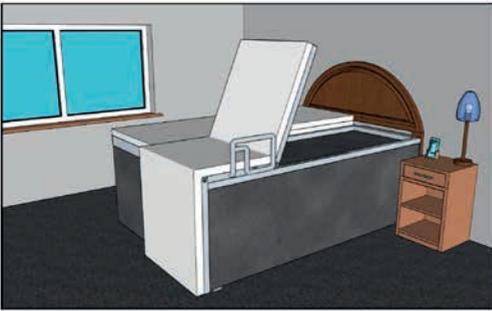


# Andrew Westwood

T217

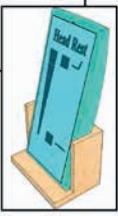
## The Mobility Mattress

The following concept design is aimed at elderly and disabled people. It includes an electric mechanism and wireless control panel. This solution promotes independence of individuals with limited mobility while blending into a house interior unlike other existing solutions.



### The Mobility Mattress

I wanted to design a bed adaptation to address several issues facing elderly and disabled people. The main focus of the design was that it should be a product that could fit in existing beds and would enable the user to get in and out of bed independently. This product was designed with the user in control at every step. It is easy to use and suitable for a range of people and disabilities. I wanted the bed to look like a 'normal' bed, as I feel only used by the less able-bodied look like they have been 'adapted' from a regular bed. The mechanism that I had used was a frame component. There was a risk in this as the environmental impact was posing, it is completely recyclable and eco-friendly, as well as regarding electrical safety. As this product is aimed at the more vulnerable, number of accidents, I have taken into account the grounding, use and need to keep manufacturing costs as a minimum.



My design concept is called the 'Mobility Mattress'. It is an improved version of a disability bed, constructed by using recyclable steel frames. The bottom frame is attached to the wall. The top set of frame is separated into four sections, which form a pivot between them, so the bed can be put into different positions. The top of the metal frame forms an wooden base with a slight upwards bend to make it feel less rigid. It is 90cm thick so as to cater for any significant height differences when placed on a bed. The metal base goes up and down with a bottom set with voice command or from the metal bed adaptation. The main focus of this bed adaptation is that it moves forward on a track, putting you into a central position at the end of the bed to allow the user to be independent. The voice commands that it is adaptable to allow the user to position themselves comfortably for sleep or long periods of use.

There is an easy to use wireless, digital controller with a microphone. The user can move between positions and it also has voice activation for people with mobility issues.

The ground will hold down, so when the user is on the bed and has on the side it, it can simply be slid down out of sight giving the bed the appearance of a standard bed.

Andrew Westwood (T217)      PL62471896      E-mail: andrewwestwood@gmail.com

# Dawn Goodwill-Bagan

T217

## Ditchling Dice Match – Site specific design

This site-specific design is for a National Trust site in southeast England. The idea involves a dice game aimed at educating primary school children on the surrounding environment and the species important to Ditchling Beacon.

**DITCHLING DICE MATCH**

FLORA & FAUNA FUN

Age: 5+

Dawn Goodwill-Bagan (G2761867)  
Produced for T217      DawnG021@gmail.com

Sketch-Up images of the tray insert made from polymer sheeting and a single die made using plastic pellets and injection moulding. I anticipate that it could be possible to use a transfer on the dice which would be fused onto the dice and coated with clear non-toxic varnish to pro-

**Score Pad**

Name:	Tick when completed
1 of each picture	<input type="checkbox"/>
2 of same picture	<input type="checkbox"/>
3 of same picture	<input type="checkbox"/>
4 of same picture	<input type="checkbox"/>
5 of same picture	<input type="checkbox"/>
3 of same picture with 2 of another same picture	<input type="checkbox"/>

**Die**

Context: To design a toy, game, piece of equipment or interactive feature, to incorporate awareness of keeping Ditchling Beacon for future generations, use of the design is likely to instil responsibility about nature into each user. Information relating to the park will help to develop an interest about the importance of sustainability and protection of the habitat for flora and/or fauna of Ditchling Beacon, a country park in the South Downs in South East England.

Children can think about Ditchling Beacon once they get home and engage with issues in a fun and knowledgeable way.

**Aesthetics:** The dice are all identical, they each have artwork on all six sides which relate to species important to Ditchling Beacon, i.e. No Eared Owl, Juniper, Heath Snail, Adonis Butterfly, Dwarf Thistle and Carder Bee. The drawings are colourful, each relating to the species, which are portrayed with a fun, childlike appearance, giving an emotional connection to the user, during play, thus giving meaning to the game.

**Rules:** Shake the dice in the plastic cup, roll them into the well and place them, as they land, into the dice area. Each turn allows up to three rolls and the pad has sections to complete to obtain a tick. The winner is the child with all sections ticked.

# Glenn Ratcliffe

T218

## Can you tell the Time? - Educational Game

The game is aimed at under 12 year olds as an educational aid for learning to tell the time. It features Braille numbers on the cards to address inclusivity and can be played by multiple players as well as used as one to one teaching tool.

### Can you tell the Time? *"Tick-tock" look at the clock!*

An Educational aid for under 12 year olds. Created by: Glenn Ratcliffe: (F555583x) T218: TMA03 :An Educational aid for under 12 year olds

The learning aid could be enjoyed by a range of children under 12 years old. The rules are simple, mainly to turn over a matching pair. The inclusion of catch phrases 'Can you' and 'Tell the time' are a fun indicator to the child that a pair might have been selected. These phrases have been included in braille to give the same anticipation experience to the visually impaired player as well as helping to orientate the card.

The times shown on the cards would be based on the school timetable, making the learning more relevant to the child. While any set of cards could be devalued by some cards being lost, the teacher wipe card which allows one to one learning means that even a limited number of cards could be beneficial.

While using the learning aid the child could improve their memory and concentration skills, self-esteem and confidence.

glenn.ratcliffe@mail.com



The addition of braille numbers & words makes the aid more inclusive. Raised dots were added to the ends of the analogue clock face.

Fig. 20. Teacher learning card with a collection of card examples.  
Note: Cards are teacher read and shown full size, for best only, only a 1:1  
ratio should be used in a classroom setting.

A further idea to develop the learning aid was a wipe clean card for a teacher to use as a one to one teaching aid.

Based on the concept of the old family favourite 'memory' played with playing cards. 'Can you tell the Time' can be played by multiple players or used as a one to one teaching tool.

# Jonathan Luney

T217

## Project Jörmungandr – Tattoo artist support chair

This design focuses on user needs and addresses the issue of musculoskeletal trauma in the back and neck in practicing tattoo artists. The proposed solution is a seating system with an air sprung support that reduces muscle strain while maintaining the freedom of movement.

project jörmungandr -  
air sprung tattoo artist support chair

In a January 2017 journal (Investigation of musculoskeletal discomfort, work postures, and muscle activation among practicing tattoo artists by Kessler & Sommerich) findings revealed that there was over 50% prevalence of musculoskeletal trauma in the upper neck and back areas of practicing and retired tattoo artists.

It was my intention to determine how these tattoo artists could be better accommodated, with a supportive seating system which will allow them to work whilst maintaining the freedom of movement which they need to perform effectively.

tattoo artist illustrating usual working posture leading to back injuries and pain



jörmungandr



air strut sprung

power coated tubular steel curved support arm

50mm adjustable padded chest support



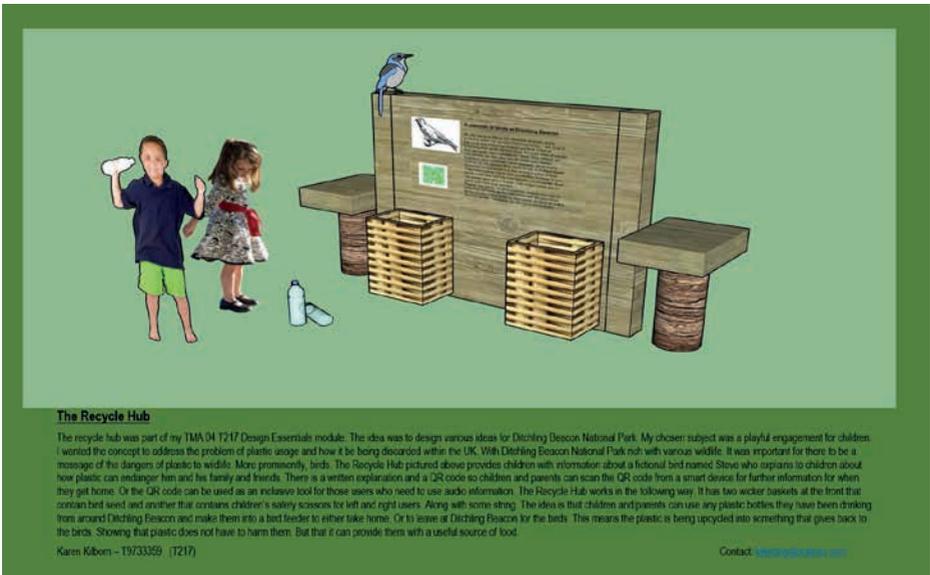
jonathan.luney - b3305844 - j185@ou.ac.uk - 0790954712 - T217 as part of G01

# Karen Kilborn

T217

## The Recycle Hub - Site specific design

An interactive design idea to promote sustainability and preservation, and deal with litter at the Ditchling Beacon National Park. It aims to encourage children and/or families to learn about the local wildlife and how they could recycle discarded plastic bottles into functional DIY bird feeders.



# Nylia Ashrif

T217

## Get Hooked - Planting system

A smart, self-watering, planting system which aims to combat the time and space constraints of modern living through the 'grow-your-own' initiative. It re-purposes condensation/wastewater from tumble dryers, into a nutritious source for the compact (indoor/ windowsill) hydroponic vegetable garden, tailoring growing needs to the gardener.

**Get Hooked**

The goal was to design a product to encourage/enable people in towns/cities with limited time and space to grow their own veg. People are less likely to grow their own veg at home due to lack of space. For example, people living in a flat may not have access to a garden. Also, people are having to work long hours to maintain rent/mortgages, payments meaning they have less time. There is the preconceived notion that growing your own veg is a difficult task that requires a lot of time and expert knowledge. Subsequently, there is a lack of knowledge in the skills and information required which deters people from attempting the task in the first instance.

My developed concept is a self-watering planting system that sits on the windowsill with adjustable hooks. The hooks connect the planting system to the bottom tray positioned underneath the windowsill and is both deeper and wider for larger produce. Additional lighting is provided by the section directly underneath the windowsill. There is a cap where you can insert excess water from your tumble dryer. Once filled, the water is directed into a reservoir where an absorbent wick fabric will allow the soil to maintain the required moisture. The inbuilt system will allow the user to set an assistance level ranging from expert to novice. They can select their chosen produce from the preloaded directory and set the date they are planting in order to predetermine when the produce should be ready. The system will allow the user to develop an understanding of what they are growing by providing the necessary knowledge whilst providing notification on water levels.

Nylia Ashrif  
07857857449  
Nylia.ashrif@hotmail.co.uk  
www.linkedin.com/in/nyliaashrif  
T217 Design Essentials  
E4119350

# T317 - Innovation: designing for change

Innovations emerge from complex, dynamic, iterative processes.

This module looks at how opportunities are created and ideas generated for innovation and developed into successful products, services and systems. The module looks not just at innovation for commercial advantage but also considers how, through responsible design, innovation can contribute to the development of a more sustainable future and reduce the negative impacts of innovation. The work shown here presents the outcomes of some of the open-ended projects which completes students' design studies. Students identify a problem and develop their own innovative solution.

# Anthony Jackson

## T317

### The Smart Power Tower

An integrative smart power-hub which combines; audio, centralised device charging, USB connectivity, Blue-tooth, visual-feedback and aesthetics into a sleek design proposal, in efforts to save space, reduce mess and increase functionality, for portable devices around the home.

## The Smart Power Tower

Built in Smart Speaker

Horizontal light bar glows to display a sense of power

Vertical light bars display a cascading light pattern when a device is attached, to indicate power flow

Cables retract inside the device when not in use

Flexible cables allow any shape or size device to be connected

Adaptors are provided to allow connection to any USB-Mini, USB-C or lightening device

Each cable is capable of outputting up to 5 Amps of power

*The vision - "Design a means of providing charging functionality to a wide range of portable electronic devices in the home, whilst eliminating the unsightly mess of multiple visible cables"*

Speaker

Primary spring

Circuit board

Cable

Clamp

**What is it?**  
The Smart Power Tower combines the cutting edge versatility of a smart speaker with a powerful centralised charging hub for all your portable electronic devices. The device is designed to charge anything from a mobile phone, to a Bluetooth speaker, and even a laptop.

**How does it work?**  
The device uses an internal spring and pulley system to retract the cable back inside the device, keeping it neat and out of sight. When in use a clamp holds the cable in position.

**How did the project develop?**  
The driving force for this design project was a dissatisfaction with the current solution, namely a combination of four-gang extensions and a myriad array of tangled plug-in chargers and their messy cables. The decision to combine the solution with another popular device was driven by a recognition of the need to make an innovation that had the potential to diffuse widely. The Smart Power Tower capitalizes on the success of smart speakers.

The problem

An early concept sketch

Produced by Anthony Jackson for T317 innovation designing for change  
AUGUST

# Brian Moran

T317

## Bib PFD (Personal Flotation Device) for Kayak Anglers

This device is an automatic inflation and lifesaving aid, to support both conscious and unconscious water rescues of Kayak Anglers, in times of emergency (e.g. falling overboard).



# Bib PFD

## Personal Flotation Device for Kayak Anglers

Automatic inflation  
Easy deflation  
Quick removal

- Self righting
- Universal fit

Supports unconscious users  
Keeping Kayak Anglers safer  
Reassuring family and friends

Re-usable  
100N buoyancy  
Polyester outer - Plastic fasteners  
CO2 gas inflation mechanism  
Service Status Indicator  
All day comfort  
Worn with angling PFD

# Chris Peysson

T317

## Yaw-Maw

This concept was designed in response to the urgent need to deal with the impact of plastic waste in oceans and waterways. The design proposal is for retro-fitted system that can be added to boats to capture and sieve plastic waste as they sail which would be used alongside an incentive system to encourage its use.

### Yaw-Maw

Protect Water – Protect the Earth

#### The Vision

Yaw-Maw directly facilitates active waste management culture steering through scalable, versatile and personal stakeholder uptake. Yaw-Maw supports secondary closed-loop recycling for new plastic recycling businesses and poverty reduction where collected plastic could be exchanged at designated government and app supported collection points for a reward. Moreover, through user involvement, Yaw-Maw promotes global action for cleaner communities, wildlife preservation and intergenerational equity.

#### The Context

Floating plastic waste pollution that accumulates in rivers and ocean gyres have far-reaching negative consequences for global species health. The micro degradation of plastic can take hundreds of years, leach toxic chemicals, and create vectors for human disease, especially in developing countries. Plastic is widely ingested by birds and by marine food web species that when fished are consumed by humans. Yaw-Maw as a sustainable, cheap and easy to use mobile plastic capture method harnesses riverboats as a widely existing underutilised resource for environmental protection.

#### Concept Operation

Yaw-Maw attaches to the gunwale of a boat and comprises of adjustable stainless steel arm sections attached to modular, hemp bound bamboo containers that slot together, and with a fabricised rear hump mesh latticed panel to evacuate the water. Yaw-Maw requires few attachments as incoming water tilts the gunwale grip hooks to stabilise the unit while the maw channels plastic waste over anti-return bamboo blocks and into the rear container catch net that is accessed by a hinged door and lifted out for emptying.

#### The Benefits

Yaw-Maw intercepts plastic before its micro degradation, and detrimental impacts in the broader natural environment for a cleaner planet, moreover, provides new ecological recycling strategies to reduce poverty in low-income countries. Yaw-maw is not static representing autonomous versatility, little packaging is required, and the concept is of scalable and relatively inexpensive bamboo design. Lightweight materials reduce distribution costs and low fabrication costs further support a reduced need for tooling, reduced impacts at life-cycle stages and low maintenance where product treatment with calcium hydroxide and its easy removal from the water increases product longevity. Yaw-Maw is combustible for energy recovery, adaptable to changeable river heights and of high stakeholder value including, for example, environmental agencies, fisheries, conservation, hospitals, tourism and NGOs.

**It's time to clean up!**

Chris Peysson – 08967867 – chrispeysson223@gmail.com – T317 Innovation: designing for change

# Stuart Cairns

T317

## The City Tube

A reconfigured design idea aimed at city traveling, cycling and reducing carbon footprints. It harnesses kinaesthetic energy to illuminate sheltered cycle routes, thus creating a safer, interactive, cost effective and environmentally friendly mode of transportation.

**JOIN THE CYCLING REVOLUTION** 

# RIDE THE CITY TUBE



The City Tube takes Wolverhampton's tired cycle lanes and transforms them into vibrant, safe and comfortable travel routes for cyclists, using a network of illuminated cycle tubes. The UK government endorse cycling as a primary mode of transport and have pledged to deliver better safety, better mobility and better streets to support cycling by 2040. Let's be ahead of the curve!

Join a community of commuters, parents, children and enthusiasts, young and old. Be part of a sustainable transport movement that reduces the city's carbon footprint whilst improving health and wellbeing and reducing transport costs.

Geodesic structure offers comfort, safety and clarity when cycling through the City. It boasts low environmental impacts in manufacture, and use, and LED lighting is powered by users' kinetic energy.

Stuart Cairns, PI: C2984406, T317  
07734 039664



The exhibition was kindly supported by the Open University's 'More Students Qualifying' (MSQ) project and the School of Engineering and Innovation.

For more information on the Design and Innovation course visit:

**<http://www.open.ac.uk/courses/qualifications/q61>**



**[open.ac.uk/blogs/design](http://open.ac.uk/blogs/design)**



**[facebook.com/groups/1599710346973999/](https://facebook.com/groups/1599710346973999/)**



**[twitter.com/@DesignOpenUni](https://twitter.com/DesignOpenUni)**



**[50.open.ac.uk](https://50.open.ac.uk)**