bin 2 bin

SUSTAINABLE

in & out

guzzini

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Design by Yoon Bahk

Royal College of Art
Postgraduate Art and Design

Imperial College London

guzzini

Contents

IDE

IDE is a unique joint course between the Royal College of Art and Imperial College London. It is 30 years since the RCA's Sir Misha Black created the IDE department with the critical question "can you teach design to engineers?". The world of design has changed dramatically since then and now IDE students work in a fertile innovation environment where people from many different backgrounds (design, engineering, commerce, science) and from multiple cultures, countries and experience work together to explore and create innovative design propositions.

The joint Masters programme is organised into 3 strands - Experimental Design, Design for Manufacture and Design Enterprise.

Innovative design development is about striving for original works of world changing impact. How do the students achieve this? It requires passion, intelligence and curiosity to explore the unkown - there are no standard instructions nor is there obvious wayfinding to produce the right outcome. Whilst there many be no book of spells, there is magic.

Guzzini

Fratelli Guzzini was established in 1912, based on the handcrafting of ox horn items. The company owes its current success to an extraordinary intuition: in 1938 Guzzini introduced the use of Plexiglas in making everyday household articles.

This initiative soon revealed itself to anticipate the subsequent technological innovation: starting from the switch over to acrylic resin moulding in the early Sixties, right up to the modern-day ability to combine modern materials with those marked by antique traditions such as china, glass, steel and wood, thus proposing objects with excellent functional and aesthetic features, all with one thing in common: the fact that they are the protagonists of a new everyday lifestyle, which are easy to use, affordable, but also refined, reliable and of top production quality.

Some of the leading names in the world of international design chose to work together with Guzzini for its ability to make simple items in an extraordinary way by combining functionality with a stylish design.

Guzzini have brought colour and ease in food preparation and consumption. Today Guzzini launches a new vision, a new method of design in the food territory: Foodesign Guzzini combines the creativity of objects with the creativity of traditional cuisine.

Designers, food experts, lifestyle experts and chefs share their knowledge to design kitchen tools with high aesthetic value, without forgetting that all foods are linked to the culture of design, and re-interpret the relationship between shape and function, between food rituals and contemporary society.

The aesthetical and functional research, experimenting innovative and wisely combined materials, able to anticipate the variable demands of consumers, render the company one of the worldwide symbols of "Made in Italy".

Daniele Bedini

Born in Florence, Italy 04 Oct 1952, he graduated at University of Florence, College of Architecture with the 1° thesis in Europe in 'Space Architecture', in collaboration with NASA. He became ESA (European Space Agency) consultant in 1989 where he was responsible for 'Space Habitability' within Simulation and Space Station Groups.

He performes both his space and industrial design activities as President of "IS in and out space" S.r.l. - based in Montelupo Fiorentino - Florence - Italy (from November 2004) – www.isspace.com

With IS, he works as 'industrial designer' or 'Artistic Director' for important companies like: SLIDE, IGuzzini Illuminazione, MarcaCorona, Zazzeri Rubinetterie, Officinanove, Qsquared Design, etc.

From 1991 he is 'adjunct Faculty' at ISU (International Space University), Strasbourg and by 2009 is 'Module Leader' at Royal College of Art, Innovation Design Engineering Department. This 'module' represents the first 'Space-related design course' in Europe. The course subjects range from Space Hotel to Extreme Habitats.

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Ashley Hall

Ashley is a designer and a Deputy Head of the department of Innovation Design Engineering at the Royal College of Art where he is also head of first year and experimental design. He studied furniture design at Nottingham Trent University and the RCA, receiving his MA in 1992. After working as a furniture, product, lighting & interior designer for a variety of design consultancies and manufacturers he established his own company in 1994 which was followed by the formation of Diplomat with Matthew Kavanagh in 1999. Clients include some of the top furniture brands: ArrMet, Artifort. Covo, Edra, Origlia, Saporiti Italia, RSVP, Sauder, Sintesi, Supporto and Zeritalia. Current work includes designs for mass production and an experimental line of furniture using new materials and technologies. Ashley's academic appointments have included module leader in innovation strategy and innovative materials at the University of East London, lectureships at the University of Salford, Ravensbourne and Grays School of Art. He has lectured internationally in China, Japan, Thailand, Norway, Australia and Ghana and has run department consultancy projects with Unilever, P&G, O2 mobile, Hutchison Whampoa, Ford and Sharp. He is actively researching and writing papers on non-linear systems in design, experimental design and industrial design pedagogy.

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Project Brief

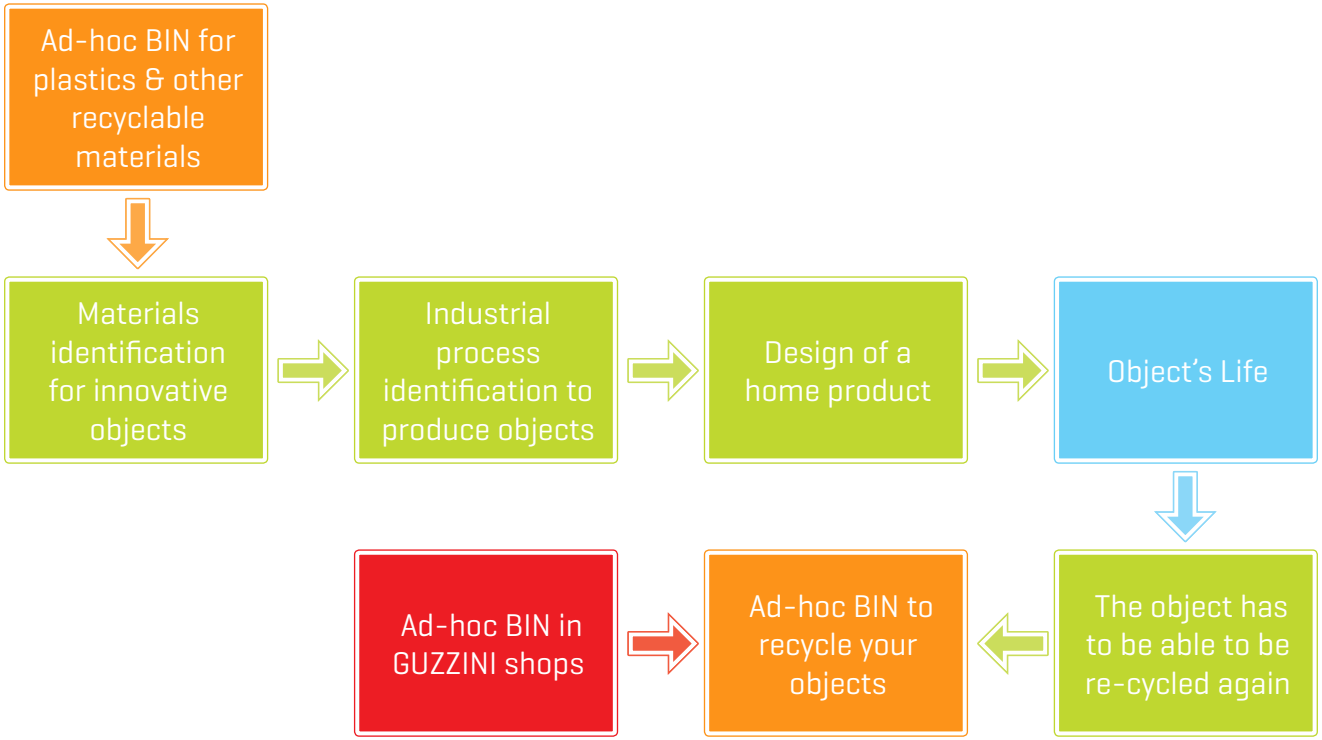
The GUZZINI WORKSHOP was held from 4th to 8th of May, 2010 at the Royal College of Art's Innovation Design Engineering Department. Thirteen students worked on the attractive theme of "re cycling". Students conducted research on the possibility to apply advanced materials that are able to be 100% recyclable (especially plastics) and advanced industrial production processes to home accessories. In particolar the workshop was focussed on the closed loop life of an 'object'. In fact the design goes from BIN to BIN, in terms of all the designed objects at the end of their lives returning into the BIN to be recycled and become new home products again.

Recycling will be mandatory in the future, designers, consumers and manufacturers will need to recycle all glass, plastic, cans, paper and cardboard, according to the environmental department of the European Community. This workshop was oriented to satisfy this requirement. Another important aspect was to introduce the possibility to organize a GUZZINI network to recycle its products introducing an ad-hoc Bin in its shops to collect end-of-life objects to be recycled again. The workshop also identified other materials to be used for GUZZINI products and so the GUZZINI Bin will be able to collect different materials and educate customers to understand this closed loop cycle. The students designed some examples of recycled objects for daily life through understanding the industrial processes involved in all the recycling phases and produced some Eco-Friendly objects for our houses.

They are small/medium objects, able to be produced with existing or near-future industrial processes and able to be recycled again at the end of their lives.

A touch of nature, freshness and originality make these objects smart, young and attractive. The projects are some examples of a new way of thinking, "Sustainable Life", to be transferred to GUZZINI clients, then to all.

Product lifecycle from Bin to Bin



A Short Introduction to Recyclable Material

Polymer recycling is the process of recovering scrap or waste plastics and reprocessing the material into useful products. Compared to glass or metallic materials, plastic pose unique challenges. As a result of the massive number of plastic types, each of which carries a resin identification code which must be sorted before they can be recycled. This can be costly; while metals can be sorted using electromagnets, no such 'easy sorting' capability yet exists for plastics. In addition to this, while labels do not need to be removed from bottles for recycling, lids are often made from a different kind of non-recyclable plastic. To help in identifying the materials in various plastic items, resin identification code numbers 1-6 have been assigned to six common kinds of recyclable plastic resins, with the number 7 indicating any other kind of plastic, whether recyclable or not. Standardized symbols are available incorporating each of these resin codes.

The SPI resin identification coding system is a set of symbols placed on plastics to identify the polymer type. It was developed by the Society of the Plastics Industry (SPI) in 1988, and is used internationally. The primary purpose of the codes is to allow efficient separation of different polymer types for recycling. The symbols used in the code consist of arrows that cycle clockwise to form a rounded triangle enclosing a number, often with an acronym representing the plastic below the triangle. When the number is omitted, the symbol is known as the universal Recycling Symbol, indicating generic recyclable materials. In this case, other text and labels are used to indicate the material(s) used. Today plastics can be recycled once, but many scientists are studying the possibility to create sugar-based polymers to make plastics recyclable many times.

Other materials can be used to product recyclable objects: natural materials have the best chance to be recycled many times. Some example of nature-fibers derived materials are: bamboo, wood, latex, silicone, paper, etc. The GUZZINI workshop produced a wide range of design products based on the use of PET, SAN, BAMBOO, PAPER and other recyclable materials.

Elastica

A family of vases differentiated from their well known relatives, Elastica has been designed looking at the process of using a vase the other way round.

What would you do when you have a vase which is much shorter than the flowers you want to put in it? Cutting the flowers into shorter stems would be the best ultimate solution? But why can't we change the vase instead?

Elastica is an adjustable vase which can be adjusted according to the different heights of different flowers. The main body of the vase holds water for the end part of the stems. This is the only the part of the flower's stem that needs to be in water, while the mesh lid keeps the stems in place, leaving the flowers just the way you want them to be. Three different sizes of product make it even more flexible for different flower arrangements.

- Natural rubber and latex
- Injection moulding

Living Chopsticks

A chopstick stand designed as a lucky bamboo pot of plants.
Some people like to keep lucky bamboos in their homes, as they believe they would bring luck and happiness in to their lives. On the other hand, chopsticks are becoming part of an everyday life cutlery for many people all around the world.
Although it is not a real plant, living chopsticks is a unique chopstick stand that can bring more life into the kitchen just by standing in one corner.

- SAN

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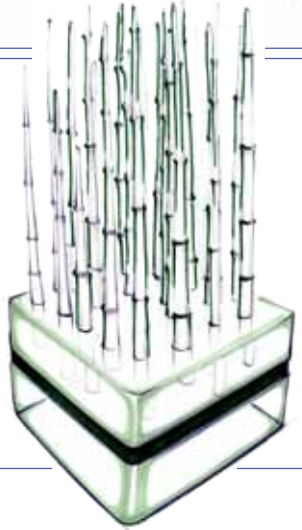
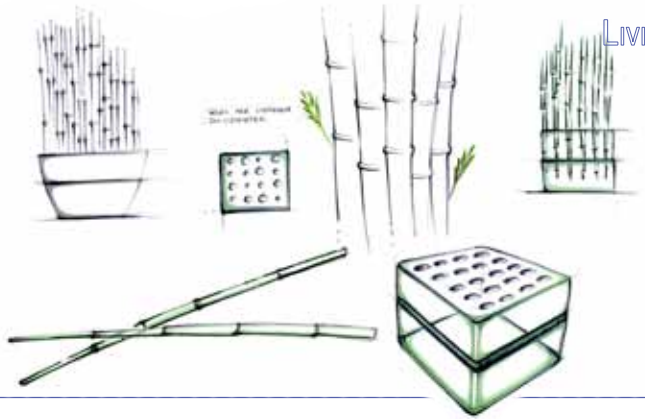
Elastica

Living Chopsticks



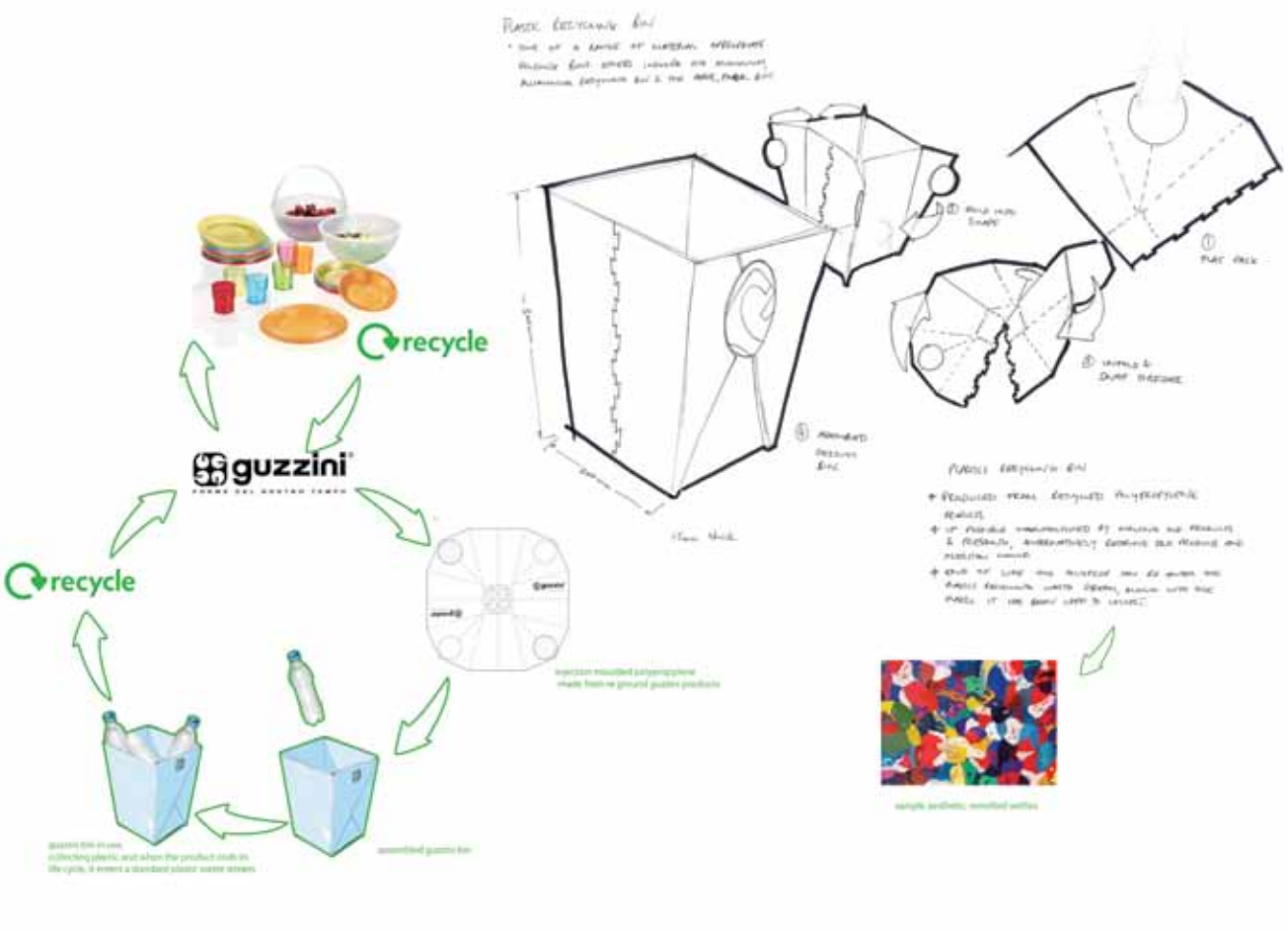


Plastic-Plastic Recycling Bin

The Guzzini Plastic-Plastic Recycling bin is a flat pack design produced entirely from recycled polypropylene Guzzini products. Implying a nostalgia towards the classic style of Guzzini in a new domain of sustainability. The aesthetics of Plastic-Plastic imply both its use as a plastic recycling bin and Guzzini's effort to recycle. The aesthetics of subtle injection moulding details against the random polymer retain the quality of Guzzini products that the customer expects.
This product contains the narrative of recycling and can, at its own end of life join the waste stream of material it has been using during its life.

- Recycled polypropylene
- Pressing or injection mouding

Alex Bone alexander.bone@gmail.com


recycle
guzzini
recycle

Life Saver

Lifesaver is a device that gives your plant a long happy life. It can be use as a watering device, keeping the plants alive while you're away or lazy. It can also be use as an additional nutrient provider if filled with liquid plant nutrient supplements. It can even be use to release pesticide smoke if flipped around. The donut shape gives the user a hint to place it around the plant and the turn opening allows users to fill and close the container in a straightforward way.

- Recycled PET
- Blow moulding

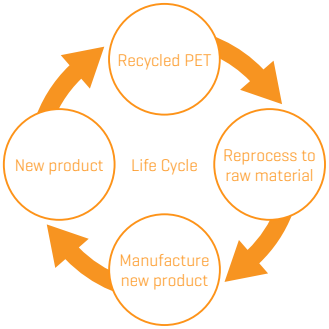
Angela Chao mambobo@gmail.com

Planter

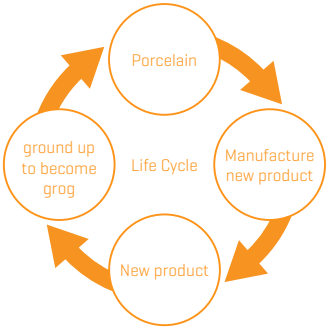
People who live in the city often don't have a large gardening area. But even so gardening tool is still needed. The Planter was made to save the extra effort to move and store gardening equipments. Users can simply leave it in the garden/pot after use and the tools are designed to blend in with the gardening space. They are made of ceramics and can be recycled to make new ones.

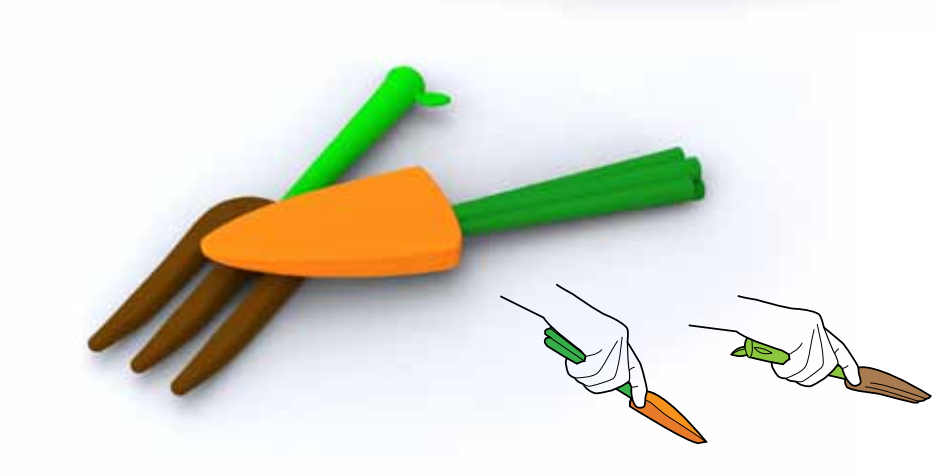
- Coloured porcelain
- Pressing

Life Saver



Planter





Snowflake

Snowflake was inspired by nature and the way snowflakes form and interact within a group.

The modularity and customization allow various compositions. It could be a fruit plate, a chandelier or a sculpture in different indoor environments.

- PET and SAN
- Injection Moulding

Tina Chen tinachen0313@gmail.com

Recycling process

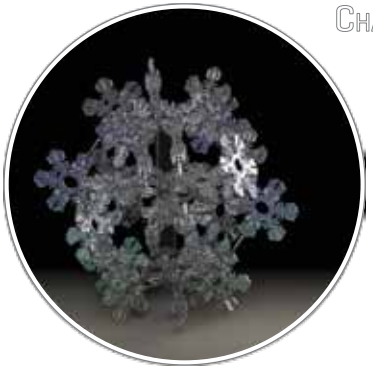
When the life of the product comes to an end, you can bring it to any Guzzini retailer.

You can put it into the recycling bin, or give it to any retail assistant.

The old products will be transported to the factory.

There, they will be processed, and recycled material will be used to make new products

Chandelier



Fruit bowl

Room divider

Puzz.LED

The puzz-led is a unique concept inspired from the basic jigsaw puzzle shape to form modular furniture with integrated LED lighting. The product brings a sense of playfulness and charm to interior living spaces while creating new forms of ambient and task lighting. It can be used as a stand alone piece or a collection.

Puzz-leds can be used for a variety of applications such as a stackable shelving unit, a bed side piece, a small glass top table or a towel holder in the bathroom. Puzz-led consists of a three layered assembly, an outer profile, inner profile and a led lighting strip. The three profiles can be press fit together to form the puzz-led and can also be easily disassembled and recycled.

The puzz-led profiles are manufactured from 100% recycled materials (SAN/HDPE) using an extrusion process. Smaller versions of the product can be injection moulded as well.

- SAN and HDPE
- Extrusion or injection moulding

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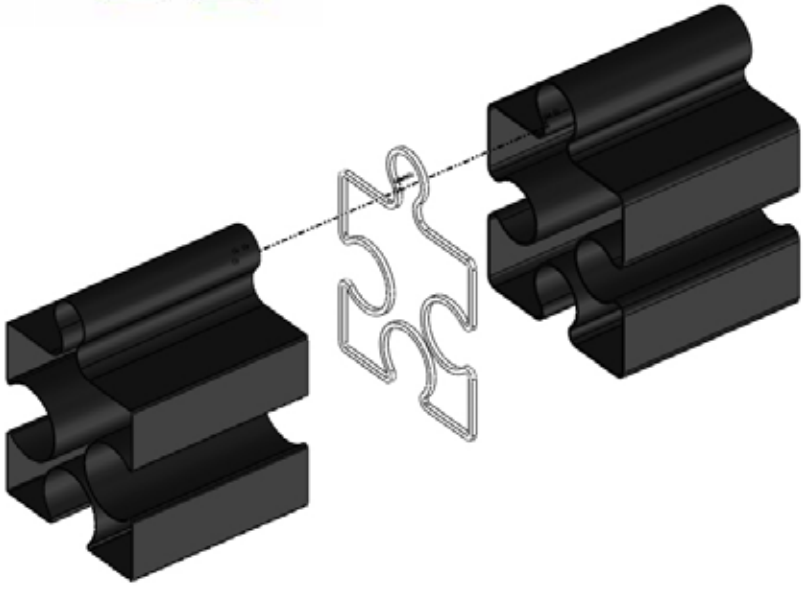
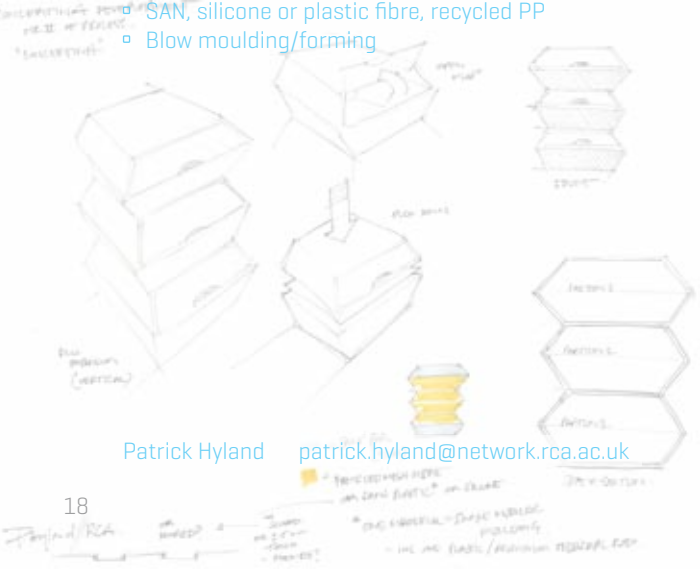


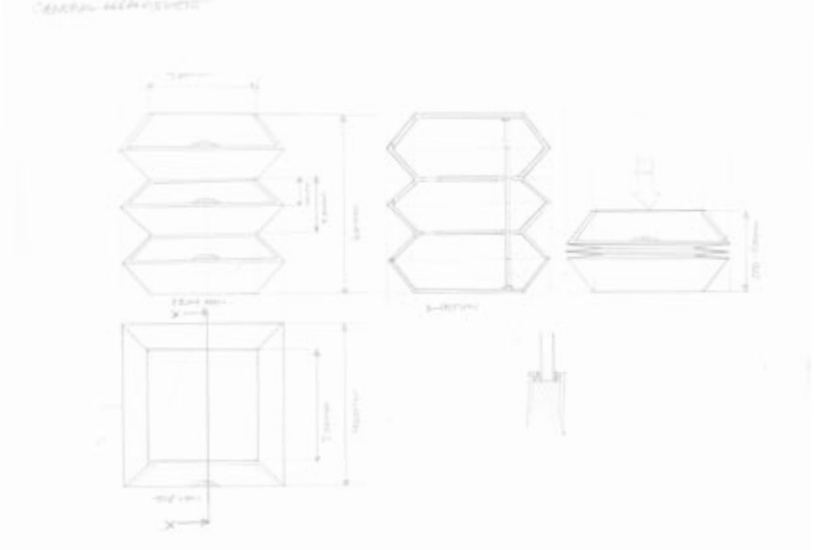
Bincertina

Bin-certina is a collapsible and flexible bin which has similar movements to a Concertina musical instrument.

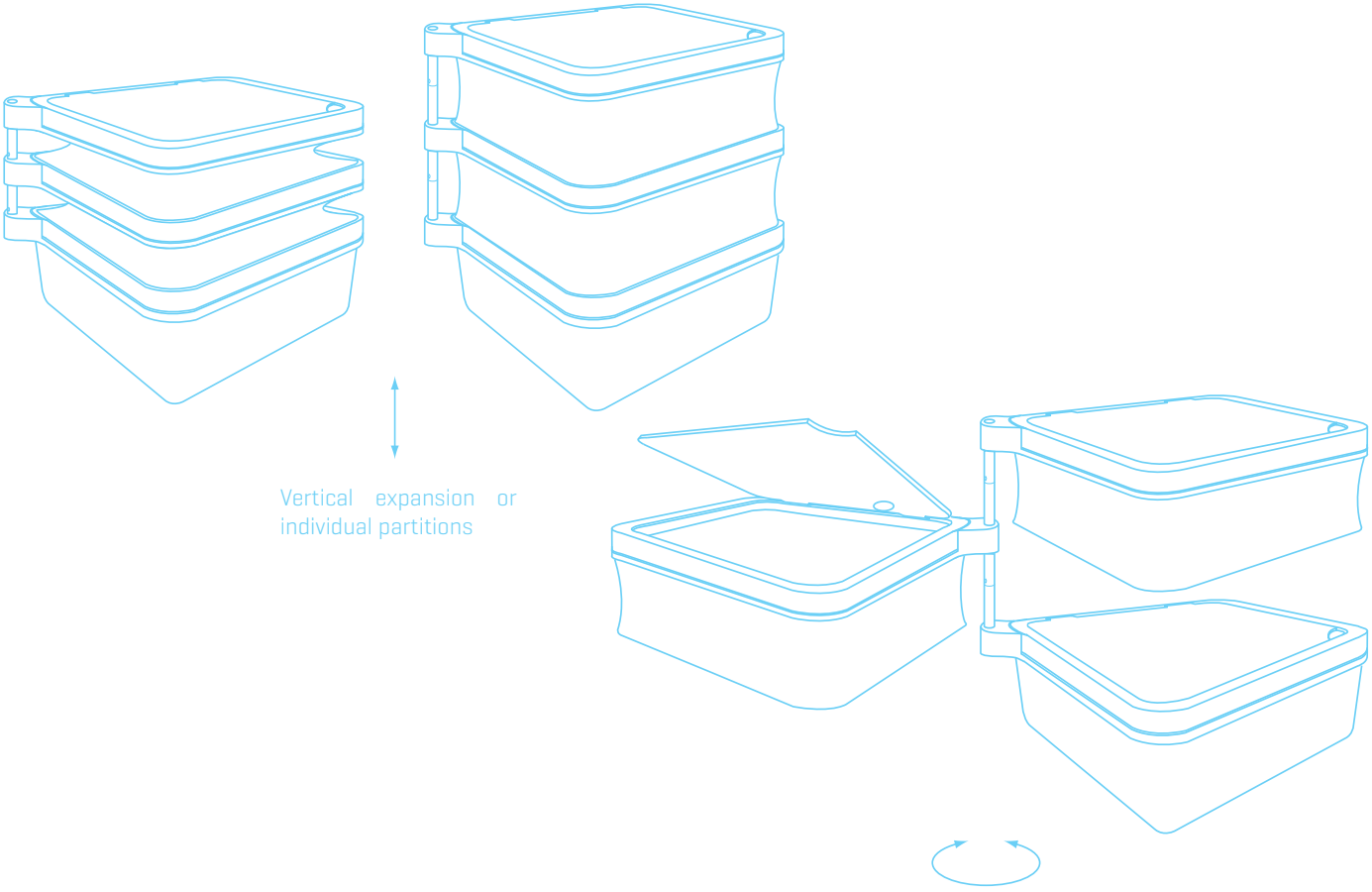
The bin has three partitions- recycling, glass and landfill. To access a particular partition, the middle one for instance, simply pull up a supporting telescopic pole and then swivel it out to access the flap for the bin. Plastic bags are used inside each partition and each flap has a removable frame to pull the bag in and out.

- SAN, silicone or plastic fibre, recycled PP
- Blow moulding/forming





Patrick Hyland patrick.hyland@network.rca.ac.uk



Vertical expansion or individual partitions

Rotation & Access

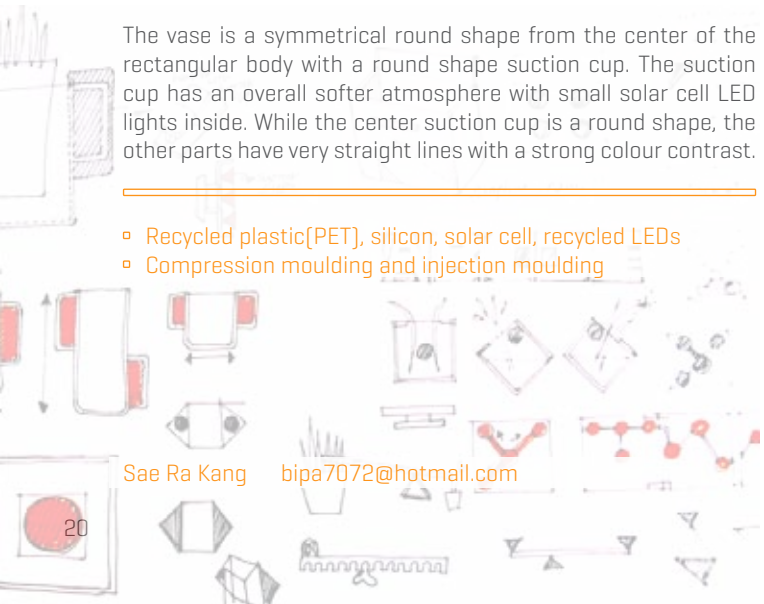
L+D Vase

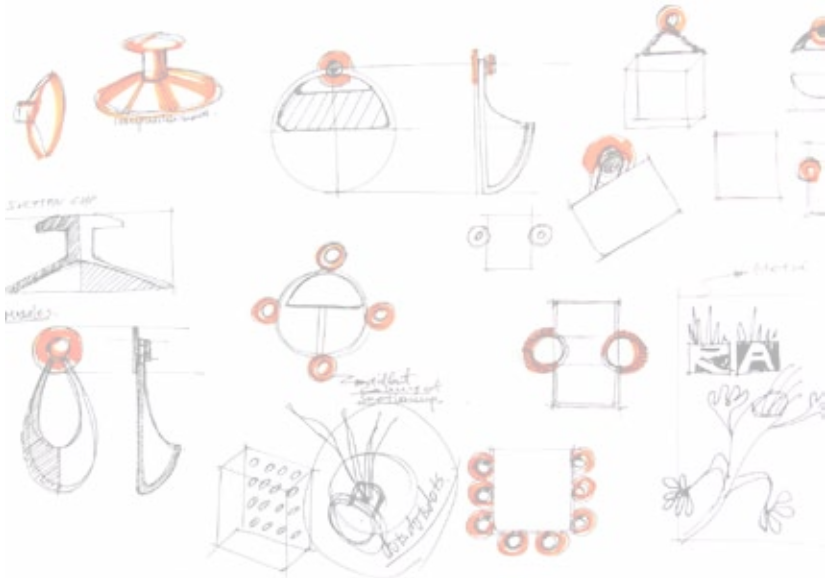
The aim of this concept was to show how disconnected we are from nature in our current state of mind and in a sense, to bring colours back to life. The colourful vases are a reminder, that raises a question about the meaning of sustainability, in the everyday place such as a kitchen.

Attracting one's immediate attention in a space, color plays a very important role in the project. The core idea of the design was to let the users understand the message of the vase and to become aware of its presence. The vases were held on the kitchen window or tiles.

The vase is a symmetrical round shape from the center of the rectangular body with a round shape suction cup. The suction cup has an overall softer atmosphere with small solar cell LED lights inside. While the center suction cup is a round shape, the other parts have very straight lines with a strong colour contrast.

- Recycled plastic(PET), silicon, solar cell, recycled LEDs
- Compression moulding and injection moulding





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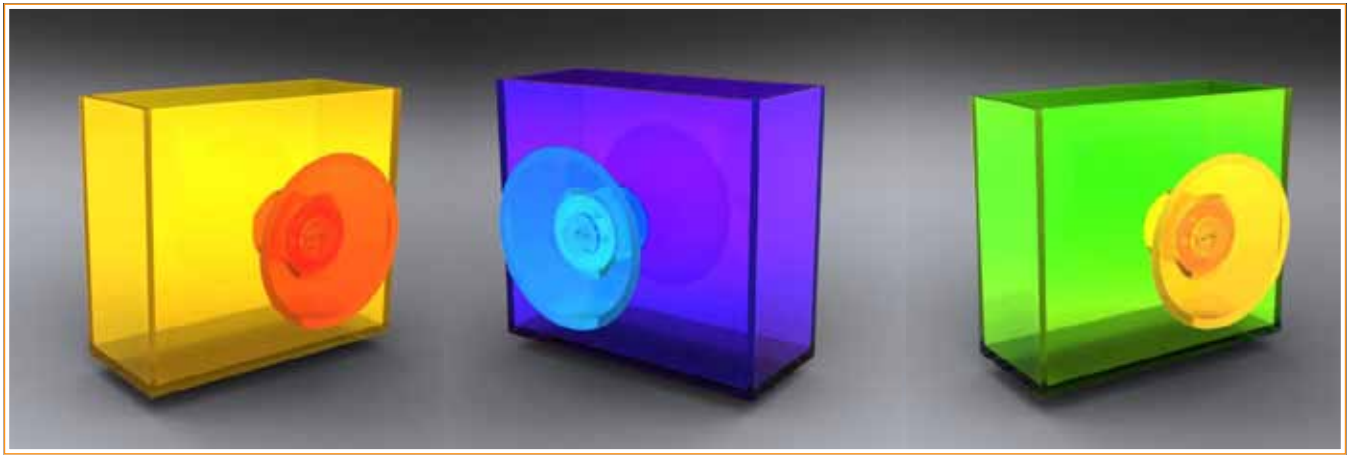
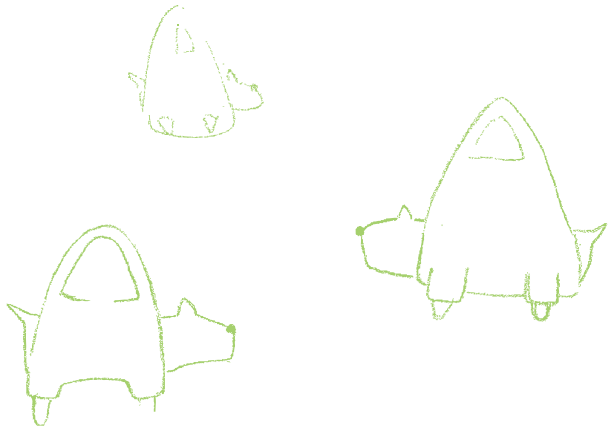


DOGAB

DOGAB is a dog bed for small size dogs, and it's also a bag that you can carry your dog around in. Additionally you can easily attach or detach small bags by buttons for carrying accessories or dog food with you. The material is HDPE and silicon which all are recyclable.

- HDPE
- Die cutting and injection molding



Yuan Chun Lin sonic0702@gmail.com

MoldHouse

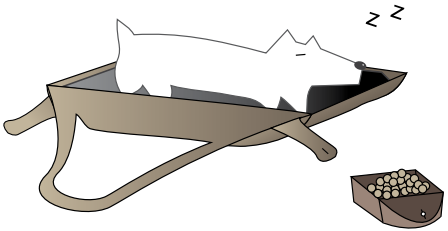
MoldHouse is a modular set of pet house, accessories, and toys. Users can assemble it by themselves and paint it in the colour of their choice. It offers different sizes for different pets from birds to dogs. All of the material are recyclable.

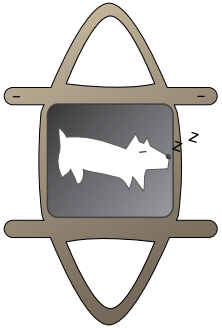
- Polystyrene
- injection moulding

Dog House Climber

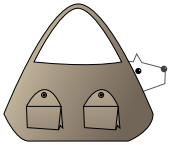
The dog house is not only a stair for small dogs or kids to go up to bed, but it's also a dog house, a storage space and can be a for sitting.

- Acrylic or Chroma
- Extrusion and injection moulding

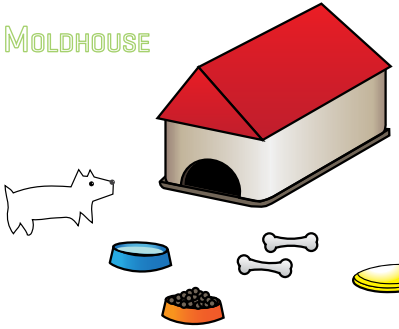


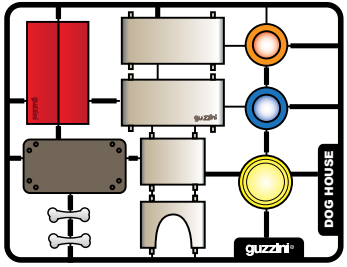


DOGAB

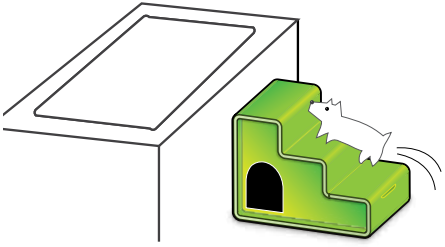


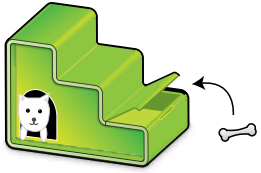
Moldhouse

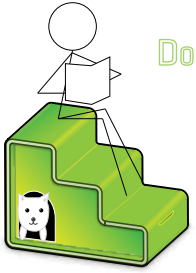




Dog House Climber







Pond

Pond is a decorative, self-sustaining, miniature eco-system. It is a fish tank that the free floating perennial water hyacinth to absorb nitrates and phosphates (fish waste) and can be harvested for use as fertilizer, animal feed and source of energy.

- LDPE/HDPE

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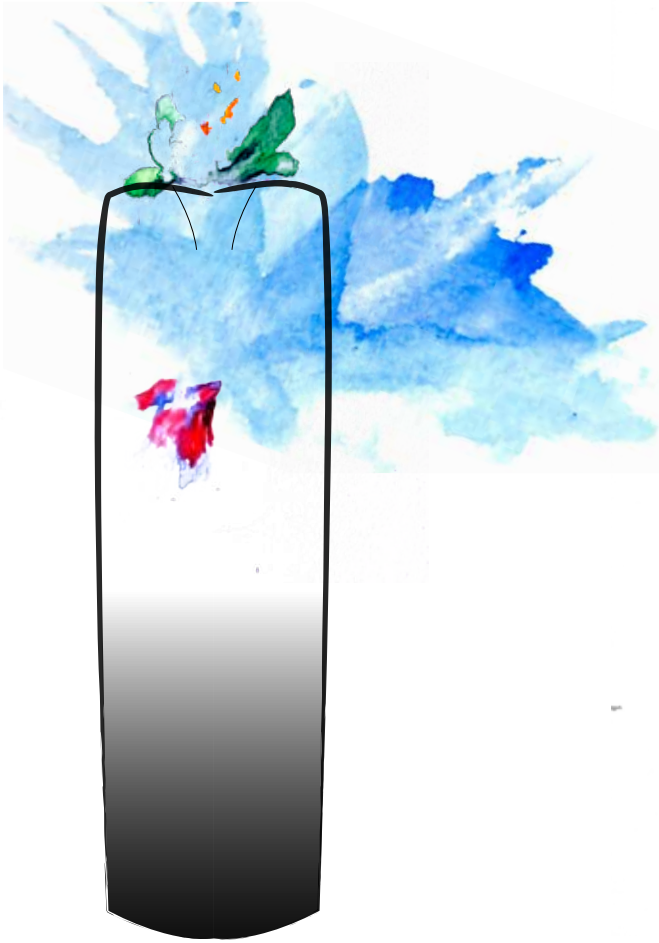
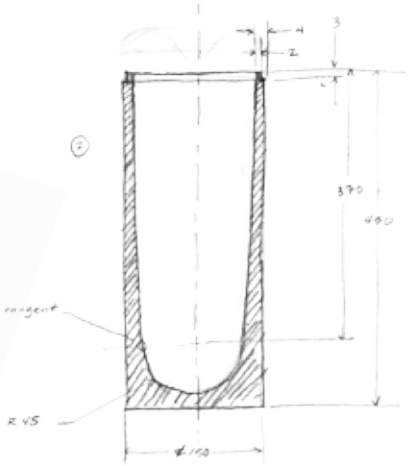
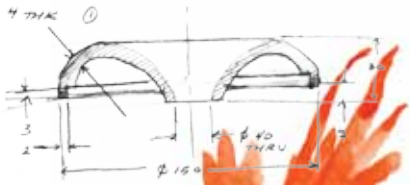






ITEM	QTY	
1		LID
2		VASE

ALL DIMENSIONS IN MM

Nature Step

Nature step is a bathroom mat with soil and grass seeds planted inside. After a shower, the water dripping from people's body will water the grass, and the grass at the same time will offer a nature feedback for us as well.

- PET
- Injection moulding

Trirack

Trirack is a simple clothes rack. However instead of the whole rack, customers purchase the plastic cylinder with three holes. Then they need to source and to make their own clothes rack.

- PET
- Injection moulding

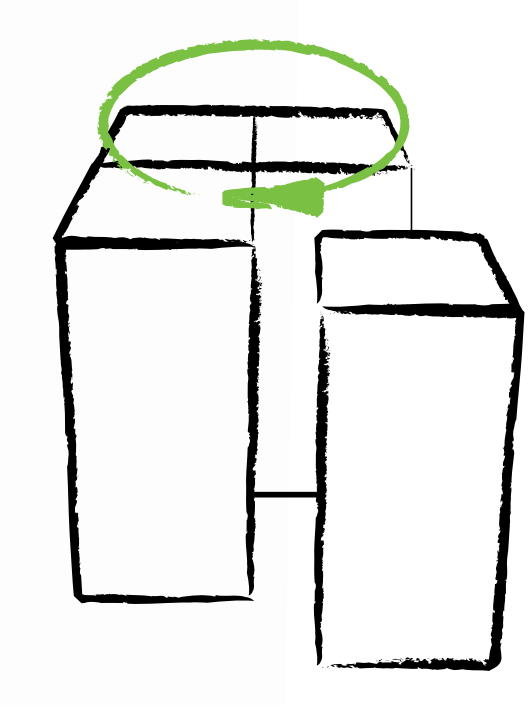
Yan Lu yan@yanlu.com

Worm Motel

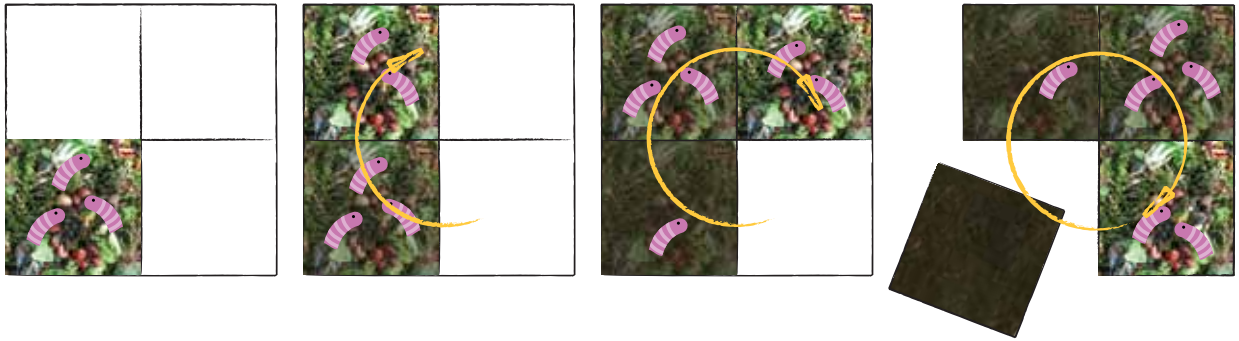
The problems with current wormeries are that: horizontal stacking requires all chambers to be lifted to reach the compost, they have a large footprint, currently there are no attractive wormeries on the market and most wormeries are designed to be kept outdoors.

Worm Motel is a new design of wormery to tackle the limitationswith current wormeries in the market.

- HDPE and Paper Pulp
- Injection moulding, paper pulp moulding



Oliver Poyntz ollie@oliverpoyntz.com



In-bidone

In-Bidone is an all-in-one bin which makes use of available empty space within the bin. Plastic bags taken from the supermarket can be reused by hooking them onto the top of the bin to provide storage for recycling as well as a large bin-bag for landfill waste.

- PET
- Extrusion and injection moulding

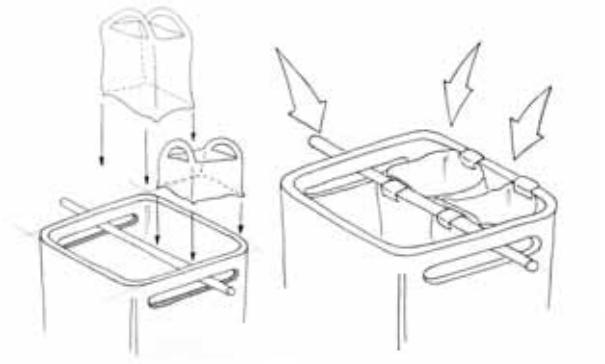
Jacobs Screen

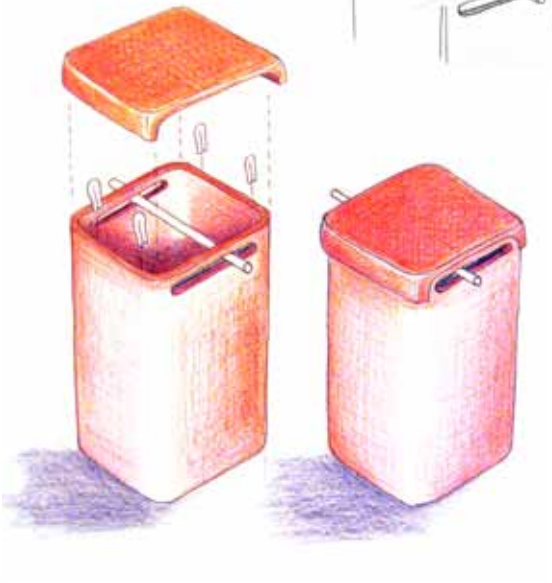
Jacobs Screen is a wall-mounted screen which alters the quality of light in a room. Based on the mechanism from a traditional Chinese toy using blocks and ribbon, the screen is made up of plastic slats which can rotate round to expose a different colour, reflecting light back into the room.

- PET
- Co-extrusion & injection moulding

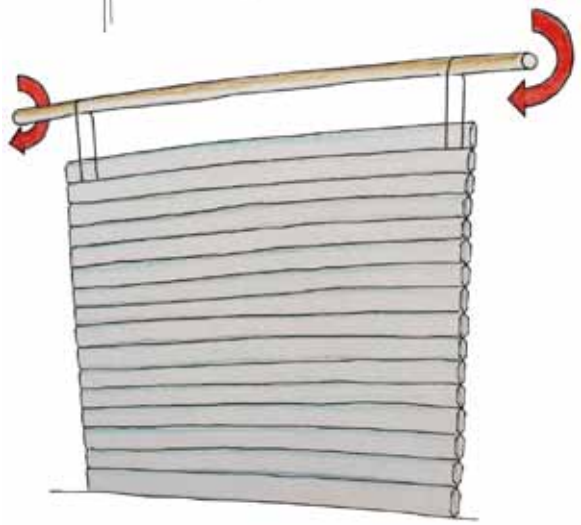
Marc Purser marc.purser@network.rca.ac.uk

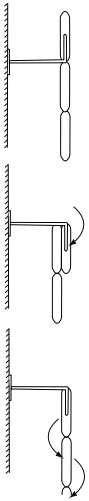
In-bidone





Jacobs Screen

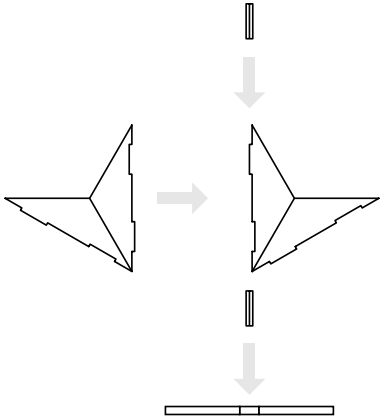




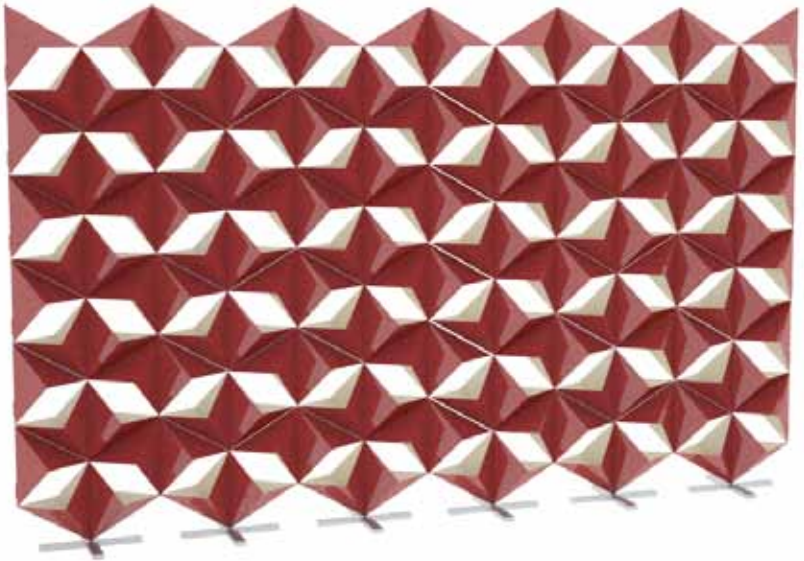
Flostack

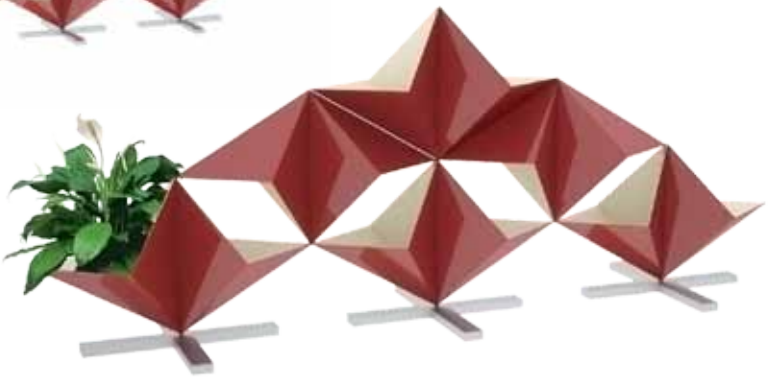
Flostack combines the simplicity of using one main element for creating intelligent space dividers. The objective was to keep the elements simple and encompass the trend of having more plants within living spaces but take into account the limited space available. The main part is made out of pulp. Pulp combines up-cycled cardboard panels and old newspapers with epoxy and polyurethane. An environment friendly outer epoxy coating makes sure the whole divider is water proof.

- Pulp coated in environmentaly friendly epoxy resin
- Paper pulp moulding



Paul Vocken paulvoncken@gmail.com





SUSTAINABLE

in & out

EXHIBITION: 22 SEPT – 07 Oct 2010

Royal College of Art, Upper Gulbenkian Gallery

+ Worshop Book, edited by IDE

SUSTAINABLE

in & **out**

EXHIBITION: 22 SEPT – 07 Oct 2010

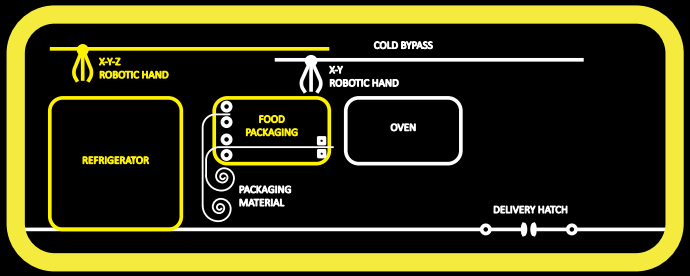
Royal College of Art, Upper Gulbenkian Gallery

+ Space Module Book, edited by IDE

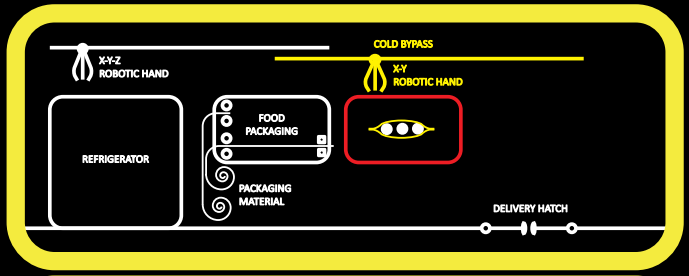





1


X-Y-Z
ROBOTIC HAND
COLD BYPASS
X-Y
ROBOTIC HAND
REFRIGERATOR
FOOD
PACKAGING
OVEN
PACKAGING
MATERIAL
DELIVERY HATCH

3


X-Y-Z
ROBOTIC HAND
COLD BYPASS
X-Y
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REFRIGERATOR
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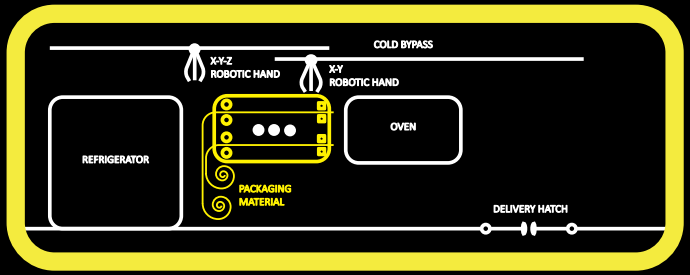
PACKAGING
PACKAGING
MATERIAL
DELIVERY HATCH

2


X-Y-Z
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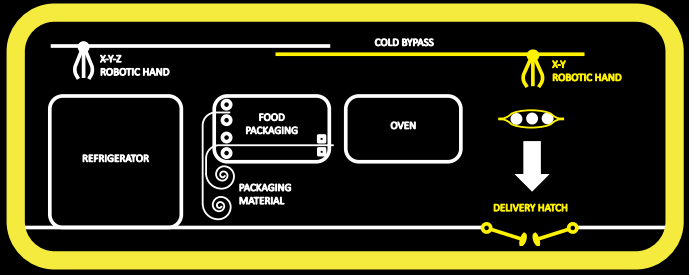
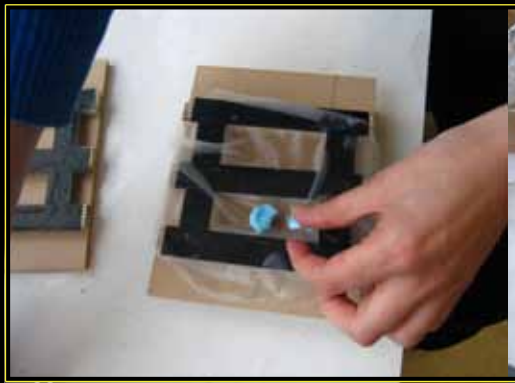
PACKAGING
MATERIAL
DELIVERY HATCH

4


X-Y-Z
ROBOTIC HAND
COLD BYPASS
X-Y
ROBOTIC HAND
REFRIGERATOR
FOOD
PACKAGING
OVEN
PACKAGING
MATERIAL
DELIVERY HATCH



Food

Play with your food

Experience weightlessness in micro-gravity and allow the magic of mealtimes to captivate, charm and enthral you. Visitors to our space hotel are encouraged to explore and discover. The surroundings and interactions are designed to enhance their unique, once in a lifetime, ethereal experience.

Our space hotel dining event begins. Diners are seated below a spectacular ceiling, where fresh food is illuminated in vast refrigerators that mimic beautiful stained-glass windows. When choosing a meal, choice is key, and diners are encouraged to invent their own mealtime concoctions. Child-like curiosity is promoted – and wild and wonderful meals can be devised. Turkey with chocolate and pineapple, anyone? Or maybe mushrooms with yoghurt?

Inside the kitchen rack, robotic arms hand pick the fresh, refrigerated ingredients and 'package' them into meals. Translucent, edible rice paper is used to contain the food in bite-sized pieces to avoid small debris floating away and contaminating the electronics and air recycling system. The intrinsic, flexible quality of rice paper is exploited to provide an edible 'plate' with floating food 'tentacles'. These can be manipulated to create crazy shapes, or individual 'bites' can be torn or bitten off to float individually. Unlike terrestrial dining, playing with your food is encouraged! Space food provides entertainment and fun, as well as nutrition and comfort. Microgravity mixed with mealtimes provides a unique and thrilling experience onboard our Space Hotel.

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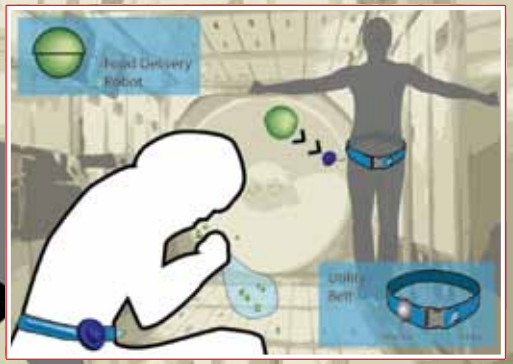
How the menu is projected for the diner



Sixth Sense

Camera

CPU

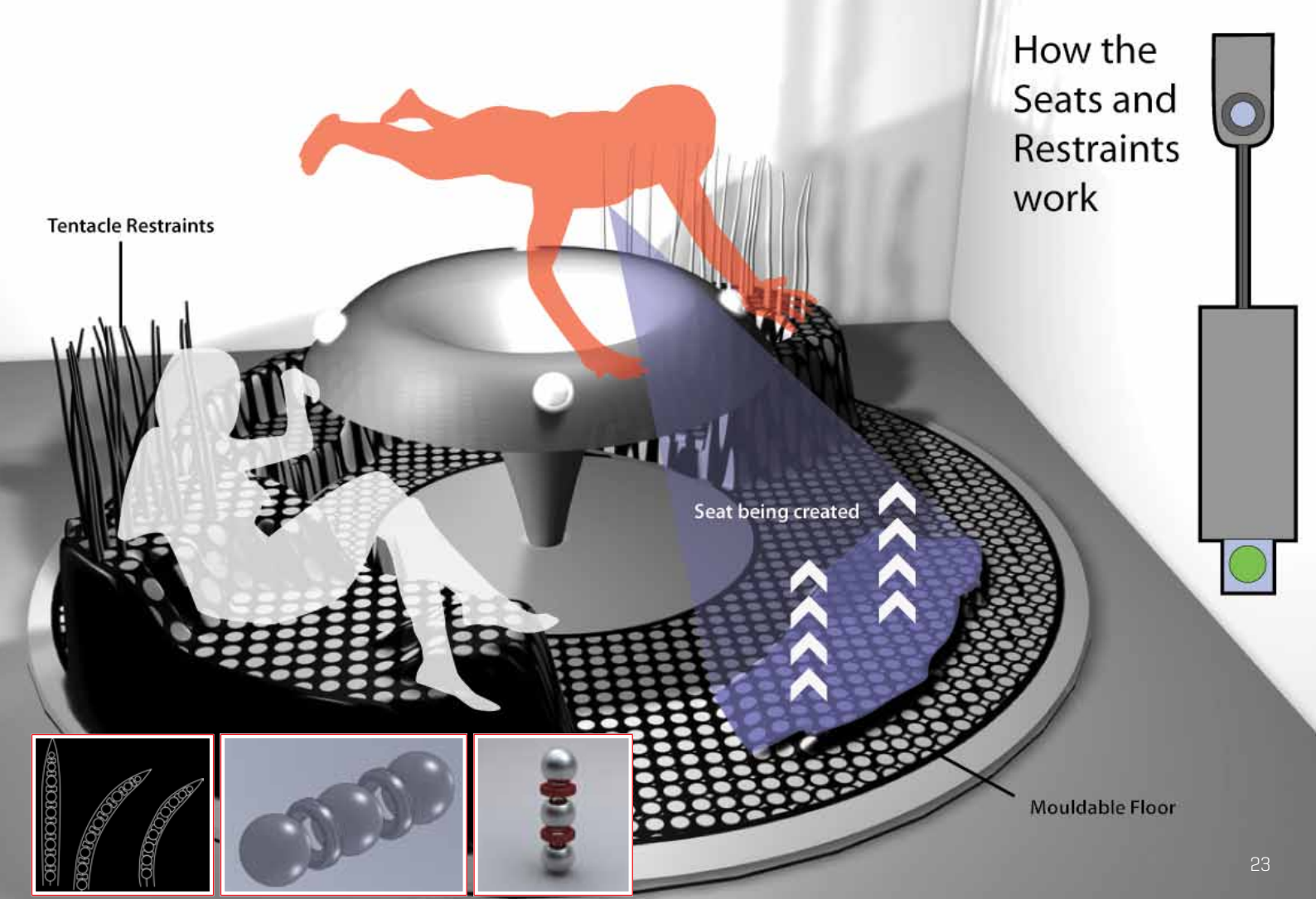
Projector

Utility Belt

Robot Dock

Sick Bags

How the Seats and Restraints work



Kitchen/Dining Area

The dining area concept was to create an elegant solution that was in keeping with the general architectural theme as well as providing a safe and hassle-free environment for the potentially tricky and frustrating experience of eating in space. Upon arrival at the station, the guests see the tabletop as a feature in the floor of the main communal area, thus providing a useful visual orientation in the microgravity environment and combating space nausea. When mealtimes come around, the pins surrounding the table descend on demand to create a circular Japanese-style recessed seating arrangement, with corresponding restraints pushed out from the floor. These act as safety belts that can be wrapped around the body according to the guest's wishes, and then hardened in place using an intuitive stroking action. The table's full shape is also revealed. Modelled after a black hole singularity, the table's "impossible" shape lends itself to microgravity. A robot waiter powered by directed air jets transports the food safely and hygienically from the food rack to the docks on the table. Once securely in place, the lids are flipped open. Waste is put into the centre of the table, following the black hole theme by gently sucking any detritus away safely to be stored for later disposal.

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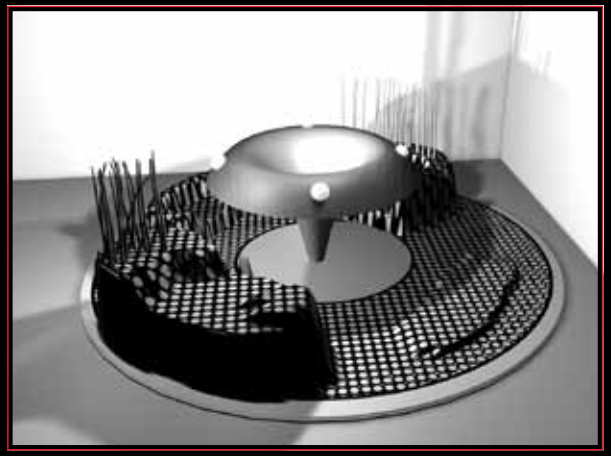
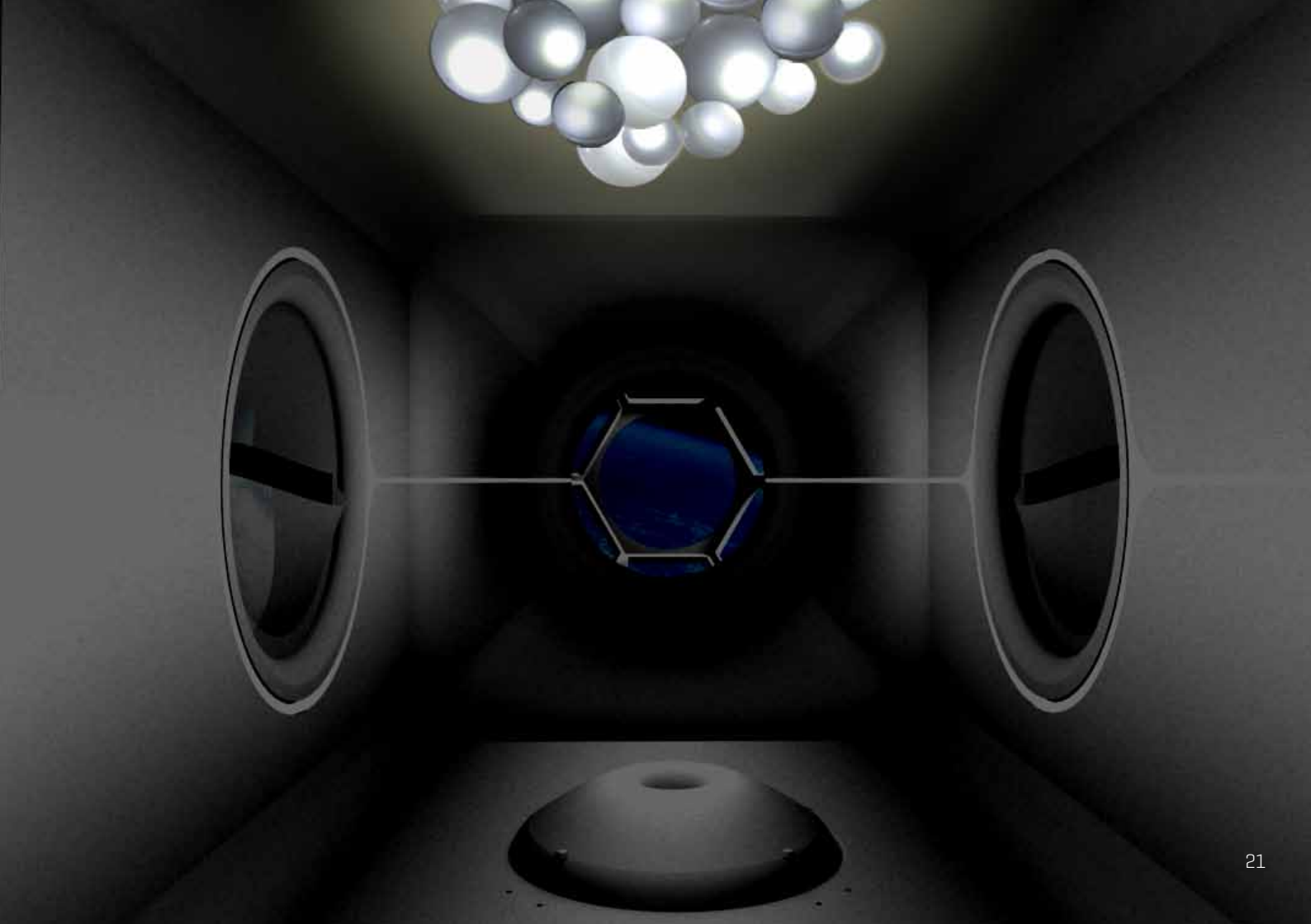
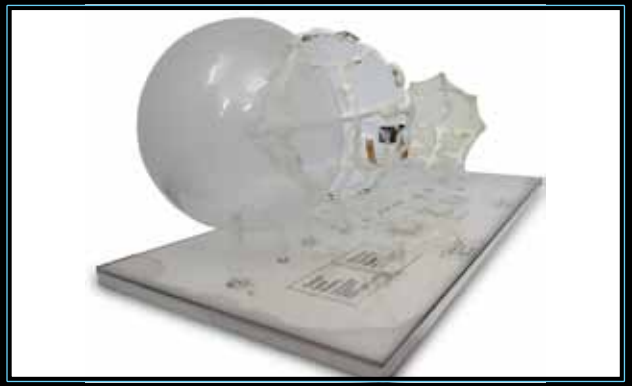




Lighting

Imagining when you first fly into the space hotel, the light balls will be gathered on the top of roof acting as the public area illumination. These have a specific function to mimic different levels of daily sunlight, so the passenger can maintain their body clock throughout the journey. The light balls also can provide a sense of direction, which is very important in space as gravity no longer exist and passenger need some sort of orientation to keep them comfortable. Passengers are also welcome to take a light ball for their personal use. When they lay their hands on the light ball, the built-in infrared sensor can immediately recogonize and record the user for tracking purpose. Hence the light can be carried with passengers to every place to use. Once the user has finished using it, simply push the ball 1m away will signal the light ball to return to its original position.

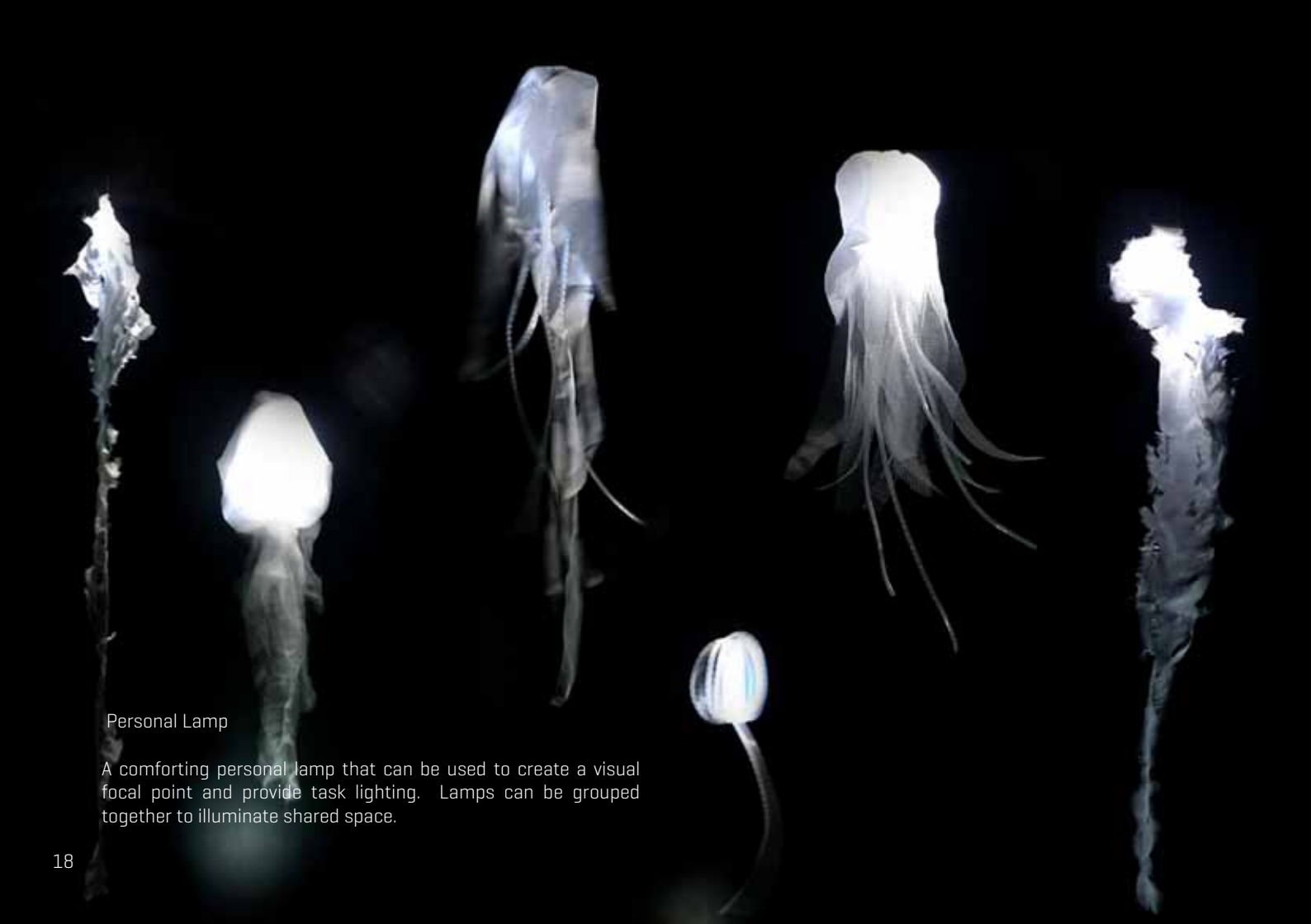
The inside structure of light is Hoberman's expanding structure is used to make the sphere size can flexible automatically. User can adjust the ball based on different needs through remote gesture control. With this flexible size in mind, the sphere is covered with rubber mixed with lycra mix. The reason is for high-temperature resistance and expandability.



Wei-Li Chen wei-li.chen@network.rca.ac.uk

Doorway Concept

The illuminated entrances allow guests to flow fluidly between rooms, while maintaining privacy through the unique angle of the doorway opening.



Personal Lamp

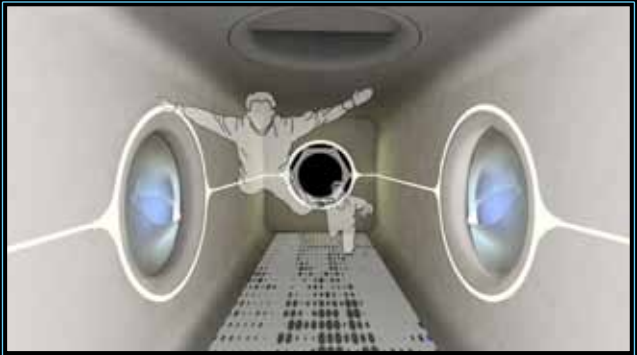
A comforting personal lamp that can be used to create a visual focal point and provide task lighting. Lamps can be grouped together to illuminate shared space.

Horizon Line

The lit horizon line uses a cycle of subtle bio-dynamic lighting to simulate the daily chromatic light cycle on earth around the hotel whilst providing a line of reference for orientation.

Lighting

The lighting system for the space hotel is designed to help guests acclimatise to their new environment. In the absence of natural sunlight and gravity, lighting elements can provide illumination, visual cues for spacial orientation, and chronological markers. With these goals in mind, we designed a selection of treatments, products and installations:



Shadow floor

To assist orientation and provide interactive fun in the space hotel, the shadow floor is a surface animation that creates the illusion of casting a 'shadow' while floating in a zero gravity environment.

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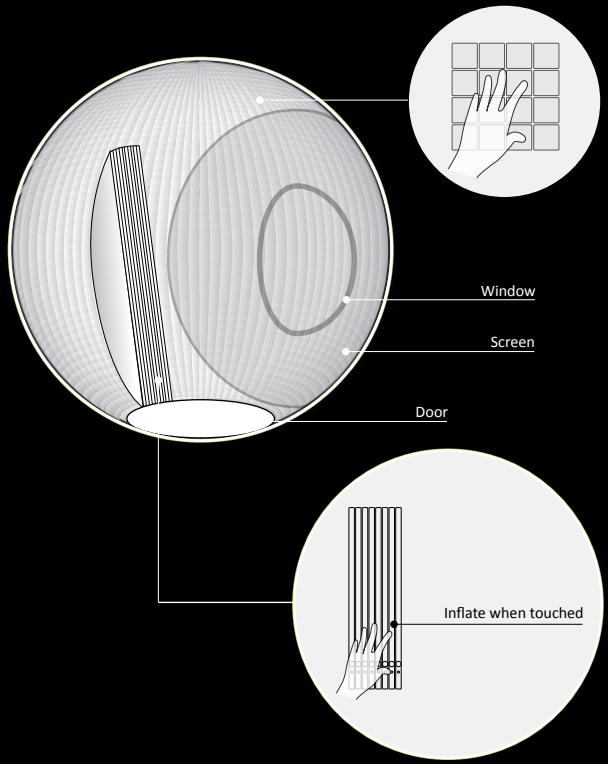
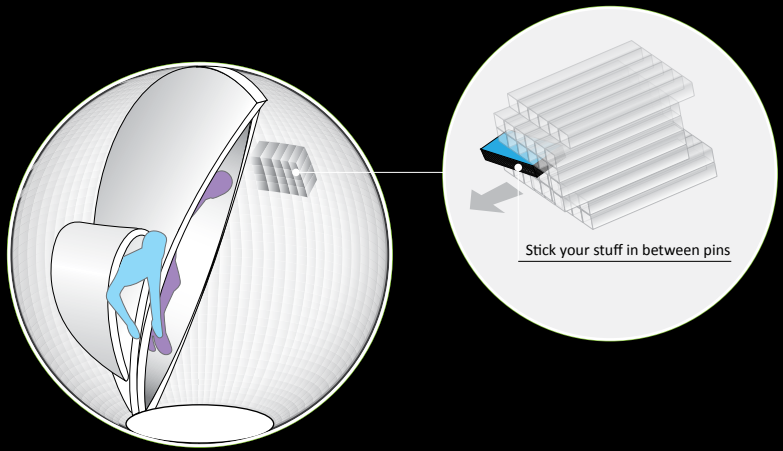
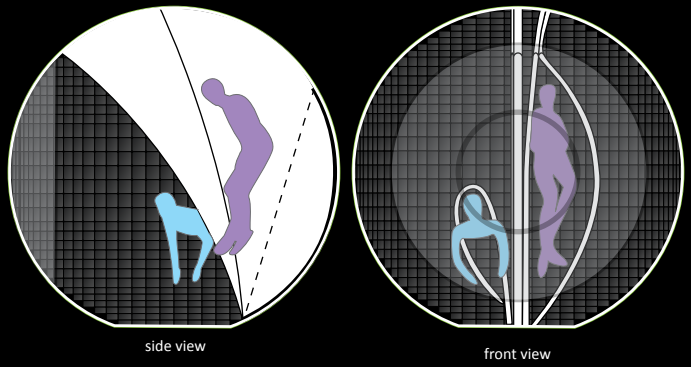
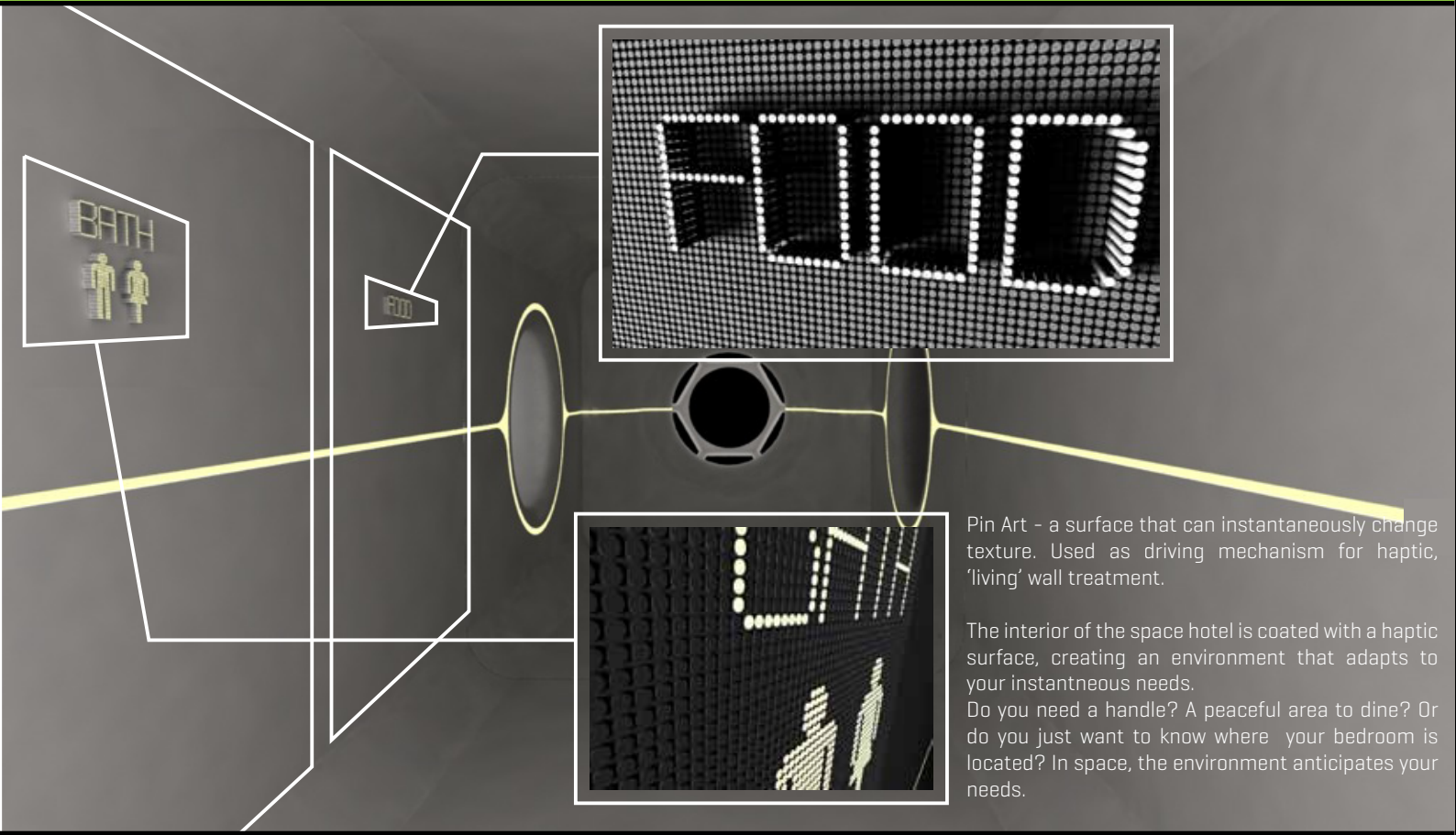






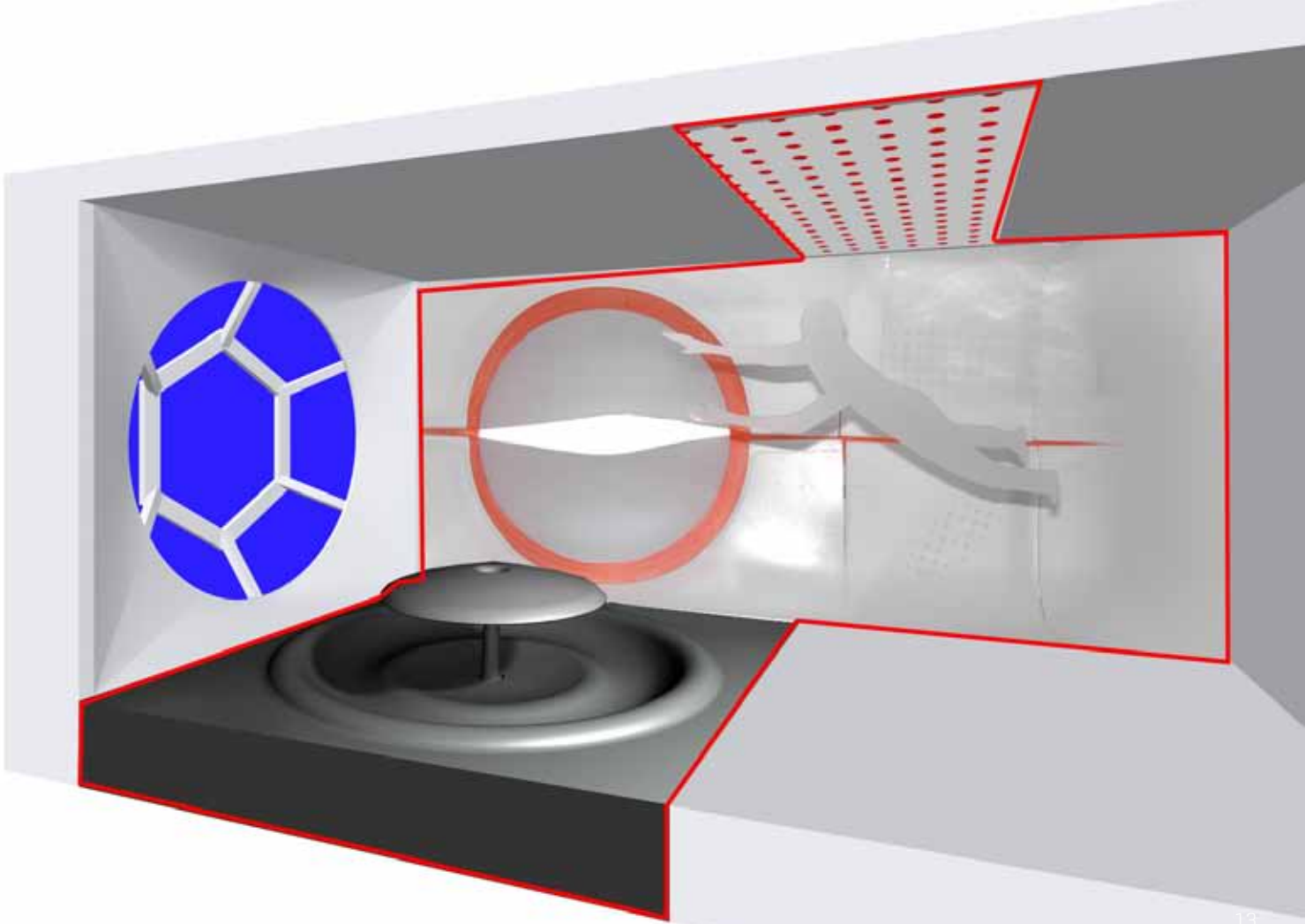
Bedroom

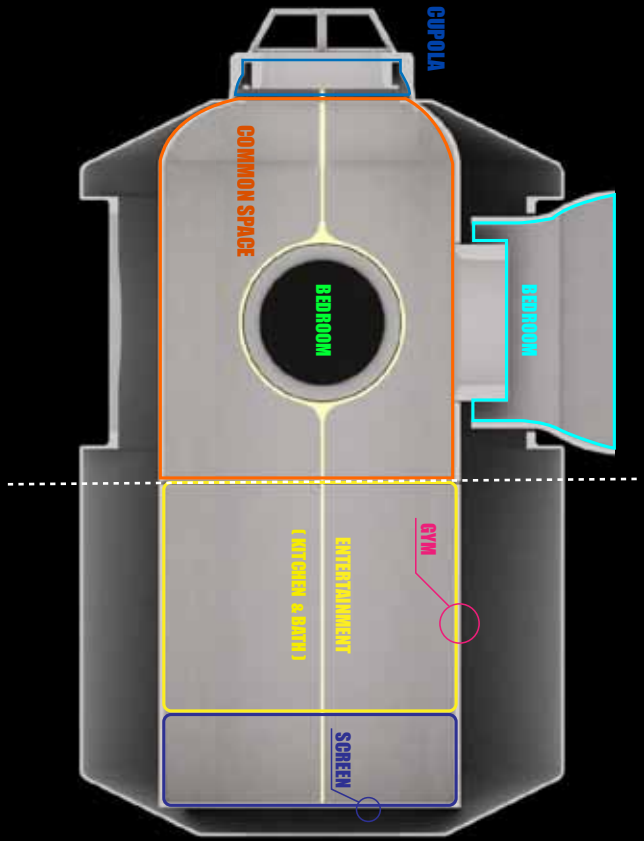
Optional Partition
Inflatable structure
Pinwall for gripping and storage
Large screen for communication, entertainment and information



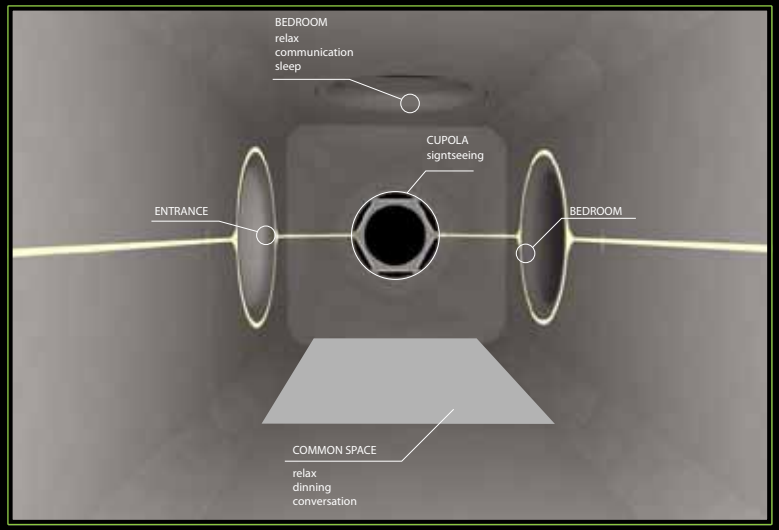
Pin Art - a surface that can instantaneously change texture. Used as driving mechanism for haptic, 'living' wall treatment.

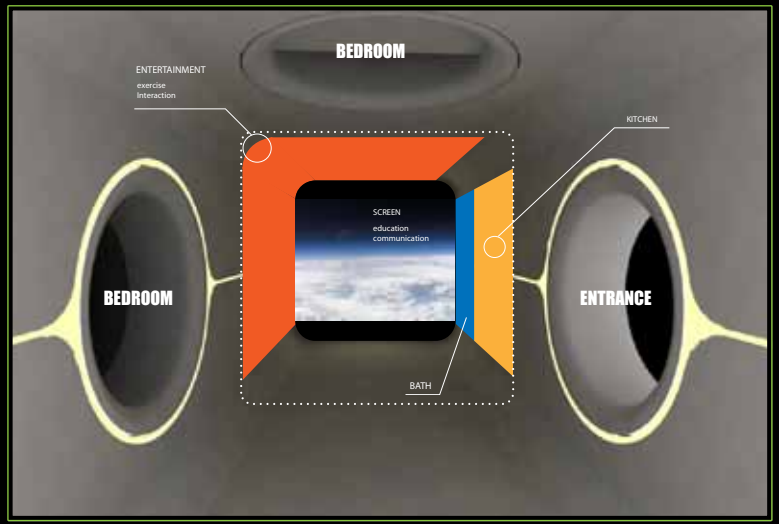
The interior of the space hotel is coated with a haptic surface, creating an environment that adapts to your instantneous needs.
Do you need a handle? A peaceful area to dine? Or do you just want to know where your bedroom is located? In space, the environment anticipates your needs.




CUPOLA
COMMON SPACE
BEDROOM
BEDROOM
GYM
ENTERTAINMENT
(KITCHEN & BATH)
SCREEN

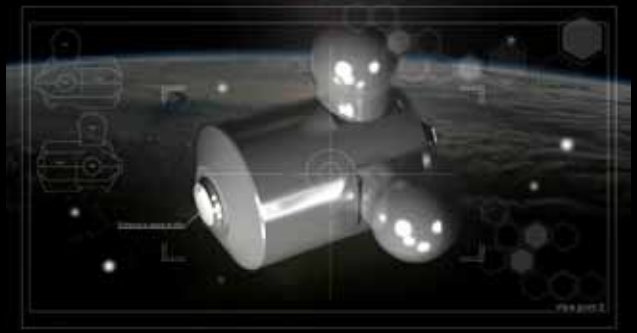
Elevation


BEDROOM
relax
communication
sleep
CUPOLA
signtseeing
ENTRANCE
BEDROOM
COMMON SPACE
relax
dinning
conversation


BEDROOM
ENTERTAINMENT
exercise
interaction
KITCHEN
SCREEN
education
communication
BEDROOM
ENTRANCE
BATH

General Architecture

The goal was to create a haptic environment that can anticipate the needs of the new space traveller. Upon arrival the interiors of the hotel appear purely informational; directing guests to various sections of the node and helping them adjust to the unique physical challenges of microgravity. Signage and handles push out from the wall upon human proximity, aiding guests in their movement about the hotel. As their stay in space progresses, the surfaces of the interior react more unpredictably to human touch, emotions, and functional requirements; effectively providing constantly evolving serendipitous moments of discovery within the limited confines of the space module.



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Tan-Chi Chao tan-chi.chao@network.rca.ac.uk

Project Brief

A few years ago the closest that designers would come to space design would be designing props for Hollywood sets. Now with the successful launch of Spaceship one for Scaled Composites and Virgin Galactic, a new context and paradigm for designers has emerged. Space travel is now moving quickly into the commercial phase outside of national agencies where its expected that the pace of space design will accelerate quickly. All of Virgin Galactic's tourist flights have sold out and people are already talking about the next milestone - a space hotel. Designing for space is going to require clever simulation and mapping skills to understand the environmental design parameters, both physical and psychological.

The 2010 Space Module, leaded by Daniele Bedini, was a project to design a space hotel with careful consideration of both physical and psychological conditions in order to be a successful experience for a space tourist. Working in interdisciplinary groups students focused on one of the three areas: General Architecture, Kitchen/Dining and Food and Lighting.

Students were challenged to develop a new experience to cope with the different environmental conditions, limitations in HAB module size, forced dependability on a closed life support system, psychological and sociological risks, etc. They had to take into account the necessity to minimize weight, volume and energy consumption of all functional elements inside the Module.

The 2010 Space Module was focused on the detailed design of a Space Hotel and the production of full-scale details to be exposed in an RCA public exhibition. In particular, students had think in an advanced way about general architecture of the hotel, its main functional areas such as Food/kitchen system, lighting system, textile/clothes system, etc. Last year's project was used as a basis to develop the new detailed design. Another content of the Module was the identification of what we will be able to transfer into commercial products from the innovative requirements of extreme design. This is mandatory due to the involvement of 'commercial' companies, like iGuzzini Lighting, Elmar kitchens and Fratelli Guzzini.

Module Leaders - Daniele Bedini and Ashely Hall

Students - Jessica Baker, Tan-Chi Chao, Jieting Chen, Wei-Li Chen, Charlotte Christofferson, Dominik Donocik, Hong-Yeul Eom, Samuel Jewell, Sae-Ra Kang, Anne Sofie Lefevre, Gaetano Ling, Yuan-Sun Lin, Kunal Nandi, Andras Szalai, Alicia Tam, Hawys Tomos, Daniel Watson

Module duration - 4 weeks


THE KILLS

.elmar

Elmar

Combining practical ability with listening skills; projecting the company's authentic ethical DNA into real respect for the environment; giving a global perspective to local values.

In recent years, Elmar has redirected its company policies to comply with these essential guiding principles. Each step in this evolution confirms the company's growing interest in listening to the customer's needs, interpreting the evolution of society, adding more value to existing values. Topics regarding quality expectations, new democratic consumption inflexions, the rejection of uniformity and the respect for the environment have all been picked up and taken to heart by Elmar that has united tradition and modernity in the knowledge that the past always sheds light on the present. New furniture programmes stem for these principles, design plays an aesthetic role in innovation without pursuing the ephemeral value of luxury but leaving the mark of its contribution to increasing the product's value as a witness to time. This is how a new concept of the kitchen is born, a concept that divides new dimensions into various taste sectors; a well-constructed and complex collection in which the kitchen factually becomes a place where flavours, essence, emotions and encounters reign. Furnishing programmes distinguished by versatility and values to allow everyone to personally reinvent the kitchen in just a few gestures, transforming it into a multifunctional space. We address quality-loving consumers who appreciate detail and want a product capable of expressing values that are perceived as being consistent and in which the consumer can identify himself.

This is how Elmar affirms itself as a company based on renewal, on the principles of the Renaissance, a company based on two fundamental values: aesthetics and ethics. An aesthetic company because it offers the authentic value of design, doing away with superfluous frills in favour of distinctiveness. An ethical company because the company's values stem from a concept that places Man at the centre of design, respecting the environment and combining innovation and solidarity with the territory. A company for which the personal growth of all its in-house collaborators becomes a new wealth for its thinking abilities and for its practical and know- how skills. A company for which the direct relationship with retailers becomes a motivational partnership and a sensor that is active on the territory; where agents, suppliers and consultants become the holistic components of an economical family projected towards the future and founded on authentic ethical values, on new management methods, on real ecological awareness and on a strong bent towards innovation. Possibilities, commitments and dreams are born from this concept that also give the company a place on the International research and training scenario, alongside architectural feasibility paths that are projected into the future and into space.

realising various modules of the "orbiting home". Among the most significant elements, there are the three MPLM (Multi-Purpose Logistic Modules), for the transportation of goods to and from ISS on board the Space Shuttle missions. The MPLM have carried out several missions since 2001 and have been designed to be used for at least 25 space missions each. Other highlights of the Thales Alenia Space Italia Turin activities for the Space Station are the European Columbus Laboratory for the micro-gravity research; the ATV (Automated Transfer Vehicle), automatic logistic system with a maximum payload of 7,300 kilos of supplies and materials for the astronauts; The NODES 2 and 3, elements which connect the pressurised modules of the "orbiting home"; and the CUPOLA, an extraordinary observatory which will enable astronauts aboard the Station to manoeuvre the remote controlled robotic arm during the assembly of the various modules. Scientific satellites and probes for exploring the Universe represent the further area of excellence of Turin plant. The most recent programs include the satellites Herschel (for the infrared observation of the Universe), Planck (to observe the cosmic background radiation), GOCE (to make the first high-resolution global map of the terrestrial gravitational field). In the field of the solar System exploration, after the integration of Rosetta (a mission to a comet), Mars Express and Venus Express (missions to Mars and Venus), the plant is deeply involved in the development of Bepi Colombo (a mission to explore Mercury) and ExoMars for the robotic exploration of Mars.

ThalesAlenia Space
A Thales / Finmeccanica Company

Thales Alenia Space

A global reference in spaceprograms

Thales Alenia Space represents a worldwide standard for space development: from navigation to telecommunications, from meteorology to environmental monitoring, from defense to science and observation.

THALES ALENIA SPACE ITALIA

Thales Alenia Space Italia S.p.A. is the Italian component to Thales Alenia Space.
The company is founded on forty years of experience acquired by working in the realisation of more than 200 satellites for telecommunications (Intelsat, Hot Bird, Arabsat, Italsat, Globalstar, Sicral), for science and exploration (Hipparcos, Beppo Sax, Cassini-Huygens, Rosetta, Integral, Mars Express and Venus Express) and for remote sensing (ERS 1 and 2, Envisat, Met-Op, COSMO- SkyMed). Not forgetting the vital contributions made in the development of the orbiting infrastructures (the International Space Station and logistic transport modules). The company co-operates with the major international space industries and in the programmes of the most prestigious institutions such as NASA, the European Space Agency and the Italian Space Agency. Thales Alenia Space Italia employs about 2,300 people and has sites in Rome, Turin, L'Aquila and Milan.

TURIN: THE FUTURE HAS ITS OWN SPACE

The Thales Alenia Space Italia Turin plant has always been specialised in the design and production of scientific satellites as well as in the field of orbiting infrastructures, contributing over 50% of the habitable volume for the International Space Station and becoming a worldwide centre of excellence in this field. Today, Thales Alenia Space Italia Turin is an industrial reality, perfectly inserted in the production, economic and social context of the Turin area. More than 30,000 sqm of the 50,000 sqm of the Turin facilities are occupied by laboratories, clean rooms and production areas. This witnesses the high production level of the site, which has been fully involved, over the last few years, in the realisation of the major European scientific missions (Integral, Mars Express, Venus Express, Rosetta) and in the production of key elements for the International Space Station. The plant is fully equipped with test facilities, simulating all the environmental conditions of deepest space.

SPACE IS OUR HOME: THE MODULES FOR THE ISS AND THE EXPLORATION PROBES

The International Space Station is the largest orbiting infrastructure ever built. Thales Alenia Space Italia, and in particular the Turin plant, gave fundamental contribution to its development,

including Harvard University, M.I.T (Boston), La Sapienza (Rome), Milan Polytechnic, CNR (National Research Council), Central Institute for Restoration, and Lighting Research Center (Troy, NY).

The great attention it pays to design has led to collaborations with some of the most renowned architects and designers in the world such as Giò Ponti, Rodolfo Bonetto and Bruno Gecchelin, followed by Renzo Piano, Gae Aulenti, Piero Castiglioni and then Norman Foster, Daniel Libeskind, Jean-Michel Wilmotte, Mario Cucinella, Massimiliano Fuksas and Ron Arad, the designers of some of iGuzzini's most significant luminaires.

The company has received a number of awards, from Compasso d'Oro in 1989 for the Shuttle luminaire designed by Bruno Gecchelin and the one awarded in 1991 to the Guzzini Group "for having developed over time a very coherent designing and manufacturing philosophy where the culture of design has represented a common denominator and an element of distinction", to the 1998 Compasso d'Oro for the Nuvola product designed by the Piano Design Workshop.

In 1998 iGuzzini was awarded the Guggenheim Prize for its constant commitment to culture and in 2001 the Leonardo Prize for quality.

iGuzzini

iGuzzini Illuminzione

Architecture is pure volumes in light - Le Corbusier

iGuzzini illuminazione was established in 1958 under the name Harvey Creazioni. The initial production of enamelled copper objects was supplemented in 1959 by decorative luminaires.

Today, fifty years after its establishment, it is a leading company in the production of high-end indoor and outdoor architectural luminaires for international markets.

It is led by Adolfo Guzzini, President and Antonio Santi, CEO, and is part of the Fimag family-run holding company together with Teuco Guzzini (sanitary units, bathroom furniture) and F.lli Guzzini (design household accessories). These three companies make up the Guzzini Group, one of the most significant examples of the Italian entrepreneurial history, characterised by constant dynamism, and innovation at 360°: from services to clients and marketing tools, from communication to distribution networks.
Its activity is characterised by the designing of an efficient use of the light: this translates not only into the production of innovative high-performance luminaires designed by major international architects and designers but also in its ability to combine them into lighting systems suitable for and able to blend into the most diverse architectures.

Since iGuzzini is well aware that better light quality improves the quality of life indoors and outdoors, it has been committed to spreading an actual culture of light for over thirty years now. Proper lighting saves electric energy, makes our towns safer, adds value to buildings and shop fronts and - last but not least - curbs light pollution.

The different application fields include urban lighting, museums, offices, commercial areas and hotels.

iGuzzini luminaires are lighting some of the most prestigious settings in the world: the Borghese Gallery Museum, Palace of Exhibitions and Aurelius' Domus in Rome, the Beaubourg in Paris, Luxor Temple in Egypt, the Hermitage Museum and Nevsky Prospect in St. Petersburg, the North Greenwich Transport Interchange and Heathrow Airport in London, the Mercedes Design Centre in Stuttgart, the Paul Klee Centre in Bern, the Oriental Art Center in Shanghai, Mostar Bridge, the headquarters of Il Sole 24 Ore and the new Exhibition Pole in Milan, Melbourne Airport, and the National Assembly for Wales in the UK. While some of the most important top brands are: Armani, Fendi, Porsche, Maserati, Dunhill, MaxMara.

Over the year iGuzzini has constantly invested in research as well as technological and production innovation with partners

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ThalesAlenia Space
A Thales / Finmeccanica Company

iGuzzini

IS

Space Hotel

SUSTAINABLE

in & **out**