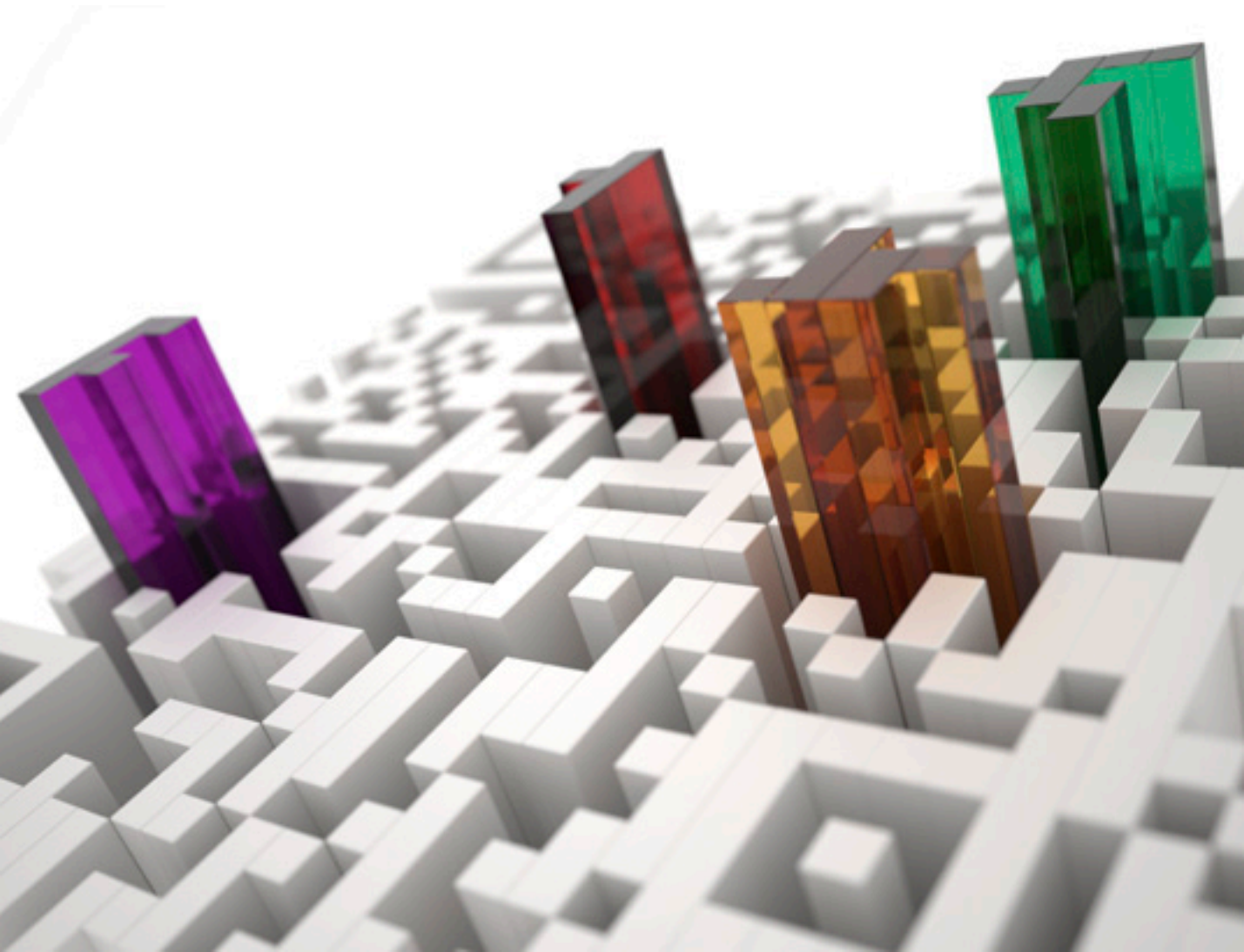
DESIGN PRODUCTS

Product, Furniture & Industrial Design *innovation* at De Montfort University



Design Products Yearbook

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Design Products Courses

Product Design BA (Hons)
Product Design BSc (Hons)
Product & Furniture Design BA (Hons)
Furniture Design BA (Hons)
MDes Design Products
MA Product Design

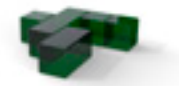
Theme

The four block arrangement icons are derived from an extruded version of the De Montfort University website QR code as seen on the front cover, and are used to group the student projects into four identifiable categories.

Health, Wellbeing & Emotion

Living & Working Environments

Sustainability



Safety & Support

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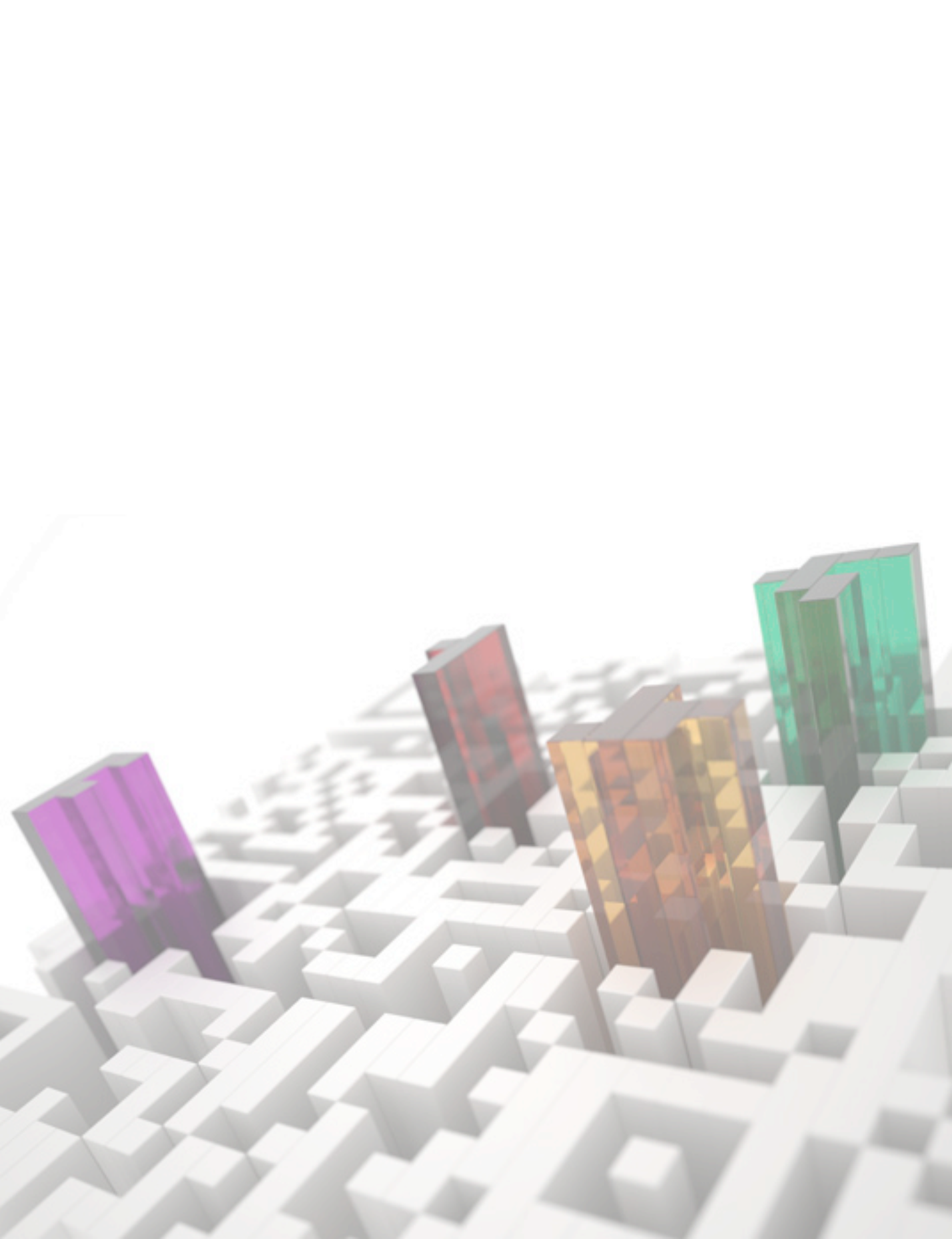
product | furniture | industrial



Design at DMU
Design Products

Welcome to 'Design Products'; our first edition celebration of the projects undertaken by students and staff in Product and Furniture Design at De Montfort University. These projects represent a breadth of approaches, subjects and outcomes reflecting the expert provision of the department. Staff and students' research and product solutions are pertinent to the lives we live today, such as the impact of an ageing population or First and Third World health provision – underpinned by the consideration of environmental and economic sustainability. Student studies are categorised by their Programme emphasis. Projects are undertaken in both areas of the Arts and Sciences with students choosing an approach, which emphasises their studies, from the visually creative to the overtly technical. Students can choose to practice within specialist areas of both Product and Furniture Design.

This year sees the first graduating cohort of our four year MDes Programme. This Programme emphasises research tools, design business and emerging technologies, within the context of professional practice. Projects range from tackling the challenges of communications across different generations through to rape prevention schemes in refugee camps. Each project is differentiated by a key theme and comprehensive research methods are employed to emphasise genuine insights into people's behaviours.

The range of Programmes within the subject of 'Design Products' are designed to address the needs of both international design business and our students. Students join us from a variety of backgrounds, cultures and countries. Students can choose, within the Programme, from a choice of options including a year industrial placement, an 'exchange' year with a European university (though ERASMUS) or an MDes.

Our approaches to the design process ensure that new insights into problems are recognised and are subsequently resolved. The act of 'designing' in itself is also questioned as staff and students review the role of consumers within the design process. This allows them to become actively involved through a co-design process and helps to determine the product outcome.

Our Programmes' emphases upon employability is reflected in our commercially sponsored projects, our work placements and involvement in national competitions. As this book shows, students have been involved in projects with Unilever, Howdens, Games Workshop and Habitat, bringing a commercial context to students' studies. They have undertaken placements with the likes of BMW and Bluefrog Design and won competitions set by organisations such as the RSA and D&AD.

The link between academia and the design industry is further strengthened by the work of our New Product Development Centre (NPDC), our umbrella initiative for commercial and research design activities. The recently refurbished centre (costing £2million) facilitates research activities into additive manufacturing, design research methods, resource efficiency and retail design. Staff are not only active as 'researchers' but also undertake commercial 'interventions' to improve the competitiveness of the region's businesses. Over a 10 year period more than 120 projects have been undertaken attracting in excess of £4.5 million. These activities are important in that they inform our design curriculum and ensure that students are taught by practicing designers and researchers. This work also makes certain that our staff are categorised highly within national Research Assessment Exercises (RAE) with projects being classified at an international standard.

This edition demonstrates the breadth of expertise that our staff possess, the ingenious and thoughtful projects students produce and importantly, the successful careers our alumni are engaged with – a combination of attributes which place this subject area in a strong position for the years to come.

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designproducts
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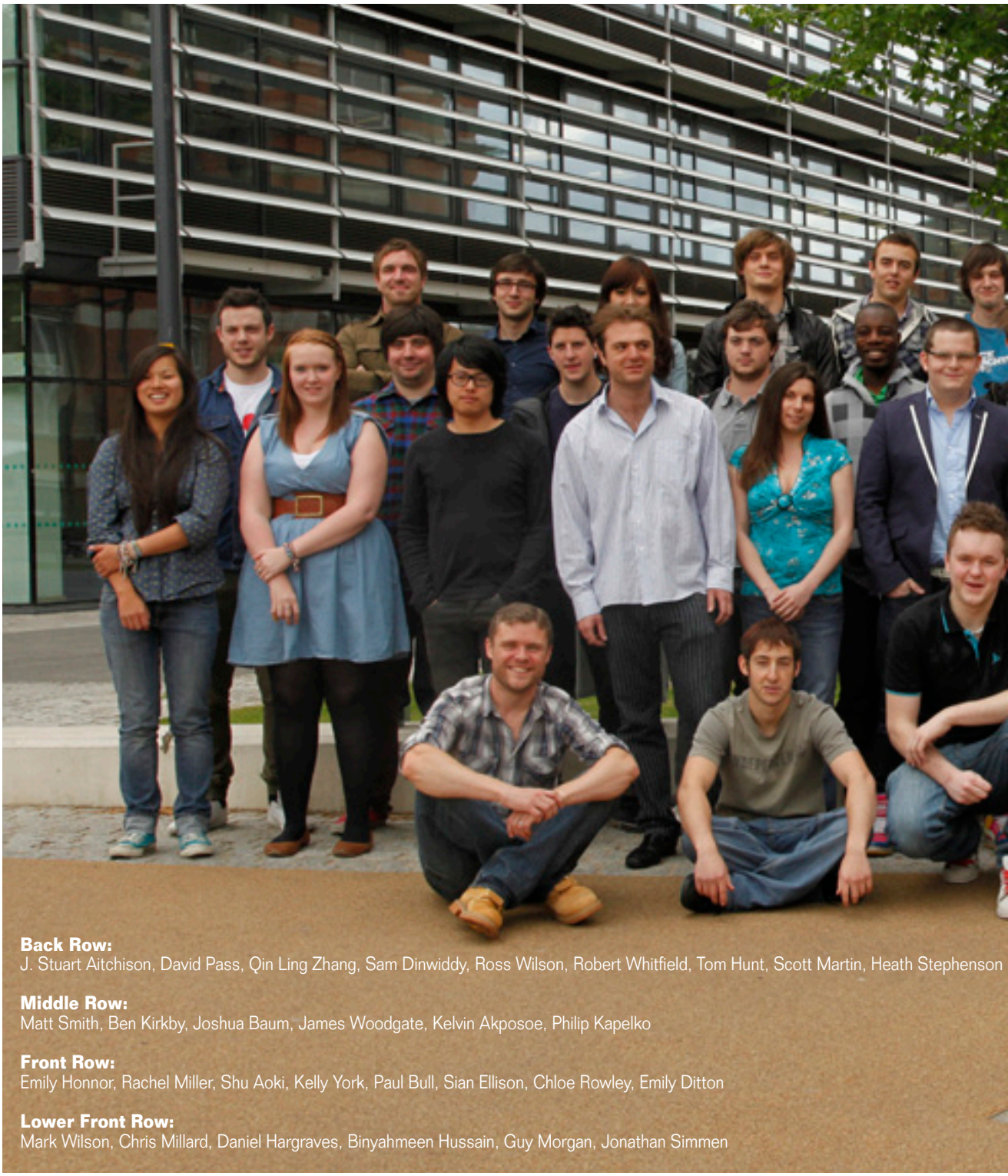


Back Row:
J. Stuart Aitchison, David Pass, Qin Ling Zhang, Sam Dinwiddy, Ross Wilson, Robert Whitfield, Tom Hunt, Scott Martin, Heath Stephenson

Middle Row:
Matt Smith, Ben Kirkby, Joshua Baum, James Woodgate, Kelvin Akposoe, Philip Kapelko

Front Row:
Emily Honnor, Rachel Miller, Shu Aoki, Kelly York, Paul Bull, Sian Ellison, Chloe Rowley, Emily Ditton

Lower Front Row:
Mark Wilson, Chris Millard, Daniel Hargraves, Binyahmeen Hussain, Guy Morgan, Jonathan Simmen

Grand Challenge #1
Ageing Population

Within the world's non-developing nations and in particularly the G7 group of economies, people are having fewer children and living longer. This exponential demographic change and the fiscal certainties that it brings, will form one of the grand challenges to these collective society's wealth and pre-eminence over the coming decades. Currently, one in six people in the UK are over 65, but by 2030 this proportion is expected to be one in four, with the over 85s being the fastest growing sector of the population. The predicament for the UK is that in relative terms, fewer people are paying taxes whilst more people are reliant on pensions, healthcare and the support of the state; which as a financial model manifests a greater danger to individuals' personal wealth and the UK's economic surety than any legacy of profligate investment banking.

The population's increased life-spans are mainly attributable to improvements in working conditions, diet, medical interventions and housing. However, the UK's new demographic destiny means that such progress can no longer be relied upon. The challenge that governments, science, design and society must face is how to provide, on a much reduced budget, a standard of healthcare, products and support systems for its ageing population that are comparable, if not better, than anything that has been available during the 'Long Boom'.

As well as being expensive, ageing is also risky; for women and particularly for men, increased years in life expectancy are likely to be spent in poor mental and physical health although research has found that such difficulties are not evenly distributed amongst populations, with regional and local variations in life-spans of up to 15 years (related to factors such as earnings, employment and lifestyle). Applied research into enhancing mobility and independence for the elderly also has many parallels with the needs of the disabled (although they are not necessarily related even though disability levels increase with age) and a growing awareness of this has meant that socially inclusive design is increasingly recognised as a fundamental part of good practice and of the conscientious development of new product and new services.

Engineering and design research over the past decade has also made great advances in assistive technologies and systems, enabling people to stay independent and in their homes for longer. Within the science community there is also a burgeoning understanding of the mechanisms for improving cognitive function and for creating mental wellbeing in later life, with research, products and systems establishing that physical activity, work, social networking, plus cultural and community engagement are all good for improving individuals' quality of life in old age.

The challenges and opportunities presented by an ageing population are also increasingly seen by business as a key opportunity for innovation and enterprise which although not directly a solution for the demographic deficit, is a vital part of the collaborative strategy needed for its resolution.

Grand Challenge #2
Health

Technological innovation and highly developed economic and organisational structures have allowed Western societies' citizens to become largely detached from the struggle for the basic necessities of life; food, water, shelter and safety. Yet, concerns over personal health are inescapable and even though medicine is increasingly able to improve and preserve peoples' lives, factors such as the ageing populations, obesity and drug-resistant viruses present enormous challenges for science and society.

Health services face many challenges one of the most pressing is the rise in Healthcare-associated infections (HAIs). The Department of Health have announced that 1 in 10 patients acquire HAIs and as a result they stay in hospital 2½ times longer than required. This has a tremendous human cost but also places great financial pressure on the NHS. Highlighting of HAIs in the media has led to this becoming a political issue and a health priority. Good design can help make hospitals safe by developing furniture and equipment that's easy to clean and also challenges the behaviour that prevents it from being cleaned or promotes the spread of infection in the first instance. The Department of Health and The Design Council challenged the UK design community to tackle the issue of HAIs. The result is a testament to the power of design thinking and it is a model of how design is liable to be procured, tested and developed in the future.

"It was fascinating because we had all the knowledge and they had all the talent and being able to merge the two was invigorating" (1).

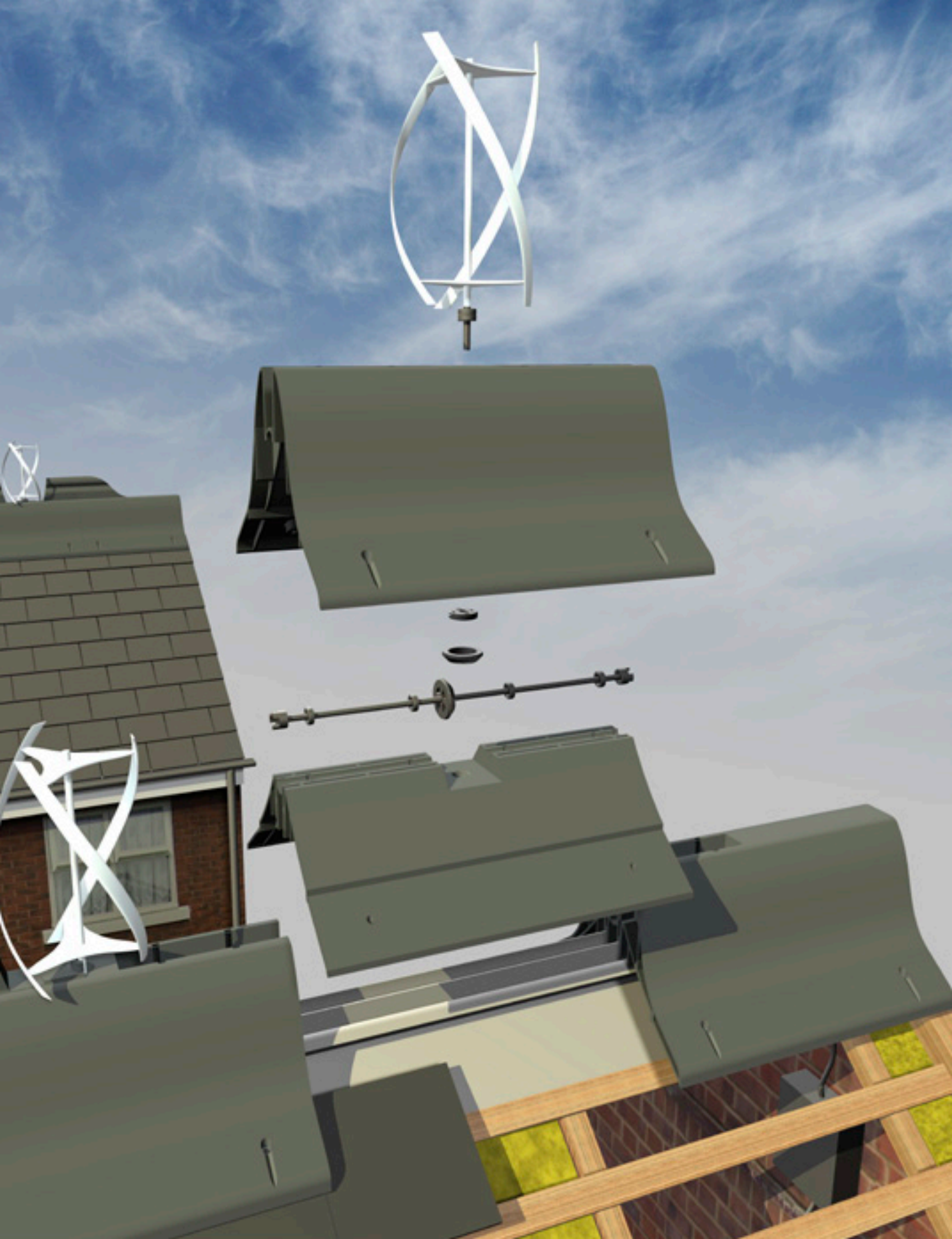
The number of obese people in 2005 was around 400 million; this will balloon to 700 million by 2015. "The demands of age-specific ailments will increase on healthcare services and support agencies as the proportion of the population over 65 increases from 7.3% to 9.4% by 2020". (2)

Bigger challenges face us still. While the "OECD (Organisation for Economic Co-operation and Development) countries spent nearly $3.5trn in 2005 which could rise to $10trn per year by 2020" (2), demand for healthcare treatment for chronic conditions is also set to soar in the E7 countries (China, India, Russia, Brazil, Indonesia, Mexico and Turkey). Their GDPs "..are set to triple from $5.1 trn in 2004 to $15.7 trn; by 2020" (2) and these will be significant new markets for health. Whilst national, regional and cultural factors help shape the severity of how much external forces impact on our personal health, we still share common global themes.

In times of great change there are also great opportunities for design, which in partnership with science and technology will shape the health and well-being of future generations.

1 – Paul Cryer, HCAI Technology Innovation Programme Manager, Department of Health. Design Bugs Out Report: Design Council 2009

2 – Technology Strategy Board Report Medicines and Healthcare. Strategy 2009-2012. Executive Summary



Grand Challenge #3
Sustainability

Sustainable Development is a concept that has developed since the 1970's. The public and governments started to understand and worry about the effect of human activity on the environment, the potential consequences of depleting resources for future generations and the permanent damages we caused to the planet. It was understood that the rate of resource depletion was directly linked to the increasing production of goods needed to satisfy our consumption patterns. All agreed that such a rate of resource depletion combined with a growing population was creating an unsustainable way of life. As the World Commission on Environment and Development defined it, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (WCED, 1987, p. 8).

The emergence of sustainable development has created great repercussions in design and product development, both in research and industry, through the discipline of sustainable design. The take-on of these issues in industry was caused by increasing external pressures; such as legislation, media, scarcity of materials, rise of oil prices, environmentally more aware consumers, etc. These issues have challenged businesses to integrate environmental and social concerns as new performance criteria alongside their financial criteria. And in order to manage performance all across products' life cycles, product development teams have had to combine sustainability with supply chain design thinking.
In research, many focus on developing tools to help the identification of environmental aspects, the selection of materials and the screening of design concepts. Research also concentrates on case studies or "success stories" to illustrate the potential of sustainable design. At De Montfort University, we have been investigating sustainable design for many years, running various research and commercial projects in this area. Also, as a fundamental part of our education model, the students benefit from the gathered knowledge and expertise through our course and the use and learning of latest software, equipment and involvement in real industrial projects.

In the development of products, sustainability is a concern for the whole supply chain (designers, engineers, manufacturers, retailers, etc) but the choices product designers make in regards to sustainability and collaboration with the supply chain are pivotal to change the way we produce our goods. Only this approach, alongside designers' creativity and ingenuity, will provide sustainable design; or as some practitioners call it, GOOD DESIGN.

Grand Challenge #4
Society

The exponential growth and advancement of information and communication technology presents society with many opportunities, but what must be mediated by designers is whether the activities created, replaced, or enhanced by such technologies produce societal improvements or just change without eventual benefit; "...as people incorporate these emerging technologies into their social interactions, there results a tendency to lose touch with social nuances, cultural values, and the characteristics of traditional society." (1)

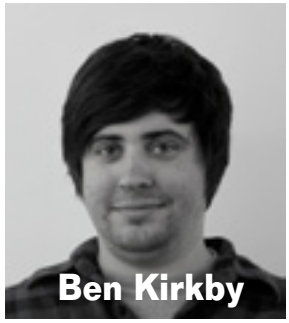
The integration of these maturing and emerging technologies into personal, local and wider communities can create a reliance by their providers on their use that currently at least, can be a barrier to their success. However, older generations who didn't learn through processor-based technologies are being supplanted by those who recognise and welcome the opportunities presented by assistive technologies and systems.

As public service funding is cut, in parallel with an agenda for constant improvement in services and social cohesion across the generations, product and system design is increasingly seen as a solution for delivery; not just technology as a means of information retrieval but also as a facilitator of interactive dialogue,. As well as making personal engagement with geographic or issue-based communities much easier, the opportunities presented by information and communication technology increasingly makes it easier for individuals to reduce their carbon footprint and to stay connected to family, friends and support networks, particularly in later life.

In order to be effective, designers must comprehend how their designs work in a social context. To do this they must understand the expanded definition of their design discipline as sustainable design, service design, interaction design, user-centred design, and designing for social networks. In an age with dwindling resources, with more of the population than ever before living longer, where social cohesion, societal and cultural traditions are under threat, designers need to provide more for less, fostering change and positive behaviour whilst also considering what they do in a broad social context.

(1) Social Interaction Design in Cultural Context: A Case Study of a Traditional Social Activity. Ko-Hsun Huang and Yi-Shin Deng, 2008. The International Journal of Design

Health, Wellbeing & Emotion



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DPI for Children

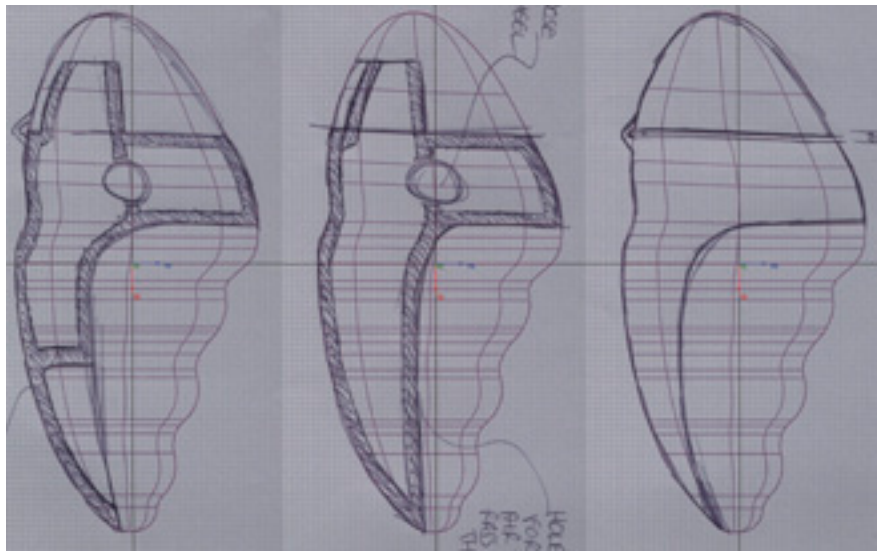
An air propelled dry-powder inhaler (DPI) for children

Minor Project

An inhaler designed in response to an RSA brief called Double Duty Devices. Research shows that there a variety of ways in which waste is produced during the lifecycle of medical inhalers. For instance, up to 80% of the medication they contain is wasted due to their incorrect use. And when inhalers are finished with, the majority of them end up in landfill even though they are made from recyclable materials.

This inhaler, for use by Asthmatic children, was designed to tackle both of these issues.
Inhalers normally use a pressurised propellant to deliver the medication but this design uses air pressure, generated by the user as they squeeze the flexible inhaler body, to do the job. Squeezing the inhaler body drives air through a valve, picks up the correct dosage of powder while making an audible clicking sound that cues the user to inhale. This help to the user, to inhale at the right point in the process, wastes much less of their medication.

The inhaler body & internal parts would be manufactured from polypropylene (PP) so are fully recyclable, once cleaned & sanitised. The inhaler needs no separate propellant. It is driven by air, CFC and HFA propellants used by existing inhaler designs.



Digital Book

A community and social care device

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Minor Project

Designed as a response to research into the ageing population, community and social media, Digital Book helps and encourages the elderly to stay connected to their friends, family and community whilst also storing valuable memories which they can then share.

The intuitive interface is simple and enjoyable to use, creating an emotional link between the user and what the product provides. Through email, and social media discussion and news, DIGITAL BOOK helps to combat loneliness – a major cause of depression. The product would be offered through local health service provision and supported via specially commissioned websites and remote IT services.

DIGITAL BOOK can also function as simple photo frame to display static or slideshow images. The materials and colour are chosen to make the person feel comfortable using the product.

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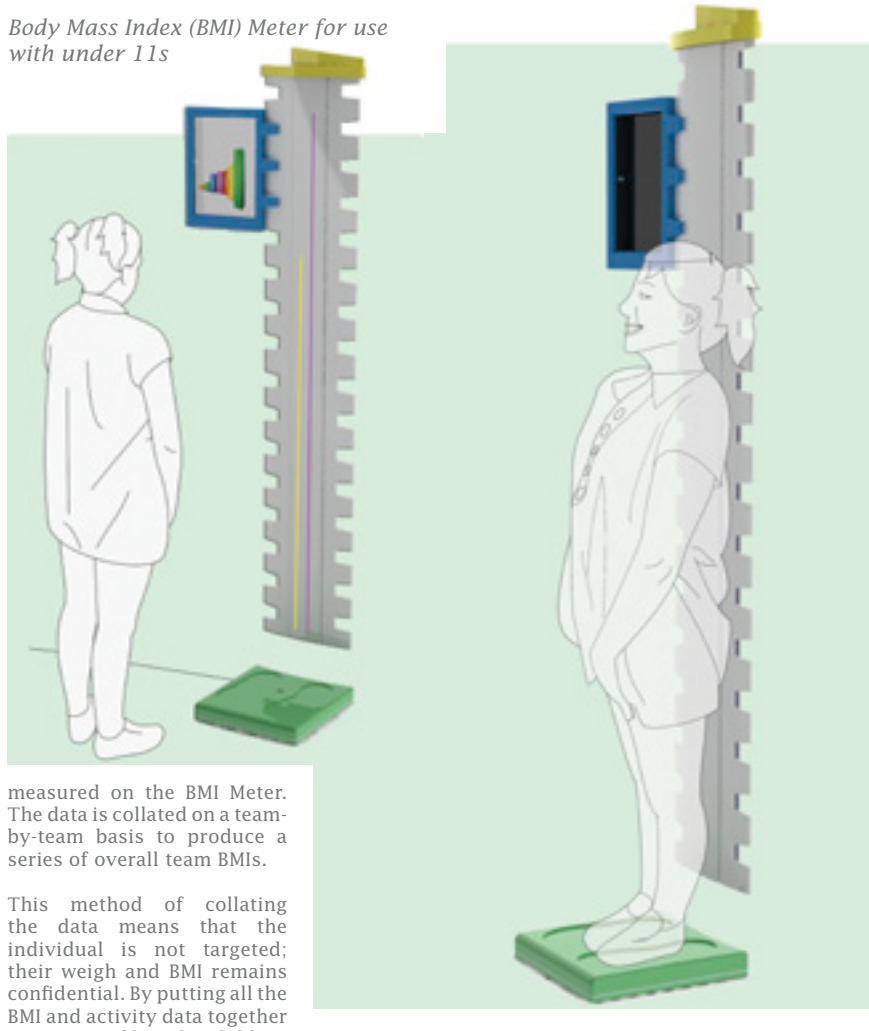
BMI Meter

Body Mass Index (BMI) Meter for use with under 11s



Minor Project

The National Child Development Program (NCDP) run a scheme to measure the weight and height of 4 -11 year old children as part of studying and managing obesity in this group. The government devised the NCDP to get at the statistics of obesity after the increase in this over the last 15 years.

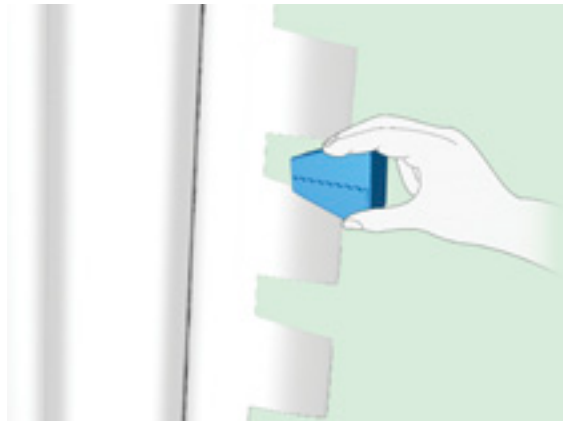
The data from this program is only used for government studies so it is not immediately useful to those who provide it – the children! Plus12% of children are clinically overweight, opt out of taking part and many of them find talking about weight issues a problem.

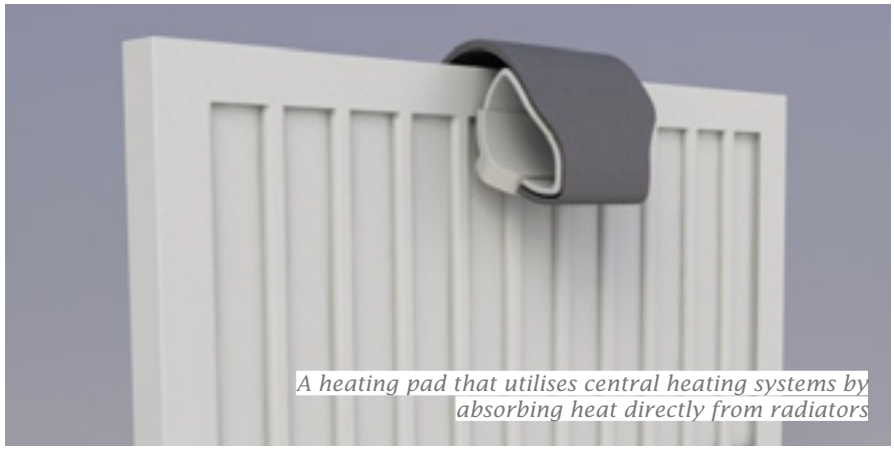
The BMI Meter project will collect the information in a more light-hearted, immediately useful and constructive way. It will teach children about weight issues in a practical manner and will engage them in collecting and responding to the data on their BMIs.

Each child in the class has a pedometer, worn every day and colour coded to their team. There are four teams; yellow, green, blue and red. The pedometer records the child's physical activity (by distance covered). This is collected when the child is periodically weighed and measured on the BMI Meter. The data is collated on a team-by-team basis to produce a series of overall team BMIs.

This method of collating the data means that the individual is not targeted; their weigh and BMI remains confidential. By putting all the BMI and activity data together in team profiles, the children are encouraged to compete to improve the BMI figure by dint of improving their exercise regimen. Improvements and success can be rewarded in a variety of ways.

The information gathered by the BMI Meter is still of use in the long term for the government run NCDP scheme but becomes is of immediate benefit to the subjects of the study. The Meter itself will improve participation of those children who were reluctant to participate in the study in the first place.





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Major Project

Calor was designed to ease the symptoms of rheumatoid arthritis by providing users with thermal comfort for their hands and other affected parts of the body. The product is intended to be carried between rooms, allowing users who are conscious of their utility bill to quickly access therapeutic warmth without having to heat every room. Calor supports users who are more inclined to heat rooms in their homes that aren't used regularly in order to ease their symptoms. Calor is stored, hanging, on the front of a radiator and utilises thermal materials (metals and fabrics) to quickly absorb and retain heat. The heat is held within the product for a period of time, providing the user with relief either by inserting their hands through the sleeves, or if they wish to warm any other part of their body, vents can be opened to release heat.

Mea

Personalised ceramics

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Major Project

Mass manufacturing does not allow for variation in production in the same way that bespoke craft approaches can. This often affects the perceived nature of the goods produced, reducing their personal value and emotional resonance, encouraging disconnects such as the 'throwaway' society. Personal products are less likely to be discarded, and usually have a longer life due to their owner's connection to the product. Such emotional bonds are often due to emotional associations, usually from a memory of a place, person or event.

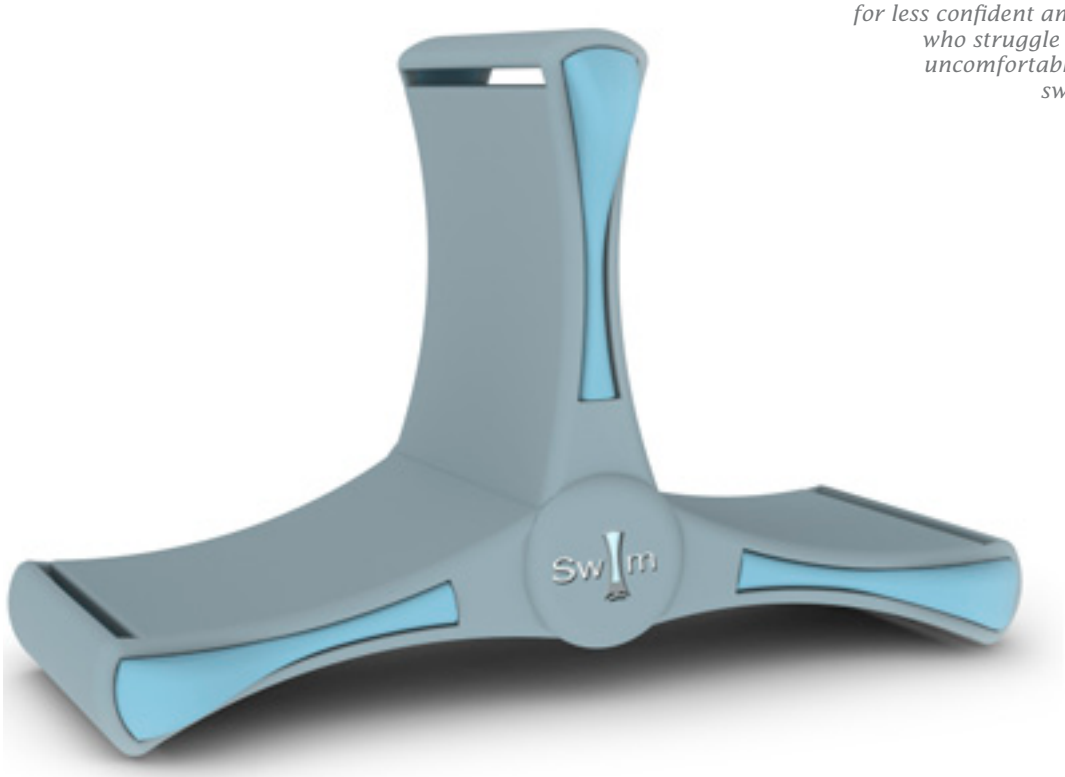
This understanding and the potential of additive manufacturing were key insights that informed the Mea project's conception.

Mea is created around an existing memory. It seeks to build a strong emotional connection between the owner and the object; this is achieved by using information from a memory, and the user's direct input to physically alter an object's form, which is manufactured through the use of ceramic additive manufacturing. The end result is a range of ceramic tableware, each item of which is unique and personal to its owner.

As well as its original overall form, the artefact's surface texture is codified to contain the location, time, date and a personal message to be explored by and explained as the owner chooses.

Amputee Swimming Aid

A flotation system, primarily for less confident amputees, who struggle and are uncomfortable whilst swimming



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Major Project

It is recognised that swimming is an important source of all round exercise & self esteem particularly for amputees who find it difficult to partake of other physical activities without adverse side effects.

This product design is a response to the need that amputees have for swimming aids. Key issues for amputees whilst swimming are: lack of buoyancy because of limb loss, difficulty in staying horizontal and general lack of independence in the water. There can often be self-consciousness, a lack of confidence & a desire to avoid undignified situations (like use of the swimming hoist) all which can deter the amputee from the notion of swimming.

The design is a flotation system, primarily for less confident amputees, who struggle and are uncomfortable whilst swimming. But the system can be used progressively and by more confident amputees: it can be configured & used according to individual abilities & confidence and then adapted as these improve. And because it is also for use by able bodied, tyro swimmers it avoids categorisation as a minority product.

The device, made from ethylene vinyl acetate (EVA) foam, can be used in up to six different configurations and in a variety of ways by the swimmer (from strap-on flotation to hand-held float). Individual arms, each with a removable buoyant core, attach to a central boss. The arms can be arranged to provide appropriate support according to the user's needs whilst the buoyancy of the device can be tailored by deployment of the cores. So, for the least confident & able swimmer, the device can be set up to provide high levels of support & buoyancy. As their skill & confidence grow, the device can be re-set so that they are able to work harder at their swimming and benefit more by this.

Over time the user can set a series of personal goals where, as their water skills improve, they rely less & less on the flotation system.Their physicalhealth benefits & their sense of achievement and self-esteem grow as well.

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Salbutamol Inhaler

Reducing medication wastage often left in the bottom of used existing pressurised canisters

Minor Project

5.2 million People in the UK are receiving treatment for asthma. Many waste medication by not shaking it up before use and not inhaling at the correct time. Waste is also generated due to users disposing of their inhalers incorrectly. This is compounded by chemists supplying the user with both a new canister and inhaler, giving the user no incentive to keep the inhaler.

Medication is often wasted in the bottom of used canisters; the existing products rely on a pressurised canister to propel medication through the inhaler. When the pressure becomes insufficient, any medication left in the canister is wasted.

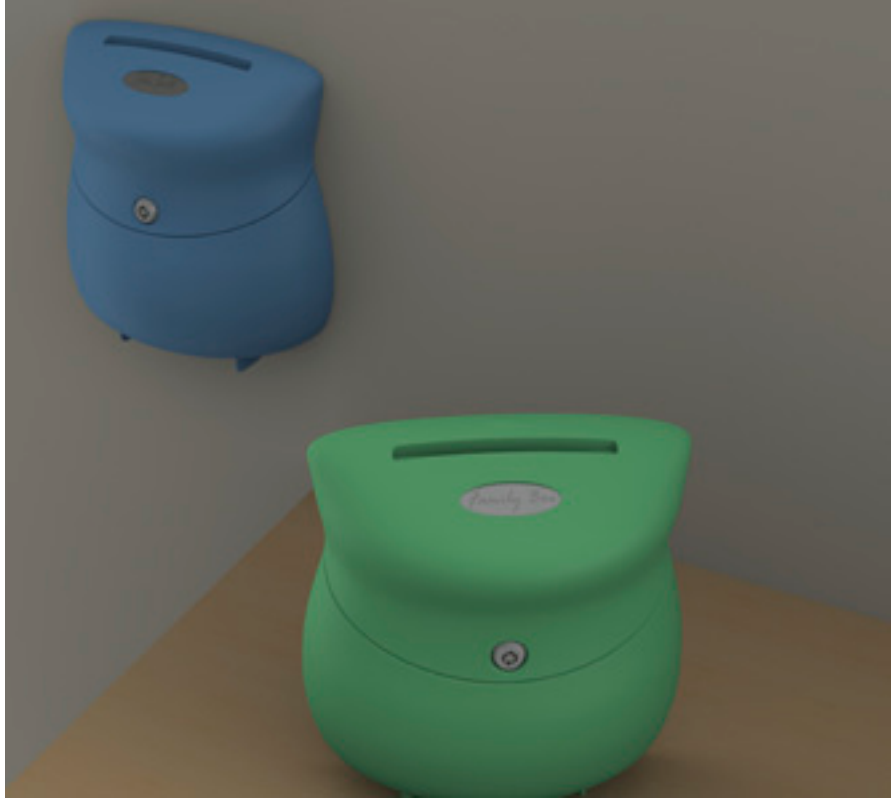
This Ceramic inhaler will be purchased by the user and kept permanently – the higher quality finish of the product will provide users with the incentive to do this.

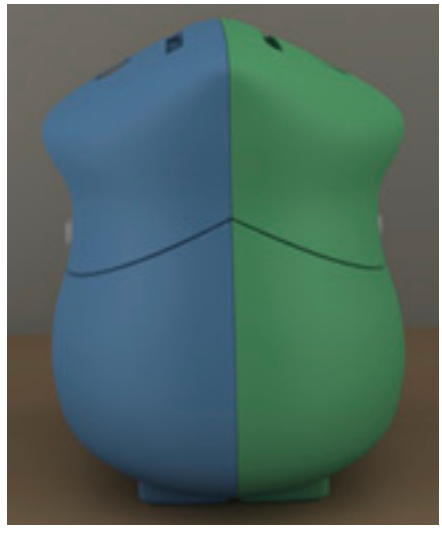
The inhaler uses a small fan to agitate the medication, keeping the medication suspended in air, for the user to inhale without needing the container to be pressurised.

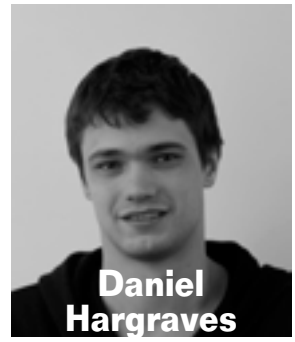
The user pulls a cord on the reverse of the product, allowing a coil spring to be wound and released, providing enough energy to agitate the medication inside the product; the user can then inhale the medication.

Emotional Drop-Box

An Emotional Drop-Box to help stop conflict between families and friends while one of their number is dying







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Major Project

When someone learns that they may soon die, it can be hard for them to deal with their own feelings and emotions, let alone those of their family and friends too. When these feelings come too quickly into the open, they can generate conflict between loved ones at a time when this is the last thing intended. The people involved need time to consider and process their emotions before considering those of the others involved. This will reduce the opportunity for conflict between them.

The Emotional Drop-Box is a place where personal notes and messages between the principal and their family and friends are posted. The time taken to set them down gives the writer pause for reflection and consideration before they, in turn, read their messages from loved ones. The principal can reply to messages in their own time and place them in another drop-box; enabling long exchanges between principal and their loved ones and helping to keep open conflict at bay.

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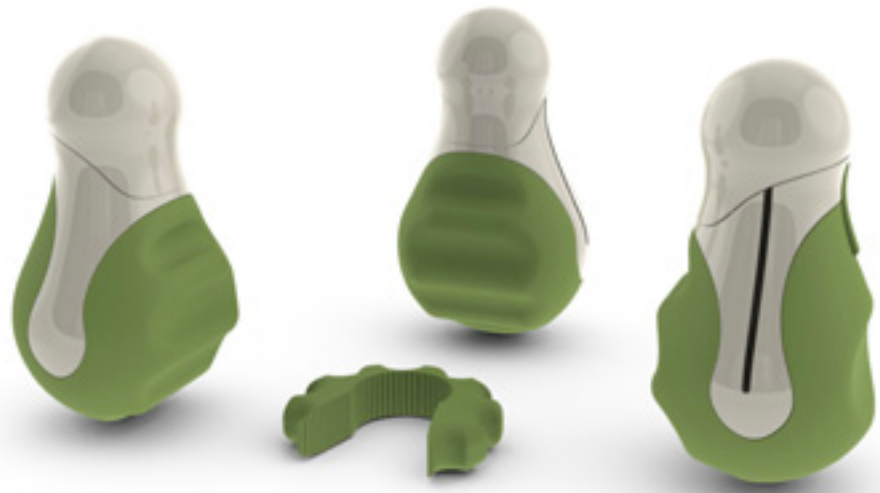
Arti

Hand Arthritis Home Aid



Major Project

In the UK osteoarthritis affects 8.5 million people and over 350,000 people have rheumatoid arthritis. These conditions are characterized by stiffness and limited movement in the joints which produces pain. The design research focused on hands which are most obviously affected by arthritic conditions in terms of the difficulties and pain that the sufferers endure to do even the simplest tasks. The symptoms are often alleviated when sufferers exercise their hands, wrists and fingers. The design work focused on products to encourage and aid the sufferers with hand exercises and with tasks done by hand. Although there are many individual products on the market that help arthritis sufferers with a particular task or with exercises, there are few which aid with a range of tasks and help with exercise routines.

The design, with its mix of hard and malleable materials, encourages the user to squeeze it with the either their entire hand or with individual fingers to keep joints mobile, reduce pain and stiffness. The integral counter records the amount of exercise that the user does to encourage them to do more and to keep it up. The

key slot will hold a household key and help the user turn it more easily. The hand exerciser also contains a manipulator tool to help with a range of gripping and turning tasks around the home.

Patient Compliance

A device that helps diabetics to comply with their medication more easily

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L3 Major Project

As a consequence of the UK's increasing obesity levels, the amount of people that are contracting Type-Two diabetes is growing exponentially. Testing blood sugar levels is an uncomfortable process for diabetics and has to be undertaken several times a day. Likewise, sufferers who have to inject insulin must endure regular discomfort.

Compared to current insulin-administering equipment, this Ditton's innovative device reduces the need for patient compliance, with them only needing to replace the vial of insulin weekly, change the clips at day and night-time and regularly connecting the unit to a PC. The device consists of three main elements; the main unit which houses a vial of insulin, the day clip and the night clip. The clips are worn on clothing, somewhere that is tight and in constant contact with the skin. This enables them to simultaneously record blood sugar levels and to dispense insulin medication through the use of a patch. The clips have an integral memory capacity from which information is uploaded to the main unit.

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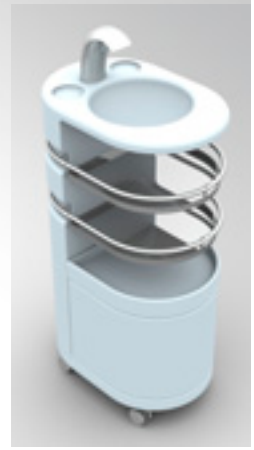
Font

A portable hand washing unit for hospitals

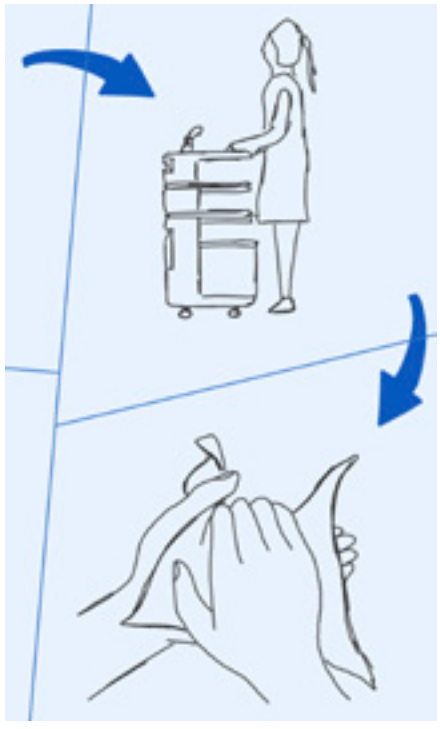


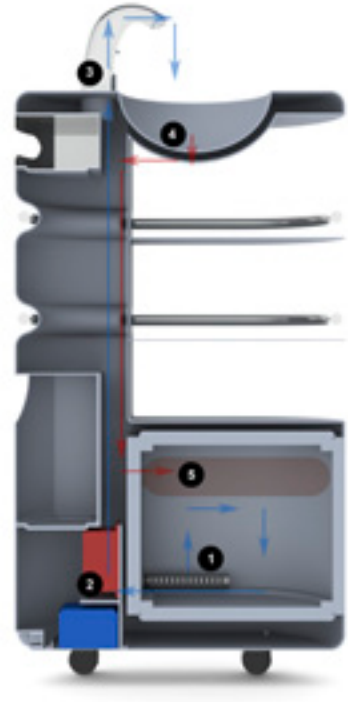
Major Project

In 2009, almost 600 people died in the UK from developing MRSA, whilst over 2000 died as a result of developing C. Difficile. The use of alcohol gel in hospitals to control MRSA is now widespread, but this strategy is unable to kill the C. Difficile bacteria, which can only be controlled by staff and visitors washing their hands with antibacterial soap and water.

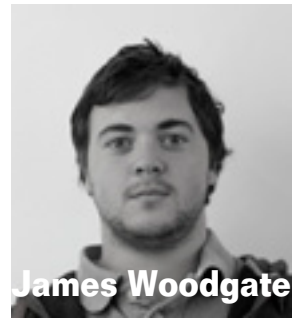
Ellison's response to this endemic threat was to map the spread of C. Difficile in hospitals and through subsequent analysis, conceived of the need for a portable hand-washing unit for nurses who, as a result of their ward rounds and other tasks, were one of the largest transmitters of associated infections in hospitals.

In practice, Ellison's design would accompany nurses in their daily routines. Designed to help rather than hinder nurses' activities, the product incorporates storage shelving, for transporting nurses' equipment on their rounds, saving time and energy through reducing the amount of extra journeys needed.





Bluetooth Hearing Aid



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The product allows the user to have telephone conversations using the earpiece. It works with landlines and mobile phones by integrating Bluetooth technology with a normal hearing aid

Minor Project

Many old people have trouble communicating with other people due to poor hearing; this is amplified when using a telephone, meaning many elderly people feel cut off from friends and family.

The hearing aid has two elements; an earpiece and a hub

The product allows the user to have telephone conversations using the earpiece. It works with landlines and mobile phones by integrating Bluetooth technology with a normal hearing aid.

The hub allows the person to keep track of phone calls; phone numbers, missed calls, who they have spoken to recently, etc.

Uniquely the hub monitors behaviour changes in call patterns to see if the person is in good health.

A large button on the hearing aid provides the users with an emergency contact system.

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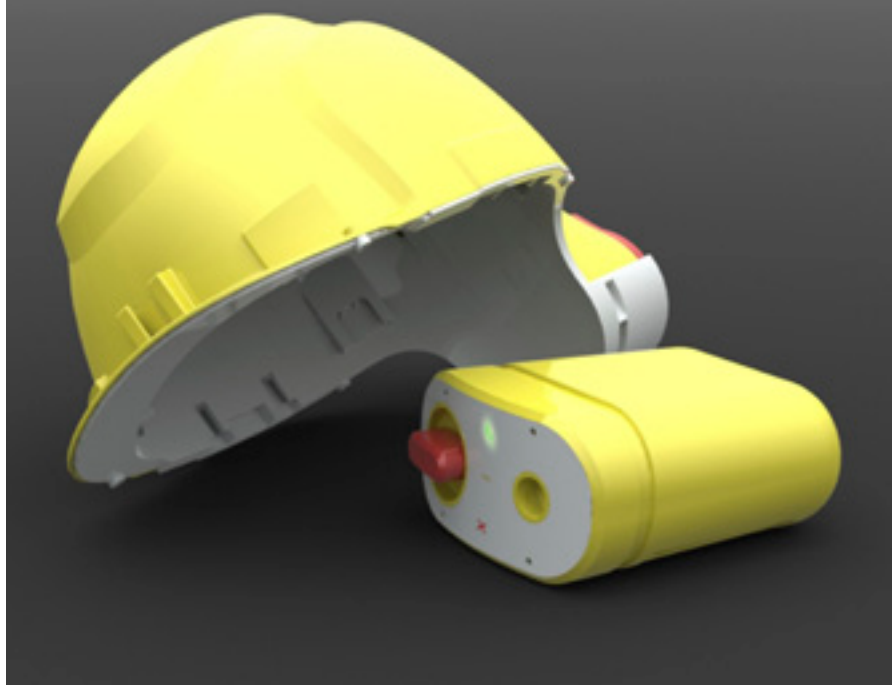
Deep Miners Helmet

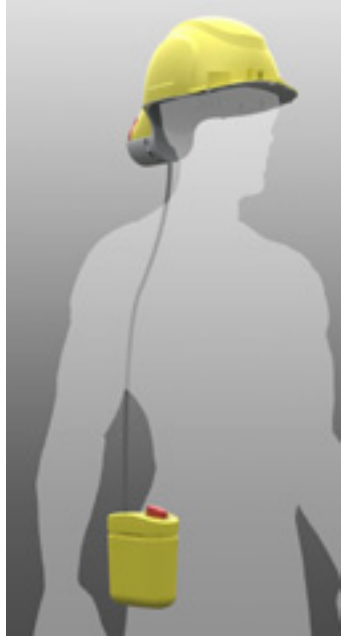
A remedy for heat illness amongst deep miners



L3 Major Project

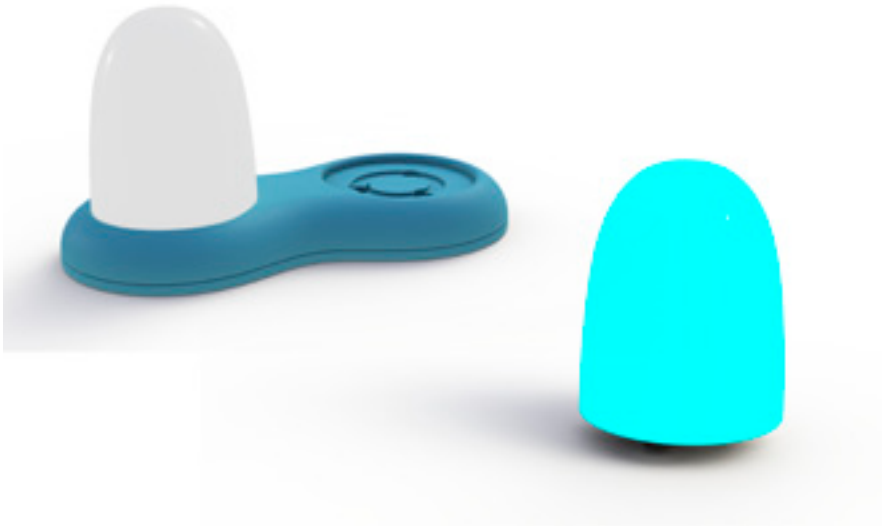
Workers in deep mines can be at risk of heatstroke because of the particular conditions in that environment. Deep mine temperatures are typically 30 degrees Celsius and over, with 90-100% humidity. Low air movement leaves the vapour in a saturated layer over the skin. This can lead to problems of over-heating, dehydration, loss of concentration, fainting and fatally, heatstroke.

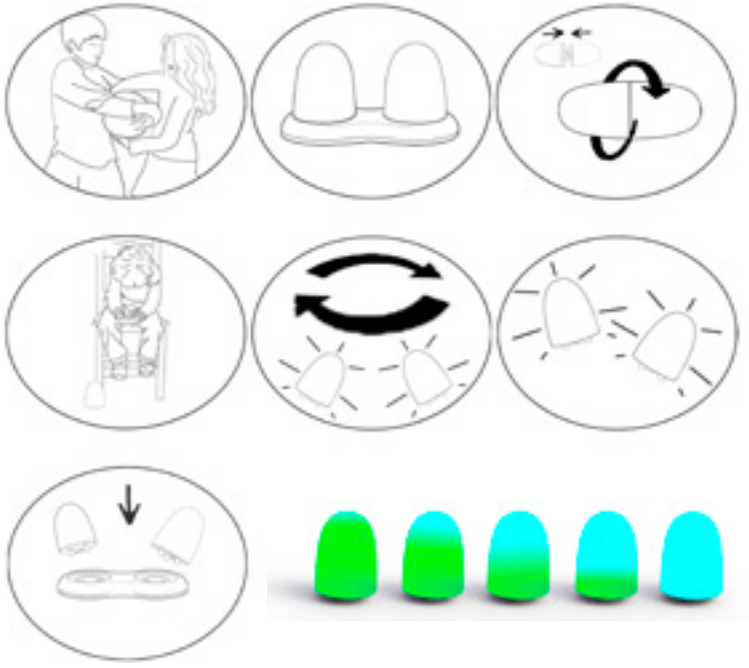
The remedy for heat illness is integrated into an existing piece of miner's kit: - the helmet. An electric fan, placed at the rear of the helmet and powered from a battery pack carried at the miners' waist, blows air over and around the miner's head to disperse that saturated layer, keep the wearer cool and prevent heat illness. The fan has two settings: a slow one for continuous use and a faster one, set manually, for increased airflow. Use of the faster setting triggers a signal to other workers and managers that the person may be feeing unwell. The air passes through a filter to clean it on the way to the fan. The filter, made from PU is oil impregnated which increases its filtering capacity and renders it easier to clean.

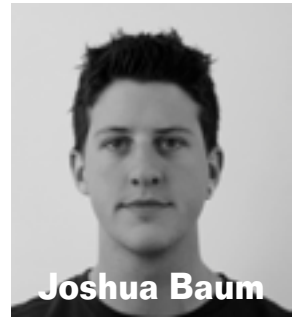


Conflict Resolution

A 'sharing' toy for nursery school children







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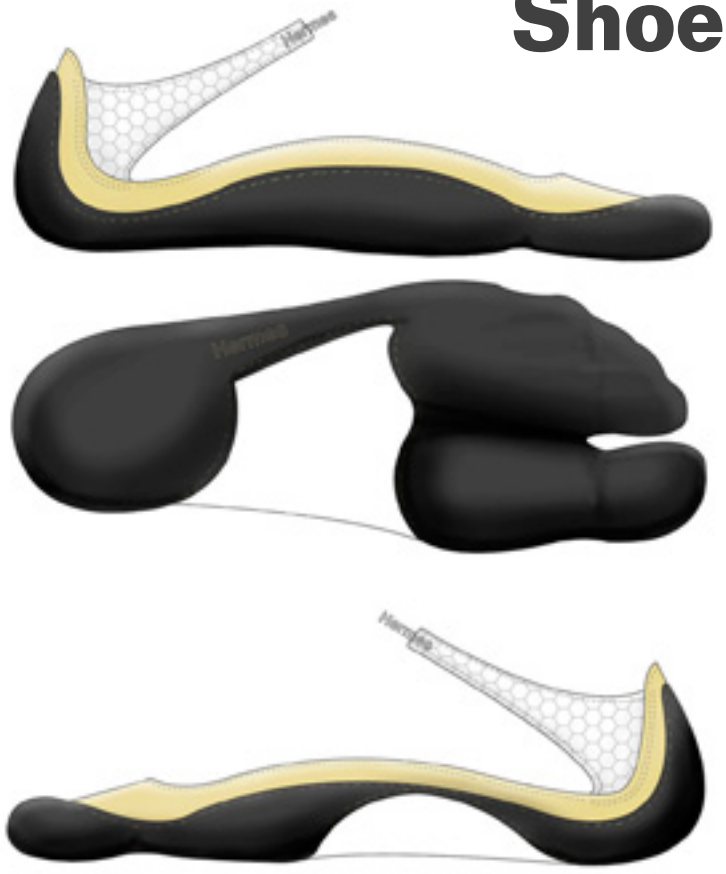
Minor Project

Nursery-aged children often come into conflict with each other over the sharing of toys. Because staff will not always be available to mediate between the children, Baum's product solution seeks to provide children with a designated time to enjoy the toy which all can understand, keeping them happy and calm.

Children would need time to learn how the toys work and so it was necessary to develop an accessible way of representing the transition of time that was easy to teach to two-four-year-olds. Comprehension of this concept is particularly important as the time slot ends and the transition stage is reached. The principle of visualising time was investigated through use of sand timers and then light was introduced to replace sand as 'the measure of time' (soft lighting has been shown to aid in conflict resolution). Each toy begins fully-lit and progressively containing less and less light (in diffused horizontal bands) until 'empty' and the child's turn is over.

Barefooted Running Shoe



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Major Project

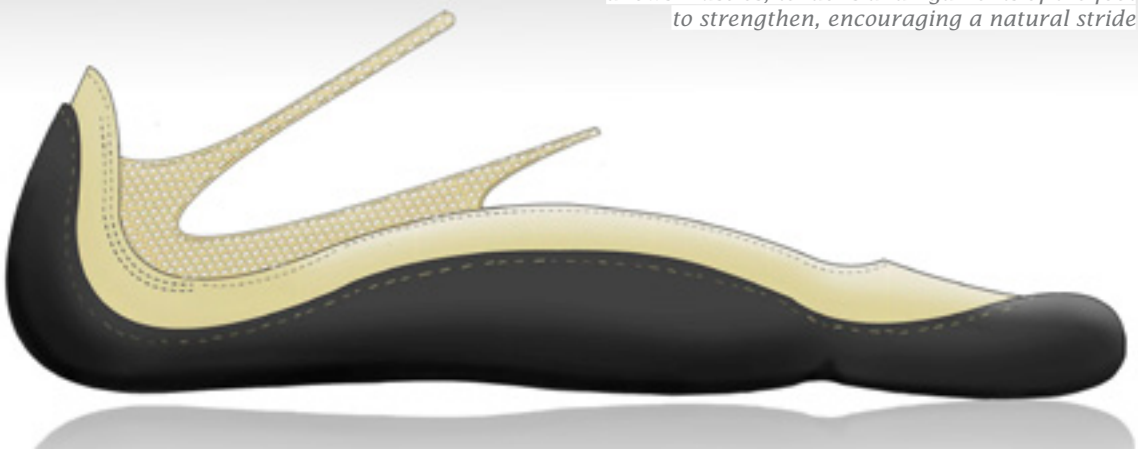
There are many problems with the functionality of running shoes, the amount of injuries sustained due to running trainers which force users to heel strike first, rather than a toe strike – a human's natural running motion, which causes minimum to no impact.

By creating a running shoe capable of emulating barefooted running but able to give the user sufficient protection; injuries sustained by runners and athletes will be dramatically reduced. The product allows a more natural gait which allows muscles, tendons and ligaments of the foot to strengthen, encouraging a natural stride as users revert back to striking their toe first with minimal collision, as opposed to the high impact of striking the heel first.

The design will lead to improvements in balance; barefoot running stimulates the smaller muscles responsible for balance and coordination in the lower half of the body. Going barefoot helps you stay grounded and connected to the environment.

The super thin puncture resistant sole provides protection from the modern day urban environment.

The product allows a more natural gait which allows muscles, tendons and ligaments of the foot to strengthen, encouraging a natural stride



Linea

A family communication service for sharing photographs and events

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Major Project

The product was designed in response to the communication problems faced by elderly people as their social networks began to shrink and family members move away.

The product uses photographs as the media to appeal to users across the generations.

The system is made up of a number of products and applications that are aimed at different generations in a family.

The telephone unit which has a removable screen for browsing photographs is primarily aimed at ageing family members, whilst the smart-phone application is aimed at teens and young adults.

The products are registered as a 'family' of devices and share photographs and events (past and upcoming) to inspire a sense of collective history and belonging whilst also encouraging communication and reminiscence.

Linea creates a connection between the user and their public and personal life: both remembered and current, in a way that parallels the nurturing of human companionship.

The products are registered as a 'family' of devices, that inspire a sense of collective history and belonging whilst also encouraging communication and reminiscence

HCAI

Hand gel dispenser

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Major Project

Patients with Health Care Associated Infections (HCAIs) stay in hospital two and a half times longer than those without. They need 365,000 more bed days to care for them at an estimated annual cost of £1billion. The European Centre for Disease Control found that 30% of HCAIs are preventable; a potential saving of £300million.

There are five ways in which HCAIs are spread: by air, by patients, on medical equipment, by healthcare workers, on common touch sites.

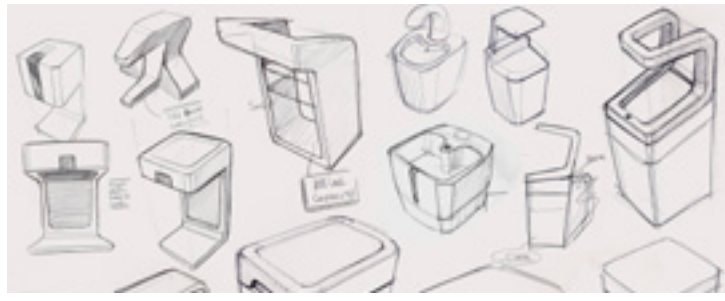
Hands are biggest source of transferred infections. For example: indwelling devices (those planted in the body) such as catheters and cannulas are a major route for infection. They become contaminated by handling, when taken from their sterile packaging before their insertion into the patient. This suggests that the hands are not as clean as they ought to be. Better hand hygiene would close down of this infection pathway. But, although hand hygiene is simple and effective with far reaching benefits, the current guidelines for it are not being followed:

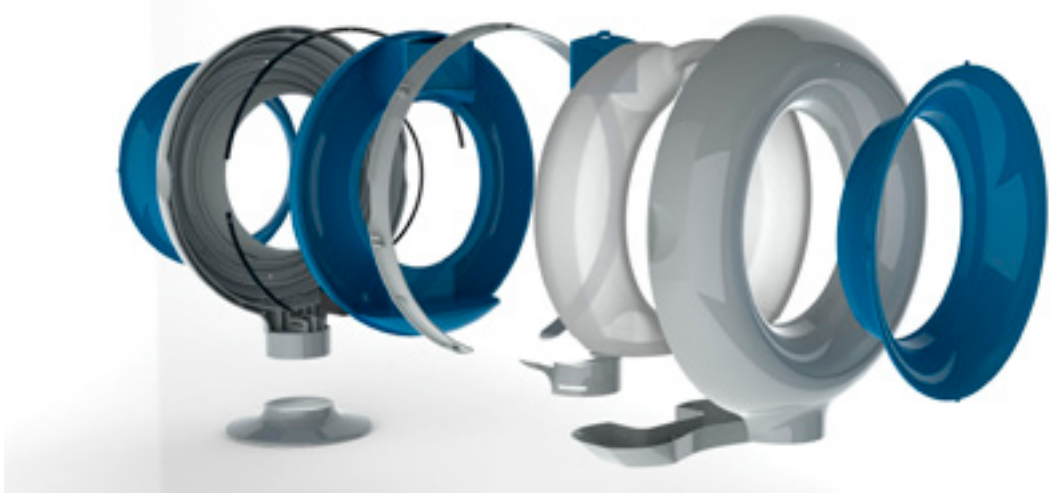
- People are avoiding it because the

soap or solution is harsh on the skin.
- It is inconvenient when hand washing facilities are not at care points.
- Through negligence and absentmindedness because routine care practices do not trigger the need to wash hands.

The product comes in two parts: the torus shaped dispenser that combines a RFID reader and the RFID tag coded to & carried by the healthcare worker. In the case of nurses it would be integrated into a nurse's fob watch. The Gel Dispenser is placed at points of patient contact: at the end or side of a bed. When a health care worker goes to the patient the Dispenser recognises them by their RFID tag and sends them an audible reminder to clean their hands. The worker should place their hands through the centre of the dispenser which will meter out the sterilising gel. The Dispenser will record whether or not they did this.

The information about each worker's hand hygiene performance is collated and used to score and encourage the team performance of the staff in each ward as well as their individual performances. The team information is continually updated and can be presented on screens in the ward so that the staff and patients there can see if they are maintaining an acceptable level of hand hygiene compliance. The individual compliance data can be used by health staff supervisors to manage the individuals in the team.





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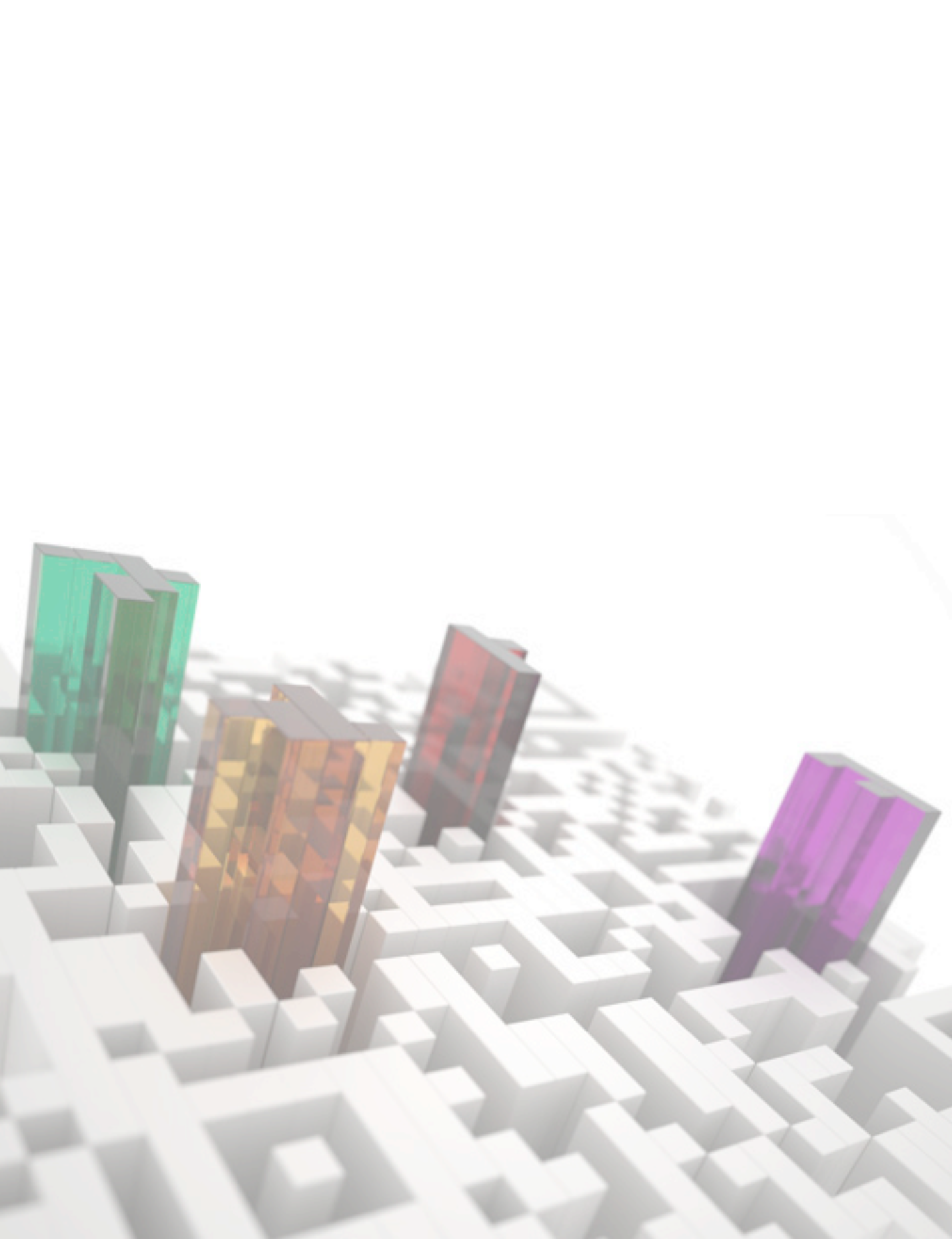
Digital Bus Timetable

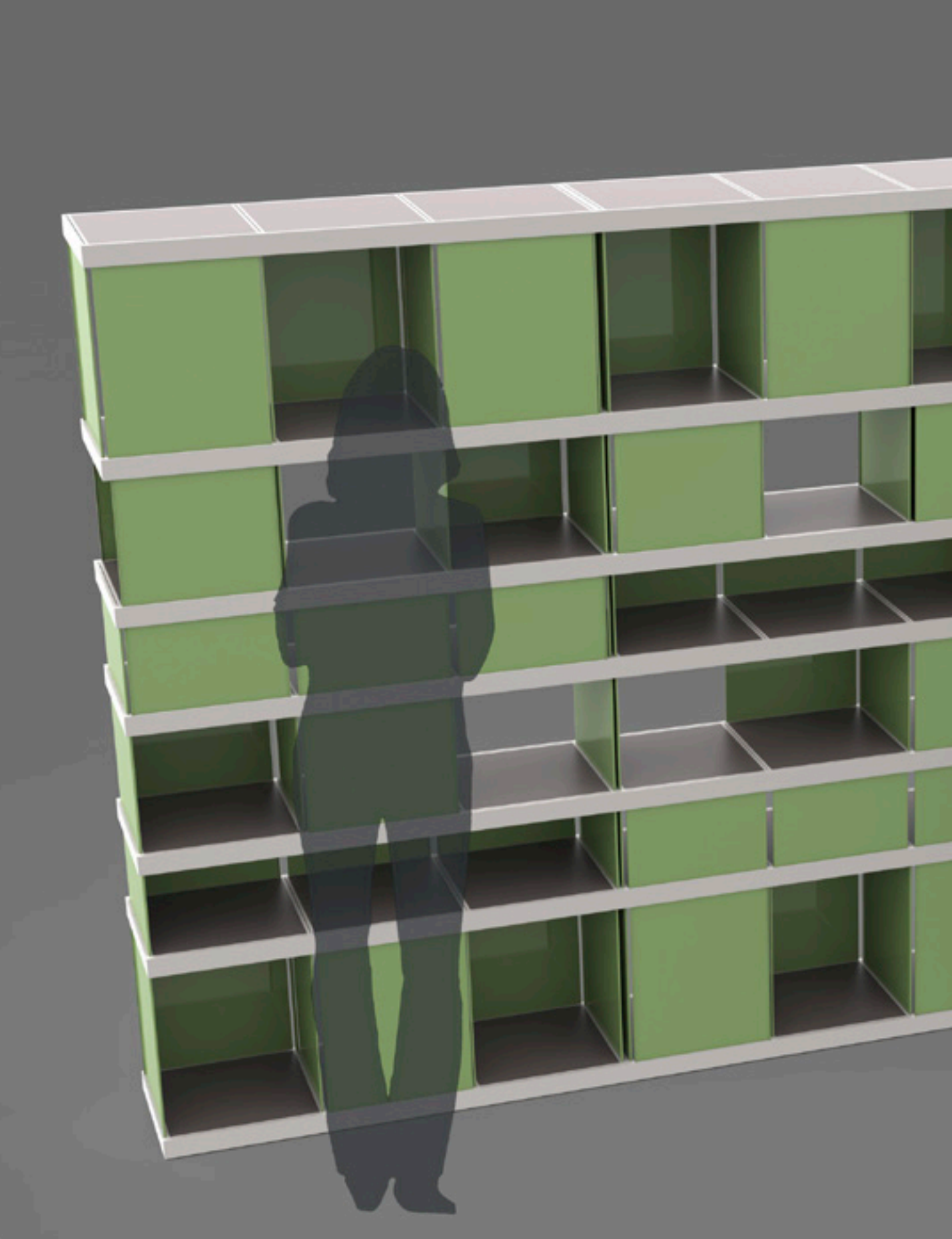
L3 Major Project

Research studies have shown that the level of public transport usage and people's opinion of the service provided can be improved simply by the provision of more information at the point of use. The Digital Bus Timetable was developed in response to these facts and the opportunities presented by recent technological developments which have made it possible to deliver real-time information more cheaply and efficiently.

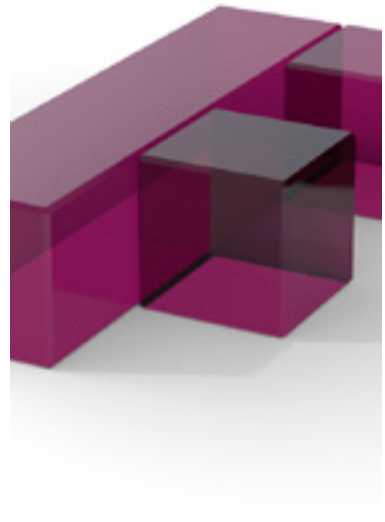
Aimed at urban centres, the Timetable offers a public service to all people. This inclusive product features a highly assessable interface that is height adjustable and which also enables blind user access.

The product is a modern replacement for printed bus timetables, using existing mobile phone networks the up-to-date information about bus times, ticket prices and bus status is provided via a display located at bus stops. Real time information about traffic conditions and bus locations are provided, along with mapping software to plan routes and explore the local environment. There is also the facility to purchase paperless tickets using an RFID travel card.



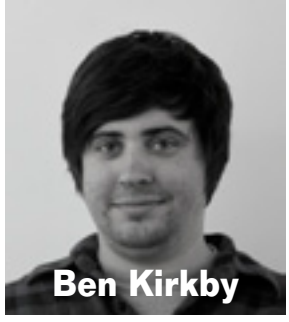


Living & Working Environments



Inclusive Kitchen

An adaptable, inclusive kitchen, avoiding the stigma that is so common in inclusive design solutions



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Major Project

The project grew from research into inclusive projects that are designed specifically for social minorities such as the elderly or for less able-bodied people. These solutions often do not appeal majority of the population which only adds to the social stigma for the less able users. The research also revealed that most kitchens cannot easily be adapted to accommodate the change, usually deterioration, in their users' physical abilities.

This kitchen counters the stigma by its design for use by the able bodied and people with lesser physical capabilities side-by-side. It includes the generously scaled sink with access for seated users, the flexible midway storage, a mid-level oven with load-bearing drop-down door and the integrated pull-out table for seated users. These make prep, cooking & cleaning in this kitchen easier for both able & less able users.

The kitchen comes in a full range of modular base & wall mounted units and appliances and is readily adaptable to accommodate changes to its users' physical, functional capabilities & requirements through out their ownership of it.

Inpress
Part of the Hammonds Group

A big Thank You to Mick Sumner from In-Press, who are producing the drawer fronts for Ben's design

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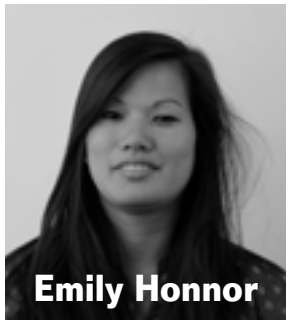

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Curvature

Library bookcase system

Major Project

Our public libraries are typically furnished with high, straight rows of book-casing that cut off sight lines and light and organise the space in a hard rectilinear grid. There is an abrupt demarcation between these strictured spaces and the more open communal areas of the library: the entryways, the sitting and service areas. If libraries are to compete for their customers against other institutional and commercial attractions their interior furnishing has a part to play to enhance the library experience.

This design for library shelving is a response the stricture of the straight and enclosing shelf systems. It innovates in a number of ways. Its curves can be arranged in a number of different ways to soften the appearance and access to the books. The shelving is see-through; there are no back panels in the construction. This allows better light and sight lines and better interaction between library users. Books are loaded and accessed from both sides of the shelves using a system of extruded ticket strip and plug-in bookends along each curved shelf edge.

Hanbo

Shelves

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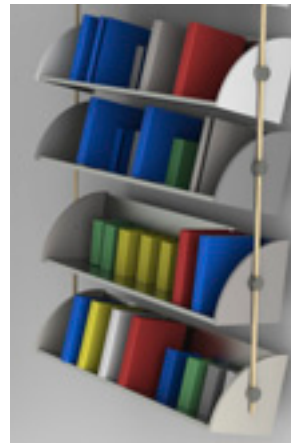
Minor Project

Careful manipulation of thin sheet steel produces shelves that are robust enough to support whole rows of books. Then suspend each shelf, one over the other, from a pair of ropes that hang from a pair of cast metal brackets on the wall. The ropes pass through fittings on the end of each shelf that allows adjustment for height and angle. The lower the shelf, the more it can be leant back, better to read the books' titles on their spines. The mix of natural rope fibre, timber & metals is technical, modern, suited for contemporary domestic & contract interiors. The way it installs is low impact, making it quick to use, easy to reposition and relocate.



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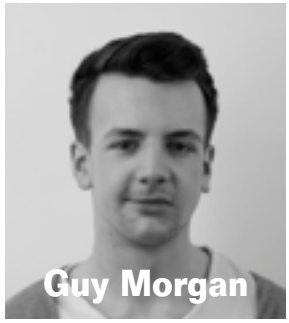

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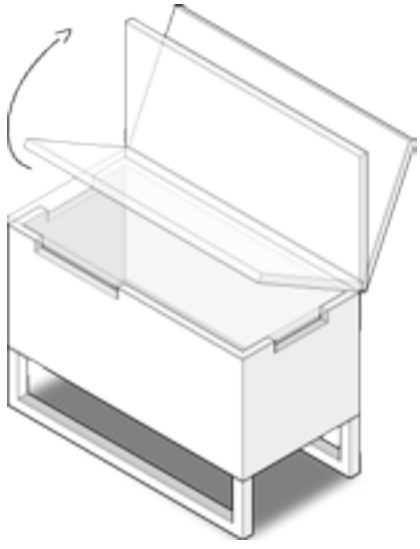
Athena

A compact kitchen & dining installation

Major Project

Designed for single or professional couples and young families; Athena is a response to the smallness of the rooms in new built homes in the UK and the unsatisfactory amount of space they provide particularly for preparing & partaking of food. Most new builds combine kitchen, dining and living into one room but furnish them separately for each activity. Their kitchens are small; designed and equipped just for food preparation, its cooking and cleaning up.

This kitchen challenges that model and shows that it is possible to combine a proper kitchen with dining furniture for these confined areas. The table and the seating for this, are integrated into the kitchen furniture and are only unpacked when needed. This means that the small space can be used in a much more flexible way than were the table and seating out permanently.



Stackable Café Chair

The brief demanded the innovative use of 'thin materials' in conjunction with a new or established manufacturing process

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Minor Project

A seating project designed in response to a brief that demanded the innovative use of 'thin materials' a material and a new or established manufacturing process.

The seat and backrest are pressed from 1.5mm sheet steel as separate components before being spot-welded together using the flanges on the undersides. To add strength, bridging plates have been added the seat and backrest.

The form of the chair underwent many iterative developments, being repeatedly tested to find the best ergonomic posture and aesthetic detail possible whilst still adhering to the restraints of the manufacturing process.

A three-part aluminium casting locates the legs and holds this sub-assembly to the seat with hidden fixings. The front edge of the seat and top edge of the backrest feature a small lip which enhance the users comfort as well as strengthening the components.

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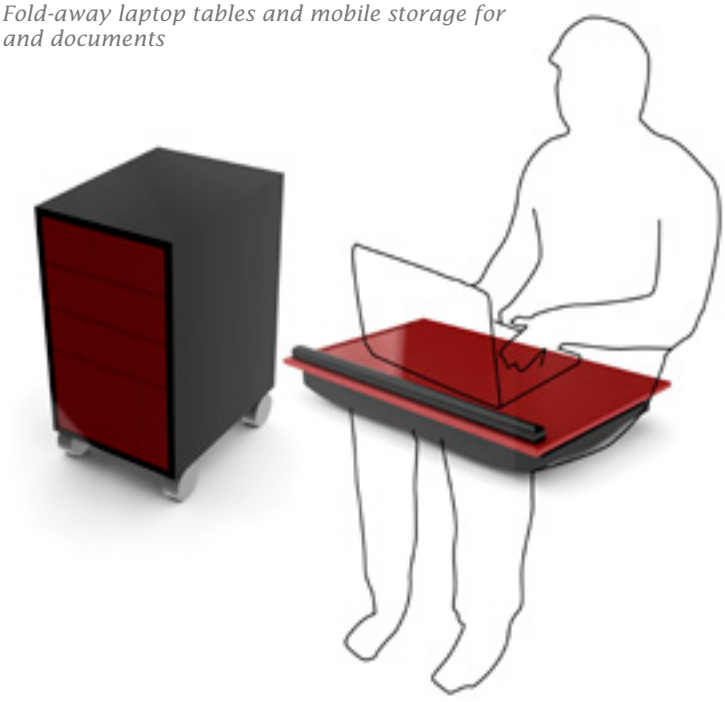
Living Room / Home Office Unit

Below: *Fold-away laptop tables and mobile storage for devices and documents*



Major Project

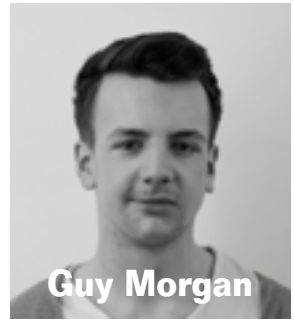
This product was designed in response to the change in new homes in the UK. As homes have become smaller, home office spaces and storage space for documents and files have been lost or combined with rooms with other functions.

For many people the office environment has moved into family spaces such as to the living room, a reduction in costs have seen people buying laptops rather than desktop PCs, as laptops do not require the same designated desk space as a desktop PC.

The product is designed for people who are living in smaller homes who use laptops within the living room.

The product offers a combination of living and office functions; fold-away laptop tables, mobile storage for devices and documents, plug sockets provide easy powering and charging of devices, fixed storage shelves for books and media such as CDs and DVDs.

Tove chair



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Minor Project

Tove was designed in response to the challenge of using thin materials in new and innovative ways. The chair uses thin plastic sheeting to form a slender seat & back-rest, which appear to float on the minimal frame. The structure is anchored by a pair of purpose designed, die-cast brackets that clamp the back-rest & seat to each other and to the tubular legs.

The product is best suited for contract interiors and modern open-plan living.

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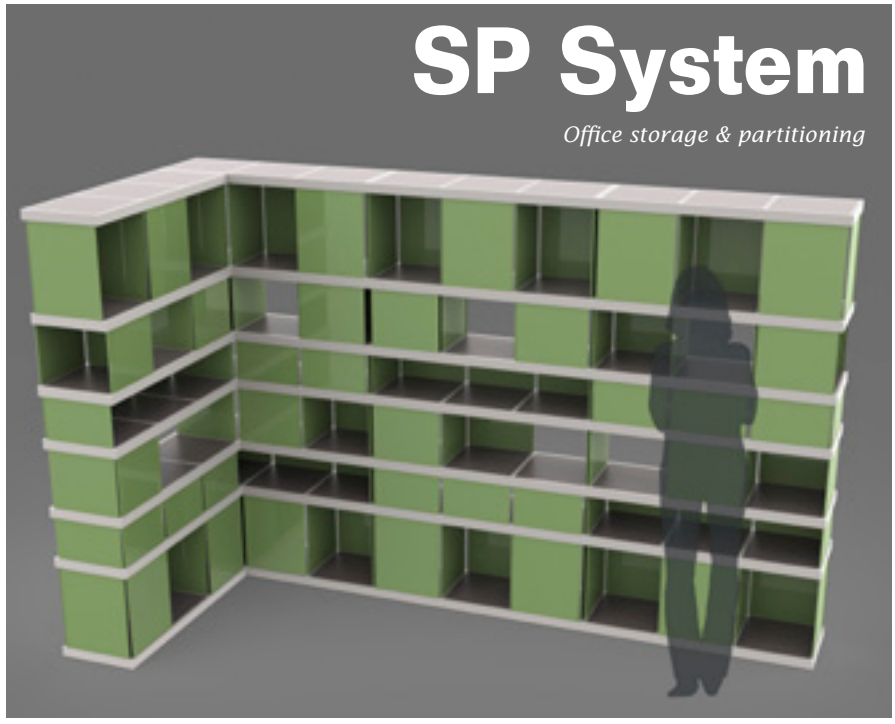
SP System

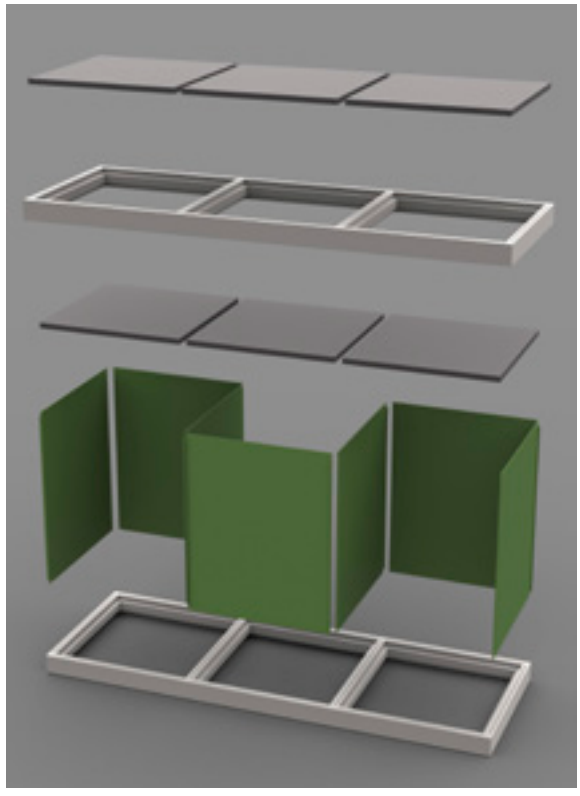
Office storage & partitioning



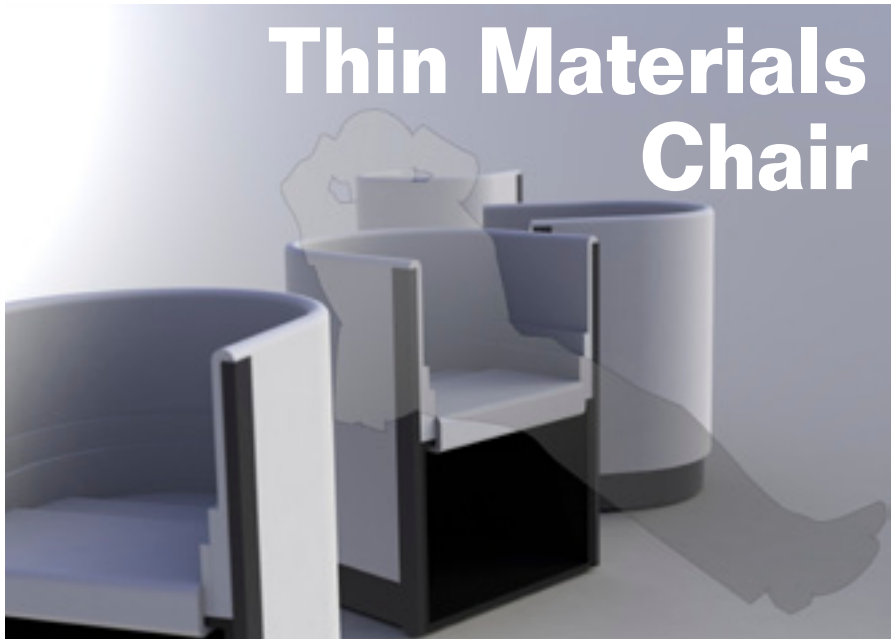
Minor Project

SP SYSTEM is a flexible, endless storage and partitioning system for commercial environments. Using three repeated elements, the system can be configured to create three different height and width options, enabling the installer to customise its function to suit the workspace and storage needs of the user. The metal panels are pinned into place and can be arranged to allow access from different sides of the partition, as well as forming a larger section by leaving a centre panel out and joining two sections together. The versatility of the product allows users to also develop the configuration of components in parallel with changing working requirements and practices – such as less paper document storage or for creating 'windows' through which to communicate with co-workers.

Designed in response to a brief that required an imaginative use of thin materials in conjunction with repeated structural element, Eillison's innovative design for manufacture specifies Reaction Injection Moulded (RIM) rigid polyurethane for the shelf frames and powder coated steel for the upright supports and the shelf.



Thin Materials Chair



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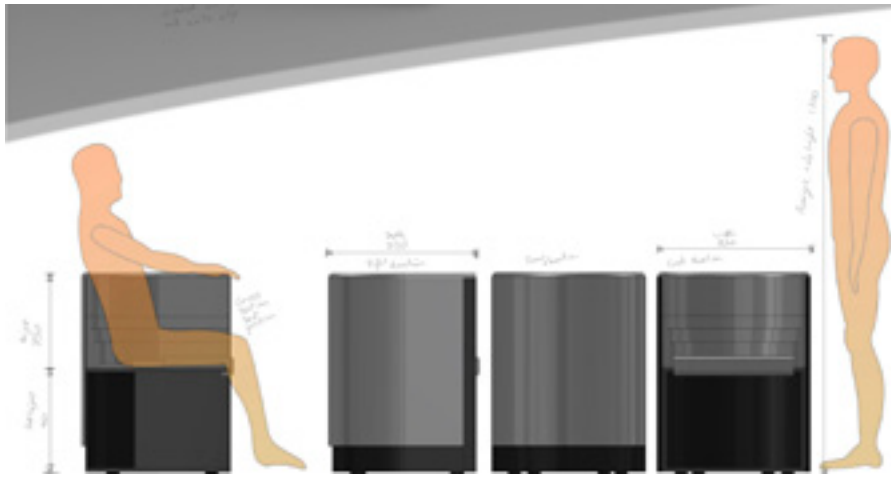
Minor Project

Low Density Polyethylene is a material that is overlooked in furniture production. Low Density Polyethylene is used in car dash boards and is a strong effective cushioning material that could provide comfortable seating.

The product was designed with comfort in mind for use in relaxing areas. The foam used is resistant to water so would be ideal for a bar or club. The material can come in almost any colour; this can be specified before manufacture and could be adapted to fit an individual's taste.

The chair uses materials that are no thicker than 15mm. This was to prove that thin materials can be structurally sound. This was a manufacturing decision as the materials would be easier to create, transport and use in the build of the chair. It also has no visible fixings and its major joining method is self adhesive sheets. This was to aid in manufacture and to reduce component cost.



Expandable Dining / Home Office Table

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Major Project

With the amount of space within the home decreasing, the demand for compact furniture is constantly increasing.

Research showed the majority of people used their dining table for home office use as well as dining purposes. Yet very few people had sufficient storage within their dining rooms.

Research also stated people wanted to entertain larger groups of friends without sacrificing the space a large table would require.

The solution is designed for those in smaller homes who want the option to expand their dining provision. The design comprises of two separate elements; a table and storage unit.

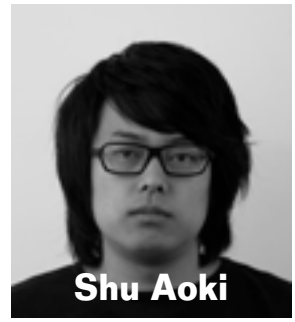
The four seat dining table combined with the storage unit creates dining space for six.

The storage unit provides drawer storage for office or dining paraphernalia. The large drawers accommodate the filing of A4 documents.

The user can choose to use both of them in the same or different environments within the home.

Load

Modular side table / storage



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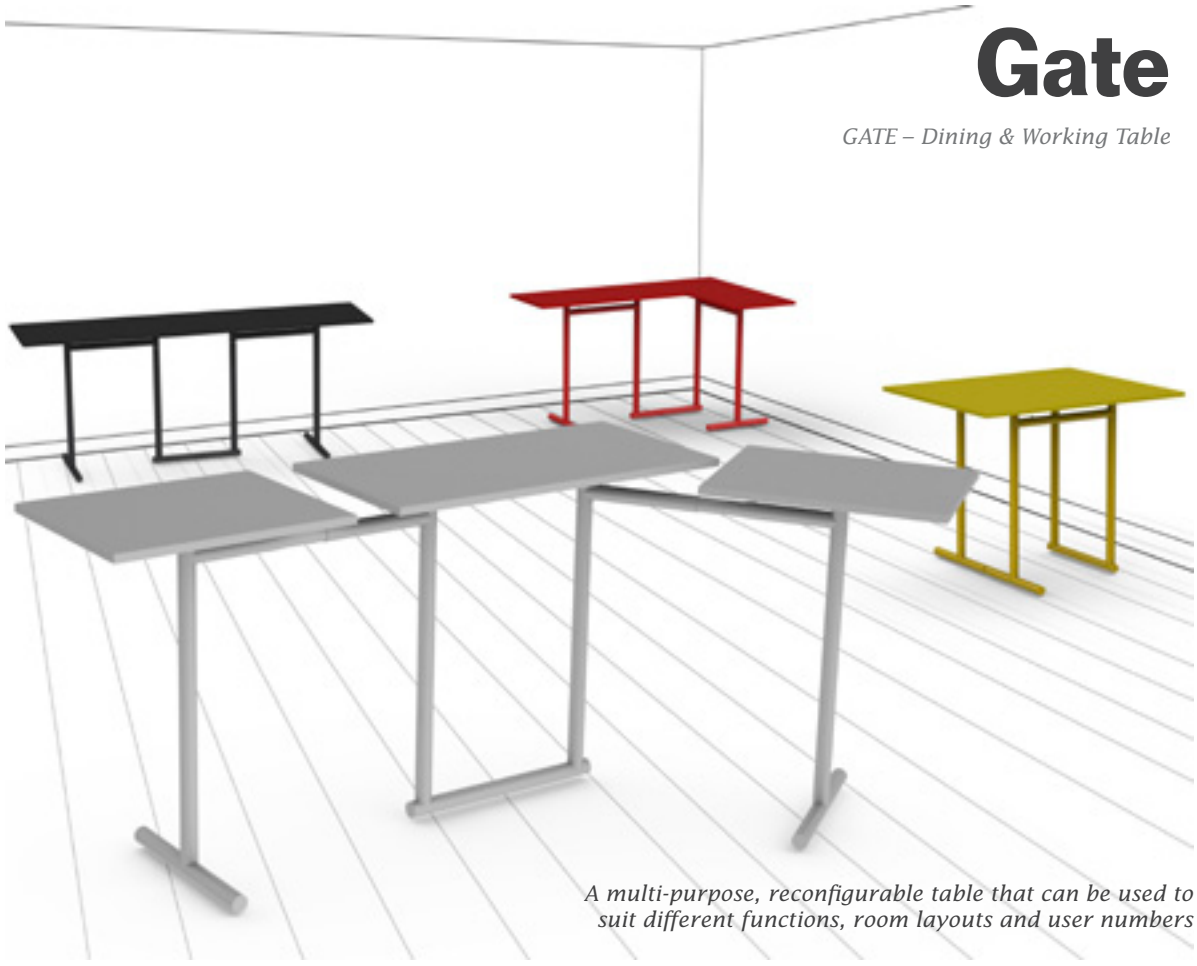
Minor Project

Conceived by Aoki in response to his research into traditional Japanese joinery methods and the designs of the Dutch designer Gerrit Rietveld, Load seeks to rationalise these seemingly simple construction methods for mass-manufacture and self-assembly.

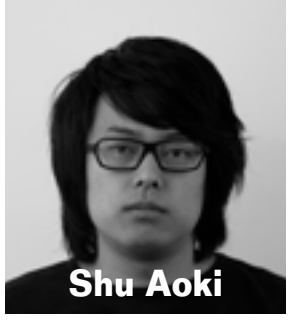
Load is stackable, flat-pack and is aimed at companies such as Habitat and IKEA. Further variations are possible using different leg lengths and box widths which are decided at purchase. A degree of variation is also possible if the customer chooses to cut the legs to lengths that suit their needs.

Gate

GATE – Dining & Working Table



A multi-purpose, reconfigurable table that can be used to suit different functions, room layouts and user numbers



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Major Project

Gate is a dining table, a work desk, or a breakfast bar and was designed in response to a Japan and UK-centred research study that analysed dining and home-working patterns within compact environments.

Aoki's research identified parallels between Japan's domestic dining culture, the localised densities of their metropolitan populations and the need for creating adaptable spaces within the UK's own urban living environments. He concluded that something akin to a breakfast bar satisfied what people did in both countries, i.e. everyday dining, formal dining, dining with guests or work in a small home. In response to this complex functional requirement, Aoki conceived of a multi-purpose, reconfigurable table that can be used on a daily basis to suit different functions, room layouts or user numbers. More configurations and broader use is made possible by combining two or more units. Gate is conceived as a response to a growing market in which people increasingly live with less space – either as a result of homeowners' increased difficulties in obtaining an up-scaling mortgage or, as is progressively more the case, where extended families are living together.




Below:

1- *Push the spring clip button and slide the side table out*
2- *Pull it out until the button pops out and locks it*
3- *Rotate the side table by 90 degrees*
4- *Push the button and push-slide the side table. The button pops up and locks the position*

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Sustainability

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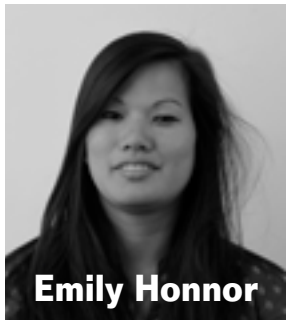

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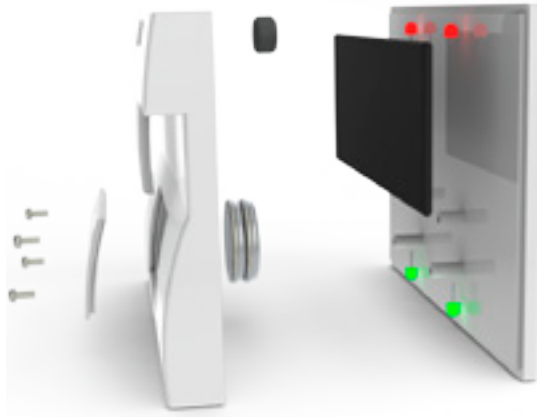
Energy Monitoring & Saving System



Major Project

In offices it is all too common for workers to leave the space they have been using with everything (lights, machines, heating, etc) switched on; not just over a break or when they have to go elsewhere in the building, but when they leave for the night as well. This negligent behaviour wastes energy, causes environmental stress & adds to business costs.

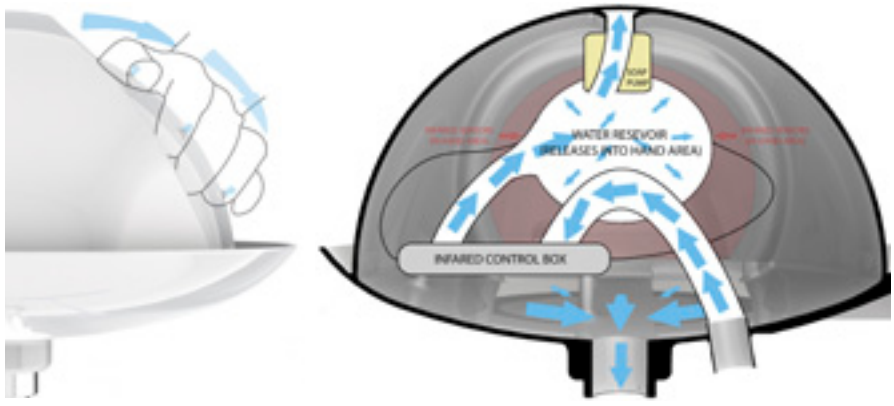
This product, installed across the office, comprises a passive monitoring & feed-back system coupled with remotely activated controls on individual electricity supplies & computer systems. Each worker wears a Radio Frequency Identifier (RFID) so the building management system, via a series of RFID monitors & power consumption meters placed through out the workplace, knows where they are, what they are doing & how much energy they are using. It also knows when they stop; leave the space & whether or not equipment, heating/air-con & lights were turned off.

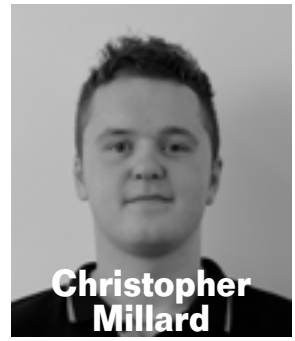
If the worker is environmentally conscientious; turns off & reduces un-necessary energy use in the place they are about to vacate, the system records & rewards this. Conversely, if the worker walks off & leaves everything running the system notes this too & will penalise this. It will also turn off idle appliances & equipment, switch computers to hibernate, etc.

Over time the system will develop a profile of each worker's energy husbandry; good & bad, and will feed this back in real time to display on each worker's RFID badge. Those who are careful about their energy use at work will get the warm glow of a job well done while those who are more profligate will be encouraged to improve their ways.

Aqua

A water-saving wash hand basin





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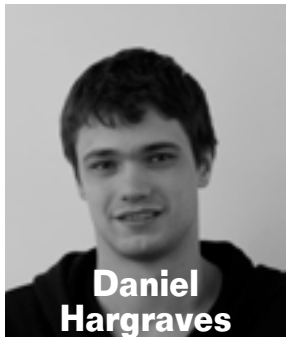
Major Project

Research into personal water usage identified opportunities for design-lead, water-saving solutions. Two thirds of the average Northern European's 150-litre daily water consumption is used on personal hygiene. A significant proportion of this is for hand washing so a design which encourages personal cleanliness whilst reducing water consumption is a good thing.

The user places their dirty hands over the depressions in the sides of Aqua's dome. In-built sensors detect the hands and turn the water on to bathe them front and back. Initially the water is mixed with a soap-sanitiser before reverting to just water for rinsing. When the hands are removed, the water is switched off.

The water turns on without direct contact which minimises cross contamination between consecutive users. The water flows only when the hands are in position for cleaning; so reduces water consumption to just what is needed. Reduced water pressure and careful direction of this onto the hands, further minimises water consumption.



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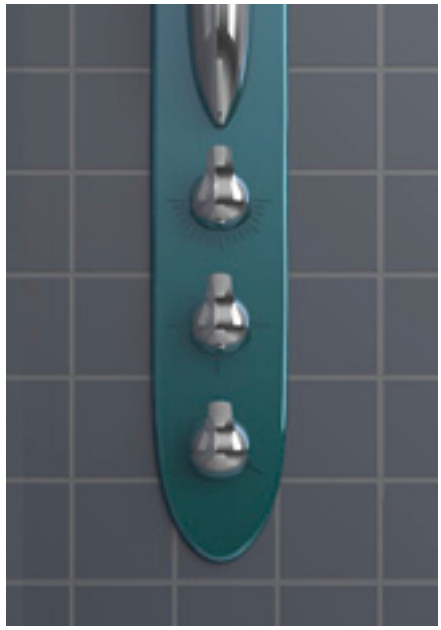
Luxury Eco Shower

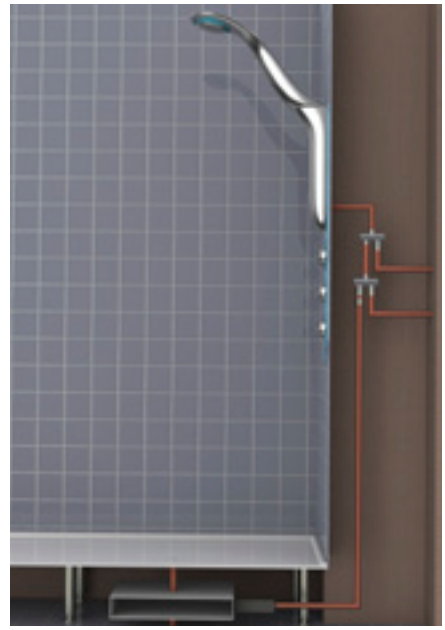
Major Project

Persistent low rainfalls deplete aquifer and reservoir water levels and put pressure on domestic consumers to use less water. Over 45% of domestic water use is for personal cleaning so showering which uses less water than bathing is good but eco showering which recycles low-grade waste water, a.k.a. grey water, is even better.

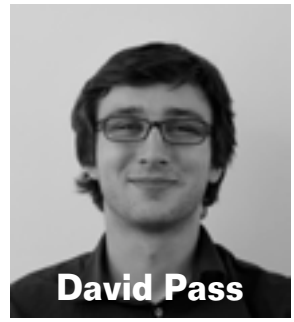
There are other eco shower designs on the market but these often give a poor washing experience so there is a gap in the market for this shower design; with its large spray head, good control interface and high-end aesthetic to give a luxury washing experience while it uses less water.

A particular innovation of this shower design is that it immediately recycles its grey water; filtering and reheating it as necessary. This conserves heat energy as well as water.





Kettle/Surface Steam Cleaner



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Minor Project

Research suggests that, on average, we use twice as much water as we need when boiling a kettle. This wastes as much energy again as we needed to boil that water.

At the same time, in the kitchen, the disposable paper towels, dish-cloths and sponges that we use to clean the kitchen surfaces can harbour as many germs as they clear away, with cleaning agents that are often harmful to the environment. Disposal of the wipes and cleansers adds to waste management concerns.
Or we could clean and disinfect the kitchen surfaces with the boiling water and steam that we have in excess.

The kettle-steam cleaning system utilises the hot water that remains in the kettle at the end of tea and coffee making to clean and sterilise kitchen surfaces. The system alleviates the need for other wiping, mopping products and environmentally dubious cleaning agents; reduces the waste produced by these and helps to maintain a clean, safe, hygienic kitchen environment.

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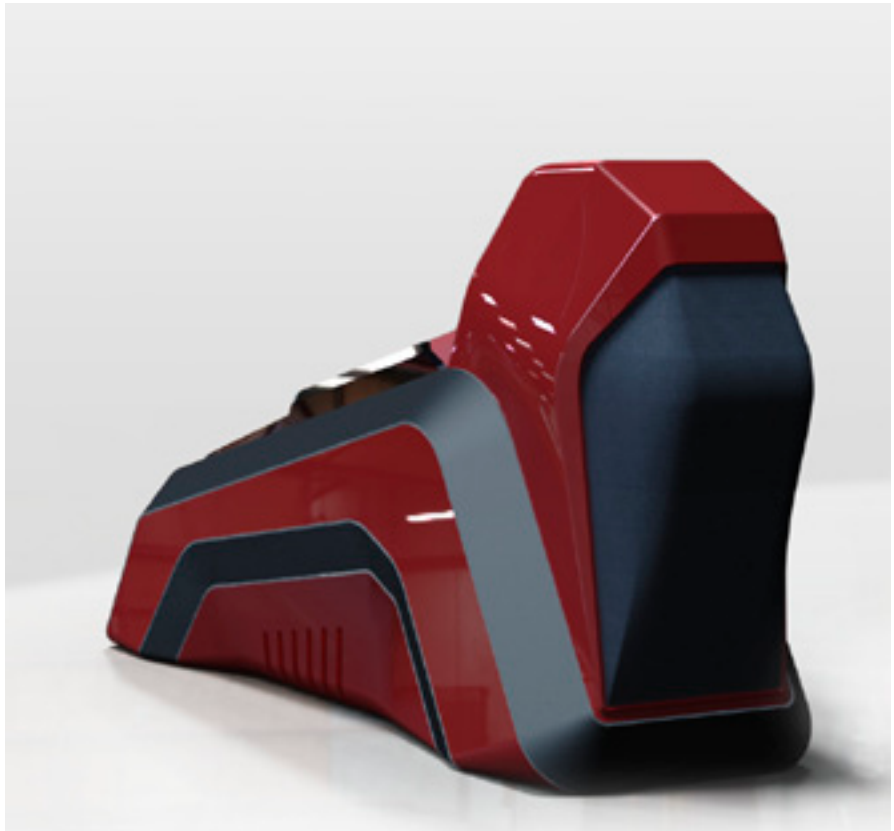
Greener Airbrush

A replacement for aerosol paint;
A live project set by Games Workshop



Major Project

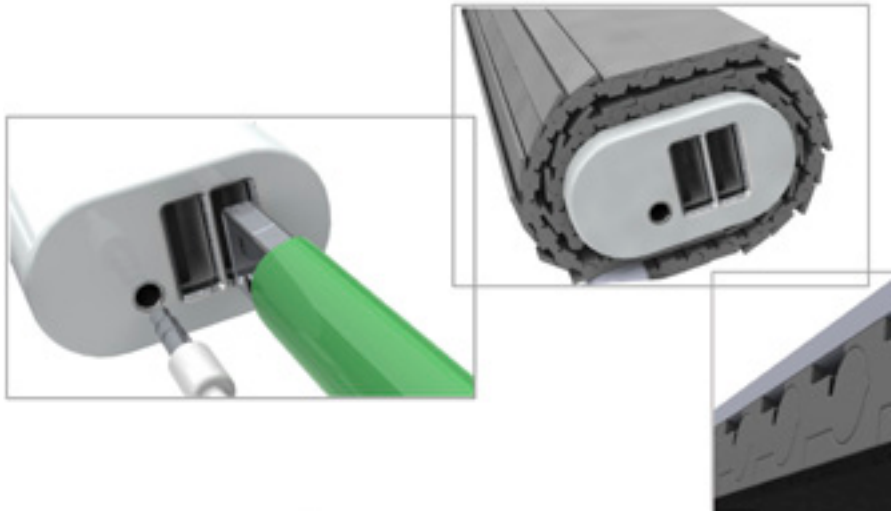
The project is based on a live brief set by Games Workshop. Games Workshop provide hobbyists with a range of products from role-playing and strategy games to intricate models that can be painted to represent characters and objects within the game. Their consumers range from young children to much older adults.

The brief was to design a solution for applying paint primer to models without using aerosols.

Primer is usually applied in a suitable environment such as a well ventilated garage or shed, which may not necessarily have electrical power. Aerosols provide a convenient solution that doesn't need a power supply. The solution is a foot-operated pump powered airbrush (airbrushes are usually powered by compressors which require electrical power). Airbrushes require a constant supply of pressurised air to 'blow' the paint onto the target surface. The foot pump is designed and optimised to obtain the high pressures required by airbrushes with as few compressions of the foot-pump as possible.

Cloud Computing

An environmentally friendly alternative to current computing



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Minor Project

The computer industry is damaging to the environment, in particular people's desire for new technology. Our consumer society sees people replace their computing devices after a short time, typically 3 years or less.

The product uses 'cloud computing' which is a term given to shared computing resources that are provided through the internet.

The approach of having data, hardware and software in "The Cloud" means a simple device with similar technology to a smart phone can be used to access the more powerful computers in the 'cloud' to perform tasks beyond that of the simple device's capabilities. This will extend the life of the product as upgrades can be delivered through the 'cloud' rather than replacing individual devices.

The Product is a tablet computer that has 2 displays; a Pico projector and an OLED touch-screen. This gives the user the choice of using the OLED touch-screen or the projected image for viewing, and when in projector mode, the OLED touch-screen acts as a keyboard and touchpad.

Food Organisation System

A series of innovative food containers for the domestic environment that aid in the reduction of food waste through better visibility, portion planning and organisation of food

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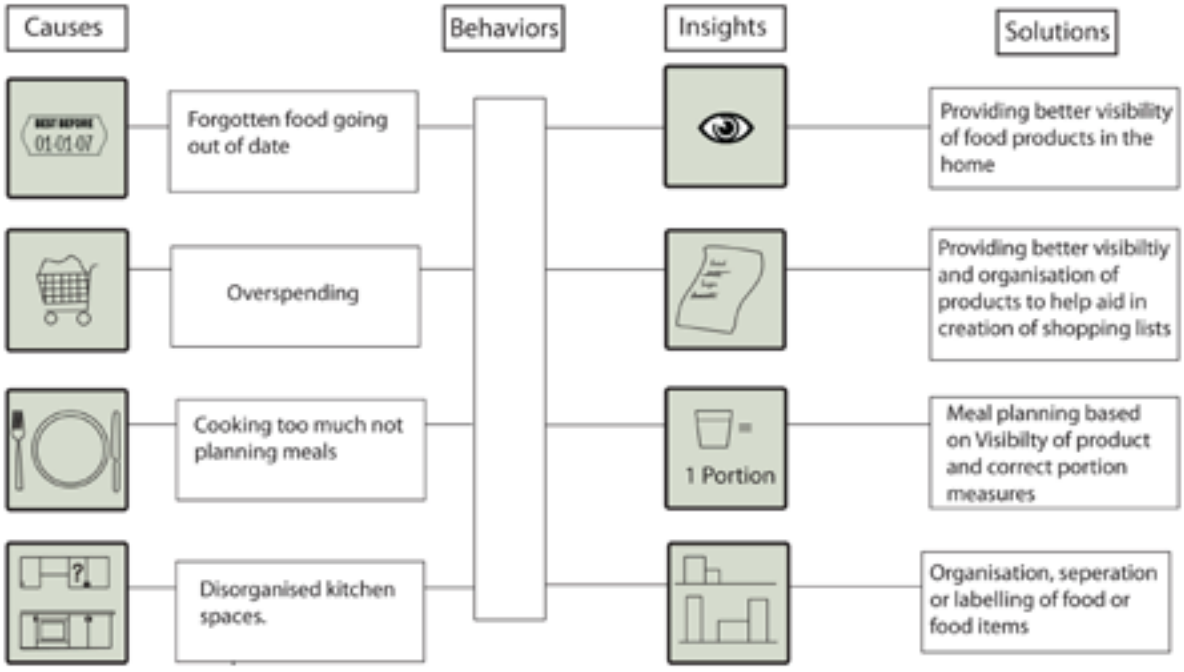
Major Project

The UK wastes one third of all food that is purchased, which costs UK consumers a staggering £8billion a year. In response to these statistics, research for the Food Organisation System concept began by enquiring into how the problems of food waste could be addressed – namely, (1) What are the causes of food waste? (2) How to deal with the waste we have?
This enquiry led to investigations into the key drivers for these issues: i.e. low visibility of food, forgotten food going out of date, portion sizes and meal planning were all major causes as was the disorganisation of kitchen environments.

The Food Organisation System is a range of 'ambient food' (can be stored at room temperature) containers that address the outlined problems of food organisation and wastage. The range of products is designed for a broad range of UK demographics, but the intended market was 25-45-year-old homeowners with a medium to high income.

The containers come in a full range of sizes and are displayed hanging from a rack system. They are made of clear plastic, to enable informed decisions to be made about the food that the user has in the home.



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Spray-Can

Games Workshop spray can redesign

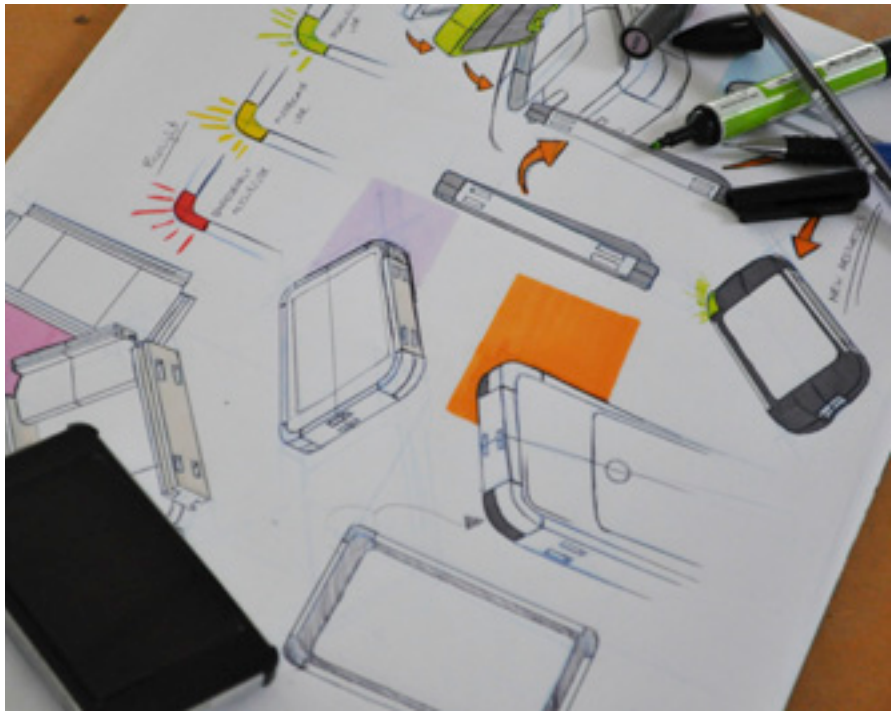
Major Project

Games Workshop (GW) sells paint in spray-cans to its customers for them to apply base coat to GW miniatures. The miniatures are then over-painted by hand. The problem with this spray-can system is the hydrocarbon (HC) based propellant and paint systems that they contain. These produce inflammable green-house gases: hazardous in transit, to users & the environment and which are under increasingly stringent regulation, particularly in export markets. And the can is not reusable.

GW's brief required a solution that avoids the hazardous propellant & paint system; a solution that avoids the need to discard the container at the end of a single filling.

The design replaces the HC propellant with air pressure; the HC paints with a water-based ones. The product is cleanable & refillable. The user fills the pressure chamber with their choice of paint. The chamber is pressurised with air using the hand-pump. The paint is led through a flexible tube to a spray pen. After use, the container is depressurised; any paint removed & saved for future use; the container, tube & spray pen cleaned with water-based cleaners. The tube stores by coiling around the pressure container and the spray pen sits on a rest atop the container.

GAMES WORKSHOP



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Minor Project

Designed in response to the Make Something Disappear design brief set by the RSA, AUCTUS is conceived to benefit both the consumer and the environment. It gives the user the opportunity to continuously change the aesthetics of the product as well as its hardware. By the provision of a well structured supply and return system, the visual features of the mobile, plus its structural and technological components can be efficiently 'up-cycled', re-used and updated. The product consists of an outer core and an expansion pack (located within its interior). The outer core is kept throughout the changes of the mobile. Components can be changed within the expansion pack to suite the user's needs. AUCTUS achieves a high degree of sustainability through its facility for components such as a camera to be traded-in and re-purchased again by customers. Also, materials such as the aluminium inner core and a HDPE outer core are up-cycled and reintroduced into the device manufacture process as long as the materials' structural or aesthetic performance allows.


Sausage and mash
Recipe Note: Cook: 15mins preparation + 20mins cooking time
Serves 4
Cook the potatoes in boiling salted water for 15mins or until tender. Meanwhile, place the sausages on a grill rack and cook for 10-12mins, turning occasionally until golden on all sides.
Whilst the potatoes and sausages cook, heat the oil in a medium pan, add the onions and sauté for 8 mins or until golden. Stir in the flour and cook for 1 min.
Add the sugar and ground black pepper and stock cube, then gradually stir in 425ml water. Bring to the boil, and simmer for 2mins.
Drain the potatoes, return to the pan, then add the butter, milk and mash until smooth and lump free. Season to taste.
Divide the potatoes between four plates, top each with 2 sausages and a little gravy, then hand the remaining gravy around in a sauce boat. Serve with sliced green beans.
200 g
15 g
1 kg potatoe
60 ml

Safety & Support

Kayak Safety Paddle

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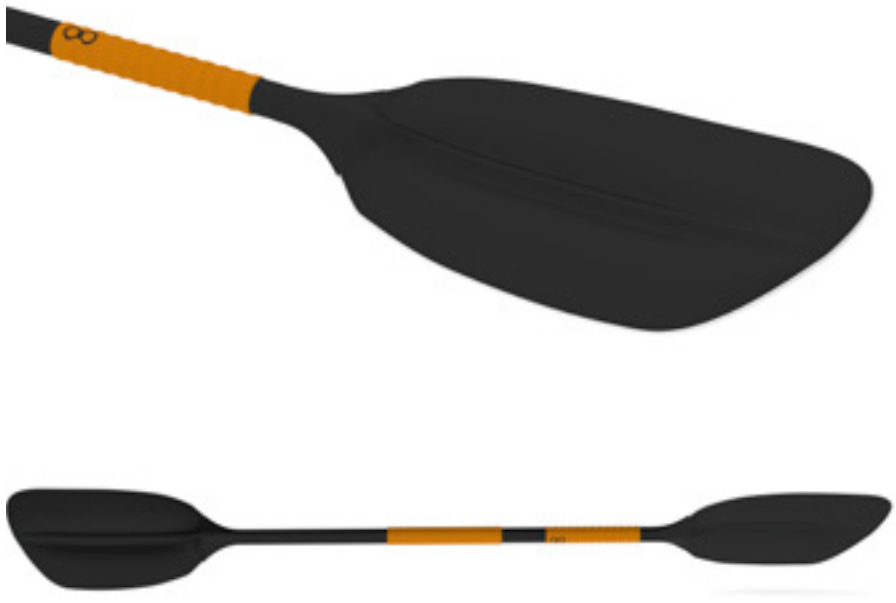
Major Project

Sea kayaking is an increasingly popular sport and although kayakers accept a moderate level of risk, it is during 'night paddles' that they are most at risk from accidents and drowning. The main cause of these accidents is when larger vessels collide with kayakers who, to exacerbate matters, often do not wear a flotation device (due to the restrictions on movement these can create). Visibility is therefore vital for all 'night paddlers' and although a range of waterproof hand-held strobe lights and torches are available, there are no paddles that contribute to fulfilling this safety function.

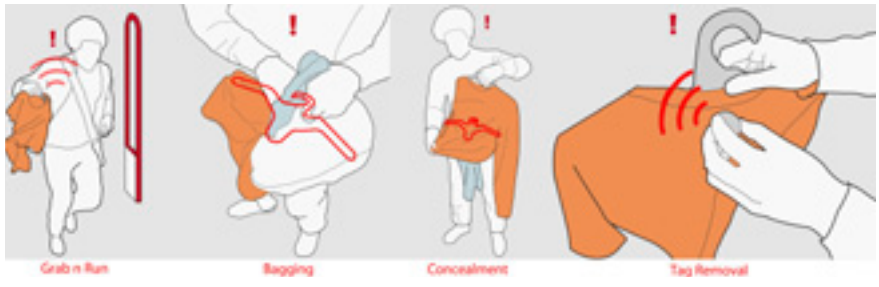
Baum's response was to design a paddle equipped with sleek edge-lit paddle blades – the lighting effect of which gains greater prominence in use by the circular motion of paddling. The paddle also contains an additional flotation device placed in a water-tight compartment in the centre of the paddle shaft. This floatation device is manually inflated for speed of deployment, and acts to keep the paddler's head above water.

The paddle is equipped with sleek edge-lit blades which gain greater prominence in use by the circular motion of paddling

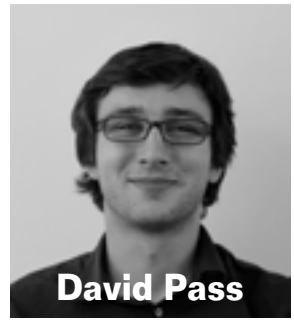


Hang Safe

Anti-theft clothes hanger



'...garment security mustn't compromise the honest shoppers' experience'.



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Minor Project

Research showed that the highest shrinkage, for business by category in 2009, was the theft of fashion apparel at 3.5% of turnover. Primary research revealed that thieves target the most easily concealed goods; 'bulk theft' of several garments being their primary objective. Shop owners find that thieves usually leave the hangers behind along with the disabled electronic article surveillance (EAS) tags.

If the hanger is permanently attached to the items, the risks of 'bagging' or concealing multiple items makes stealing them more difficult and more apparent to the shop staff.

The hanger contains the EAS device. It sounds the alarm when an attempt is made to remove it from the garment. Furthermore, the alarm sounds when the hanger is taken out of the shop. So Hang Safe works in three ways: its attachment to the garment makes the garment hard to conceal; the EAS system works in-store and at the exit.

But ultimately, 'garment security mustn't compromise the honest shoppers' experience'. Therefore much of the work on this project was focused on making the hanger wearable and ensuring it did not compromise the fit and finish of the garment as the customer chooses andtries it on.

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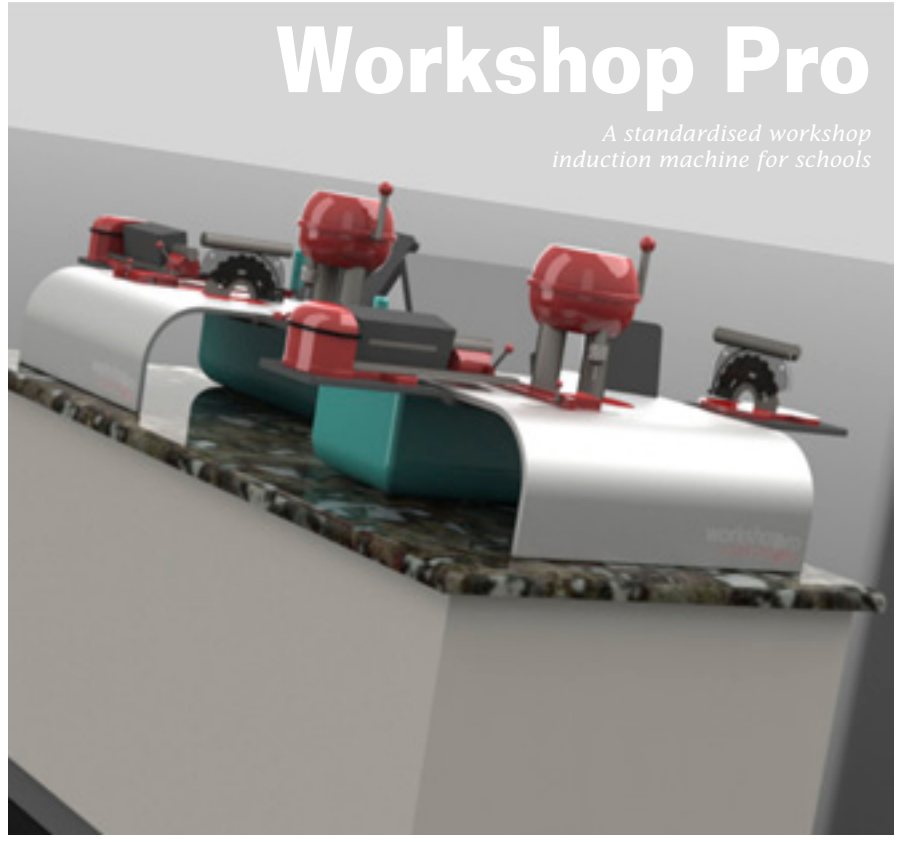
Workshop Pro

A standardised workshop induction machine for schools



Major Project

Conceived to standardise the way school students are taught to use potentially dangerous machinery, WORKSHOP PRO reduces human error by ensuring everybody goes through the same induction process, as well as allowing users to revisit these as and when required without tuition.

WORKSHOP PRO is designed for students and pupils entering a workshop for the first time, and for those wishing to refresh their knowledge and safety. The modular nature of the system means that schools can cater for their specific workshop requirements whilst still being able to expand the system in parallel with machinery purchases or developments in safe practice guidelines. A touch-screen and rear mounted display improve this technological interfacing.

The product system teaches core understanding, enabling students to benefit from different kinds of induction task simulations ranging from full haptic technology use to interacting with non-functional mechanical machinery.

Transform-Fit Helmet

A size-adjustable, high-visibility helmet for children aged 6-11

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L3 Major Project

Nearly half of all bicycle related injuries and fatalities in the UK are suffered by children between the ages of 6-11. However, despite public awareness about the importance of visibility and wearing head protection, a decreasing amount of children in this age group wear high visibility accessories or protective headgear. Those who do are often wearing helmets that do not fit them properly. Therefore, the main problems to overcome are ill-fitting helmets (due to the variety and growth of head size), low child visibility, and overall compliance due to self-consciousness and fashion trends.

The Transfrom-Fit Helmet uses a unique inner shell with six separate expanded polypropylene sections attached. This allows the child to tighten the helmet around their individual head size using the innovative single adjuster at the back of the helmet. The helmet also has two lights with a built-in battery pack for night time riding.

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Anti-Shock

Road bike suspension for overuse injuries

Major Project

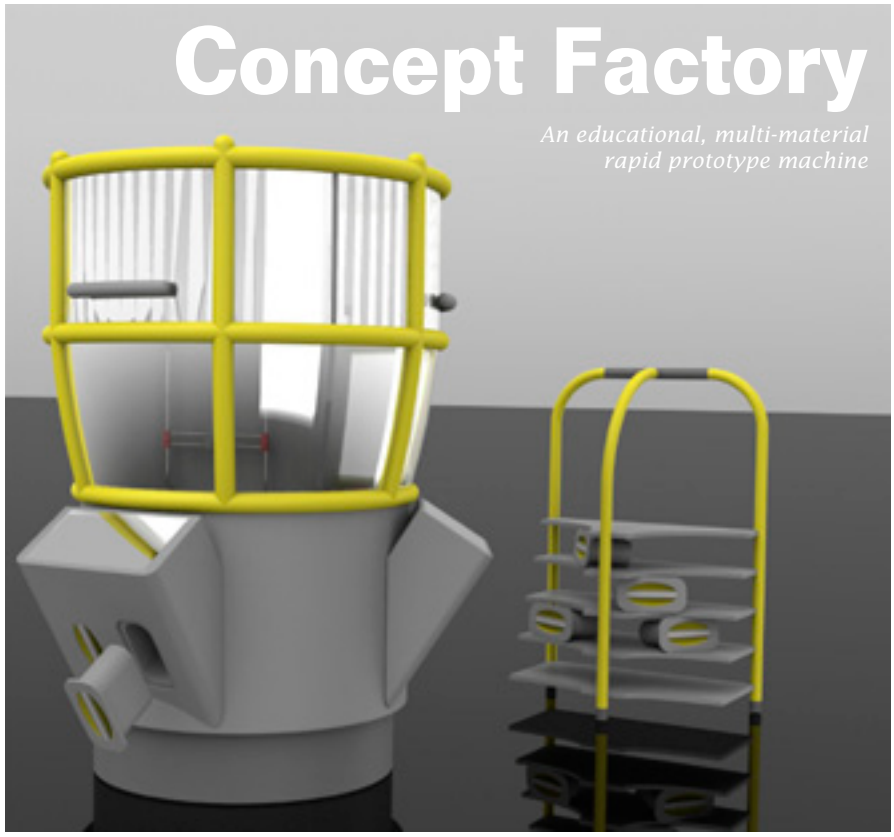
Cycling is on the increase in the UK. With this come increases in related injuries. Anti-Shock is designed to prevent and treat over-use injuries in the hands, wrists, arms and shoulders that occur over time when riders repeatedly take impacts. Two out of three cycle over-use injuries are related to the hands.

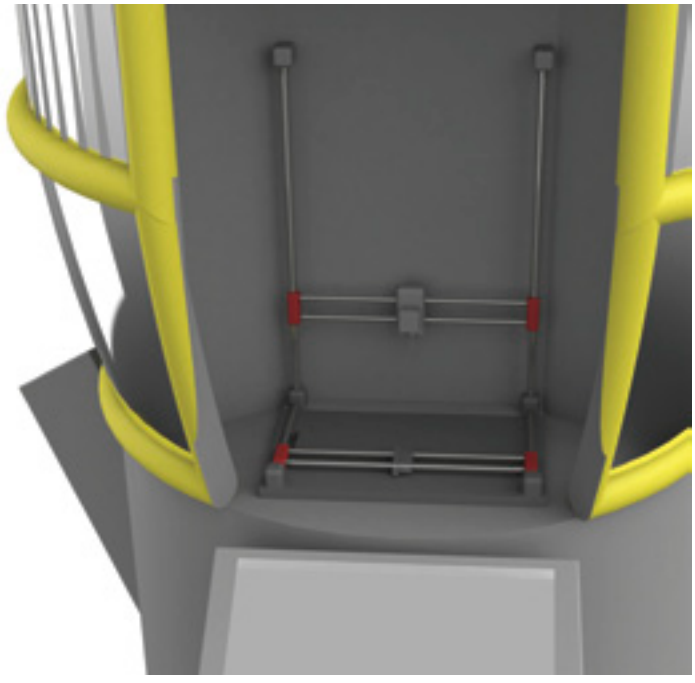
The product is for regular cyclists that ride rigid bikes, who wish for more comfort without the expense of fork suspension. People who commute by bike will appreciate relief from potholes, speed bumps and other such hazards found every day on the nation's roads. Users who already have health problems from over-riding their bike will be able to carry on riding if Anti-Shock is fitted.

The product provides relief from shocks and impacts in two ways; by adding dampened movement to the handlebars and to the grips. A sprung stem is the main part which allows the whole handlebar to move up and down. The grips contain in-built conical springs which also provide movement. The whole unit is light, unobtrusive and doesn't negatively affect handling characteristics.

Concept Factory

An educational, multi-material rapid prototype machine





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Minor Project

CONCEPT FACTORY was conceived to help more school-aged students make the step from drawing and CAD design to realised three-dimensional products. The product would also help school children gain a greater understanding of how machines from industry are being used to benefit the design process. By improving technologically integrated learning and inspiring children to work together, students gain an understanding of design as a wider concept, not simply in the context of GCSE / A-Level Product Design or Resistant Materials.

CONCEPT FACTORY can be used to create up to three projects at once, prototyping using 3D printing technology in polymeric and ceramic powders, and CNC loom weaving to produce clothing components. The product concept would use an 'heads-up display' (HUD) so users can visualise what they are prototyping and through the range of model outcomes it can produce, encourages students to try out different materials, and learn about their qualities.

Mark Wilson

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Roof-Rack Cycle Carrier

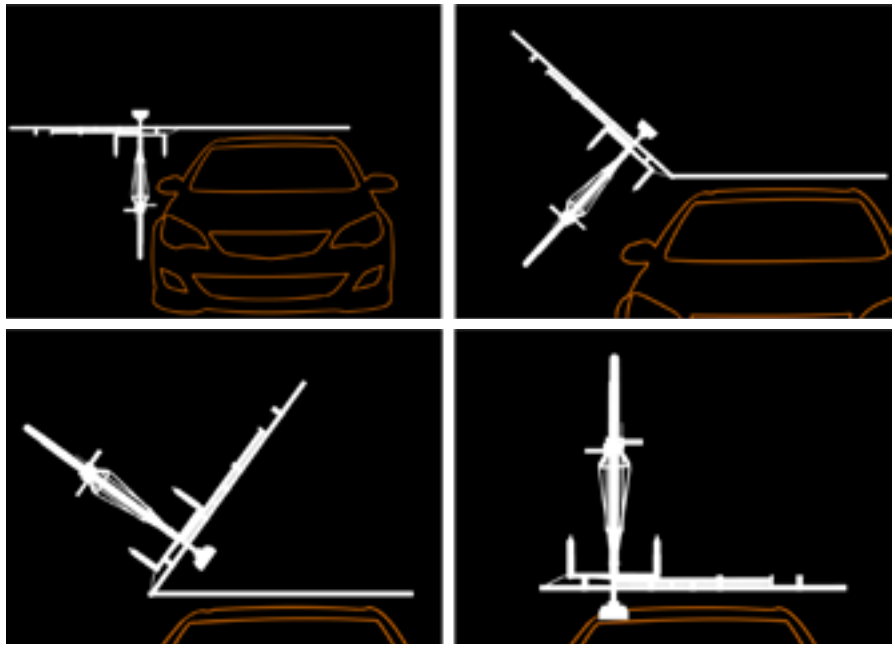
Major Project

Research of existing products has found the methods and products used to hold the bicycles on motor vehicles are time-consuming and not particularly user friendly. Some methods involve partial dismantling of bicycles, certain products cannot carry all types of cycles and some can only be used with certain types of vehicles.

The core problem identified with existing roof-rack designs is the requirement to physically lift the bicycle onto the top of the car.

This design makes the roof-rack cycle carrier quicker and easier to use than existing products. A folding mechanism makes getting the cycle onto the roof of the car much easier and with less physical exertion. The roof rack is designed so the top folds over to the side of the car and the bike can be lifted up to fixings which are within easy reach. The whole unit, with bicycles attached can then be folded back onto the top of the car.

The product is aimed at regular cyclists who travel by car to locations such as bike parks and velodromes, who wish to maximise their riding time.



Health Angel

A motorbike helmet system that automatically alerts emergency services in the event of a crash

J.Stuart Aitchison

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Major Project

Health Angel was designed for motorbike riders who primarily enjoy riding in remote areas, especially those who do this alone. Riders of this kind who are involved in serious accidents often have an increased risk of death or long-term damage if they fail to receive help within the 'golden hour', particularly associated with head trauma. Often victims are either unconscious or physically unable to seek help Furthermore, any communication devices they may have might be damaged in the accident or have a poor signal.

The helmet incorporates a crash detection device and satellite communication technology which can alert emergency services and provide GPS coordinates for an injured rider. A data storage device is also carried within the helmet which paramedics can use to access the victim's vital medical information. The helmet's styling is intended to invoke a sense of caution, safety and functionality in the rider, moderating their behaviour before each journey. The design uses colours and patterns that research has shown are more visible through appearing closer; such visibility will enhance other drivers' awareness of the motorbike rider and as a result, it is expected more will increase the distance they allow for them.

designproducts
product | furniture | industrial

I-Spy

Car travel game

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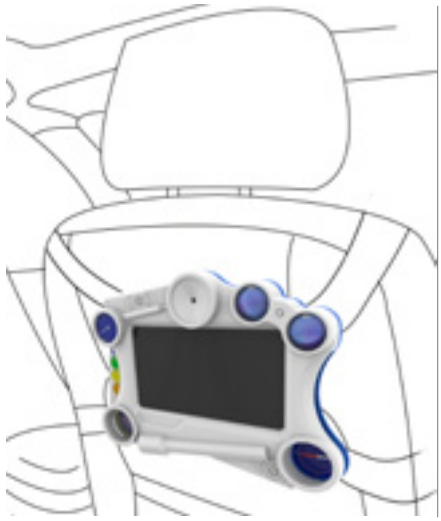
Major Project

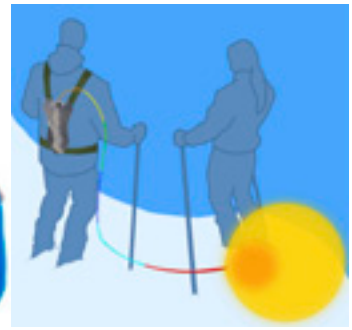
Distraction of drivers contributes to around 15% of road traffic accidents. For car drivers travelling with children this is a serious issue. Children can become restless & unhappy on even short journeys if their in-car toys and games are not absorbing enough. This can distract the driver who has the dilemma that, if they turn to placate the child, they endanger all the car's occupants.

The I-Spy car travel game is an interactive device that allows visual communication between the child & the driver and between the child and the world in front of the car. Cameras in it and in the sat-nav enable the driver and child to see each other without the driver having to turn away from the road ahead. Another camera in the sat-nav looks forward to give the child the view of the road ahead. This forms the basis of the I-Spy games, which display on the child's screen in the rear, for them to interact with using a separate controller device. For one of the games, the sat-nav previews up-coming features and landmarks for the child to identify on their view through the car windscreen.



Avalaunch

A mountain sports rescue beacon



Above: *Deployed beacon*

Binyahmeen Hussain

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Major Project

Targeted at winter sport enthusiasts, mountaineers and hikers, Avalaunch is a rescue aid designed to reduce the time it takes to locate someone when they are injured or trapped beneath the snow. The device must be deployed manually by the user either before being caught in an avalanche or after injury.

Deployed by pulling a shoulder strap lever, a helium canister inflates a balloon within the backpack, instantaneously releasing it from canister and the backpack when it is full. The balloon quickly rises to a height sufficient not to escape being caught by an avalanche and remains tethered to the victim. In difficult terrain and with acute time pressures on rescuers, Avalaunch will greatly improve a victim's chances of survival or avoiding serious injury.

Martial Home

Home training equipment for martial arts

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MARTIAL HOME 夫婦ホーム

Above Left: *Closed*
Above Right: *Open*

Major Project

Individuals who specialise in the sport of martial arts find it hard to be motivated with current existing products due to their busy lifestyles in modern day society.

Research was undertaken into martial arts and home gym equipment to find a way to combine them into a single training product: a product which will motivate martial arts adherents to train & practice at home as part of their busy lives.

Martial Home is a home based training equipment that is designed to allow the user to practise their skills in their own time & within the comfort of their home. The main aim is to motivate the user to practice on a regular basis by encouraging self-directed & goal-directed behaviour. This is achieved by allowing the user to set-up their own goals and then providing the user with sufficient feedback of their performance at the end of a session.

There are 3 main workout types; Power - measure your strength, Speed - calculate the time to complete a given set number of targets, and Reaction Time - counts the number of successful targets hit within a given time limited.

The targets have pressure sensitive pads that are colour co-ordinated with LEDs. This enables the user to identify what target to strike when performing their workout. The display unit allows the user to see their results of a session which will encourage goal-directed behaviour.

A connection to a PC will enable further training features which will allow the user more control of their workout sessions and a function to monitor their past and current performance for more intense training schemes. The PC based programme can also provide more in-depth demonstrations and explanations of techniques.

Festival Cooking

A social cooking service for music festivals

Robert Whitfield

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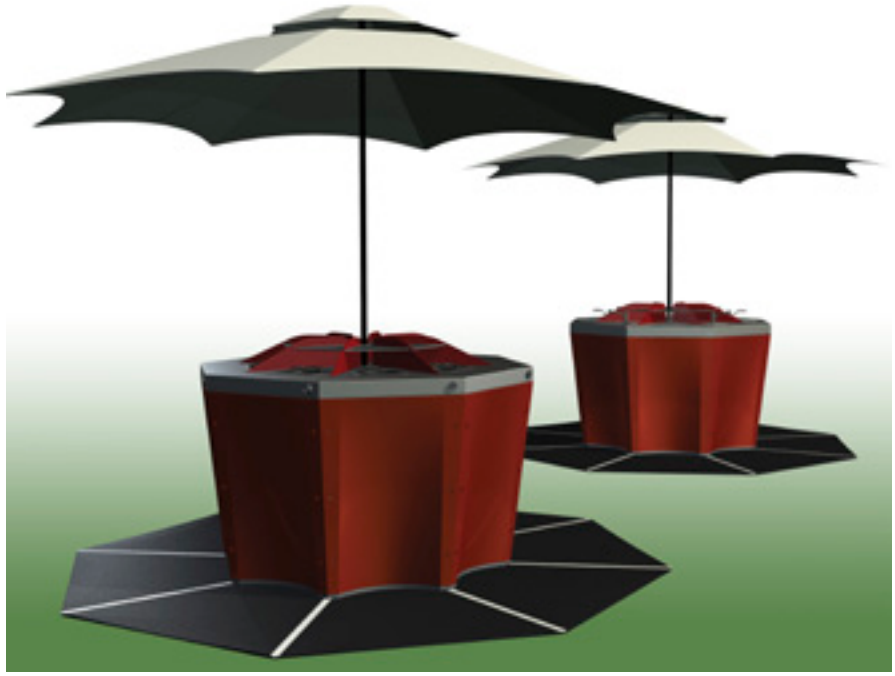
Minor Project

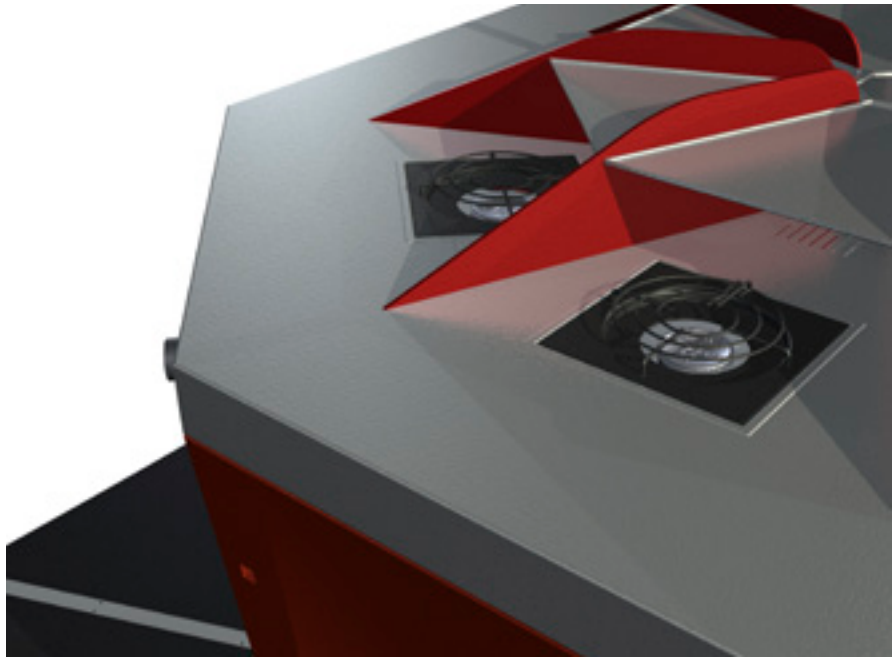
The product was designed in response to many music festivals banning personal cooking equipment from the campsites due to health and safety fears. It will be bought by festival organisers to provide cooking facilities for festival goers in these situations.

The product allows festival goers to cook in a safe, managed environment that also allows them to meet new people and improve the 'community spirit' found on many festival campsites. By encouraging cooking in specific parts of the campsites, the organisers have a better chance of improving the recycling and disposing of food and packaging waste.

The product uses LPG gas to fuel the burners and is designed to be easily assembled and disassembled so that it can be transported to and from festivals as well as easily cleaned.

Research involved questionnaires with music festival goers of all ages and tastes as well as a telephone interview with the Office Manager at Glastonbury.





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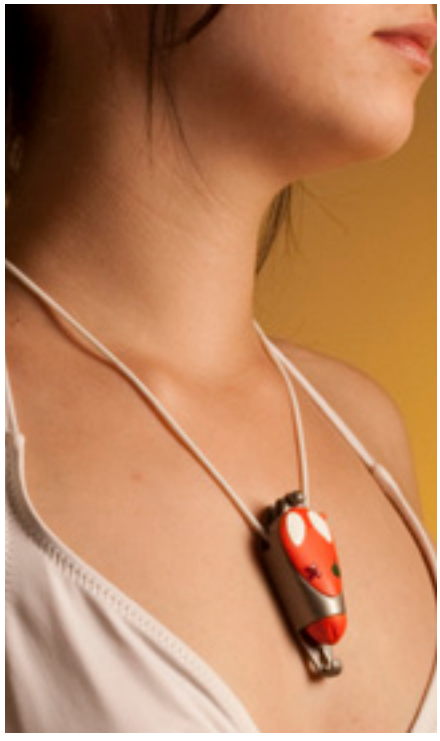
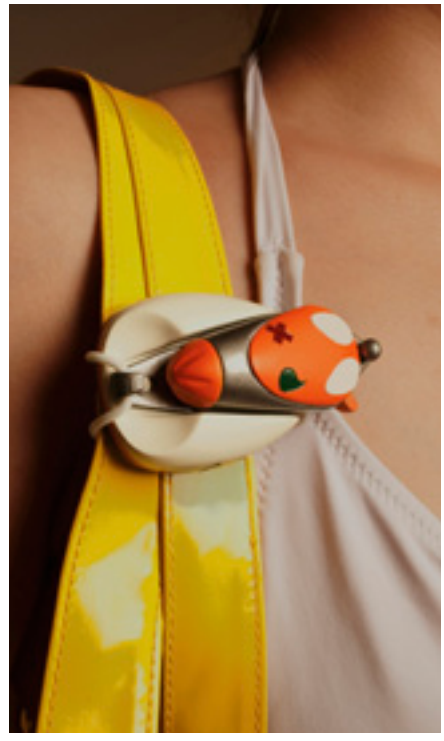
Major Project

Skin-Safe was designed in response to the increasing incidence of skin cancer around the world. Habitual or excessive UV exposure is the primary cause; damage to skin can be built up over years through intentional or unintentional exposure such as outdoor work etc. The variables that determine risk are age, skin type and local UV levels. Children and the elderly are of high risk as are those with pale skin. People with dark skin are better protection from UV however skin cancer is more fatal to them once developed.

Skin-Safe is for families with children, habitual sunbathers and those routinely exposed to UV. The device has a skin-type sensor, an age-input and UV sensors. Using these variables in real-time, the device provides the user with a unique time allowance for safe exposure, alerting them when they must cover up. It also evaluates the protection provided by the user's sunscreen and alerts them when they should re-apply.





Food Preparation System

for the Blind and Partially Sighted

This food preparation system helps overcome the key barriers to food preparation both in the home and when going to the supermarket

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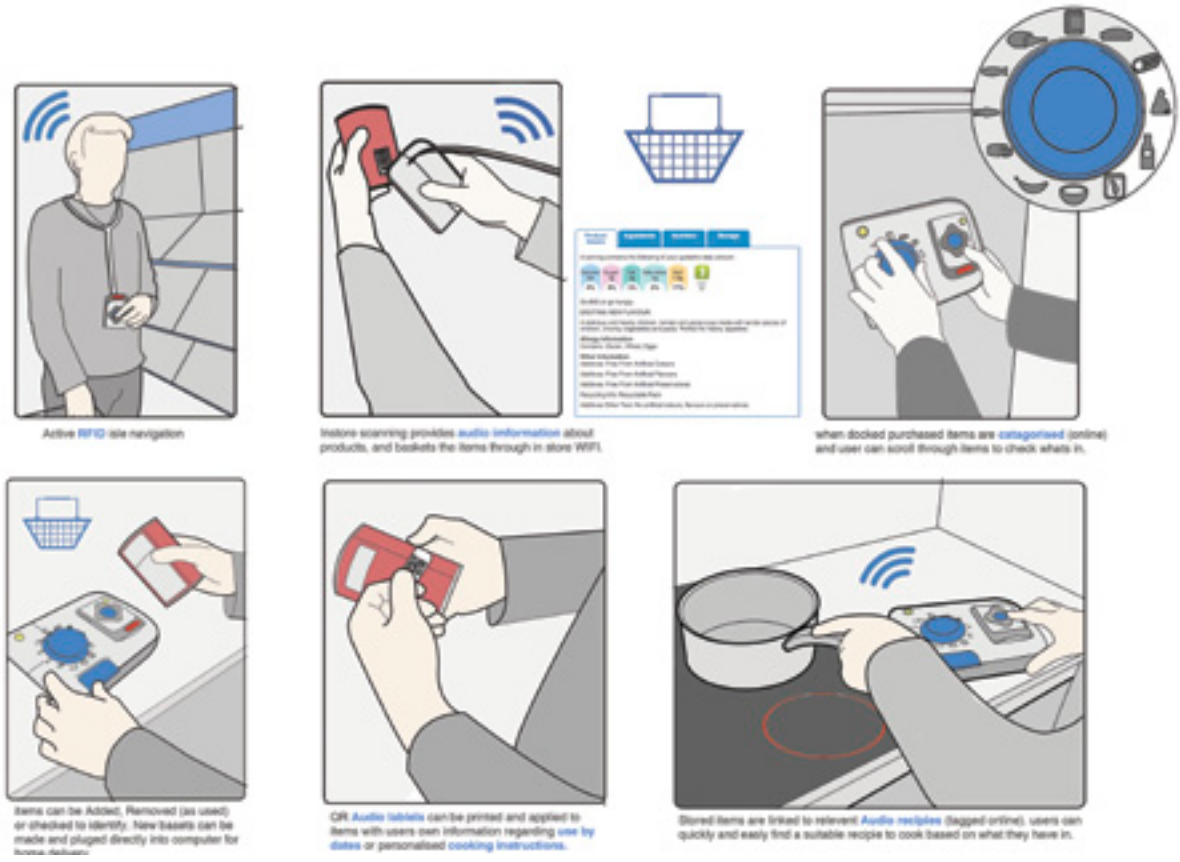
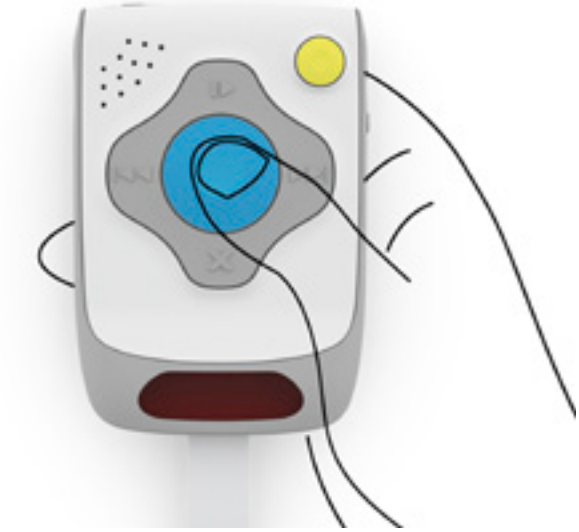
Major Project

An RNIB report on the needs of blind and partially sighted people found meal preparation to be a significant barrier to their independence. More field research into this found food shopping to be an important activity in the lives of the blind and partially sighted, not just because of its necessity, but also because of its social and psychological benefits. Whilst the activity of cooking itself was a significant barrier, most of the current products on the market were for safety & hazard prevention; few products gave the blind a sense of independence or added something new to their experience or helped with the planning & procurement aspects of cooking.

This food preparation system helps overcome the key barriers to food preparation both in the home and when going to the supermarket. It enables complete independence for the user to manage food preparation tasks: assisting them in organising their lists, identifying products in store, managing food items in the home and guides through the tasks of prep, cooking & serving in a step-by-step audio format.


Active RFID isle navigation
Instore scanning provides audio information about products, and baskets the items through in store WIFI.
when docked purchased items are catagorised (online) and user can scroll through items to check whats in.
Items can be Added, Removed (as used) or checked to identify. New baskets can be made and pluged directly into computer for
QR Audio labels can be printed and applied to items with users own information regarding use by dates or personalised cooking instructions.
Stored items are linked to relevent Audio recipies (tagged online), users can quickly and easly find a suitable recipie to cook based on what they have in.



Community Cooker

A portable heater and cooker that encourage a sense of community and reduce domestic violence within African refugee camps

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Major Project

The product was designed primarily to help reduce the amount of time that women are in vulnerable situations within a refugee camp, but also to combat smoke-related illnesses.

Sexual abuse and rape are huge problems within refugee camp environments with over 75% of inhabitants being vulnerable women and children. By making the stove more efficient, less wood in needed and so the time that women and children spend individually collecting firewood, where they are most at risk, is reduced. The product's innovation is within the systems that it enables; it provides jobs for men, through the supply of kits which are assembled in the camp. This activity creates a traditional, well respected, masculine employment which is designed to motivate those men, who on entry to a refugee camp often lose their sense of masculinity and turn to alcoholism and sexual abuse to assert their authority.

The removable smokeless heater is designed to be taken into shelters to provide a heat source for the users at night and to reduce the amount of smoke related health issues normally caused by burning materials within confined spaces. The cooking pot

and lid are also specifically designed for the stove in order to reduce the amount of heat that is lost through unnecessary gaps. The heater sits in the top of the stove, the pot then sits inside this. Inside the heater pot are locally sourced rocks that heat up whilst the stove is in use. They store the heat until the heater is removed and taken inside where they radiate smokeless heat through the rest of the evening. The cooking pot is able to be used with or without the heater. In terms of sustainability, the system reduces the amount of firewood that is cut down. The heater itself is designed to be disassembled and flat-packed so when being transported it is more efficient in terms of the space and energy used. This applies both at the original supply stage and if being transported by its user. The product works as a traditional wood-burning stove.

The product was designed primarily to help reduce the amount of time that women are in vulnerable situations within a refugee camp

Reverse Design

An aid for teaching Design and Technology (D&T) in schools

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Minor Project

In response to the RSA brief: Develop resources or strategies for use in secondary school to help students and teachers understand all the powerful things that design can do, my product emerged from researching 'how students learn'.

Through research conducted at Ashlyns School in Hertfordshire where York interacted with both students and teachers; giving her insights into how lessons are taught and by soliciting the views of the students and teachers she was able to understand the pros and cons of existing teaching methods.

D&T students are mainly visual and kinaesthetic learners; where they are intrigued by visual images and physical interaction. Research has also lead to the idea that students struggle to understand how the various stages of design interlink. For example: research helps the idea generation – students tend to think that research is just a task, rather than using the information to produce design concepts. This reinforces the theory that students find it hard to appreciate how design improves and relates to the real world.

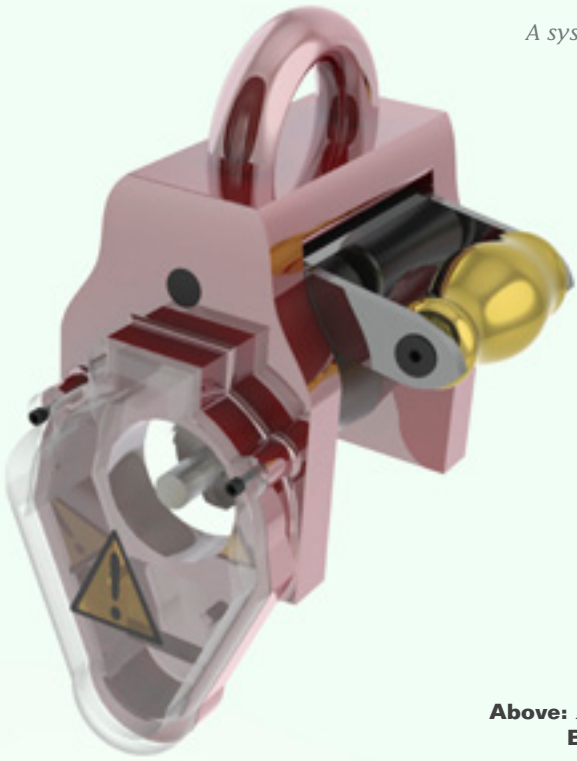
There was an opportunity to design a resource that educates students in the design process; where the most efficient method is reverse engineering. It is easier to learn from existing artefacts (physical objects) rather than trying to teach the process, which can only be visualised through diagrams.

Reverse Design is a resource and strategy that teaches the whole design process through reverse engineering. It engages both students and teachers in Design and Technology (D&T) to understand the impact that design has on society.

There was an opportunity to design a resource that educates students in the design process; where the most efficient method is reverse engineering

Web Slinger

A system to aid arborists in lowering safety



Above: *Pulley with Warning*
Below: *Camber Arm*

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Major Project

Designed to counter the dangers experienced by arborists whilst working in challenging surroundings. Web Slinger enables workers to control the lowering very heavy timber sections to the ground, improving protection for them and the workers on the ground from falling objects.

The system's innovation lies in the sets of cambers are used to counteract the effect the lowering rig as it slides up the trunk of the tree. Also, the inertia reel pulley system is a fail-safe, adding extra security and a guarantee that the weighty objects cannot possibly fall.

In addition to the cambers and the pulley system, the new maillon / carabiner arrangement has a dual function – either aiding the arborist in attaching the load to the rigging line or doubling up as a belaying system for hobby climbers. By having no opening in its structure, Web Slinger is proven to be stronger than other products in the same market. Its 'no hassle' openings also allow for ease of use and speedy deployment.

Design Theory & Practice

As part of their Research and Professional Practice modules, final year MDes students are required to develop and define their own methodologies for the design process through personal, reflective analysis and by studying the approaches taken throughout the broad design industry

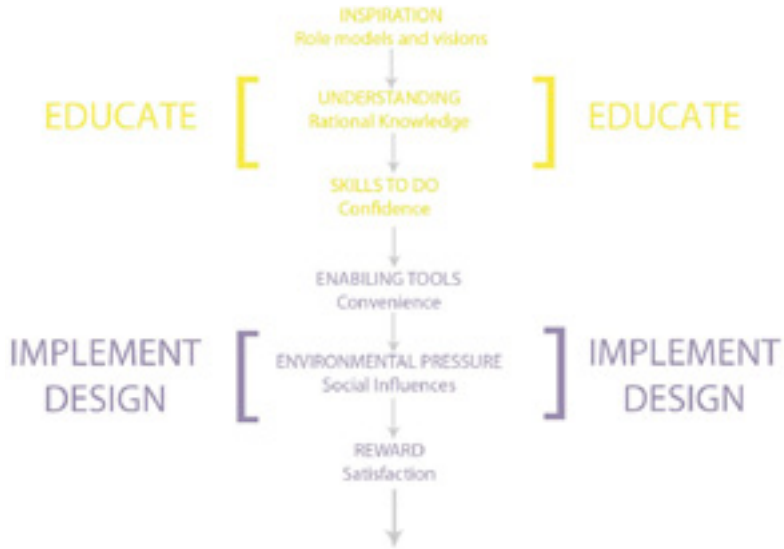
Sam Dinwiddy
MDes Product Design

Behaviour: How to test Ideas against the Human Aspect

When analysing problems within an innovative and forward-thinking brief, very often the product solution will be attributed to behavioural changes. Being able to see where your ideas are placed in the larger picture of behavioural changes are important to analyse the most appropriate and intelligent approach to a design.

This next method which is developed from the '7 Doors Model' of behaviour change has been adjusted to understand the narrative of the idea, and to answer the question; will my design outcome really affect the behaviour of the end consumer, furthermore will my end consumer appreciate the new idea?

Fig 2. shows the 6 stage process of analysing ideas against behaviour developed at DMU by MDes Design Products students in 2010. Within this there are two overriding stages; education and implementation. The key is to give the user the tools and motivation in order to make behavioural changes themselves. This system tends to broaden ideas and gives a larger picture to the design, and it is this which makes it valuable; this system adds depth and user reality any project.



It begins with inspiration, the driver for the project; what are the key motivations and inspirations for the user? The next step is to reaffirm those inspirations with understanding of the problems. The user will then see why this product, system or service could be of benefit to them. The skills section is now allowing the user to be able to approach the design without it feeling foreign to them. This is where the next step, implementation of design comes in. with the user already susceptible to allowing this change we have to make the idea become a tangible reality, a convenience to make it fit into their everyday life and confirm this with making it feel natural. The idea or design needs to be developed now with the user in mind focusing on environments and social influences to give grounding to the concept to make it work in their lives.

But this will all be in vain unless the user understands the benefit of the idea, this is where a reward is important, not only to confirm that this behaviour (and adopting the product) is the right this g to do but also to inspire and motivate to continued use; thus completing the life cycle of behavioural change and adopting new ideas.

The benefit of a system like this is that any idea or concept can be tested against it. It may not change the idea but will give the designer a broader insight into the problem or add depth to the idea and open new areas of exploration.

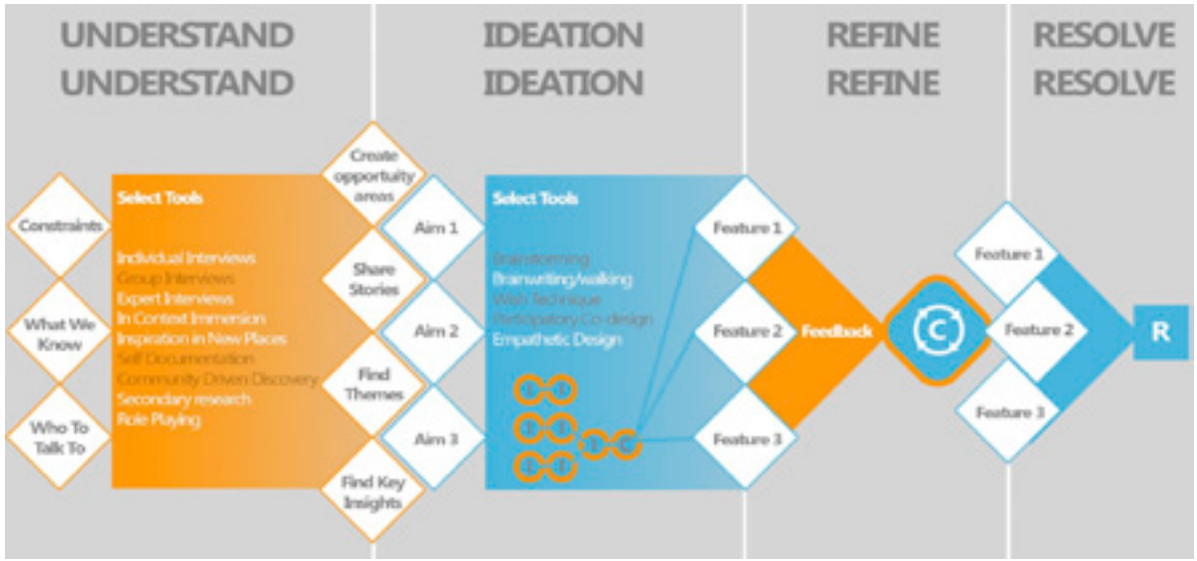
Above : *Fig 2. showing the 6 stage process of analysing ideas against behaviour*

Scott Martin
MDes Product Design

Improved Methodology

Design is the art of solving wicked problems and much like a design brief wicked problems are always different, requiring dissimilar methods to solve them. The benefit of this Methodology is that it is versatile which it achieves through providing a framework in which to use a wide range of design methods. There is a large emphasis on the methods used, as they speed up the process by providing actionable tasks which allow the designer to direct energies more effectively and speed up the process. These tools also ensure quality results.

The methodology has kept the four stages of understand, Ideation, Refine and Resolve as it is a sequential set of actions, if these were completed in a different order the process would break down. It is also useful to set times for deadlines and what deliverables are expected, this can be useful when engaging with a client and when utilising the design methodology in a design team, as the stages define what to expect at each subsequent stage. The key feature of this is the compulsory steps, these are important to establish which direction to go before work on a stage has begun. This allows any type of brief to be worked on without compromising the integrity of the methodology and thus ensures consistent outcomes.



Above : *Fig 1. Developed Methodology Framework (S.Martin, 2011)*

Robert Whitfield
MDes Product Design (also see p.01)

Analysis and Comparison of the Design Methods

There are two big comparisons between the old methods and the new. First, the older methods were geared towards a scientific approach in finding the best solution whilst the newer methods are led more by intuition – although the use of assessment criteria does present a more rational approach to weighing the merits of a design or solution. Secondly, the design thinking approach encourages much more collaboration. Not only between members of a design team, but also with people outside of the profession – from clients, to experts and to end users. Whilst John Chris Jones and his peers saw design as much more of a solitary pursuit until the detailing stage, the new design methods encourage team working right from the early researching stage and many consultancies now employ people from a variety of backgrounds (design, research, etc) to allow for a better collaborative process.

IDEO and the Design Council, whilst both operating a similar school of thought, offer different ways to approach the process and methodologies of design. IDEO has come from a consumer electronics background and whilst it could be argued that the Human Centred Approach differentiates them from Silicon Valley companies, they are very much an innovation led organisation and this comes across in their methodology, which seeks to uncover new ways of working and radical solutions. The Design Council, in contrast, was born out of a war-time need to promote design and innovation in British business. As such its work is often focused at encouraging smaller companies (with perhaps less money to spend) to invest more in design and innovation, this means they can't always advocate the radical work of large consultancies, but can convince them to become more open and willing to allow designers to help them solve problems or improve their products/services.

Older methods were geared towards a scientific approach in finding the best solution whilst the newer methods are led more by intuition – although the use of assessment criteria does present a more rational approach to weighing the merits of a design or solution.

Emily Ditton
MDes Product Design (also see p.01)

Design Methodologies for Emerging Markets

Nokia's change of focus has meant that they have begun to dominate emerging markets. They have not merely centred on providing low-cost or ultra-low-cost products, but have interrogated the way that different markets will use them.

One of the main ideas that have raised the success of their new venture is their development of a range of different apps and services that it can provide with its low cost handsets. This has been named 'Nokia Life Tools' and is designed to "..inform, involve, empower and help bridge the digital divide in emerging markets". It focuses on the needs of the people using it, and the three main areas are Agriculture, Education and Entertainment and each one provides help with issues associated. For example, the Agriculture app includes updated market prices, input prices, weather conditions and extra news and information to increase the knowledge of the user. This service is delivered via SMS and costs a maximum of $1.3. The focus of this value adding services are rural farmers and villagers who use their mobile phones as a primary source to access the external world.

This is only one example of the service bundles that Nokia provide. Others include:

•Nokia Vans- a distribution channel that allows the services to cover as larger area as possible and so accessing as many people as possible.

•Nokia Money- allows the user to keep on top of their finances and provides banking services.

•Nokia Tej- order and supply chain management solution

The Nokia Research Centre has been developed to "..explore technology frontiers and solve scientific challenges today, in order for Nokia to deliver irresistible personal experiences tomorrow." A clichéd phrase, but with the developments they are making in developing markets, the research is paying off.

Note : *Extracts in the above referenced in text to: www.nokia.com/NOKIA_COM_1/Microsites/Entry_Event/Materials/NLT_Emerging_markets_backgrounder.pdf*

New Designers 2011

We will be showcasing the very best of our students' work at the 26th New Designers graduate show. Business Design Centre, London N1.

Part 2 : *06 July - 09 July*
Product Design, Furniture Design, Spatial Design, Visual Communication and 'One Year on".

Design Products success

Above: In previous years Matthew Dobson scooped two prizes at the show - the prestigious Audi Foundation Award and the Allermuir Award – also netting over £2,000 in prize money. His seating range used repeated elements of interlocking aluminium extrusion spanned by lengths of timber to create a series of different chairs, footrests and tables. The extrusion was generously manufactured by one of our industrial partners – Boal UK Ltd.

Above Right: Kevin Scott won Second Place in last year's Designer of the Year Competition with a new twist to bicycle security. His bike frame can become flexible so that it can be wrapped around a lamp post and secured with one lock – leaving a thief no incentive to steal it because the bike is too flexible to ride away.

Right: Winning prize money and an all-expenses trip to exhibit her work in Dubai, Naomi Dean won two awards, the Ercol Award for furniture design in solid wood (her innovative wardrobe outshone the competition despite not being a solid wood piece). She also won the the British Contract Furnishing Association Award for the same design.

designproducts
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Visiting Lecturers

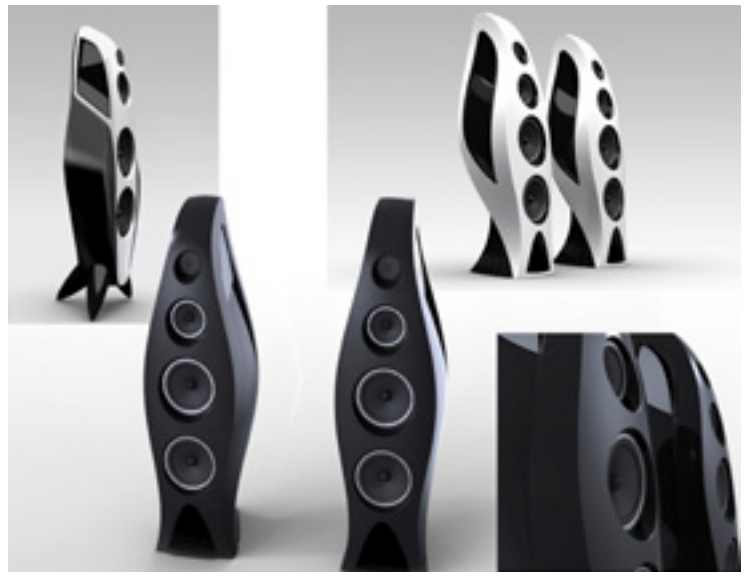
Product and furniture design teaching is enhanced by visiting designers who support week-long projects or conduct weekly seminars, tutorials and lectures

Redlinestudios

Redline Studios produce creative solutions for industry. Their experience within the design sector is extensive, spanning over fifteen years. Within this time they have developed a broad portfolio of work, ranging from products within the toy, industrial and product design sector and the automotive industry. Their expertise covers the generation of innovative ideas, creative engineering solutions, data for manufacture and production of show models or fully working prototypes for evaluation.

Their project base reflects an ever increasing ease of communication. As well as the UK, current clients range from China, Indonesia, Ireland, USA, Italy and France.

www.redlinestudios.co.uk



Below: *Al, Andy, Bal, Dan*

Matthew Cockerill

Design Professional
Associate Design Director

Seymourpowell
UK
www.seymourpowell.com

After graduation with a BEng in Mechanical Engineering, Matthew began his career as a Production Engineer for the soap company Cussons before changing direction and studying for a MA in Industrial Design at De Montfort University. He has had a varied career at some of the UK's leading design consultancies, helping design everything from Scalextric controllers, laboratory equipment, first class airline seating to the passenger experience at Heathrow, Terminal 5.

In 2003 Matthew moved to Seoul, South Korea and worked for several years with Samsung Electronics to create leading edge consumer electronics. Since returning to the UK Matthew has worked for Seymourpowell, working in the space where business, technology and people meet. He helps companies identify consumer insights, create compelling product propositions and deliver products that satisfying consumer needs and desires whilst meeting business objectives.

Above: *LG_Lcd TV*
Left: *Edf_EcoManager*
Below: *Telicom Italia set-top box*

Steve Mosley

Design Professional
Director

Mosley&
UK
www.mosleyand.com

Mosley& was formed in 2007 by Steve Mosley after working as Senior Designer at Nokia Design and also previously being a partner of the British design duo 'Mosley meets Wilcox'.

Mosley& has a multidisciplinary approach to its work specialising in Industrial Design, Structural packaging & Graphic Design - this approach enables a focussed and complete response to the brief. The Studio also regularly collaborates with other creative & technical specialists which initially led to the name Mosley&.

Right: *Nokia 7610*
Above: *MagicBox_iPod / iPhone speaker & dock*
Below: *Paul Smith Exclusive_Limited Edition David Bowie Table*

Marcus Atkin

Design Professional
Director

Think Again Design
UK

Marcus Atkin is an independent design consultant and owner of the industrial design studio Think Again – founded with the belief design is about more than just objects; it is about experience of emotions and memories which should enhance lives.

Prior to graduating from De Montfort University in 2001 with a BA in Product & Furniture Design he spent many years living in San Francisco studying architecture and psychology. Since then he has worked with some of the world's top manufacturers and design houses including IDEO, Motorola, Dyson and Philips which has allowed him the opportunity to work all over the world. He has received many prestigious design awards and his work has been reviewed and exhibited in a number of international publications and exhibitions.

designproducts
product | furniture | industrial

Design Products Alumni

Where are they now...?

Chris Elsworthy

Year Graduated: 1998
Director

CEL Enterprise Ltd
UK
www2.cel-global.com

In August 2010, Chris successfully faced Duncan Bannatyne and Peter Jones on the BBC's show Dragons Den. Chris was looking for £150K of investment to launch his Power8 Multitool Workbench and was successful in receiving this support not least because of his in-depth knowledge of his product and of business. His company, CEL Enterprise Ltd, is going from strength to strength and has recently launched a range of cordless garden tools which as well as the Power8 Workbench are selling in great volumes, all over the world.

Chris looks back at his time at DMU with great fondness and appreciation "Being a student was great fun and a great opportunity...DMU had excellent workshop facilities and lots of hardware that you could easily get your hands on – I was impressed by that".

Chris securing £150k investment on BBC show "Dragons' Den"

Bethan Gray

Year Graduated: 1998
Creative Director

Bethan Gray Designs
UK
www.bethangray.com

Since graduating in 1998 with a BA (Hons) Furniture Design, Bethan Gray has become an award-winning furniture designer, working as a consultant for leading manufacturers and retailers such as The Conran Shop and CASE Furniture. She had a long and successful career at Habitat where she was Head of Furniture Design before moving on to set up Bethan Gray Designs.

She is a leading global furniture trends expert for stylus.com and also is an Associate Lecturer at Central Saint Martins, lecturing final year students in product design.

Above: *Ottori*
Below: *Enshi*
Below Left: *Parker*

Ryan Helps

Year Graduated: 2008
Product Designer

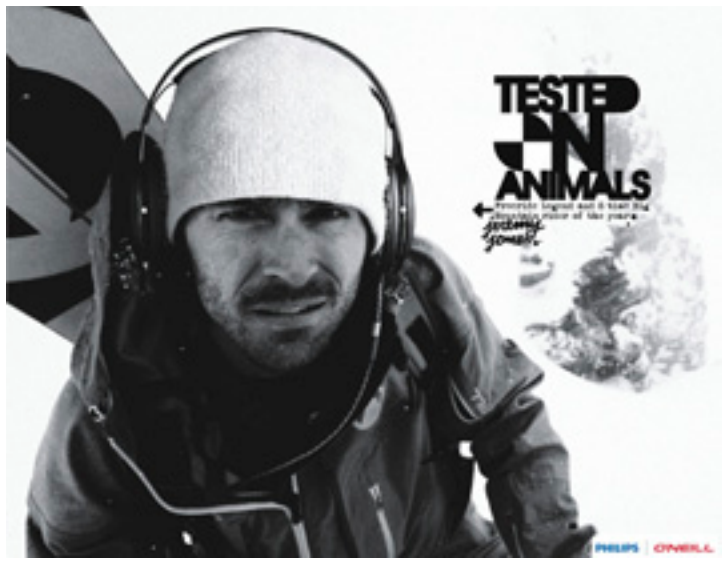
Philips Design
Hong Kong
www.coroflot.com/ry

I graduated in 2008 from De Montfort University with a 1st class BA (Hons) in Product Design. Over my three years at De Montfort I learned a broad range or relevant skills, giving me a strong, yet flexible foundation to move into the ever competitive design industry.

Since then I moved to Hong Kong to work for Vtech Telecommunications, where I spent over two years, designing viable products for the US market under both the AT&T and Vtech brand. During my time at Vtech, I was successful in bringing several products to market, and was exposed to a broad, design, engineering and manufacturing experience, which was based both in-house, and external vendors in China and Taiwan.
In early 2011, I joined Philips design Hong Kong, here i am working within a broad accessories portfolio. Currently I am working for the Philips / O'NEILL headphone range. Already in my short time here, I have been exposed to new Design processes, tactical marketing, the business group and multidisciplinary design departments within a large international national design studio. All these aspects will help me to improve, and further broaden my design.

Above: *AT&T Dect phone*

Below & Right:
Philips / O'NEILL Headphones



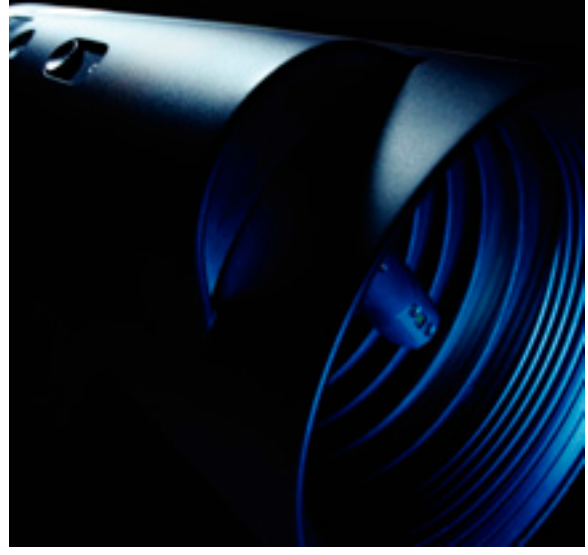
Luke Wolfson

Year Graduated: 2004
Freelance Designer

After graduating from DMU in 2004 I got offered a job as a Design Engineer from Dyson on the back of exhibiting my work at New Designers, working as part of the motors team testing vacuum motors. After Dyson I was employed by Filmlight as part of a KTP – a government sponsored scheme which links universities to industry. While working for Filmlight as a industrial designer I was involved at all stages of design projects, from concept to production. After the KTP project finished I had the opportunity to go back to work for DMU as a part time tutor while continuing to work for Filmlight. I'm currently still freelancing for Filmlight but have also been involved in some other freelance projects including working as a interaction designer at the BBC for the iPlayer site.

IMAGES COURTESY OF
Dyson Ltd & Filmlight Ltd

Above: *Filmlight_Blackboard2 Console*
Below: *Filmlight_Truelight Projector Probe*
Below Left: *Dyson DC12*



designproducts
product | furniture | industrial

Toby Fox

Year Graduated: 2008
Product Designer

Mosley&
UK
www.mosleyand.com

After graduation in 2008 from De Montfort University with a 1st class BA (Hons) in Product Design, Toby began his career working for multidisciplinary design consultancy Mosley&, which specialises in Industrial Design, Structural packaging & Graphic Design.

Toby has designed products for major brands including Universal Music, Virgin Galactic, Coca-Cola, EMI Music and MagicBox. Toby is involved in every stage of the design process, from concept generation and visualisation to client presentation, product and project delivery and management.

In 2010, Toby spent a year working at *Elstree Film Studios* on the set of *Sherlock Holmes 2* as a Special Effects designer for Mosley& sister company Effect By Design.

Above: *DECT phone handsets*
Left: *Coca-Cola_'T-Shirt in a can' POS concept*
Below: *MagicBox_iPod/iPhone alarm clock & docks*

Above & Below: *MagicBox_iPod/iPhone headphones, alarm clock & docks*

Work Placements

Product and Furniture Design students gain valuable work experience through sandwich course and vacation-break placements

Established & Sons

Professional Experience
Shu Aoki (BA Furniture Design)

Established & Sons
London, UK
www.establishedandsons.com

BMW

Professional Experience
Heath Stephenson (BSc Product Design)

BMW
Munich
www.bmw.com/com/en/insights/technology/concept_6series/gallery/index.html

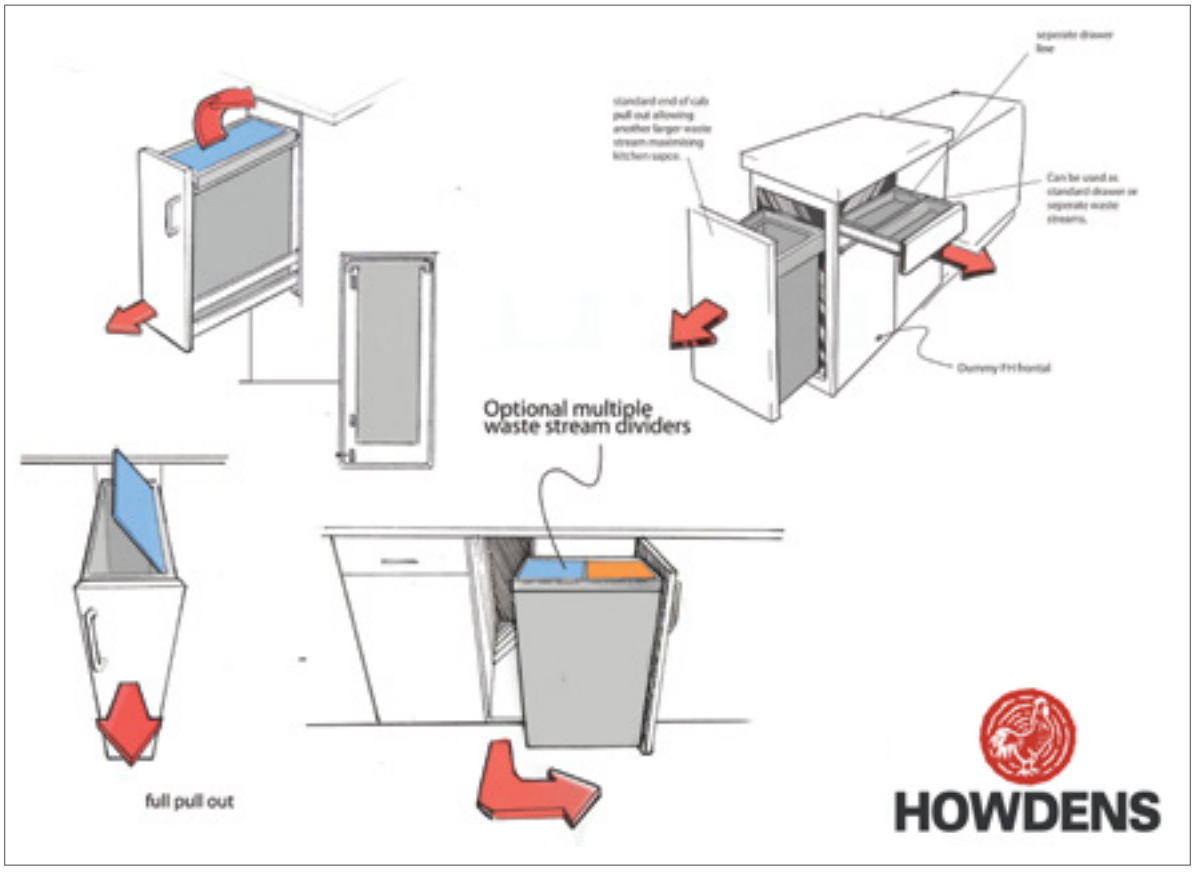
Choosing to undertake a year in industry working for BMW in Germany was the best decision I ever made. I had the opportunity to work with people at the forefront of their field and participate in a number of live projects, contributing not only to my experience but also to my portfolio. My role was working independently and with a visualisation specialist to create CAD renders of the developing concept car for reference by both the clay modellers and designers.

BMW gave me a great insight into the industry that I will be entering and I learnt many new skills that have put me in good stead for the future. I am excited to be graduating and with a year's placement behind me I am confident about the future.

Howdens Joinery Co.

Professional Experience
Sam Dinwiddy (MDes Design Products)

Howdens Joinery Co.
Yorkshire, UK
www.howdens.com



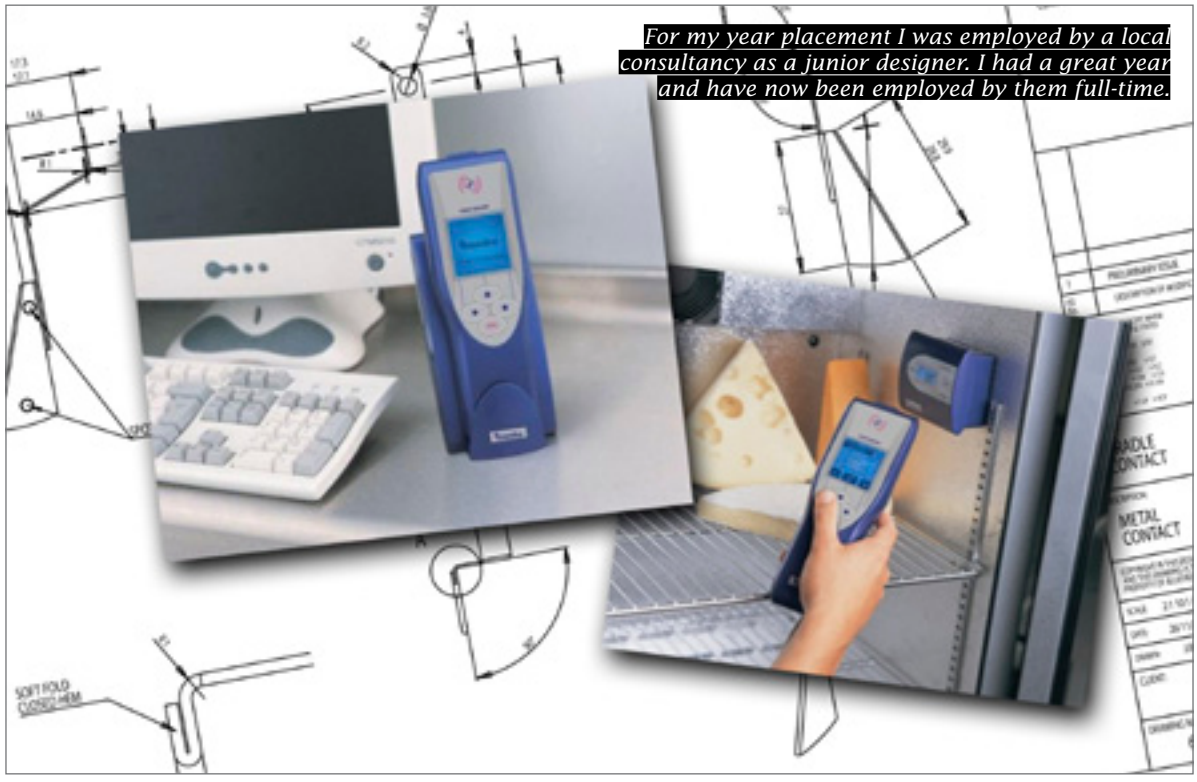
While I was on the placement I was primarily working on a brief in waste management solutions for the kitchen. This was of great benefit to me as it coincided with my specialist research area for MDes. The purpose of the brief was to research and investigate new solutions for dealing with waste management in the home, as well as researching areas of drivers for sustainability within the kitchen. Alongside this primary role as a research/designer of waste solutions, I also engaged in other design projects and work on new interior designs and displays.

During the summer of 2010 I undertook a work three-month placement in the concept design department at Howdens Joinery's Head Office as a junior product designer.

Bluefrog Design

Professional Experience
Joe Brunton (Bsc Product Design)

Bluefrog Design
Leicester, UK
www.bluefrogdesign.co.uk



During my placement year I worked on a number of projects, most notable a hedge-trimmer and a handset docking station modification.

The hedge-trimmer was one of my first projects and I was thrown in at the deep end by being asked to develop a concept into a viable product. This development process was a vast learning process in particular because I had to work to industry timescales and quality standards, but with great guidance from the Company's Head, Chris Samwell, the realised was viable and looked very professional!

The handset docking station modification brief was brought into the company because an original modification hadn't worked, leaving the handset unable to connect docking station properly.

The first process I went through was to sketch ideas and mechanisms that would solve the problem theoretically. I then went to the worked shop, cut up an existing docking station and made some new designed contacts to fit as a rig. Once I had found a solution that worked I modelled the part in CAD and it was sent away to be made so a professional quality model for presentation to the client.

Sponsored Projects

Design businesses and professional bodies give students the opportunity to work on live design briefs and research projects

A live design project with Howden's Joinery and the Helen Hamlyn Centre of the Royal College of Art the Helen Hamlyn Centre of the Royal College of Art

This year's graduating students have made a great success of sponsored projects and collaborative opportunities throughout their studies. Such projects support the students' long-term learning goals, giving them valuable experience of professional practice, whilst also benefiting the projects' sponsors with the their original thinking.

Students underwent a live design project with Howden's Joinery (the UK's largest supplier of kitchens to the trade) and the Helen Hamlyn Centre of the Royal College of Art. The brief encompassed space-planning, demographic changes and sustainable solutions. The students benefited from the opportunity to work closely with research partners who had a range of disabilities – from wheelchair users, to young arthritis sufferers and the visually impaired. Ben Kirkby, a third year MDes student joined this in-depth research project and went on to design a truly inclusive kitchen, avoiding the stigma that is so common in inclusive design solutions.

Ben Kirbys' truly inclusive kitchen

Games Workshop sponsored a final-year brief that called for an engineering design solution that would allow modellers to move away from using aerosol cans to base-coat their models. The sponsor's motivation behind this technically demanding brief was to provide its customers with a greener solution that maintained the very high quality of finish that is essential with such detailed figures.

Unilever set an intensive one week Design Challenge for this year's graduating students. The project focussed on reinterpreting the packaging and advertising pitch for the European brand AXE (Lynx in the UK) The students worked with the AXE brand team to learn about ethnographic research and explore brand positioning and target marketing.

Games Workshop

Heath Stephensons' foot powered pump and airbrush

Above: *Sam Dinwiddys' Design Concept Board for the AXE design challenge*
Left: *Scott Martin's Concept for Axe's sister brand, Rexona*

Design Unit & Retail Lab.

The Design Unit aims to promote the business benefits of design intervention to companies, encouraging continued future investment into the design community at large

In response to popular demand from industry, the De Montfort University Design Unit was established in 1992 and in the past 20 years it has undertaken design research consultancy for clients that have included BNFL, Guinness, Adidas, Oxford Instruments and many others. In 2004 the Design Unit's remit broadened considerably to embrace the coordination of Higher Education Innovation Fund (HEIF) and regional development (Regional Development Agency) funded activities; in effect becoming a design capability tasked with identifying and supporting design opportunities for the East Midlands Region.

Through both research and commercial work the Design Unit has had considerable success in developing products through to market; a folio that includes several award-winning and patented products. Their expertise, derived from working directly with industry, is fed back into the curriculum and the student learning experience. The success of the Design Unit's cross-disciplinary activities led to the group being shortlisted for a Times Higher Award in both 2007 and 2008.

The Design Unit is also at the heart of establishing Designers in Residence, an initiative that provides students with the chance to engage with staff who have active industry experience and knowledge, generating richer and more relevant learning opportunities and better validated product outcomes.

Through both research and commercial work the Design Unit has had considerable success in developing products through to market; a folio that includes several award-winning and patented products

RETAIL LAB is a state-of-the-art research and development facility, supporting insight into consumer behaviour and resource efficient retail design.

The facility's unique approach to conducting research and development places the consumer at the heart of investigations. The latest technologies, such as eye tracking and body motion detectors, are used to evaluate consumer behavioural response in existing spaces and bespoke test environments against proposed resource efficiency changes. Building a comprehensive picture of behavioural response patterns provides commercial clients with a better understanding of their target consumers, enabling informed decisions about alterations to a retail environment. As well as a 'mock shop' retail laboratory, the facility also includes a virtual test space for concept evaluations and a dedicated area for conducting training and exhibitions.

RETAIL LAB works with businesses to identify research and development needs and utilises the wide research expertise available across the university to create a multidisciplinary informed output for each project. The experts involved in the projects range from social scientists, technologists to designers, in areas as diverse as lighting, architecture, textiles, fashion, packaging and product design.

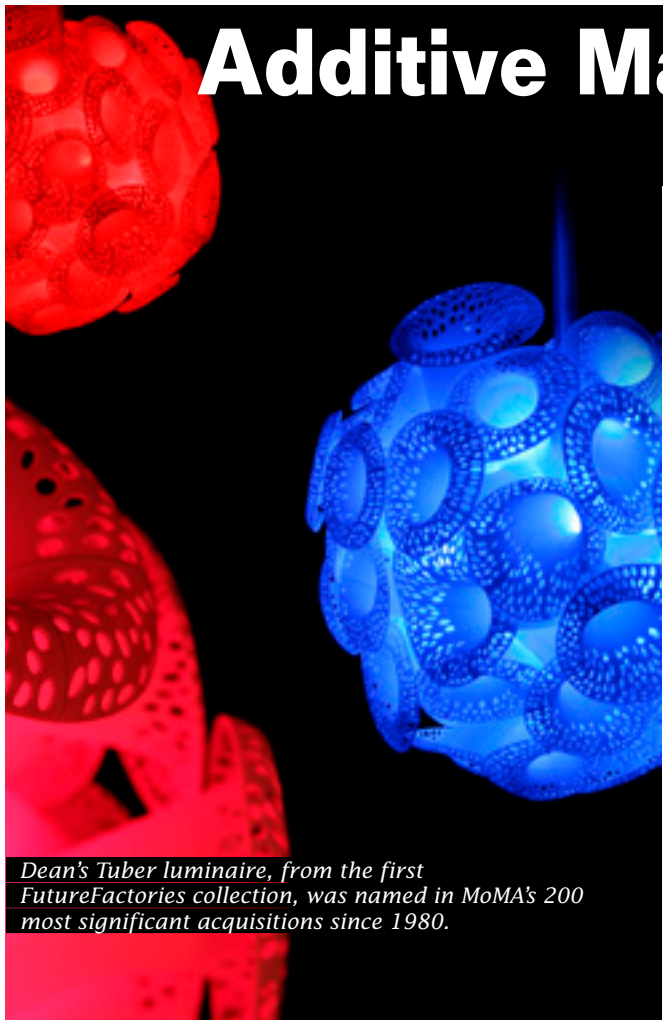
The facility's unique approach to conducting research and development places the consumer at the heart of investigations.

Research Cluster

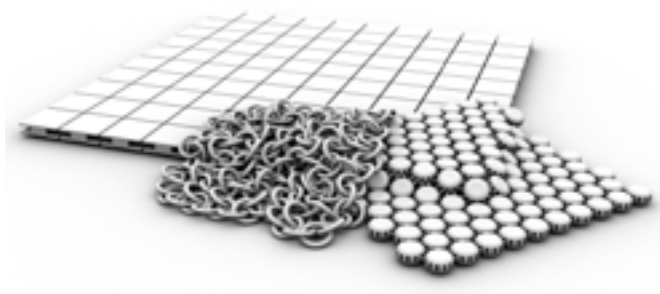
The Department's teaching staff is engaged in a broad range of important research activity that informs all three programme's curricula

Additive Manufacturing

Mass-Industrialisation



Dean's Tuber luminaire, from the first FutureFactories collection, was named in MoMA's 200 most significant acquisitions since 1980.



Additive manufacturing is a research specialism within Design Products with areas of study ranging from niche decorative products to high performance engineering applications. The Department is equipped with an extensive suite of digital design and manufacturing equipment including plastics and metal sintering – the tools of choice in direct manufacture.

Through his FutureFactories project Dr Lionel Dean has been in the vanguard of direct digital manufacturing and a pioneer of mass-individualisation. His research explores the combination of computer scripting with Computer Aided Design and the use of this computational design approach to create virtual meta -designs capable of mutation and evolution. The FutureFactories project has had worldwide impact and has yielded a string of iconic product designs from limited edition gallery pieces to retail products for well-known manufacturers. Pieces from the project have been acquired by MoMA, The Museum of Modern Art in New York, and DHUD, the Design Museum of Barcelona. In 2008 Dean's Tuber luminaire, from the first FutureFactories collection, was named in MoMA's 200 most significant acquisitions since 1980.

Inter-departmental and cross faculty projects have brought groundbreaking research. An area of study has been Additive Manufactured or 'printed' textiles; matrices of rigid links which can be considered the contemporary equivalent of chain mail. Collaborative exploration of these structures has led to high performance geometries that could revolutionise protective clothing. Departmental design and engineering expertise is underpinning fashion lead custom-fit projects for example 'printed' bra wiring which is among the projects being developed using the in-house Rapid prototyping equipment.
Additive manufacturing expertise feeds into the undergraduate teaching program with direct manufacture taking on an increasing significance in the understanding of materials and processes. Post graduate projects, feeding on this expertise, are challenging the norms of conventional mass-manufacture and exploring the possibilities for a post-industrial society.

designproducts
product | furniture | industrial

Design Unit

The DMU Design Unit has earned an enviable reputation as a leading authority in the effective use of design as a business tool within industry.

Based on its track record the Design Unit has had considerable success in attracting and effectively managing Higher Education / Regional Government and European funding to support new product development within the East Midlands. These schemes have resulted in an impressive number of effective interventions, resulting in award winning and patented products, and having considerable impact in terms of creating jobs and increasing GVA within the region.

In order to achieve this level of intervention over £600,000 of this funding has been invested directly into the local creative community to increase the design support capacity of the Design Unit and expand on our expertise.

Many of the schemes have been built on The Design Unit's **expertise in resource efficient design** for both the design of products and retail environments, typically through the RED (Resource Efficient Design) Initiative and the Deep RED project. The New Product Development Centre (NPDC) is a unique facility demonstrating state of the art rapid prototyping and testing technologies for product design. Funded by Leicestershire Economic Partnership (LSEP), the NPDC has enabled small manufacturing and design companies in Leicestershire to realise the potential of their new product concepts. The facilities provide practical techniques for product development, from 3D scanning and surface manipulation software to the latest in rapid 3D printing and metal casting.

Through these research schemes The Design Unit has been able to help over 400 companies benefit from the use of product design within their businesses. The Design Unit aims to promote the benefits of design intervention to companies, encouraging continued future investment in to the design community.

east midlands mas
BERR manufacturing advisory service

deepRED
Resource Efficient Design in the Supply Chain

IBBD
improving business by design

?

npdc new product development centre

east midlands competitiveness programme
european regional development fund

theREDinitiative
resource efficient design

Design Education Research

Extract from paper to be presented at the INTERNATIONAL CONFERENCE ON ENGINEERING AND PRODUCT DESIGN EDUCATION. London, 2011.

Entrepreneurial Skills vs. a General Awareness of Business Practice

If the title 'Business Knowledge & Professional Practice' encompasses all of this important 'additional' knowledge, skills and experience needed by graduates (but still peripheral compared to their majority design skills), how much should be learnt comparatively through live projects, work placements and employment compared to that which is directly taught through lectures and seminars at university? More broadly; to what extent should such learning outcomes be balanced between employability, and an individual's interest in enterprise / entrepreneurship?

The emergence of individual undergraduate characteristics, which are inclined towards either the 'entrepreneurial' (in its broadest sense) or the judicious, leads academics to recommend, and students to envision, different professional roles within the design sphere. To adapt undergraduate teaching so that it parallels and presupposes students' results and perceived potential would of course become akin to streaming (thinly disguised as module choices). It would currently seem inappropriate to teach undergraduates design skills in this way, but if new institutions and qualifications became part of the UK's product design education landscape then a component of university's justification for coexistence could be such a separation of teaching foci and emphases.

It could be apposite to apply a similar type of curricula separation for the teaching of business knowledge and professional practice, i.e. a core module with 'satellite' options to cover such aspects of study as 'Entrepreneurship Skills' or 'Manufacturing Management and Quality Control'. These choices would be made by students (in Level 5) after receiving core Module guidance about selecting the most appropriate business knowledge and professional practice subjects for their career ambitions. Such expectations of future roles would not however be obstructively defining (as they would be, were they design project choices), but would simply be helpful in focussed applications, interviews and in employment.

In light of current Government policy and the activities of lobbying groups such as The Association of Graduate Recruiters (AGR), universities are now under more pressure than ever to "...work more with employers to develop the curriculum in a way which embeds employability skills into every degree course." (AGR 2010 Manifesto). Therefore, engagement with industry and collaboration through the more focussed Knowledge Transfer Partnership scheme (KTP) may be the key to the survival for BA Product Design courses that don't have the STEM (Science, Technology, Engineering & Maths)-funded security of BSc and MSc study.

However, in order to fully connect with this process of industry engagement, the tension that has sometimes existed between academics and employers needs addressing i.e. the conflict between the less ruminant design skills needed by a sizeable portion of employers and the necessity for university curricula to educate students for the leading edge of the discipline."

(S.Lawson. E&PDE, 2011)

ERASMUS

European study exchange for Design Products Students
Ecole Supérieure d'Art et de Design (ESAD), Orléans, France

ERASMUS is the European Commission's flagship educational exchange programme for Higher Education students, teachers and institutions. It encourages student and staff mobility for work and study, and promotes co-operation between universities across 31 countries in Europe.

The Department of Product & Interior Design has an arrangement in place with the Ecole Supérieure d'Art et de Design (ESAD) in Orléans, France and this year five second year students have spent a thoroughly rewarding year studying in this renowned design institution on the banks of the river Loire . There are also opportunities to benefit from ERASMUS funding to study at other institutions of to help fund work placements on the Continent.

Currently, the Erasmus Scheme is well funded with students receiving a lump sum from the EU (approx. 2000 Euros) whilst also continuing to receive their student loans and any University bursaries or scholarships from which they benefit. Students are allocated pleasant student accommodation with your own cooking and bathroom facilities.

An ERASMUS year and its opportunities gives students additional time to hone their design skills at the same time as becoming increasingly independent, whilst experiencing a different culture and learning or improving a foreign language. Students also meet many of their contemporaries from all over Europe often forming life-long friendships.

There is competition for places on the ERASMUS scheme and only students who are hard working and achieve good grades will be accepted. Please note that future financial and accommodation arrangements may be subject to change.

An ERASMUS year and its opportunities gives students additional time to hone their design skills at the same time as becoming increasingly independent.

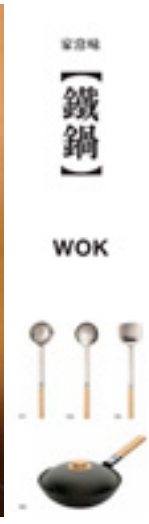
Below: *ESAD Orleans Entrance*

International Students

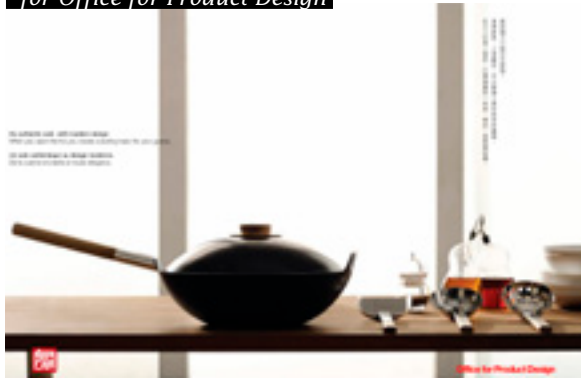
Some of our most successful students have come from overseas to study at DMU

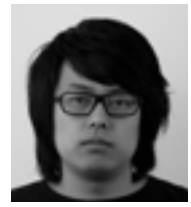
Lo Chi Shing (Hong Kong, China): I started my BA Product Design course at DMU in 2007. It was a very interesting studying experience and the most unforgettable thing was that I won two national design competitions – the D&AD Product Design Prize (a Mobile phone concept for Orange) and the RNID earplug competition, both of which were run as course projects.

After graduating in June 2009 and exhibiting at the New Designer Exhibition in London, I came back home to Hong Kong and worked as a freelance designer for short period. I then started working in the Hong Kong based design consultancy I'm still at today – Office for Product Design. We work on projects across a wide range of typologies spanning consumer electronics, homeware and furniture.



Above & Below: *Lo Chi Shing's work for Office for Product Design*





Shu Aoki (Japan): I decided to study furniture design at De Montfort University for its good facilities and its technical curriculum. The course is creatively and technical challenging and has taught me that there is always a limit in production terms. Understanding the boundary of what possible or impossible to manufacture with the current techniques and materials is essential. However challenging this and trying to break the boundary into new techniques and approaches is exciting as a young designer, although such progress would be impossible to achieve without understanding material and manufacturing first.

Top: *Lo Chi Shing, Shu Aoki, Rosetta Lau*
Above: *Work by Shu Aoki*

Rosetta Lau (Hong Kong, China): I studied BA Furniture Design at DMU for two years after joining its second year from Hong Kong Polytechnic. I really enjoyed the course, the process of developing ideas through working with models (the technicians were really helpful) and was so excited to see my own work finished and exhibited in London when I graduated – it was a great time for me.

I am now working as a visual merchandiser for the fashion retail company IT in Hong Kong. My role is to design furniture to display the products in store, to design and sometimes to hand-make props for the displays, all of which I enjoy very much.

Affiliations & Partners

The Department and students benefit from accreditation and support from industry partners

iED

Our BSc (Hons) Product Design programme has the kudos of being accredited by the Institute of Engineering Designers, with many of our alumni becoming Graduate and then full members of the IED. In order to gain its accreditation, our BSc Programme has undergone a stringent assessment process by an expert IED panel in which every aspect of the curriculum, provision and student work is scrutinized. In the last accreditation, the panel commended the Programme and its graduates.

Left: *James Heywood's scaling school chair – the 2008 FIRA Award winner*

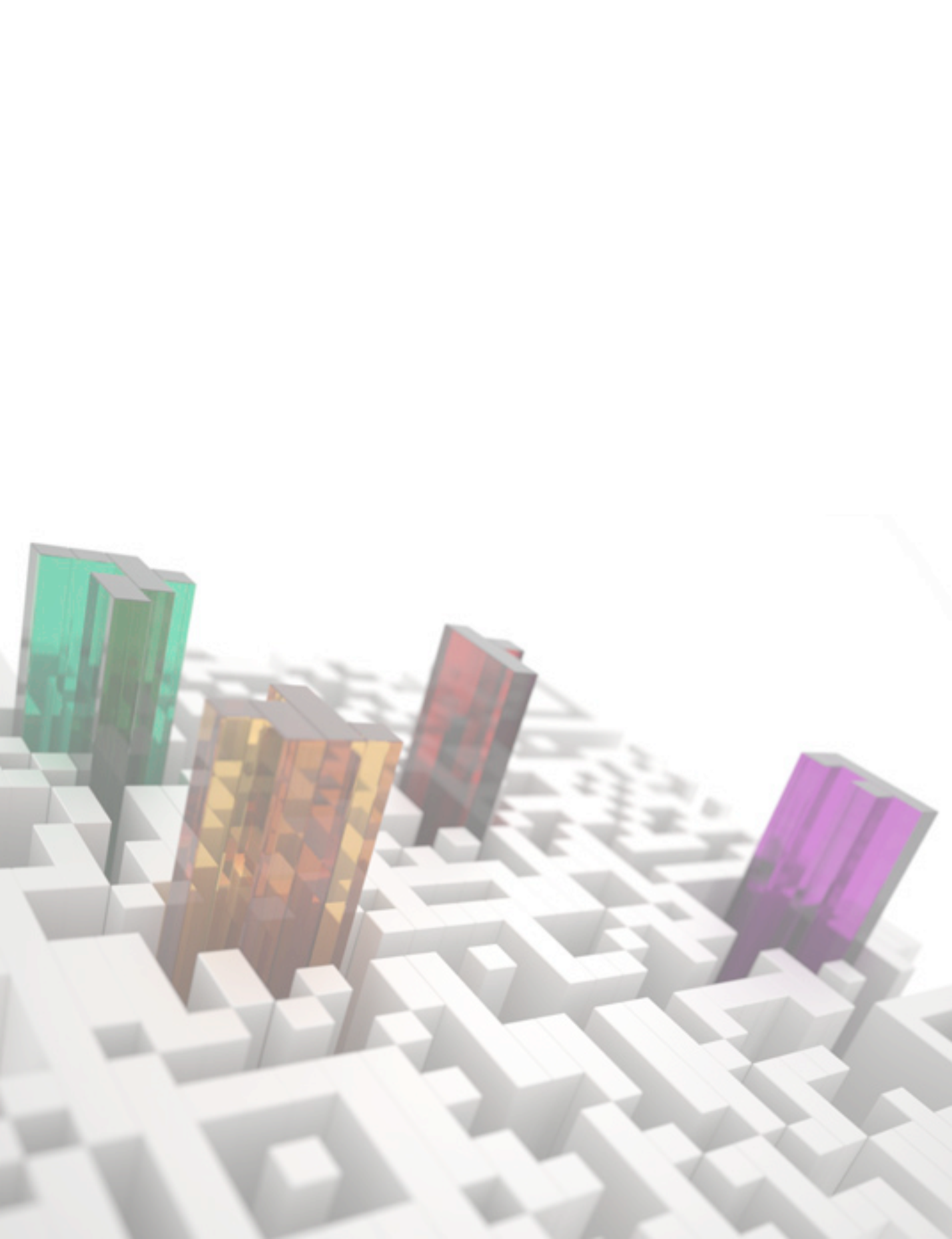
FIRA

Since 2008 the Furniture BA (Hons) Programme has had a close affiliation with Furniture Industry Research Association (FIRA) and in particular, their Chief Ergonomist Levent Caglar – the country's leading authority on ergonomic furniture design.

Each year, FIRA have awarded an 'Ergonomic Excellence Award' to one of our graduating furniture students – an arrangement that the Association has with no other university.

Michael Marsden

Course Leader
Design Products
t: +44 769 746 2859
e: student@surname.co.uk
w: www.studentname.co.uk



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