

THE HELEN HAMLYN CENTRE FOR DESIGN YEARBOOK 2011



Royal College of Art

Postgraduate Art and Design



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The Helen Hamlyn Centre for Design at the Royal College of Art, London, undertakes design research and projects with industry that contribute to improving people's lives. Our approach is inclusive and interdisciplinary, and projects are organised in three research labs: Age & Ability, Health & Patient Safety and Work & City. As a centre for design-led research and innovation, we are an integral part of the RCA, one of the world's leading postgraduate schools of art and design. This Yearbook captures our work in 2010/11. We welcome your comments.

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MESSAGE FROM THE RECTOR DR PAUL THOMPSON

The academic year 2010/11 was one of positive change for the Royal College of Art's largest and longest-running centre for design research. In March 2011 a new name – the Helen Hamlyn Centre for Design – and a new operating structure with three research labs was announced by the College to mark fresh intent.

The new name emphasises the practice-based credentials of a research centre staffed mainly by RCA graduate designers. The new lab structure enables its core themes to be explored in greater depth – with more cross-fertilisation between individual projects within a particular theme.

This publication reports on key projects and initiatives in a year when the Helen Hamlyn Centre for Design brought several major studies to a conclusion within a short period. These include the redesign of the emergency ambulance with London NHS; the Designing Out Medical Error (DOME) project with Imperial College; the i~design programme with Cambridge Engineering Design Centre; the TACT3 study on ageing and continence with New Dynamics of Ageing; and the design for dementia project with Bupa.

The completion of such a large programme of design research is testament to the strength-in-depth

of the centre in those core areas on which it has built its reputation. Funded by a mix of UK Research Councils and industry partners, the work ranges from ways to improve hospital and elderly care to ways to improve the design process itself.

At a time when increased life expectancy, pension reform and long-term care for the elderly are regular topics of political and social concern, the work of the centre has never been more vital. For this we must thank the Helen Hamlyn Trust for funding not only the core operations of the centre through an endowment but also the Helen Hamlyn Chair of Design – an 'in perpetuity' professorship which is currently held by the centre's director Jeremy Myerson.

It is through the Trust's vision and generosity that we are able to create a framework that attracts so many other prominent players to support the centre's work. I want to thank everyone involved in the Helen Hamlyn Centre for Design – the research team, partners and sponsors, the advisory board, members of the Helen Hamlyn Trust and Helen personally – for making 2011 such a memorable year.

MESSAGE FROM THE FOUNDER

HELEN HAMLYN



This year marks two major milestones in the relationship between the Helen Hamlyn Trust and the Royal College of Art.

Twenty years ago, in 1991, my charitable foundation initiated and supported the launch of the DesignAge action research programme at the College under the direction of Roger Coleman. This pioneering initiative explored the design implications of an ageing society and eventually over this period grew into the Helen Hamlyn Centre for Design that we know today.

But DesignAge would never have come into existence without the *New Design for Old* exhibition, which was held 25 years ago in the Boilerhouse space for contemporary design at the V&A. This is the second milestone. Back in 1986, sixteen leading international designers were invited to redesign everyday items for the home to improve the lives of older people. The results that went on show in South Kensington alerted everyone to what could be achieved in terms of social inclusion with the practical application of design thinking.

The *New Design for Old* exhibition really threw down the gauntlet for those operating in the vanguard of what is now called inclusive design. So I am particularly pleased to see a new

generation of RCA graduates rising to the challenge of creating age-friendly designs in the same spirit of creativity and experiment as shown 25 years ago at the V&A.

The evidence can be found in the pages of this Yearbook, which presents all of the centre's valuable work over the past 12 months. You can read about our flagship patient safety project to redesign the interior of the emergency ambulance alongside other relevant studies addressing ways to improve hearing care, video conferencing and urban spaces for older people.

It gives me great pleasure to see that not only are the right problems being addressed by the Helen Hamlyn Centre for Design but also – to borrow the title of the end-of-year show and symposium by our research associates – that the problem comes first. I wish the entire team at the College every success with *The Problem Comes First* exhibition and I would like to thank the many commercial, academic and non-profit partners who have joined with the Helen Hamlyn Trust in supporting the centre's pioneering work in 2010/11.



DIRECTOR'S REPORT JEREMY MYERSON

Twenty years after the Helen Hamlyn Trust first supported an action research project on design for older people at the Royal College of Art, the Helen Hamlyn Centre for Design is today firing on all fronts across a broad spectrum of design to improve life.

This Yearbook gives a detailed picture of our activities in 2010/11, a year in which we mounted the largest programme of design research and projects with industry in the centre's history. Equipped with our new name and new lab-based operating structure, we significantly extended our reach in a number of ways.

Our research team addressed a wider range of issues than ever before. We branched out from our core focus on the physical and sensory design implications of ageing to explore cognitive impairments such as autism and dementia – and we continued to build our expertise in healthcare, workplace and urban design too.

To help achieve all this, we broadened our skill base, recruiting for example our first research associate from RCA Textiles to enhance our work in design for autism, and set up expert networks around each of our projects. Our work in patient safety especially requires a multidisciplinary team-based approach.

Our international profile was raised too. Not only did we work with several multinational companies, giving us a global view of social change, but we also attracted delegates from 30 countries to our successful Include conference, held at the RCA in April this year.

Our Challenge Workshops, led by Julia Cassim, visited more cities around the world than ever before, exporting inclusive and co-design techniques to designers via a series of events that have become a fixture on the international calendar for many development agencies.

Julia left the centre this summer after 11 years with us to return to Japan, and we thank her for her pioneering work. The good news is that Julia will continue to lead the Challenge Workshops as a Visiting Senior Fellow.

Perhaps the best illustration of our enhanced reach in 2011, however, can be seen in the sheer bandwidth of the centre's work. This extends from fundamental user and ethnographic research to design for production. Our projects to design out medical error, remodel the emergency ambulance interior and develop a new resuscitation trolley (which has just completed a clinical trial at a London hospital) demonstrate the full scope.

Few other design research centres can claim such broad-ranging innovation

capacity. This attribute is due to our place right at the heart of the Royal College of Art and to the hard work and talent of my colleagues and collaborators whom I would like to thank for making 2010/11 such an important year.

To mark the end of the year, our 2011 Helen Hamlyn Research Associates exhibition is called *The Problem Comes First*. Running from 23 September to 5 October, its theme is inspired by a landmark Danish Design Council show curated by Jens Bernsen, which visited the V&A Boilerhouse back in 1983.

Bernsen's exhibition was based on a very simple premise: in order to create meaningful design, first you must define the problem you are trying to solve. That means proper research and analysis is important to the design process.

As Bernsen memorably stated: 'Good design is not only solving problems but also stating them'. This message was quickly lost during the consumerist design boom of the 1980s but is ripe for revival now.

Indeed many of the social issues that were distinctly unfashionable when the Helen Hamlyn Trust and the RCA first collaborated 20 years ago are sky-high priorities for designers today. For the Helen Hamlyn Centre for Design, this can only be a good thing. We hope you enjoy the 2011 Yearbook.

THE PROBLEM COMES FIRST



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Twelve new RCA design graduates and one academic visitor from China joined the latest edition of the Helen Hamlyn Research Associates Programme, which teams up College researchers with partners in business, government and the third sector. Thirteen collaborative projects addressing social need and inclusion were showcased in an end-of year show and symposium entitled The Problem Comes First.

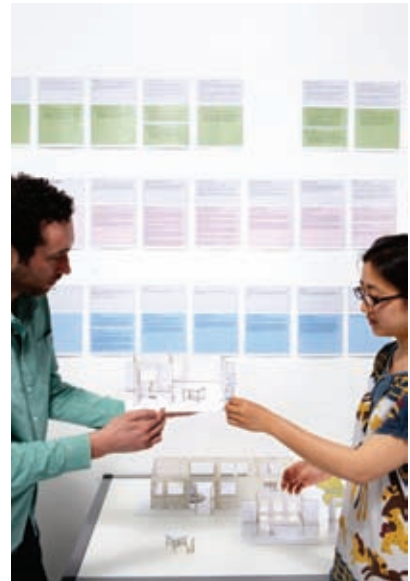
The exhibition ran from 23 September to 5 October 2011. It was supported by the European Commission Representation in the UK through its co-funding of cultural activities and staged as part of the RCA's contribution to the London Design Festival.

Shown here are a series of portraits of the Helen Hamlyn Research Associates 2011 by photographer Petr Krejci, which capture the designers in the act of contemplating the design problem. These images were used in the exhibition and catalogue.

- 1 Tom Stables investigates hearing loss
- 2 Gail Knight measures up public toilets
- 3 Jamie Tunnard explores video technology
- 4 Andrew Brand and Katie Gaudion probe sensory needs



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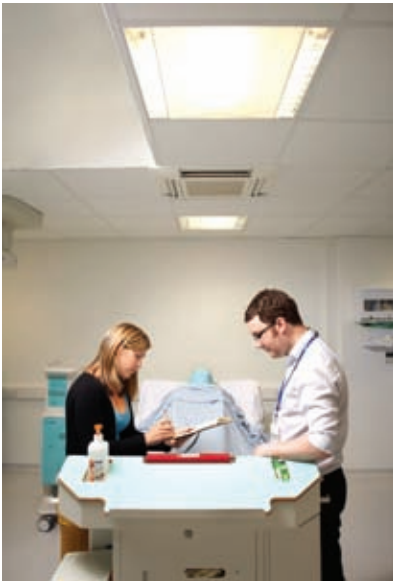


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- 5 Florie Salnot investigates the world of pregnancy
- 6 Ying Jiang and Gregor Timlin discuss care home design
- 7 Maja Kecman (left) and Karina Torlei assess the neckbrace
- 8 Gianpaulo Fusari studies emergency health services



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- 9 Grace Davey and Jonathan West examine medical error
- 10 Megan Charnley explores the future of city lighting
- 11 Lottie Crumbleholme (left) and Catherine Greene look at sustainable working
- 12 Catherine Greene and Lisa Johansson study local communities

INCLUDE 2011

The sixth international conference on inclusive design, Include 2011, organised and hosted by the Helen Hamlyn Centre for Design, took place at the Royal College of Art on 18-20 April 2011. Its theme was the role of inclusive design in making social innovation happen.

Led by Include Conference Director Jo-Anne Bichard, the event attracted more than 200 delegates from 30 countries around the world. It featured 120 paper presentations by design researchers, professionals and policymakers as well as international projects and posters, designer-led workshops, a 24 Hour Inclusive Design Challenge, the Include Conference Awards, and a guest exhibition from Art Center College of Design in California, entitled Safe Agua.

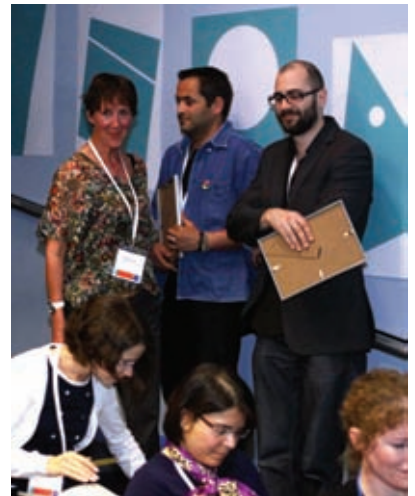
Keynote speaker Bill Moggridge, director of the Cooper Hewitt Design Museum, New York, used his own stellar 40-year career to describe how design has progressed from the personal to the social to the global environment. Gala Dinner speaker Sarah Harper, Professor of Gerontology at Oxford University, explained how the changing demographics of advanced ageing are creating important new contexts for inclusive design.

Include 2011 was sponsored by Audi UK, which showcased the winning Glasgow School of Art team in its Sustain the Nation competition, and BT, which hosted two business breakfasts to probe the commercial uptake of inclusive design in industry.





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- 1 Conference promoted at RCA
- 2 Three Include chairs (from left): Nina Warburton, Graham Pullin and Sean Donahue
- 3 Keynote speaker Bill Moggridge
- 4,5 Conference workshops
- 6 Gala Dinner speaker Professor Sarah Harper
- 7 BBC Technology Correspondent Rory Cellan Jones (far right) chairs BT Business Breakfast
- 8,9,10 Include delegates enjoy the action
- 11 Oliver Anderson (centre) from Imperial College leads a workshop on patient safety



Adult with autism takes part in sensory workshop

AGE & ABILITY RESEARCH LAB

The Age & Ability Lab focuses on design for a more inclusive society irrespective of age and ability. This year we addressed a wide range of design issues related to quality of life for older people – from ways to improve hearing aids and video-conferencing technology to the completion of a major study on the provision of public toilets. Cognitive ability also forms a key aspect of our work and we continued to develop our research into housing design for adults with autism by looking at sensory preferences. Underscoring our approach is the i~design research programme which concluded this year with the launch of a series of web-based tools to help designers practice inclusive design more effectively.

Rama Gheerawo, Lab Leader

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OUT OF ORDER

THE PROBLEM WITH PUBLIC TOILETS FOR OLDER PEOPLE

Research Associate: Gail Knight

Co-Investigator: Jo-Anne Bichard

Research partner: TACT3 consortium

Funder: New Dynamics of Ageing

Project duration: Nov 2008-Oct 2011

This study on continence and ageing has resulted in a citizen-driven website that will encourage local authorities to improve provision of public toilets



Many public toilets in the UK are unhygienic, inaccessible or closed down. In this context, continence concerns can result in many older people limiting the time and distance they are away from home, impacting on their health and wellbeing.

This work is part of a three-year research project called Tackling Ageing Continence through Theory, Tools and

Technology (TACT3). It is funded by the New Dynamics of Ageing programme, a seven-year multidisciplinary research initiative between five UK Research Councils, which is the largest and most ambitious research programme on ageing ever mounted in the UK.

The research focused on the needs of two distinct groups of users: members of the public and providers of toilet

facilities. Continence concerns affect people of all ages. Nearly 100 members of the public were interviewed, from parents of newborns to people aged over 90, with questions focusing on their experiences of needing, finding and using publicly accessible toilets.

From these interviews, four user profiles were created to communicate user needs to providers. The profiles

included a young women with Irritable Bowel Syndrome (IBS), a man in his thirties with a young family, a retiree managing health concerns and an octogenarian with limited mobility.

BARRIERS TO CHANGE

In addition, 20 organisations involved with the provision of publicly accessible toilets were interviewed about the barriers they faced in service provision. These professionals included local authorities and managers of train stations, parks, shopping centres and department stores.

From these engagements, the project focused on how the services could be improved. One aspect of this involves the use of 'open data', an initiative encouraging local authorities to release information about facilities and enabling communities to make decisions about them. The release of 'open data' by local authorities on their publicly accessible toilet provision, including details of access and opening times, could be used in map and smartphone applications.

Bringing together existing and future open data on publicly accessible toilets, the project has developed a website called The Great British Public Toilet Map. This resource shows where toilet data has been provided. If no information currently exists, the site asks residents to contact their local authorities to explain the need to release the data.

www.greatbritishpublictoiletmap.co.uk

ROBUST ACCESSIBLE TOILETS



Robust Accessible Toilets (RATs) is a project running alongside the TACT3 study (opposite). It specifically focuses on the issue of misuse of toilet facilities. Incidents of misuse have resulted in a one-size-fits-all approach in the design of publicly accessible toilets. RATs aims to bring together two distinct design perspectives – those of Designing Out Crime and Inclusive Design.

Publicly accessible toilet provision has never been more diverse, with a range of providers offering facilities in public buildings, stations, shopping centres and local businesses, as well as standard Automatic Public Conveniences (or 'superloos') offered by local authorities. Where problems exist they are often specific to the type of facility, the environment and the community that use it.

This second study has produced case studies of toilet provision in a local neighbourhood, a tourism spot and a town centre in order to better understand the location-specific problems and potential solutions. The research aims to bridge the gap between user-driven design needs and anti-crime advice, as some solutions can lead to legitimate users being designed out of facilities with anti-social activities.

The RATs study is re-examining the research from the TACT3 project with a focus on 'fear of crime' and the challenges of managing toilets that are abused. The project output is a publication, an Inclusive Design Guide to Publicly Accessible Toilets.

Principle Investigator: Jo-Anne Bichard
Research Associate: Gail Knight
Research partner: ESRC Connected Communities Programme

LOUD AND CLEAR MAKING HEARING CARE INCLUSIVE

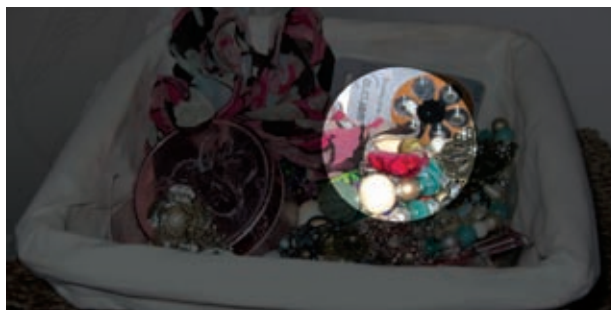
Research Associate: Tom Stables

RCA Department: Design Products

Research partner: Oticon

Project duration: Oct 2010-Sept 2011

This study explores how inclusive design principles can bring hearing aid technology and people closer together



Hearing aid technology has advanced rapidly in recent years, but its design can be stigmatising and not inclusive of the needs and lifestyles of people with hearing loss. The aim of this project in partnership with Danish hearing care company Oticon was to improve first time users' understanding, ownership and acceptance of their hearing aid. The company has worked to develop design strategies to address the stigma surrounding hearing loss.

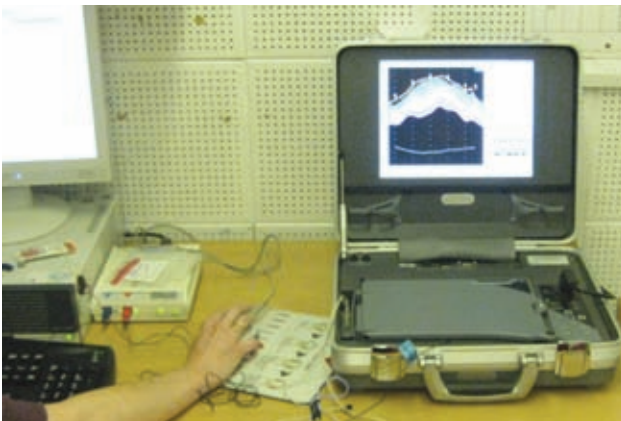
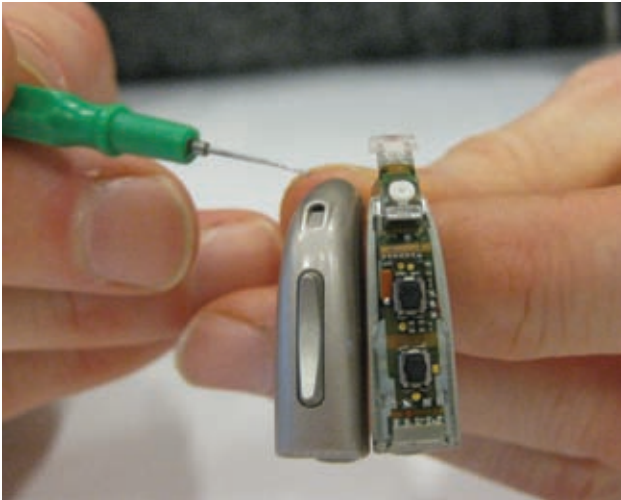
The point at which a person receives a hearing aid after they first discovered they had reduced hearing, can be as long as ten years. The slowness of the process of acceptance is due to a reluctance to admit a loss of ability and a resistance due to a perceived stigma.

Hearing aids today are powerful computing devices and capable of complex sound processing and wireless connectivity. However, while the acoustic benefits are impressive, the use of hearing aids is not always intuitive

and often ignores the other age-related impairments of people with hearing loss such as reduced dexterity or vision.

Small buttons, fiddly battery drawers and confusing operating procedures can alienate people from the device. Both functionally and aesthetically, users can find it difficult to place the hearing aid in their daily lives. This can lead to people giving up on the aid altogether and becoming even more isolated.

The research conducted in this



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project aimed to give a holistic perspective of factors affecting how people behave, what they know and how they feel in relation to the device. Engineers were interviewed to find out what is involved in producing a hearing aid; audiologists were observed recommending and fitting the devices with users. There was an in-depth user study involving home visits with nine people with hearing loss: five older users over 65; two young people under 30 and two parents with teenage sons.

NOT STRAIGHTFORWARD

The research revealed the hearing aid to have a confused identity – part technology, part medical device, part wearable object. It is worn like jewellery, yet some users want it to be as discreet

as possible. The user is buying technology, yet is treated like a patient.

The structure of administering the hearing aid is not straightforward either. The role of the audiologist is both business owner and doctor, and also brand representative as the manufacturer designs for the end user but sells to the audiologist. The manufacturer has two customers, but is only able to talk directly to one of them. All of these factors make the hearing aid an object without a clear context of use – thus it is difficult for users to understand as a product and to align with their self image.

The results of the study are an insight bank of user behaviour and a range of specially devised inclusive design tools to be used by the Oticon

development team. By bringing inclusive design principles to one of the world's most sophisticated hearing care manufacturers, the aim is to create hearing aids that fit people's lives more effectively.

- 1 Images showing how young adult with hearing loss treats the device as a piece of jewellery and stores it with other accessories
- 2 Both the hearing aid and the audiology fitting procedure involves complex and powerful technology
- 3 Older people with hearing loss can struggle with the hearing aid due to reduced sight and dexterity

SENSORY PREFERENCES HOUSING DESIGN FOR ADULTS WITH AUTISM

This project takes a total design-led approach to sensory needs in order to create better homes for adults with autism

Research Associates: Andrew Brand
and Katie Gaudion

RCA Departments: Innovation Design
Engineering and Textiles

Research partner: The Kingwood Trust

Research consultant: Colum Lowe, Being

Supported by: The Monument Trust

Project duration: Oct 2010-Sept 2011



Adults with autism often live in environments that do not take into account their individual and sometimes extreme sensory differences. Methods for identifying those sensory differences are not readily available to the designers of residential accommodation. The result is that quality of life can be diminished for adults with autism.

But what if sensory preferences could be identified more easily and incorporated into the design of autism-friendly homes? Then, adults with autism might be given the opportunity to develop skills and learn more about themselves and the world around them.

This project looks at how the design of home environments and occupational play might better support adults with autism. Autism Spectrum Disorders including Asperger's are currently thought to affect one in 100 people. Much research focuses on the causes and clinical symptoms of autism; very little has looked at the social implications of the condition. These include the need to design better home environments and the importance of enabling the growing number of people diagnosed with autism to live more independently.

UNUSUAL PROCESSING

Sensory experiences include touch, movement, body position, sight, smell, taste, sound and the pull of gravity. The process of responding to, organising and interpreting this information is called sensory processing. It is estimated that over 90 per cent of people with autism have unusual sensory processing and this affects the way they relate to other people, and sense and perceive the world around them.

The premise of the research is that the right home environment – one that has been adapted and furnished with sensitivity to people's sensory processing differences – can minimise

triggers of anxiety and stress and support personal development.

Everyday sensations can be experienced at unbearable levels or not be noticed at all. Some adults with autism will seek out sensory experiences, whilst others will try to avoid them. Living in a world that does not take into account their sensory sensitivities can give rise to high levels of anxiety, which in turn may trigger unusual behaviours and diminish motivation and confidence.

To better understand the sensory needs of adults with autism, the research started by looking at how people are currently supported in their homes, observing and participating in the daily activities of staff and residents. An extensive literature review of sensory interventions for people with autism was conducted and the researchers visited three controllable sensory environments that had been created specifically for adults with autism.

To complement this broad overview, four adults with autism – each with different needs and abilities – were invited to participate in an improvised sensory space. The aim was to set up stimulating sessions that would reveal their sensory preferences. In the planning of these activities, sensory profile questionnaires were completed for each resident as a guide to how to dress the room and select or create props that might appeal to individual needs.

Each activity focused on stimulating the primary senses and the process of simply engaging with objects rather than achieving specific tasks. The results were overwhelmingly positive.

Participants showed enhanced and, in some cases, unprecedented levels of concentration, communication and social interaction. These sessions were then repeated twice to check results and pilot new methods of engaging Kingwood staff with the people they support.

Building on this research, the study has three main outputs. The sensory profile questionnaire has been developed into a card-based system that uses images to enable adults with autism to share their sensory preferences with support workers and family members. Selected images can then be highlighted within a digital tool to create a formal sensory profile for each individual. This profile will be circulated to prompt enhanced care and inform design decision-making as a 'mood board'.

SENSORY PROPS

In tandem with this novel, image-based system of sensory profiling, bespoke sensory props and guidance have been developed to show how to use lighting, fabrics and other materials to create temporary, affordable and adaptable sensory spaces within the home settings that are tailored to individual preference.

The third output is a series of creative workshops for Kingwood staff on the theme of 'Ready Steady Make'. This supports the development of skills in mapping sensory preferences and making sensory props. The outcome of the project is a total design-led approach to the sensory preferences of adults with autism, embracing sensory identification, transformative space creation and staff development. Findings will be used to inform the interior design of a new Kingwood development to accommodate eight adults with autism.

The project builds on Andrew Brand's initial scoping study of housing design for adults with autism in 2009/10, which resulted in the guidance publication *Living in the Community*, and will be followed next year by investigation of outdoor sensory spaces.

WINDOW ON THE WORLD VIDEO CONFERENCING FOR OLDER PEOPLE

Research Associate: Jamie Tunnard

RCA Department: Design Products

Research Partner: Cisco

Project duration: Oct 2010-March 2011

This rethink of video-conferencing technology allows older people to enjoy a face-to-face experience with life-size dimensions

Current developments in video-conferencing technology are mismatched to the needs of older people, denying them the social benefits of video connection to friends, family and health professionals.

Current systems fall into two categories. They are either very expensive, large-scale installations for business use, which appear remote and are beyond the budget of retirement communities; or more commonly, on smaller devices such as laptops, tablet computers and smartphones which are aimed at a consumer market and do not align eye contact. The quality of the picture is very dependent on the internet connection and small screen sizes mean that the 'life sized' experience of a face-to-face conversation is lost.

This project set out to explore the opportunity for a life-sized, high resolution, affordable video-calling system for the home, focusing on the needs of older people who are more likely to have reduced sight and hearing and are at greater risk of social isolation. Could there be a gap for a mid-level, mid-sized system that combines the cost effectiveness of smaller devices with the richer all-round experience of more expensive set-ups?

The research mapped existing video

services and listed benefits and shortcomings to understand where product opportunities lay. A series of design experiments created prototypes and mock-ups to involve older people in the early stages of the design process (see opposite). These helped to imagine and articulate how a new large-screen video service could bring personal and social benefits. Being able to connect with friends and family and access advice from healthcare professionals without having to leave the home scored highly.

DOMESTIC CUES

The physical development of the prototypes took references from traditional elements in the home such as mirrors, picture frames and window frames. People felt that they wanted an object that would fit into their domestic environment and act as a 'window on the world'. Layering extra functionality onto laptops, TVs or smartphones was not seen as an optimum solution, especially as they require set-up each time they are used and could be difficult to use in a multi-person household.

The final prototype places the camera in the centre of the screen so that eye contact can be maintained throughout a video call. It uses existing technology to reduce costs and could

work with current video and voice-over-internet services. Low level LED lighting illuminates the caller's face so that expressions can be better read in most lighting conditions. The screen is life size, which allows for a more human interaction – the caller is not drastically reduced in size to fit onto a small screen.

Whilst the outcomes of the project are not market-ready ideas, the prototypes challenge existing notions of what video conferencing services should be and suggest a more people-centred approach in making video call.



I-DESIGN 3 EXTENDING ACTIVE LIVING THROUGH MORE EFFECTIVE INCLUSIVE DESIGN

Lead Researcher: Yanki Lee

Principal Investigator: Jeremy Myerson

Research Partners: Engineering Design
Centre and Well-being Institute, Cambridge
University; Loughborough Design School,
Loughborough University

Funded by: EPSRC

Project duration: 2007-2010

This major research study has created a set of practice tools to enable a paradigm shift from designing *for* people to designing *with* people

Against the background of rapid population ageing, the study and practice of inclusive design in the UK has grown considerably over the past decade. This rise in activity and profile has been catalysed in part by the ten year i~design programme of research (2000-2010) funded by the EPSRC and led by Cambridge University's Engineering Design Centre (EDC) in partnership with the Helen Hamlyn Centre for Design at the RCA.

The first phase of the i~design programme (2000-2004) concentrated on building an academic knowledge base in inclusive design. The second phase of i~design (2004-2007) set out to understand commercial needs and

engage the business community in inclusive design. The third phase of the programme (2007-2010) sought to build on previous work by focusing on designers and their interactions with people.

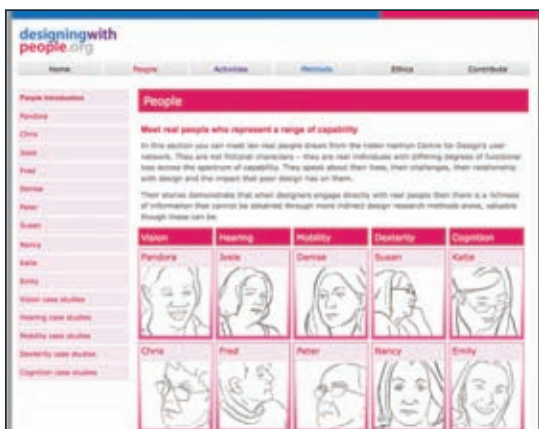
Cambridge University's Well-being Institute and the Loughborough Design School at Loughborough University joined the research consortium for the third phase. The aim was to make the practice of inclusive design more effective by giving designers more accurate, relevant and up-to-date data on capability in the population, combined with a robust model of human-product interaction with reference to environmental and social

contexts of use. A key part of phase three was to conduct a 400-person pilot to test the requirements for a new survey of national capability.

IMPROVED DATA

By providing designers with improved data in a form that would be most useful and by creating advanced tools for calculating levels of inclusion, the i~design team wanted to support the practical development of new products and services that would give older people greater independence and bring disabled people into mainstream life and employment.

The RCA research team worked closely with colleagues at Cambridge





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and Loughborough to turn their scientific findings into practical resources for designers. A key objective was to bring hard capability data alive for the design profession in an empathic and meaningful way. This research was consolidated in an open-access resource (www.designingwithpeople.org) that explores the current shift from designing *for* people to designing *with* people and aims to offer a wealth of practical information on inclusive design practice.

USER NETWORK

The website has four main sections. A People section presents 10 individuals drawn from the Helen Hamlyn Centre for Design's user network – their vision, hearing, dexterity, mobility and cognition capabilities correspond to different scales on Cambridge University's population capability data and their life experiences can act as an inspiration for designers.

An Activities section uses the centre's extensive track record of inclusive design projects to present

precedents and case studies related to the activities of daily living. Insights on user behaviour are grouped under four themes – Personal Care, Household, Work & Money and Communication – and presented using images, video and first-person testimonial. Loughborough's Context Framework is presented here.

A Methods section maps and evaluates common design methods in practice and classifies them within a special framework. Designers can browse exemplar projects related to each method and identify the most appropriate method for their current project. Finally, an Ethics section offers designers guidance on good practice in working with people. Designers can work through the stages of contact, consent, confidentiality and conduct step-by-step in order to understand the ethical principles of user involvement.

Alongside the development of www.designingwithpeople.org, which invites contributions from designers and seeks to build an online community of practice, the RCA research team also

developed and tested an educational workshop for design students, The Methods Lab, which works in tandem with the web tool.

All of the design tools generated by the i~design 3 research project were launched at the Include conference on inclusive design at the Royal College of Art in April 2011.

As part of this launch, a short documentary film was made by Marie Lenclos of Pigeon Films to show how the tools can be used in practice. The film featured the Vitamins design team during the creative development of a new ice scraper for car windscreens.

www.designingwithpeople.org
www.inclusivedesign toolkit.com

1 Screen shots of the new web tool

2 The Vitamins design team is shown using simulation tools from the i-design project in a documentary film about the research

AGE AND INGENUITY AN INTERCULTURAL APPROACH TO AGEING

Research Fellow: Yanki Lee

Research Partner: Tsinghua
University, Beijing

Funded by: Department of Business,
Innovation and Skills (BIS)

Project duration: Dec 2010-Nov 2011

Research into the lifestyles of retired scientists on the campus of an elite Chinese university could hold clues to ageing well in place



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With pensions equal to half of their salaries before retirement, apartments for life, a familiar environment and a connected community, more than 6,000 retired academics are actively ageing on Beijing's Tsinghua University campus in China.

Tsinghua is one of China's top higher education institutions and has just celebrated its 100th anniversary. It features first-class learning and advanced

facilities in science and technology with more than 30,000 staff members and students. Many of its retirees are scientists who have respectable social status as subject experts as well as mentors of many of China's key political leaders in the Communist Party, the ruling party in the Chinese government. What can Tsinghua's community of academic retirees tell us about successful ageing in place?

Dr Yanki Lee, a research fellow from the Helen Hamlyn Centre for Design, is currently spending one year on a UK-China Fellowship of Excellence programme funded by the UK's Department of Business Innovation and Skills (BIS).

The award enables young researchers to conduct cutting-edge research in a Chinese research institution and Dr Lee is conducting

a study to engage this prestigious and ingenious group of older people at Tsinghua, who were the cream of the nation in the second half of the 20th century. This group of Chinese intellectuals is actively resisting the general features of 'old age', instead maintaining a strong Tsinghuaian communal identity.

FESTIVAL EVENTS

Working in collaboration with sociologists, gerontologists and design experts from both China and the UK, Dr Lee's study aims to explore the lifestyles and aspirations of this group in order to find new ways to tackle ageing issues. The year-long project is interdisciplinary and intercultural. A series of design events have been planned to coincide with five traditional Chinese festivals on the Tsinghua University campus in order to broadly capture living strategies and the pursuit of personal ambitions, 'contributions to the nation' and 'the continuation of labour' among the retired academics.

In parallel with this strategy, the research is employing the methodology of reflective ethnography in its interactions with a core group of around 20 scientists aged over 80 – an approach in which ageing is viewed as a culture. The Fellowship aims to challenge the concept of ageing as 'a policy problem to be solved' (DEMOS 2011) and instead promote it as a unique experience for each individual and a culture from which we can draw lessons. A book on the 'ingenuity of ageing' will be published at the conclusion of the project.

1 Research Fellow Yanki Lee (right) pictured on the Beijing campus with Chinese academics

WINDOWS FOR ALL



Norwegian window manufacturer NorDan is known across Europe for its advanced and sustainable products. However when the Norwegian Design Council saw an opportunity to work with the company to make its windows more user friendly, the Helen Hamlyn Centre for Design joined a consortium alongside Norwegian design consultancy Kadabra to use a people-driven approach to create innovative new ideas.

The project aimed to get a better understanding of people's needs and aspirations in relation to windows, often an expensive and important purchase for any homeowner. The team worked with a range of users of different ages and abilities, including a wheelchair user, a blind person, a person with arthritis and a student living in a

tiny flat where window space was at a premium. Architects, housing developers, insurers, police and fire safety officers were also consulted. Research methods ranged from functional testing in a lab workshop to one-to-one interviews in the home to explore blue-sky thinking.

The result was a suite of design ideas related to ease of opening, better service delivery and the incorporation of new technology. NorDan is now in the process of developing some of them.

Senior Associate: Catherine Greene
Project adviser RCA: Rama Gheerawo
Project partners: NorDan ASA,
Norwegian Design Council

This collaborative project was initiated and directed by Onny Eikhaug, Innovation for All Programme, Norwegian Design Council



Ambulance station photographed as part of research

HEALTH & PATIENT SAFETY RESEARCH LAB

The Health & Patient Safety Lab has a focus on making healthcare services more efficient, innovative and people-centred. Our flagship project to redesign the interior of the emergency ambulance completed a mobile demonstrator unit this year, and we extended our work in emergency care with studies on better neck support for spinal injury patients and ways to reduce violence in A&E Departments. The DOME project with Imperial College produced a range of interventions to reduce medical error on surgical wards, but we also looked beyond the hospital to explore the care home environment for dementia patients and the design issues related to a healthy pregnancy. A key feature of our work is to advance ideas to production with industry partners.

Ed Matthews, Lab Leader

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REDESIGNING THE AMBULANCE

IMPROVING MOBILE EMERGENCY HEALTHCARE

Research Associate: Gianpaolo Fusari

Lead researcher: Ed Matthews

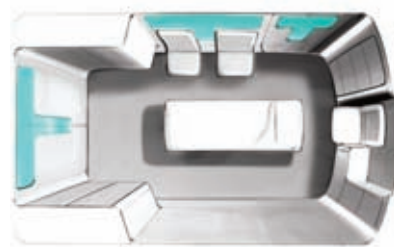
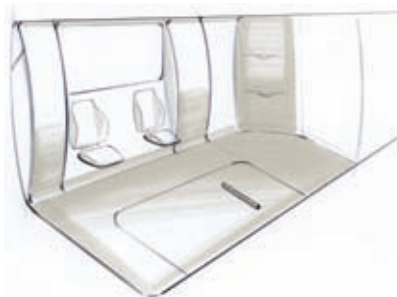
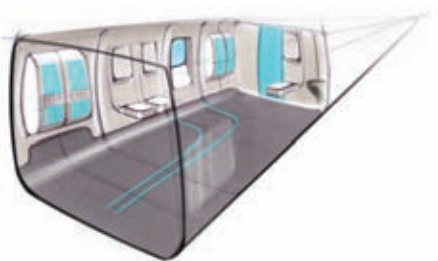
RCA Department: Vehicle Design

Research partners: Imperial College St Mary's NHS Trust; Vehicle Design Department, RCA; Department of Emergency Medicine, University of West of England; London Ambulance Service

Funded by: London NHS (Regional Innovation Fund) and Helen Hamlyn Trust

Project duration: March 2010-Sept 2011

This flagship project to design a safer treatment space in the emergency ambulance improves the experience for patients and paramedics alike



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There are many problems with the design of existing ambulances that impact negatively on patients and paramedics alike. Some of the most pressing issues concern the treatment space. This environment is difficult to keep clean given the frequency of use and the resultant lack of opportunity to scrub the vehicle down, leading to hygiene and infection control problems. Ambulance crews also suffer from poorly thought-out ergonomics, badly laid out equipment and difficult-to-access storage spaces, all of which can affect performance in critical, life-threatening situations.

There has been virtually no standardisation of ambulance specifications across the UK, which has created logistical and managerial problems for ambulance trusts. A patient in need of emergency treatment will have a different ambulance experience depending on their geographical location

in the UK. All these problems combine to compromise safety and make the ambulance service intimidating.

One reason for this situation may be the way ambulances have evolved. Conceptually ambulances haven't changed much since their inception – they are still regarded as a means to transport injured patients to hospital. However an emerging vision of bringing care to the community and reducing unnecessary trips to hospital requires a different approach to ambulance design, one that supports paramedics and clinicians and acknowledges the experience patients go through.

BUILDING ON RESEARCH

This project builds on six years of research by the Helen Hamlyn Centre for Design in partnership with the Vehicle Design Department led by Professor Dale Harrow at the RCA. This began with the

Future Ambulances project, funded by the NPSA and the Helen Hamlyn Trust, followed by the Smart Pods project funded by the EPSRC. The redesign of the treatment space of the current emergency ambulance represents one key component of the systems-thinking for the future of mobile emergency healthcare proposed by the Smart Pods project.

For the development of a new ambulance interior, the team brought together frontline paramedics, clinicians, patients, academic researchers, engineers and designers in a co-design process. This was the first time a group like this had been formed to look into the issues and design an ambulance from the ground up. London Ambulance Service paramedic Dixie Dean was seconded to the Helen Hamlyn Centre for Design during the project.

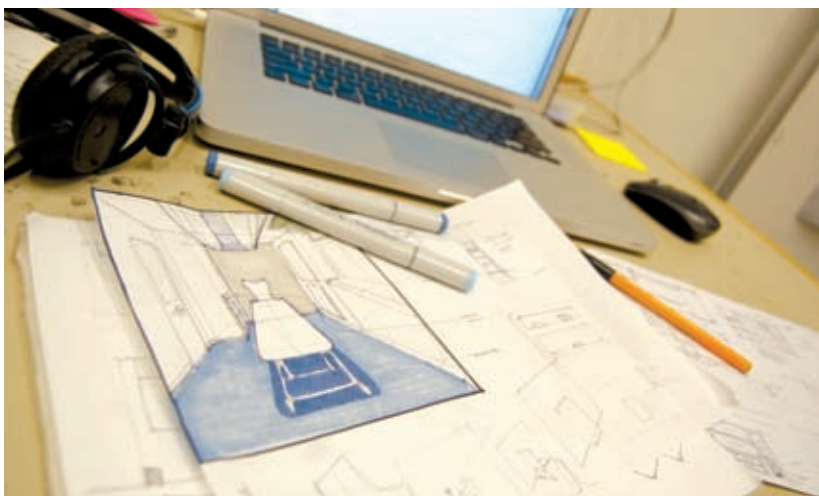
The project has reconfigured and redesigned the layout of the patient

treatment space to achieve 360° access to the patient. This not only improves clinical efficiency but also enhances patient safety. The new interior is designed to be easy to clean which dignifies the patient experience and reduces the spread of infection. Modular equipment packs containing specific treatment consumables have also been incorporated to aid clinical performance, infection control and stock control. Configurable lighting is adapted to suit clinical tasks and create an ambience to suit the patient's wellbeing.

Finally, the design team has explored a digital diagnostics and communications system that illustrates how urgent and emergency pre-hospital care could benefit from the combination of existing digital technologies.

A full-size mobile demonstrator unit has been built and evaluated by frontline clinicians. Results have demonstrated that the redesign of the ambulance treatment space provides significant benefits in terms of clinical efficiency, infection control and reduction of costs to the NHS.

The full-size interior prototype will be formally unveiled by Lord Darzi of Imperial College Healthcare Trust in September 2011 during the London Design Festival as part of a concerted drive to engage manufacturers in taking the project to the next level. The aim is to produce a fully functioning vehicle fit for 21st century emergency healthcare.



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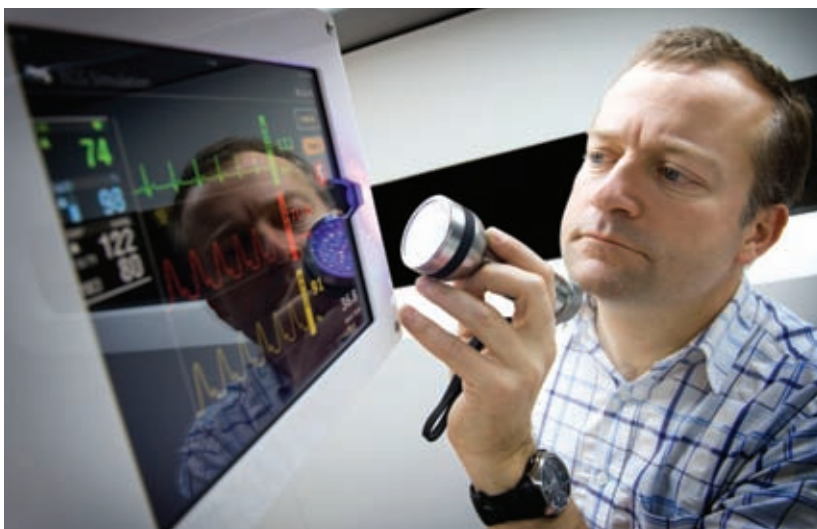
- 1, 2 Exploratory concept design sketches
- 3 A London Ambulance Service crew treats a simulated cardiac arrest, observed by Professor Jonathan Benger of the University of the West of England
- 4 A computer-generated model of ambulance interior design as it approaches completion



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- 5 A paramedic uses a treatment pack to dress a simulated leg ulcer inside the mobile demonstrator unit
- 6 Patient vital signs displayed on overhead monitor
- 7 Using ultraviolet light to detect potential points of contamination



MAKE IT BETTER DESIGNING OUT MEDICAL ERROR

A design-led approach to reducing medical error on surgical wards has generated a number of interventions in the most high-risk processes

Research Associate: Grace Davey

Senior Associate: Jonathan West

Senior Researcher: Beverley Norris

Project Manager: Ed Matthews

Principal Investigator: Jeremy Myerson

Research Partners: Department of Surgery
and Cancer, Imperial College London;
Imperial College Business School

Funded by: EPSRC

Project duration: Oct 2008-Sept 2011



A fundamental part of the Hippocratic Oath is *Primum non nocere*: 'above all, do no harm'. However, despite advances in modern medicine, no individual, system or environment is perfect.

The issue of medical error in hospitals is today high on the political agenda and rarely out of the news. Human errors and systemic failures lead to preventable harm and unnecessary suffering for patients. In the UK, research suggests that as many as one in ten patients in hospital may suffer the effects of error in care, resulting in costs of £2 billion annually. It is estimated that over half of these cases may have been avoidable.

A key aspect of the problem is that healthcare processes continue to evolve whereas the design of much ward-based equipment remains largely unchanged. Daily patient care involves a complicated interaction of many tasks and processes, supported by products that co-exist within the patient's bed space.

However, many of these products are designed with little thought for safe integration and context of use. This is because design skills are engaged late in the stage of development of hospital equipment, and as a consequence the designs can show little regard for the systems in which they work.

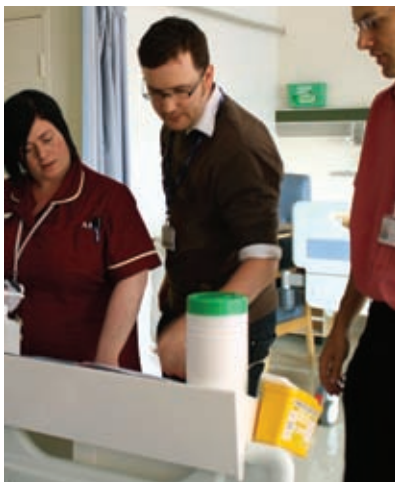


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The three-year DOME (Designing Out Medical Error) project was set up with the aim to better understand and map healthcare processes on surgical wards – and establish an evidence base to design equipment and products that support these processes and therefore reduce instances of medical error. A single multidisciplinary team was assembled from among research staff at the Helen Hamlyn Centre for Design, Imperial College London and St. Mary's Hospital, Paddington – uniquely bringing together designers, engineers, clinicians, ergonomists, psychologists and business academics in the fields of design, patient safety and management.

The DOME study took the view that no single discipline approach could effectively tackle the complex systemic nature of medical error on surgical wards. Therefore a key objective was to develop a collaborative methodology to allow systems and products to be considered concurrently, paving the way for process reforms as well as new designs.

At the outset of the study, the research team carried out several hundred hours of initial observations in three hospitals in order to observe and map all activities of patients and staff. The team immersed themselves in the surgical ward environment and engaged with patients and frontline staff



throughout the project. Concurrent with the research on surgical wards, the DOME project investigated how risk is managed and safety considered in other industries. Members of the team visited international sites in the mining, chemicals, oil exploration, shipping and construction industries to draw lessons on ways to reduce systemic error.

ERROR-PRONE PROCESSES

Through a systematic process of reviewing published literature, incident reports, observations and questionnaires, the five most error-prone processes on surgical wards were identified and prioritised. These were subjected to an engineering design technique called Failure Mode and Effects Analysis (FMEA) to chart and understand each step of the process.

The five most high-risk processes were then crystallised into design briefs, which gave focus to the innovation phase of the project. This phase included brainstorming, expert groups and workshops. Ideas were developed through sketching, computer models and prototypes, which were subjected to continuous critical feedback from patients and healthcare staff. New designs were then tested in a simulated ward environment to check their safety and usability.



The design outputs of DOME are broad in range – from physical products, communication and diagnostic tools to service and environmental recommendations.

Interventions include: the Carestation, an all-in-one unit for the equipment needed for patient care in the bed space; a generic symbol for hand hygiene that works with a supporting campaign to encourage people to wash their hands when entering and exiting the bed space; and a new trolley to monitor vital signs that is easier to clean and use – and captures and interprets data automatically. The project also generated design proposals to improve medication delivery and the handover process.

Results of the DOME project will go on show in a travelling exhibition, entitled Make It Better, in 2012 to solicit further feedback; clinical trials will be undertaken and key design interventions will be taken forward by manufacturers with a view to production.

1 The DOME research team worked closely with frontline clinical staff throughout the project

MAKE IT BETTER



- 2 The Carestation, an all-in-one unit for the equipment needed for patient care in the bed space, addresses infection control
- 3 A new blister pack design with tear-off 'spoons' aims to give patients more information about their medication regime
- 4 A trolley to monitor vital signs that is easier to clean and use – and captures and interprets data automatically
- 5 Gel dispenser shows off new symbol for hand hygiene with introductory speech bubble as part of communication campaign
- 6 This exemplar environment to support a safer handover has two modes, doubling as a staff room (below) for relaxation

Clean
your hands
here!



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MEDICATION DELIVERY



In parallel with the DOME (Designing Out Medical Error) research project, the Helen Hamlyn Centre for Design has worked with Humanscale's Design Studio over the past year to investigate the distribution of medication in hospitals with a view to providing a more reliable and fail-safe approach.

The research outlined the main causes of medication errors in UK and US hospitals and provided a detailed analysis of how medicine reaches the patient on the ward in three major London hospitals. The collaboration with Humanscale also extended to the development of a new Vital Signs trolley as part of the DOME project.

Senior Associate: Maja Kecman
Research partner: Humanscale,
Design Studio

BETTER CARE HOMES DESIGNING FOR DIFFERENT AND CHANGING ABILITIES

Visiting Research Associate: Ying Jiang

Senior Associate: Gregor Timlin

Research Assistant: Lisa Johansson

RCA Department: Design Products

Research partner: Bupa

Project duration: Oct 2010-Sept 2011

This design study looks to support the development of better care homes by understanding the different age-related disabilities that must be supported



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The care home environment needs to cater for the widest range of disabilities among predominantly older residents, but care home operators and designers struggle to reconcile the different and changing needs of the people living there within the constraints of existing resources.

There are clear reasons for this. The level of disability of residents in care homes is on the rise. The population is living longer due to advances in living conditions and modern medicine. However with increasing life expectancy, more people will experience degenerative diseases such as dementia where their reduced abilities need care and support. As older people are encouraged to live independently in the community for as long as they can, increasingly they only enter a care facility when they are no longer able to perform daily tasks and need a greater level of support.

This project, in partnership with healthcare provider Bupa, set out to improve the design of the care home environment for residents, carers and facility managers alike. A key focus was to re-evaluate the effectiveness of the facilities that are currently on offer to inform the design of future care homes to enable residents to utilise their remaining abilities, not simply to

accommodate their existing disabilities. A starting point was to look at the care home interior as a 'shared space' like a street environment, which has to be designed as a 'trade off' between a range of different physical, sensory and cognitive disabilities.

SETTING THE CONTEXT

The research team interviewed care home providers and experts and conducted a literature review to understand the issues and set the context. In the UK the average age of a care home resident is 83. Forty per cent of people aged 85 and over are disabled by frailty, disease or sensory loss and 29 per cent of people aged 85 have Alzheimer's disease and either cancer, heart disease or a respiratory disease. It is forecast that by 2050 the number of people in the UK with dementia could more than double from 750,000 to 1.7 million.

Further in-depth research involved older people themselves, to look at the effect of major disabilities on quality of life. Eight people who were not care home residents but who had different cognitive, sensory and motor impairments were interviewed and taken through a series of questions and activities. This work created a map of how different disabilities affect simple

tasks and the major activities of daily living. Extensive visits to 14 care homes were also conducted to see how these findings play out in the care environment – and design concepts were modelled and validated through workshops with disability experts.

The different cognitive, sensory and physical needs of care home residents have been related to a new set of design guidance, which has been collated into an open access web tool. This covers a range of subjects, from large-scale site layouts of new homes to the simple details and furnishing of individual rooms. It is built to work both as an information source for new designers and as a tool to consolidate wide-ranging ideas for experts in the field.

The aim is to influence the designers, specifiers and operators of future care homes to help create spaces that feel more like a 'home', that compensate for multiple disabilities and help older residents to build on their remaining abilities to remain active for longer.

www.bettercarehomes.org

- 1 Disability experts join the research team to evaluate design concepts
- 2 Activity room in existing care home visited as part of study

NECKSAFE

DESIGNING BETTER SUPPORT FOR SPINAL INJURY PATIENTS

This multidisciplinary project is designing a neck brace that provides more safety and comfort for people with suspected neck fractures

Research Associate: Karina Torlei

Senior Associate: Maja Kecman

RCA Department: Innovation
Design Engineering

Research partners: Bath Institute of Medical
Engineering, Great Western Ambulance
Service, Royal National Hospital for
Rheumatic Diseases, University of West
England (Academic Department of
Emergency Care) and i2R Medical

Funded by: National Institute for
Health Research (NHS)

Project duration: Feb 2011-Jan 2013



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- 1 Research associate Karina Torlei is immobilised on a spinal board to see the patient perspective
- 2 Observing how the existing neck brace is used
- 3 Materials in an ideas generation workshop



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Head and neck immobilisation is needed for everyone who has suffered a major accident and is at risk of neck injury – currently around 440,000 people in the UK per year. This is usually achieved by fitting a disposable, semi-rigid cervical collar, commonly known as a neck brace. Paramedics often have to apply this device at the scene of the accident and it remains on the patient to stabilise their neck during transfer to hospital and whilst they undergo initial tests by the medical staff in the Emergency Department.

However research suggests that current ways to stabilise the patient's neck after a suspected spinal injury do not provide adequate immobilisation or clinical access. Recent studies have noted the harm caused by the rigid collars that are currently available. These include skin ulceration and

increased pressure inside the skull. Poor fitting due to different body shapes, weight and sizes can also cause problems with over-extension of the neck and excessive head movement. All these can potentially cause even more harm to the patient.

PATIENT PATHWAY

The NeckSafe Project is a two-year collaborative research study that brings together designers, engineers and clinicians to rethink the neck brace and address these issues through extensive user research and collaborative workshops. Research associate Karina Torlei and Senior associate Maja Kecman have mapped the patient pathway by shadowing people who have needed a neck brace and by spending time on ambulance ride-outs to see the context first hand.

They have also been in Accident

and Emergency departments, scrubbed up in theatre and spoken to a wide range of stakeholders including patients, paramedics, doctors, nurses, radiographers, radiologists, neurosurgeons, orthotists and physiotherapists.

The user research has provided invaluable insights to help shape a design brief with the aim to improve the performance and safety of the neck brace. The project is currently exploring a range of different design concepts to achieve a better fit for a variety of body sizes, increase immobilisation, improve access for clinical assessments, improve comfort and make the brace easier to use.

VIOLENCE IN A&E IMPROVING THE PATIENT EXPERIENCE BY DESIGN

The experience of A&E can often lead to frustration and confrontation – this design project is seeking innovative new ways to reduce the tension by creating a humanising patient experience

Research Associate: Gianpaolo Fusari

Senior Associate: Maja Kecman

Research partners: PearsonLloyd (lead consultant), Tavistock Institute, Tavistock Consultancy Service, University of West England (Academic Department of Emergency Care) and University of Bath (School of Management)

Funded by: Design Council and Department of Health

Project duration: April 2011-Nov 2011



Violence and aggression towards NHS staff is estimated to cost at least £69 million a year in staff absence, loss of productivity and additional security. In 2009/10 there were over 150 physical assaults per day on healthcare staff in England. Incidents of violence and aggression are a particular problem in the A&E (Accident & Emergency) departments of hospitals because these environments are especially complex, high-pressured and unpredictable. It is common to hear staff say that no two days in A&E are ever the same.

This project brings together a multidisciplinary team of designers, researchers, clinicians and consultants

to look at innovative new ways to reduce violence and aggression in A&E. The Helen Hamlyn Centre for Design is working in a consortium headed by design firm Pearson Lloyd, as part of a national design initiative led by the Design Council for the Department of Health. Commenting on the project, Sir David Nicholson, Chief Executive of the NHS, said: 'NHS staff are committed to providing the best possible service to patients. It is completely unacceptable for them to be assaulted or work in fear of being physically or verbally abused.'

There are a myriad of factors that combine to turn a 'normal' situation into one that escalates into violence or aggression. Patients and their relatives

arriving at A&E are often in a heightened state of stress and anxiety, as well as being in pain. This may be exacerbated if they are intoxicated or have mental health problems. The A&E system they encounter can sometimes be difficult to understand and navigate, with insufficient communication and long waiting times. The result is that people in difficult emotional states find themselves in an environment that they find uncomfortable and confusing. Through their eyes, the A&E process lacks empathy. Some patients don't understand their place in the system and their expectations are often very different from the service they actually receive.

Typical approaches to dealing with aggression and violence tend to be reactive rather than trying to understand the roots and tackle the problem through prevention and mitigation. This can mean that endemic low-level aggression is tolerated up to a point where it becomes more serious. The design team took a more holistic approach by investigating the social, environmental and system issues around the problem. The project aims to use design as a proactive vehicle to change people's behaviour. A preventative approach to aggression means that low-level aggression is also targeted, and less people reach the point of becoming physically violent.

FRONTLINE INPUT

Building on desk research and ethnographic reports directed by the Design Council, the project conducted observations and interviews with frontline A&E staff and patients in three NHS Hospital Trusts. Experts in the fields of behavioural science, built environment and clinical care were consulted on the team's ideas and a Design Council advisory board comprising representatives from the three NHS Trusts and other leading figures also played a key role in shaping the project.

The project is now concentrating on delivering different outputs that will respond to the original briefs that were released for tender by the Design Council. Solutions will touch on all three main areas proposed: Information, Environment and Service. All design concepts generated by the project will be launched by the Design Council in autumn 2011 prior to implementation and evaluation with participating NHS Hospital Trusts.

RESUS:STATION CLINICAL TRIAL



The Resus:station, a new piece of hospital equipment that supports the resuscitation process during a cardiac arrest, has completed a two-year clinical trial at St. Mary's Hospital, Paddington, funded by the Wellcome Trust. The trial involved simulation, training and the use of five prototypes on wards during actual resuscitations. Bristol Maid, a well-established NHS supplier, has been granted a European licence to make the product.

Running concurrently with this trial, technical development work on the accompanying software has also been completed with development partner Savant.

The Resus:station has been in development at the Helen Hamlyn Centre for Design since 2005. The project was co-designed in partnership with clinicians and

psychologists at Imperial College London, and its ergonomic and technical benefits over existing 'crash trolleys' are many.

Clinical equipment is laid out openly and logically to allow instant access; the trolley can divide into three separate units so each member of the 'crash team' can have their own kit beside them; stock is tagged with Radio Frequency Identification (RFID) technology; and the entire process is 'logged' using new technology to enable better post-event evaluation by medical staff.

Senior Associate: Jonathan West
Research partner: The Wellcome Trust, Helen Hamlyn Trust
Industry partners: Bristol Maid, Savant

HEALTHY PREGNANCY

REDEFINING THE EXPERIENCE

Research Associate: Florie Salnot

RCA Department: Design Products

Research partner: Clearblue

Project duration: Oct 2010-Sept 2011

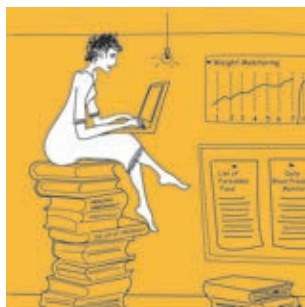
This design study uses novel research methods to create a set of personas of pregnant women, presenting a more holistic view of mothers-to-be





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- 1 An artistic impression of pregnancy – this research tool enables participants to fill lines in a drawing with memories and recollections about being pregnant
- 2 Researcher Florie Salnot listens to feedback from a mother-to-be
- 3 Six personas of pregnant women



3



During pregnancy, women can experience huge disruptions to their lives that are not only physical and medical, but also social and emotional. Their feelings can be ambivalent: exciting and tiring, enjoyable and restricting, hopeful and fearful. Although pregnancy is a complex condition, the care that pregnant women currently receive is usually focused on the physical health of the foetus and mother-to-be. This approach takes little account of the other changes a woman goes through and neglects broader wellbeing, especially during the first 10 weeks – often the most difficult and confusing period of pregnancy, as the risk of miscarriage is highest.

Clearblue, maker of home pregnancy test kits, currently interacts with women for one minute – the 'moment of truth' when they find out if they are pregnant or not. This project looks at how Clearblue could extend that relationship by investigating how women could be supported in a more holistic way throughout their pregnancy; it aims to understand how personal and emotional needs can be

addressed alongside the existing input from medical experts.

Designer Florie Salnot collaborated with 15 women to gain insights into their experiences, fears and aspirations. Capturing their daily activities as well as their emotions was important and three different methods were used across the group.

MOODS AND CONCERNS

The women who were currently pregnant were asked to fill in a one-week pregnancy diary to map their daily moods and concerns. Women who had given birth in the past two years participated in two-hour sessions where they were asked to map their emotional experience over the nine months and focus on the important moments of the pregnancy. The women who were pregnant a long time ago were asked to fill in the lines of a drawing of a pregnant woman by writing about their personal experiences. Only the most memorable experiences – good or bad – were captured.

The research resulted in the creative development of six different profiles of

pregnant women defined by the way they manage their pregnancy – whether self-reliant, dependent on friends and family, or on the medical experts.

In Control is a person who wants to be in control of the details, is self-reliant and does not take what the doctors say for granted; Early Anxious is a woman in the early stages of pregnancy but going through an anxious rather than a positive experience; Family Focused has strong connections to friends and family and draws support from those around her; Emotionally Challenged – this is a medically sound pregnancy but the woman experiences mental and emotional challenges; Confident & Carefree – a woman who just listens to the doctors and is confident that they will look after her; and High Risk – a pregnancy with medical complications where the woman has to rely heavily on her doctors and nurses.

Different insights associated with each persona have been summarised in a website for Clearblue's internal use to inspire ideas, share the user research and help to create a more holistic and healthy view of pregnancy.



Office workers participate in a workshop on sustainability

WORK & CITY RESEARCH LAB

The Work & City Lab investigates the design implications of changing patterns of work and city life. Many of these changes have resulted from the introduction of new technology, which is reshaping the way that communities are formed and interact. This was the theme of a major collaborative project with Research in Motion, maker of the BlackBerry®. Sustainability was another key theme for the Lab this year. We looked at cultural issues around creating greener office design and we worked with the Boundary Estate in London to explore more sustainable lighting for local urban communities, which are often excluded from investment in the public realm.

Jeremy Myerson, Lab Leader

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IN THE SHADE LIGHTING LOCAL URBAN COMMUNITIES

Research Associate: Megan Charnley

RCA Department: Architecture

Research partner: Megaman
Charity Trust Fund

Strategic partner: Paviom

Project duration: Oct 2010-Sept 2012

This project proposes a more sustainable lighting strategy to improve social cohesion and boost economic activity in under-lit pockets of the city

There has been major investment in lighting cities at night, but much of that investment has gone into illuminating popular tourist areas, heritage buildings and commercial districts. As a result urban lighting is unevenly distributed; while there is light pollution in some areas, many pockets of the city are under-lit at night. This limits local trade and use of public space, undermining economic activity and social cohesion, and leaving many local communities literally and metaphorically in the dark.

This project set out to explore how a new lighting design strategy for these overlooked pockets of the urban fabric could help to create more sustainable cities. The research examines the role of Intelligent, energy-efficient lighting as a catalyst for the creation of more socially resilient and economically viable urban areas after dark. The aim was to strengthen ties and open up new fields of possibility to a wider group of residents.

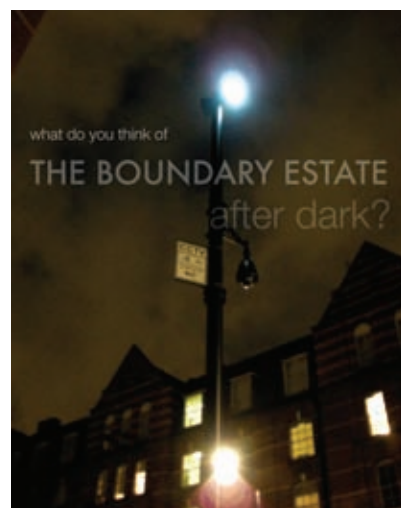
RESIDENTIAL POCKET

The historic Boundary Estate in Shoreditch, East London was chosen as a site to understand how a particular residential pocket of the city is used at night. Workshops were held with three different groups on the estate: local

older people, a group of Bengali men, and young Bengali-British women from the Boundary Women's Project. Each group mapped the estate after dark, revealing – among other insights – how the division between different residents and incomers (dictated often by ethnicity) is exacerbated after dark. Video ethnography was used to find out how older women and teenage boys feel about the area in the evening – and how they use (or avoid) it.

The study found that the public realm after dark is dominated by intimidating groups of young men. This reduces the co-operative use of public space, restricting access to groups such as women and older people. There are tensions between the resident community and late night city revelers, as well as within the estate itself. The public realm could provide opportunities for these groups to mix, but instead it often seems to be one group's exclusive territory.

Initially, residents insisted that the estate was too dark at night. Further probing revealed that it was the quality rather than the quantity of light that was remiss. All the groups that participated in the study expressed more concern with the estate's social environment than with its built environment.



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- 1 Questionnaire for Boundary estate residents
2,3 Local people give their views
4 Residents at a lighting event on the Arnold Circus bandstand



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The research has led to an outline strategy that departs radically from traditional urban lighting schemes to create a more locally specific, socially aware and sustainable urban night-scape. The concept of a Night-time Neighbourhood Network is proposed within a dimmer cityscape, where brightly lit 'nodes' encourage activity at existing or newly built community facilities. Bus stops, local shops and playgrounds become joints in a 'light skeleton', creating safe, inclusive evening areas.

SENSE OF SECURITY

Street lighting between the nodes could be dimmed but a node would be visible from any point within the network, aiding wayfinding, creating a clear hierarchy and a sense of security. The presence of people at each node would provide natural surveillance as a real alternative to CCTV, reducing crime through social interaction.

As part of this alternative lighting strategy, each node in the Night-time Neighbourhood Network could be inaugurated by a temporary lighting event, which encourages the community to reconsider their preconceptions of the area. If the event is interactive it creates an inclusive opportunity for active participation in the public realm and initiates a change in behaviour. Every member of the community can claim ownership of the node, which is established as a safe, social space in the evening.

To test this proposition, the project successfully staged a lighting event at the Arnold Circus bandstand on the Boundary Estate in July 2011, drawing a diverse group of residents from the area to participate in an interactive event involving the exchange of coloured LED balloons. The study will now go into a second year to extend the research by developing key ideas into a generic lighting strategy for application in other sites and cities.



4

TALKING PEOPLE RESHAPING COMMUNITY AND COMMUNICATION

Research Associate: Lisa Johansson

Senior Associate: Catherine Greene

RCA Departments: Design Products, Visual
Communication and Innovation
Design Engineering

Research partner: Research in Motion,
maker of the BlackBerry®

Project duration: Oct 2010-Sept 2011

This design study involving 20 RCA Masters students looks at the impact of digital technology on helping people in local communities to come together

Digital technology has changed the way we communicate and, in turn, the way we form, maintain and participate in communities. We can now contact anyone, anywhere in the world, from a small device in our hands. Staying in touch, sharing and collaborating has never been so easy and as a result many communities now exist virtually.

But while these technologies offer huge potential to bring people together, they can also unintentionally keep people apart. There is still a marked difference between our online and offline communities. They can feel like separate worlds and while enhancing certain communities, technology can have a negative effect on others.

In London, we are more digitally connected than ever but it takes an extraordinary event like a snowstorm to meet the neighbours. Ordinary events such as popping next door for a bowl of sugar, or to ask them to mind your cat while you are away, has become a point of nostalgia in big cities.

SOCIAL EXCHANGE

This project, in partnership with Research In Motion, maker of the BlackBerry® range of smartphones, explored how online and offline spaces might come together to enhance communication in communities and increase opportunity for social exchange.

The project began with an exploration of the idea of community

through a combination of desk research, expert interviews and site visits. A month-long workshop was held with 20 Masters students from three RCA departments – Visual Communication, Innovation Design Engineering and Design Products. Working in interdisciplinary teams, the students conducted their own research through a combination of workshops, interviews, surveys and interventions with nearly 150 people – from school children and parents to homeworkers and urban joggers.

The student teams then developed design propositions for selected groups, such as The Garden, an online public space for people in long distance relationships, Boss on Demand, a system to provide a 'virtual boss' for



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homeworkers who live in the same area, and Runabout, a device which enables lone runners to connect and compete against other joggers. These proposals were exhibited in London in an exhibition entitled 'Beyond the Screen' (see pages 48-49).

TWO HIGH STREETS

Following this, a second phase of user research was developed to build upon the insights and propositions collected by the RCA students. Two high streets at opposite ends of London were chosen to run a series of interviews with local shopkeepers and residents. The sites were chosen for their differences in terms of demographics, income and ethnicity, with the leafy

suburbs of Chiswick contrasting with the gritty, urban area of Clapton.

The research uncovered a wide range of insights, such as how different groups of people rely on various types of communication such as social media or local newspapers to get information about their area. There was little crossover between the online and offline worlds, meaning that many people missed out on information.

In response to this, the study explored how digitally enabled community notice boards could become spaces for people to interact with real-time local information from both online and offline sources – and how navigation technology and online maps, currently linear in character, could

be enhanced to encourage more chance exchange or discovery within local communities.

These and many other insights and ideas have been compiled within an online insight bank specially commissioned by Research In Motion for this project. The insight bank will be used by the company to gain a deeper understanding of how design and technology can support the changing needs of communities, bringing together people who are currently kept apart across a digital divide.

1 Street scene in Clapton, one of two sites for research

2 The researchers engage with a local resident in Chiswick

BEYOND THE SCREEN



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Images of work completed as part of the Talking People research project (see previous two pages). Six groups of MA students from the RCA departments of Visual Communication, Design Products and Innovation Design Engineering were asked to create ideas that benefit particular communities and social groups. An exhibition of the outputs entitled Beyond the Screen and curated by Catherine Greene and Lisa Johansson, was held at the European Commission's 12 Star Gallery in London in June 2011.



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- 1 Runabout is a service that helps runners improve their performance by competing against a community of other runners
- 2 An exhibition of the work held at the EU's 12 Star Gallery in June 2011
- 3 The first prize winners with Todd Wood, VP Industrial Design, Research In Motion and special guest architect Frank Duffy
- 4 Communitree is a digital noticeboard that is placed in local shops and cafes and displays the skills of people who live locally in that area
- 5 Vocal Expression responds to the user's voice, animating their SMS and emails to make them more expressive
- 6 Drawn to the Table turns the dinner table into a central interface connecting all the communication devices in a family
- 7 Boss on Demand is an online system that enables peer to peer relationships between homeworkers in the same area
- 8 The Garden is a virtual public space for people in long-distance relationships offering support from other couples in the same situation



8

SUSTAINABLE CULTURES CREATING GREENER WORKPLACES FOR ALL

This international design study looks inside three large organisations to explore ways in which managers and employees can make office life more sustainable

Research Associate: Lottie Crumbleholme

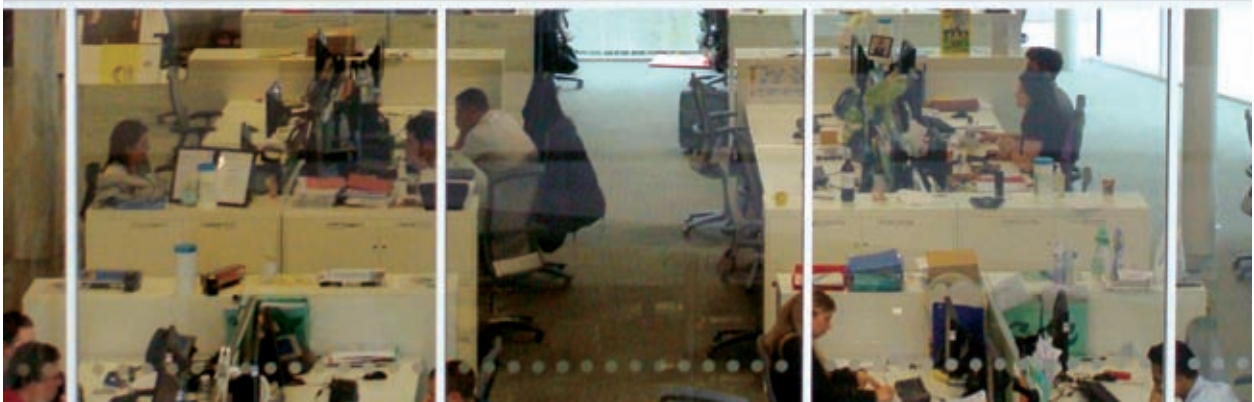
Senior Associate: Catherine Greene

Research Consultant: Dr Alma Erlich

RCA Departments: Visual Communication
and Design Products

Research partner: Johnson Controls Global
Workplace Innovation

Project duration: Oct 2010-Sept 2012



The way we work is having a major effect on our environment. Office buildings waste energy and resources. Lights are left on; desks are left empty; and ICT and air-conditioning systems are left running. With customers now demanding greater sustainability and governments legislating for it, companies are looking for ways to develop a more sustainable culture, but many struggle to define the right approach.

Individual employees too are uncertain as to how they can make a difference. Many feel that the greener things they can do, such as recycling or avoiding printing, are insignificant without a coherent company strategy for sustainability in place.

When Johnson Controls, a leading provider of facilities, commercial real estate and energy management for many of the world's largest companies, conducted a global survey called Oxygenz, it discovered a marked preference among prospective employees to work for 'environmentally-aware' organisations.

Against looming EU targets of 30 per cent reductions of carbon emissions by 2020, this study builds on that work, in partnership with Johnson Controls. It aims to get a better understanding of what a sustainable workplace means in order to look at ways to better support both employees and workplace managers in translating a desire for greener offices into real actions.

The research team created case studies in three large European organisations in the UK and the Netherlands, each representing a different industry sector – financial services, real estate and consumer products. The study began with in-depth interviews with employees and experts from each company. These were followed by workplace observations allowing the team to get an understanding of how the workplace was being used. Based on the results of these interviews and observations, a workshop was held in each of the organisations to further explore key issues.

CONDUCTING RESEARCH

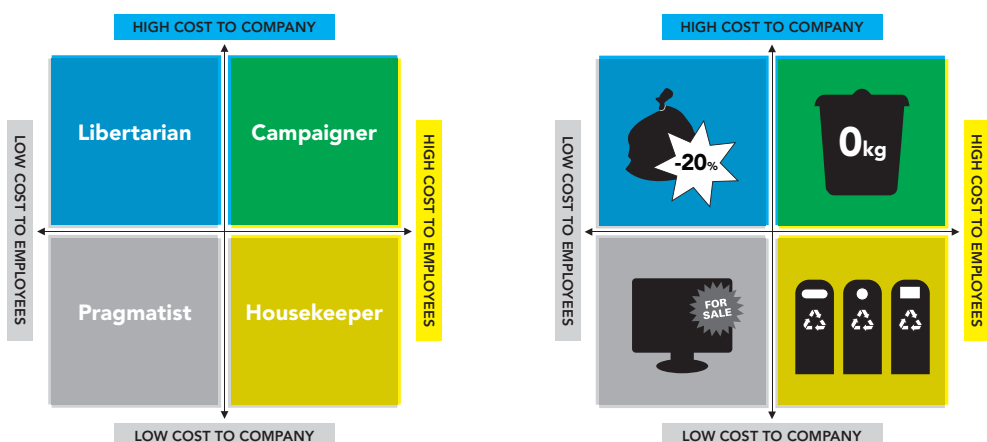
In all, 36 people took part in the research. These participants were chosen in three groups across the age range (under 30, 30-50, and over 50) and from different departments and functions in order to provide, as far as possible, a cross-section of each company. From the outset, it was clear that different people had a very different understanding of what sustainability in the workplace should mean. These views were based on people's perceptions of the various costs and benefits of being sustainable to both company and employee.

The research team identified a framework with four different workplace cultures towards sustainability, based on relative costs to company and employee

(low to high). The Housekeeper (high cost to employee, low cost to company) takes a 'waste not, want not' attitude, putting all the cost on the employee by encouraging behaviour change and cutting down on the use of resources. The Pragmatist (low or no cost to both employer and employee) believes that only initiatives that benefit everyone can succeed, requiring a clear business case for any sustainable initiative. The Libertarian (high cost to employer, no cost to employee) believes sustainability is the responsibility of the company and requires no sacrifices from staff. Only the Campaigner advocates responsible change by both the company and employees (and therefore a high cost to both).

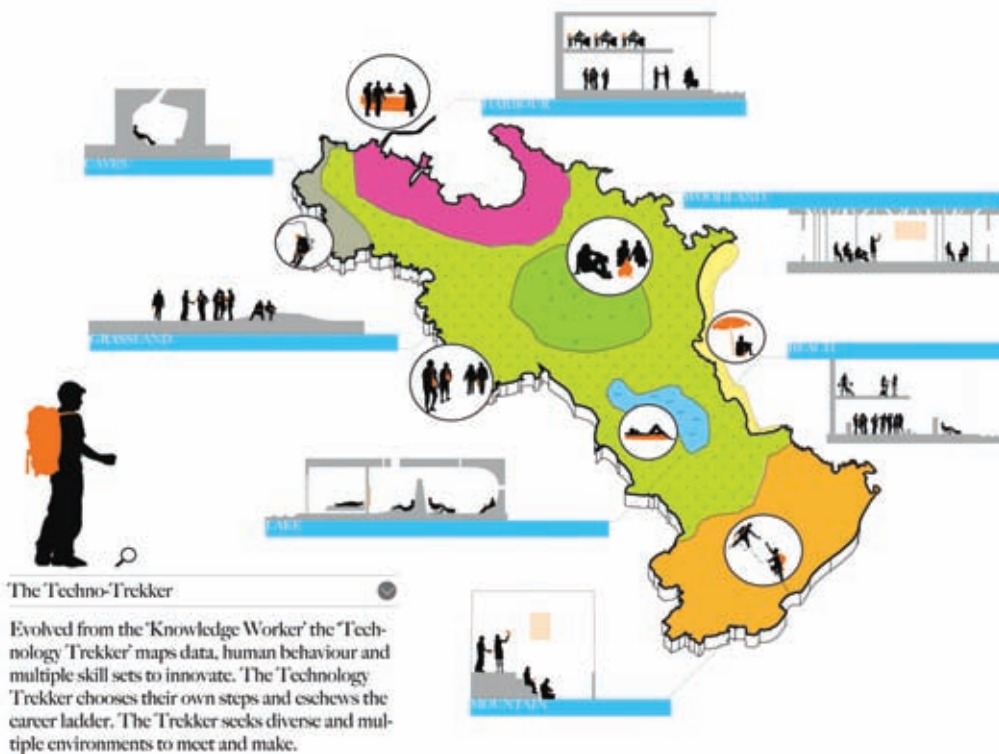
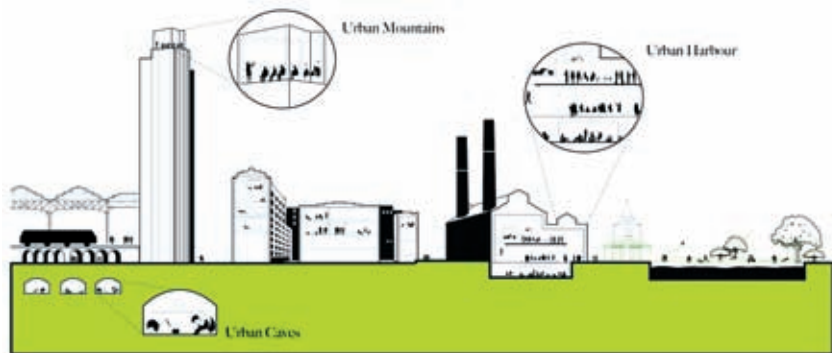
These four different sustainability models can be used to help companies and workplace managers to review their policies, understand how they could work better and create a sustainability strategy that is suitable to their needs. As well as this, they provide an understanding of the way in which sustainability should be communicated within a particular corporate culture.

The next phase of the project will run a further round of workshops inside the three participating organisations and develop a communication toolkit to help companies and workplace providers create more sustainable workplaces for all.



RETHINKING THE FUTURE

The Helen Hamlyn Centre for Design's Work & City Research Lab joined an expert consortium this year to enter the Rethinking The Future design competition organised by the British Council for Offices. The competition brief was to create a sustainable campus environment for up to 5,000 employees of a media technology company to live and work on the fictional island of Riduna off the British coast in 2018. The consortium, headed by architects Gensler, adopted the natural landscape of the island (grasslands, caves, harbours etc) to create a series of flexible work settings – and presented its project in the form of a media website (shown here). The entry was shortlisted.



EXPLORING INNOVATION

The Helen Hamlyn Centre for Design is collaborating with Unwired Events and Inflate, the inflatable structures company founded by RCA design graduate Nick Crosbie, to stage an annual one-day innovation fair of early-stage technologies for work and the workplace. The event, Exploring Innovation, presents innovations by RCA researchers, graduates and alumni, alongside new ideas from the corporate labs, in a series of luminous inflatable pods. Its format is novel: visitors meet the innovators face-to-face as part of a specially timed tour. The latest edition of Exploring Innovation, the fourth in the series, took place on 5 October 2011, sponsored by Haworth.



CHALLENGE WORKSHOPS

CO-DESIGN WITH DISABLED PEOPLE

AS A TOOL FOR INNOVATION



Julia Cassim reports on the global expansion of the Challenge Workshops and the creative, social and economic benefits of a uniquely adaptable model

The Challenge Workshops is the Helen Hamlyn Centre for Design's knowledge transfer programme for professional designers. It works independently of the centre's lab structure and focuses on techniques in inclusive design as a tool for innovation, demonstrating how close interaction with disabled and older people during the design process can be a catalyst to better design for all.

The origins of the Challenge Workshops lie in the UK with a long-term collaboration with the Design Business Association on the DBA Inclusive Design Challenge, but in recent years it has branched out internationally. Over the last year, for example, the programme has run 24 and 48 Hour Inclusive Design Challenges in Boston, Seoul, Dublin, London and Porto while

workshops of different types and widely varying contexts have been organised in Tallinn, Kyoto, Jerusalem, Singapore, Shanghai, Seoul and Zagreb.

All have been at the invitation of partners including the Singapore Workplace Development Agency, The British Council in Portugal, Korea and Croatia, Tongji University in Shanghai, Hadassah College in Jerusalem, the Kyoto Institute of Technology and the Estonian Association of Designers. Each project has required an understanding of the particular cultural, social and design context so that the format can be tailored to reflect that context and the aims of those who commissioned it.

The complex logistics that underpin the organisation of each Challenge has meant that a new network of collaborating local partners must be

built, often from scratch. This latter aspect in turn becomes the enduring legacy of the event and is one reason why Challenges tend to repeat themselves – for Dublin and Seoul it was the second and third time around respectively and a third is planned for Dublin later in 2011. Porto's Challenge has inspired the capital Lisbon to hold one of its own in 2012.

IMMERSIVE EVENTS

So what are the elements common to each and how do they differ? The 24 and 48 Hour Challenges are essentially accelerated and highly immersive versions of the front end of the normal design process where the stimuli for the final visualised design idea comes from the experience of working with a design partner at the extreme end of the



- 1 A Place to Pause: seating design concept for wheelchair users in Boston 24 Hour Challenge
- 2 Challenge Workshops around the world



2

capability spectrum. This is central to the Challenge Workshop methodology irrespective of its context, as is the emphasis on showing how disability *per se* is an alternative creative state that offers radically new ways of looking at intractable or just plain tired conventional scenarios.

It is why the results of such Challenges can be so startling and innovative. That and the fact that the design teams are created from scratch, usually through an open call to local

designers to allow a balance of skills across design disciplines. Product and industrial design, interaction and visual communications are always in the mix with an architect or two thrown in for good measure where the subject is the built environment, as it was in Dublin, Boston and Porto.

All centred on historic areas of each city that have seen a greying tourism demographic. So the 15 teams that took part in those three Challenges were given routes to walk with their

disabled design partner – in Boston, from different subway stations to Faneuil Hall where the colonists first protested the Sugar Act in 1764 and established the concept of 'no taxation without representation'. In Porto it was along the Douro River and up the steep cobbled slopes of the riverbank lined with port wine storehouses, while in Dublin the teams took on the busy Grafton Street area that is due for redevelopment.

Continued on page 58

CHALLENGE WORKSHOPS AROUND THE WORLD

Dublin, Ireland

26-27 November 2010

24 Hour Challenge organised by the Centre for Excellence in Universal Design, National Disability Authority, looking at inclusive design interventions in the Grafton Street area, Dublin's retail core.

London, UK

17-19 April 2011

24 Hour Inclusive Design Challenge at Include international conference 2011, held at the Royal College of Art and sponsored by Sanctuary Care. Design teams were asked to interpret People Power at either a personal or communal level.

Tallinn, Estonia

23-25 September 2010

26-27 May 2011

Workshops were held to create better street mapping and signage as part of the Tallinn for All project. The first was organised with the Estonian Association of Designers, the second involved three Estonian graphic designers.

Boston, USA

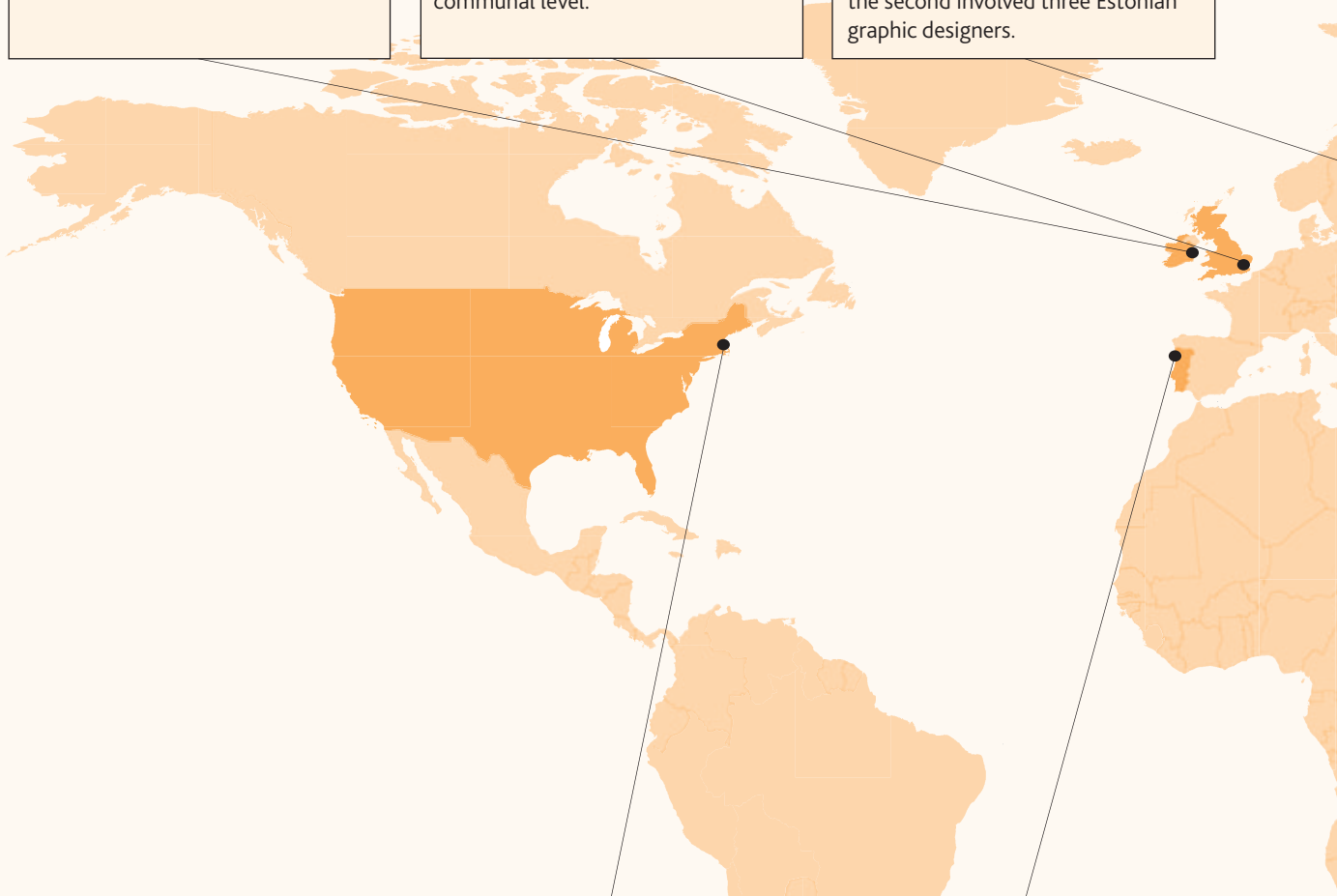
17-18 November 2010

24 Hour Challenge organised by the Institute for Human-Centered Design. Five teams participated. The brief was to transform the visitor experience of the outdoor Quincy Market, one of the most important tourist destinations in Boston.

Porto, Portugal

3-4 June 2011

24-Hour Universal Design Challenge organised by Design Studio FEUP, University of Porto, looking at how to make key tourist routes in the city more accessible.



Zagreb, Croatia**28 March – 1 April 2011**

Extra/ordinary Design Workshop and Exhibition organised with the School of Design, University of Zagreb, Croatian Designers Association in partnership with URIHO and the Association for Promoting Inclusion funded by The British Council, Croatia.

Shanghai, China**3-11 May 2011**

Inclusive Design Workshop at the College of Design and Innovation, Tongji University.

Seoul, Korea**15-16 September 2010****9-11 December 2010**

The first event was a workshop held as part of the 2010 Korea Disability Culture and Art Festival; the second, a 48 Hour Inclusive Design Challenge and Inclusion by Design Exhibition at Design Korea, organised by The British Council.

Jerusalem, Israel**28 February – 3 March 2011**

A design challenge with students at Jerusalem's Hadassah College on the theme of play environments for children with disabilities.

Singapore**29 June – 1 July 2011**

Three-day workshop held at the new Khoo Teck Puat Hospital on the theme of isolated elderly Singaporeans. Commissioned by Singapore Workforce Development Agency and organised by Centre for Enabled Living.

Kyoto, Japan**25 October 2010**

A design challenge for students and professionals at the Kyoto Institute of Technology on inclusive product design.

- 3 Adjustable toilet concept developed as part of Seoul 48 Hour Inclusive Design Challenge
- 4 Memo personalised card system: concept in Include 2011 24 Hour Challenge
- 5 Petal: hydrant-adapting concept for people to take short rests in Boston 24 Hour Challenge
- 6 Scenes from the Extra:Ordinary Design Workshop held in Zagreb to support disabled craftspeople



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In Dublin and Boston, the Challenge allowed a more discursive and holistic view of universal design, expanding it beyond Ron Mace's seven principles and accessibility alone, and showing that good design for the built environment (whether termed – inclusive or universal) is rooted in a multi-disciplinary approach that includes visual communication.

The same could be said for the three-day workshop in Singapore, which took place in the pioneering new Khoo Teck Puat Hospital – a green and patient-friendly hospital centred on surgical and care excellence. The theme was how to respond through design to the isolation felt by many elderly

Singaporean residents of high-rise public housing blocks. However, the overarching aim was to bring designers and healthcare workers together to design responses to the situation. And so the workshop was as much about educating designers and non-designers to work collaboratively as it was about the final design result.

COLLABORATIVE APPROACH

This approach was taken a step further at the workshop commissioned by the Disabled People's International in Seoul in September 2010 – where the designer/ partner ratio was comprehensively reversed with the seven participating designers

outnumbered by the 21 disabled people who together formed the four teams. Some of the latter had taken part in a previous 48 Hour Challenge in Seoul and, inspired by the experience, wished to learn how disabled people can work proactively with designers.

Three of the other workshops were aimed at industrial design students. In Shanghai, a new approach to the selection of design partners was piloted – the Tongji University students and their counterparts from Milan Polytechnic were taken through tasks aimed at building up their understanding of inclusive design. They were then given a set of criteria and asked to source and work with



6

their own design partner – from bus conductors to couriers.

But perhaps the most satisfying and life-changing of all the workshops over the past year was the five-day Extra:Ordinary Design Workshop held in Zagreb this spring. It was a further development of the highly successful All Inclusive Sarajevo model held in 2009.

Four teams of designers from Bosnia, Serbia and Croatia led by RCA alumni worked with deaf craftspeople from four sheltered workshops. Together they co-designed and prototyped a new product range and accompanying visual identity for each to alleviate the severe economic straits the workshops found themselves in after all official financial

support had been removed.

All Inclusive Sarajevo has had transformational results in economic, social and creative terms, so The British Council funded a second workshop in Croatia based on the model and with the same aims. It was initiated by Sanja Bencetic of the University of Zagreb, who had participated in the first.

Three teams of Croatian designers, led again by RCA alumni, worked with URIHO, a large-scale sheltered workshop producing uniforms, ceramics and metal goods; a fourth group worked with a smaller non-profit organisation centred on offering work opportunities to people with learning disabilities.

The results were outstanding and

exhibited on the fifth day at the Croatian Designers Association gallery. The prototypes are now being refined for an exhibition to be held at the Design Museum in Zagreb in autumn 2011. The Extra:Ordinary Design Workshop demonstrated the power of co-design allied to an inclusive process to transform on every level – creative, economic and social. In their differences as well as their similarities around the world, the Challenge Workshops never cease to surprise.

THE HELEN HAMLYN DESIGN AWARDS INNOVATIONS TO IMPROVE LIFE

The Centre's annual award scheme for Royal College of Art students encourages engagement with people and rewards excellence

Life-enhancing innovations to help people with visual impairments navigate the internet, wheelchair users to negotiate the urban environment, autistic children to communicate and diabetics to manage their condition were among the award-winning projects created by graduating RCA Masters students in the Helen Hamlyn Design Awards 2011.

These awards recognise outstanding student projects that are based on user research and address a genuine social need. College professors and head of department nominate the entries, which are judged by an external panel of experts during the RCA Show.

The four main award categories were sponsored this year by Age UK, the Technology Strategy Board,

Clearblue and GMW Architects, which rewarded a campaigning architectural project to use unoccupied space on a London high street for educational purposes. Representatives from each organisation handed over the prizes at an awards ceremony on 28 June 2011 as part of the Royal College of Art's Innovation Night. There was a total prize fund of £10,000.

Helen Hamlyn, founder of the Helen Hamlyn Trust, gave her own personal award to a project which redesigned the traditional black bag used by nurses on home visits. A special award for alumni of the Helen Hamlyn Centre for Design was given to industrial designers Edward Goodwin and Richard Hartshorn for their work in keyhole and robotic surgery.

Many of the entries to the award scheme came from participants in The Methods Lab (below left), an interdisciplinary workshop for RCA students, which the centre ran last autumn from 1-5 November 2010 as part of AcrossRCA, an initiative encouraging collaboration in art and design.

Thirty-six design students from nine RCA departments and from the Media, Art & Design Faculty at Genk, Belgium, participated in a five-day creative workshop themed 'Ageing in Kensington' – a subject chosen not only for its proximity to the RCA but because Kensington has the best life expectancy (82.4 years) in the UK.



Winner: **David Swann**

RCA Department: Vehicle Design

21ST CENTURY HEALTHCARE AND TREATMENT CASE

This project redesigns the traditional black nursing bag carried by community nurses on home visits – a case which has been largely unchanged for the past 100 years. This 21st century design aims to enhance patient safety by optimising hand decontamination performances, increasing clinical efficiency through modularity and improving productivity of the health visitor.

Judge's comment:

"The Helen Hamlyn Centre for Design is proud to be involved in patient safety, an area of great importance, and to be working with NHS Trusts. This innovation is a much-needed, practical solution based on solid PhD research."

Helen Hamlyn



HELEN HAMLYN DESIGN AWARD FOR CREATIVITY

Winner: **Stephen Matthews**

RCA Department: Innovation
Design Engineering

HEALTHCARE ANYTIME- ANYWHERE

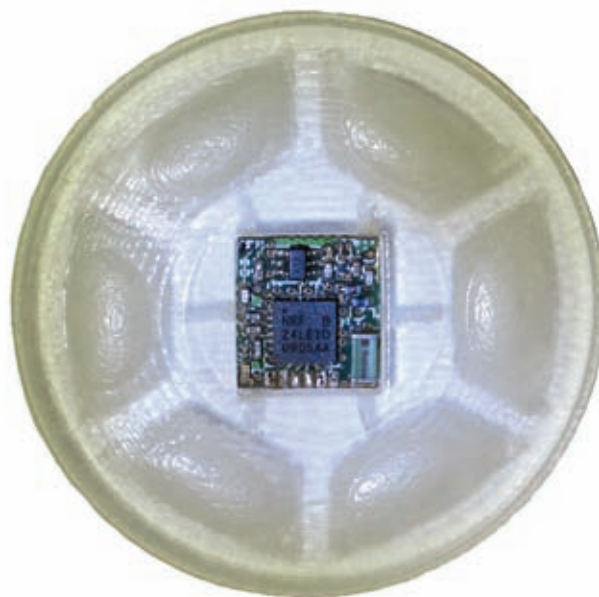
This project proposes a fully integrated healthcare service to manage chronic diseases such as diabetes. A wearable patch dispenses medication from six chambers and is loaded with intelligent sensors that transmit their data via a wireless link to a mobile phone. Type I Diabetes was used as a case study to demonstrate proof of concept.

Judge's comment:

"One individual has got as far in his Masters degree as many a large corporation with multi-million-dollar budgets. This has application far beyond diabetes."

Brian Firth, Swiss Precision Diagnostics

CLEARBLUE DESIGN AWARD FOR HEALTHCARE AND PATIENT SAFETY



clearblue

Joint Winner: **Patrick Hyland**

RCA Department:
Innovation Design Engineering

SYNERGISE

A hand-operated mechanical system that allows wheelchair users to negotiate angled and cambered surfaces, which adversely affect wheelchair propulsion, with greater ease and control. Synergise uses a simple ratchet system and can be retrofitted inexpensively to many existing wheelchairs.

Judge's comment:

"An elegant and eminently practical analysis and solution to a much neglected problem."

James Goodwin, Age UK



Joint Winner: **Samuel Jewell**

RCA Department:
Innovation Design Engineering

AUDIOWEB

Online we exploit colour, images, video and animations to communicate, often excluding people with low vision. Instead they are limited to a single voice reading the page from top to bottom. AudioWeb uses different voices and sound effects to make their experience of the internet as easy, fun and meaningful as it is for the sighted.

Judge's comment:

"This addresses an issue of increasing importance in an ageing population – enabling the visually impaired to handle everyday life more easily."

James Goodwin, Age UK

AGE UK AWARD FOR INCLUSIVE DESIGN



Winner: **Lingjing Yin**

RCA Department: Design Products

TOUCH*PLAY – RESEARCH INTO AUTISM

This project explores how technology could be used to enable children with Autistic Spectrum Conditions to play, explore and express their emotions and feelings. Touch*Play is a device that can record sound by pushing a button. The only way to playback the recorded sound is to touch another person, requiring cooperation and interaction with other people. (In collaboration with Mark McKeague, RCA Design Interactions).

Judge's comment:

"A really clever use of technology with emphasis on human interaction. It has application beyond autism connecting people of different ages and abilities."

Mike Biddle, Technology Strategy Board.

Technology Strategy Board
Driving Innovation

TECHNOLOGY STRATEGY BOARD AWARD FOR INDEPENDENT LIVING



Winner: **Bethany Wells**

RCA Department:
Architecture

FAIRGROUND COLLECTIVE

Access to spaces for education is under threat. This project explores how the agency of the architect can expand to support ethical access to tools, land and resources. It advocates an ethical architectural strategy to occupy unused space on a high street in Finsbury Park, London, bridging education, design practice and community action.

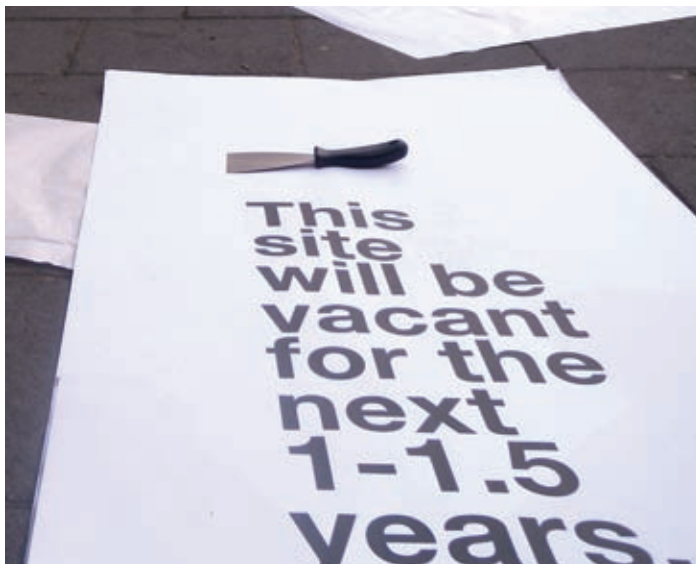
Judge's comment:

"This is Big Society by stealth tackling issues like education. It expands the role of the architect within the social sphere."

Tim Hardingham, GMW Architects



GMW ARCHITECTS AWARD FOR WORK AND CITY



Winners: **Edward Goodwin and
Richard Hartshorn**

RCA Industrial Design Engineering
Graduates 2001
Helen Hamlyn Research Associates 2002

MEDICAL INNOVATION WITH IMPERIAL COLLEGE

Over the past five years, the industrial design practice of Goodwin Hartshorn has worked closely with clinicians and researchers at Imperial College London to develop a series of innovations for keyhole and robotic surgery.

Judge's comment:

"This partnership, founded while on the Helen Hamlyn Research Associates programme, has gone on to undertake design work with Imperial College that is collaborative and truly groundbreaking."

Jeremy Myerson, Director, Helen Hamlyn
Centre for Design

HELEN HAMLYN DESIGN AWARD FOR ALUMNI



PEOPLE, PARTNERS AND PUBLICATIONS



Lady Hamlyn (seventh from left) photographed with Helen Hamlyn Centre for Design team members and advisers at the Annual General Meeting of the Board of Advisers, held at her Holmewood residence, September 2010

PEOPLE

THE HELEN HAMLYN CENTRE FOR DESIGN TEAM



Jeremy Myerson
Director and Chair



Rama Gheerawo
Deputy Director



Kay Sandford
Operations and Finance
Manager



Margaret Durkan
Communication
Manager



Mark Byrne
Administrator



Julia Cassim
Senior Research Fellow



Ed Matthews
Senior Research Fellow



Jo-Anne Richard
Research Fellow



Yanki Lee
Research Fellow



Jonathan West
Senior Associate



Maja Kecman
Senior Associate



Gregor Timlin
Senior Associate



Catherine Greene
Senior Associate



Beverley Norris
Senior Researcher*

**Seconded from National
Patient Safety Agency*

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Helen Hamlyn
Helen Hamlyn Trust

Professor Gordon Kennedy
Nottingham Trent University

Marie Lenclos
Pigeon Films

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Rector, Royal College of Art

Matthew White
Design Consultant

PEOPLE

HELEN HAMLYN RESEARCH ASSOCIATES 2011



**Andrew
Brand**



**Megan
Charnley**



**Lottie
Crumbleholme**



**Grace
Davey**



**Gianpaolo
Fusari**



**Katie
Gaudion**



**Lisa
Johansson**

ANDREW BRAND

Andrew has a Masters Degrees in Engineering from Loughborough University and in Innovation Design Engineering from the Royal College of Art. He has worked in the automotive, medical and heavy plant industries and is a Chartered Mechanical Engineer, delighting in opportunities to combine technical and design skills. Andrew is a founding member of start-up company Squeeze, developing products for people with autism, and the design collective BREAD.

andrew.brand@network.rca.ac.uk

MEGAN CHARNLEY

Megan graduated from the Architecture Department at the Royal College of Art in 2010. Her final project – The Railway Wikiversity – was featured in Blueprint Magazine's Top 50 Student Design Projects 2010. Before starting her Masters course she gained a First Class degree at Cambridge University, and spent two years working in architecture practices, the first year in Barcelona and the second freelance in London. She also works as a freelance architectural assistant at a sustainability consultancy.

megan.earnley@network.rca.ac.uk

LOTTIE CRUMBLEHOLME

Lottie graduated from Buckinghamshire Chilterns University College in 2005 with a degree in Graphic Design and Advertising. She went on to work in corporate communications for two years before studying Communication Art and Design at the Royal College of Art, graduating in 2009. Since then she has been working as a freelance graphic designer and a university lecturer.

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GRACE DAVEY

Grace trained in Engineering at Bristol University, followed by Industrial Design Engineering at the RCA. Awards include Imperial Young Innovator of the Year, Dyson Award finalist and two MADE awards. A central focus of her work is design for healthcare.

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GIANPAOLO FUSARI

Gianpaolo is an Industrial Design graduate of the Universidad Iberoamericana in Mexico City (2003). After working at Rojkind Arquitectos and creating studiojakai, his own design practice, he moved to the UK. He graduated from RCA Innovation Design Engineering in 2009 and is a founding member of the design collective BREAD.

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KATIE GAUDION

Katie has a Masters of Philosophy in Textiles Design from the Royal College of Art in which she received a Helen Hamlyn Design Award for outstanding creativity. Katie's design research is inspired by her experience of facilitating sensory sessions in multi-sensory environments for children and adults with unusual sensory processing patterns. Since graduating Katie has presented her textile research at the Cumulus Conference in China and was invited to present a keynote at the 8th International Snoezelen Symposium in Alabama, USA.

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LISA JOHANSSON

Lisa graduated from the Royal College of Art's Design Products course in 2010. Born in Sweden she moved to London to do her first degree in Product Design at Central Saint Martins College of Art & Design, after which she spent two years designing furniture and products for the nursery industry. She is passionate about design research and is particularly interested in sociology, sustainability and system design. Lisa is a co-founder of the design consultancy INTO.

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Gail Knight



Florie Salnot



Tom Stables



Karina Torlei



Jamie Tunnard



Ying Jiang

GAIL KNIGHT

Gail graduated from RCA Industrial Design Engineering in 2007. Her first degree was Mechanical Engineering at Imperial College, with a year studying in Lyon, France. She enjoys projects that focus on communities and urban design, and previously worked in wayfinding. She also came up with the idea for Sat-Lav, a text service to find a toilet in Westminster.

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FLORIE SALNOT

Florie did her undergraduate studies in La Sorbonne, Paris in History of Arts & Anthropology. After obtaining a BA in Cabinet Making at the Ecole Boulle, Paris, she graduated from the MA Design Products course at the Royal College of Art in 2010. She is passionate about social design and has been working for three years on a design project with the Saharawi refugees in the Algerian desert, a project for which she won the Coca Cola design award for sustainability.

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TOM STABLES

Tom graduated from BA Product Design at Central Saint Martins College of Art and Design in 2006. Setting up studio he completed interior, lighting and product design projects for a range of clients including Paul Smith, LVMH, Vtech and Hulger. He graduated from the RCA with MA Design Products in 2010. His work has always been driven by an interest in people, which led to an inclusive design emphasis on his graduation show.

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KARINA TORLEI

Karina graduated from Industrial Design Engineering at the Royal College of Art in 2008. Her first degree was BEng in Product Design Engineering from Swinburne University in Melbourne, Australia. Before studying at the RCA, Karina spent three years with Tomra Systems in Norway designing consumer recycling equipment and she later worked for designer Ross Lovegrove. In addition to medical design, Karina has a passion for sustainability and is one of the founders of Artica Technologies, a company set up to commercialise an award-winning low energy cooling technology initially developed as a graduation project at the RCA.

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JAMIE TUNNARD

Jamie graduated from RCA Design Products in 2010. After studying his first degree in Fine Art he worked for a number of leading contemporary artists. He is interested in the benefits and importance of visual communication and how the technologies that support it can be improved for all users through a process of research and inventive design.

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YING JIANG

Ying Jiang is a Visiting Research Associate and Academic Visitor at the Helen Hamlyn Research Associates, RCA. She has lectured at the Design School of East China Normal University, Shanghai, since 2006 in fundamental design, furniture design and accessory design. She also is an independent designer, and has worked for Shanghai Research Institute of China, Shanghai River Museum and City Civilization Museum of World Expo Shanghai 2010. She is a graduate of Tsinghua University, Beijing, in exhibition design (BA) and industrial design (MA).

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PARTNERS

HELEN HAMLYN RESEARCH ASSOCIATE PARTNERS 2011



BATH INSTITUTE OF MEDICAL ENGINEERING

BIME (Bath Institute of Medical Engineering) is a design and development charity working in the fields of medicine, healthcare and assistive technology. Its projects range from practical items for daily living to harnessing technologies for people living with dementia.
www.bath.ac.uk/bime

BEING

BEING is a specialist business consultancy that helps organisations in the public, private or charitable sectors achieve their goals through the effective application and management of design. BEING was commissioned by the Kingwood Trust to shape and manage a ground breaking project with the Helen Hamlyn Centre for Design.
www.beingdesign.co.uk

BUPA

Bupa's Care Homes provide some 35,000 beds principally in the UK but also in Spain, New Zealand and Australia for older people in need of care and refuge. Bupa endeavours to provide the highest possible standards of care in all its markets and its collaboration with the RCA is a reflection of its commitment to provide leadership in the design and provision of dementia care.
www.bupa.co.uk

CISCO

Cisco Systems is a multinational corporation that designs and sells communications technology and services. Headquartered in San Jose, California, Cisco has more than 70,000 employees. The Cisco programme 'Ageing Well' is designed to explore how communication and collaboration technologies, including video and interactive information exchange, can benefit older people.
www.cisco.com/uk

CLEARBLUE

Clearblue is the brand name of Swiss Precision Diagnostics, which was formed in 2007 as a joint venture between Inverness Medical Innovations and Procter & Gamble to create, using its parent companies' complementary strengths, one of the world's foremost organisations in consumer diagnostics.
www.clearblue.com

DESIGN COUNCIL

Design Council CABE is a unified voice for a broad spectrum of design, architecture and public space, placing good design at the heart of social and economic renewal. We provide evidence and demonstrate how design can help build a stronger economy and improve everyday life through practical projects with industry, public services and education.
www.designcouncil.org.uk

DEPARTMENT OF HEALTH

The Department of Health exists to improve the health and wellbeing of people in England. It provides health and social care policy, guidance and publications for the NHS and social care professionals.
www.dh.gov.uk

DOME

DOME – Designing Out Medical Error – is a research collaboration between the Helen Hamlyn Centre for Design at the RCA, Imperial College London and St Mary's Hospital Paddington. It is funded by the EPSRC. The project aims to better understand and map healthcare processes on surgical wards to reduce instances of medical error.
www.domeproject.org.uk



EPSRC

The EPSRC (Engineering and Physical Sciences Research Council) is the main UK government agency for funding research and training in this area, investing around £850 million a year in a range of subjects from mathematics to materials science.

www.epsrc.ac.uk

HUMANSCALE

Since its start in 1983, Humanscale has become the premier designer and manufacturer of ergonomic products that improve health, comfort and work life quality. Well recognised through an impressive award collection, Humanscale combines research with cutting-edge technology to create simple, innovative, easy-to-use solutions for offices, homes and healthcare facilities.

www.humanscale.com

IMPERIAL COLLEGE HEALTHCARE NHS TRUST

Imperial College Healthcare NHS Trust was created by merging St Mary's NHS Trust and Hammersmith Hospitals NHS Trust and integrating with the Faculty of Medicine at Imperial College London. Now one of the largest NHS trusts in England, the Trusts have joined up with the College to establish one of the UK's first academic health science centres.

www.imperial.nhs.uk

JOHNSON CONTROLS

Johnson Controls Global WorkPlace Solutions is a leading provider of facilities, commercial real estate and energy management for many of the world's largest companies. Its solutions optimise performance and productivity while reducing occupancy costs. Its 20,000 employees have delivered over \$3 billion in savings to customers over the last 10 years in over 75 countries.

www.johnsoncontrols.com

KINGWOOD TRUST

Kingwood Trust is a registered charity providing support for adults and young people with autism. Its mission is to pioneer best practice which acknowledges and promotes the potential of people with autism and to disseminate this practice and influence the national agenda. Kingwood is an independent charity and company limited by guarantee.

www.kingwood.org.uk

LONDON AMBULANCE SERVICE

The London Ambulance Service (LAS) is the busiest emergency ambulance service in the UK. It has more than 5,000 staff, who are based in 70 ambulance stations. The LAS serves more than seven million people who live and work in the London area.

www.londonambulance.nhs.uk

MEGAMAN

Megaman Charity Trust Fund was established in 2008 in recognition of the role played by the private sector in meeting the social needs of the community. It shows its support in two major areas: education and environmental protection. It is funded by endowment and ongoing contributions from Neonlite International Holding Limited, the parent company and owner of the renowned trademark Megaman. It is dedicated to innovating in energy-efficient lighting products.

www.megamanlighting.com

NATIONAL INSTITUTE FOR HEALTH RESEARCH

The goal of the National Institute for Health Research (NIHR) is to create a health research system in which the NHS supports outstanding individuals working in world class facilities, conducting leading-edge research focused on the needs of patients and the public. The NHS reputation for international excellence is growing as it gains recognition for being the preferred host for collaborative and multi-centred research in partnership with industry.

www.nihr.ac.uk

PARTNERS

HELEN HAMLYN RESEARCH ASSOCIATE PARTNERS 2011



NEW DYNAMICS OF AGEING

The New Dynamics of Ageing Programme is a seven year multi-disciplinary research initiative with the aim of improving quality of life of older people. It is a unique collaboration between five UK Research Councils: ESRC; EPSRC; BBSRC; MRC and AHRC. www.newdynamics.group.shef.ac.uk

NHS LONDON

NHS London is the Strategic Health Authority (SHA) for the whole of the Greater London area. That means it provides strategic leadership for the capital's healthcare and makes sure the £13 billion annual investment in staff and services delivers the best possible care and support for the public and patients. www.london.nhs.uk

PAVIOM

Paviom, founded in 2009, is a young architectural lighting company which specialises in external lighting and takes a holistic approach to sustainable lighting design. It commissions independent designers from around the world to contribute to the development of ecologically responsible lamps and fittings. www.paviom.com

PEARSONLLOYD

PearsonLloyd offers design knowledge and strategic thinking in industries that have demanding spatial, ergonomic and social needs such as healthcare, airlines, and the workplace. The studio has a history of implementing strategic change within these areas through exploring the relationship between people and the complex built environments they inhabit. www.pearsonlloyd.com

OTICON

Oticon, founded in 1904, is one of the world's leading hearing instrument manufacturers. Based on the brand promise 'People First', through its products and support it aims to empower people. Oticon was the first manufacturer to produce a fully digital hearing device and has recently released Intiga, the world's smallest fully wireless hearing instrument. <http://oticon.com>

RESEARCH IN MOTION

Research In Motion (RIM) is the company behind the BlackBerry product line and a leading designer, manufacturer and marketer of innovative wireless solutions for the worldwide mobile communications market. RIM's portfolio of award-winning products, services, and embedded technologies includes the BlackBerry PlayBook™ tablet, the award-winning BlackBerry smartphone, software for businesses and accessories. www.rim.com

TACT3

TACT3 (Tackling Ageing Continence through Theory, Tools and Technology) is a three-year research project that aims to reduce the impact of continence difficulties for older people. It is managed by Brunel University. <http://people.brunel.ac.uk/~tact3>

UWE

The University of the West of England (UWE) and the University Hospitals Bristol NHS Foundation Trust have formed the Bristol Academic Department of Emergency Care as a joint venture. Medical, nursing, physiotherapy and paramedic disciplines deliver applied and clinical research relevant to emergency care. www.uwe.ac.uk

PUBLICATIONS

SELECTED PRESENTATIONS, PUBLICATIONS AND CONFERENCES

KEYNOTE & INVITED PRESENTATIONS

Richard, J. & Knight G. (2011) *The Trouble with Toilets at Toilet Talk: Women's Needs Seminar*, Women's Design Service, The Building Centre, London

Richard, J. (2011) 'The Role of Older People in Designing' at KT Equal: Empowering Older People to be active researchers, thought-leaders and influencers. Reading Town Hall, Jan 2011

Richard, J. (2010) *Toilet Provision for an Ageing Population at KT Equal: Continence Matters*, Brunel University, December 2010

Richard, J. (2010) 'The Inclusive Workplace' Business Breakfast DoGA, Norwegian Design Council, Oslo, Norway. November 2010

Richard, J. (2010) 'Smarter working for the ageing workforce' in *Quality of Life: Social, Economic & Ergonomic Challenges for Ageing People at Work*, European Ergonomics Conference, Brugges, Belgium. October 2010

Cassim J. (2010) 'Engaging designers' Special plenary session, 3rd International Conference for Universal Design in Hamamatsu, Japan,

Cassim J. (2010) 'Inclusion by Design', Design Center, Busan, South Korea, 4 December

Cassim J. (2010) 'Inclusion by Design', Kyoto Institute of Technology, Kyoto, Japan

Gheerawo, R. (2011) 'Consumer Matters: A People-centred Approach to Design', *Knowledge of Design Week*, Hong Kong Design Centre, Hong Kong, China

Gheerawo, R. (2011) 'The Role of Ethnographical Research in Design Thinking', *Design Thinking Lab 2011*, British Higher School of Design, Moscow, Russia

Gheerawo, R. (2010) 'Social Concerns: Getting Closer to your Consumer', *Research Symposium, Research In Motion*, Waterloo, Canada

Gheerawo, R. (2010) 'Making Technology Work for Older People', *WorkTech, Unwired*, London, UK, November 2010

Gheerawo, R. (2010) 'Closer to the Consumer: a Competitive Edge Through Design', *Innovation Norway and the Norwegian Design Council*, Bergen and Trondheim, Norway

Gheerawo, R. (2010) 'A People-centred Approach to Design', *Culminatum Innovation and Design* London, Helsinki, Finland,

Gheerawo, R. (2010) 'Designing to Make a Difference', *Barcelona Design Week*, Barcelona Centre de Disseny, Barcelona, Spain,

Gheerawo, R. (2010) 'Inclusive Design and

Industry', Design for Humanity conference, Design information Centre, Riga, Latvia,

Greene, C. (2010): 'Lessons from the Library' *Work Tech conference*, British Library, London,

Kecman, M. (2010) 'Design in Healthcare: reducing errors and infection, promoting efficiency and improving patient experience'. Presentation to US Government healthcare policy makers, White House, Washington DC

Kecman, M. (2010) 'Design for Patient Dignity: Improving patient information' *Transforming patient and staff experience, what works?* The King's Fund, London,

Lee, Y. (2011): 'Living a designerly life' Public speech given at MaD forum, Hong Kong

Lee, Y. (2011) 'Design.Lives: Design Participation for Social Inclusion', Visiting Scholar, Hong Kong Design Institute, Jan 2011

Matthews, E. (2011) 'Designing Out Medical Error', 7th World Congress for Design & Health, Boston, USA

Myerson, J. (2011) 'Space to Engage', Sheffield Business School annual Conference, Jan 2011

Myerson, J. (2010) 'New Demographics New Workspace' keynote presentation at *WorkTech Amsterdam conference*, November

Myerson, J. (2010) 'Ageing and medicine: quantity versus quality', *Battle of Ideas*, organised by Institute of Ideas, RCA

Myerson, J. (2010) 'The Lives of Others: people-centred design at the RCA', *Rochester Institute of Technology*, October

Myerson, J. (2010) 'Welcoming Workplace', *Office & Facility conference*, Warsaw, Poland

PUBLICATIONS

Richard, J. & Gheerawo, R. (2010) 'The Designer as Ethnographer: Practical Projects from Industry' in *Design Anthropology: Object Culture in the 21st Century* SpringerWien New York, USA

Cassim, J. (2011) 'Beyond the Touch Tour' in Dent, P (ed) *Sculpture and Touch: New Studies in Sculpture series* Penelope Curtis (ed), London, UK, Ashgate

Cassim, J. & Dong H. (2010) *Interdisciplinary Engagement with Inclusive Design - the Challenge Workshops Model* in Coleman, R & Clarkson, J. *Applied Ergonomics special issue*

Gheerawo, R., Liem, A. & Swierenga, S. (2010) 'Encompassing Universal Design Approach in ICT' in *The Journal of Usability*

Studies, Vol. 5, Issue 4, pp129-131, Aug 2010

Greene, C., Myerson, J. (2011) 'Space for thought: designing for knowledge workers', *Facilities*, Vol. 29 Iss: 1/2, pp.19 - 30

Myerson, J. & Lee, Y. (2010) 'Inclusive Design Research Initiatives at the Royal College of Art' Chapter in *Universal Design Handbook* (2nd Edition), McGraw-Hill Professional, USA

Myerson, J. (2010) 'Makepeace: Sustaining a Narrative in Craft and Design', essay in *Devon Guild of Craftsmen exhibition catalogue for John Makepeace touring show*

Myerson, J. (2011) 'The Arrival', chapter in *How To Run a Successful Design Business* Shan Preddy (ed), Gower

CONFERENCE PROCEEDINGS

Richard, J. & Knight, G. (2011) 'Knowing Where to Go' *Proceedings for Open Space Open People - Inclusive Design from Getting Out of Doors*. Edinburgh College of Art

Cassim J. (2010) 'Designing Effective User Interactions - examples from the Challenge Workshops,' *Proceedings of the 3rd Conference of the International Association for Universal Design IAUD*, Hamamatsu, Japan

Gheerawo, R., Richard, J., Gaggero, C., Muhammad, Y. & Westaway, A. (2010) 'Digital Barriers: Making Technology Work for People' in *proceedings for the 3rd International Conference for Universal Design, IAUD*, Hamamatsu, Japan

Gheerawo, R. & Donahue, S. (2010) 'Social Sustainability: The Challenges Facing Universal Design' in *proceedings for the 3rd International Conference for Universal Design, IAUD*, Hamamatsu, Japan

Eihaug, O. & Gheerawo, R. (2010) 'Innovation for All - Working with Government to Affect Business' in *proceedings for the 3rd International Conference for Universal Design, IAUD*, Hamamatsu, Japan, October 2010

Lee, Y. & Ho, DKL. (2010) 'Teaching the teachers: Co-designing new inclusive design experience to enable secondary school students to think creatively' published in *Participatory Design Conference 2010 University of Technology, Sydney, Australia*

Lee, Y. & Ho, DKL. (2010) 'Including people in design processes, good but how? Engaging with Inclusive Design Methodology through a digital platform' published in *7th international Conference on Design and Emotion Chicago*

THE HELEN HAMLYN CENTRE FOR DESIGN YEARBOOK 2011

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Front image: sketch for sensory prop
by Katie Gaudion, RCA Textiles

