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Challenge  
2009

**Challenge** is an annual publication documenting the work of the Challenge Workshops, a knowledge transfer programme for the professional design and business communities based in the Helen Hamlyn Centre at the Royal College of Art, London.

**The Challenge Workshops** focus on techniques in inclusive design practice as a tool for innovation. The flagship is the DBA Inclusive Design Challenge, a collaboration between the Royal College of Art and the Design Business Association (DBA). Shorter design challenges and workshops are held in different industry, academic and public contexts, nationally and internationally, throughout the year.

The aim of the Challenge Workshops initiative is to encourage innovation in products, services and environments that include the needs of disabled people, and to foster partnerships with them as an integral part of the design process.

**The Helen Hamlyn Centre** provides a focus for people-centred and inclusive design at the Royal College of Art, and works closely with InnovationRCA, the College's innovation network for business, to deliver the Challenge Workshops.

The DBA Inclusive Design Challenge 2009 was sponsored by **Sanctuary Care**.



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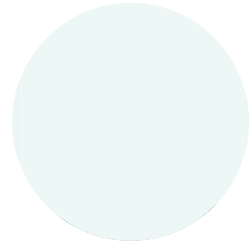
# Editorial

The dictionary defines the term 'challenge' as 'a demanding or stimulating situation' – the essence of the Challenge Workshops. In 2008, we thought that the theme of dementia for the annual DBA Inclusive Design Challenge was perhaps too tough. How wrong we were! This year has shown once again that when you raise the bar for designers, they rise to the occasion and deliver the goods in ways that demonstrate why London has become the international design capital of choice.

For this year's DBA Inclusive Design Challenge, the overarching theme was Sedentary Lives. The five shortlisted teams looked across a spectrum of scenarios and came up with a range of innovative design proposals showing the impact that sedentary lifestyles have on everyone, from children and the working population to those at the end of their lives. This publication looks in detail at these and also at the results of international design challenges and workshops held in Hong Kong, Tokyo, Jerusalem and Sarajevo.

In fact, this past year could be termed 'A Tale of Five Cities' with the Challenge Workshops programme going global with a vengeance. 48 Hour Challenges were held in Hong Kong and Tokyo, and workshops in Jerusalem and Sarajevo. Like all effective knowledge transfer programmes, the secret seems to lie in the ability of a base template to be adaptable to quite different cultural and social circumstances while retaining those elements that make it universally relevant and applicable.

In China, no word for inclusive design existed before the 48 Hour Challenge was held in Hong Kong. So the legacy of the event was not just an ongoing pan-Asian network of designers and disabled people with an understanding of the inclusive design process and how to go about it, but a new word that has entered the design lexicon.

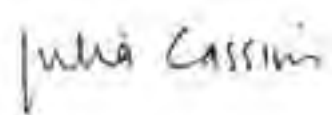


Julia Cassim  
Senior Research  
Fellow,  
Royal College of Art  
Helen Hamlyn  
Centre

In Jerusalem, the challenge was about enabling people with rheumatoid arthritis to lead more inclusive lives. In Sarajevo, the challenge was less about creating a set of visual exemplars of inclusive design and more about empowering a group of highly-skilled deaf craftspeople to work with designers and create prototypes for products that utilise their skills. Importantly, it was about providing them with the means for longterm economic survival by building design guidelines around the prototypes and creating a design-led business plan that would allow this to happen.

In Tokyo, where so many of the participants had a hardcore engineering background, the Challenge model demonstrated that inclusive design is not just about a technical response to a functional problem. In its best manifestation, it is an interdisciplinary process where engineering knowhow and the lateral insights and problem-solving skills of disabled people require a designer's ability to lead from the front in creating solutions that make sense in aesthetic, business and innovation terms.

But irrespective of the context in which the Challenge Workshops take place, the great joy of the programme comes in seeing the emergence of the new networks that each project generates and the sheer dedication of those unseen hands who find the funding and organise the logistics to make each event happen. This publication is dedicated to them.

A handwritten signature in black ink that reads "Julia Cassin". The signature is written in a cursive, slightly slanted style.





**01**  
**LONDON**

# DBA Inclusive Design Challenge 2009

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## Sedentary Lives – the design brief

We are leading increasingly sedentary lives – from couch potato kids who are glued to their computers, office workers who barely leave their desks and long distance truck drivers who spend long hours behind the wheel, to the elderly who live in supported care schemes at the end of their lives. Getting people moving is a massive challenge. Inclusive design proposals were invited from member firms of the Design Business Association (DBA) to address any one of a range of sedentary living scenarios.

Sian Jarvis, Director of Communications at the Department of Health (DOH) and initiator of the influential Change4Life campaign, was keynote speaker at the DBA Inclusive Design Challenge 2009 awards event, held at the Royal College of Art on 5 March 2009. She laid out in stark terms why the DOH has invested £75 million over three years to get people on their feet again.

According to Jarvis, if we do nothing by 2050, only one in ten of us will be of a healthy weight and the annual cost to the economy will reach £50 billion – around half the NHS budget for a year. Such an analysis explains why this year's Challenge theme of Sedentary Lives was so pertinent to the state of the nation's health.

Five design teams were shortlisted for the DBA Inclusive Design Challenge 2009. The breadth of possible scenarios allowed them to concentrate on issues affecting the whole spectrum of lifestyle, age and ability in the general population – a naturally inclusive design fit. Obesity, the direct consequence of sedentary lifestyles, emerged as a major theme. So it was left to the teams to tackle the big question – how can design help to turn the tide of the inactive and obese?

## The verdict

The 2009 DBA Inclusive Design Challenge Award went to Matter for 'Mo-dynamic seating' – a radical redesign of the cushion. Deborah Dawton, CEO of the Design Business Association, presented the award, which was designed by Japanese ceramist Ikuko Iwamoto, an RCA graduate.





## Awards event

**"This is the second year Sanctuary Care has sponsored the DBA Inclusive Design Challenge... and the main reason is just because it's such a worthwhile competition. The designs this year have been exceptional."** Steve Wood, Managing Director, Sanctuary Care

**"What I found really interesting about all five presentations ... is that all of you held up a mirror to the individual. It was really all about the individual having to change their behaviour. There was no mechanical device that would somehow come in and make us all healthier and fitter."** Sian Jarvis, Director of Communications, Department of Health

Deborah Dawton, DBA (left) and the Matter team

## Judges

- Neil Barron, Managing Director, Gusto Design
- Peter Blake, Client Partner – Digital, The Team
- Deborah Dawton, CEO, Design Business Association (Chair)
- Jeremy Myerson, Director, RCA Helen Hamlyn Centre
- Elisabeth Parker, Director of Care (Older Persons), Sanctuary Care
- Michael Wolff, Patron, DBA Inclusive Design Challenge



PROJECT 1

# BWA Design

## Get Up and Grow

A campaign encouraging teenagers and elderly people to get together and grow food. Through a national network of community gardening projects based at care homes, the campaign will provide an opportunity for residents to get involved in a more active way of life.



## What the designer said

"The challenge of this brief was to make people think differently – with tangible benefits. We've used the project to interest clients in the scope of our work. Through a six-minute DVD they get a good idea of our approach, our skills and what we do in our spare time. We've also met up with our local Transition Town food group to talk about taking ideas forward." Catherine Barr, BWA Design

## What the judges said

"A wonderful inter-generational idea focused on behaviour and founded on robust research. The judges felt that the campaign would probably take on a life of its own, centred as it was on the popular activity of gardening and would bring different things to different communities. For the young, the core motivation would be reduction of their personal carbon footprint; for residents of care homes, it would reconnect them with the natural world and act as a mechanism for essential social interaction. The word 'garden' is an anagram of 'danger' yet the team has turned that on its head and transformed it into a place for mutual discovery".

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## How it works

Get up and Grow responds to the burgeoning national interest in food cultivation and research indicating that gardening can deliver multi-generational benefits. It is proposed that community allotment spaces will be designed in care home gardens to encourage residents to spend time outside.

Supported by their carers, elderly people will be offered different ways to get involved, with each season culminating in a celebratory event. From tabletop planting to simply sharing a cup of tea, they can decide how they would like to help. The allotment will incorporate seating and raised beds to maximise opportunities for older people of different abilities to get involved.

Each project will be guided by a standard

information pack of seasonal templates and ideas, activity cards, stickers and recruitment posters and flyers.

The project team will consist of a community coordinator, local gardener and teenagers recruited through local youth and community initiatives. They will be encouraged to keep ongoing visual records in the care home through photo albums, wall displays and stories inspired by seasonal events, from garden parties to Christmas seed catalogue evenings.

## User input

- Residents at a Sanctuary Care residential home in South London.
- A day care manager of a local care home in Herefordshire.
- Hay-on-Wye Transition Town facilitator.

## PROJECT 2

# Clinic

# Shift – the anti-sedentary lifestyle



A communications initiative to tackle the growing problem of sedentary lifestyles. A fun approach to a serious subject, personas are used to deliver the message in different formats across the age spectrum – to engage, educate and encourage everyone to get involved.

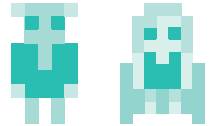
### What the designer said

"It was an opportunity to think about a subject we wouldn't normally get the chance to. It meant our team could express themselves unhindered by client 'interference'. The team worked in a really refreshing manner, primarily because of the freedom, but also because of the nature of the project... which they all found inspiring and rewarding" Andy Hunns, Clinic



## What the judges said

"It was clear that a high degree of creative energy, enthusiasm, lateral thinking and sheer hard work had gone into the creation of a compelling range of inclusive scenarios. These were bound around a quirky and attractive logo that was embedded in a wider communications campaign. The use of likeable mentors, particularly the Shift buddies or walking partners, would work well in the games environment and the team showed an excellent understanding of the dissemination potential of different media."



## How it works

Shift uses different media to get across the nature and impact of a sedentary lifestyle while targeted strategies suggest outlets for physical and mental activity. The campaign's logo has three versions: a simple, clear generic one that works in greyscale; a playful, colourful, tighter version; and an animated one for younger audiences for use in digital and ambient media.

Alongside the logo are persona-based 'ambassadors' created to deliver the Shift core message to different audiences:

- **Jack** - a couch potato kid, likes playing his P3 and online games, eating junk food, watching TV and connecting with friends on Facebook.
- **Mary** - an office worker, loves her job, lets off steam in the pub but sees no point in walking or exercise.
- **Alf** - a senior citizen, enjoys TV, reading and his family but dislikes the physical impact of the ageing process.

For each persona, a range of possible activities were designed, backed by

information in the appropriate media format for the target audience.

For Jack's generation, messages would appear on favourite online sites and on posters in venues where they gather. With involvement from the Department for Children, Schools and Families, activities would be delivered by the mobile Shift bus. Work is a major part of Mary's lifestyle so the Shift message could be delivered en route to work via ads on public transport or through clever T-shirts to show that Shift is a fun idea. Screensavers and educational tools could be downloaded from the Shift website to spread the message and get others involved.

For Alf's generation a more sedentary lifestyle is often unavoidable, but there will be Shift buddies to get minds engaged in mental activity and in physical exercise through the medium of volunteering.

## User input

- Street interviews with different people.
- People of different ages who are not sedentary by choice.

## PROJECT 3

# Matter 'Mo' dynamic seating



'Mo' is a lightweight, portable seating product with a pixellated support system that accommodates the user's micro movements, providing a health-positive solution to inadequate seating in any context.

### What the judges said

The judges praised this 'intelligent journey from start to finish'. They felt it was a thoroughly researched, compelling, single-minded, technically clever and genuinely inclusive solution with a great deal of potential that could encourage people to venture out. In the care home context, its ease of cleaning and disinfection would cut cleaning costs, reduce storage needs and help cut their carbon footprint. The team was praised for the multiplicity of scenarios of use they had opened up for the product – in the home, for children, nomadic workers and frequent travellers.



## What the designer said

"This was the first time I had been involved with the competition. It was a fantastic experience and a great opportunity to develop my understanding of the inclusive design process. By involving Herman Miller, we have illustrated how designers and the clients and brands they work with can use inclusive design as a tool to drive really successful and exciting new product development. Looking at a problem with a more inclusive perspective led us to develop design solutions that were much easier to use, easier to live with and desirable to a wide range of people."

Chris Weston, Matter

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## Background

Matter investigated different sedentary scenarios – in the home, at work and when we are on the move and less able to control where we sit down for a rest or a break. In discussions on how people adapt to ill-suited seating, the cushion emerged as a product in need of some innovative and inclusive design help.

## How it works

'Mo' replaces the traditional synthetic foam or gel cushion padding with a moulded product consisting of a polymer spring configuration sandwiched between two identical mouldings of linked pixels.

This revolutionary new pixellated support system is designed as a matrix. Each pixel inherently conforms to the user's weight, adapting to their micro-movements and distributing their body mass evenly on the seat. Importantly it provides them with the ability to fidget

– a crucial consideration for people who are seated for long periods in the same position and can develop pressure sores if they are unable to stand up.

In a care setting, the need for frequent cleaning and disinfection is paramount. With its open structure, 'Mo's non-porous moulded inner can be rinsed under the tap, soaked and disinfected. The removable cover is breathable with a wide aperture and a corner tab that is pulled over and holds the inner in place. 'Mo's slim profile means that it fits easily into a bag, making it portable, particularly where the quality of the seating cannot be guaranteed, such as in classrooms, sports arenas and open-air theatres.

## User input

- Carers and residents at Trowbridge Care Home.
- People of different ages who are involuntarily sedentary nomadic workers.

PROJECT 4

# Rodd Divide Equally



A series of tools for preparing, serving and storing the correct amounts of food that provide simple ways to encourage people to eat the right amount without the need for scales or measures. Divide Equally educates and enables people to take more control over their health and nutritional well-being through better portion control.





## What the judges said

The judges found the team's approach to the key issue of portion control clever and highly imaginative. Their response in the form of a cornucopia of new product ideas – simple, desirable and beautifully realised tools with an iconic brand at the centre – showed how well they understood that portion control could not be addressed by a single gadget alone but required a systemic approach. The project stands a very good chance of commercial implementation.

## What the designer said

"Truthfully, we considered entering the Challenge as part of our marketing plan. But at the first briefing we connected with the honest-to-goodness multidisciplinary design approach. Our entries have created significant commercial and press interest. Divide Equally is hopefully on its way to retail in 2010." Ben Davies, Rodd

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## Background

Over the last 50 years, we are doing less but eating more. Nearly one in four adults and almost one in three children in the UK are now overweight or clinically obese. Portion sizes have increased dramatically – an average plate of pasta is five times larger than in 1980; bagels and burgers have doubled in size and some biscuits have grown by 300 per cent. User research sparked ideas on how portion control could be tackled through the design of simple household objects.

## How it works

The team designed a series of preparation aids to get people to eat the right amount:

### Measuring Aids

- Chopping board with high-contrast rings to indicate the correct portion size with further text information on the back.
- A 'one cup' marking system for any container to eliminate inaccuracy and

uncertainty about a correct cup measure.

- A simple plastic measuring cone for different food types that lies flat for storage and can be incorporated into packaging or supermarket recipe cards.

### Serving and Storage Aids

- A double-walled cup and portioned crockery to provide you with the correct-sized meal.
- A baking dish system with a notched rim to indicate the correct portion size.
- A set of portioning tools with pasta, rice and cheese measures.
- Crockery with lids that allow extra meals to be stored easily.

### User input

- Mothers with large families and older people living alone.
- Users with dexterity and visual problems.
- Staff at a children's nursery.
- Catering staff at a Sanctuary Care home.

## PROJECT 5

# Wire Design 'id' development system

A three-part individual development system based on existing cognitive behavioural therapy models – id helps people to adopt a positive attitude towards change, maps their personal barriers and potential, and connects them to mentors and possible activities, thereby encouraging them to take the crucial first steps in leading a less sedentary life.



## What the designer said

"It is satisfying and inspiring to spend time with the people we are trying to help. It can be very humbling to realise that our perspective is often blinkered – the insights and ideas of users can be quite brilliant. The DBA Inclusive Design Challenge provides us with invaluable case studies. Some of our best clients have been attracted to us in this way." John Corcoran, Wire Design

## What the judges said

The judges were impressed by the team's in-depth research into the causes of inactivity and by their analysis of the intractable problem of how to incentivise people to change their behaviour. They felt that id was a genuinely new concept with a novel anti-advertising approach. This 'beautiful virus', as the proposal was called, harnesses the potential of social networking as a profiling tool and mode of dissemination to allow discovery on one's own terms.

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## Background

id is an individual development system in three parts with versions for personal or professional use:

**id Frame** introduces people to the possibility of positive lifestyle change by understanding their personal barriers, opportunities and potential. The professional framework in the version for carers uses common terms of reference, improving communication between inactive people and professional practice.

**Id Self** exists as a starter pack of cards to be used with a friend or professional helper while the on-screen version allows users to build models of themselves. Both help people gain a better understanding of their current position, their barriers to change and opportunities for the future embodied

in a set of themes. Each bears a unique number to enable more complex modelling and analysis.

**id Space** connects people via the id Self profile to local mentors who have a real appreciation of the barriers that person faces and may be able to highlight local opportunities.

id is designed to be owned, promoted and mentored by the people who use it.

## User input

The design team looked at existing international studies on health and lifestyle trends, spoke to eminent psychologists and health care professionals, and ran workshops with carers and people who turned their lives around.

Chamber  
展覽館

**02**  
**HONG KONG**





# 48 Hour Inclusive Design Challenge

28-30 August 2008, Hong Kong

Sponsored by the British Council and the Innovation and Technology Commission, Hong Kong

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This was the most complex and ambitious of all the international challenges to date. Held in the run-up to the 2008 Beijing Paralympics, it was a celebration of the 60th anniversary of the British Council in Hong Kong.

All of the British Council offices in the East Asia region were involved. Six interdisciplinary teams of designers from Hong Kong, China, Korea, New Zealand, Taiwan and the ASEAN region were led by veterans of the DBA Inclusive Design Challenge and alumni of the Helen Hamlyn Research Associates Programme.

Each team was paired with a disabled design partner from Hong Kong, Beijing and Chongqing. The event was supported by local disability networks, Hong Kong Polytechnic University and the Hong Kong Designers' Association (HKDA).

The teams were asked to address the theme of Independent Urban Lives in the areas of work, mobility, leisure, communication and the home.

Over a two-day period, the teams worked at Cyberport, Hong Kong's digital hub, and delivered their design solutions to an invited audience at a public event on 30 August 2008 at Innocentre, home of the Hong Kong Designers' Association (HKDA). Keynote speaker and patron was Victor Lo, Chair of the HKDA. Two highly respected commentators – graphic designer Stanley Wong Ping Pui and the design critic and illustrator Craig Au Yeng Ying Chai – followed the Challenge's progress as it unfolded over the 48 hours.

The audience vote for Best Idea went to Team 1 from Hong Kong and Guangzhou led by Matthew White and Ng Fan of Saatchi & Saatchi for their MPowerStyx chopstick mouse. The Best Presentation prize went to Team 6 from the ASEAN region led by Guy Robinson of Sprout Design.

From top left, clockwise:  
 Matthew White,  
 Guy Robinson,  
 Matt Wright,  
 Alistair Russell,  
 Gero Grundmann,  
 David Hamilton,  
 Julia Cassim,  
 Yanki Lee



**BRITISH  
 COUNCIL**

**CELEBRATION**

**60**



## THE PROPOSALS

### TEAM 1:

## Upright mouse and MPowerStyx

Two design solutions to help people with MPS, an incurable condition that results in claw hands, to use a computer mouse. The first reconfigures the mouse in an upright orientation, allowing easier grip and a more relaxed hand. The second is a chopstick mouse, the MPowerStyx, which allows skills learned through years of eating to be adapted to a new form of human-computer interaction.

#### Team leaders

Matthew White, UK – independent designer  
Ng Fan, Hong Kong – Creative Director, Saatchi & Saatchi, Guangzhou

#### Design partner

Tang Wai-man, and Tang Wai-chi, Hong Kong Society for Mucopolysaccharide Diseases (MPS)



# MPOWERSTYX





## TEAM 2: HearPiece

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A campaign to raise public awareness of noise pollution – and associated design solutions to address key aspects of the problem, in the context of people with impaired hearing. These include a noise-reducing booth, noise-reducing headphones, a mobile phone application that detects and maps out the noisy places, a new type of public announcement system and a device that indicates the volume of noise and dispenses a pack of affordable ear plugs.

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### Team leader

Alistair Russell, UK – Senior Structural Designer, Bloom

### Design partner

Mandy Tang, Hong Kong student with severely impaired hearing



### TEAM 3:

## MyMag™ – Stylish Streetwear for Independent Urban Living

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A range of MyMag™ garments with embedded magnetic buttons and seams to replace traditional zips, buttons, clips and straps, designed to address the active urban lifestyle dressing needs of a person without arms. These snap simply in place, providing an intuitive way of fitting and fastening trousers, jackets, skirts, shirts and accessories. Trousers also feature flexing internal stabilisers that give them an easy-access open shape.

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#### Team leaders

Gero Grundmann,  
Germany, Studio Bec –  
visual communications  
Professor Liu Xin, Beijing,  
Tsinghua University –  
industrial design

#### Design partner

Liu Wei, a multi-talented  
21 year-old national  
paralympic swimming  
champion, composer,  
pianist and music bar  
owner from Beijing



## TEAM 4:

# Snipper – safe nail clipping

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A solution to the problem of clipping nails for wheelchair users, those unable to bend or people with hand tremor. The Snipper is a simple, inexpensive system available in a variety of sizes. Made of moulded silicone, its protective cover is placed over a finger or toe where the edge sits neatly under the nail to act as a trimming guide and protect the skin below. The snug fit-in position ensures it will not move, allowing the user to concentrate on damage-free snipping.

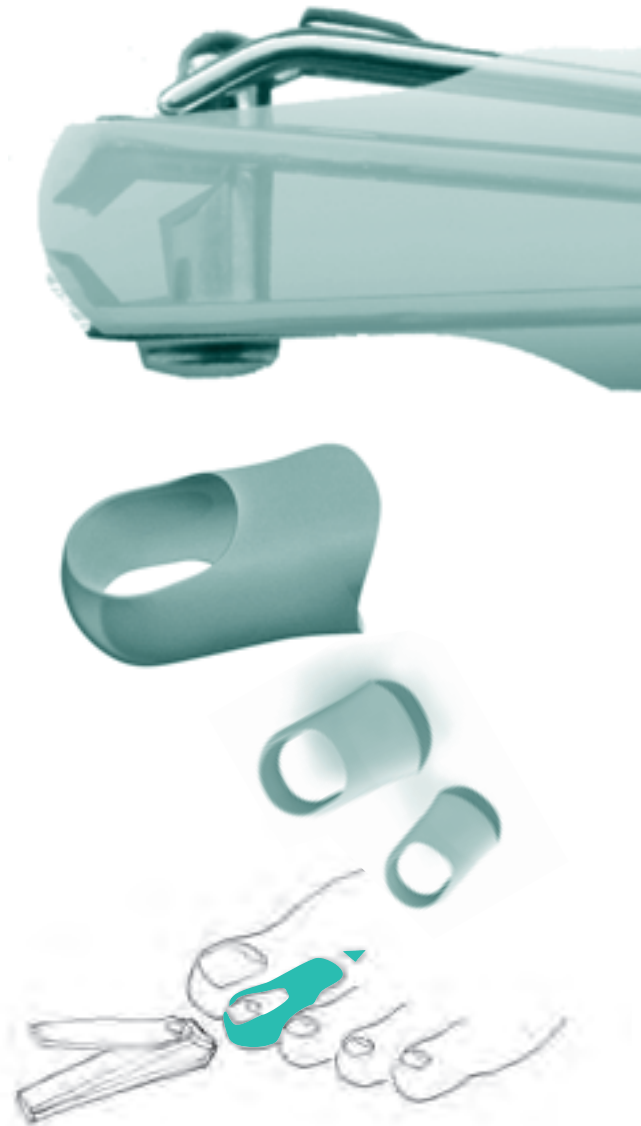
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### Team leader

David Hamilton, UK  
Senior Designer,  
Priestman Goode

### Design partner

Chen Jia-yu, Chongqing,  
Publisher



## TEAM 5: Infiniti



Infiniti is a discreet, stylish, wearable device that helps blind and partially sighted people to find their way around on a daily basis without being treated 'differently'. It allows the user to stream information using their existing personal mobile GPS technology to navigate their position within the urban environment. Infiniti's voice-activated Bluetooth audio feedback enables users to find a public toilet, tour a museum or simply choose from a fast food menu.

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### Team leader

Matt Wright, UK – Matter

### Design partners

Tam Wai-ho and Jason Ho Ka Leung, Hong Kong



## TEAM 6:

# Fruit-Ball

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Fruit-Ball is an educational interactive experience in the form of a circular game for use outdoors by anyone. It requires little strength or range of movement and can be approached by wheelchair. The objective is to roll a weighted ball, apple or round fruit up to the hole. The top of the table is a subtle dome allowing the unsuccessful objects to return to the edge. An interactive LED ring halfway up is engaged once the object passes its outer circumference. The engaged section lights up and plays the corresponding sound to the character. Any object that enters the hole returns to the tray underneath.

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### Team leader

Guy Robinson, UK  
Sprout Design

### Design partner

Willy Lo, Hong Kong,  
motorised wheelchair user



# Innovating through Inclusive Design

31 August 2008, Innocentre, Hong Kong  
Organised in collaboration with  
the Hong Kong Design Centre and  
the British Council, Hong Kong

This one-day design workshop was held at Innocentre, the Hong Kong Design Centre's headquarters in Kowloon. The aim was to bring designers from different disciplines with no previous experience of inclusive design together with disabled consumers to explore new design directions under the theme of 'smart wearables'.

A series of clothing or product concepts were inspired by the needs of the disabled consumer who the team worked with, but pitched at the mainstream marketplace.

The participants were a diverse group of professionals drawn from organisations such as the Hong Kong Jockey Club, VTech Communications, Philips Design, IDT Technology, Tuen Mun Hospital and different design schools in Hong Kong. The teams were led by Alistair Russell (Bloom), David Hamilton (Priestman Goode), Matt Wright (Matter), Matthew White (independent product designer), Gero Grundmann (Studio Bec) and Guy Robinson (Sprout Design).



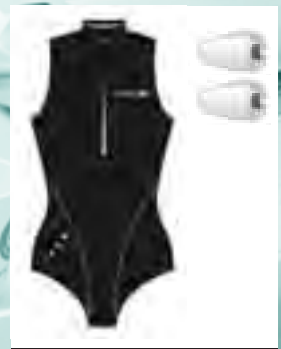
Team A



Team B



Team C



Team D



## argument 2

poor crowd control  
in dense, urban environments  
especially train stations, stadiums

↓  
no intelligent crowd control  
system available

↳ barriers are the  
state-of-the-art

↓  
NORMAL: anxiety + stress → cust. exp.  
DISASTER: crushing, injury, + death

↳ safety

questionnaire  
Hessling, 2004  
Excerpt

### Benefits:

- crowd control emergency
- safety in emergency
- improved customer experience

### Existing Technology / Concepts

- rope barriers
- barriers / bollards / posts



A black and white photograph of a museum gallery. A large projection on the wall shows a historical scene with several figures. In the foreground, a computer workstation with a monitor and keyboard is visible on a desk. A person is partially visible in the background, looking at the projection.

# 03 Tokyo

# 48 Hour Inclusive Design Challenge

23-25 November 2008, Design Innovation Forum

Organised by Nikkei Design and the University of Tokyo  
Sponsored by Toyota, Fuji Xerox, Rinnai, Toyo Exteriors, Uchida Yoko and supported by The British Embassy, Tokyo

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Japan's landscape and national psyche have been profoundly shaped by natural disasters. The long Japanese archipelago stretching from arctic Hokkaido to sub-tropical Okinawa experiences more than its fair share of typhoons, floods, fires and landslides each year and lives with the ever-present threat of earthquakes, a major one of which is predicted soon for the Kanto region where Tokyo lies.

So it was appropriate that the 48 Hour Inclusive Design Challenge held at the University of Tokyo had disaster as its theme. It was the second collaboration between Nikkei Design, Japan's leading design magazine, the University of Tokyo, the RCA Helen Hamlyn Centre and the Engineering Design Centre at the University of Cambridge.

The event was part of UK-Japan 2008, a celebration of 150 years of friendship between the two countries. Jim Dawton (Dawton Consulting), Hazel Macmillan (Wolff Olins) and Ben Davies (Rodd Design), veterans of the annual DBA Inclusive Design Challenge, led teams of designers from the sponsoring companies, interaction graduates of Tokyo University and postgraduate students of the Engineering Design Centre at Cambridge University, who were funded by the Great Britain Sasakawa Foundation.

After a reception at The British Embassy in Tokyo, the teams got cracking. Working with disaster experts and creative partners with disabilities, Jim, Hazel and Ben had just 48 hours to orchestrate their team's response to the Challenge's theme of inclusive responses to natural disasters in dense urban environments. They presented their proposals to a capacity audience at Nikkei Design's Innovation Forum 2008.

## The result

The overall audience and design prize went to Elixir – a disposable emergency product that serves as a portable toilet or as a water carrier; the technical prize to Crowdscape, a sophisticated low-tech wayfinding system; and the theme prize to 'Know your way', a communication campaign that encourages people to know their exit in advance.

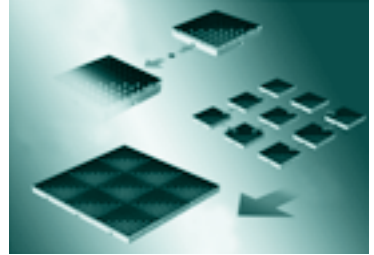
### Crowdscape

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Crowdscape is an intelligent crowd management system for public buildings that provides instruction and reassurance to high volumes of people by using directional symbols. In a disaster scenario, the safest course of action is not necessarily to leave, so the system gives instructions on the best solution for the context – to move in a given direction or to stay put. It consists of modules that can be mounted on the floor, wall, stairs or ceiling that communicate wirelessly with a central control system.

Based on feedback from existing infrastructure in the building, these modules display LED symbols to inform the safe and efficient movement of people away from danger and obstructions. In a power cut, the modules have their own back-up power supply to allow continuous operation.

Individual modules can be combined to form larger shapes for a bigger visual impact. This system is useful not only in extreme disaster situations, but for everyday problems such as rush hour or construction hazards.



# Elixir

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This ergonomic water-carrying and sanitation system consists of a simple, easy-pull, wide-mouth cap, a standard 250-500ml aluminised polyethylene drink bag and a waterproofed cardboard frame. The design has the following critical benefits in a disaster: the special spout design eases opening and drinking; the frame and bag allow many ergonomic options for squeezing, transporting and gripping the container; the integrated wet-wipes and compact size make it useable for toilet functions; clean, odour-free disposal is achieved by sealing the spout, separating the cardboard from the sealed bag and disposing of the bag; and the cardboard frame provides reliable kindling for fire.

Elixir has additional commercial viability for anyone far from a toilet such as campers and hikers; at open-air festivals, on long car trips and when toilets are inaccessible or unusable.



Drinking water



Ways to hold



Toilet



# Know your way

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The 'Know Your Way' campaign stresses the importance of preparing and establishing a mental image of where the exits in a building are and how to get to them before a disaster strikes. The project draws on the experience of the blind design partner who relies on detailed prior knowledge and a mental image of every journey. Knowing the precise position of a building's exits can save lives when people are caught in an unknown environment, dust, smoke or darkness.

The logo uses Japanese kanji characters that mean 'knowledge leads your way out.' The character resembles a person, and its simple design makes it work well in both low and high resolution formats. Know your way and save your life!







**04**  
**Jerusalem**

# Challenge Workshop

10-15 May 2009, Hadassah College, Jerusalem

Sponsored by Roche

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A year after the successful BMe Challenge Workshop sponsored by Roche and held in London (see *Challenge 08*), the venue shifted to Hadassah College in Jerusalem where a group of fourth year Universal Industrial Design students worked under department head Keni Segal. Roche again provided the funding and background expertise.

Once more the Challenge Workshop centred on inclusive design responses to the complex issues of people living with rheumatoid arthritis. In London, four teams of professional designers from France, the UK, Spain, Italy and Greece, all RCA alumni, came up with a range of ideas which were prototyped and shown at the European League Against Rheumatism (EULAR) conference in June 2008.

In Jerusalem, five teams of Hadassah students were joined by six industrial design students from Istanbul Technical University and their tutor Chem Alpai. Together they explored how inclusive design can bring enhanced quality of life to those living with rheumatoid arthritis. They developed a range of innovative ideas, with the winning Hot Dog team proposing a personalised 'pill stick' system. Roche has provided further funding for it to be refined and prototyped.



## PILL STICK

An improved system of pill delivery to alleviate difficulties for people with dexterity issues. Pills are dispensed in the correct sequence into pill sticks to allow for discreet and easy access for people on single or multiple regimes.



## STRAP IT

A strap with embedded storage that can be attached to a variety of bags.



## POPO

A portable cradle that anchors a baby to allow for safe nappy changing.



## CUT ON DEMAND

An easy-to-wear swimsuit manufactured under the cut-on-demand system that allows the embedding of smart textiles features and customisation of form and function in the garment.



## WALL-E

Male and female wallets based on origami principles that open concertina fashion to allow easy access to credit cards and change.



**05**  
**Sarajevo**





# All Inclusive Sarajevo

25-29 May 2009, Academy of Fine Arts,  
University of Sarajevo, Bosnia Herzegovina

Organised by Kulturanti and sponsored by  
the British Council

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All Inclusive Sarajevo was initiated by designers Natasa Perkovic and Josip Lovrenovic, founders of Kulturanti, a non-profit association based in Sarajevo whose aim is to promote creative collaborations between groups or individuals who do not routinely have the chance to collaborate. This five-day design workshop was awarded a grant under the Creative Collaborations project fund of the British Council.

Four independent designers – Bernadette Deddens (studyoportable), Gero Grundmann (Studio Bec), Matt Harrison (Studiohead) and Freddie Yauner, all RCA alumni – led teams of designers from Bosnia, Croatia and Serbia.

Working with local organisations that employ hearing-impaired people, the aim was to create a range of designer goods that utilise existing technical skills and production capabilities and thereby provide an income stream for the future.

Bernadette Deddens worked with seamstresses from the Association of the Deaf of Canton Sarajevo; Freddie Yauner with metalworkers from Librag; Gero Grundmann with the reprographic workshop of Pismolik; and Matt Harrison with Damir Husejnovic, a leather craftsman backed by a network of 20 textile craftspeople from the Centre for Self-Reliance.

The workshop culminated in presentations of the prototypes in an exhibition at the Academy of Fine Arts, followed by a reception at the British Ambassador's residence.

The prototypes will be further refined before being exhibited in Belgrade and Zagreb. British Ambassador Michael Tatham noted that he spends most of his time trying to find ways of promoting regular collaboration between politicians, officials and the judiciary in the troubled region but 'you in the creative fields are setting a real example for politicians'.



## THE PROJECTS

### TEAM CENTRE FOR SELF-RELIANCE

## Moja. Tor.ba

This team set out to create a sustainable design-centred business model for a skilled leather craftsman, which utilises and promotes a network of craft skills through the Centre for Self-Reliance. The commercial intention was not to create a model that relies on increasing the number of bags produced, but to increase the retail value and profit from each item.

Using the high-quality leather work of Damir Huseinovic, combined with embroidered or silk fabrics created by other members of the centre, the team developed a template for a customisable bag.

The design is a simple ladies two-pocket shoulder bag with detachable straps. That can be 'inverted' so that the exterior surface is either simple, elegant and durable leather, or individual and vibrant hand-painted silk.

The straps can also be attached to the bag in a variety of combinations, to maximise comfort for as many people as possible. The design allows for single or double shoulder support, expansion and contraction of the bag, and back-pack style wearing with storage for an umbrella or scarf at its base.

#### Team leader

Matt Harrison, Studiohead

#### Regional leader

Snezana Skoko



## TEAM PISMOLIK

# Superlik

Superlik is a new designer goods label developed by the team for Pismolik, a company with 50 years experience making signs, stamps and graphic products.

Pismolik has many competitors and receives no support for employing disabled makers. The team set out to change this by studying Pismolik's skills, generating concepts and prototypes for designer goods, minimising waste, and building a brand under which the new products can be marketed.

The team created prototypes for home and work products, fashion items and accessories, many from off-cuts of metal and plexiglass. Among them were fruit bowls, photo frames, clocks, lamp shades, office trays, pen holders and name signs, as well as designer T-shirts inspired by Bosnia's crafts heritage.

The new products for the consumer and business market will be sold under the label Superlik (lit. super character/ super-dude). It launches Pismolik's transformation into an inclusive, designed company, creating individual products and forming new creative networks. The designers wrote a set of creative and brand guidelines to make Superlik's success sustainable.

### Team leader

Gero Grundmann, Studio Bec

### Regional leader

Kenan Zekic



## TEAM LIBRAG

# Metal street products

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Librag has a well-equipped metal workshop specialising in the bending and welding of steel rods and sheet metal. It produces lamps and plant holders that are well made but lack design appeal and do not attract sales.

The team focused on the possibilities of the materials and construction methods, aiming to exploit the craftsman's expertise. They created simple low-cost products imbued with observation of local habits and a realistic chance of sales:

- **Street Ashtray by Sanja Bencetic:**

The streets of Sarajevo are strewn with cigarette ends. Embedded in the pavement, the Street Ashtray aims to alleviate these. A steel box construction with a hinged lid, it allows discarded cigarette ends to be stubbed out, stored and emptied easily.

- **Giant Lamp and Standard Lamp:**

A giant version of a conventional sitting room lamp with a damask shade and tassels, and a standard lamp with a zinc shade with embossed detailing at the rim.

- **Seating:** A bench and stool from zinc with slatted seats of wood off-cuts.

- **Ashtrays:** Copper ashtrays and holders engraved with the faces of Sarajevans, made in collaboration with Pismolik.

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### Team leader

Freddie Yauner

### Regional leader

Sanja Bencetic





## Snit

The team was made up of industrial seamstresses. All had excellent crochet and embroidery skills and could replicate an existing pattern, but were unused to generating original designs. The challenge was to harness these skills and provide a conceptual basis for a brand of accessories. 'Snit' means a thread that follows a pattern. This was the idea behind the principle on which a new collection was based.

The team concentrated on developing a set of modular elements. A range of printed cloth pouches and a shoulder bag were produced with crocheted and embroidered layered motifs. The central feature was a button to which the elements could be attached or detached. The idea was to allow the customer to mix and match and assemble and customise their accessories in their own way.

Other products included a modular scarf and long mitten set attached by buttons, separate mufflers, collars, braces and belts with a variety of motifs in which the button was the characteristic detail.

### Team leader

Bernadette Deddens (studioportable)

### Regional leader

Lejla Hodzic



# Weblinks

## DBA Inclusive Design Challenge 2009, London

[www.bwa-design.co.uk](http://www.bwa-design.co.uk)  
[www.clinic.co.uk](http://www.clinic.co.uk)  
[www.matter-studio.co.uk](http://www.matter-studio.co.uk)  
[www.hermanmiller.com](http://www.hermanmiller.com)  
[www.rodd.com](http://www.rodd.com)  
[www.wiredesign.com](http://www.wiredesign.com)  
[www.dba.org.uk](http://www.dba.org.uk)  
[www.sanctuary-housing.co.uk](http://www.sanctuary-housing.co.uk)  
[www.nhs.uk/Change4Life](http://www.nhs.uk/Change4Life)  
[www.enabledbydesign.org](http://www.enabledbydesign.org)

## 48 Hour Inclusive Design Challenge, Hong Kong

[www.bloom-design.com](http://www.bloom-design.com)  
[www.matter-studio.co.uk](http://www.matter-studio.co.uk)  
[www.priestmangoode.com](http://www.priestmangoode.com)  
[www.sproutdesign.com](http://www.sproutdesign.com)  
[www.studiobec.com](http://www.studiobec.com)  
[www.britishcouncil.org/hongkong](http://www.britishcouncil.org/hongkong)  
[www.itc.gov.hk](http://www.itc.gov.hk)

## 48 Hour Inclusive Design Challenge, Tokyo

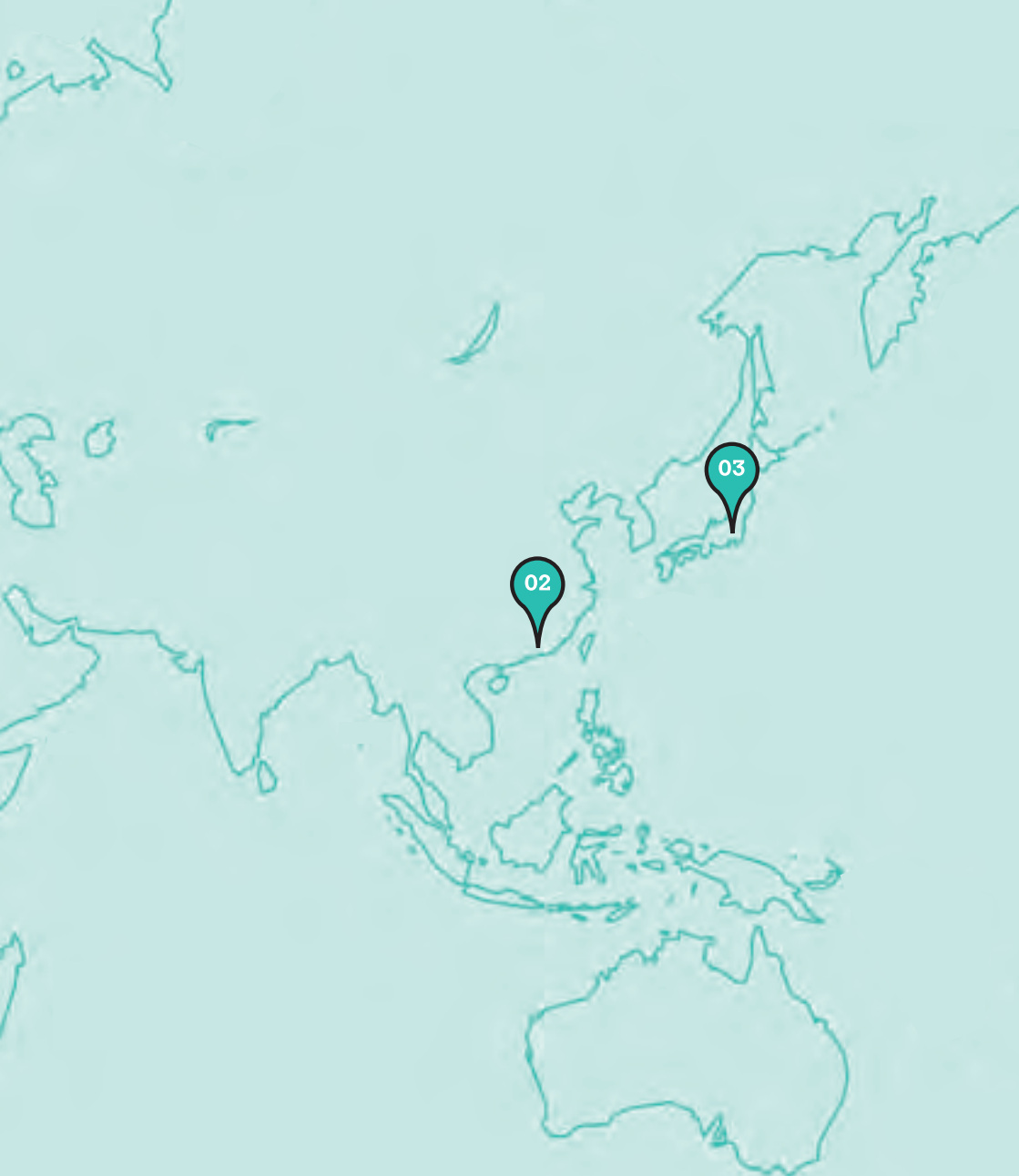
<http://nd.nikkeibp.co.jp/nd/index.shtml>  
[www.u-tokyo.ac.jp/index\\_e.html](http://www.u-tokyo.ac.jp/index_e.html)  
[www-edc.eng.cam.ac.uk](http://www-edc.eng.cam.ac.uk)

## Hadassah Inclusive Design Workshop, Jerusalem

[www.hadassah.ac.il/mainen.html](http://www.hadassah.ac.il/mainen.html)  
[www.itu.edu.tr/en/](http://www.itu.edu.tr/en/)  
[www.roche.com](http://www.roche.com)

## All Inclusive Sarajevo

[www.britishcouncil.org/bih-projects-creative-collaboration-all-inclusive.htm](http://www.britishcouncil.org/bih-projects-creative-collaboration-all-inclusive.htm)  
<http://allinclusivesarajevo.wordpress.com>  
[www.freddieyauner.co.uk](http://www.freddieyauner.co.uk)  
[www.studiobec.com](http://www.studiobec.com)  
[www.studiohead.com](http://www.studiohead.com)  
[www.studyoportable.com](http://www.studyoportable.com)



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**Challenge** describes a year in the life of the Challenge Workshops, a knowledge transfer programme in inclusive design organised on an international basis by the Royal College of Art Helen Hamlyn Centre. Design Challenges in different contexts and of varying durations share a common theme: the problem-solving skills of disabled people are used in a co-creation process to stimulate design innovation in new products and services.

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