human frame

Projects from the Helen Hamlyn Research Associates Programme 2006
**Human Frame**

An exhibition of industry-funded projects from the Helen Hamlyn Research Associates Programme 2006, featuring work by 18 new design graduates of the Royal College of Art

**Show:** 23-27 September 2006  
Open every day 10am-6pm  
Admission free  
Upper Galleries, Royal College of Art

**Symposium:** 25 September 2006, starting 2pm  
Part of Innovation at the RCA 2006, the Royal College of Art’s contribution to the London Design Festival

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Exhibition graphics: Margaret Durkan
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In June this year, the Chancellor of the Exchequer, Gordon Brown, made a visit to the Royal College of Art to view the RCA Show of graduating student work.

Having spent far more than his allotted time chatting with our textile, vehicle, interaction, communication and product designers, the Chancellor was heading for the exit back to 11 Downing Street when I thrust on him a pile of books and catalogues about the work of the College.

“You are trying to distract me from reading about the economy,” he said to me. I paused and said “this is about the economy”. “That’s right”, he replied. “It’s about the new economy . . .”

One of those defining moments.

An excellent place to start looking for insights into the new economy is, of course, the Helen Hamlyn Research Associates Programme. The projects undertaken each year by new design graduates of the Royal College of Art, working in tandem with industry partners, represent a consistent approach to the new economy – one that combines commercial innovation with human-centred design, creating winning ideas for business that also benefit society because they are inclusive in intent.

This year’s programme, collectively titled Human Frame and featuring 18 RCA graduates, has an unprecedented span of subject matter. But underlying the breadth is a depth of vision seeking to understand user needs.

I am grateful to all our partners who have made this year’s line-up so ambitious and thought-provoking, and to the Helen Hamlyn Foundation for creating the opportunity in the first place for our graduates to make an impact in the real world.

The new economy, indeed.
Message from Helen Hamlyn
Design for living longer

I wish the Research Associates 2006 every success in this event and during their future careers, especially as this autumn’s show and symposium of the Helen Hamlyn Research Associates takes place exactly 20 years since my Foundation organised the New Design For Old exhibition at the Victoria & Albert Museum in London.

The V&A show was a landmark event that highlighted an emerging trend of real significance. Back in 1986, as we set about asking leading designers from around the world to rethink everyday products for older people, the profound impact of population ageing on design was not fully appreciated by either policymakers or industry.

Today that is no longer the case. The message about living longer in a time of demographic change is well understood and no government agency or commercial organisation can be complacent about the need to meet the aspirations of older people.

In this context, I am extremely happy that new design graduates of the Royal College of Art are addressing the needs of an ageing population, not just in the home – independent living was the key focus of New Design For Old – but also in the workplace and in relation to the opportunities presented by new technology. I strongly believe that technology only becomes meaningful when people can use it and benefit from it.

One aspect of this year’s programme that particularly pleases me is the attention paid to design for patient safety. Older people need health products and systems on which they can depend, so the work undertaken in relation to the design of the resuscitation trolley and the ambulance is important for all our futures.

Below: images of past projects from the Helen Hamlyn Research Associates programme at the RCA
If we accept that inclusive design has moved decisively from the margins to the mainstream over the past 20 years, then it follows that we should make comparisons between the Human Frame exhibition of 2006 – featuring this year’s Helen Hamlyn Research Associates – and the New Design For Old exhibition of 1986 at the Victoria & Albert Museum.

New Design For Old was organised by the Helen Hamlyn Foundation in the V&A’s Boilerhouse space, in partnership with Sir Terence Conran, who is today the Provost of the Royal College of Art. It asked fundamental questions about design and human dignity and, looking back, it was an important catalyst to change attitudes in Britain towards designing for older people.

At a time when many older people relied on ugly, stigmatising aids and appliances to maintain independence in the home, Helen Hamlyn’s vision was to commission some of the world’s top industrial designers – from Kenneth Grange, Robin Day and David Mellor to Harmut Esslinger, Antii Nurmesniemi and Vico Magistretti – to propose a completely new approach.

Function and style
New products were designed to satisfy two criteria: first, functional efficiency (most existing designs performed poorly); and second, style and attractiveness. This second aspect attracted the most attention. A student competition underpinned the radical nature of the initiative.

Today, design and business have largely accepted that ageing populations deserve no more and no less than the standard and quality of design enjoyed by all. Older people should not be excluded or marginalised, with access only to products and services in a ghetto of special needs. Much of this shift in attitude can be traced directly to the influence of New Design For Old. Even the title suggested discarding outdated stereotypical thinking as well as replacing one set of equipment with another. However essential points of difference between what the designers did then at the V&A, and what RCA graduates have produced over the past year on the Helen Hamlyn Research Associates Programme, demonstrate the degree to which inclusive design has broadened its focus.

Back in 1986, the debate about design for older and disabled people revolved around the home. This group was largely defined as having consumer and civil rights, rather than as active economic contributors. Kitchens, cutlery, showers and bedroom furniture were the staples for redesign.

The Helen Hamlyn Research Associates of 2006 have continued the theme of independent living, as cooking, shelving and air-control projects for Osaka Gas, Heal’s and B&Q demonstrate.
But the requirement to design inclusively has reached far beyond the domestic sphere to embrace transport systems and work environments, so that those of advanced years can remain mobile and economically productive. Studies with Thorn and Visteon to explore better lighting for offices and car interiors extend the notion of independence, for example.

**Voice of experience**

Inescapably, given the tenor of the times, *New Design For Old* was conceived around the concept of world-class designers thinking up new ideas for older people. Today, amid unprecedented interest in user participation methods of design, the research associates are more likely to work with older people and other groups to develop and validate ideas, recognising how the voice of user experience can contribute to the creative process.

In 1986 there was also a focus on the single, stand-alone piece of equipment as a solution to the problem. Today there is more emphasis on a systems design approach, on an interrelated context of use, as exemplified by patient safety projects with the National Health Service.

Finally, as you will see from this publication, there are those projects with such partners as Research In Motion and Philips that seek to make new technologies easier to use by a wider section of the population. Twenty years ago, when *New Design For Old* made such a dramatic impact, such technologies as wireless networks and the internet simply did not exist.

We live today in a more complicated and connected world – which, of course, makes the case for inclusive, user-centred design more compelling than ever before.
Two worlds collide
Innovation through inclusive design

Historically, knowledge transfer between academia and industry has been a difficult process. Academic timetables run differently from the financial year, expectations and outcomes can be mismatched, and each party can speak a different language to the other. All of this makes communication, much less collaboration, problematic to accomplish.

The Helen Hamlyn Research Associates Programme is a deliberate response to bring two worlds together: it teams new Royal College of Art design graduates with business partners on year-long design research projects. The work featured in this catalogue from the Research Associates 2006 represents the seventh year of collaborative projects and builds on a history of successful alliances with industry partners.

The year has been one of variety in terms of partners, from large multinational corporations to public sector, consulting and academic organisations. Our research associates – the largest cohort we have ever supervised, drawn from five different departments of the RCA – also represent a wide range of skills and backgrounds. Product designers, vehicle designers, graphic designers, design engineers and interaction designers have joined us from the UK, across the European Union, Serbia, India, Korea and Brazil.

A common language
What ties them all together is the language they speak – the language of innovation. Underpinning this is a close engagement with inclusive design, described by the DTI as ‘a process whereby designers ensure that their products and services address the needs of the widest possible audience’. Central to inclusive design is a commitment to undertake user research, an aspect which has a special effect on how the Helen Hamlyn Research Associates shape their projects.

Designing for real, observed need isn’t just important from a social perspective. It can act as an innovation trigger to think laterally and invent new solutions. Thus inclusive design and innovation feed off each other, enabling companies to achieve commercial advantage by meeting the aspirations of their customers.

The underlying theme of our work is population ageing, a profound trend across the world. Its design implications are explored in three key areas of research, to give older people greater independence in the home, more access to work so they can remain economically productive for longer, and better standards of patient safety in healthcare services.

Some of the 13 projects on this year’s programme make the needs of older people their starting point and seek to develop an innovative response. This has been in the traditional mould of the Helen
Hamlyn Research Centre. Others represent a departure in that they take innovative new technologies as their starting point and seek to make them more inclusive, useful and understandable to a wider market.

Creative edge
The creative edge that the research associates bring to business can be attributed to a number of sources: the inventiveness and lateral thinking from the RCA departments; the network of support built around each project from the research partner; and the slower ‘burn’ of the academic year that allows research questions to be considered outside the competitive commercial environment.

However, one thing brings it all together and that is close consideration of the end user. Projects have employed a range of ‘rapid ethnography’ techniques tailored to identify and include the requirements of diverse users. The research associates have sent out questionnaires, consulted experts, visited people in their homes, worked closely with users in situ, tested prototypes, and created research ‘kits’. The result of all this activity has been the application of core academic design knowledge to the business context. And we’ve been doing this since 1999, working with around 60 industry partners in that time.

This year we asked three leading journalists in the design world – Hugh Aldersey-Williams, Catherine Jarvie and Graham Vickers – to interview our research associates and their partners and write up their collaborations. We hope you enjoy this new-look catalogue as well as the work it describes – projects that reflect the core values of the programme: inclusive design, user engagement and innovation.

Below: images of work from this year’s Helen Hamlyn Research Associates Programme at the RCA
## Research Partners

### Audi Design Foundation
An independent charity established in 1997 by Audi UK, a company well-known for spearheading innovation. It is dedicated to using creative solutions to address issues around sustainable design and inclusive design, particularly in South Africa. The Foundation offers a range of opportunities for new talent to explore a world of ideas, including grants to build prototypes, research funding and overseas bursaries.

www.audidesignfoundation.org

### Colebrook Bosson Saunders
Colebrook Bosson Saunders (CBS Products) are leading designers and manufacturers of award-winning, ergonomic products that bridge the gap between technology and furniture. Established since 1990, CBS Products have a global presence, bringing with it a fresh and innovative approach to all the products they design, ranging from flat-screen monitor arms to modular workstations and laptop stands. CBS Products provide solutions for a healthier, more enjoyable and more efficient work environment.

www.cbsproducts.co.uk

### BOX and DEGW
BOX is a knowledge and innovation exchange at the London School of Economics which raises the game for how people act, innovate and think in groups. It operates at the interface of university research and business. The BOX innovation space at the LSE is designed by DEGW, a leading strategy and design consultancy operating from 12 offices worldwide. DEGW uses its knowledge to help clients develop solutions that can be adapted over time.

www.boxexchange.net www.degw.com

### Future Foundation
Future Foundation is a strategic consultancy advising companies on how to plan for the future by meeting developing customer needs and contributing to the wider environment in which they operate. It works for clients ranging from Electrolux and Nissan to non-profit organisations and government departments via two operating companies: nVision, an online social trends resource, and Future Foundation Projects.

www.futurefoundation.net

### B&Q
B&Q is Europe’s largest home improvement retailer and is part of the Kingfisher group. It operates more than 320 stores in the UK and Eire and also has operations in China and Taiwan. B&Q is recognised for its forward approach and has won many awards for its work on diversity and sustainable development. This year marks the continuation of the third B&Q participation in the Helen Hamlyn Research Associates Programme at the Royal College of Art.

www.diy.com

### Heal’s
Heal’s is a leading retailer for the very best in contemporary furniture and home accessories. Established in 1810, the company has always been at the forefront of design and provided inspiration for the home. Many of the ranges are exclusive with the buyers working closely with manufacturers to produce quality, well-designed products. The main store at 196 Tottenham Court Road houses the entire collection and five other stores, throughout England, show a selection of the hundreds of items available.

www.heals.co.uk
National Patient Safety Agency

The NPSA was created to co-ordinate the efforts of those involved in delivering healthcare to learn from patient safety incidents occurring in the NHS. The NPSA's work encompasses: safety aspects of hospital design, cleanliness and food; and ensuring research is carried out safely, through the Central Office for Research Ethics Committees. It also addresses concerns about the performance of doctors and dentists, through the National Clinical Assessment Service.

www.npsa.nhs.uk

Research in Motion

RIM is 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 include the BlackBerry® wireless platform, the RIM Wireless Handheld™ product line, software development tools, radio-moderns and software/hardware licensing agreements.

www.rim.com
www.blackberry.com

Osaka Gas

Osaka Gas is the major natural gas supplier to the Kansai region in Japan, distributing natural gas to over 6.5 million households. It has a major influence on gas-powered white goods produced by leading Japanese manufacturers, helping to determine the specifications that govern their design, installation and use. It strives to maximise the advantages of gas and create customer-focused home gas products.

www.osakagas.co.jp

Thorn Lighting

Thorn's mission is to improve the quality of life by providing the best quality lighting for people's work, leisure, education, healthcare and travel in and around our countryside, cities, buildings and monuments. The indoor office market is a major part of Thorn's portfolio, and is a product that has a significant effect on the quality of our everyday lives as so many people spend most of their day in office environments. Thorn is furthering office lighting through understanding future workplace needs.

www.thornlighting.com

Philips Design

Royal Philips Electronics is one of the world’s biggest electronics companies with activities in the three interlocking domains of healthcare, lifestyle and technology, and 165,600 employees in more than 60 countries. Philips Design is a multi-disciplinary community of researchers and designers within Philips, looking at how design can best serve people's current and future values and needs.

www.design.philips.com

Visteon

Visteon is a leading supplier of consumer-driven innovation to global vehicle manufacturers. The company is targeting its engineering expertise as a systems integrator to develop and deliver products and technologies in the core areas of interiors, climate and electronics. Visteon's advanced technologies are also present on concept and development vehicles serving as the platforms for future automotive technology.

www.visteon.com
Inclusive konro
Improving kitchen stoves in Japan

Osaka Gas, the major natural gas supplier to the Kansai region in Japan, worked closely with the Helen Hamlyn Research Centre to develop a more inclusive gas cooker aimed at the needs of older people.

A familiar feature of most Japanese kitchens, the konro is a gas cooker typically comprising three hobs and a fish grill. At first glance it might be considered a classically simple piece of design but despite incremental improvement over the years – for example incorporating programmable features and induction heating – no konro currently on the Japanese market addresses the needs of that country’s steadily growing numbers of older people.

Significantly, the percentage of the population over 65 in Japan doubled to 14.1% during the period from 1970 to 1994; it is now expected to reach 25% by 2014. The reduction in dexterity, visual acuity and cognitive processing associated with ageing suggested to the Osaka Gas company – which helps to determine the specifications that govern the design, installation and use of gas-powered white goods in Japan – a pressing need for a more inclusive design approach to kitchen appliances for older people.

The konro offers an ideal focus for this concern since it is a much-used piece of kitchen equipment where coherent improvement was overdue. Japan’s customary eagerness to remodel consumer products has not hitherto extended to domestic kitchen appliances, many of which have remained largely unchanged for decades.

Partly in response to Western trends, there has been an increased consumer demand for choice in the Japanese kitchen in recent times. So the moment
seemed right to simplify the konro cooking experience by offering an appliance that would be safe, easy to operate and simple to maintain for users of all ages.

**Exploratory work**
Research associate Chris McGinley was appointed to work with Osaka Gas on the two-year project in autumn 2004. His initial exploratory work involved desk research, collecting details of existing products and compiling a body of research about the domestic appliance market in Japan, Europe and the UK. Osaka Gas provided a datum in the form of what they considered to be the best-designed konro currently on the market and this was used as a starting point for asking questions and proposing solutions.

McGinley acknowledged that distinctions between Western and Japanese cooking would make it necessary to research the way the konro is used *in situ*, that is, in a typical Japanese kitchen. Accordingly he researched seven Japanese households in order to gain practical insights into the real day-to-day difficulties that users might encounter using the appliance. Several problem areas were identified, involving the ease of handling components, the complexity of the controls and difficulties of safe cleaning.

The fish grill element of the konro was seen to be a key feature. Commonly in daily use, it raised questions of access, visibility and safety, especially when a second group of expatriate Japanese housewives in the UK contributed to the research.

A series of desirable goals emerged from these different inputs. What was needed was a konro that would offer good safety features and communicate these features clearly. Weight, positioning and overall design would seek to reduce the physical effort needed to operate the appliance.

**Enjoyable objective**
Improved ease of maintenance would also be a priority, as would clarity of communication: the new konro should convey information unambiguously and frequently. Finally the appliance should be enjoyable to use, an objective best achieved by eliminating all of the negative operational experiences identified by users.

To match the results of McGinley’s research to the prevailing design development...
programme at Osaka Gas, a graphical model was derived to illustrate the goals of the ‘inclusive konro’. Then a rough prototype was produced and this, along with the findings of a user questionnaire, provided valuable feedback that would inform a more refined visual prototype. Because the original fish grill feature had repeatedly been deemed problematic, it was the first section to be thoroughly analysed through full prototyping.

The grill was modelled in CAD for dimensional refinement then prototyped using a combination of fabrication techniques (vacuum forming, rapid prototyping and steel fabrication). The result was inserted into an existing konro to help test it and to aid empirical assessment of the proposed design. Finally a full-scale visual prototype was created of the new konro, integrating a range of design features.

McGinley’s research approach was based on the belief that inclusive design demands a people-inspired approach. This development involved real users at every key stage in a combination of initiatives of gradually converging focus (observation, interview, user analysis, concept trials, and focus group discussions) to arrive at the final design. Identifying and managing user aspirations, then turning them into informed design realities, resulted in a research and design project that was consumer-driven from first to last.

Graham Vickers

Key (to above image):
1 Integrated vent plate
2 Illuminating rim
3 Burner guard
4 On/off slide switch
5 Larger control dial
6 Wide grill
7 Maximised grill window
8 Simplified hob stand
9 White glass surface
10 Time display
11 Temperature display and problem status
12 Debris capture mesh tray
13 LEDs under plastic guard strip
14 Surface indentation
15 Dial surface details
16 Konro quick reference trays
17 Easy-use control panel
Air control
A system for improved air quality

Climate change and heightened insulation are making our homes hotter and stuffier in summer and having an adverse effect on air quality all year round. This project explores a new system to ‘condition’ the domestic air we breathe.

In the context of growing concern about the world’s power resources and rising energy prices, the question of how we control the quality and temperature of the air in our homes has taken on a new and pressing significance.

Traditional air conditioning is certainly effective at lowering the temperature of a building by re-circulating refrigerated air, but this by itself does little to contribute to a healthier atmosphere. The basic problem is how can we better ‘condition’ the air in our homes – that is to say, how can we control its freshness, its temperature, its humidity and its ventilation properties in an energy- and cost-efficient way. This is the fundamental problem that research associates Duncan Turner and Chris Glaister chose to address in partnership with Europe’s largest home improvement retailer, B&Q.

In the first year of the project...
a research framework was established that confirmed a clear market need for a product that would deliver the kinds of benefits envisaged: controllable fresh air, all year round, stimulating feelings of health and personal wellbeing – an important aspect in particular for older people – and removing the need to open and close windows while juggling the effects of heating and cooling devices.

**Design concepts**

Scoping studies with health-conscious users led Turner and Glaister to focus on a series of physical design concepts; these defined the control and layout of a system that was by definition an entirely new type of product. Potential users were consulted about practical design aspects, including materials, finishes and operation, as well as personal aspirations towards healthier air quality in their homes.

While well-insulated new homes naturally stood to benefit most from the idea, the proposed system would work in more or less any premises, especially since it is now recognised that all houses could and should be properly insulated.

Jason Fell, the B&Q buying manager for heating & cooling responsible for bringing the innovation to market, welcomed the opportunity to work with the RCA team, saying that it would help address "the ever-growing need for consumers to control".

"The project meets the ever-growing need for consumers to control..."
need of consumers to control not only their climate but also energy costs”. Fell also identified this as a long-term project, acknowledging that the designs and models produced in the second year of the project have already stimulated “proactive customer research” in homes in London, Leeds and Birmingham.

At the heart of Turner and Glaister’s concept is the relatively simple idea of drawing in and expelling air from opposing locations in the home, so stimulating the sort of gentle fresh-air flow that is achieved by opening windows on either side of a house. However their proposal goes further, taking into account that variations in temperature and the presence of airborne pollutants may demand further intervention.

**Breath of fresh air**

Intake filters purify the air and there is also the option to control air temperature by means of a simple heat exchange unit. The thinking here is to try to conserve any beneficial internal temperature – cooler air in summer, warmer air in winter – while taking in fresh air from outside. This contrasts markedly with traditional solutions that ‘bottle up’ increasingly stale air in the home in order to conserve its temperature.

As the study has progressed, B&Q’s understandable wish to continue to market traditional air-conditioning and heating products in parallel with this concept has been accommodated and indeed such products can work harmoniously alongside the new system.

The development process is ongoing, and B&Q’s commitment reflects a genuine wish to offer its customers a true ‘air conditioning’ product that is, in aspiration, nothing less than a built-in breathing apparatus for the home, capable of being retro-fitted or incorporated in new-build premises.  

Graham Vickers
Storage in the home
Furniture design for nomadic lifestyles

The more we move, the more we need storage furniture that can easily move with us. This project has developed a range of new storage solutions for contemporary design retailer Heal’s.

Britain is a nation on the move. Eleven per cent of us moved house in the year before the 2001 Census and each of us makes an average eight moves over the course of our lives. And with more and more of us willing to relocate for everything from a new job to a new relationship, it is a trend that won’t go away.

This isn’t to say that the old adage about an Englishman and his castle isn’t true, just that these days we’re a little more fickle than that saying suggests. We may well be house-proud (according to a 2002 survey commissioned by Bryant Homes, almost 65 percent of us think our home says more about us as a person than our clothes or car), but it would seem that our loyalties lie in the notion of ‘home’ rather than mere bricks and mortar.
This understanding of the changing needs of the UK homeowner, says designer Tomek Rygalik, was what informed his project with contemporary design retailer Heal’s. Along with gathering and analysing extensive social and demographic data about our trend for an increasingly nomadic existence, Rygalik studied the ways in which we style our homes.

“Our possessions say a lot about who we are,” he notes, “so I wanted to look at how people collect things, including the way people tend to display certain things and hide others.” His ultimate aim was to incorporate both strands of this research into commercial furniture designs, the results of which are currently being prepared to go into production and will appear as a 12-piece collection in Heal’s stores by the end of 2006.

**Easy to move**

Rygalik was keen to develop furniture that was “less permanent, more mobile,” and which, crucially, would be as easy to move as to use. Early ideas included plans for a prefabricated shelving unit on wheels, with another designed to lean – rather than be affixed – to a wall. These were, he says, just two of a number of “conceptual directions” that illustrated certain ideas he was trying to explore but which proved to be unfeasible to develop as commercially viable products for Heal’s.

The necessary compromises that commercial viability (from unit and production costs to mass-market appeal) place upon design ideology proved to be
“Our possessions say a lot about who we are. I wanted to look at how people display some things and hide others”

Tomek Rygalik

an eye-opener for Rygalik, but also a useful introduction to the stringencies of designing for a major retailer. “I really think I benefited from it,” says Rygalik, who graduated from the RCA’s Design Products course in 2005. “Heal’s helped me understand a lot of things in my design practice I would not have concerned myself with before.”

Even so, it remained important that the principles of the project were embodied in the products selected for further development. With functionality and ease of use already high on the agenda, Rygalik was keen to create what he terms a ‘careful collection’ – designs that would be aesthetically modest, to allow the objects that they display to speak for themselves, while discreetly hiding away items the owner would prefer not to put on view.

**Spirit of collection**

The final designs include a set of clean, wall-mounted metal hooks, a metal shelf with integrated wooden drawers and a multifunctional table. But the spirit of Rygalik’s early vision is perhaps best preserved in a simple folded-metal shelf with a spirit-level ingeniously embedded in its centre to ensure that, no matter how many times it is put up and taken down, its owner is guaranteed a level surface every time.

“The idea is that it’s easy to put up,” he affirms. “You hold it with one hand. It’s very light, and you can level it with that hand without needing to measure or mark the wall.”

Without naming names, Rygalik knows first-hand “how difficult it is” to put up some other retailers’ off-the-peg shelving units. “I was looking for improvements that would make it less of a hassle,” he says, “especially as we now move house a lot.” This, as anyone who has performed an ungainly two-step with a disobliging piece of flat-packed kit will know, is a noble aspiration in the world of domestic furniture design.  

Catherine Jarvie

The entire storage collection for Heal’s, reflecting a design modesty to allows displayed objects ‘to speak for themselves’
As wireless networks grow, communication technology once exclusively the province of business people on the move will become accessible to new groups of users as prices fall. This more diverse range of users, representing a wider spectrum of age and ability, will in turn force a radical rethink of how the technology should be packaged and presented.

Research associate Maja Kecman has re-evaluated perhaps the most iconic of wireless business accessories, the BlackBerry®, with its manufacturer Research in Motion (RIM) as her research partner. She developed a number of scenarios involving new user groups, of which the most promising was a ‘vertical’ family. “It’s a businessman’s tool, but I decided to look at multi-generational families and how
they communicate with each other,” she explains.

For this new group, high-tech bells and whistles don’t count for much. More important is that devices work down to the level of simplicity demanded by each quite different user, even if this means using the computer technology involved well below its full capacity.

**Importance of the hub**

Maja Kecman’s investigation began with interviews with subjects of various ages and cultural backgrounds and different levels of technical ability. One important discovery was that family communication tends to be reliant on a hub family member, usually the mother, who receives ‘incoming’ messages and suitably edits, translates and sorts them before passing them on to whoever else in the family they are meant for. For example, in one family she studied, although the grandmother said she wrote letters, it was the mother who physically put pen to paper on her behalf.

Kecman and RIM agreed to explore how this hub function might be undertaken using BlackBerry™ technology. A model family was devised, comprising a mother, a father (a typical BlackBerry™ business user), their teenage daughter, a younger child, and a grandmother. As well as facilitating development of a number of design concepts, such a model was also a powerful tool to enable RIM to visualise how potential new markets might be opened up.

Both the content and the medium of the messages passed between family members need to be adapted for their recipients. For example, a grandparent might prefer to write notes whereas younger members of the family would send text messages or emails.

The personal device allocated to the grandparent might therefore comprise a miniature scanner and printer. The young child would clearly need wi-fi (wireless fidelity) technology as he or she rushed around the house. This could be provided as a kit comprising traditional playthings such as drawing utensils and

“This study gives us insight into how to make the user experience..."
stamps, as well as the means to translate the resulting drawings into digital form.

The teenage daughter meanwhile would have a more sophisticated but still mobile interface. “I like the idea of making the technology bend to them, not making them have to adapt to use it,” says Kecman. She is keen to create a solution not simply for the ‘perfect family’ but for any family with an everyday level of dysfunction.

**Family tensions**

As well as offering a more realistic view of the market for any eventual product, the multi-generational family provides more opportunity for design intervention, says Kecman, whose observational studies pinpointed tensions between family members and identified areas where people’s desires and obligations come into conflict.

At work, we have become accustomed to using letters, emails, texts, phone calls and face-to-face discussion variously in communication with colleagues and business associates when different levels of formality are demanded. At home, this technology-assisted social behaviour has not yet found its equivalent in family communication. This project suggests that the artificial distance provided by technology might be just the thing to resolve the huffs and sulks of family life, as the medium becomes in effect the mediator. This brings added benefit for the BlackBerry’s™ business user, says Renn Scott, user experience architect at RIM. “This study not only gives us insight as to how we can improve a device for the ‘business user’ but also how to make the experience they have with their family more meaningful and easier.”

Hugh Aldersey-Williams

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*Renn Scott, RIM*
Working light
Lighting control interfaces for an ageing workforce

As workforces around the world become progressively older, office lighting that is static and unresponsive does little for their physical and emotional needs. This project looks at ways to give users more variation and control.

Research associate Matthew Harrison chose to explore a problem that affects many people working in offices, but which, by its nature, often goes unrecognised. Static and unresponsive lighting that creates a dull and oppressive ambience not only fails to address everyone’s changing ergonomic and psychological needs during the course of the day; for an ageing workforce in particular, it fails to deliver adequate light levels that are essential for older people to be effective at work.

Although the issue had already been addressed to some extent by existing products, Harrison discovered that where they existed at all, most were undermined by control interfaces that were poorly designed and as a result often ignored by those whom they were intended to benefit.

Working with research partner Thorn Lighting, Harrison first
sought to gain an overview of the current market by means of desk research, interviews with lighting designers and a collaboration with light source manufacturer Philips in Eindhoven (Thorn does not manufacture light bulbs).

**Technology potential**
Harrison discovered technology that would allow for responsive lighting – light that can change throughout the day – and even light that can be used to suppress the sleep hormone melatonin to help people feel more alert in the daytime. Typical of the unsatisfactory control systems he found, however, were prohibitively complicated wall-mounted touch screens or remote controls that lay forgotten in a drawer.

Harrison next undertook user research, creating a ‘day-in-the-life’ model based upon a number of visits to real office sites including Orange and EMI. He elected to make background observations rather than conduct interviews, believing that people’s reaction to lighting is largely subconscious and that more could be gained by observing their behaviour than by questioning them on lighting issues about which they had probably thought little.

He then presented his findings in the form of a hypothetical day in which he charted the lighting needs of individuals as their physical, psychological and emotional needs changed along with their moods and activities.

“The value has been in providing a clear point of view on the future of office lighting and developing an online interface concept” Angus Shield, Thorn
From the day-in-the-life model, Harrison developed three broad light fitting concepts incorporating elements of automatic and user-controlled light changes throughout the day.

Next would come attempts to integrate some of the core findings into the performance of Thorn’s existing fluorescent grid ceiling luminaires. Working closely with the company, Harrison wanted to introduce user-controlled brightness and colour balance options alongside some elements of automatic lighting change throughout the day.

To overcome the traditional unfriendliness of user interfaces, he proposed a solution that combines a very clear backlit wall-mounted control (installed at waist-height for easy access) that uses icons to make operation easy and intuitive, and, to complement it, an intelligent online interface accessible over an intranet via a web-browser.

**On-screen testing**
This on-screen idea proved to be an invaluable part of the research process when Harrison devised five easy-to-use software-based prototypes and put them online for people to try. With more than 80 responses he received valuable feedback that fed directly into the development of an optimal online interface. The creation of a working rig hooked up to a Thorn light fitting is one of the main outputs of the two-year study and looks likely to form the basis of a continuing alliance between Harrison and Thorn.

Thorn marketing director Angus Shield, who has collaborated closely with the RCA on the project, explains: “The value for us has been in providing a clear point of view on the future of office lighting. Valuable user research has informed the development of an online interface concept, demonstrating not only that users want more control but how it can be achieved.”

Graham Vickers
Futurescapes of work
A documentary from 2012

What will the world of work look like as populations age, natural resources diminish and new technologies liberate us from the fixed office? A fictional neighbourhood called Little Brinkland suggests some clues.

We all know how we work today – most of us in offices in one fixed location for a set number of hours a day. But how will we work in the future – the surprisingly near future perhaps – when emerging technologies rethink the rhythms of working life against a backdrop of a rapidly ageing workforce and growing environmental fears?

Anab Jain is interested in exploring the kind of ‘new design spaces’ that might arise to accommodate ‘the jobs of the future when demographic and scientific forecasts have come true’. Informed by conversations with futurists and the thoughts and images of people who spend much of their time online, she takes a slice through the future around the year 2012, embracing aspects of change ranging from the utopian, such as the advent of new technologies, to the dystopian, such as the
exhaustion of fuel sources and the consequences of that for city life. More neutral trends subject to more reliable prediction, such as the ageing population, are also taken into account.

City neighbourhood
The resulting world she calls ‘Little Brinkland’: a city neighbourhood populated by workers whose jobs are not entirely new-fangled but more like strange mutations of present-day careers. Anab Jain takes on the role of a chronicler in Little Brinkland and narrates the stories of three protagonists – a nomadic city worker/hacker, a home-based cyber junkie and an anxious banker on the verge of retirement.

These protagonists have evolved new ways of working as they are projected from 2006 into the world of Little Brinkland in 2012. The nomadic worker, Andrew, now runs a creative technology enterprise from his café office. He has teamed up with his friend, a pet surgeon, to insert wi-fi technology under the skin of dogs along with the normal RFID tags. They use their own pet dog to advertise the new roles of pets as mobile communication hosts and information carriers.

Alice, who used to be a cyber junkie working in the isolation of her home, still cannot break away from the world of virtual economies and continues to work as an ‘avatar supply agent’ inside her screen. But through a new service called Coldzones.inc, she can book a ‘cold zone’ by one of the few trees in Brinkland, where

“It seemed natural to look at what we might find in a changing world...
the constantly networked, digitally exhausted Brinklanders gather to have a moment of solitude or human conversation.

**Technology-free zone**

In reality, these coldzones block out the wireless chatter and connectivity with a nearby fake base station, ironically using the highest technology to produce a technology-free zone. Another change — towards a growing older population — has been factored in too. Liz, the senior banker who used to be anxious about retirement, continues to work in her new role as a data banker from her garden.

Everybody involved with this project recognises the risks of a scenario approach. It is hardly likely that it will accurately represent the reality of 2012, and so it cannot serve as a direct guide for product design. However Anab’s research partner, office products manufacturer Colebrook Bosson Saunders, regularly asks its own designers to rethink the company direction and Jain’s outside vantage point broadens the canvas in several ways. Chief among these is an attitude to work that favours flexibility and multi-skilling over the traditional sedentary single career. Her discipline of interaction design offers a further new perspective, and the media she uses, such as film, adds a fresh dimension to the presentation of ideas.

This scenario study, which is entertainingly brought to life with video interviews with the Brinklanders, has led Anab Jain to imagine a variety of novel office environments in conceptual terms. These support creative thinking about the future of work. This approach suits Colebrook Bosson Saunders very well. Director Peter Bosson once performed similar exercises in a radical approach to office ergonomics with Ettore Sottsass at the Olivetti Studio in Milan.

“We are therefore used to abstraction without the certainty of an end product,” explains Bosson. “It seemed natural for us to look at things not as possible lumps of metal and plastic but from what we might find in a changing and complex world of work, with demographic shifts and rapid technology changes all having an influence.”

*Hugh Aldersey-Williams*

*Futurescapes of work 27*
Food for thought
Imbedding innovation into organisations

Many companies rely on away days and workshops to give their organisation short, sharp bursts of creativity that cannot be sustained. This project uses the metaphor of a restaurant to propose a new in-house innovation service.

When Ré Dubhthaigh and Toke Barter first set about their research project in conjunction with BOX, a pioneering innovation space located at the London School of Economics, and its creators, architects DEGW, the stated aim was to produce a system that transfers the BOX innovation experience to other locations.

“The initial metaphor for the project,” confirms research partner Andrew Harrison of DEGW, “was BOX in a box – how could you wrap up the BOX experience in terms of being creative, sharing ideas and innovating, and take it out wherever you needed it – in a hotel or a client’s organisation, for example?”

But as they researched their subject further, the two research associates, who run their own practice called Radarstation, came to realise that, useful as the temporary innovation experience is, what many companies really require is a permanent model of in-house innovation to draw upon.

Sustained service
“What we wanted to do was to create a service that would sustain innovation internally,” reveals Dubhthaigh. How, they wanted to know, could innovation be embedded within an organisation, to become a part of everyday life?

“At the moment innovation within many companies resides in away days and workshops,” Dubhthaigh explains. Indeed, their research revealed that organisations spend tens of
thousands of pounds on a short-term, out-of-office experience that may well succeed in producing intense bursts of enthusiasm and creativity, the like of which can prove difficult to sustain over time.

A similar sum, they note, will buy that same company the services of at least one in-house innovation facilitator for a year. “The idea is that when you need something it’s there to draw on and you have a constant innovation stream,” notes Dubhthaigh. Key to their vision was the idea that innovation support should be accessible to everyone, irrespective of their place within the organisation or level of design or visualisation skill.

Realising that what they were looking to provide was “not so much an innovation centre, more of a support service”, Barter and Dubhthaigh set to work looking at how other services operated, before settling on restaurants (and food in general) as a workable metaphor for their ideas.

They took the basic structure of an in-company restaurant to illustrate how they imagined their innovation service to work, with a ‘head chef’ overseeing the creative process, ‘cooks’ to develop and create ‘dishes’ (design solutions), and ‘waiters’ to liaise between the ‘kitchen’ (innovation studio) and customers (an organisation’s staff).

The pair outlined a basic, three-tiered menu system along the same lines, with an in-house design ‘catering’ team offering three basic ‘menus’: one for...
‘Snacking’, in which staff would be able to help themselves at their desk to a selection of pre-set design packages and concepts; another for ‘Fast Food’, whereby a wider selection of pre-formatted design support is delivered quickly, efficiently and to a consistently high standard; and, finally, a ‘Gourmet’ menu designed to meet the bespoke innovation needs of an individual, team or organisation with tailored ingredients and recipes.

**Everyday working life**

“A meal is very much a part of the everyday experience,” notes Dubhthaigh, much as they hope to see innovation become an everyday part of an organisation’s working life. To further this aspiration, the project envisages an open innovation studio operating in full view of employees in the social space of an organisation just as an open kitchen operates at the hub of a busy restaurant.

And just as people use recipes for cooking, the research associates see the potential for design and innovation techniques to be taught as transferable skills. “At the moment you go into a room and somebody runs a workshop and it’s a bit smoke and mirrors,” says Toke Barter. “But these are very simple tools and processes that anyone can learn.”

An in-depth review of their ideas will be published as a book at the culmination of a project that has evolved considerably from the original brief. But Dubhthaigh and Barter, along with research partners Andrew Harrison of DEGW and Lewis Pinault from BOX, see the way the study has developed as a clear demonstration of the power of thinking about a problem from a new angle. After all, what would be the point of looking at ways to better inspire and embed innovation if you weren’t able to practise what you preached?

Catherine Jarvie

“**The idea is that when you need something it’s there to draw on and you have a constant innovation stream**” Ré Dubhthaigh
Resus:station
Redesign of the resuscitation trolley

When patients suffer a cardiac arrest, the arrival of a well-designed and well-stocked ‘crash trolley’ is literally a matter of life or death. This project takes a systems design approach to rethinking a vital piece of medical kit.

The resuscitation trolley, or ‘crash trolley’ as it is better known, is a familiar piece of mobile storage equipment on hospital wards. Carrying defibrillators, drugs, airway equipment and more to the patient’s side, it is the traditional centrepiece of the process of resuscitation following cardiac arrest, a process that is highly dependent upon time-sensitive procedures.

According to the National Patient Safety Agency (NPSA), the NHS body that seeks to learn from patient safety incidents occurring in the National Health Service, the crash trolley has some basic flaws: the variable design of this non-standardised ‘tool chest on wheels,’ and its poorly maintained or inaccessible equipment stock, contribute to low survival rates. This project therefore set out to determine the design requirements for a modern...
Rather than simply improving a standalone piece of industrial equipment, the researchers decided to adopt a systems design approach and re-evaluate the entire process of which that equipment is the hub. A design team led by Professor Roger Coleman of the Helen Hamlyn Research Centre, and comprising RCA industrial designers Sally Halls and Jonathan West along with experts from the Imperial College School of Medicine, liaised with the NPSA and its head of design and human factors, Colum Lowe.

**Clinical input**
Following extensive literature searches, the designers sought input from the clinical side of the collaborative team, learning from these experienced practitioners by means of a series of interviews and workshops. Using a modified FMEA (Failure Mode and Effects Analysis) tool, the resuscitation process was mapped by breaking it down into small individual tasks. This approach helped to chart the resuscitation procedure as a cycle of activity rather than as a linear progression. At this point the initiative underwent a change of emphasis with the designers now starting to exert influence as ‘visualisers’ for mapping processes and design opportunities.

Each of the errors that had been identified in this early part of the research provided a trigger for design concept generation. The systems design approach meant that clinicians too were encouraged to participate in seeking creative solutions to the problems that had been identified. This was significant.

Some of the key issues that began to emerge were surprising. The trolley is traditionally seen not as a piece of medical equipment in itself but simply a tool chest; therefore its contents are often confusing or incomplete. Yet this vital piece of kit can literally determine a patient’s destiny by how well it is designed, how easy it is to use and how reliably it is stocked.

Here the research team concluded that the design of future trolleys would not only have to incorporate better physical characteristics but would also need to have far-reaching procedural implications.

Further challenges lay in gathering and collating input from a very broad user base.

In addition to the collaborative
clinical team members, several hospital Resuscitation Officers were consulted and user needs were identified through contacts identified by the NPSA and at the European Resuscitation Council Congress. Technical and manufacturing limitations also had to be identified before these could be incorporated into the broad design approach.

**Design direction**
The whole project has been a complex problem-solving exercise that extends far beyond the familiar reaches of industrial design. Its primary outcome to date has been an agreed design direction that will address three main areas. Restocking the trolley could be assisted with better monitoring of its use and access to its contents; relevant data could be sent to a Resuscitation Officer’s computer affording an instant display of each trolley’s status and preparedness for deployment.

Security could be improved by recording the identity of whoever removes items, the objective here being to allow free access in an emergency, but to deter the casual removal of essential items. Finally, the auditing of resuscitation data could be much improved by logging the actions of the resuscitation attempt.

The degree to which all of these considerations can be integrated into the design of the first full-size ‘smart trolley’ prototype will depend on how soon various enabling technologies can be agreed and realised. The next step is then to create that prototype in order to get a clear insight into all the storage and size constraints, as well as other physical issues such as weight, manoeuvrability and visual presence.

It is a demanding but feasible challenge. Importantly it is design-led. “Having designers investigate the causes of patient safety incidents in the NHS and produce guidance, proposals and suggestions for possible solutions has proven a real benefit for the National Patient Safety Agency,” explains Colum Lowe. “Everybody looks at a problem from their own perspective and designers see things connected to the built environment and manufactured products that others in healthcare can sometimes overlook.”

Colum Lowe, NPSA

"Designers see things connected to the built environment that others in healthcare can sometimes overlook”

Graham Vickers
Designing future ambulances
A road map for mobile healthcare

Ambulance design specifications in the UK vary widely from one health authority to another. This study set out to consult with all those involved in mobile healthcare services to develop a safer and more standardised blueprint for the future.

When the National Patient Safety Agency (NPSA) recently made a risk assessment of a typical patient journey en route from emergency call to A&E unit, the NHS body concluded that a whole range of adverse safety incidents could be attributed to design factors. This assessment came against the backdrop of an imminent planned reconfiguration of national ambulance services.

In response, a project – Designing Future Ambulance Transport for Patient Safety – was set up. It was led by the NPSA and its head of design and human factors, Colum Lowe, in partnership with the Helen Hamlyn Research Centre at the Royal College of Art and the Healthcare Ergonomics and Patient Safety Unit at Loughborough University. Two senior research associates in RCA Vehicle Design, Owen Evans and Merih Kunur, contributed to the study.
Healthcare systems in the UK and abroad are prone to the kinds of risk and error that stem from the fragmented, ad hoc design of medical equipment and services that fail to take into account the circumstances and procedures of use. The legacy is a generation of devices designed with little or no reference to patient safety, having poor interfaces, and with weak operating systems that result in an unacceptably high number of safety incidents. Non-standard fleets of ambulances are only part of the problem.

**Identifying obstacles**

To tackle these systemic problems, the project team decided to consult extensively with stakeholders. The objectives in doing so were two-fold: to establish design-related requirements within the UK ambulance service from both strategic and operational perspectives; and to identify obstacles to and drivers for change within the industry.

A series of four workshops, held between January and April 2006, provided starting points for the project. The first, held at the Design Council in London, brought together strategic decision-makers from a representative sample of UK ambulance services, along with members of NHS agencies responsible for emergency care and vehicle procurement. It set a pattern that was repeated with some variations in the three other workshops, involving paramedics, fleet managers and vehicle manufacturers.

Conducted under the Chatham House Rule (which encourages free discussion through a guarantee of anonymity), these workshops invited participants to complete an unsigned workbook...
Harrogate in June 2006. Two interactive workshops, a questionnaire, high-profile publicity for the project and various other initiatives for soliciting input resulted in an encouragingly good response. Given the scarcity of high quality research literature on ambulance design, one important outcome of the project will be to extend the evidence base for design and purchasing decision-making in the future. Imposing design standardisation in ambulance specification is not feasible today, but developing a road map that leads to design standardisation remains the most significant objective. According to Colum Lowe of the NPSA, “Design excellence has not always been top of the healthcare agenda and as such it is gratifying to see the enthusiasm with which this and other projects are being embraced by the NHS and its suppliers.”

A further goal of the project has been to get funding for a programme to explore the potential for transferring technology and design approaches to ambulances. A successful application has already been made to the Engineering and Physical Sciences Research Council (EPSRC) for an agenda-setting event in October 2006. This will bring together researchers from around the UK to explore in more detail the challenging issues of improving patient safety when travelling by ambulance to and from the hospital. Graham Vickers

“Design excellence has not always been top of the healthcare agenda so it is gratifying to see enthusiasm” Colum Lowe, NPSA

an incident reporting survey. More than 20 stakeholders participated in the workshops in which vehicle designers from the RCA visualised design issues and possible solutions suggested by participants.

A good response

AMBEX – the world’s largest ambulance and emergency healthcare event – provided a further opportunity to gather more stakeholder opinions from other areas of the motor industry to ambulances and other mobile healthcare vehicles. A successful application has already been made to the Engineering and Physical Sciences Research Council (EPSRC) for an agenda-setting event in October 2006. This will bring together researchers from around the UK to explore in more detail the challenging issues of improving patient safety when travelling by ambulance to and from the hospital. Graham Vickers
PixelRoller

A paint roller that paints pixels

The Pixelroller is a novel technological innovation: a paint roller that ‘paints’ digital images onto a range of physical surfaces. A year of development has resulted in a more robust and usable product with refined technology.

One great challenge seldom met by technology products is to achieve an archetypal form that indicates at a glance how they are to be used. Too often, they end up looking novel, inscrutable – and daunting.

The bicycle is a simple contraption where you can see all the moving parts, but it is not this technological transparency that is important. The key thing is that it has obvious cues for human contact – you see where to sit and where to put your feet and hands, and off you go. With ergonomic cues like these, even complex technology loses its tendency to intimidate. So the TV remote and the mouse achieve their ease of use by inviting our touch, and we need know and care nothing about the technology behind them.

Using Stuart Wood and Florian Ortkrass’s PixelRoller is in this sense just like riding a bicycle.
It has a handle (for you to hold) and a wheel (that rotates). The rest follows immediately from the conjunction of these two — you pick it up and start rolling. What it does next is amazing — but delightful rather than frightening, as you are by now sure how to use the thing.

**Digital image output**

Rather than evenly rolling out paint, it starts to set out a complex image. This is because the PixelRoller can take a digital image and output it using real paint onto a vast range of substrates such as walls, floors or even grass.

PixelRoller made its debut in spring 2005 as a joint Masters project between Design Products student Florian Ortkrass and Stuart Wood, who was studying Interaction Design at the RCA. Since then, with a development grant from the Audi Design Foundation, RCA graduates Ortkrass and Wood have been able to refine the technology and construct a superior prototype.

Basically, streams of paint are fed to the roller where solenoids control its emission, allowing a pixellated image to be ‘painted’ with only the familiar roller action. “It’s still like analogue input,” says Ortkrass. A computer linked to the roller contains data for the image and governs the paint supply. It also calibrates the position and orientation of the roller so that the image remains in register.

The recent development work has centred on finding the most suitable solenoids and ensuring the robustness of a device which,

“The designers of the PixelRoller strike the right balance between

Above and right: the PixelRoller in action, painting digital images onto a variety of surfaces in time-honoured paint-rolling fashion. Previous page: CAD model shows understandable form of new technology tool.
while obvious as to how to use, nevertheless involves a formidable combination of mechanical moving parts, flowing liquids and digital data. “The major headache was the paint application to surfaces,” says Wood.

**Increasing resolution**
With this problem cracked, the designers want to increase the resolution by adding more paint nozzles and move to four-colour capability. With each refinement, the research associates have been careful to look for solutions relying on simple proven technology rather than custom fixes, for example using standard spray paint and nozzles. “They strike the right balance between creativity and delivering results,” says Rebecca Myrie of the Audi Design Foundation. “This is exactly what we are looking for.”

“The experience of using the product is important,” says Wood. The fact that people have no trouble coming up with applications is perhaps the best indication of the concept’s potential. At the moment, images are rather crude and suggestive of urgency, and could be deployed by anyone from the police for emergency signage to exhibition designers for temporary graphics.

With further refinement, there is scope to tackle all kinds of mural messages, from gallery labels to transport liversies, retail and advertising hoardings. And thanks to its friendly appearance, what may be a high-tech toy for a young public artist might equally be used by a retired couple redecorating their home with roll-on patterned ‘wallpaper’.

But for now it is the performance aspect that most excites those closest to the project. Trustees of the Audi Design Foundation who have seen the PixelRoller in action were captivated by its theatricality. Trustee Isobel Pollock calls it “very entertaining and definitely eye-catching” while Max Fraser feels that “it shows real magic”.

Rather than develop it into a protected design for licensing as a single product that does just one thing, PixelRoller’s inventors are keen to exploit this side of the technology, offering a service to companies or cultural institutions that want to make a splash.

*Hugh Aldersey-Williams*

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*creativity and delivering results*”  Rebecca Myrie, Audi Design Foundation
Offline etiquette
The impact of web pages in physical space

The presence of the internet is beginning to influence the intimate social spaces of the home. Through concept furniture and objects, this project explores new rules of engagement between the virtual and the physical.

The internet has changed office life, and now, as computers become a natural part of the home, it is changing domestic life too. The give and take of information that at work would be confined to documents and data can, in the home, become highly personal, transforming computers from work tools into ‘intimacy devices’, in the words of Derek Powazek, the author of Design for Community.

The question research associate Cristina Bilsland addresses in her project is: ‘How does this reflect into the physical space?’ She shows how our living room layouts have changed following previous technological intrusions. Sofas and chairs were once clustered round the coffee table for conversation, with perhaps just a gramophone on a table against the wall. Then, they were loosely directed towards the...
television, with the ever-present telephone on a side table. With larger TV screens and cordless phones, the layout changes again.

**Altered interactions**

Now the computer in its turn is altering our social interaction, perhaps more profoundly than ever before. Bilsland’s study explores its accommodation in the home by looking at some of the extremes of internet use in order to come up with rules of ‘offline etiquette’, as well as ideas for the design of the immediate physical surroundings.

In a communal setting, is it acceptable, for example, to open and read your partner’s emails when it is a no-no to peek at letters in sealed envelopes? Clicking is so easy, after all. Drawing on observation of people’s online behaviour as well as cases described in newspaper headlines such as ‘Honey trap for the web adulterer’, Bilsland developed a set of scenario characters who raise a range of tricky new social questions.

‘Lizzie’ is happily married and would never have an affair, but enjoys flirting online. ‘John’ unleashes his violence on virtual punch bags, and says it prevents him beating his wife. ‘Helen’ is addicted to the illusory company offered by chat-rooms. ‘Ian’ is 37 and still living with mum, and is so immersed in the virtual world that he neglects basic nutrition.

How to meet the needs of such people? Cristina Bilsland has devised a range of furniture and objects that adjust the relationship between the real and virtual, acting as provocations rather than development concepts. Although these are solutions designed to accommodate computer technology in the home, they are also a critique of how that technology is changing our social lives and interactions.

**Moral obligation**

This is welcomed by research partner Philips. “We have some kind of moral obligation,” explains

“We have a moral obligation to understand the impact of what is happening, the positive and the negative” Gavin Proctor, Philips
Gavin Proctor, a director of design research at Philips. “We need to understand the impact of what is happening, the positive and the negative. There is an opportunity if you can tap into these issues and potentially turn them around.”

This is what Cristina Bilsland’s designs begin to do. How, for example, to gain the privacy you need without actually leaving the room? A high chair with a ladder for legs would stop others snooping over your shoulder. A chair with massive blinkers might do the same. A chair with a wraparound screen might provide a greater level of withdrawal. And if two of you seek separate virtual escape, then why not try a new version of the love seat where you sit in opposition with an S-shaped barrier removing the temptation to pry.

Other concept products are less concerned with degrees of privacy, more with enhancing the sense of connectedness with the virtual world. Thus ‘Helen’ might pour a drink for herself and her virtual companion into an electronic loving cup which then activates the internet connection. As for ‘Ian’, to get him away from the screen it might be necessary to wire his sustenance to the computer so that the speed of the link drops if he neglects to eat and drink.

Hugh Aldersey-Williams
Social vision
A new approach to presenting data

This project has developed a new form of visual communication for a social trends think-tank that not only enhances its client presentations but also helps to deepen its quality of analysis and understanding of ideas.

How you do go about communicating visuals of the future without falling into sci-fi clichés? And when you’ve made a research discovery about social change, how do you make sure the message reaches a wider audience?

These were just some of the conundrums faced by graphic designer Thea Swayne when she undertook a communication project to help social trend forecasters the Future Foundation to work better with external audiences. The company, founded as an independent think-tank ten years ago, “has such a diverse range of clients, from banks and government departments to media and advertising, who all have different needs and all do different things with the data,” says Swayne.

Her early research revealed an organisation that, like so many
‘Attention spans are declining because people are overwhelmed by the amount of information they have got to take in’

Melanie Howard, the Future Foundation

others needing to convey complex statistical information, was in thrall to computer programmes such as PowerPoint. And a cross-section of its clients, whom she interviewed, felt that more could be done. “Prior to my project, the visualisation of data was mostly limited to bar charts and images that weren’t really appropriate to the subject,” she recalls.

**Information recall**

Studies have shown that people only remember 15 per cent of the information conveyed by bullet points, for example, in contrast to up to 95 per cent of the messages they receive via a visual presentation. But Swayne discovered that an endless visual diet of pie charts and line graphs isn’t necessarily any more effective in communicating ideas.

Holding an individual’s attention is crucial to getting your message across and Swayne’s research revealed concentration spans tended to peak in the first five to ten minutes of a presentation, before dropping off rapidly until, after 40 minutes, she says, a person’s attention is “at an all-time low.”

There are ways to combat this – to use the right visual images to stimulate interest and “re-engage people with the subject” – and as part of her research, Swayne travelled to Boston to attend a one-day seminar led by Edward Tufte, the US graphic design

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**Best description of luxury**

<table>
<thead>
<tr>
<th>Description</th>
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<tr>
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<tr>
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<td>Having beautiful home furnishings</td>
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<tr>
<td>Going on expensive holidays</td>
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**Spending on Leisure**

- **Forecast**:

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guru who has been dubbed “the Leonardo da Vinci of data” by the New York Times.

Tufte advocates a careful use of colour in charts and visuals and emphasises avoiding what he calls “visual noise” and “chart junk” – items that are purely decorative, unnecessary, or that impede communication. It was an approach that appealed to Swayne, who plans to explore Tufte’s ideas and make them applicable to the needs of her research partner.

**Powerful visuals**

It is a concept that appeals to the think-tank. “What we’re finding,” says Future Foundation co-founder Melanie Howard, “is that our clients’ attention span seems to be declining because they’re overwhelmed by the amount of information that they’ve got to take in. A visual can cut through that and get things across very simply but very powerfully.”

As the project developed, Thea Swayne set about creating a visual language that is essentially human and all about “connecting with real people again”. Although the Future Foundation deals with all sorts of fascinating social groups and trends, it realises there are further client opportunities to be gained through innovative visualisation of research findings.

Swayne has taken one of the organisation’s top 10 social trends – a look at the world of ‘experience’ and how that’s changing (for example, the shift from purchasing possessions to acquiring experiences) – to test her theories through a series of sharp, informative and engaging visuals, the model of which can be applied to any other trend. The results, so far, have been positive and more far-reaching than the original brief.

When Swayne began her work with the think-tank, the aim was to help the company to better engage with its clients. But a welcome – if somewhat surprising – side effect has been how Swayne’s work has helped the Future Foundation to better engage with itself. The study is not just about enhancing presentation but about deepening the quality of analysis and understanding of ideas through a visual approach.

Before her arrival, Swayne notes that “consistency and brand identity in the representation of the Future Foundation were not very coherent.” Nine months in and Melanie Howard is talking about using Swayne’s research to “develop a toolbox of techniques and approaches” that will be used internally to roll out the designer’s ideas. It is fairly safe to assume that sci-fi stock-in-trades about the future won’t make the cut.

_Catherine Jarvie_

Below: a new look for data. People remember visual information more than lists or bullet points.
Moving light
Lighting the future car cockpit

Lighting for car interiors has changed little since the dawn of
the automobile. This study presents a new concept in vehicle
lighting, as the driving population ages and in-car systems
become more complex.

Some things are so familiar to
us that it isn’t so much that the
idea of changing them is not
an option, rather that change
isn’t even considered at all.
Take vehicle lighting – since the
first automobile rolled off the
production line with interior
electrical lights ‘as standard’, very
little has changed.

In an era where the extras
inside cars can make or break what
is for many people one of the
single most expensive purchases
of their lives, it seems somewhat
astonishing that until now this
problem has barely been addressed
at all. According to Jeong Tae
Kang, an RCA graduate working
in partnership with automotive
components supplier Visteon in
the Department of Vehicle Design,
“almost 70 per cent of money for
the industry goes into electronic
devices for inside the vehicle, but
not lighting.”
So, while GPS devices, gaming consoles, MP3 systems, and DVD players might all be at your fingertips in-car, when night falls you’ll still struggle to read the address that needs to be programmed into your state-of-the-art satellite tracking system and still fail to easily find that pound coin/parking ticket/lifesaving medication that you dropped in the dark. “The problem is basically in the construction,” says Kang, “because they’re still using only two lighting spots from the car roof.” (Lighting spots, it must be added, that give about a tenth of the light output of the standard desk lamp.)

Ageing drivers
With the average 55-year-old needing around twice the contrast effect than the average 25-year-old to be able to read clearly (and the majority of the UK’s car-driving population – just like the general population – becoming older overall), it quickly becomes clear that this is a problem that needs to be addressed.

Kang’s research identified the three types of illumination most needed by vehicle users: practical (to help you find that lost coin), emotional (ambient lighting to both reflect and enhance your mood) and informational (to offer people integrated access to information on the move).

The latter two forms, in particular, will bring our driving experience out of its current rut. In almost every other area of our lives – at home, in the office, even while socialising in bars and cafés – our expectation for information at our fingertips has grown exponentially over the past decade or so. But despite the fact that the
average driver spends more time in his or her car than ever before, notes Kang, “the vehicle doesn’t work that way”.

Information panel

To that end, he has created an in-car information control panel that runs horizontally around the interior of the vehicle, offering both passengers and driver access to everything from weather and stock market forecasts to notice of what’s playing on the in-car entertainment system.

This will be incorporated into Kang’s updated lighting design – a series of pillars flanking the windows, containing 24 individual lights, each fully adaptable to the driver or passengers. “Using different colours we can create different ambiences through the light,” Kang remarks. The roof light, for example, can be set to create a restful feeling or make it like a very bright day.

The option to develop an emotional space in the vehicle will be extended outside it too. Kang’s interior lighting vision is designed to link up with the car’s exterior front and rear lamps. (The Smart car is Kang’s vehicle of choice for such a system: its distance of less than 15cm from the exterior headlamp to the interior makes it easy to integrate the information panel and lights.) Working with Visteon’s Auto Envision Group, Kang is developing a full-size working prototype to demonstrate his ideas.

As well as being able to adjust the glare of the car’s headlights, Kang reveals that he wants “to create interactive interfaces between the driver and the car”. Drivers will be able to use the interior information panel to “project emotions through the rear lamp, like a smile or an angry face.” And why not? It’s long been held that our cars reflect our personalities; perhaps the next logical extension is for them to reflect our emotions too.

Simon Harris, senior designer at Auto Envision Group of Visteon UK comments: “Working with the Helen Hamlyn Research Centre is a refreshing counterpoint to our mainstream activities. We are pleased that our research associates do not just have the curiosity and originality to ask new questions but also bring the commitment and energy to find the answers.”

Catherine Jarvie
Why external partners join the Helen Hamlyn Research Associates Programme

“Our research associates do not just have the curiosity and originality to ask new questions but also bring the commitment and energy to find the answers” — Visteon

“Extremely focused and very good storytelling, research, synthesis and design” — IDEO

“Challenged us on the key issues – which is what we wanted” — Philips Design

“There’s a degree of excellence in analysis, interpretation, idea creation and development” — Omron Japan

“A fantastic job of pursuing the design brief with enthusiasm, creativity and insight” — HP Labs

“Our business depends on a socially inclusive design approach. We couldn’t afford not to work with the Research Associates” — BAA

“The discussion of ideas is challenging, the presentations are provocative” — Peabody Trust

“We were inspired by a new way of thinking” — British Heart Foundation
Define / Develop / Deliver

The Helen Hamlyn Research Associates work on projects with industry partners through three distinct phases, tied into the three terms of the academic year at the Royal College of Art.

**Define**
October-December
The first phase of the programme follows an induction period with professional skills training in such areas as project management, presentation, user research, writing and film-making. The Define phase, covering the autumn term, is a period for exploration and focus. Researchers investigate the context of the project, conducting a market analysis, reviewing the literature, and building a working relationship with the research partner. Preliminary user studies help to define a point of view and decide which areas or ideas to prioritise. Early design concepts are generated.
Develop  
January-March  
The second phase of the programme uses the spring term to develop design directions chosen with the research partner. Scenarios and prototypes are created. Relevant processes and technologies are investigated. Ideas are validated with experts and in user trials. Modifications are made and final communication outputs are determined as the project enters the final straight.

Deliver  
April-June  
The third phase of the programme uses the summer term to complete the project. The Deliver phase is all about giving the research partner the results of the study in a form that is of the most practical and applicable use to the organisation. This can take the form of exemplar designs, prototypes, films, guidelines or publications. All projects include a final report and full design documentation so that ideas and recommendations arising from the project can be acted upon by the research partner.

Show and Symposium  
Public dissemination is part of the ethos of the Research Associates programme. All research associates participate in an autumn exhibition and symposium at the Royal College of Art, presenting and displaying those aspects of their project that are not confidential to the industry partner. This event normally takes place in late September, as part of the RCA’s contribution to the London Design Festival.
Danish-born Toke Barter’s background is in interactive media. He has developed digital typography for MeCompany, worked as a concept developer for Lego, created interactive visuals for the fashion world, and designed and curated interactive concepts for architects Land Design.

Moving to London in 2001 Toke took his Masters in Interaction Design at the Royal College of Art, where his work explored the magical and emotional aspects of future technologies. In 2004 he founded Radarstation with Ré Dubhthaigh — a company that delivers design-led futures for such clients as the BBC, BP, Vodafone, Live|work and Tate Britain.

Ré’s background is in visual communications, having spent a number of years as a freelance designer in Dublin, specialising in print media and storytelling through design. He has also researched and curated for the Darklight digital film festival, and taught design processes at colleges throughout Europe.

Ré has a Masters in Interaction Design from the Royal College of Art, where his work focused on storytelling and foresight. After an internship with Lego Concept Lab he founded Radarstation with Toke Barter in 2004. Together they have worked for such diverse clients as the BBC, Hitachi, the Department of Trade and Industry and the Interaction Design Institute Ivrea.

Cristina Bilsland is a designer, researcher and writer. She has a BA from Central Saint Martins College of Art and Design and an MA from the Royal College of Art in Design Products. Her work has won several awards, ranging from Design Against Crime for the Home Office to plastic products for the Institute of Materials. Cristina has shown her work in exhibitions in London, Frankfurt and New York. Since January 2006 Cristina has curated Script, a monthly debate series at the Design Museum.

Cristina’s main interest lies in exploring mundane issues and social developments, responding to them with designs that have a significant rhetorical dimension. This approach aims to both spark debates as well as inform commercial practices on the human side of design.

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Having graduated in Mechanical Engineering from Imperial College, Chris Glaister went on to study Industrial Design Engineering at the Royal College of Art in 2002. During his gap year at Imperial, Chris worked designing Formula 1 engines. Since graduating from the Royal College of Art he has been involved with InnovationRCA’s Selected Works programme at the College and during the last year, the Helen Hamlyn Research Associates Programme. Outside the College, Chris has worked in furniture and product design and in 2005 he co-founded Blend Studios Ltd, a product design and development consultancy, with fellow Helen Hamlyn Research Associate, Duncan Turner.

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Sally Halls studied Mechanical Engineering at Bristol University before coming to the Royal College of Art to study Industrial Design Engineering. It was here that she developed an interest in medical design, dedicating her final year to a project humanising incubators.

After graduating, Sally took the opportunity to further this interest at the Helen Hamlyn Research Centre as a research associate, where she is helping to improve patient safety through the redesign of resuscitation trolleys.

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Anab Jain is an interaction designer, researcher and filmmaker with a MA in Interaction Design from the Royal College of Art, and a first degree in Communication Design from the National Institute of Design, India. Anab’s work has received several international awards including the UNESCO Digital Arts Award 2005, Design for our Future Selves Award 2005 and Chicago International Documentary Festival 2004.

Anab has presented her work in international conferences such as Ubicomp 2005 Tokyo, Design Engaged ’05 Berlin, and ISEA Zero One Festival 2006, San Jose, USA. Her work has been showcased at Mattel Toys Headquarters, Los Angeles, Apple Computers Inc, Cupertino, California and Tate Modern, London. Anab has worked in India and the UK as an independent design consultant. She has a keen interest in creating engaging experiences around emerging technologies.

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Matthew Harrison started his career by training as a mechanical engineer and working for the Ford Motor Company. After graduation in 2002 he went to study Industrial Design Engineering at the Royal College of Art to satisfy his desire to design within the context of user experience. During his MA, Matt designed the DOPIE flip flop, due to hit the high street in spring 2007 under license to shoe makers Terra Plana. Since completing his MA, Matt has worked for the Helen Hamlyn Research Centre, on a project supported by Thorn, exploring design futures in office lighting.

Matt supplements this research work with freelance web and interface design, and he is developing Studiohead, a cross-disciplinary design practice specialising in the boundary between product and experience design.

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Jeong Tae Kang is a product designer and researcher with an MA in Design Products from the Royal College of Art. He has a varied background in furniture, lighting, interior, web design and design research. He has worked for Hyundai Motors, Design House, David Gill Gallery and Hwangdong Ltd. Some of his work resulted in a Korean patent in 2003.

Kang has displayed at many exhibitions including 100% East and has exhibited with Ingo Maurer, the lighting designer, in 2005. He exhibited his work at Barcelona in 2003 followed by exhibitions at Gana Art, Korea and Contrasts gallery in China. His latest creations can be seen in Wallpaper and Blueprint. Currently, Kang works as a design consultant in lighting, interior design, product design and web design in Korea and the UK.

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Maja Kecman is an industrial design engineer with a Masters degree in Industrial Design Engineering from the Royal College of Art and an undergraduate degree in Manufacturing Engineering from Cambridge University. Her design experience ranges from medical devices and consumer products to factory layouts and processes.

Maja has won a number of awards including first prize in the Helen Hamlyn Design for our Future Selves Awards 2005 and was also shortlisted for British Female Inventor of the Year 2006. In addition to being a research associate at the Helen Hamlyn Research Centre, Maja has provided consulting services to several companies including healthcare and medical devices consultancy Pearson Matthews.

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Florian Ortkrass graduated from Brunel University with a first in Industrial Design Engineering. For this degree he developed an inflatable car using shape memory polymers. After graduation, Florian developed lighting systems for the German company Holtkoetter. He also worked for acclaimed furniture designers PearsonLloyd in London, Siemens Design, Philips Design and Audi. He then graduated with an MA in Design Products from the Royal College of Art in London in 2005.

Since then, he has formed creative collective rAndom International (with fellow Royal College of Art graduates Stuart Wood and Hannes Koch). On the strength of PixelRoller, rAndom has won the Wallpaper Design Award 2006 and an iF-Design Award (Concepts) in Germany.

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Tomek Rygalik grew up in Poland. He studied architecture in Lodz, and then Industrial Design at Pratt Institute (1999 BA Hons). After completing his studies, he worked with several design consultancies in New York. Tomek then came to the Royal College of Art’s Design Products postgraduate programme, graduating in 2005. Since then he has worked as a research associate and also runs his own design practice. Tomek has won many prizes and awards including First Prize Award in the 2006 International Bombay Sapphire Martini Glass Design Competition, BSI Environmental Design Award 2005, and Rosenthal Design Award 2004. Two of his furniture pieces were part of the British Council’s Talent/Talento selection in 2005. In recent years his work has been exhibited in London, Milan, New York, Tokyo and Valencia.

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Chris McGinley is a Scottish-born designer based in London. His qualifications include a MEng from Strathclyde University, and an MA from the Royal College of Art. Chris received the Anthea & Thomas Gibson Award two years running based on scholarly achievement, and the Most Outstanding Team Design Award from the Royal Commission of Design Engineers.

Chris has worked in a design and research capacity for groups such as Strathclyde University and the Central Research Laboratories (CRL), and has experience in giving presentations and running workshops in the UK, USA and Japan. He has developed a robust understanding of inclusive design and the sensual and experiential needs of the user. He has held creative roles in groups such as Joseph Duggan Photography and DooD Design, and exhibited graphic and product design work internationally.

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Thea Swayne is a designer, researcher and consultant. She has a First class degree from Central Saint Martins College of Art and Design and an MA from the Royal College of Art in Communication Art and Design. Her work has won prizes, including the National Grid Transco Award 2004, and she has exhibited in galleries including the Pompidou Centre, Paris. In 2005 Thea collaborated with the National Patient Safety Agency to publish *Information Design for Patient Safety*.

Thea runs her own design company; recent clients include Imperial Innovations, Defra, and *The Guardian*. She is interested in helping clients visualise the future and has worked with the Future Foundation to develop visuals and scenarios for clients such as Thames Water and the Office of Science and Technology. Since October 2005, Thea has taught at Central Saint Martins College of Art and Design, London.

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Jonathan West has a background in design and engineering which began during his first degree in Mechanical Engineering at Birmingham University. Since completing his Masters in Industrial Design Engineering at the Royal College of Art in 2003, Jonathan has had an interest in medical design, a field in which he is now working.

Jonathan’s first job was to design a powered paediatric wheelchair for Sunrise Medical, meeting user needs and designing a working prototype. Since then he has worked in industry and at the Helen Hamlyn Research Centre where, as a research associate he has provided GlaxoSmithKline with design guidance on their pharmaceutical packs (directly influencing the European pack style), and is currently working on a new resuscitation trolley for the National Patient Safety Agency.

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Duncan Turner’s background is in industrial design, which he studied at Sheffield Hallam University (graduating 2001) before joining the Royal College of Art to study Industrial Design Engineering. He has spent time working as a furniture designer in Japan (2003) and freelanced in product design and development in the UK. After gaining his Masters from the RCA, Duncan went straight on to the Helen Hamlyn Research Associates programme to work with B&Q.

This project looks at how our homes can work better as an environment which provides a healthy air quality and energy efficient thermal comfort year round. Duncan has shared this post with fellow research associate Chris Glaister. Together they have set up Blend Studios Ltd, a company that brings technology and design together to create products for a diverse range of clients.

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Stuart Wood started focusing on the integration of new materials and processes in digital design when studying Product Design at Brunel University. During that time, he worked as an interaction designer for Therefore, the BBC and Ross Lovegrove in London. Stuart then went on to study for an MA (Interaction Design) at the Royal College of Art, where he and colleague Florian Ortkrass graduated with the acclaimed PixelRoller/LightRoller project. In 2005, Stuart won the Creative Review Creative Futures award in the category of Interaction Design. Together with Ortkrass and Hannes Koch, Stuart is one of the co-founders of creative collective rAndom International and its business division OPERATION:Schoener Ltd in London.

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Senior Research Associate Profiles

As an industrial designer, Owen Evans draws on his broad design experience to help clients take new products to market. After gaining an BSc in Mechanical Engineering from Imperial College and working as a designer in the automotive industry for several years, Owen gained an MA in Industrial Design Engineering from the Royal College of Art, during which he won the Snowdon Award for Disability Projects. This was followed with a Helen Hamlyn Research Associate project working with leading UK bus and coach maker Optare.

After Optare, Owen worked as a freelance designer before founding his own company, Furnace Design Ltd in 2005. Furnace is currently working on furniture and vehicle styling projects for UK manufacture. Owen rejoined the Helen Hamlyn team for the ambulance project in 2005.

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Merih Kunur is an experienced vehicle designer, researcher and consultant. He studied Industrial Design at Mimar Sinan University, Istanbul, from 1981-7, focusing on transport projects. He later graduated in 2003 from the Vehicle Design Department at the Royal College of Art with an MPhil, his thesis investigating mobility issues within London. Since then Merih has worked with the Helen Hamlyn Research Centre on the Mobility project, in collaboration with Capoco Design, and currently on the future ambulance study.

Previous projects include animation art direction for TV, retail, textile and vehicle design. He has exhibited his design work widely in Turkey, the UK, Japan and USA. In 2006 his work was exhibited at the Detroit Motor Show and at Ambex in Harrogate.

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The Helen Hamlyn Research Centre would like to thank the following Royal College of Art departments which hosted projects in 2005-6:

**Communication Art & Design**
The Department of Communication Art and Design reflects the multidisciplinary nature of contemporary communications. It joins graphic design and illustration with experimental moving image and sound research, to provide a creative environment for the exploration, development and cross-fertilisation of ideas.
*Head of Department: Professor Dan Fern*

**Industrial Design Engineering**
The Department of Industrial Design Engineering, a joint course with Imperial College, is a creative hub that prepares its students to work at the centre of demanding projects, working across several disciplines to match the changing skills and immediacy required of today’s professional designers.
*Head of Department: Professor Tom Barker*

**Vehicle Design**
The Department of Vehicle Design pioneers new approaches for our mobile futures. Central to its work is an understanding of the broader issues of vehicle design necessary to optimise opportunities for mobility: accessibility, aerodynamics, environmental impact, ergonomics, legislation, materials, production, safety, technology and aesthetics.
*Head of Department: Professor Dale Harrow*

**Design Products**
The Department of Design Products does not embrace any one design ideology or favour a specific style. Its purpose is to create a culture that thrives on new ideas, new ways of doing things and new areas of exploration and risk-taking.
*Head of Department: Professor Ron Arad*

**Interaction Design**
The Interaction Design Department provides a creative and intellectual environment where students and staff can explore the interaction between people, design and emerging technologies in relation to different contexts of practice (industry, design studios, think tanks and research labs), design approaches (practical, experimental, conceptual and critical), and design roles (maker, strategist and critic).
*Head of Department: Professor Anthony Dunne*
The Helen Hamlyn Research Associates Programme

If you would like to be part of the Helen Hamlyn Research Associates Programme please contact: Rama Gheerawo, Programme Leader, Helen Hamlyn Research Centre, Royal College of Art
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