VITAL SIGNS
Vital Signs

An exhibition of industry-funded projects from the Helen Hamlyn Research Associates Programme 2007, featuring work by 12 new design graduates of the Royal College of Art

**Show:** 21 September - 4 October 2007
Open every day 10am-6pm
Admission free
Entrance and Lower Galleries, Royal College of Art

**Symposium:** 24 September 2007, starting at 2pm

Vital Signs is part of the Royal College of Art’s contribution to London Design Festival 2007

Exhibition curation: Rama Gheerawo
Exhibition design: Sally Halls
Exhibition graphics: Margaret Durkan
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New purpose and direction

The annual show and symposium of the Helen Hamlyn Research Associates is always one of the crowning fixtures on the Royal College of Art calendar.

This year, the presentation of projects by 12 RCA graduates in partnership with a range of business and not-for-profit organisations takes on a special resonance following a period of change and renewal in the Helen Hamlyn Centre.

Over the past 12 months, the College has worked with the Helen Hamlyn Trust to give the centre new purpose and direction under the leadership of Jeremy Myerson.

We have revised the College Ordinances – a very rare thing – to enshrine the centre within the College’s constitution, we have introduced a new identity, built the research team and expanded the remit to look at design for patient safety alongside the now-established focus on independent living for older people.

The fruits of this new strategy can be seen in *Vital Signs* – the title of this year’s research associates show and a name chosen for its medical as well as economic and mobility-related connotations. The social contexts in which our graduates are now operating as Helen Hamlyn Research Associates are richer and more complex than ever before – spanning from homes to healthcare and transport in terms of subject matter and from phones and washbasins to urban planning in terms of scale.

I am very grateful to the 12 industry partners who have contributed to this year’s programme, to the six RCA design departments which have hosted projects, to the graduates for producing such dynamic work, and – of course and as ever – to the Helen Hamlyn Trust for creating the opportunity in the first place for our designers to express their ideas in contexts that can improve lives.
Message from Helen Hamlyn
Improving people’s lives

As populations age, maintaining a health service that is safe, efficient and innovative becomes an urgent priority. Policymakers, economists and politicians understand this well enough. So do designers, which explains why I am delighted that the latest group of Helen Hamlyn Research Associates has embraced the challenges of design for patient safety with such interest, evident rigour and energy.

The health and patient safety projects on this year’s programme range from the future of the pharmacy and improving the labelling of injectable medicines to new tools for surgeons and a redesign of the hospital resuscitation trolley. What they all share is a commitment to make things better and safer from the patient’s point of view.

Indeed the entire thrust of the Helen Hamlyn Centre since its inception at the RCA in 1999 has been to improve people’s lives in some way, using a human-centred design approach to effect improvements.

The current emphasis on health and patient safety – a vital consideration for all people, but especially for older people – is simply a logical extension of work which began, in the era of DesignAge, by looking at independent living for older people and progressively broadened in focus to embrace inclusive design at home, at work and on the move.

I wish the Research Associates 2007 every success in this event and for their future careers. I hope and believe that their time spent with the Helen Hamlyn Centre will have equipped them with the insights and skills to design for a world in which people come first.
Activism and industry
Combining social and business needs

One the most distinctive themes of design research at the Royal College of Art over the past 40 years has been work that combines social activism with application by industry. Since the 1960s, the RCA has maintained a practical interest in human-centred design that jointly benefits society and business – and it is within this tradition that the Helen Hamlyn Centre and its research associates operate today.

The agreed starting point for the College in this area was the establishment in 1961 of a Design Research Unit directed by Bruce Archer, which specialised in the design of non-surgical hospital equipment and employed 30 researchers at its peak. Indeed one can see a direct link between Archer and Kenneth Agnew’s pioneering NHS project to research a new ‘optimal’ hospital bed in the late 1960s and our current redesign of the standard hospital resuscitation trolley in partnership with the National Patient Safety Agency.

Back then, Bruce Archer believed that combining social concern with take-up by industry depended on a multi-disciplinary approach. With his research unit, he set out to “break down barriers... scientist from artist, artist from designer, designer from engineer, engineer from common man”. Much the same spirit pervades the Helen Hamlyn Centre today. Our work crosses all the design disciplines taught by the College – its consistent thread a focus on user need and usability at a time of social and demographic change.

**Across disciplines**
This year’s Research Associates programme is a good example of cross-disciplinary engagement. Graduates from the Departments of Architecture, Communication Art and Design, Design Interactions, Design Products, Industrial Design Engineering and Vehicle Design have worked closely with industry partners within the framework of a single unitary programme. No other area of the College can claim such disciplinary breadth.

Add the raft of external collaborators on specific projects – these range from technology experts to hospital clinicians – and you get some sense of the span of expertise feeding into the work on show in Vital Signs.

In the late 1980s, Bruce Archer’s emphasis on social usefulness and systematic design methods was out of vogue at the RCA, as an era of style and conspicuous consumption dominated. But the College reconnected to its activist design research heritage when my colleague and former co-director Roger Coleman set up the DesignAge action research programme in 1991, even inheriting some of Archer’s files.

Out of DesignAge, which looked at the design and business implications of an ageing society, grew the Helen Hamlyn Centre we know today. So the research associates of 2007 belong to a culture with deep roots – a culture that demonstrates that meeting social needs and business targets are not mutually exclusive.
Five stages to innovation
Delivering inclusive design

If design is described as a purely aesthetic process, it makes for a one-dimensional relationship with business and society that weakens its effectiveness in both arenas. But if design is described as a way of thinking about and visualising people’s real needs and aspirations, it becomes a powerful tool for change. This is at the heart of the research associates’ practice and philosophy.

In leading this year’s programme, I set out to do the following things: to give the projects a stronger inclusive design focus, to build a studio-based environment for the researchers where ideas could be shared and strengthened, and to define the process that the research associates go through. I call this process ‘the five i’s’ after its five component stages. It describes the way in which our research associates develop empathy with users and balance their own creative voice with the opinions of the people they engage with.

**Insight** is the first stage when the designer works with lead users to understand their needs and tap into personal aspiration. Then follows **Interpretation** when those insights are translated into the design brief. The user is as important as the designer at these two stages. **Inspiration** is about creating concepts from the design brief so the designer leads at this point.

**A non-linear approach**

**Innovation** filters these concepts to select and develop a realistic and achievable proposition. The designer leads again but needs to refer back to user insight. **Impact**, the final stage, is about assessing the value and effect of the design outcome with the user. The designer needs to listen again. This process is not meant to be linear – essentially the route to a design solution is iterative. It evolves the designer’s role from a studio-based, internally driven approach to becoming open-minded, observant and empathic.

The 10 projects in **Vital Signs** address core inclusive design issues in three key areas: **Home** looks at improving digital connectivity, lighting and bathroom facilities for older people in the home; **Health** tackles issues of patient safety including packaging design, surgical tools, hospital equipment and pharmacist-patient relationships; and **Mobility** addresses concerns surrounding older drivers, urban planning and rural mobility.

Inclusive design is an ideology and practice that our research partners have come to value, whether large multinational corporations, public sector, consulting or academic organisations. Our research associates are equally drawn to the inclusive design agenda. On the programme we’ve been encouraging this since 1999, with a portfolio registering more than 60 industry partners and an equal number of RCA graduates. So we hope you enjoy this publication, the eighth in the series, which reinforces the benefits of an inclusive design approach as a way to innovate in business.
At the interface of design with society
Contributing to the RCA research culture

Since the Helen Hamlyn Research Associates held their first show and symposium at the RCA in autumn 2000, the programme has moved forward in the context of a fast-developing research environment for the College as a whole.

Research now underpins the academic life of the Royal College of Art. The past five years have seen the College awarded the highest score for art and design in the most recent Research Assessment Exercise; commendation by the Quality Assurance Agency in 2007 for research leadership and management, including high quality research training; incremental success in winning major research grants from the UK research councils and other funders; new digital facilities supported by the Science Research Investment Fund; an increase in research student numbers, and in the number of academic and technical staff engaging in doctoral study themselves and training to supervise research.

Allied to this, there has been strategic development of key research fields in collaboration with researchers, funders and partners, and referenced in accordance with new thinking and new knowledge, based upon changing technological, material and social possibilities.

**Three research areas**
Current research at the College falls broadly into the following three areas: developmental research (including projects that explore new techniques and processes, and develop new and modified materials with a range of applications); applied research (including design for manufacture, inclusive and sustainable design, and strategic design concepts and prototypes that could provide significant value to business and industry); and historical, critical, cultural and studio research (where this relates to and/or informs art, media, design, production and practice).

It is at the interface of design with society that the work of the Helen Hamlyn Centre finds its natural place as part of the RCA’s research environment. Not only does the centre respond to the commitment enshrined in the College’s Royal Charter to explore ‘social developments’ but it also links design research to the mission to collaborate with business and industry.

Research associate projects feed the RCA’s research culture by working at the intersection of inclusive design and innovation. Short applied studies with commercial and public sector organisations act as a forerunner to larger research programmes funded by the major research councils, by demonstrating expertise in particular areas.

The Research Office at the RCA has been keen to develop the work of the research associates – and this strategy has borne fruit with major research grant awards to the Helen Hamlyn Centre in such areas as giving older people better access to the workplace, redesigning emergency mobile healthcare services and applying inclusive design techniques in business. A significant new bridgehead in research for the centre has been established – built on the foundations of prior work by the research associates.
The value of rapid ethnography
Giving people a voice in the design process

Over the past academic year and more, I have had the privilege of working on a research collaboration involving the Tanaka Business School at Imperial College and the RCA Helen Hamlyn Centre. The focus of this collaboration has centred on understanding the research process for design amongst the research associates based within the centre, as part of my Doctoral study.

A common thread amongst all of the projects on display in Vital Signs is that each research associate has spent significant periods of time observing people within their homes and workplaces, trying to better understand their lives, routines, behaviours and beliefs. This approach – which is widely known as ‘rapid ethnography’ – represents an innovative way to bring the voice of users directly into the design process.

Historically, rapid ethnography as a design research methodology emerged from within the discipline of anthropology, where the emphasis is placed on first-hand observation and participation amongst people within native cultures. Direct participation gives researchers access to social situations that help them to better understand people’s routines, behaviours and, potentially, belief systems. These insights are then used as a pathway to understanding their world and environment. Today, designers have uniquely adapted rapid ethnography to fit the needs of commercial business practice.

For designers, rapid ethnography represents a movement away from the study of native cultures towards the study of consumer cultures. The principles remain the same — a quest to understand people within the context of their natural environment. But instead of travelling to far away lands, we study people within their homes and workplaces.

Direct participation
Due to commercial pressures we spend much shorter periods of time with people but our aim is still to directly participate in their lives in order to gain access to social situations that help us to better understand their world. We then take this understanding into the realm of business to better design products and services that will better meet the needs of our constituents. The strength of the method is that it places primacy on users and ensures that their voice is at the forefront of any resulting design inspiration.

Based on my study of the programme this year, one can say that rapid ethnography provides a catalyst that enables both research associates and research partners to see old problems in new ways. For the research associates, new creative ideas spring up that they are then tasked with bringing to light. For some research partners, new realms of business opportunity emerge that did not come out of their more traditional research and development departments. For other research partners, rapid ethnography represents their first opportunity to put the voices of real people behind their quantitative market segmentation. In the end, through credible research practice, all partners in the process are transformed.

Tanaka Business School
Imperial College
London
Alex Thompson
Research Partners

ARUP

Arup is a global firm of designers, engineers, planners and business consultants providing a diverse range of professional services to clients around the world. With this fully integrated approach Arup is a creative force behind many of the world’s most innovative and sustainable designs for the built environment, including most recently the ‘Eco-City’ of Dorgan, China. This leading practice has established 60 years of research and has its own Foresight + Innovation + Incubation group.

www.arup.com

BT

BT is a world-leading provider of communication solutions and believes that good communication can help create a better world. Through this collaboration with the RCA Helen Hamlyn Centre, BT is keen to find new ways to lead the way in product design for excluded groups and create products that enhance communications for all members of the community.

www.bt.com

Child Graddon Lewis

Formed in 1992, architects and designers Child Graddon Lewis (CGL) today has more than 50 staff in its Spitalfields offices in London. CGL has an excellent track record in commercial, retail and residential architecture as well as mixed-use projects requiring master planning and urban design expertise. CGL is currently working with Transport for London, Genesis Housing Group, Brompton Estates, Royal Borough of Kensington and Chelsea, HSBC and Boots.

www.cgluk.com

DePuy

DePuy International is an operating company of Johnson & Johnson. With an annual turnover in excess of $50 billion, Johnson & Johnson is the world’s most broadly-based manufacturer of healthcare products, servicing in excess of 150 countries in pharmaceutical, consumer, medical device and diagnostic markets. DePuy has already established itself as a global leader in the design, development and manufacture of orthopaedic systems.

www.jnjgateway.com

Ideal Standard

Ideal Standard serves the UK market with sister companies Armitage Shanks and Trevi Showers. The company is unusual in that it produces the complete bathroom: sanitaryware, baths, complete showers, brass fittings and storage furniture. It is also very keen to use quality designers and to apply design in its mid-market as well as its top-end ranges.

www.ideal-standard.co.uk

Intel

Intel is a technology company constantly pushing the boundaries of innovation in order to make people’s lives more exciting, more fulfilling and easier to manage. Intel’s Digital Health Group is helping to accelerate improvements in healthcare quality by understanding people’s needs and delivering solutions that make it possible for them to protect and enhance their health throughout their lives.

www.intel.com/healthcare
Research Partners

Lloydspharmacy

Lloydspharmacy is the UK’s largest community pharmacy operator providing medicines, services and health advice throughout the UK. It has more than 1,600 pharmacies nationwide, delivering services to two million people a week. Lloydspharmacy is owned by Celesio, a European healthcare company based in Stuttggaart. Celesio owns pharmacies in seven European countries, the majority of which are located in the UK.
www.lloydspharmacy.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

Reid Architecture

Reid Architecture employs a philosophy of knowledge-led architecture in which research provides a fundamental contribution to what is a highly creative international architecture and design practice. The practice boasts its own Research and Development Unit that informs all the projects it undertakes. Its previous research has covered mixed-use within the context of community, real issues that hamper successful urban design and the inclusive design of urban space in cities.
www.reidarchitecture.com

Sheppard Robson

Social conscience, sustainability, technology transfer, efficiency and quality are the key principles of Sheppard Robson. Since its foundation in 1938, the practice has demonstrated excellence in design and innovation. Led by a dedicated group of experts, the practice also actively collaborates on industry research projects and has been able to implement several innovative means of analysing the effectiveness of its buildings for environmental impact, improved social well-being and enhanced economic performance.
www.sheppardrobson.com

Thomas Pocklington Trust

Thomas Pocklington Trust is the leading provider of housing, care and support services for people with sight loss in the UK. Each year it also commits around £600,000 to fund social and public health research and development projects. Its research and development programme aims to identify practical ways to improve the lives of people with sight loss, by improving social inclusion, independence and quality of life, improving and developing service outcome as well as focusing on public health issues.
www.pocklington-trust.org.uk

Toyota Motor Europe

Toyota Motor Europe oversees the wholesale sales and marketing of Toyota and Lexus vehicles, parts and accessories, and Toyota’s European manufacturing and engineering operations. Toyota directly and indirectly employs approximately 55,000 people in Europe and has invested more than six billion euros since 1990. In 2006, Toyota sold 1.1 million Toyota and Lexus vehicles in Europe, enjoying its tenth consecutive record year of sales. Toyota has a clear responsibility towards road safety, which is illustrated by several initiatives.
www.toyota-europe.com

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www.lloydspharmacy.co.uk
Safer by design
Packaging for injectable medicines

Patient safety is often compromised by confusion over the graphic information on drugs packaging. Injectable medicines are particularly susceptible to medical error. This study gives design guidance to make such packs safer.

Design can have a significant impact on patient safety, especially the packaging and labelling of medication. According to the National Patient Safety Agency (NPSA), a National Health Service body with a specific remit to reduce medical errors, nearly ten per cent of all adverse medical incidents reported in 2004/5 involved medication. Of these, a quarter involved injectable medicines – a hugely disproportionate number given that only a small minority of medication is given via injection.

The term 'injectable medicines' refers to drugs that come in ampoules, vials, prefilled syringes and infusion bags. Whilst there are a number of factors that affect the incidence of error, one study has estimated that a third of incidents are caused by confusion over packaging and labelling. This project in partnership with the NPSA set out to investigate how better graphic design principles might reduce confusion and enhance patient safety in the primary packaging of injectable medicines.

The study followed an earlier project on graphic guidance for the packaging of oral medication, also undertaken by the RCA Helen Hamlyn Centre with the NPSA.

Confusing brand livery
The research looked at problems with existing designs, which are caused primarily by an emphasis on promoting the company brand so that all drugs are packaged in the same corporate livery. Key user information printed in small font sizes is then overshadowed by the corporate branding, making different drug packs virtually indistinguishable from each other.

The researcher worked closely with a user group of healthcare staff at all levels – from nurses and pharmacists to anaesthetists and procurement managers – to discover how medicines are stored, prescribed, dispensed and administered. The aim was to establish what information was vital for staff to be able to give the medication safely. In this instance, the term 'user' does not extend to the patient, who has no direct interaction with the drug packaging. A patient receiving medication via injection is likely to be very ill and may not even be conscious.

Design guidance
Findings from the user study were then distilled into separate design points. Each formed an illustrated double-page spread in a publication intended to be a best practice guide capturing key graphic principles of designing safer packaging. Many of the points are overarching and relate to all forms of injectable medicines, such as emphasising the generic drug name rather than the brand name. However some are only applicable to a particular form of primary packaging (the vessel that holds the drug). For example, small cylindrical ampoules will have very different requirements to large flat infusion bags. Thus each packaging form has its own section relating to its information design.

In addition to the guidelines, the publication presents exemplary packaging designs, creating solutions that can be implemented in the near future. The use of emerging technologies (such as 2D data matrix codes) are also recommended, in order to prepare pharmaceutical companies for future requirements. The booklet is aimed at packaging designers and pharmaceutical firms, as well as being a reference guide for those involved in NHS procurement. It is due for publication by the NHS in November 2007.
Exemplar designs show best practice in information labelling on infusion bags and injectable medicines as depicted in the publication.
Older people in general make the safest drivers. However, one in six of all British road accidents that result in death or serious injury involves a driver over the age of 60. Despite this, most road safety campaigns target children and teenagers. While it is true that older, more experienced drivers are safer on the road than younger people under the age of 29, the natural effects of ageing on eyesight, hearing, dexterity, memory and mobility can have an impact on one’s ability to navigate busy roads. There is also very little information available that advises older drivers on how to keep driving safely.

This project was developed in partnership with vehicle manufacturer Toyota Motor Europe, as part of its strong commitment to help reduce traffic accidents and improve road safety. The objective was to create a road safety campaign aimed at older drivers which could be supported by a partner NGO (Non Governmental Organisation). Leading charity Help The Aged was enlisted to fulfil this role.

Researching relevant studies
The project began with extensive desk research into road accident statistics, relevant academic studies and past road safety campaigns, which have generally used shock tactics to get their message across. Interviews were carried out with a user group that included three drivers over the age of 70 with health problems and one fit younger driver.

A number of key campaign messages about older drivers emerged. For example, older people are a neglected group in terms of road safety. They are aware that driving skills start to deteriorate around the age of 55 but defer decisions on how to address this. Weather conditions, length of trip, mood and medication can all impinge on driving capability. Turning right and merging with traffic can lead to accidents. Medical professionals such as GPs and opticians have a greater influence over an older person’s decision to give up driving than family members.

These core issues formed the basis for a campaign that sought to advise older drivers rather than positioning them as victims. The emphasis was on campaign messages that affect all drivers, not just older drivers, and on a questioning rather than confrontational approach to encourage independent choices about safe driving.

Campaign takes shape
Through creative workshops, the campaign took shape visually with a giant question mark placed on its side above two round objects to resemble a car. The wheels are represented by objects such as pills, clocks, umbrellas, moons, weights and spectacle frames in order to highlight key issues contributing to difficult driving conditions such as the effects of medication on driving, the problems of driving long distances, in bad weather or bad light, and physical fitness. Roulette wheels were used to sum up the campaign generically, under the heading ‘Are you taking unnecessary risks when driving?’

A user forum was then held to test and validate the various design concepts in the ‘Keep driving safely’ series. The campaign will be rolled out this autumn with posters in Help The Aged shops, GP surgeries, pharmacies and community centres. Toyota Great Britain will also support the campaign via its nationally distributed magazine.

Keep driving safely
A campaign for older drivers
An ageing population means a significant rise in the number of older drivers but road safety campaigns mainly target the young. This project aims to deliver a campaign that makes older drivers think about how to stay safe.
Have you taken medication before getting behind the wheel?

Many prescribed drugs leave you feeling drowsy.
So talk to your doctor about the possible effects of your medication on your ability to drive.
Don't take risks on the road.
Keep driving safely.

Are you in need of a little pick-me-up?

Torrential rain can reduce vision in traffic.
Hazardous conditions can kill.
Don't take risks on the road.
Put off your journey until things brighten up.
Keep driving safely.

Do you really need to drive in bad light?

It's safer to drive in daylight than at night.
Don't take risks on the road. You can always go tomorrow.
Keep driving safely.

Can you still see clearly when driving?

If you're struggling to focus on the road,
get an eye test.
your optician can advise you on how safe you are to drive.
Don't take risks when driving.
Keep driving safely.

Are you in shape to drive?

Driving requires physical strength and mental alertness.
Don't take risks on the road.
Talk to your doctor about your fitness to drive and ask about the simple stretching exercises you can do to stay behind the wheel.
Keep driving safely.

Poster campaign highlights issues relating to safety for older drivers
Urban planners most frequently measure density by the number of ‘dwellings per hectare’. But this crude measure of the density of housing does not adequately reflect social and demographic change, with more fluid patterns of living and working, changing family structures, ageing populations, more people living alone and shifts in cultural identity. This project in partnership with a quartet of leading London architectural firms set out to explore alternative ways to measure urban density, which go beyond a prescriptive numerical representation towards a more animated description of densely planned urban living.

How we measure urban density is critical to making the city more inclusive. As Jan-Carlos Kucharek wrote in the RIBA Journal: “The definition of density and how it is measured is important, because interpretations can lead to wildly varying design approaches.” A particular issue concerns how planners address high-density urban environments around transport nodes. The project focused on this issue to investigate measures that bring such environments alive and make them destinations rather than dead, dormitory-like districts.

A dynamic city
The study began by looking at different aspects of London – its historic growth, urban planning controls, employment and development trends, and future plans for transport. A picture was built up of a dynamic, multicultural city straining to break free of conventional planning – a view reinforced by a programme of user consultations at the individual, community and local area scale, and a series of interviews with experts to relate the picture to national and global factors. London’s King’s Cross, set to become an international transport hub, was chosen as a research site to play out some of the emerging design scenarios.

The Metricity study resulted in four new principles for measuring urban density and supporting a greater animation of dense city development: Intensity, Amenity, Autonomy and Frequency. Intensity responds to the changing socio-economic dynamics of an area as a measure of density – and the design implications of its use relate to building typologies. How can we make better use of vertical stacking to create more flexible mixed use developments that combine living, working, retail and leisure?

Diversity in housing
Amenity responds to changing household structures and its design implications relate to providing a diversity of housing types with provision of services and open space. How can we provide better living space around transport nodes?

Autonomy responds to changing patterns of employment and its policy implications relate to land use, public consultation and zoning. How can we create developments that sustain local jobs and economic activity? Frequency responds to changing patterns of movement in the digital city and its policy implications relate to providing new technology infrastructures for a more mobile population.

Collectively, these new principles give architects and planners a new perspective on how we might measure urban density more imaginatively in the future. Without a change in approach, London will continue to measure new development with old, single-minded metrics. As Richard Rogers has written: “Open-mindedness has given way to single-mindedness and in its wake we are witnessing the destruction of the very idea of the inclusive city.”
Top: diagram shows four new principles to measure urban density. Above and left: Tokyo dwellers who supplemented the user study.
The resuscitation trolley, or ‘crash trolley’ as it is better known, is a familiar piece of mobile storage equipment on hospital wards. Imagine you’re in hospital, and your heart stops. A team of medics will rush to your assistance, and shock your heart, give you oxygen, drugs and so on. All the kit that they use is stored on a crash trolley.

The National Patient Safety Agency (NPSA) has long understood the role of good design in reducing medical errors. When, in 2005, the NPSA received figures showing that errors with poorly stocked resuscitation trolleys were adversely affecting patient outcomes, the agency decided to take action. As well as publishing articles targeting the poor design of trolleys, and challenging the industry to come up with better solutions, the NPSA approached the RCA with a brief to redesign the crash trolley to reduce these errors.

Rooted in understanding
The resulting project, called resus:station and now in its second year, is funded by the NPSA and the Helen Hamlyn Trust. A collaboration involving the designers with clinicians and clinical psychologists from St Mary’s Hospital in Paddington gave the right mix for a thorough design overhaul. This meant that the design work was rooted in a deeper understanding of the resuscitation process. The designers were able to observe videos of cardiac arrests, attend Advanced Life Support courses, interview different clinical staff and even observe actual resuscitation attempts.

This led to a great deal of concept work, with ideas being generated using co-design methods with St. Mary’s clinicians. These designs were gradually whittled down to one concept by getting input from a broader selection of clinicians from other hospitals and professional groups. This design was made into a working ‘phase one’ prototype.

Range of benefits
The new trolley has been designed with the system of resuscitation at its heart. Its features can be divided into ‘low-tech’ and ‘hi-tech’ categories. The low-tech benefits are that all the equipment is laid out openly to allow instant access. The trolley can also divide into three separate units, so each team member can have their own specialised kit beside them. Hi-tech features include a touch screen which helps the resuscitation team through the process, and which logs each event as it happens. The trolley uses Radio Frequency Identification (RFID) technology to keep track of all the equipment on the trolley.

The phase-one prototype has been tested in several different simulated resuscitation scenarios, in St Mary’s and elsewhere. User feedback has been positive. The design has also won a Medical Futures Innovation Award for Anaesthesia and Critical Care, a prestigious accolade in this field. Testing the trolley in situ led to suggestions for improvements. These have been incorporated into five ‘phase two’ prototypes to be built in partnership with a manufacturer, Bristol Maid, and given a more formal test study at St Mary’s Hospital in October 2007. The aim is to gather an evidence base to show how the new design can improve resuscitation.

As key steps are taken towards commercialising the concept, the entire project demonstrates that adopting a systems design approach rather than simply addressing a standalone piece of medical equipment leads to far more tangible innovation in patient safety.
Top: prototype resuscitation trolley during hospital trial.
Above and right: concept sketches and CAD drawings.
Densely populated cities can support transport infrastructures that are multi-modal. But in sparsely populated rural areas, transport options can be significantly reduced and rural communities face a serious loss of mobility. For older people in particular, this can have an adverse effect on being independent – a lack of transport can leave them cut off from other public services and isolated from family and friends.

Older people also face additional challenges in accessing rural transport. There can be problems in boarding and disembarking from buses and trains, and concerns about personal safety. Services can be intermittent and badly connected, with exposure to the weather, poor quality of roads and long walks at either end of the journey in order to reach the destination.

Field trip to Ireland
To explore the implications for digital service providers of supporting greater mobility and independence for older people in rural areas, Intel teamed up with the Royal College of Art to set up a new type of collaborative project. The research context and outcomes were directed by Helen Hamlyn Research Associate Merih Kunur, working in tandem with design scenarios generated by first year Vehicle Design Masters students at the RCA.

The Vehicle Design students were divided into five teams, each working on a different aspect of multi-generational mobility. A field trip to rural Ireland was undertaken and journeys were made by public transport and a local community bus service to experience the problems older people face firsthand. Interviews then followed to fully understand current shortcomings as well as lifestyle and mobility needs and aspirations.

The findings of the study were captured in a book that outlines four issues that impact on rural mobility: independence, identity, inter-generation and integration. Together, these headings address the many complex layers present in looking at rural infrastructure and older people.

Creating choice
The Independence theme looks at enabling personal independence and creating choice in the services and infrastructure around us. Identity investigates the strengthening of community identity and how this can interact with individual identity and relate to local and geographical context. Inter-generation looks at how mobility can aid interaction across the age spectrum in rural settings. Integration describes how transport services can be linked to other services such as healthcare and touches on social and economic integration. Each theme is illustrated in the book with design concepts from the Vehicle Design student teams – these visualise scenarios for change.

A number of key implications for digital service providers resulted from the study. Whilst mobility is often defined in terms of transport, it means much more. Mobility is a key determinant of quality of life for older people: it enables social connection and allows for autonomy and personal independence. A localised focus on mobility provision can have a really positive impact in rural areas. Equally, digital services that encourage independence for older people should be developed around their particular needs and local circumstances.
Above: design concepts by RCA Vehicle Design students illustrating four key issues arising from the study. Below: the research context in rural Ireland.
More than 14 million people in the UK can be termed 'digitally excluded' and the majority of these are older people. Some have never had access to a computer and many are never likely to. Many older people cannot justify the costs of buying a computer or the complications of learning to use one. This means that they are missing out on the benefits of being connected to the internet in terms of information and services. Perhaps the greatest missed opportunity is in the different modes of communication that broadband offers at reduced or no cost. This could be of specific benefit to many older people who live some distance from family and friends but wish to feel more connected. This project with BT set out to explore access to broadband that is thoughtful and creative and all about promoting independent living and choice – and not simply about providing hard-wired telecare solutions.

**Vendor design concepts**
Six lead users aged over 60 were identified and interviewed in their homes. This group represented a mix in terms of age, gender, physical proximity to their family, living alone or with a partner, and urban and rural location. Six tester design concepts that visualised different ways in which the internet could be accessed without using a standard computer terminal were developed so that users could visualise potential benefits and react to new ideas. These concepts ranged from a piggy bank that displays your credit or debit card balance to a simplified keyboard that groups keys alphabetically and into logical clusters.

This research highlighted a number of issues in terms of who the outcomes should be aimed at and what technology should be used. In its latter stages, the project focused on the over-70s for whom cost is especially important, as is ergonomics of use such as tactility of buttons and easy-to-read displays. This group wanted any new devices to build on familiar interfaces and any benefits to be self-evident.

**Two phones in one**
The main design outcome of the study, the TwoTone Phone, addresses these issues. It is effectively two phones in one unit. The white face acts as a normal, cordless house phone but the black face is a Voice Over Internet Protocol (VoIP) phone that utilises existing VoIP services to allow calls to be made over a broadband connection. Turning over the phone activates its different modes: the VoIP mode does not have a screen but simply has six large buttons on which users can write the names of their contacts. The buttons turn orange if the person is online and flash when that person calls, with the added benefit of indicating who is available to chat.

Whilst designed with the older person in mind, the concept is aimed at the mainstream market. Users can connect the phone to their television in order to make video calls and the base unit also acts as a wireless router. Although the TwoTone Phone has a large number of functions, these are presented in a way that does not intimidate or confuse. The user can choose the level of functionality and adapt the phone to suit their needs. For the digitally excluded, it provides a simple way to communicate freely, using previously unattainable broadband services.
Above: main components as listed in user manual. Below: prototype showing two sides to the device. Left: older users involved in the study.
As the cost of surgical procedures rise, manufacturers and health service providers alike are looking afresh at the design of surgical instruments, many of which have not been redesigned for decades. Such tools do not reflect advances in new materials, new technologies, ergonomic practice or surgical technique. In some cases, instruments cannot perform the functions they were originally designed for, forcing the surgeon to improvise in the operating theatre.

This project in partnership with orthopaedic systems company DePuy, part of Johnson & Johnson, set out to generate new design ideas against the background of rising cost pressures and changes in surgical practice and legislation. The market for orthopaedic surgery is growing by 12 per cent a year but the cost of instrumentation pushes up the cost of any surgical procedure.

The study focused on user need and application as a route to innovation. Both surgeon and patient were considered as primary users since the design of the surgical tools affects the surgeon’s skill, stress level and precision as well as patient comfort and recovery time. The team of supporting staff and scrub nurses were also included since they transport, prepare, store, handle and remove the tools and have to be considered as important secondary users.

**Workshops with surgeons**

Workshops were held with surgeons in the UK, USA and India to tap into their tacit knowledge and learn about what they want and expect from their instruments. This approach was supplemented with hospital visits to see live surgery, carry out individual interviews with surgical staff and gain firsthand experience of using the tools on ‘sawbone’ models. Some key design criteria emerged from the study. Each surgeon has their own way of performing surgery so tools would need to compensate for this. Cultural differences and the relationship between nurses and surgeon had to be considered, as the tools are subject to human error. Multiple ergonomic factors come into play and affect efficiency of assembly, use and disposal. More implicit aspirations were also uncovered. The feeling and look of tools have a direct influence on the surgeon’s confidence and frame of mind – and the function can allow them to achieve better accuracy and efficiency, an important factor when surgeons look to improve on previous operating records.

**Blueprint for redesign**

These criteria were exemplified in the design of two surgical tools that use improvements in plastics technology to cut manufacturing costs and time spent in the operating room. The tools can be customised to the surgeon’s individual way of working; they improve accuracy and simplify the controls so that the process involves less risk to the patient. Preparation and disposal were also addressed as the instruments come preassembled, have fewer working parts and can be made from disposable and recyclable materials. Both tools allow for one-handed operation and enable surgeon and nurse to work side-by-side.

Extensive feedback from surgeons and nurses led to the design of second-generation tools, which then went into cadaver trials. The design methodology employed here is set to become a blueprint for the redesign of more surgical tools at DePuy, adding value to operating procedures, enhancing surgeon comfort and improving patient safety.
Views of prototype surgery instruments
In the traditional shop-counter pharmacy, medicine and advice are dispensed in a clinical, professional and often impersonal environment. But as patient aspirations rise in line with a growth in alternative medicine and online diagnosis, a paradigm shift in how pharmacies work is underway. In particular, the relationship between the pharmacist and the patient is undergoing change, as health is increasingly viewed as being less about curing sickness and more about maintaining well-being. Personal autonomy in managing health is thus balanced against reliance on a medical authority figure.

Within this changing context, Lloydspharmacy, and its parent company Celesio, commissioned a study to re-examine the role of the pharmacist, understand more about the voice of the patient and envisage potential pharmacies based on a social model of interaction.

**Research through drawing**

To achieve its objective, the research adopted an imaginative user-led approach. The medium of drawing was used to encourage people to express their aspirations for their health and their responses to pharmacy through sketching. At the outset, four Saul Steinberg illustrations were used as ice-breakers to visualise different types of pharmacist-patient relationship. Six users, ranging in age, gender and health, were then asked to respond to a series of questions by drawing on a giant pad. The entire process was video-recorded, resulting in visual transcripts that could be analysed by the researcher. In a second round of user consultation, the patient group was then asked to comment on a series of provocative design proposals aimed at visualising expectations of what a future pharmacy could offer.

**Five future pharmacies**

Five potential pharmacy scenarios resulted from the project, each describing a new type of patient-pharmacist relationship. The ‘Open Pharmacy’ serves a local community of people who are not referred to as ‘patients’ or ‘customers’ but as ‘members’. Each member recognises that their personal health forms a small but significant part of the community’s health and they can interact with other members within a circle of care, sharing knowledge and ideas. This model bears the tagline ‘Your Health, Our Health’.

The ‘Life Pharmacy’ – bearing the tagline ‘Health is a Journey’ – is for people concerned with their well-being. Dispensing medication is only a small part of its business. Contact with the pharmacy is sustained and ongoing rather than intermittent in response to illness. The ‘Pro-Scribe Pharmacy’ elevates the professional status of the pharmacist, who emerged in the research as under-valued. It is known for its no-nonsense advice and its name refers to ‘Proscription’ – a formal (but non-legal) agreement between the pharmacist and the patient that they will not undertake activities that will damage their health.

The ‘Self-Health Pharmacy’ (‘Many Advisers. One Expert. You’) considers the patient to be their own health expert, affording customers more autonomy and responding to the rise in self-help. Finally, ‘Coffee + Pharmacy’ is a coffee shop with an en-suite pharmacy. This represents a form of ‘undercover healthcare’ for people who have an aversion to the constant reminders that they are ill. The wait for their prescription can be enjoyed while reading the paper and sipping a latte.

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**Potential pharmacies**

Investigating the future of the pharmacy

As more people seek to actively manage their health, the traditional relationship between the pharmacist and the patient is changing. This study proposes new pharmacies based on a social model of interaction.
Left: brand identities for five future pharmacy scenarios. Above: the user group adopted drawing as a research medium.
Bathrooms for older people typically focus on creating a safe, sterile environment where grab rails and anti-slip materials are prevalent. Far less attention is paid to achieving a sense of luxury or indulgence that is rejuvenating. The bathroom is a space where we all beautify ourselves regardless of age or gender. The washbasin and mirror area needs to perform beyond the functionality of hygiene to become the arena where we can transform ourselves and create the image we want to show to the rest of the world.

For consumers over 50, who typically hold more disposable income than any other age group and are a burgeoning market for bathroom manufacturers, the desire to pamper and groom becomes increasingly important. This is true for both men and women, whether living alone or in a relationship, working or retired. There are few washbasin solutions that fully integrate lighting, water, storage and the mirror, and fewer still that address our aspirations as we age. This project with Ideal Standard looked at the furniture in the bathroom in the context of ‘beauty pampering’ for an ageing consumer demographic.

History of grooming
Early research looked at how we use the bathroom and at the ergonomics of washing, reaching and relaxing. The history of grooming and beauty, and related product typologies such as the bedroom dressing table, were investigated. New production technologies and materials were studied and observational research at a beauty spa looked at grooming in a professional context.

Eleven people representing a mix of age, gender, ethnicity, personal circumstance and family structure were selected as core users to inform and inspire the design approach. They were filmed and interviewed in their own space or home. All had a distinctive relationship with the subject – the group included a dancer and an actress who have a professional obligation to beauty and appearance and could be described as expert or ‘extreme’ users.

Five key areas for design innovation emerged from the user research. As well as demanding improvements in terms of lighting, storage and the mirror, because we all like to look at ourselves from different angles, users also commented that they wanted a design that gives a feeling of permanence and structure to their routine and enhances their relationship with water.

Floating from wall
The final concept incorporates a sculptural basin, three mirrors, appropriate lighting, seating and storage. The basin ‘floats’ away from the wall, removing the need for mastic. The main mirror incorporates a soft, glowing band of light that ‘washes’ an equal amount of light across the face. A handheld mirror detaches from this, allowing the back and side of the head to be seen. An adjustable tap allows users to wash their hair. The shape of the basin includes a horizontal surface to place things on, as well as pullout storage. The stool incorporates a digital weighing scale that gives a readout on the mirror when this feature is switched on.

The study resulted in a full-sized prototype that is both indulgent and functional, and inclusive of older people rather than exclusively for them. The prototype is set to be unveiled by Ideal Standard this autumn at a special press event at the 100% Design show in London.
Views of the integrated mirror, basin and tap: prototyping a sense of luxury and indulgence
Every day, it is estimated that 120 people in the UK lose their sight through eye disease or injury. Whilst many people think of blindness as complete loss of sight, only 4 per cent of people who are registered blind see nothing at all. The other 96 per cent have some vision and this varies enormously. For individuals with low vision to live independently, perhaps the most important change that can be made to their homes is to improve the lighting.

Light is essential to sight – and sight is important for independence.

Lighting can make a huge difference in the home by enhancing contrast and improving the eye’s ability to discern print and objects. This becomes a real issue as we get older – people aged over 60 need three times more light than people under 20. But despite the critical importance of light to people with sight loss, very few of the lighting solutions currently on the market address their needs. Standard ceiling fixtures and wall switches exclude the very people who need lighting that is well designed and easy to direct.

Common eye conditions
The project, undertaken in partnership with a leading sight loss charity, started by looking at four common eye conditions: glaucoma, cataracts, diabetic retinopathy and macular degeneration. Five users with sight loss were visited in their homes and video interviews were carried out to understand their abilities and aspirations. To support their everyday lives, these residents wanted lighting that aids navigation, creates mood, is portable, and is easy to install and control and adapt to existing furniture and fittings.

Experts in lighting technology and occupational therapists who specify lighting were also consulted and a lighting installer for a local council was shadowed on rounds to residents’ homes. A wider spectrum of people was consulted through online discussion groups and a user forum was convened to test prototypes and discuss the functionality of the design concepts at the conclusion of the project.

Three new concepts
The study resulted in three concept directions that share the language of the domestic and represent a departure from existing lighting products on the market. ‘Tack’ is a small, low cost, self-powered light source that can be placed around the home to aid orientation and navigation. A line of these tiny objects could be located around doorframes or on staircases to help highlight points of potential danger. ‘Frame’ explores overall illumination and ambience within a room, offering a dimmable high-illumination object that can be hung on the wall like a picture frame. The lighting levels and colour can be adjusted to suit individual mood or preference. ‘Candle’ is a portable, handheld light which ‘docks’ for re-charging like a mobile phone and can be used as a task light or to create atmosphere.

Whilst the visually impaired market is considerable – in the UK there are over two million people with significant sight loss, and each year 65,000 people are diagnosed with low vision – the concepts also have relevance to mainstream home interiors. The ideas will now be developed in a second year of research with the aim to commercially produce new lighting and provide better lighting support for people living with sight loss.
Right and below: concept sketches for three new lighting products, Tack, Frame and Candle. Bottom: prototypes in context of use. Left: images of users from visual impairment house visits.
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 Helen Hamlyn 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.
Paul Clarke is an architectural designer, researcher and filmmaker with a Masters degree in Architecture from the Royal College of Art. He has an avid interest in the extraordinary and unforeseen implications of future technologies, as well as socio-economic and demographic change. Paul suggests a way of understanding future worlds, the psychologies of society and its inhabitants. Narrative futurology, a critical design approach, provides a creative tool to explore alternative horizons. JG Ballard once described his process and its outcomes as ‘creepy truths’ and he has exhibited his work at the Architecture Foundation’s ‘Best in show’ in 2006. Paul has also worked for architecture practice Project Orange, working on private residences, boutique hotels, bars and restaurants.

Contact:
t: +44 (0)7789 916137
p.clarke@onlyforwardarchitecture.com
www.onlyforwardarchitecture.com

Sally Halls

Fully trained as an engineer, Sally Halls graduated with a Masters in Mechanical Engineering at Bristol University. She then went on to study Industrial Design Engineering at the Royal College of Art, where she developed an interest in medical design. Her graduation project looked at ways in which incubators could be humanised to allow more contact between mother and child. This received a Dyson development grant and a Design for our Future Selves award for health and patient safety. Since graduation Sally has worked at the Helen Hamlyn Centre, where she was involved in the development of the Resus:station, which recently received two Medical Futures Innovation Awards for Best Medical Device and Overall Winner in the Anaesthesia and Critical Care category.

Contact:
t: +44(0)7734 430164
sally.halls@rca.ac.uk

Matthew Harrison

Matthew has an MA (2004) in Industrial Design Engineering from the Royal College of Art, and an MEng (2002) in Mechanical Engineering from Imperial College London. Since graduating from the RCA, he has run two inclusive design research projects within the Helen Hamlyn Centre. The first was an investigation into office lighting futures for the ageing workforce in partnership with Thorn Lighting. This resulted in a lighting control interface allowing office workers to control the lighting to suit their needs according to their task, mood or time of day. The second project is in partnership with BT. Matthew also runs an industrial design studio based in London with fellow RCA graduate Cian Plumbe.

Contact:
t: +44(0)7971 965276
matt@studiohead.com
www.studiohead.com

Paul John-Baptiste

Paul studied for a BA in Graphic Design at Central Saint Martins College of Art and Design. Whilst there he developed a keen interest in typography and it was through this interest that he first became involved with inclusive design, investigating ways of make the printed word more accessible to sufferers of the eye condition Age Related Macular Degeneration (ARMD). After completing his BA, Paul went on to study for an MA in Communication Art and Design at the Royal College of Art. Paul again furthered his work in inclusive design, through defining a specification for a PC-based system to help people with ARMD to read and write. Paul now works as an independent graphic designer.

Contact:
t: +44 (0)7985 428941
pauljb@hotmail.com
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 she was also shortlisted for British Female Inventor of the Year 2006. In addition to being a Helen Hamlyn Research Associate, Maja has provided consulting services to several companies including healthcare and medical devices consultancy Pearson Matthews.

Contact:

| t: +44 (0)7976 515765 |
| maja.kecman@alumni.rca.ac.uk |

James King studied graphic design at Central Saint Martins (where he now teaches) and then went on to graduate from Design Interactions at the RCA. During his Masters, he became interested in speculating on the social impact of emerging technologies by designing with them as if they were ordinary and everyday. One such project was a slice of lab-grown meat, made to look as tasty as possible. Currently, James is developing a practice that seeks to integrate futures research with design in order to facilitate the debate on progress. The Potential Pharmacies project has provided him with a great opportunity to apply this way of working.

Contact:

| t: +44 (0)7796 850638 |
| mail@james-king.net |
| www.james-king.net |

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 Centre on the Mobilicity project, in collaboration with Capoco Design, and currently on a study of the future ambulance. 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.

Contact:

| t: +44 (0)7785 715070 |
| merih.kunur@rca.ac.uk |

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.

Contact:

| t: +44 (0)7799 388087 |
| chris.mcginley@rca.ac.uk |
Cian Plumbe

Cian completed his first studies at the University of Bristol where he earned a Masters degree in Mechanical Engineering. After graduation, his desire to work more directly at the interface between people and objects led him to the Royal College of Art, from which he graduated in 2004 with an MA in Industrial Design Engineering. He has worked for acclaimed design practice Ora-Ito in Paris, as a furniture designer in London, and as a freelance designer for clients such as Tate Modern, MoMA and A1 Racing. Cian has since founded a design studio called Studiohead that he runs with fellow RCA graduate Matthew Harrison.

Contact:
t: +44 (0)7854 049783
cian@studiohead.com
www.studiohead.com

Tomek Rygalik

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.

Contact:
t: +44 (0)7815 087582
trygalik@yahoo.com
www.tomekrygalik.com

Lisa Stroux

Lisa Stroux has a background in design as well as engineering. She completed her BSc at the Technical University Delft in The Netherlands and graduated from the Royal College of Art with an MA in Industrial Design Engineering (IDE) in 2006. Since then she has been working freelance for several design consultancies including Pearson Matthews and Ross Lovegrove. Lisa joined the Helen Hamlyn Centre earlier this year as research associate. Apart from design work, Lisa has been involved in the IDE department at the RCA as a visiting tutor. She is also a consulting design fellow at Imperial College and is pursuing commercial opportunities for her graduation project within the RCA’s Selected Works scheme.

Contact:
t: +44 (0)7851 606157
lisa.stroux@rca.ac.uk

Jonathan West

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 Centre where, as a research associate, he has provided GlaxoSmithKline with design guidance on its pharmaceutical packs – directly influencing the European pack style. He is currently working on a new resuscitation trolley for the National Patient Safety Agency.

Contact:
t: +44(0)7812 173 812
jcdwest@yahoo.com
Why external partners join the Helen Hamlyn Research Associates Programme

“Working with the research programme has provided us with a stimulating and thought provoking insight into a key area of our work as architects and urban planners. The completed report will be invaluable in furthering our discussions with both government bodies and clients.”

Child Graddon Lewis Architects

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

Peabody Trust

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

BAA

“Working with the Helen Hamlyn Research Associate is producing the innovative ideas and strong design concepts we require to address the lighting needs of people with sight loss.”

Thomas Pocklington Trust

“Besides working with highly creative designers the great thing about working with the Research Associate programme is the insights gained through the in-depth user research which is not often part of our process at Ideal Standard.”

Ideal Standard

“We were inspired by a new way of thinking”

British Heart Foundation

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

Omron Japan
The Helen Hamlyn Centre would like to thank the following Royal College of Art departments which hosted projects in 2006-7:

**Architecture**
The Department of Architecture aims to combine experiment with plausibility. With inspiration drawn from the city, it attempts to tune in to urban desire and anticipate the next major architectural moves. It is not interested in designing spaces that simply evolve the norms of style but work in a dynamic way with what happens in them. Its medium is not so much bricks and mortar but space itself. It considers the work of the architect as spanning between the hard materiality of building and the reprogramming of existing space.

*Head of Department:* Professor Nigel Coates

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**Design Products**
The Department of Design Products does not embrace any one design ideology or favour a specific style, nor does it train towards any one of the design trades. Its aim is to create a design culture engaged equally in ongoing debate on all aspects of design, including social, ecological and technological. It seeks to generate a culture that thrives on new ideas, new ways of doing things and new areas of exploration. It encourages experimentation and risk-taking.

*Head of Department:* Professor Ron Arad

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**Communication Art and Design**
The Department of Communication Art & Design reflects the multidisciplinary nature of contemporary communications and is committed to retaining a balance between digital media and traditional craft-based media. It provides a creative and energetic working environment for the exploration, development and cross-fertilisation of ideas that includes strong emphasis on the ethical purpose of communications within contemporary society.

*Head of Department:* Professor Dan Fern

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**Design Interactions**
The Department of Design Interactions is not simply concerned with acquiring or refining a specific set of skills. Essentially, its interest is in the social, cultural and ethical consequences of emerging technologies, and this means asking probing questions through design. To this end, the Department considers the implications as well as the applications of new technologies, and seeks fresh approaches to interaction design that are meaningful and relevant to our lives both now and in the future.

*Head of Department:* Professor Anthony Dunne

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**Industrial Design Engineering**
The Department of Industrial Design Engineering has the philosophy of the Enlightenment: creativity, design and science in harmony. It is a unique ‘hub’ discipline, from which creative multidisciplinary projects are inspired, led or joined and then executed. A joint course with Imperial College, it believes in the benefits to society of design and promotes its graduates to work at the centre of complex, demanding projects, juggling creatively in teams, to achieve great ideas, designs and successful products.

*Head of Department:* Professor Tom Barker

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**Vehicle Design**
The Department of Vehicle Design seeks to pioneer new approaches for our mobile futures. Central to its work is the understanding of the broader issues of vehicle design necessary to optimise opportunities for mobility, including accessibility, aerodynamics, environmental impact, ergonomics, legislation, materials, production, safety and technology, as well as aesthetic principles.

*Head of Department:* Professor Dale Harrow
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, Royal College of Art Helen Hamlyn Centre. email: rama.gheerawo@rca.ac.uk