

Coming of Age – An Inclusive Design Resource Comes to Fruition

Colette Nicolle

**Ergonomics and Safety Research Institute (ESRI)
Loughborough University, UK
c.a.nicolle@lboro.ac.uk**

Susan Hewer

**Royal Society for the encouragement of Arts, Manufactures
and Commerce (RSA), UK
Susan.hewer@rsa.org.uk**

Cherie Lebbon

**London South Bank University, UK
cherie@cherielebbon.demon.co.uk**

**Cheryl Kingsland
Designfocus**

Keywords: Inclusive Design; Resource; Toolkit; Website

Abstract

In July 2004, the Royal Society for the encouragement of Arts, Manufactures and Commerce (RSA) launched a unique tool to aid everyone interested in inclusive design – an informative and user-friendly, accessible website: www.theRSA.org.uk/inclusivedesign.

This resource came to fruition following early stages of development undertaken by the i~design project team (Helen Hamlyn Research Centre, Design Council, University of Cambridge and the London Institute) funded by the EPSRC. The RSA then took on and funded the implementation under the aegis of an international steering committee and working with Wire Design on the technical and visual development.

This paper will map the painstaking steps that led to the achievement of this resource, making it as accessible, inclusive and usable as possible – always putting the user at the centre of each stage. It will indicate what the Steering Committee aimed to achieve with the resource and what the future plans are for its further development and dissemination. Feedback on the resource is very welcome and delegates to Include are invited to provide this to the RSA.

Introduction

The need for a fully accessible, user-friendly and multi-disciplinary resource to cover the many different aspects and facets of inclusive design has become more and more apparent. This urgency runs parallel to other significant developments - for example the new British Standard on Managing Inclusive Design (BS 7000-6), CEN/CENELEC Guide 6, and initiatives from the European Commission such as the European Design for eAccessibility Network (EDeAN).

The necessity was recognised particularly by the academic community. For students to consider principles of inclusive design in their work or take account of the need to involve users in every stage of the design process, not only expert guidance from tutors is necessary, but also easy access to resource and reference material is essential. The IDCnet project also identified the need for source materials in order that tutors and lecturers were not forced to 're-invent the wheel' (Nicolle et al, 2005). They found that there is a great interest in sharing materials and practical exercises in both issues related to Design for All in general, and also specific areas related to information and communication technologies, the focus of IDCnet.

Key reference works have emerged in the last few years, including for, example, UserFit (Poulson et al, 1996), Inclusive Design: design for the whole population (Clarkson et al, 2003), and the Universal Design Handbook (Preiser, 2001). The Design Council has also developed a set of useful case studies, stories and examples of inclusively designed products, services and environments which can be found on its website at http://www.designcouncil.info/webdav/servlet/XRM?Page/@id=6014&Session/@id=D_DHfihn7g2l8afJ2RkTVy&Section/@id=1068. The need still remained, however, for a tool which would not only benefit the academic community but also professional designers and the business community.

In 1999 the i-design project team (Helen Hamlyn Research Centre, the Design Council, University of Cambridge and the London Institute), funded by the EPSRC, took the initial steps towards building the first web-based resource. The essential idea behind the resource was to produce a practical tool to aid everyone - an informative, user-friendly, accessible website. As well as the contextual information that the site was to provide, the i-design team was rigorous in their methodology of involving users from the start of the project and making the process as iterative as possible.

The design of the structure of the website was informed through research and testing. This was achieved by bringing together an expert user group of researchers, design managers, young designers and design educators, so that ideas around how to relate the content layout to designer's processes could be tested. Also, by working with designers as part of this process, an understanding could be achieved regarding how they wanted to access information that supported design decision making. As part of this process they explored the types of information available and ways to categorise and sort it. This provided the website designers with direction for the structure of the database and the layers of information as they are accessed on the website.

The prototype was tested twice. The initial version was trialled at the INCLUDE 2003 conference held at the Royal College of Art, where delegates were given an introduction to the site and left to explore the content. Researchers observed the

participants noting aspects of behaviour; participants also wrote comments about usability and content. This information provided guidance on aspects that would make the site more user friendly. Some participants who had specific expertise and interest in the project were approached to become members of the virtual expert panel.

After the website designers had responded to the feedback on the first prototype a second test was carried out. This was specifically a test of the usability of the second version. Design experts and students following a set exercise responding to a questionnaire that accompanied the test. The same test was sent to the virtual user expert panel which, on the whole, matched the responses from the other groups and contributed further comments based on their areas of expertise.

After these three levels of testing the designers and researchers were confident that the site was working in a way that met the needs of all of the groups of potential users.

From i~design to RSA

At the end of the i~design project – and with it the end of the funding from the EPSRC – the website was at the final development stage and all that was needed was an organisation to take on the final implementation to give the resource its final push into the world. It was at that point that the RSA became directly involved. The RSA has been influential in its promotion of inclusive design, through its student design awards scheme since the mid 1980s. The RSA also has a history and tradition of initiating projects and passing them on to an appropriate organisation to continue and develop. This time the RSA picked up the results of the i~design project through the first call for project ideas from its 22,000 Fellows. The RSA recognised a unique opportunity to produce a resource which would have synergy with its existing design work as well as with its new Society-wide five-point agenda listed below:

- Encouraging Enterprise
- Working Towards a Zero Waste Society
- Fostering Resilient Communities
- Developing a Capable Population
- Advancing Global Citizenship

Thus the RSA came to fund the final chapter by bringing this Resource to fruition. Under the Chairmanship of Andrew Summers CMG, a steering committee was formed with a wider virtual group of international members. Following the rigorous example set by the original i~design team, the Steering Committee set themselves the following challenges:

- To produce a contemporary format for the website which reflected the working methods of design students and professionals.

Telephone discussions were held with tutors from a variety of design courses to gain an understanding of current teaching and learning practice and research methods and resources familiar to students. Graduates from the Royal College of Art, who participated in the Helen Hamlyn Research Associates Programme, were asked to give feedback on the prototype for the resource produced for the i~design project especially on the usability of the interface and content structure. The prototype had been available for the

Research Associate's to work with as part of the tools available for their personal projects. This had given them the opportunity to experiment with the resource and give more constructive comments based on applied use of the tool and its content

- To make the information meet the needs of not only academics but also design professionals and industry.

The Virtual User Group was asked to comment on the resource and feedback was also sought from design practitioners, including those less familiar with inclusive design. In addition, whilst developing the site's content management system, Wire Design regularly discussed issues related to the site's functionality and ease of use with the project's steering group.

- To ensure, by working with a variety of users, that the site was as accessible and user-friendly as possible.

Informal trials were first conducted by the Virtual User Group. These were followed by user trials with 6 home-based users with various impairments (blind, visually impaired, arthritic, spinal/head injury, Cerebral Palsy, and learning difficulties), using their own computers and appropriate software or hardware adaptations, and focusing on the basic functionality and accessibility of the site. A number of students participating in the RSA Inclusive Worlds project, a key audience and first significant group of people to utilise the resource, were also asked to comment on their experience of using the site. In addition the resource was rigorously tested through a variety of accessibility software.

- To launch the resource within six months

The Resource was launched by Ross Lovegrove, RDI, at an event held at the RSA at the end of June 2004.

Final Format


The website provides access to over 1000 pages containing the strategies, tools and methods to assist in the development and implementation of design solutions that put people, of all ages and abilities, at the centre of the design process (See Figure 1 below). It draws together key contextual case studies and information, examples of products, services, buildings, business practice and inspirational design concepts.

RSA [Low graphic version](#) Search

Inclusive Design Welcome to Inclusive Design

- HOME ▶
- ABOUT THIS RESOURCE ▶
- INCLUSIVE DESIGN OVERVIEW ▶
- EXAMPLES ▶
- STRATEGIES & MODELS ▶
- METHODS & TOOLS ▶
- EXPERTISE & RESOURCES ▶
- GLOSSARY OF TERMS ▶
- ABOUT US ▶

Inclusive design is about ensuring that environments, products, services and interfaces work for people of all ages and abilities. Many people are interested in this, but there is no ready source of information, methods, tools and examples to help them achieve it. This website aims to plug that gap by bringing together new and existing information and making it accessible via a single interface.



This website is for design students and their tutors, professional designers, design managers and policy makers. It has been developed to introduce newcomers to key concepts, information and design/research methods. And also to support practitioners in undertaking individual projects and gathering together the information, examples and inspirational material they may need.

The aim is to make key information on inclusive design readily available to students, their tutors, and design professionals, and encourage them to build up their own collection of relevant information, tools and techniques. The website gives speedy access to information that is already available on the Internet, but perhaps not easy to locate, along with material that is no longer in print.

[wireinternet.co.uk](#) | [Home page](#) | [Accessibility](#) | [Low graphic](#) | [Legal](#) | [Contact us](#) | [Top of page](#)

Figure 1
Home Page of RSA Inclusive Design Resource

The resource has been designed and developed to be as accessible as possible for all users. A person with sight problems may wish to use the 'low graphic version' of the site and, by using the text options provided – rather than using the facilities within the browser – can also easily change the text size, font style and colour of text and background.

The website consists of a series of 'cards', each of which contains a short description of a linked PDF and/or Internet resource (Figure 2). Cards can be browsed and marked for collection as a set, which can then be printed out. Linked documents can also be downloaded and printed, as required. The cards are organised into five sections, as listed below, and further broken down into subsections. A free-text search facility also allows for browsing by keyword, title or author.

- Overview: key facts and figures and other material to support and explain inclusive design
- Examples: of best business practice, products, services, buildings and inspirational design concepts (see Figure 2 below for an extract from the cards related to inclusively designed environments and products)
- Strategies and models: for implementing inclusive design
- Methods and tools: for understanding user needs and aspirations and developing design solutions around them
- Expertise and resources: to support design decision-making.

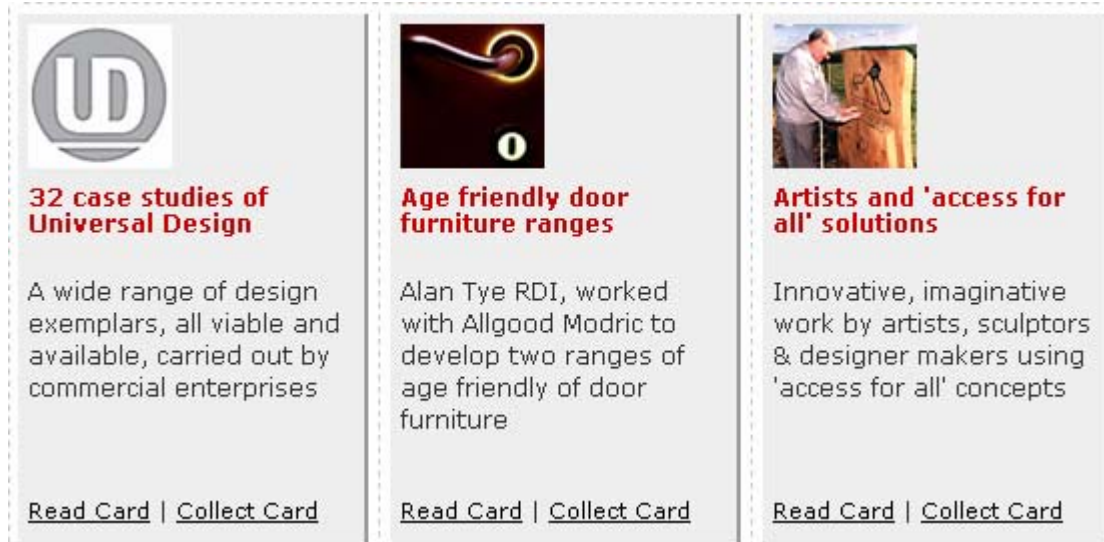


Figure 2
Extract from Environments and Products

Needs of Education

The need for education to recognise the value of the inclusive design philosophy has never been more urgent. The RSA project, Inclusive Worlds, asks students from a range of disciplines to consider how their designs could benefit from the philosophy and also from initial user research. The thinking behind the resource is that it will be an aid for projects such as this and for cross-disciplinary working. International workshops held under the auspices of the GENIE Network have indicated the enthusiasm and success of setting projects for students with an inclusive agenda. This was successfully demonstrated at the final GENIE workshop in Helsinki (2001), which gave students the opportunity to discuss ideas for new design solutions with older persons. The methods and techniques piloted at that workshop also emphasised that key knowledge and skills should include not only an understanding of the general principles of inclusive design, but also knowing how to put those principles into practice. (Dekker et al, 2004)

Evaluation and Next Steps

Since its launch, the RSA Inclusive Design Resource has received good press and has appeared as number one in Google website ratings for Inclusive Design Resource. During autumn 2004 the site received on average 2,800 visits a month. However, just as crucial as the original user research, the Steering Committee is adamant about the need for a rigorous evaluation of the website. The following points have been identified:

- * Take up and usage
- * Effectiveness
- * Accessibility to Users
- * Provision of up-to-date information
- * Relevance for a range of different constituencies
- * International relevance

The material is currently being updated and refreshed, and we also intend to include additional functionality such as user registration and project storage. As well as evaluation strategies already in place, the RSA would value input from this audience via the 'Contact Us' link on the site which will allow us to further develop and improve both the content and the interface with the user.

References

Clarkson, J., Keates, S. Lebbon, C. and Coleman, R. (editors). (2003). *Inclusive Design: design for the whole population*. London: Springer:Verlag.

Dekker, M., Nicolle, C., and Molenbroek, J. (2004). GENIE workshop for curricula with user involvement and inclusive design. *Gerontechnology* 2004; Vol. 3, No. 1.

European Design for All e-Accessibility Network (EDeAN). Available at <http://www.e-accessibility.org>

Gerontechnology Education Network in Europe (GENIE). Available at <http://www.gerontechnology.info/genie/>

Nicolle, C., Tahkokallio, P. Darzentas, J. Strobbe, C. and Velasco, C. A. (2005). Curricula recommendations – an update from the Inclusive Design Curriculum Network. In *Proceedings of Include 2005*, London, Royal College of Art, 5-9 April 2005.

Poulson, D., Ashby, M. and Richardson, S. (editors) (1996). *USERfit—A Practical Handbook on User-Centred Design for Assistive Technology* (Brussels, Luxemburg: ECSC–EC–EAEC).

Preiser, Wolfgang F.E. (editor) (2001). *Universal Design Handbook*. McGraw Hill.

RSA, Inclusive Design Resource. Available at www.theRSA.org.uk/inclusivedesign