
Editorial

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Biographical notes: Henri Christiaans holds an MSc Degree in Psychology from the University of Amsterdam and a PhD Degree in Design Engineering from Delft University of Technology. He is an Associate Professor in the Applied Ergonomics in Design group of the School of Industrial design Engineering. He is head of the Master Program Integrated Product Design at this school. Furthermore, he is program coordinator of the Master Program 'Retail and Interior Design' at the Piet Zwart Institute of University of Rotterdam. His research focus is on design methodology regarding the cognitive aspects of product design and use.

Paulien M. Herder holds an MSc Degree in Chemical Engineering (1994) and a PhD Degree in Systems Engineering (1999), both from Delft University of Technology. She is an Associate Professor in the Energy and Industry group at the Department of Technology, Policy and Management and she is the Executive Director and Sub-programme Leader (Design of Flexible Infrastructures) within a large, international research programme on Next Generation Infrastructures (NGInfra). Her research focuses on the flexible design and on design processes of large-scale networked systems, mainly in the energy and industrial sectors.

Ina T. Klaasen holds a PhD Degree in Urban Design and Planning and is an Associate Professor of Spatial Planning at the Faculty of Architecture at the Delft University of Technology. Besides pursuing an academic career she has been a member of the Provincial Council of North-Holland and an advisor to

the Municipality of Amsterdam. She is an Editor of the *Journal of Design Research* and Initiator and Editor of the *Series Design/Science/Planning*.

This is the final issue of Volume 5 of the *Journal of Design Research*. Four more issues are planned for 2007, together forming Volume 6. This way we compensate for the year 2006 when 'moving house' from one publisher to another caused some logistics problems, resulting in only two issues last year.

The design themes of the papers in this issue vary widely, from 'retractable hinges' to 'urban renewal'. What these papers have in common though, is that they all focus on the design process and on methods used in this process – be it different methods, used in different stages of the process, from the development of theoretical knowledge to the *ex post* evaluation of design products.

The first and the last contributions, 'Ecodesign and Bionics applied to the development of retractable hinges', by Kindlein et al. and 'Sustainable urban regeneration and floor plans of housing', by Stouten, both concern sustainability. The former points out that sustainable development requires designers to assume a new approach when conceiving a product concept. Through the application of ecodesign techniques coupled with the concepts of bionics research, the viability is demonstrated of redesigning an existing product in such a way that its environmental impact is reduced throughout the product life-cycle. The latter paper draws attention to the fact that in urban renewal projects not much attention has been given to the social dimension of sustainability. Perspectives in this respect are offered with regard to the construction of floor plans for social housing projects for a multicultural target group.

In 'Integrated design of Micro-Electromechanical Systems', De Grave and Brissaud describe an ethnographic-based approach to the emergent technology of these systems (MEMS). Elements such as design actors relationships, design documents and design knowledge objects are analysed in order to propose a socio-technological description of the design process, proposing a new scheme for MEMS design.

Robust parameter design methods are used to make systems less sensitive to variations in the environment, manufacturing and customer usage patterns. However, these methods can be expensive and time-consuming. In 'Streamlining robust parameter design efforts', Singh et al. propose and evaluate techniques to make products robust using fewer experimental runs. They argue that if faster, more frugal methods are brought into an organisation in order to enable much wider application of robust design, then perhaps the benefits of broader application will outweigh the slight sacrifice in optimality of each application of the method.

By studying the design history of the Tjipoenegara irrigation system, considered to be representative for 'Irrigation design in the Netherlands East Indies' in general, Ertsen leaps nearly a century back in time, to help to understand the 'genesis of technology'. Modern engineers may not easily recognise their working environment or education as traditional, but these are indeed strongly influenced by the activities of their predecessors. Ertsen reconstructed a social construction process of design-related decisions, concluding that the approach to this process was experimental action research. The experiments were based on existing knowledge of procedures, artefacts and processes. His findings are reported in 'Irrigation design in the Netherlands East Indies'.

Urban design is not generally considered to be a science in its own right. This is remarkable as implemented designs create the spatial conditions for societal processes, states Ina Klaasen. In 'A scientific approach to urban and regional design: research by design', she pulls down obstacles for a scientific developing urban design like viewing creativity as incompatible with science and regarding every design as unique, also pointing out similarities between researching and designing. Presenting examples, she argues that design can be used as a research method leading to enable theoretical underpinnings of designs for specific sites.

We keep welcoming your proposals for papers regarding the interrelation between design disciplines and social sciences; comments and suggestions regarding the future course of the *Journal of Design Research* are of course welcome as well.