We gradually notice a shift from the partially superseded micro approach to accessibility (or barrier free design) to the new macro approach in Design for All or Universal Design. This UD concept gradually acquires global significance in the social, in the academic, and in the political field. Strong motivating factors for the new design paradigm are the challenge of an ageing population in Europe and in other parts of the world, and the crucial role of physical accessibility in securing Human Rights.

In an interview with Professor Hubert Froyen, this shift will be analyzed from his point of view and his built-up experience. Professor Froyen analyzes the opportunity for moving beyond the conceptual commitment to Universal Design and he shares a strategy for an overall methodological approach to training of designers and to user / expert engagement on a large scale.

Universal Design, A Methodological Approach

Elke Ielegems interviews Hubert Froyen

Elke Ielegems

In the text of this interview the initials E.I. stand for Elke Ielegems, and H.F. for Hubert Froyen. Before the interview starts, Hubert Froyen adds an important preliminary note.

‘We think and speak consciously in the plural ‘we’ form. The readers are invited to enter into the progress of the reasoning and the research. An important reason for the we-choice is an unpleasant personal feeling on constant use of the I-form, a feeling that is increased even more by the knowledge that very many of the ideas and concepts are not developed individually but together with others or are inspired by others.

An additional reason for the avoidance of the I-form is that personal subjective handicap experiences are an important motive for the investigation of this specific theme of the systematic elimination of handicap situations in the built environment. Personal functional limitations, with a congenital absence of the right hand, offer us a penetrating insight into both specific usage problems and in remedial design solutions related to implements and physical spaces. To prevent purely subjective experiences and opinions from slipping into an objective study, requires discipline and certain precautions. A proven precaution consists of allowing the ‘I’ to be productively present in the symbiosis of the preparatory
thinking and feeling, but at the same time to ban it completely from the spoken en written synthesis.
To facilitate objectivity, formulations of core ideas are also to a large extent sought from other researchers and writers. The ‘i’ and one’s own ideas seek support and a second opinion from others, with different life histories and handicap experiences, and with different academic / professional careers.’

**Fig. 1:** Elke ilegems - Hubert Froyen. Photo ©2014 by Elke Meex

E.I. First a preliminary question. On a worldwide scale, a variety of terms and definitions are used to describe a new human-centered design paradigm, Design for All, Inclusive Design, or Universal Design. Is it meaningful to start a discourse, without a more precise description of what precisely we mean by this terminology?

H.F. Terminology in itself is not the crucial point. Let us assume that the most popular terms Design for All, Inclusive Design, or Universal Design, all on an equal base refer to broad-spectrum design approaches meant to produce buildings, products and physical environments that are inherently accessible to a widest possible diversity of people, young and old, tall and small, people with and without permanent functional disabilities. It would include all modal users as well, people in temporal and situational ‘handicap situations’, people with heavy luggage or pushing a pram, people under conditions of stress, alcohol, drugs or medication, people who don’t understand the local language. If this is clearly understood as the core of our work, we can further explain and discuss the topic, under whatever specific name.
More importantly however, on a global level are all historic and relevant contemporary socio-economic and cultural differences between Europe, Australia, India, etc. How different is the perception of dis-ability? Do we automatically refer to a stigmatized group of disabled people, under a strictly ‘religious model’, or a ‘medical model’? Or do we adopt a ‘social model’, which refers in a much broader sense to disability as an intrinsic human condition for all, sooner or later? A social model that also puts a strong emphasis on extrinsic environmental conditions.
Many environmental conditions are designed and controlled in a human-made physical world. And further, beyond perception of human dis-abilities, what are socio-political priorities in a given society, what resources for design and for building production are available? What technological solutions are in store in local markets? And last but not least, what are the potentials of human drive, of adaptability and creativity in given circumstances? All we can personally do is speak from a local perspective, here and now, and hope that some of our communicated conceptual impulses gradually gain status as ‘more universal’, and as ‘useful for more’.

E.I. Is this shift in perception of human dis-ability, from a ‘medical model’ to a more ‘social model’, also reflected in related design approaches?

H.F. Yes, we gradually notice a shift from the partially superseded micro approach to accessibility or barrier free design, to the new macro approach in Design for All or Universal Design. The first approach, the elimination of barriers, is based on a predominantly ‘therapeutic philosophy’. The objective here is to intervene in the environment in such a way that people can use it more independently.

Universal Design on the other hand focuses attention on more than the removal of obstacles, and strives for the elimination of discrimination, for the full participation of all citizens in social life, and for an improved quality relationship between all people and physical objects and environments. Integral and inclusive Design for All can thus be seen as a way of quality engineering towards more social sustainability. It also seeks to blend beauty and elegance into these core considerations, away from stigma. Universal Design can be viewed as a broader and more ambitious positive response from design theory and practice to the need for a human-made environment that is more accessible, useable and sustainable for a greater diversity of users in all stages of life.

Fig. 2: Entrance Museum M, Leuven (B).
Architect S. Beel - 2005-2009

E.I. At the end of your academic career you published a book about an overall methodological approach for Universal Design, as a synthesis of all your research and teaching experiences. How does this relate to these observations above?

H.F. We started from the observation that the concept of Universal Design (UD) gradually acquired global significance in the social field, in the academic, and in the professional field. Political initiatives at the highest level have since anticipated this evolution. In 2001, the Council of Europe adopted a resolution
on ‘...the introduction of the principles of universal design into the curricula of all occupations working on the built environment’ (“Resolution ResAP (2001)1”, 2001).

But there was not yet a methodological framework to structure underlying scientific investigation, and to support related teaching and design practice. In our personal academic research over the last three decades we have gradually developed an overall methodological approach for Universal Design (Froyen, 2012). Design for a diversity of users, for different stages of life, and for dynamic conditions in the real world, does not imply a fixed concept or a certain style, but dwells upon a basic professional attitude and upon particular skills. This design approach rather relates to science-based art, and Universal Design is ‘de facto’ evidence-based. The intrinsic capabilities of a person are not the only cause of barriers and disability, but extrinsic factors in an obstructive human-made environment also play a role. We can design dis-abling spaces, but equally well we can build en-abling physical structures. This notion should be at the basis of all human-centered design processes. The main challenge is to have enough relevant knowledge about the whole range of particular human functional, sensorial and mental (dis)-abilities. Additionally the designers have to understand what impact a specific design solution might have on a specific category of users.

Even if designers strive for newness and for innovation in each and every project, they still heavily rely on underlying common design patterns. Empirical design patterns based on human-environment interactions. We all know, for example, pretty well how average people orientate and navigate in public spaces. But do we have enough relevant knowledge about orientation and navigation of people with very poor or with no visual perception at all? How do people with colostomy use toilet spaces? How can we design a comfortable class room for children with Autism Spectrum Disorder?

In our personal research (Froyen, 2012) we have intensively focused on the elaboration of specific Universal Design Patterns (UD Patterns), together with six complementary components of a methodological approach. We view such UD Patterns for the built environment not only as carriers of information, but also as Open Content (OC) forums and as tools in the on-going search for temporal social, academic and professional consensus.

E.I. In your book you describe two possible pathways to an inclusive built environment, one is called a ‘prescriptive approach’, the other a ‘descriptive approach’. What approach do the proposed Universal Design Patterns implement?

H.F. The global objective to build and to live ‘more universally’ relies on human decision-making and design processes in which choices are made among possible alternatives, always with the intention of making contributions in a systematic way to the elimination of handicap situations. The measures, with a view to that social and professional goal, can be arranged roughly into two approaches: the prescriptive and the descriptive.

Prescriptive models, as applied in compulsory regulations and laws, usually strive for intensive rational decision-making in which one supposes that with complete knowledge of the various alternatives and their consequences the most optimal solution
can be selected and made obligatory. The objective within the new Universal Design paradigm of designing integrally and inclusively for the real diversity of users, neglected for centuries, makes the possibility of having completely rational decision-making impossible. The diversity of human needs is enormous, and additionally the needs of each individual person change over time. Furthermore, both designers and users of the artifacts are limited in their ability to think rationally.

The descriptive approach, which has a central position in the formulation and in the application of UD patterns, places special emphasis on the descriptive and evolutive nature of knowledge about functional limitations (performance requirements) and of possible morphological / technological solutions. Especially the progress and the directing of decision-making processes have precedence in practice, without the development process or the form being fixed beforehand. This leaves more space for contextual and innovative solutions and for a systematic broadening to Universal Designing as ongoing thinking and acting.

In our proposed methodological approach the major accent is definitely on a ‘descriptive approach’, in a performance-based Universal Design Paradigm.

E.I. The pragmatic part in your methodological approach is quite clear, but in the subtitle of your book we read ‘A pathway to human-friendly and elegant architecture’. This notion of elegance is somehow different from classical aesthetics we are so familiar with in the history of architecture.

H.F. Throughout my whole life the coupled experience of beauty and elegance in my dynamic interaction with physical objects and tools has been at the core of all my feelings and my thoughts. Mere visual perception of aesthetic elements is often meaningless for me as a person with a congenital limb deficiency, I’m born with one hand only.

I don’t see myself as a victim of an intrinsic physical impairment, but rather as a student of disability. My condition gives me a specific perspective on interactions with tools and appliances. This specific role as a user / expert gives me a better insight in both functional problems and in potential morphological solutions. This does not help me to understand the functional problems of other conditions, but I can share this knowledge with a variety of people, and I can learn from them. That is how a set of Universal Design Patterns might be formulated over time.

Beyond the social model of disability we mentioned before, we see an upcoming ‘cultural model of disability’, where we do not only design for people with functional limitations, but we co-create with them. Who else can better help us to design a built environment with high multi-sensorial qualities, than people who are blind and constantly focus on these broader sensations beyond pure vision?

The appreciation of the qualities of beauty and elegance, for example in a simple chair, grows over time, in frequent usage and observation by a great diversity of users (short and tall, weak and strong, pregnant, exhausted, with backache, prosthesis, having problems with sitting and raising), and in different circumstances (while resting, working, moving the chair, cleaning, playing, in meetings, in conversation,...). Beauty & elegance can eliminate
stigma for people with disabilities because their attitudes towards their disability, and their self-image, are directly affected by the quality, by the comfort of use, and by the social appreciation of their equipment.

Beauty & elegance can furthermore add to sustainability, because we have more concern for the objects and spaces we like more.

**E.I. What do you see as relevant future trends in Design for All / Universal Design?**

H.F. After the first major European UD2012 conference in Oslo, the Norwegian Delta Center published a very valuable anthology with global perspectives, theoretical aspects and real world applications. (Trends in Universal Design. An anthology with global perspectives, theoretical aspects and real world examples, 2013). The more than twenty written contributions were structured under three major trends: from political initiatives and regulation to INNOVATION, from accessibility to INCLUSION, from barriers to SUSTAINABILITY.

We believe these three shifts summarize quite well the post-war evolution from a perception of design for a minority of ‘disabled patients’ to mainstream design for ‘all citizens’. Innovation is a crucial drive for human well-being and for the economy, inclusion relates to equal rights / equal opportunities, and sustainability guarantees quality of life also for generations to come.

**Fig. 3: Chair for all ages, STOKKE Tripp Trapp Chair**

**Discussion**

Professor Froyen gives a clear view of the gradually increasing attitude to adapt a macro approach in Universal Design. Interestingly, he accentuates that the significant characteristics when designing for the widest possible diversity of people should be supplemented with the integration of qualities of beauty and elegance. It is argued that they are equally important issues as accessibility, usability and sustainable design solutions.

Professor Froyen points out correctly that there is a need for a more methodological foundation to support designers to implement an integral and inclusive design approach into practice. Literature study confirms this lack of an available inclusive design methodology (Dong, Keates, Clarkson, & Cassim, 2003; Herssens, 2011, 2013; Keates, Clarkson, & Harrison, 2000). The gap between theory and practice is still very wide. Therefore, the point of view is taken that Inclusive design methods should focus more on the actual needs of the designer and its implementation in the design process. They should encourage the designer more to design for innovation, inclusion and sustainability and, as Professor Froyen mentioned, focus on a descriptive approach. Future research can offer us more insights in a supportive design methodology for designers to close this gap gradually.