

# DESIGN for ALL

2014 • 10

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A Publication of the  
Design for All Institute of India

Guest Editor: Isabella Tiziana Steffan

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# DESIGN FOR ALL

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the Design for All Institute of India

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## CHAIRMAN'S DESK

Dr. Sunil BHATIA

Confusion is sort of dynamo of the progress of the human society. We live in confusion, die in confusion and create problems out of it and try to muddle through it and the result is confusion. Confusion is either confounded or resolved. It is the biggest challenge for designers and most of the time our aim is to lower the possibilities. No designer can completely eliminate and rule out its unexpected and sudden emergence. A small probability of it may prove reason of many incidents. 'Is confusion foundation of accidents?' Confusion in our thought process or in action may be a fact but we do not deal with this topic at all with our students believing common sense is synonymous with confusion. Common sense is a great weapon available to mankind to attack and handle all sorts of confusions. Under many situations it fails to provide results and it needs trained minds to handle with proper attention. Confusion may prove an asset for designers who are engaged in sorting out their intricate problems as well as it biggest enemy when not handled properly. If some confusion receives the right attention by the designer it will take the product to new heights and if ignores it may invite irreparable loss that will affect mankind as a whole. Another drawback is if designer comes under the pressure of web of confusions and his mental state is not rightly equipped to bear it, it will completely ruin that

individual and his untold sacrifice will never be praised. Confusion needs careful and utmost delicate handling otherwise man made incidents might reoccur as we witnessed in Japan where tsunami, earthquake and nuclear plant created utter confusion and result was that incident was about to wipe out that civilization.

What is confusion? Is it the disorientation of mind? Does it persists or just disappears with time? Is man think under its influence? Do we not frequently experience confusion in our lives? These are the statements that are popular in our academic circles. 'How does designer think about confusion in general?' One day I was looking at the object from the distance and my eyesight was unable to identify it. I was confused as to what exactly I was looking at. The object was at distance and clear view was not available. I could not rightly judge what it was. After sometime it was providing information that approaching object is known person and the very next moment I experienced confusion and my mind denied that conclusion. It is the beauty of the confusion it resurfaces when we try hard to deflect from our thinking. At one stage I experienced that my mind was hyper active to know the object quickly. I failed to understand why I was in hurry to solve that confusion? My mind was not at rest till it was solved. 'Why this hurriedness or impatience to know the approaching person was a mystery to me and I am sure no one can escape such experiences in his or her lifetime. Is it limitation of our senses which are responsible of confusion in us? Designers are more concerned with state of mind of users as well their sense organs. They never believe users with disoriented thought process. To overcome the limitation of sight that may reason of confusion, designers have

designed spectacles, binocular lenses and telescope to help in lowering confusion. Man's physical strength is limited and he cannot do what he wishes to do because of this ceiling but he is power hungry. This confusion of enhancing the power leads him to think for design of such machines and tools that will lower confusion wherever the application of physical power is required. He cannot walk, run and swim for long durations and it sets the boundary and never allows traveling far from it. That led him to design bullock cart, bicycle automobiles, and various types of boats where with manual efforts persons can go long distances. The improved versions are automobiles, airplanes and ships which can carry us from one continent to another with minimal efforts. Individuals experience a limit when they reach out with their hands and cannot feel anything. He feels confused because it is beyond its ability to feel touch experience. His biggest frustration is feeling of limitation. He wants to enjoy complete freedom and to achieve that by removing layers of confusion in his life. He has designed remote control robots to do manual as well as other works and feel, see what is it and biggest example is his Mars exploration. Our voice dies after travelling specific distance and to overcome he has designed amplifiers, loud speakers etc. Is it not all products / services that are designed to lower the intensity of confusion?

New confusions are associated with new products but are handed to us either by training or providing proper knowledge. As man progresses he keeps on replacing old with new confusions and there would be never stage when people will feel free from confusion. Is more information that leads to better knowledge a

root cause of enhancing the degree of confusion in us? Ancient people experienced the same and they clubbed all the confusion under one category of Black magic. Later on its offshoots prove forerunners of disciplines like mathematics, physics, chemistry etc. of modern times. Man attempted to handle vast information to lower the confusion by making design of different forms, methods, policies and procedures to be handled in systematic manner of administration. Standardizations are other tools to do certain works in this manner and result is to eliminate the confusion. Gas pipe line is colored with yellow, water line with blue and electrical wiring with red, green yellow or black to avert accidents because of confusion.

The hypothesis is that our mind is responsible for confusion, is said in general. Either a person is actively preoccupied with some other activity or under the influence of thought processes that stay for a long time or refuse to entertain new thought processes or fail to focus on present tasks which leads to confusion. Another possibility when someone is sitting idly and his mind refuses to entertain the information which leads to a state of confusion. It is my belief that confusion can surface from inward or outward possibilities and it is based on situations. Traveler's confusion is different because it works on different platform. His mind is set to a thinking pattern but faces a changed environment at several new places and tries to map the situation with his past knowledge which results in confusion. To check the confusion designers have prepared guide maps. All state problems are to progress inclusively and no citizen should be deprived from progress. Citizens may be illiterate, challenged but transfer of money should

be designed in such manner so that exchange should be smooth and have minimum possibilities of confusion. All should get their due. More the confusion leads to more legal burdens on state exchequer. Currency is designed with color, different size and even by using embossed character or Braille sign to provide feasibility to all and exchange amongst parties should be easy. People have realized all over that technologies that progress inclusively gives better dividends. Growth of search engine like Google is purely based on inclusive growth. Computer key board or mobile or land line instruments keys have specific marks on certain key and by introducing the voice or lighting is an endeavor to benefit challenged people. It is an attempt to tackle the confusions of challenged person that allows mainstream progress.

Scientists encounter new challenges and confusion works as catalyst in search of exploring new means for solving problems. Confusion of origin of universe had led them to explore the basic particles which constitute our universe and that led to the birth of quantum mechanics and now look at the exploration of vastness astronomy. What makes the electron to move around the nucleus is still unclear. Rather it is the matter of confusion that is still disturbing the minds for further probing. Why is the universe expanding and is still an unsolved mystery till date? When twins are similar in all respects confuses us? When a young one experiences hormonal changes that lead to confusion and question arises why this change has taken place in body? Noble laureate Nash experienced the extreme confusion wherever he went because his mind was pre occupied with problem of game theory and later on developed such a theory that he was declared

a beautiful mind. Is it when our senses experience something that does not match with our mind that confusion is created? Whatever our mind fails to understand leads to confusion. Does a visually impaired person not experience confusion? Deaf and dumb people also experience confusion but it is different from what a normal person experiences. I failed to pin point the origin of confusion in mankind but no one can deny its role since it has contributed a lot for progress of our civilization.

Man has used confusion for the benefit of his society. He learned the art of domestication of animals and to control them he tied the animals with ropes. Untying is mystery for animals for they experience confusion which makes them rely on their physical strength to break the rope and never attempt to permit confusion in mind to invent devices to untie it with the help of other parts of the body. Why man's children learn the art of handling confusion and succeed in untying? It means animals mind works in a single direction unlike humans that is multi directional. It is the multi-directional mind that allows selecting the best options out of many and makes it easier to explore confusion and its various possibilities. It is the modern technologies that are taking our inborn character of thinking in multi direction. To exploit the labor for their benefits they are encouraging specialist who can think in one direction, in assembly line one labor can perform one job and his mind thinks in one direction. All the programs of computer takes extra care wherever the possibilities of confusion arises and it is designed only to accept that command that is required to execute . Computers are making our thought process mould in uni-direction and only it does what for it is designed & never allows

any deviation to multi directions. This may be one of the reason innovations and creativity are machine based and progressing in uni-direction and earlier attempt of mind base innovations are missing where they used machine as supporting tools. Animal's trainer never thinks of handling confusion of animal but they tried to associate the things for learning. Do animals experience confusion? My answer is in negation. It is blessing to human that they experience confusion.

Confusion persists; disturb the peace of mind when many opportunities surface and our greed works as catalyst in grabbing without losing any possibility or fear of losing the probable outcome. Designers live in confusion and are not sure what to do in next phase in designing of products which makes them extra sensitive toward confusion and allows them to handle it cautiously. We educate students by using models of certain outcomes that help in understanding and lowering of confusion. Confusion is good for health of designers. Major inventions have come to the existence because person's mind faced extreme confusion for identifying the formulation of problems and it led to solve these problems under the influence of confusion. Even recreational activities are designed on philosophy of confusion. Football, tennis, chess playing cards, boxing and other games are designed to create the confusion on others and succeed in goals or wining points for victory. Human psychology is developed in such a way that person attempts to solve the problems has to undergo experience of confusion. It is general experience that as we come closer to solution we come under intense confusion and take wrong decision which leads to failure. Those who are

trained and take proper decision succeed. After that moment we are relieved from the confusion, no more agitation occurs and hormonal changes subside as we turn to a normal state of being. It is similar to person being in love. This phase of confusion always proves beneficial for progress of society. Confusion's next stage is anxiety that leads us to experience high level of activation of mind. It may turn harmful if it goes out of hand and under control as it takes to high level of innovations and creativities. Confusion is considered as negative energy by majority but it is positive for a few who know the art of channelizing.

Design of elimination of confusion needs extensive support of experience and understanding of deep knowledge of human psychology. It helps in identifying the human weaknesses that can be reason of slipping something that may prove disaster. Many rail accidents can be averted if designers eliminate possible man made confusion as well machine misinterpretations. If proper knowledge is missing confusion might prove fatal. To lower the possibilities we designed the manual where all the possibilities are covered and clearly indicate the user's limitations. When a girl's mind is confused about her love and lacks the experience, she invariably plays the game of probability of plucking petals of rose by declaring 'he loves me he does not love me'.

One day I was looking for solution of the problem and my mind was in utter confusion and it took me beyond the required level of solution of the problem and result was that the problem remains unsolved. Sometimes our confused mind is hyperactive or underactive in both cases we fail to solve. We should train our designers how to live with these conditions. Best way is to develop

patience and never allow anxiety to influence their decisions. What is block development? It is the technique where our thought process attempts to eliminate the confusion in systematic order and helps in visualizing what will be the consequences of what we are currently doing. The unit of the house construction is bricks and its shape is designed in a rectangle which helps in creating the desired design and lowers our confused state. Confusion is responsible for designing the concept of benchmarking for performance evaluation. To make a mark on the bench of sewing machine to avoid the cumbersome repetitive exercise of measurement by measuring tape of stitch clothes as per specification can invite error in measurement that can lower the quality of the product.

In conclusion, confusion is the state of being unique to human beings and while it creates agitation and unrest, it is this agitation and thirst for a solution that leads to development and progress in design. Designers should explore confusion of mankind and use the confusion as an impetus to generate unique solutions. However, it is essential to control the agitation and unrest by developing patience and using a step by step logical process to eliminate solutions that will lead to failure. Using theories of elimination and visualization techniques designers can effectively use confusion in an advantageous manner to help design reach new heights.

Confusion must be embraced rather than neglected and we must use our gift of multi-directional thinking to develop various designs that can lower the level of confusion to a large extent. Arch Isabella Steffan has been one of the first people to work on



## GUEST EDITORIAL

Isabella Tiziana STEFFAN

the theme of the elimination of architectural barriers, with her B.Sc dissertation on this subject (1981), and through her collaboration with the famous Associated Architects “Ornati-Cosulich”. Later on, her active participation in IIDD Italian Institute for Design and Disability since its foundation (1994) has gradually shifted her focus on a more positive concept: that of Design for All, i.e. the planning of usable environments, equipments and services - in total autonomy – by people with diversified needs and abilities. We are fortunate that person with such great passion for ‘Design for All’ is Guest Editor of this special issue. She has worked hard for establishing her name in concept of Design For All and her journey to achieve her presence in Design For All is truly reflected in this issue. We are admirer of her intense passion for promoting the social cause of Design For All.

Enjoy reading special issue of October 2014.

With regards

Dr. Sunil Bhatia

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I would like to thank Sunil who invited me to write as guest editor of this issue, thanks also to Scott Rains who knew about my books on Design for All, recently published in Italy. One of my first concerns was: must all authors be women? This would have greatly restricted the number of people I could reach, who were interested in writing about certain subjects I wanted to explore. In this issue, women do not take up all the space, do not have primacy, but they do have their own space, and are of great value.

I am a freelance architect, who graduated in 1981 with a thesis about accessibility, or better on the compatibility between the environment and personal situations, when the ICF did not exist yet. I had the chance to share projects, both educational and non educational ones, with pioneers such as the English architect Selwin Goldsmith, the Italians Antonio Ornati and Piero Cosulich as well as Louis-Pierre Grosbois, Paul Hogan, Jim Sandhu, Francesc Aragall, just to name a few. I have participated and participate at national and international level in the working groups of several associations and pioneer networks such as DFA Italy and Europe, Design for All Foundation, European Concept for Accessibility Network, European Network for Accessible Tourism, European Disability Forum-Experts in the Built Environment Working Group, International Union of Architects-Architecture for All

Working Group (Region 1, Western Europe). I have enriched my knowledge on human interaction with the surrounding world through a Master's Degree in Ergonomics, and through a long and continuous process of evaluation. I am a certified European Ergonomist, actively involved in the Italian and European Society of Ergonomics (SIE and IEA).

I believe it is vital to focus design, scientific and operational efforts on the opportunities offered by a contemporary design that is also ergonomic, sustainable and usable by the widest range possible of people, in order to overcome at source those obstacles of physical and cultural nature that prevent these people from leading a full and participated life, as well as a truly sustainable business development. For this reason, in my recent publication "Design for All project for everyone. Methods tools, applications", I tried to compare different areas of research, evaluation and design, which can make a contribution to Design for All, that must be participatory.

The on-line English version "Design for All - The project for everyone. Methods, tools, applications" will be available by the end of the year 2014. Design for All / Universal Design is a cross-cutting issue that applies to various sectors (environments, products, services) and calls for different skills (in the medical, social, technical, managerial fields) to collaborate on joint projects. In this issue I continue my research of this cross-disciplinarity, with examples of its application that go beyond accessibility and try to implement Design for All: in the city system, architecture, products of use, services and communication system.

*The lack of compliance of the built environment and of the*

*products, with needs that can be very different, causes a state of handicap. The lack of ability is a handicap only if the project has not taken it into account.*

The issue begins with an interesting interview with my old friend, **Emeritus Professor Hubert Froyen, by Elke Ielegems, architect and doctoral student at Hasselt University, ARK - Belgium.**

I believe that a primary role is played by education, which has the duty of training from an early age open, creative and inclusive minds. This is why I would have liked to talk, for example, about the workshop on Design for All in the framework of the Master of Ergonomics, at the Department of Architecture of the University of Florence and about the projects presented by some students of the course "Sustainable revolution", that can be taken as part of several learning pathways (interior design, product design, graphic design, illustration, fashion styling, fashion design, communication, etc.) at the European Institute of Design IED. Unfortunately the timing of the courses did not coincide with the one needed to editing this number.

*Who takes care of the city system, for example by planning more liveable cities for all?*

**Maurizio Tira, Full Professor of Town and regional planning at Università di Brescia and Anna Richiedei Ph.D., Research assistant at Università di Brescia – Italy; Delfín Jiménez and Carmen Iglesia, architects from EQAR, Madrid – Spain; Dalilah Bee Abdullah, deputy director of Kuala Lumpur City Hall – Malaysia and Isabella Tiziana Steffan, architect and Ergonomist – Italy,** are going to illustrate research and experiences.

I have been to Kuala Lumpur during the First South East Asia

Conference on Accessible Tourism (SEACAT 2012). Beautiful Gate Foundation For The Disabled, together with Malaysia Hotel Association, Malaysia Council of Rehabilitation and other disabilities related associations organized SEACAT 2012, which was supported by Malaysia Convention and Exhibition Bureau and sponsored by Malaysia Prime Minister Department. Its main objective was to establish a tourism network in South-East Asia that welcomes elderly and PWDs, creating a coalition of stakeholders including disabled associations and tourism organizations. I held a workshop on “Accessible Tourism Infrastructure” and a talk on “Accessible environment: autonomous mobility for All tourists”, and met Dalilah Bee Abdullah and Kuala Lumpur’s Mayor, HE. YBhg. Datuk Seri Hj. Ahmad Phesal bin Hj. Talib. The desire to improve the accessibility of Kuala Lumpur immediately seemed to me praiseworthy, although the town has considerable architectural barriers that will require a lot of determination to overcome. The enthusiasm and commitment of the administration and in particular of the Mayor and Dalilah have convinced me: I hope they will have the chance to update us on future progress.

People are different and their needs typically change and develop throughout their lifetime, placing many demands on the homes. This means that the dwelling should be suitable for everyone, regardless of their condition or abilities. How can we design better houses and buildings?

**Katerina PAPAMICHAIL, a Greek consultant specialising in Universal Design and accessibility, and Mieke Nijs, project manager at the UD Living Lab, Hasselt – Belgium** will describe their experiences.

**Fionnuala Rogerson, vice-president of RIAI, Ireland, and Director UIA Work Programme on “Architecture for All”, Region 1** will update us about the International Union of Architects (UIA) Congress in Durban and the UIA Award “Friendly Spaces Accessible to All” 2014.

What about services and communication system?

**Laura Burzagli, Researcher, IFAC National Research Council of Italy**, has undertaken the task to throw a bridge between Information Technology and everyday environment/products.

**Jan-Christoph Zoels, Michele Giannasi and Erin O’Loughlin, from Experientia – Italy**, will illustrate an example of designing a Automatic Teller Machine (ATM) through a user-centered design and participatory process, for people with diverse needs, including impaired vision, degrees of technology literacy, and language needs.

A good planning of the built environment, a good quality of services, and proper communication are difficult to achieve if not supported by a competent, effective and efficient staff. A public authority or private company consultant, if he is an expert on accessibility, plays a fundamental role in the achievement of a truly inclusive design project. **Silvio Sagromola, director of Info-Handicap, the National Information and Meeting Centre in Luxembourg, Chris Veich, a UK consultant expert in accessible tourism, Jane Simpson, a UK architect and NRAC Access Consultant**, will describe their point of view and experiences.

Last, but not least, I would like to remember that between May 1 and October 31, 2015 the Universal Exhibition “Milano 2015” will be held in the city of Milano. The Expo will be organized by Expo

2015 SpA a company founded by the Italian Government, the Lombardy Region, the Province of Milano, the City of Milano and the Chamber of Commerce of Milano. The theme of Expo 2015 is “Feeding the planet, energy for life” and wants to encompass everything related to food, from the lack of food in some areas of the world to food education to issues related to GMOs. It is one of the major challenges humanity has been facing since the beginning of the twenty-first century: it is therefore crucial to get the protagonists of the international community to meet and talk on such an important issue for the future of humankind.

To these people Milano wants to ensure the best possible reception and accessibility in order to enable them to take an active part in such an important and global event, on an equal basis with others, in accordance with the principles contained in the “UN Convention on the Rights of Persons with disabilities (adopted in New York on 13 December 2006 and ratified by the Italian law of 3rd March 2009, n. 18), with regards to freedom of movement, accessibility and mobility for all people and the right to take part on an equal basis with others in the cultural and social life of the country.

EXPO Milano 2015 is therefore an opportunity to make the city live up to this challenge: the City Council intends to seize it, in order to set a new starting point in accessibility policies.

The aim of the municipality of Milano is to make accessible to people with motor and sensory disabilities some urban pathways that focus on the main attractions of the City (art, culture, shopping and fashion) and to improve information, especially digital information, on what is actually accessible. A special info

point will provide people who are prepared to welcome and able to resolve emergencies.

You are all invited, we are waiting for you.

Isabella Tiziana Steffan

Guest editor

# CONTRIBUTORS



## Guest Editor

**Isabella Tiziana Steffan** is an Italian architect and European Certified Ergonomist. She works in the field of accessible design, Design for All and Ergonomics for public and private customers, focusing on mobility and safety of weak users and on urban furniture. She performs teaching activities for several Institutes, among which Politecnico di Milano, Università Cattolica del Sacro Cuore di Milano and Università degli Studi di Milano-Bicocca, where she has been in charge of the workshop "Accessible Tourism".

She has been member of juries for idea competitions, among which the UIA Award "Friendly Spaces Accessible to All" 2014. She is a founding member of ENAT and her professional firm has been endorsed by Design for All Foundation as consulting partner. She works in the expert team on Built environment of the European Disability Forum.

She is member of the executive board of the Italian Society of Ergonomics (SIE); member of NAB (National Assessment Board for European Ergonomist) and CREE (Centre for Registration of European Ergonomists) for SIE. Assignment editor, area Professione Ergonomia of "Rivista Italiana di Ergonomia" (Profession Ergonomist of the Magazine of the Italian association of Ergonomics), she has been scientific representative and responsible for the Working Group – thematic area Design for All for SIE.

In 2012 she published two volumes: "Design for All – Il Progetto per tutti. Metodi, strumenti, applicazioni. Parte prima e Parte seconda". Ergonomics series, ed. Maggioli.

The English version of her two volumes: "Design for All – The project for everyone. Methods, tools, applications" is available on line since October 2014.

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**Dalilah Bee Abdullah** is an architect, deputy director of Kuala Lumpur City Hall, Malaysia, GAATES Country Representative, trainer for auditors, promoting inclusive built-environment for people with disabilities since 1998, Technical Committee panel for Code of Practices on Accessibility Design and Building, Technical committee for the National Advisory and Consultative Council for PwD. Currently serving as coordinating secretary for Disabled Persons Development Committee KLCH and resource person for various Ministries and governments agencies, she is actively performing access audits on public buildings such as airports, transportation hubs and mixed development projects.

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**Laura Burzagli**, after the degree in Electronic Engineering and an industrial experience, addressed her studies to eInclusion as a researcher of National Research Council of Italy. In this field she has been carrying on an activity on accessibility of electronic information, taking also part in working groups for the Italian Accessibility Law. She has worked in many International projects, such as the "Design for All for Inclusion" (2007-2009). More recently her activity focuses on the evolution of Information Society and intelligence distributed in the frameworks and among people for a wider perspective of inclusion. She is co/author of several international publications and conferences contributions related to this sector.

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**Hubert Froyen**. The Belgian architect and Emeritus Professor, Hubert Froyen has lectured and written extensively on the subject of Universal Design Research & Teaching, including his acclaimed book – Universal Design, A Methodological Approach (2012). Froyen was Professor at PXL/Hasselt University (B), ARK Department of Architecture and Art (Diepenbeek Campus) from 1996 until 2012 and is co-Founder of the first Belgian Office for Accessibility (1992), and holder of the Ron Mace Award (Rio de Janeiro, 2004). He is an active member of the UIA Work Programme 'Architecture for All' in Region I, Western Europe; and guest professor at Hasselt University and at universities abroad.

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**Michele Giannasi** has been working as an Experientia project manager since 2009, particularly on Italian private and public clients. He was the project manager and information architect on the BancoSmart ATM project. He has managed banking and financial projects for Experientia, introducing the user-centered approach to the financial industry. Michele has worked with new media and communications for about 15 years. As a consultant he has worked for primary companies such as Renault, Max Mara Fashion Group, Coca-Cola, Intesa/San Paolo, Sky, RAI and others. He has taught new media communication at LUISS Management School in Rome.

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**Elke Ielegems** is a qualified Belgian architect and a doctoral student at Hasselt University. The topic of her PhD research is: A Design Method for More: Development towards an inclusive design method supporting an inclusive design attitude in the built environment. The main focus of this doctoral study is not only the development of a supportive, user-friendly design method that integrates more inclusive design in the built environment, but also the inclusiveness of the design method itself. By translating the existing theory into practical, effective support adjusted to the needs of the architect, this PhD research can contribute to a more inclusive built environment.

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**Carmen Iglesias** is MSc in Architecture (Universidad Politécnica de Madrid). She has over fifteen years' experience in performing technical work on Universal Accessibility. Co-founder of the architectural firm EQAR with Delfín Jiménez. Highlight her collaborations and technical assistance with the company Vía Libre (Fundosa group): Participation in the development of more than twenty Accessibility Plans, writing numerous Technical Reports Universal Accessibility in different entities and business centers ... She also has extensive experience as an expert in audits on Universal Accessibility AENOR. At present she teaches in Universal Accessibility Master of University of Jaén.

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**Delfin Jimenez** is MSc in Architecture (Universidad Politécnica de Madrid) with PHD in progress. He has over fifteen years' experience in performing technical work on Universal Accessibility. Co-founder of the architectural firm EQAR with Carmen Iglesias. Highlight his collaborations and technical assistance with the company Vía Libre (Fundosa group). He also has extensive experience as an expert in audits on Universal Accessibility AENOR. He has worked as an international expert for the European Commission and has participated in numerous international congresses and courses. He currently teaches in Universal Accessibility Master of University of Jaén.

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# UNIVERSAL DESIGN, A METHODOLOGICAL APPROACH

Elke Ielegems interviews Hubert Froyen

Elke IELEGEMS

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.

*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*



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

*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.'*

**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



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

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.

**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



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

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.

### **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.

## References

- Council of Europe (2001), *Resolution ResAP on the introduction of the principles of universal design into the curricula of all occupations working on the built environment*.  
[http://www.coe.int/t/e/social\\_cohesion/soc-sp/](http://www.coe.int/t/e/social_cohesion/soc-sp/)
- Delta Centre (2013), *Trends in Universal Design. An anthology with global perspectives, theoretical aspects and real world examples*. Norway: Norwegian Directorate for Children, Youth and Family Affairs.
- Dong, H., Keates, S., Clarkson, J. P., & Cassim, J. (2003). *Implementing Inclusive Design: the Discrepancy between Theory and Practice. Universal Access Theoretical Perspectives, Practice and Experience*. 7th ERCIM International Workshop on User Interfaces for All. (Vol. 2615, pp. 106-117). Berlin: Springer.
- Froyen, H. (2012). *Universal Design, A Methodological Approach: A Pathway to Human-Friendly and Elegant Architecture*. Portland, Boston: Institute for Human Centered Design.
- Herssens, J. (2011). *Designing for more: a framework of haptic design parameters with the help of people born blind*. Hasselt - Leuven.
- Herssens, J. (2013). *Design(ing) for more - towards a global design approach and local methods*. Paper presented at the Include Asia 2013.
- Keates, S., Clarkson, J., & Harrison, L.-A. (2000). *Towards a practical inclusive design approach*. CUU'00 conference on Universal Usability.

# WALKING FOR HEALTH IN CITIES

Maurizio TIRA and Anna RICHIEDEI

Accessibility is influenced by physical distances, availability of pedestrian infrastructures, behaviours and several other urban space qualities. Health care services are trying to save money by preventing diseases through the promotion of walking.

The purpose of the paper is to assess what are the conditions for people to walk more and to foster the possible solutions for coaxing people to leave

cars and improve their walking. That is a crucial challenge especially in small and medium-sized towns, where public transport facilities cannot be developed. What has been quite difficult to achieve so far, could be reached through a coalition of interests, including the needs of disabled that can be matched through an accessible urban space and the urgency to reduce overwhelming health costs of an ageing society.

## 1. Introduction

Walking has always been the essence of city life, especially its open spaces and mainly in the warm climate countries. Nevertheless, walking has lost many of its natural functions and appeal, due to many different reasons. It is often restricted by obstacles and hostile conditions: children are driven to school to avoid the dangerous streets; elderly people are often confined in their

houses due to the difficult access to public transport; disabled are seized up from steps and ramps; and consequently the quality of everyday life is diminished, and the health and safety of pedestrian are threatened. Eventually, such conditions seriously affect the well being of citizens and increase the health care expenditure. Death and permanent disability from road trauma namely in urban environment, pollution, noise, congestion, the downgrading of open public space are all too common in today's cities and towns. Technology within cities progresses in leaps and bounds, yet simple, natural functions such as walking are under serious threat (OECD, 2012).

Individual land uses generate and attract trips. Daily decisions are made regarding land use locations, which indirectly affect the geography of trips, including walking, but they are inconsistent with the pedestrian's real needs for quality.

At the same time, any decisions reached concerning public transport, motorised mobility and parking also indirectly determine the pedestrian's movement, as walking precedes and follows the use of every transport means (Busi and Pezzagno, 2011).

Today walking, even for very short distances, is often being replaced by the car. If societies are to make better provision for walking, new policies are needed to reverse this trend. Walking short distances can become more attractive than using a car or motorbike. Anyway, proximity and accessibility are at the heart of the possibility of walking, both as a general feature of public space (also linked to distances and availability of means of transport) and as a design detail for disabled and the elderly.

## 2. Priorities of a Strategy for Walking

Any policy for walking should fully recognise that while walking positively influences health, good physical conditions are also a requirement for it to be a sustainable choice. Many citizens, such as the elderly, have restricted mobility due to physical disabilities and other health conditions. As populations age, this problem will grow. Providing those with mobility impairments with a dignified place to walk and enjoy simply being on the street allows them to remain purposefully engaged in society, as well as making a therapeutic contribution to their condition (OECD, 2012). Reassignment of road space and a review of traffic regulations have the potential to support this growing societal need. If genuine solutions are provided for people with limited mobility, then the needs of others will automatically be covered (Tira, 1999).

Walking is the only completely free and independent form of movement. It is also "exercise for the body without a gym and a doctor's prescription without medicine; it is weight control without a diet, a tranquilizer without pills and therapy without a psychoanalyst" (Butcher, 1999).

Even if the value of walking is often recognised because it is the life of the city and most of traffic codes place walking at the top of the transport modes, this is rarely translated into a corresponding physical plan and priority is given to the car. That is particularly a paradox in little towns, where no efficient alternatives to car exist, but nevertheless walking is not promoted. Cities where priority will be given to walking have before them an important task of re-planning the road network in order to ensure not only direct

connection, but also the uninterrupted walking of the pedestrian and the compliance by drivers with lower travel speeds. In modern space design, where priority is given to the pedestrian, separate footpaths are discarded or lowered to near the level of the road so that pedestrians and cars come closer together; the former present only a low threat at low speeds (<20 km/h). Shared space designs have shown to be often safer and more peaceful solutions than the traditional segregation of modes.

Through the promotion of walking and sojourning, several other objectives can be achieved (OECD, 2012):

- an increased use of public transport (and reduced use of private cars, with a consequent improvement in overall performance of the traffic system)
- slowing the rate of urban sprawl and restoring proximity
- reductions in pedestrian trauma in traffic
- an aesthetically better urban environment
- improvements to population health as a result of reduced emissions and noise levels, and through greater participation in the more active forms of transport.

### 2.1 An increased use of public transport

Sustainability could be strengthened if the three components of sustainable mobility - public transport, walking and cycling - are supported to assume a more important role in the functioning of the city. It is these modes that will replace the unnecessary car trips. Public transport and walking are highly interdependent. Public transport can perform its role more effectively only when the stops or stations are easily accessible on foot and the general

surroundings favour walking. Use of public transport includes both walking and waiting at stops. Besides, if public transport is reliable and attractive it could be expected to bring more people onto city streets (OECD, 2012).

In cities well equipped with networks for public transport, cycling and walking, residents are gradually reducing their former dependence on the car. When really necessary, they 'rent' a car, as members of car-sharing clubs. A truly significant number of households do not own a car (more than 30% of potential car owners in Europe) and, in the main, choose to walk (OECD, 2012). New development schemes inspired by the Transit Oriented Development (TOD) concepts (see figure 1) are being applied to town design in order to integrate spatial and mobility planning (Ottawa, 2007). Nevertheless the application is much easier in growing cities, which is not the case for most of European settlements. The regeneration of existing towns shows many more constraints that could result in an impossibility to act. That's an extra reason why walking should be encouraged, as the cheapest solution to mobility needs!

Fig. 1: Transit Oriented Development Guidelines  
Source: City of Ottawa, 2007



## 2.2 Slowing the rate of urban sprawl and restoring proximity

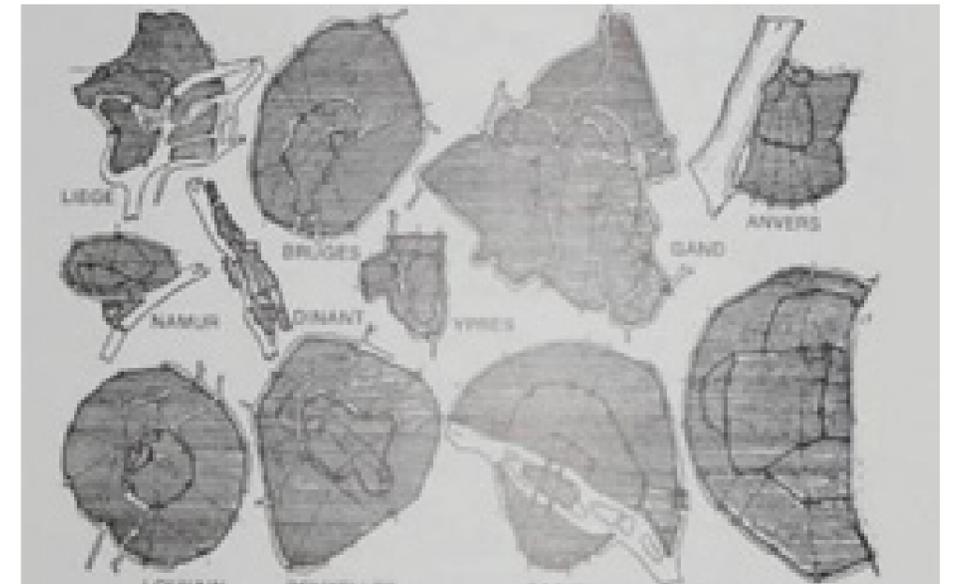
Cities have always been places of contrast. Created as a safe and secure place against enemies and natural threats, they have often become traps for their inhabitants. Lessons from history show how different cultures have tried to make urban space an asset by shaping it to the needs of the population or by answering the demands of economic, military or political powers; one aspect of cities through history has been the problem of facilitating the movement of people going about their daily life.

Thus, when people lived under transport reliant on pedestrian and animal power alone, urban settlements were limited to a size accessible on foot. Proximity was then an axiom and, even in larger cities (e.g., U.S. cities), life was conducted in a relatively restricted space<sup>1</sup> and, consequently, the physical environment of towns and cities was developed for less demanding traffic modes than today. Figure 2 illustrates how some big European cities in the 14th century were of a similar limited, urban size, despite having different populations. Proximity was not just a matter of rationality, backward technology or demography, but also to save energy. Although human locomotion on inclined surfaces has been little studied, it is known that walking speed varies according to the slope and people walk so as to minimise physical effort.

The combined effect of proximity and conservation of energy is at the heart of several urban schemes. In the central European hills, morphological constraints induced citizens to design road layouts

<sup>1</sup> So narrow was the space where people used to live, that a great majority of past generations spent all their life in a very limited geographic area.

Fig. 2: European medieval towns of similar size in the XIV century (Benevolo, 1997)



to follow contour lines, thereby leading to elongated settlements. The fascinating slow-curved medieval streets of Siena are among the best examples: whilst the main roads follow the contour lines, the secondary links across contour lines have been realised with stairs, minimising the amount of human power required to move around!

The era of the private car has completely changed town design worldwide. Some urban settlements have been planned explicitly assuming the use of the private car (see Figure 3). Furthermore, general increases in personal income have led to increases in the rate of car ownership and, therefore, the irrational use of motor vehicles at the expense of pedestrian movement.

Other features are less evident. For example, acceptable walking distance increases with the size of the core city. When distances appear greater, facades are longer, streets wider and people

accept a longer trajectory to reach their final destination. This is true foremost for walkable distance, but also applies to the travel time. Conversely, in small and less densely settled villages, especially when no facilities are provided, people are less likely to accept long trips. Although perhaps a paradoxical result, use of the car, even for short trips, can be shown. Other variables influence such behaviours, primarily parking facilities, which are highly expensive and rare in the big centres.

As a result of the application of functionalism, the distances between homes, work and other places have grown with the availability of rapid and convenient transport. When the introduction of private cars made it possible to cover longer distances, this separation became more radical. Some references speak in a positive way of the liberalisation of locations, but the



Fig. 3: Lakewood – Los Angeles County (U.S.A)  
Source: An ordinary place, by D.J. Waldie; [http://www.losangelesnow.net/special\\_features/essays/waldie.html](http://www.losangelesnow.net/special_features/essays/waldie.html)

other side of the coin is the loss of proximity, leading to people walking less because there are no destinations within walkable distance. Some of the characteristics of sprawl are:

- the relatively less expensive transformations in rural areas make sprawl more cost-efficient than urban renewal;
- low density is better appreciated by high income communities and sometimes defended for landscape preservation;
- shopping malls can be reached only by car (for distance and for safety reasons);
- services are concentrated for economic reasons (scale economy);
- work places are not fixed, so trips are multi-scope and need flexible means of transport.

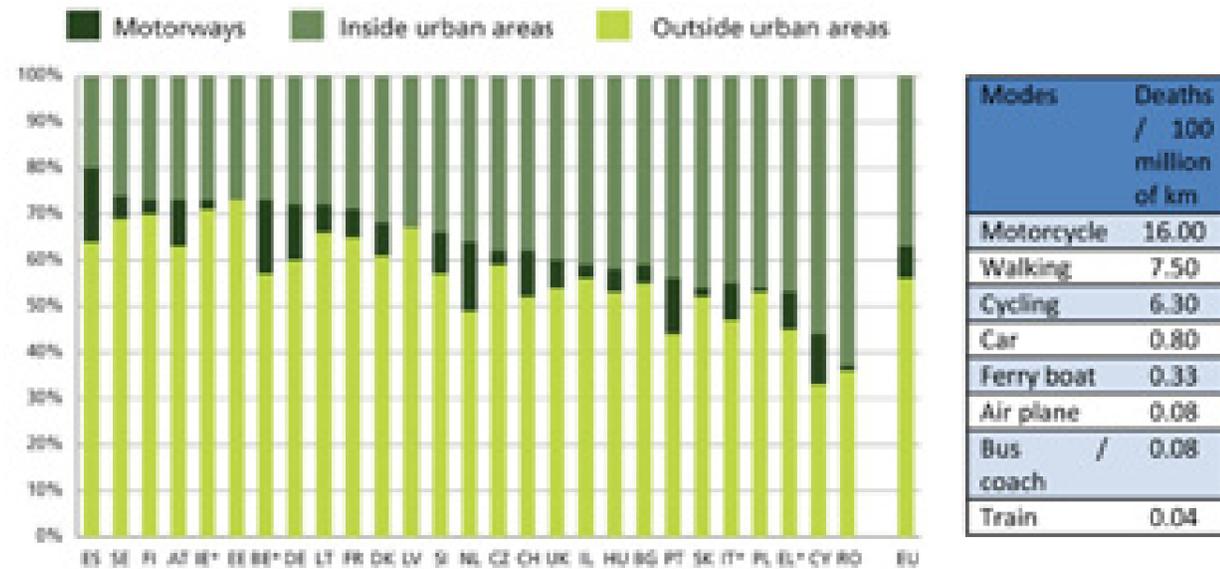
### 2.3 Reductions in pedestrian trauma in traffic

Though the most traditional approach to promoting walking and cycling insists on the provision and improvement of dedicated facilities and more liveable conditions, such solutions need to be integrated within new safety actions for the whole urban environment. Evidence shows that too many casualties still occur in urban environment (see figure 4) and then more than half of those accidents are scattered. Treating scattered accidents requires an area wide safety policy, that is a planning approach and a coalition of interests to work together!

At the same time, the space where more pedestrians and cyclists are present is inherently safer; a phenomenon that is counter-intuitive, in that normally the increase of the exposed targets magnifies risk. However, at the same time, more pedestrians give strength to those actions promoting walking and cycling.

Fig. 4: Road unsafety in urban areas in the EU-27

Source: ETSC, 2011, 5th PIN Report



The underlying phenomenon is clear: there is a multi-faceted link between the numbers of cars and other non-motorised road users (OECD, 2012).

Creating better safety conditions at street level for vulnerable users (especially children, the elderly and mobility impaired), should be a major social goal for urban societies of the 21st century. In Europe, nowadays, walking ranks second after the motorbike (per kilometre travelled) as the most unsafe means of movement, is nine times more dangerous than for vehicle occupants (see figure 5 for Italy and table 1). This is normal since, over the same distance, the exposure to risk for the vulnerable pedestrian lasts longer. Walking should establish a better quality of life not prove threatening to the life and long-term health of the inhabitants of cities and towns. We do not know enough about crashes involving pedestrians as many are never reported.

For example, there are very limited records for people who

Transport mode	2001	2009	Average annual change	% in 2009	European average (2009)
Pedestrians	1,032	667	-4.3%	16.0%	18.0%
Car occupants	3,840	1,793	-8.9%	42.0%	47.0%
Motorcyclists	848	1,039	2.8%	25.0%	13.0%
Mopeds	578	212	-10.9%	5.0%	2.0%
Cyclists	366	295	-2.1%	7.0%	5.0%
Bus/coach occupants	19	2	-8.3%	0.0%	<1%
Lorries or truck occupants	104	33	-10.1%	1.0%	4.0%

Fig. 5: Reported fatalities and trends by mode of transport in Italy compared to the EU-27 average. Source: DaCoTa project, 2012

suffer injury, with no vehicle involvement, due in part to the physical layout, traffic conditions, poor footpath maintenance or insufficient footpath width. Also, planning often does not take sufficient account of pedestrian disabilities or the limited abilities of children and the elderly in traffic (OECD, 2012).

Few accidents reported to the disabled, are often the proof of the low rate of mobility of these category of road users. The lack of accessibility is often excused by this misleading evidence: “since the disabled are very few and relatively safe shy spending for them”!? Such a trivial assumption is completely false as those with an handicap in mobility are many more than the disabled, and accessibility is a key feature for safety for all!

## 2.4 An aesthetically better urban environment

### *Public space location and orientation*

The size of public space and its proximity to pedestrian paths is an incentive to walk. It is known from environmental psychology that humans favour an accessible, varying, safe and comfortable environment. For example, a study by Badiani (2005) examined the benefits of green areas along a walking route to a public transport stop. Microclimate (where climate may change considerably over a short distance) also affects the presence and sojourning of humans, particularly with people becoming accustomed to air-conditioned, comfortable environments in homes, offices and cars. Thus, climatic conditions seem to affect walking trips, both in number and length. There is evidence of a paradoxical effect of favourable weather conditions resulting in less walking in the Southern European countries.

### *Building location in relation to public space*

The positioning of buildings adjacent to pedestrian paths is also important in terms of typology, morphology, length and continuity of façades, maintenance, etc. For example, both young and adult pedestrians seem to prefer more small blocks and small buildings in a block, than long continuous façades. Older people feel comfortable and secure when a continuous built façade can help prevent unexpected attacks from “coming from around the corner”. This demonstrates a contrast between the ‘barrier effect’ and permeability of space that is rooted in the complexity of space and planning. Figure 6 exemplifies an analysis of building façades and open perspectives along pedestrian paths.

### *Building types and uses at the ground level*

Urban morphology with a high connectivity can provide shortcuts for pedestrians, which are often crucial for walking trips. By way of contrast, ‘tree-like’ street layouts (e.g., “culs de sac” and no continuity) increase walking distances and serve as a barrier. Open ground floors can give more space to pedestrians, as in some historic cities, as well as increasing the level of security of public space.

### *Legibility of urban environment*

An easily readable urban form can heavily influence the ability of people to comfortably negotiate an urban environment. Unlike the availability of road maps and, increasingly, GPS in cars that continues the tradition of facilitating the way for drivers; pedestrians have generally less information when starting a trip in unfamiliar surroundings, with factors such as footpath conditions, width, maintenance, continuity, visibility, lighting and comfort largely unknown before setting out.

Fig. 6: An analysis of building façades and open perspectives along pedestrian paths  
Source: Badiani, 2005



2.5 Improvements to population health as a result of reduced emissions and noise levels, and through greater participation in the more active forms of transport

Health benefits include: enhanced mental performance and concentration levels, decreased feelings of tension and stress levels, a sense of well-being, relaxation and enjoyment (Lee & Buchner, 2008). In addition, walking has been found to lower the risk of developing chronic diseases such as coronary heart disease, obesity, diabetes, and osteoporosis (Lee & Buchner, 2008). In the following chapter some of those evidences will be briefly described attempting to adapt them to the needs of the disabled.

### **3. Health and moving (walking and more): Direct Benefits**

Any Urban mobility through the transport system has an important impact on a population's quality of life. Depending on its organisation, the transport system can offer or restrict opportunities for accessing services, education, employment, leisure activities, etc.. During the last half century, the model of transport has changed as a result of transport policies that have given priority to the private car, with a consequent reduction in walking in urban areas and, more specifically, in medium sized towns and cities. This change has had a detrimental impact on overall population health, with serious adverse effects, such as noise and pollution, traffic injuries, social isolation and a drop in physical activity. Moreover that model has emarginated the disabled, right when the more civilized societies have started to

grant them more equal treatment in all dimensions of daily life! So we can affirm that the impacts on transport are unequally distributed throughout society, with socially disadvantaged populations experiencing the least benefits and the greatest disadvantages from the prevailing model of motorised private transport (The Transport and Health Study Group, 1991).

Despite there being an interest in addressing the issue of physical activity and health since the early 1950s, it was not until 1996 that the first U.S. Surgeon General's report addressed the topic and brought it on the political agenda (U.S. Department of Health and Human Services, 1996). This was the first government report to underline the importance of moderate intensity physical activity. Prior to this, health benefits of physical activity were considered only for vigorous activity (Lee & Buchner, 2008). Current evidence suggests that moderate intensity physical activity, including walking, is essential in maintaining good health, while a sedentary lifestyle contributes to reduced health outcomes at different levels (U.S. Department of Health and Human Services, 2008; Cavill, Kahlmeier & Racioppi, 2006).

The WHO Global Strategy on Diet, Physical Activity and Health Recommendation for Adults stated that individuals should engage in adequate levels of physical activity throughout their lives (World Health Organisation, 2009). Different types and amounts of physical activity are required for different health outcomes, which include:

- at least 30 minutes of regular, moderate-intensity physical activity on most days reduces the risk of cardiovascular disease, diabetes, colon cancer, and breast cancer;

- muscle strengthening and balance training can reduce falls and increase functional status among older adults;
- more activity may be required for weight control (World Health Organisation, 2009).

Furthermore, the American Centers for Disease Control also recommends 30 minutes or greater, of activity each day. This can be accumulated from multiple bouts, as long as each bout is 10 minutes or greater (Lee & Buchner, 2008). The main example of moderate-intensity activity was brisk walking at 3 to 4 mph (4.8 to 6.4 km/hour) for most adults on most days of the week (Lee & Buchner, 2008). Recommendations for children suggest longer times, such as 60 minutes of moderate-intensity physical activity each day (Cavill et al., 2006).

Several studies have reviewed the effects of overall physical activity on health and disease, but only a few studies have done so, specifically for walking. The available research surrounding the benefits of physical activity on cardiovascular diseases, cancer, non-insulin dependent diabetes mellitus, musculoskeletal health, obesity, mental health, mortality, as well as overall health-related quality of life are proved by a broad literature (see among others the U.S. Department of Health and Human Services, 1996 and 2008). Moreover physical activity appears to improve health-related quality of life by improving physical functioning, while also enhancing psychological well-being (Cavill et al., 2006). Anyway there are several indirect benefits from moving (walking and more), of greater interest for town planners.

#### **4. Health and moving (walking and more): Indirect Benefits**

Walking or moving with non motorised means of transport (such as wheel-chairs) can provide opportunities for social interaction and engagement, which is a significant factor contributing to improved mental health and well-being. Other indirect benefits may include a reduction of private car use resulting in a reduction of negative environmental and health-related consequences (Dora & Phillips, 2000). Examples include air and noise pollution, congestion and legibility of space, which will be discussed in the following sections.

##### 4.1 Air pollution<sup>2</sup>

A considerable portion of urban energy consumption and related emissions are linked to road traffic (roughly one-third), which corresponds to three-quarters of all transport-related emissions (Woodcock, Banister, Edwards & Prentice, 2007). Road traffic contributes to a range of gaseous air pollutants and to suspended particulate matter (PM) of different sizes and compositions. In addition to carbon dioxide, tailpipe emissions comprise nitrogen oxide, hydrocarbons, ozone, benzene, lead and particulate matter (Woodcock, Banister, Edwards & Prentice, 2007). In urban areas, motor vehicle tailpipe emissions of primary particles account for up to 30% of ultra-fine PM (less than 2.5 µm in aerodynamic diameter),

<sup>2</sup> The paragraph is largely taken from the final report "Pedestrian safety, urban space and health published by OECD in 2012, already often quoted in the paper).

(Krzyzanowski, Kuna-Dibbert & Schneider, 2005). A systematic review identified evidence suggesting pollutants derived from transport have a serious negative impact on population health (Krzyzanowski, Kuna-Dibbert & Schneider, 2005). The findings imply an increase in total mortality, respiratory morbidity, allergic illnesses and symptoms, cardiopulmonary mortality, non-allergic respiratory disease, and myocardial infarction. Some studies also suggested an increased incidence of lung cancer among people with long-term exposure to transport-related air pollution (Krzyzanowski, Kuna-Dibbert & Schneider, 2005). Initial estimates show that tens of thousands of deaths per year are attributable to transport-related air pollution, similar to the death toll from road trauma (Krzyzanowski, Kuna-Dibbert & Schneider, 2005). Long-term decreases in air pollution are associated with reduced bronchial hyperactivity and respiratory and cardiovascular disease, and consequent gains in life expectancy (Woodcock, Banister, Edwards, Prentice & Roberts, 2007; Krzyzanowski, Kuna-Dibbert & Schneider, 2005).

Nonetheless, pedestrians in general, are not exposed to more air pollution than drivers of private vehicles, or individuals inside buildings. Although walking and cycling may suggest greater exposure to such air pollutants, several studies that have considered levels of inhalation and duration of exposure, finding that pedestrians consistently had the lowest exposure to pollutants (McNabola, Broderick & Gill, 2008). In fact, the in-vehicle air pollution levels have generally been found to be slightly higher than exposure levels experienced by cyclists and pedestrians (Kaur, Nieuwenhuijsen & Colvile, 2007). Furthermore,

it has also been reported that the mean in-vehicle concentration of volatile organic compounds often exceeds concentrations typically found in residential indoor air (Geiss, Tirendi, Barrero-Moreno & Kotzias, 2009). Car and bus travellers appear to have the highest exposure to vehicle emissions, particularly gasoline-powered vehicle emissions (Nieuwenhuijsen, Gomez-Perales & Colvile, 2007). For walking and active mobility related to active commuting, the health benefits clearly exceed the possible negative effects of long-term air pollution (U.S. Department of Health and Human Services, 1996).

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#### 4.2 Noise<sup>2</sup>

Existing evidence suggests excess environmental noise affects daily activities and has negative impacts on overall health and well-being of the population. In the early 1990s within the European Union countries, it was estimated that about 40% of the population was exposed to road traffic noise with an equivalent sound pressure level exceeding 55 dB(A) during the day, and 20% were exposed to levels exceeding 65 dB(A) (Berglund, Lindvall & Schwela, 1995). Since then, sound levels have steadily increased, as a result of the growth in road-based travel, as well as the higher travel speeds (Dora & Philips, 2000).

The World Health Organisation (WHO) has compiled two reports reviewing the health impact of environmental noise, each providing a set of recommended guidelines (Guidelines for Community Noise (Berglund et al., 1995) and the Night Noise Guidelines for

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<sup>3</sup> *ibidem*

Europe (World Health Organisation, 2009). It has not always been possible to evaluate the impact of road traffic noise on health, in isolation from other environmental noise. Overall, the main effects of noise on health include pain and hearing fatigue, hearing loss, annoyance, interference with social activities and communication, sleep disturbance and its consequences (including stress, fatigue), cardiovascular effects, hormonal responses, as well as degrading performance and development at school and work (Berglund et al., 1995).

#### 4.3 Congestion

Walking (like moving with other non motorised means) create a sense of belonging to a shared space. All five senses are active and give pedestrian the feeling of sharing an urban environment with others. The perception of space from car is totally different: drivers and passengers have the feeling of being in a private cell moving on a dedicated track. There is a strong sense of separation from the outside environment. Even though the road is a public domain, it is perceived as an exclusive place.

As a consequence, the space needed for traffic in economically developed societies (where the motorisation rates vary from 0.4 to nearly 0.7 car/inh) is huge! Congestion is a typical externality that no one pays for. When blocked in a queue most drivers complain with the neighbour's behaviour and claim for better public transports and so on ... Even the road accident is felt as a conflict between two opposing "private users" for the usage of this exclusive space. We can therefore see a very different attitude towards urban space from the same human being, when driver or

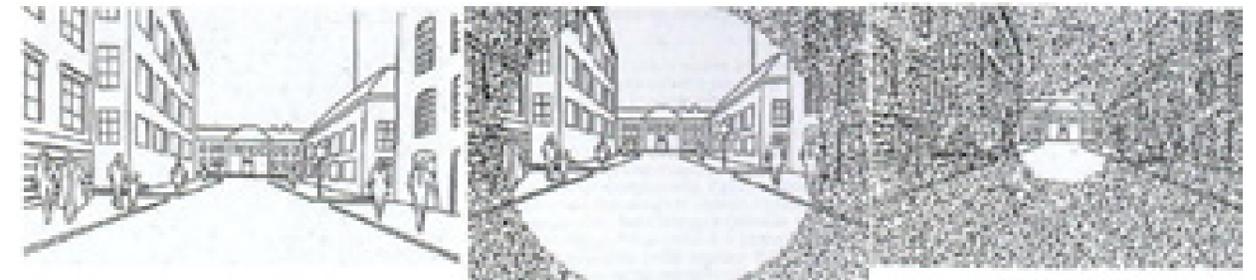


Fig. 7: The cone of vision: a) Pedestrian; b) Driving at 20miles/h (30km/h); c) Driving at 30 miles/h (50km/h)

pedestrian.

The attitude reflects a very different perception of the relationship between public and private interests. It could be said that one of the main consequences of promoting walking (and moving with other non motorised modes) is that of returning urban space to citizens and shaping back towns for them, rather than just providing space in addition to roads (Tolley and Thomas, 2001; Tira, 2003).

Congestion is at the heart of the above described problems, such as pollution and noise, being only sometimes safer for pedestrians when it slows down vehicle speed.

#### 4.4. Legibility of space

Speed and visibility are linked in a way that the cone of vision reduces speed grows (figure 7). The effects are not only on the legibility of space, that is a personal experience, but also on the safety level: the possibility to see pedestrian walking on sidewalks is highly reduced by the narrowing of the visual cone. That is one of the reason why modern towns can dare to have long repetitive facades whereas the medieval town showed off a fast changing urban landscape. Giving city users a chance to perceive the surrounding environment can be an impulse to give value to common space, so to increase the affection and respect

## 5. Conclusions

The main conclusion is mostly the same since quite a long time: reflections, researches, best practices on this new vision of accessibility of public space are pretty well known. Why all that amount of evidences do not change in our immediate future the face of towns is rather a question mark. Several features of human mentality may be evoked: knowing does not mean acting; democracy means deciding according to the majority that could not necessarily reflect the best solution; managing needs financial resources; consciousness do not necessarily imply implementation; etc..

A conclusive remark could just be a kind of cry of three key words: proximity, accessibility and safety as main concerns for planners and – foremost – decision makers!

The revolution of sustainability still remains the main policy driver for the towns of the future, and walking in an accessible environment for all one of the main challenge both for ageing (and tired) societies, as well as dynamic growing communities!

## References

- Badiani, B. (2006) *Una metodologia di analisi degli spazi urbani*, Aracne, ISBN: 9788854802971
- Benevolo, L. (1997) *Histoire de la ville*, Col. Parenthèses, Paris
- Berglund, B. Lindvall, T. Schwela, DH. (1995) *Guidelines for Community Noise*, World Health Organization, Geneva. <http://www.who.int/docstore/peh/noise/guidelines2.html>. [accessed 15/11/2009]

- Busi, R. and Pezzagno, M. (editors)(2011) *XVIIth International Conference Living and Walking in cities-Sustainable mobility and road safety (Proceedings)*, EGAF, Forlì
- Butcher, J. (1999) *Walk 21: International Charter for Walking*
- Cavill, N. Kahlmeier, S. Racioppi, F. (2006) *Physical activity and health in Europe. Evidence for action*, World Health Organization, Geneva. ISBN 92 890 1387 7.
- City of Ottawa (2007), *Transit oriented development Guidelines*, City Council [http://www.ottawa.ca/residents/planning/design\\_plan\\_guidelines/completed/transit/index\\_en.html](http://www.ottawa.ca/residents/planning/design_plan_guidelines/completed/transit/index_en.html)
- Dora, C. Philips, M. (2000) *Transport, environment and health*. WHO Regional Publications, European Series, No. 89. World Health Organization, Geneva. ISBN 92 890 1356 7.
- Geiss, O. Tirendi, S. Barrero-Moreno, J. Kotzias, D. (2009) *Investigation of volatile organic compounds and phthalates present in the cabin air of used private cars*. Environ Int. Nov;35(8):1188-95. Epub 2009 Sep 3.
- Kaur, S. Nieuwenhuijsen, MJ. Colvile, RN. (2007) *Fine particulate matter and carbon monoxide exposure concentrations in urban street transport microenvironments*. Atmospheric Environment. 41:4781–4810.
- Krzyzanowski, M. Kuna-Dibbert, B. Schneider, J. (Editors)(2005) *Health effects of transport-related air pollution*. World Health Organization, Geneva. <http://www.euro.who.int/document/e86650.pdf>.
- Lee, IM. Buchner, DM. (2008). *The importance of walking to public health*. Med Sci Sports Exerc.; 40(7 Suppl):S512-8. Review.

- McNabola, A., B. M. Broderick and L. W. Gill. (2008). *Relative exposure to fine particulate matter and VOCs between transport microenvironments in Dublin: Personal exposure and uptake*. Atmospheric Environment; 42(26): 6496-6512
- Methorst, R. (2010) *Pedestrians' Quality Needs – the added value of a systems approach – Introduction, theory and research methods*. Rijkswaterstaat Centre for Transport and Navigation, Delft.
- Nieuwenhuijsen, M. J., J. E. Gomez-Perales and R. N. Colvile. (2007) *Levels of particulate air pollution, its elemental composition, determinants and health effects in metro systems*. Atmospheric Environment; 41(37): 7995-8006.
- OECD (2012) *Pedestrian safety, Urban space and health*, OECD-International Transport Forum, ISBN: 9789282103654 (PDF) ; 9789282103647 (print); DOI: 10.1787/9789282103654-en
- The Transport and Health Study Group THSG (1991), *Health on the move. Policies for health promoting transport. The policy statement of the Transport and Health Study Group*. Public Health Alliance. ISBN 1 873514 04 2.
- Tira, M. (1999) *Comfort, sicurezza e accessibilità*, Paesaggio urbano, vol. mag-giu, p. 58-63, ISSN: 1120-3544
- Tira, M. (2003) *Safety of pedestrians and cyclists in Europe: the DUMAS approach*, in Tolley, R. Sustainable transport, Woodhead publ., Cambridge
- Tolley, R. Thomas, C. (2001) *Walking research and communication: new initiatives*, Proceedings of the 8th International Conference Living and walking in cities, Brussels
- US Department of Health and Human Services (1996), *Physical*

- Activity and Health: A Report of the Surgeon General*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. <http://www.cdc.gov/nccdphp/sgr/pdf/execsumm.pdf>.
- US Department of Health and Human Services (2008), *Activity Guidelines Advisory Committee. Physical. Activity Guidelines Advisory Committee Report*. Washington, DC: U.S. Department of Health and Human Services, <http://www.health.gov/PAGuidelines/Report/>
  - Woodcock, J. Banister, D. Edwards, P. Prentice, AM. Roberts, I. (2007). *Energy and transport*. Lancet. Sep 22;370(9592):1078-88.

# BEYOND URBAN BARRIERS

A new approach to the accessibility of urban spaces

Delfín JIMÉNEZ and Carmen IGLESIAS

Accessibility is identified today often with disability issues. Although accessibility is indeed an essential feature of the physical environment for people with disabilities or with some limitations, it is also necessary for the public in general as mark of quality in our public spaces.

In this sense it is interesting to address the issue of streets and urban spaces for all, not so much in terms of special needs for persons with disabilities, but in terms of Universal Design and integration opportunities for all citizens.

We are more used to talking about Design for All when we refer to objects of our daily life or to buildings. The Design for All approach in the field of urban public space, however, is also a very relevant topic which perhaps has not yet been developed to the same extent.

The proposed article will develop some keys to address Streets and Public Spaces Design for All, from the perspective of innovation and creative processes, and by integrating the different needs of the various groups that use public spaces.

## 1. Introduction

Many different things happen on the streets beyond the mere traffic of pedestrians moving from one place to the other. The pedestrian flows vary to a great extent depending on the person's circumstances and capabilities. Why is this diversity not taken into account in the planning phase? In almost all cases, the result

is a proposal which does not take into account the needs of the different users. A review of the procedures for designing public roads is probably needed, especially in order to better understand the need for Accessibility.

Public spaces must be designed in a more inclusive way, taking into consideration the diversity of uses and users, adding new indicators that give us a broader view of Accessibility for All (not only for people with disabilities) and introducing other key considerations that are not specifically related to accessibility.

## 2. The diversity of the streets

### 2.1 Diversity of uses: processes, relationships and activities

*“The use of many public spaces is difficult for any pedestrian, for the simple fact that they have been designed considering only formal processes, regardless of the use people make of the streets and the subsequent relationships. It is necessary to consider social processes, not only formal ones.”*

*(GEHL, 2003 - fifth edition)*

It is not enough to determine, for example, the width of a circulation path by taking into account the driveway or the height of the surrounding buildings. We must also think about what kind of relationships and activities will be developed there: movement only? Will there be storefronts and shops? Will there be benches and residential areas? Will children have areas where they can play?

The use and character of each street or public space determines the design of its accessibility. It makes little sense to establish

general fixed patterns and apply them to all cases regardless of what happens in each place. For example, on a street where traffic is very important, the relationship between pedestrians and vehicles, especially the design and location of crosswalks, becomes one of the most important aspects. However, in a pedestrian street with many shops and business, the focus will be on pedestrian interaction with commercial activities, shop windows, kiosks, tables on the street, etc. A street immersed in the historic fabric of a city, where pedestrian orientation plays a central role, would be a totally different case.

We could give more examples: a street with a steep slope, or a road with no pedestrian routes; likewise a street in a warm and sunny city is completely different from a street in a city with little sunshine and a lot of rain. It is also clear that the initial level of existing accessibility and possibilities for action in a highly developed country with many resources are not same as in a country with a low level of development where other basic needs have to be addressed first.

Thus in everyday life we can see how road traffic, commercial activities, topography, climate, urban design and economic development have a direct impact on accessibility. Addressing this diversity of uses, the specific characteristics of every place, as well as the different activities performed by pedestrians on the street can greatly contribute to improve the ease-of-use, and therefore the accessibility, of public spaces.

## 2.2. Diversity of users. Partial views of reality

Although it seems obvious, the original and main public space

users are pedestrians: people. However, everyday reality shows us that in many cases the true protagonist is the automobile.

On the other hand, public spaces are often treated as the residual space between buildings. Perhaps here it is worth recalling the words of Jan Gehl: “The order must never be: Building – Space – Life. It must always be: Life – Space – Buildings. We must always begin and end with people with buildings” (GEHL, 2003 - fifth edition).

Sometimes pedestrians are seen as an ideal and perfect “pedestrian model”, which in real life does not exist. On the street, as in any other environment or item, we must ban the temptation to think of the “typical user” as an end. The typical user does not exist. Every person has different skills and abilities, and environmental design is the one that must enable its use and enjoyment by all, regardless of their peculiarities. We must design for the ‘extremes’, because we all are ‘extreme’ users (GONZÁLEZ, 2013).

It is not possible to consider in the same way a pedestrian who runs for the bus to go to work and a person who is window-shopping; nor do a young child, a young sportsman or an elderly person cross the street in the same way. Thus, in the design of public streets, the most vulnerable pedestrian groups, such as children, senior citizens, people with disabilities, or people with temporary limitations (parents with strollers, injured people with plaster casts, pregnant women or travellers with bulky luggage, for example) are often excluded and therefore the result is not a street for everyone, but only for a lucky minority.

The accessibility of public spaces must make them usable to all



kinds of people, regardless of their functional capacities. This should not be understood in the sense that accessibility is intended to meet the needs of the few (people with disabilities): accessible design facilitates and ensures accessibility to all pedestrians.

### 2.3. Conventional methodologies in current studies on Urban Accessibility

Fortunately, in recent decades accessibility has been taken into account in the design projects for many public spaces. In many cases, however, these interventions suffer from a partial view of the reality of the street. Too often their focus is on one particular type of pedestrian: accessibility only for people with disabilities, streets for the elderly, city for the kids. All of these approaches, although they provide interesting solutions that also benefit everyone, do not have a global view of the needs of pedestrians. Moreover, interventions are often limited to installing specific accessibility elements. It is always useful to design a pedestrian crossings with lowered curbs and non-slip pavement, or to install a bench with backrest and armrests but often an overall view of the street is lacking, thus leading to miss many aspects which can only be seen when one has a general overview. For example, it is relatively common to find grey roads, grey sidewalks and grey furniture (bollards, bins). All these elements can be accessed separately but if taken all together we have a significant problem of difficulty of detection caused by the insufficient contrast between them.

Fig. 1-2: High Line. New York (USA). James Corner Field Operations 2009. Ref: [www.thehighline.org](http://www.thehighline.org). An excellent example of accessible and attractive space. The evidence of its success is that it is widely used by ALL kinds of people, regardless of their functional capacity.

### 3. Rethinking urban accessibility

It is necessary to rethink Universal Accessibility of public spaces with a broader approach, considering global accessibility features beyond the individual characteristics of each element and also introducing considerations derived from non-permanent situations or environmental external considerations that influence accessibility.

#### 3.1 Holistic view of the street and the public space

*It seems therefore evident that in this open-mindedness, we must move from a vision of founding accessibility on special needs, to basing accessibility on the Inclusive Design.*

(HANSON, 2004).

When talking about Universal Design objects, we are all familiar with the application of the Principles of Universal Design (CENTER FOR UNIVERSAL DESIGN, 1997) and the concreteness of usability of those elements. However, when we address the issue of public space, we must not simplistically see their design as a simple addition of accessible elements. The suitability of the design of each element of the street is critical. However, there are streets in which the resulting space is not suitable to be used by any citizen, despite the fact that the elements themselves are individually designed following the criteria of Universal Design.

*Designing for all involves a complete view of the streets.*



*To ensure real and effective accessibility, the design of public space must be addressed in all its dimensions: the morphological dimension, the perceptual dimension, the social dimension, the visual dimension, the functional dimension, the temporal dimension (CARMONA M, 2010).*

It is therefore necessary to design the public space, not as a sum of elements, but as a whole that requires some additional design considerations to be identified as valid for everyone. Various elements and indicators of vital importance are deduced from this holistic view of the Universal Design of Public Spaces.

### 3.2. New accessibility indicators

When we delve into the design of public space and its accessibility, we usually focus on characteristics that have traditionally been seen as the key factors. Thus, the accessibility of the street was embodied in the “step width”, “longitudinal slope”, “the characteristics of the pavement”, “dropped kerbs at pedestrian crossing points”, etc.

These are certainly key accessibility indicators that must not be disregarded by any accessibility study. Nevertheless are these indicators enough for a thorough study of the accessibility of a street?

As noted above, we must also consider other indicators which are not linked to particular items, and which traditionally are not taken into account when discussing accessible designs for

Fig. 3-4: Plaza Santa Bárbara. Madrid (Spain). Nieto Sobejano Architects. 2008. Ref: [www.nietosobejano.com](http://www.nietosobejano.com). In this square the city centre an attractive and yet easy to use space has been created: the street furniture is comfortable, all elements are easily identifiable, there are benchmarks for pedestrians and no danger points that obstruct pedestrian traffic.

public spaces. Some of these indicators are presented below as an illustrative example, without pretence of being an exhaustive and closed enumeration.

Indicators that reflect general considerations, which are understandable and measurable only from a global perspective, beyond the particular characteristics of each of the elements: visual continuity, lighting of public spaces, environmental noise, urban landmarks. These are just some of the examples that could be listed as new indicators.

## 4. Other key factors to develop

Regardless of the new indicators described above, other issues should be considered, as potential boosters/developers of accessibility. They can play a decisive role for accessibility to be really effective, and may even become a remarkable feature of public space. In this paper four of them are analysed: multi-sensorial design, incorporating creativity in the design of accessible pedestrian spaces, zoom in/out and the importance of accessibility in the process of public spaces design.

### 4.1. Multi-sensorial design

Designing public spaces with a meaning means designing public spaces using our senses. Encouraging the use of other senses that we do not normally use helps us develop those senses and find

new ways of perceiving the space of the street, incorporating the senses in the fields of design and architecture. There are numerous studies and projects about how we can perceive space through senses other than the usual sense of sight, such as the project 'Designing in the dark' (UNIVERSITY OF SAINT LUCAS, 2006) or the example of Carlos Mourao (VERMEERSCH P-W, 2013) and his multisensory projects, from his perspective as blind architect.

Senses are a necessary factor in the project (GEHL, 2003 - fifth edition) but the design of streets is usually almost exclusively focused on the sense of sight. It is our most developed sense and the one which gives us more efficiency and safety when moving around within public spaces. But, what about people with visual impairments? The consideration of other senses in the design of the street can help some pedestrians in their interaction with the environment. Although it may seem redundant, providing information in several ways allows such information to reach all people, regardless of their functional diversity. Even the sense of sight can be enhanced to improve accessibility. We can create milestone references in overly homogeneous urban spaces, where it is easy to become disoriented or lost. "Augmented reality" can play an important role in the near future also to facilitate the movement of pedestrians within public spaces, and thus also become an interesting accessibility tool.

The sense of smell, along with sight and hearing are distance receptors (HALL, 1966) and therefore of great importance at the time of interaction of the user with the public environment. Just as the sense of smell allows a blind person to recognise his neighbour by his perfume, or know exactly where he is in the street when

he smells the fresh bread from the bakery, why not make use of these features to improve accessibility of urban public spaces? The use of aromatic plants, which allows the pedestrian to know where he is and be well referenced in the public space, is a good example that may encourage this line of action.

In relation to the sense of hearing, in the same way that we use acoustic signalling in pedestrian traffic lights, we can use other sounds like the murmur of water or the tinkling of bells to position urban references in the pedestrian itinerary.

However, we must remember and try to take advantage of the reach distances for each different sense. While the sense of hearing and especially the sense of sight can be powerful and allow us to recognize a person or identify a potential danger at a considerable distance, the sense of smell allows us to interact with the environment within a short distance. The sense of touch could also have more possibilities than we normally think. Tactile pavements or Braille signage are just two of many possibilities. The sense of taste can probably be avoided because the interaction with the environment lies at a very short distance.

Fig 5-6: Seafront in Benidorm (Spain). Carlos Ferrater 2009. Ref: <http://www.arquitecturaviva.com/en/Info/News/Details/1849>. In a large open space like this, the colour is used as a reference for the orientation of the many users of the beach and the boardwalk who might have difficulties recognizing what was their exact area of origin or destination..



#### 4.2. Incorporating creativity in the design of accessible pedestrian spaces

Fortunately there are already projects that have taken into consideration the special needs of different groups and try to integrate them into the design of public spaces. Projects of 'friendly cities for the elderly' are good examples. Nevertheless, the partial consideration of the needs of a group does not mean that the needs of other groups are covered. It does not mean either that the design has been present in these interventions or even that the design has prioritized functionality elements. Social design does not have to be an ugly design, although is still often associated in many cases with precariousness, disease and lack of any attractive.

Definitely, there are some myths traditionally associated with accessibility that have to be rejected, such as the ideas that accessibility is expensive, requires more space or cannot be attractive. In particular, the myth that aesthetics is not relevant to the issues of accessibility is totally untrue.

Historically, accessibility has been associated with medical or orthopaedic problems and the only important thing was to solve unique or rare needs. However, when we speak of Design for All we are no longer talking about accessibility for a few. It is about a general purpose which needs an attractive design just like any other product on the market. If an attractive design is demanded when we want a smartphone, a car or a website, why is design not equally important in these products when we talk about accessible elements?

In architecture itself design considerations and creativity beyond use are highly valued. When we focus on public space, design considerations are only taken into account when it comes to landscaping, under a very general point of view, or associated with green spaces, but never connected to public spaces of the street.

If we now look at the road design on public spaces, we can see how use is the determining factor and the priority. However, there is also space for the creative design of the street. The next step will be to find a creative design for the accessible street. And today, this is THE challenge for all of us.

#### 4.3. Zoom in/out. The study of accessibility at different scales

In order to be effective, accessibility in public spaces must be studied at different scales. Firstly, at city level (macro level), general proposals can be studied such as the suitability of the route to be adapted or the possibility of alternative routes to the existing main one. Other possible examples would be the decrease of the pedestrian detours to reduce travelling distance, relocating some elements such as pedestrian crossings or walkways, reconsidering the vehicle-pedestrian connection with the reorganization of traffic and parking, and so on. On a smaller scale (micro level), we need to turn our attention to smaller details: the materials, the colours, the human scale as well as the diversity in every street and the different needs that have to be considered in each case. When the issue of accessibility in public spaces at different scales on the same space is not addressed, the resulting solution is not effective, as it has not considered all variables and needs. Both

scales are important and neither is superfluous. In some cases it is necessary to conduct an analysis at an intermediate level to complete the study effectively.

#### 4.4. Womb-to-tomb accessibility. Accessibility in the process

The consideration of accessibility in the whole process of design, construction and management of urban public spaces is vital. The complete process goes from concept to maintenance, including design development and construction.

The importance of the process in the design of public spaces is essential to ensure accessibility, starting with the need for a global view of the interventions to be made in order to prevent specific actions (patches) that are not effective and are difficult to manage.

Before that, however, we must first “take the measurements” of the future users, collect their demands and needs and use them as a starting point in the design of the street. Moreover, once the design is developed, evaluation and approval from the point of view of accessibility is necessary.

Finally, we must not neglect the importance of the subsequent management and maintenance of the street. Accessibility is not just for a given point in time as may be the opening of the street. Accessibility only works if it lasts over time and, for that, effective management and proper maintenance are the two key factors.

Having all this in mind in the design of the street will enable us to make sure that planned accessibility levels are implemented, are effective and will last over time.

Accessibility must be taken into consideration at an early stage

in the design, where many initial accessibility mistakes can be avoided. Afterwards, it must be taken into account during the execution, where one must exercise extreme caution in order to ensure that things are done as planned without neglecting details, since many problems can arise in this phase. Finally, accessibility must also be part of the management system of public spaces, as this will guarantee accessibility over time, not only at the time of the intervention. Therefore, we must strive for Accessibility from cradle to grave, so that it can be effective for everyone.

## 5. Conclusions

Traditionally, the design of public spaces was addressed only under the perspective of pedestrian traffic, seen as the only relevant action taking place in the streets. Roads were just considered a thoroughfare, not a place where to stay. Here the concept of accessibility is flawed because it does not consider many actions undertaken by people on the street in addition to the mere transit. Moreover, a model pedestrian user with specific functional capabilities was the reference for designing, something that does not reflect the diversity of users of the public space their different usage needs. Moreover, the issue of accessibility is addressed in a specific way, without considering other factors. In addition, the accessibility of the street is understood as the sum of the accessibility of its components, without a holistic approach to planning and its implications on Accessibility.

For all these reasons, a rethinking of Accessibility in urban public space is required. New indicators and new general criteria have to be considered without replacing the current analysis tools. These

new elements complement other indicators providing us with a much broader view of the reality and of the needs to be solved, as well as of the different possibilities to consider.

The indicators that are described in this paper are just a starting point for a broader and deeper reflection and research on this new vision of accessibility of public space in our immediate future.

## References

- Carmona M, H. T. (2010). *Public Places, Urban Spaces*. Elsevier.
- Center for Universal Design. (1997). *The Principles for Universal Design*. NCSU, North Carolina State University.
- Gehl, J. (2003 -fifth edition-). *Live Between Buildings: Using Public Space*. Copenhagen: Danish Architectural Press.
- González, S. (2013). *Designing for the extremes, or why your average user doesn't exist*. sugoru.wordpress.com.
- Hall, E. (1966). *The Hidden Dimension*. New York.
- Hanson, J. (2004). *The Inclusive City*. London.
- University of Sint Lucas, G. (2006). *Designing in the dark. Multi-sensorial workshop reconnecting designers with visually impaired end-users*. Sint-Lucas Arcitectuur Brussel - Gent.
- Vermeersch P-W, H. A. (2013). *Blindness and multi-sensoriality in architecture: the case of Carlos Mourao Pereira*. AIA, The American Institute of Architects.

# MONITORING AND ENFORCING ACCESSIBILITY STANDARDS

An innovative policy. Action plan toward Kuala Lumpur as accessible city

Dalilah BEE ABDULLAH and Isabella Tiziana STEFFAN

The contribution illustrates the commitment of the Administration of Kuala Lumpur on improving accessibility in town. The Tourism Master Plan 2014-2025 has been drafted with the ambitious aim to make the city a top-of-mind tourism destination. The action plan for accessibility aims to empower existing urban and tourism infrastructures that do not appear disabled-friendly and lead services and products to cater to the increa-

singly growing segment of tourists with disabilities. One of the main key factors considered for urban development is the accessibility of the urban environment to all users, citizens as well as tourists. The Tourism Master Plan will upgrade the identified key tourist areas in order to gradually incorporate elements compatible with people with disabilities, that will be better usable "for All".

## 1. Introduction

People with disabilities represent a significant yet often neglected tourist market. According to the UN, an estimated 1 billion people, or around 15% of the world's population, live with disabilities. Furthermore, with the increasing ageing population, the proportion of elderly people with mobility or other restrictions will inevitably rise. Accessibility should nowadays be part of all tourism products, infrastructure and services.

The access to resources by all individuals, without discrimination and under a sustainable perspective is subordinated to the presence of spaces, services, infrastructures and products designed in order to be accessible and easily usable ideally by the widest range possible of users. However narrow and obstructed walkways, lack of wheelchair access, inadequate tourism products according to the needs of people with disabilities, inability of front liners to handle requests and lack of disabled-friendly facilities and public transportation are some of the various challenges for accessible urban development, as shown in the case study of Kuala Lumpur.

## 2. Urban tourism development in Kuala Lumpur: objectives, strategies and mechanisms

In November 2012, Malaysia adopted the Ministerial Declaration on the Asian & Pacific Decade of Disabled Persons, 2013 – 2022 and the Incheon Strategy “to make the Right Real” for Persons with Disabilities in Asia and Pacific. The city of Kuala Lumpur tried to concretely implement the issues emerged from the aforementioned documents and it undertook the innovative policy 2014 with the aim to lay the foundations for a long-term urban development according to the Design for All approach. Kuala Lumpur City Hall established an access audit unit in 2010 whose purpose consists in performing periodic audits on buildings and public facilities based on the concept of Universal Design and identifying problems and obstacles faced by people with disabilities.

The most urgent need was to identify the most effective ways

Fig. 1. Summary of KLCH mechanisms for accessible city.

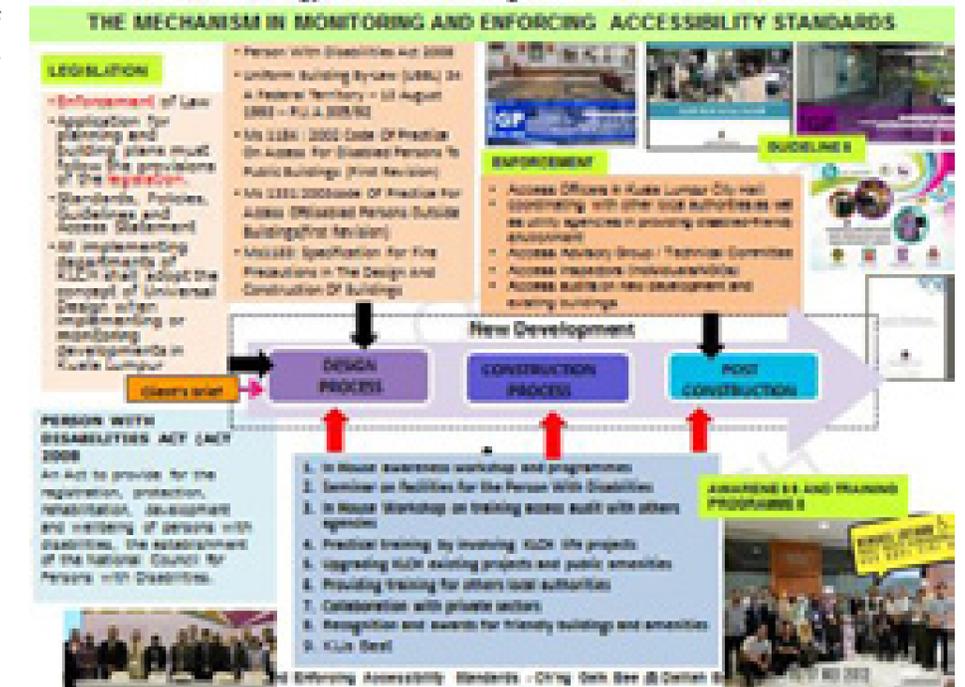


Fig. 2. Intervention for the accessibility of urban paths and infrastructures.



of enforcing laws, effective policies and mechanisms that can contribute to create a friendly built environment for All: this will enable the PWDs to fully participate and enjoy their social life and enhance Kuala Lumpur into an accessible city.

The Action Plan strategies include the provision of facilities for PWDs and their monitoring from the submission of projects to their completion, the creation of an environment that is accessible for All and the application of Universal Design in urban development towards creating an accessible and more efficient user-friendly environment for everyone who live, work, play and visit the city. The main reference and the starting point for the accessibility plan in Kuala Lumpur was represented by the legislation: Person with Disabilities Act (2008) and Uniform Building by Law (P.U.A. 305/92 - 1993) have been combined with National Malaysian Standards contained in Code of Practice on Access for Disabled Persons to Public Buildings ( MS 1184, 2002), Code of Practice for Access of Disabled Persons outside Buildings (MS 1331, 2003) and Specification for Fire Precautions in the Design and Construction of Buildings (MS 1183).

### 3. Policy and achievements

The most important achievements of the action plan can be summarized as follows:

- continuous improvement of existing activities, especially Access Audit and nine **training workshop on accessibility for City Hall staff, professionals** (architects, designers, engineers...) **and other stakeholders** in order to increase public awareness;



Fig. 3. The involvement of People with Disabilities in the action plan for accessibility.

- proposal of **disabled friendly building recognition awards**;
- **standardization of the process of building control**, the role of local authorities, professionals and related policy mechanisms to achieve compliance with the initial responsibility and to strengthen the construction of accessible facilities;
- **implementation of laws related to PWDs**: all implementing departments in KLCH shall always be in compliance of Universal Design approach for KLCH in-house projects and buildings and amenities;
- creation of **checklists** of accessibility requirements at each stage of construction;
- registration of Auditors of the **Audit Panel** within Kuala Lumpur City Hall staffs;
- involvement and input from PWDs in order to improve facilities in existing and new buildings.

Among the achievements, some key projects have been developed, both at public and private level.

The two pilot projects of accessible buildings in Kuala Lumpur concern:

1. the project of accessible public hospital at the Rehabilitation Centre, approved by KLCH (Kuala Lumpur City Hall) by using revised checklists;
2. the accessibility of the car showroom Perodua.

Moreover, several other interventions concerned various pedestrian accessible walkways, like the elevated walkway over Jalan Pinang; accessible facilities in railway stations and bus hubs; provision of accessible vans for social activities.

The innovative aspect of the Action Plan is represented by the involvement of city users, including persons with motor or sensorial disabilities and citizens with various and different needs and lifestyle. PWDs played active roles as speakers in seminars and workshops, facilitators, access auditors and inspector auditors, members of working groups for simulation sessions. Furthermore, the municipality has set up an access audit unit to monitor access facilities in order to create a barrier-free urban environment.

Fig. 4. Kuala Lumpur, Rehabilitation Centre. Accessibility at the parking, toilette, stage for conference; entrance to a specialist center.

The working group ran simulations and access auditing in public facilities and advised on the upgrade of existing spaces or new development works.

Starting from the innovative Design for All approach, the accessibility policy for the urban development of Kuala Lumpur has been organized in various initiatives and actions, as fine for abusing facilities for PWDs; recruitment of employees with disabilities in the City Hall; accessible, usable and friendly website; barrier free pedestrian pathways network and pedestrian bridges; requirements of disabled-friendly environment in the Development Order for all building approvals.

The Action Plan has set at present a benchmark for all the other local authorities, disseminating knowledge and sharing the experience of accessible urban spaces.

Under the Kuala Lumpur's Action Plan, all new constructions and retrofitting works must be universally designed: for construction to be approved, the submitted building plans must comply with the accessibility standards, the construction permit is only issued after approval and every submitting person has to issue an Access Statement describing all accessible facilities in public buildings;

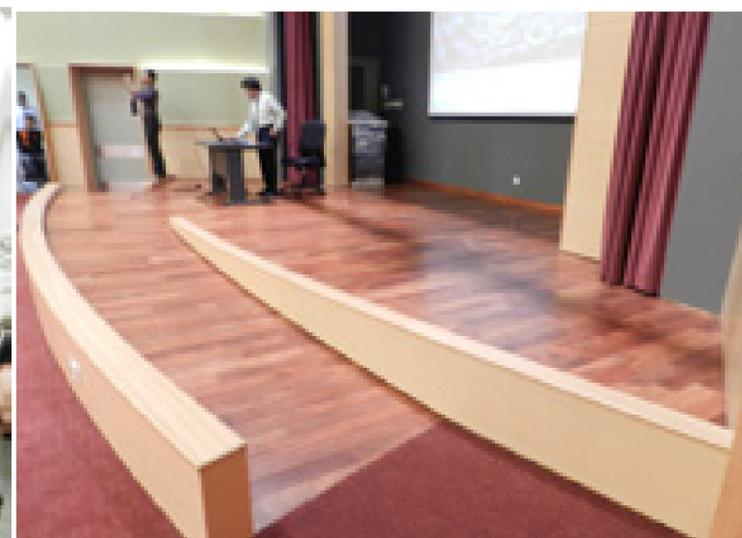




Fig. 5. Kuala Lumpur, Terminal Bandar Tasik Selatan (BTS): signages; information kiosk; accessible ATM kiosk; tactile guide to the drop off point at bus terminal.

during the construction, access auditors of the Kuala Lumpur City Hall inspect the construction with the possibility of stop-work order. In 2012 Kuala Lumpur City Hall received 1890 submissions for Development Order. Out of this, a total of 1588 submissions were given Development Order because of compliances to all requirements which include compliance to PWDs standard. The remaining 302 submissions were rejected and were not given the Development Order due to several reasons. One of which is the non-compliance to PWDs standard.

In 2012 Kuala Lumpur City Hall received 1082 submissions for Building Plan Approval for all categories of buildings which include private houses, interior partitioning, non high rise buildings and all other small development.

For this report, KLCH focus and zoom down to only high rise and related public usage building such as condominium, hotels, shopping complexes, office buildings, service apartment etc. The total submission for this category is 118. From this figure a total of 62 submissions have received Building Plan Approval because of compliances to all requirements which include compliance to PWDs standard. The remaining 56 submissions have yet to comply to certain requirements which include compliance to

PWDs standard.

At this stage plans/drawings were thoroughly checked, especially the requirements for PWDs, and those who have submitted projects are often called to discuss on the provision of the facilities for disabled.

Beside these projects, the Action Plan also involves the implementation of new programs for citizens:

- equestrian Therapy Foundation Course;
- a project for job coaching;
- sign language classes.

As a result, an access audit manual and guidelines have been published, 70 access audits have been carried out, nine training workshops were held and the Action Plan became a benchmark for all local authorities in Malaysia.

#### 4. Future developments

The “Action Plan towards Kuala Lumpur as Accessible City” was awarded among 15 “Innovative Policies 2014” at the United Nations Office in Wien (Austria) by the Zero Project, an international initiative that works For a world without barriers, according to the principles of UN Convention on the Rights of



Fig. 6. The cover of the book titled: Manual access audit for facilitators as a guideline on universal design in Malaysia, published in 2012 by National Council For Persons With Disabilities.

Persons with Disabilities (CRPD): the award recognized the city achievements to set up an implementation framework for its accessibility standards for the built environment that includes a comprehensive monitoring and enforcement system, from design to post-construction.

This success should represent an important stimulating factor for pursuing this ambitious goal.

Among the future strategies KLCH has planned, there is the collaboration between various government agencies and NGOs to conduct seminars, workshops and boost public engagement to implement pilot projects as the catalyst for making the accessibility in the built environment improve faster, such as the Seminar on Accessibility and Universal Design for target group “Hotel Provider” on 24 April 2014 at the Double Tree By Hilton Hotel Kuala Lumpur, and the Seminar ‘2014’-Kul Access Universal Design and Accessibility for Local Authorities, on 3 to 4 June 2014 at Prime Mestika Hall, City Hall Training Institute in Kuala Lumpur

with the presence of Welfare Department (Disabled Planning Department) assistant director Pathmanathan Nalasamy, Ahmad Phesal and moderator Prof Datuk Dr Zaliha Omar. Furthermore, the Kuala Lumpur City Hall (DBKL) plans to give a rebate on development charges to developers who give consideration on accessibility for people with disabilities in their development projects, as an added incentive.

## 5. Conclusions

The intention to create Universal Design Environments can be achieved through vigorous and collaborative efforts among all sectors to provide PWDs with the physical and infrastructure facilities in the urban environment: cooperative design of building interiors, indoor and outdoor public spaces, recreational areas, roads and walkways. KLCH works closely with all organizations and individuals to materialize the success of the vision of KL structure plan 2020 towards a World Class City by the year 2020.

Efforts to create an Accessible City for the urban population, including citizens, tourists and all kinds of users to ensure a sustainable development require continuous and endless commitment in the governments, NGO and private sectors.

Awareness, expertise and monitoring are the key to successfully enhance implementation and enforcement of accessibility standards.

## References

- Department of Standards Malaysia, (2014), MS 1184:2014: Universal Design and Accessibility in the Built Environment - Code of Practice (Second Revision), Department of Standards Malaysia, Ministry of Science, Technology and Innovation, Selangor Darul Ehsan, Malaysia.
- Department of Standards Malaysia, (1993), *MS 1331: 1993 – Code of Practice for Access for Disabled People Outside Buildings*, HYPERLINK “[http://www.scribd.com/julie\\_tan\\_17](http://www.scribd.com/julie_tan_17)” \t “\_blank” Julie Tan, Putrajaya, Malaysia
- Ryde City Council, (1994), *Access – Helping to Remove Physical and Social Barriers to Full Participation by all People in the Community of Ryde*; Ryde City Council; Australia.
- Government of Western Australia, (1996 rev. 2011), *Access – Resources Kit : With Checklists To Improve Access For People With Disabilities*; Disability Services Commission, Perth, Australia, ISBN 0 7309 7626 2
- MDC Legal Advisers, (2006), 13282147. *Uniform Building By-laws. Act 133*, MDC Publishers SDN BHD, Kuala Lumpur, Malaysia, ISBN 967-70-0801-3
- Ministry of Housing and Local Government (2000), *Universal Design Planning Guidelines, Government*, Ministry of Housing and Local Government, Kuala Lumpur, Malaysia, ISBN No. 978-983-2839-20-0(Full report of planning guidelines at HYPERLINK “<http://mytownnet.blogspot.com/>” \t “\_blank” <http://mytownnet.blogspot.com> )
- The Authority of the Revision of Laws Act 1968 in Collaboration

- With Malayan Law Journal Sdn Bhd And Percetakan Nasional Malaysia Bhd (2006), *Laws of Malaysia, Act 171, Local Government Act 1976*, Commissioner of Law Revision, Malaysia
- The Authority of The Revision Of Laws Act 1968 in Collaboration With Malayan Law Journal Sdn Bhd And Percetakan Nasional Malaysia Bhd (2006), *Laws of Malaysia, Act 172 Town and Country Planning Act 1976*, Commissioner of Law Revision, Malaysia
- The Authority of the Revision of Laws Act 1968 in Collaboration With Malayan Law Journal Sdn Bhd And Percetakan Nasional Malaysia Bhd, (2006), *Act 133, Street, Drainage And Building Act 1974*, Commissioner of Law Revision, Malaysia.



# BENCH “TRE”

An urban seating system

## Description

Developed by three young designers, Anna Di Gioia, Silvia Grazioli ed Elisa Pulcioni, that won a contest launched by the Italian company Zinco Service – a small enterprise that works worldwide in the field of anticorrosion - together with the local art academy Libera Accademia delle Belle Arti located in Brescia. The aim of the contest was to design an ecological bench made of hot dip galvanized steel which met the requirements of the so called design for all.

TRE is made by different modules that can be combined together so to create a bench that can be used at the same time by people with or without physical and/or mental disabilities. TRE is built with a recyclable material – steel – treated with

an industrial process – hot dip galvanizing plus painting – that will make it last for many decades with no need for maintenance. The aim of this bench is to reduce the gap between different categories of users while respecting the environment. TRE is designed with simple features so to be easily identified for its use by all users, and it is built with standard steel bars which allow serial production and costs saving. Since it is highly resistant to corrosion, TRE is the ideal product for outdoor settings. Finally, TRE is equipped with a small steel plate called Plak In, which can give instant information about the location or facilities in the nearby, simply by scanning its QR code.

## Zinco Service Srl

Via Spalto San Marco, 16

25121 Brescia (BR)

ITALY

Phone: +39 030 240 3521

Website: <http://www.zincoglobal.com/>

E-mail: [info@zincoservice.it](mailto:info@zincoservice.it)

Contact person: Mario Ubiali

E-mail Contact: [ubiali@zincoservice.it](mailto:ubiali@zincoservice.it)

Phone Direct: 3391515792

## Innovative characters

1. highly environmental friendly (because of the materials, industrial process and life cycle), socially sustainable (users). This bench is made by steel that was hot dip galvanized with a special system called Triplex: this special form of hot dip galvanizing combines the advantages of zinc coating with the ones of powder painting and guarantees long lasting performances in all environments (over 70 years as life cycle), with no need for maintenance. For this reason, TRE is certified by an Environmental Product Declaration (EPD).
2. totally modular and adaptable
3. equipped from the technological point of view (thanks to PLak In) in order to give information to the users about the location/facilities in the nearby
4. project made in Italy, realized by a network of small enterprises working together with a prestigious Art Academy and three young designers that had concrete results in the local economy and society.

## Specifications

### Technologies used

- Triplex (patent Nord Zinc spa)
- Plak In (patent Plakin srl)

### Materials used

Steel, treated with hot dip galvanizing and painting.

### Dimensions

L 2840 X H 826 X W 740 (mm)

### Variants / Colors

TRE is made by three main modules that can be combined as desired (long seat, short seat, table). All colors available upon request.

### Patents (if any)

The project is registered by ADI (Associazione per il Disegno Industriale)

### Environmental Certification

EPD – Environmental Product Declaration

### Price to the public

Varies between 1.500 and 2.500 € according to the combination and colors chosen.

# ADAPTABLE HOUSING

Experiences from the Greek  
Social Housing sector and the design  
of ATHENS 2004 Olympic and Paralympic Village.

Katerina PAPAMICHAIL

# ATHENS 2004



This article concerns the development of Adaptable Lifetime Homes through the Design for All approach, focusing on experiences from Greece. Dwellings and specifically the way they are designed, play an important role in everyone's lives. Residents can have different characteristics and their needs typically change and develop throughout their lifetime, placing various demands on the home. This means that the dwelling should be suitable for everyone, regardless of their condition or abilities. Although this may be considered a universal requirement for any habitation, the surprising fact is

that the great majority of houses and apartments do not fulfil all residents access requirements and they cannot be considered as "accessible" dwellings. In Europe, in the late 1990s social housing organisations in different countries developed guidelines for the design and construction of dwellings that could meet the needs of residents throughout their lifetime, with minimal adaptations: Adaptable Lifetime Homes. The Greek social housing practice in this area is described, including the design of the housing units of the Olympic and Paralympic Village 2004 in Athens.

## 1. Introduction

Dwellings and specifically the way they are designed, play an important role in everyone's lives. Residents can have different characteristics and their needs typically change and develop

throughout their lifetime, placing various demands on the home. Over time, the home environment must accommodate all the functions and demands of growing families with residents of different ages and abilities, including those who have progressive health conditions or disabilities. This means that the dwelling should be easily accessed by everyone and all its spaces and functions should be available to all those who live there, regardless of their condition or abilities. Although these may be considered universal requirements for any habitation, the surprising fact is that the great majority of houses and apartments do not fulfil these requirements and they cannot be considered as “accessible” dwellings. It is evident that even with the application of the most modern building techniques and materials there is very limited understanding among architects and designers of the residents’ fundamental needs and there is a lack of education and expertise in the design of accessible dwellings.

## 2. Adaptable Housing and “Lifetime Homes”

### 2.1 Adaptable Housing

The use of the term “accessible”, when applied to the built environment, often refers to disabled people’s access or use of a building or space. In such cases the term “accessible” means that a disabled person can, for example, enter a building. Over the years, however, the term “accessible” has gained a broader meaning and is used as an umbrella term for everything that has to do with making the built environment better suited to the needs of *people in general*, including people with a disability. In

this sense, “accessibility” applies to everyone who has problems in moving around because of the way the built environment is designed. This can include young and older people using walking aids, parents with a child in a pram or pushchair, people moving large items of furniture and even rescue workers who may have to get a patient out of a building on a stretcher.

“**Accessible**” as applied to housing means that a house can be approached and entered and used by everybody, without the need for physical alterations.

Accessible housing includes “adapted houses”, which have been specifically designed or altered to cater for disabled people or perhaps even for a single individual.

**Through the Design for All or Universal Design approach, the term “Adaptable housing” has been introduced.** This denotes a form of “flexibility” in housing design, which means the house is purposely designed in such a way that it can easily be altered at a later stage. Adaptable houses are not adapted from the start, but designed with flexibility in mind.

*Instead of people adapting to the restrictions of their housing, the housing is adapted to suit the changing needs of people.*

Adaptations for a specific target group or individual may be introduced at some stage in the future. Examples of such alterations include re-arrangement of bathroom installations, stair-lifts, changing kitchen cabinets, washbasins, etc.

Characteristics of adaptable houses are:

- they are ordinary dwellings, suitable for everyone
- adaptations can easily be made at a later stage to serve the needs of people with various sensory and mobility problems,

# Lifetime Homes standards

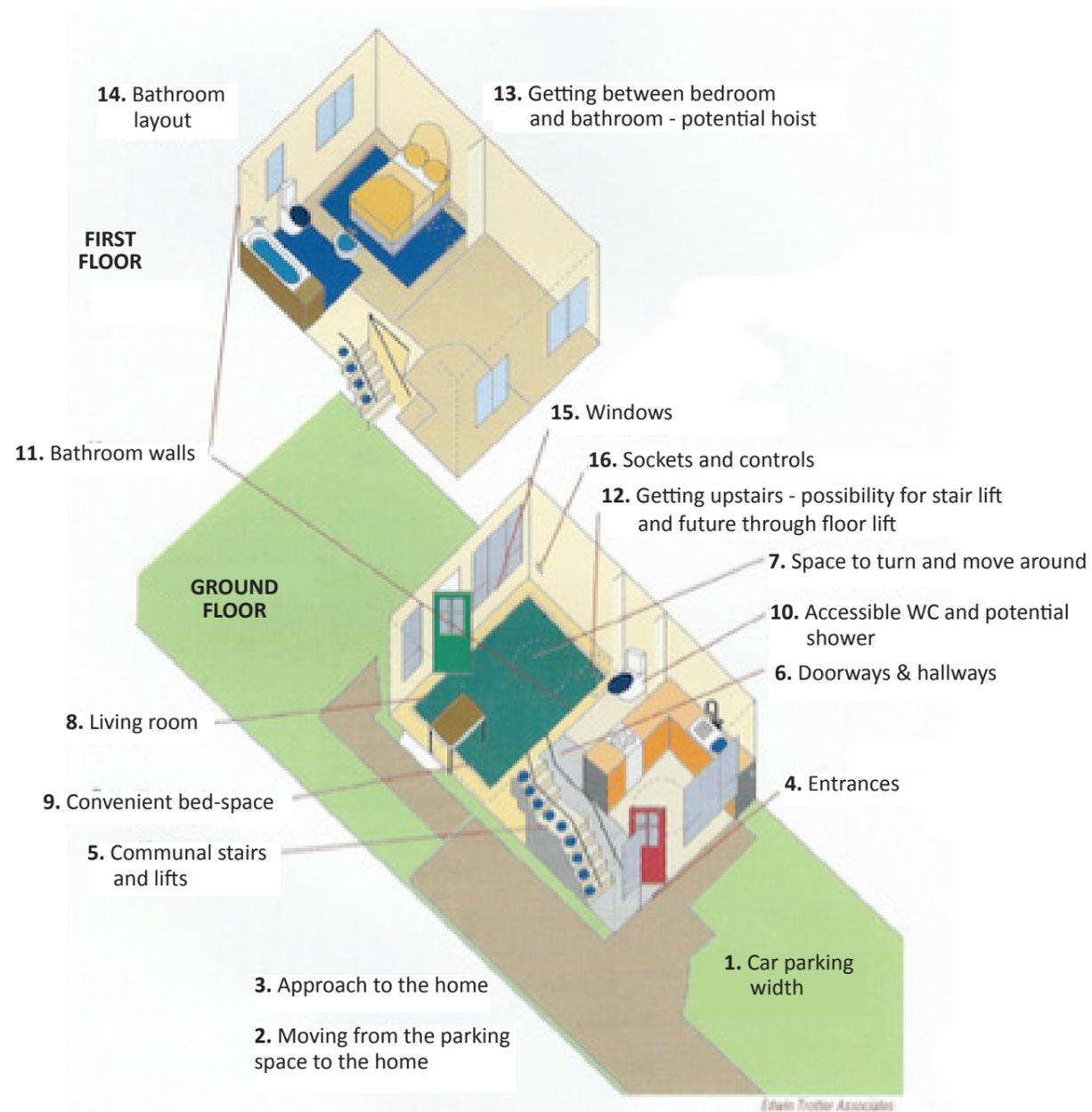


Fig. 1-2. Lifetime Homes Standards Diagram. Joseph Rowntree Foundation. © Joseph Rowntree Foundation

including wheelchair-users.

Building and adapting houses in this way is a flexible and preventive approach, as they can be changed to different standards whenever this is needed. This will reduce the number of enforced moves by people who acquire a disability. Of course, this will be best achieved if every new house is built in an adaptable way.

## 2.2 Lifetime Homes

The concept of “**Lifetime Homes**” was developed in the early 1990s by a group of housing experts in a few European countries. Lifetime Homes are ordinary homes incorporating 16 Design Criteria that can be universally applied to new homes at minimal cost. The term “Lifetime homes” means essentially the same as “adaptable homes”, conveying the idea that people should be able to use their house throughout their lifetime.

Over the years this way of designing and building has become more formalised through the formation in the United Kingdom of the *Foundation for Lifetime Homes and Neighbourhoods*, consisting of Age UK, Town and Country Planning Association and Habinteg (<http://www.lifetimehomes.org.uk/pages/lifetime-homes-foundation.html>) It promotes the Lifetime Homes Standard and provides resources to other organisations seeking to implement the standard, whether through direct property development or through the formulation of policy and practice. The administration and technical support for Lifetime Homes is provided by Habinteg, who took on this responsibility for the Joseph Rowntree Foundation. The Lifetime Homes concept seeks to conform to five overarching principles, namely: Inclusivity,

Accessibility, Adaptability, Sustainability and Good Value.

The Lifetime Homes Design Guide, was published in November 2011. The guide describes the design requirements for accessible homes that will meet the differing and changing needs of households as they experience life events. The guide gives the technical specification and guidance on the Lifetime Homes Standard. The design guide will help provide design solutions that can meet the broadest range of housing need and will enable simple and cost-saving adaptations in the future. These inform and establish the functional basis for the statements of principle that have been introduced for each of the sixteen Lifetime Homes criteria (Figure 1-2).

In Canada, similar developments have taken place to deliver adaptable housing through the work of the Canada Mortgage and Housing Corporation -CMHC- ([http://www.cmhc-schl.gc.ca/en/co/acho/acho\\_002.cfm](http://www.cmhc-schl.gc.ca/en/co/acho/acho_002.cfm)). Introducing its extensive design guidelines, CMHC underlines that a house that is designed and built to reflect the principles of universal design is safer and more accommodating to everyone who lives or visits there, regardless of age or physical ability.

During the 1990s accessible housing was an issue of concern to policy makers, as was shown in a comparative survey (Ambrose 1997). The provision of accessible and adaptable housing moved ahead at different speeds in the European member states, but in more or less the same direction. The general approach adopted was that the houses should be suitable for people with various disabilities, not only wheelchair users. Design guidelines tended

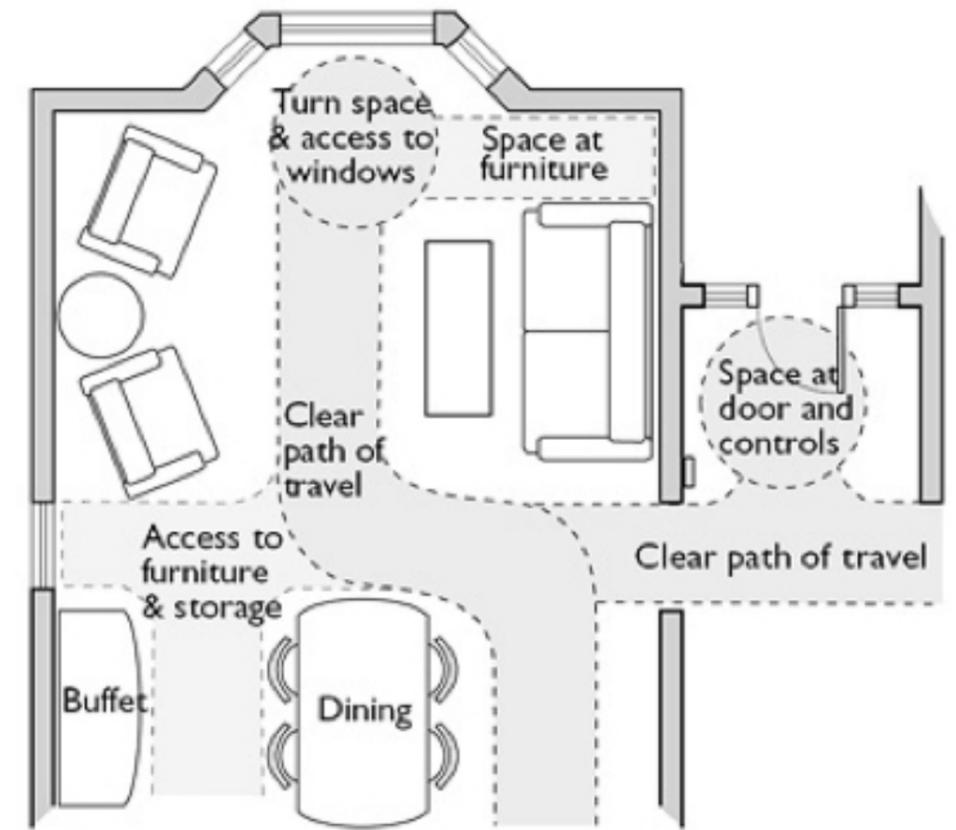


Figure 3. Accessible Path of Travel. Canada Mortgage and Housing Corporation. Source: DesignAble Environments Inc.

to focus on the requirements of people with disabilities since if they can enter a house and use it, then non-disabled people - with a variety of other access requirements - can do so as well.

### 2.3. Arguments in favour of building adaptable housing

It should be emphasised that adaptable houses cater well for the needs of elderly people. With respect to public investment in housing, since the percentage of older people in European countries is growing, this clearly shows the importance of adaptable housing within the social housing policy.

It should be emphasised that adaptable houses cater well for the needs of elderly people. With respect to public investment in housing, since the percentage of older people in European countries is growing, this clearly shows the importance of adaptable housing within the social housing policy.

### 3. Social Housing in Greece

#### 3.1 The Social Housing Organisation (OEK)

Projects of Adaptable Lifetime Homes started to be introduced and developed in the Greek public sector housing programmes, which were carried out by the Social Housing Organisation (Workers' Housing Organisation, abbreviated as "OEK").

OEK was closed in February 2013 as part of the national austerity measures for the economic crisis in Greece. There is no longer a social housing sector in Greece. Therefore the following sections describe the practice and expertise which was developed in adaptable housing, based on design for all principles, and including the construction of the Olympic and Paralympic Village, Athens 2004. The Olympic Village was built on land owned by OEK and after the Games period it became the largest social housing estate in the country, providing homes for about 10.000 residents.

The Greek social housing sector was developed after the end of the Second World War in response to the need for good quality housing for the financially weaker strata of working people. The Workers' Housing Organisation (acronym in Greek: OEK) was the main public organisation in Greece which provided housing to homeless single persons or families – beneficiaries on the public housing waiting lists. Founded in 1954, under the supervision of the Ministry of Employment, OEK constituted the largest housing construction organisation and at the same time it acted as the main instrument for carrying out social building policies in Greece. OEK was a financially independent organisation, which drew its resources from the contributions of the employees and their

employers. It covered the larger part of the total building activity of the public sector. With respect to housing construction, OEK aimed to produce not just ordinary middle-class dwellings but to set examples of higher quality.

OEK considered as "homeless" those who do not own a home and had no other assets enabling them to buy one. This orientation towards home-ownership marks the work of OEK and distinguishes it from all corresponding social housing organisations in the other European countries. Because of this orientation of home-ownership a very high percentage of the beneficiaries remain in these houses for the rest of their lives.

Towards the end of the 1990s, the housing estates of which were planned and built by OEK all over Greece represented 95% of the total annual building activity of the public sector.

The plans for new OEK settlements aimed to create an attractive and familiar urban area, self-sufficient in terms of services, but also "open" to the surrounding region and its life. OEK settlements included complete networks of roads and pedestrian walkways, squares, playgrounds, sports grounds and extensive green spaces. They also included shopping centre and multi-purpose common rooms for holding meetings and cultural events. Within this environment, homes were designed with high standards, adapted to the particular morphology of the terrain and the local character and tradition of the region in which the settlements were built. Private construction companies, supervised by the organisation's technical staff, undertook the construction.

Most of the housing units were 2 or 3-storey buildings and a smaller number were 4-storey, with 2-room flats: 60-70 m<sup>2</sup> 3-room flats:

80-100 m<sup>2</sup>, and 4-room flats: 100-120 m<sup>2</sup>. From the beginning of this century, 2-room flats (with one bedroom and a living room) were discontinued, as this size of flat was considered not to cover the needs of young couples after they had their first child.

It should be mentioned that in 1996 it was decided that families having a member using a wheelchair should get at least a 3 room flat as opposed to a 2 room apartment.

As long ago as 1989, OEK projects began to provide accessible and adaptable apartments, starting with the ground floor dwellings, mostly because of the lack of an elevator in two-storey buildings. Following this, new types of multi-family housing units were designed by OEK with adaptable and accessible apartments throughout the whole building. Thus, elderly and disabled beneficiaries of OEK housing would have the same possibility to acquire suitable housing as any other OEK beneficiary.

### 3.2 OEK's Lifetime Adaptable Homes

Aiming to cover the needs of a broad range of its beneficiaries at all stages of their lives, an effort was made during the 1990s to design and built housing with features of accessibility and adaptability for the elderly, as well as for people with various disabilities or special needs.

The design standards for OEK's Lifetime Adaptable Homes developed by its architects were modelled on the ones given as guidelines from the "Office for people with Special Needs"-Ministry of Environment, Planning and Public Works, Greece. See the webpage: (<http://www.minenv.gr/1/16/162/16203/g1620300.html>). In addition, OEK's participation in the E.U.

"HELIOS II" programme, (1993 -1996) for Social Integration and Independent Living of People with Disabilities was of great importance for the improvement and the development of these standards in Lifetime Adaptable Housing projects by exchanging experiences and information between all the E.U. Member States. OEK was also a member of the project "Adaptable and Accessible Housing", which had been established by CECODHAS, the European Federation of Public, Cooperative & Social Housing, with the objective of examining these design concepts and gathering examples of good practice from the social housing sector throughout Europe.

OEK's adaptable dwellings were designed to be more accessible, more flexible and also safer than the earlier ones, which had not been designed with accessibility and adaptability features. The quality of these houses was improved, meeting the varying needs of numerous changes of occupiers in the same home or the changing needs occurring through one family's lifetime from raising small children to accommodating a family member with a broken leg or with a permanent disability, having a grand mother to stay, or becoming frail in old age. While the housing construction was generally well executed, some issues were not always fully respected and implemented. For example, colour-contrast was not always introduced in the indoor colour schemes, as the choice of material was sometimes taken locally by construction teams who did not adhere closely to the guidelines. The only legal obligation regarding accessibility of public and private sector housing, until 2012, was the provision of level access or ramp access to the building entrance and an elevator suitable for wheelchair users,

only for dwellings of four or more floors in height. In contrast to this requirement, OEK took the decision to go beyond the demands of the legislation by designing accessible and adaptable housing units and providing elevators also in 3-storey buildings.

Design Features in OEK's Lifetime Adaptable Housing are listed below.

1. Access ramps to buildings (compulsory for buildings over 3 storeys), clear width 1.10 to 1.20m.
2. Covered and well lit entrance door; building entrance doors with 1.10m opening for door and frame, and with minimal threshold;
3. Large elevators (minimum internal measurements 1.10m x 1.40m) to accommodate wheelchair users (compulsory according to the building regulations);
4. 150 cm. turning circle at the entrance to the elevator;
5. Entrance doors to flats and balconies 1.00m to 1.10m opening for door- frame, and with minimal threshold;
6. Free passageway to all rooms and spaces;
7. Corridors short and wide (1.10 – 1.20m wide);
8. Wheelchair turning circle 1,50m in bathrooms, kitchen and living-room
9. Internal doors and windows with handles that are easy to operate; width of internal door opening (including frame) 1.00m;
10. Bathrooms located close to the bedrooms; designed to be flexible to adaptations for wheelchair access (e.g. replace bathtub with shower);
11. Easy access and circulation within bedrooms;
12. Electrical outlets at a height away from small children but easy for wheelchair users to reach (0.90m to 1.20m.);
13. Contrasting colours for doors/doorframes and walls and also in bathroom installations for people with visual impairments;
14. Balcony doors with minimum width of 1.10 to 1.20m.
15. Low thresholds at all doorways, up to 2 cm.



Figure 4. Plan of adaptable housing units (ground floor), indicating principle design features, OEK.

Source: Workers' Housing Organisation (OEK),

13. Contrasting colours for doors/doorframes and walls and also in bathroom installations for people with visual impairments;
14. Balcony doors with minimum width of 1.10 to 1.20m.
15. Low thresholds at all doorways, up to 2 cm.

The design features in OEK's adaptable housing are shown in the drawing of two typical apartments, from the late 1990s, Fig. 4.<sup>1</sup>

<sup>1</sup> All housing units had a ramp to access the ground floor, rather than level access because of the legal requirement to install a heating system in the basement, with natural ventilation



Figure 6. Model of three storey housing building, showing access ramp to ground floor entrance.  
Source: Workers' Housing Organisation (OEK)

In 2006, an internal OEK Guideline "Designing for People with Disabilities and Other People Facing Access Problems" was produced by the present author who was Head of the Architectural Studies Division. Here a number of additional access features were included.

These were:

- a. Ramp: maximum slope of the external access ramp 5% or exceptionally maximum 6%; guard-rail 5 to 10 cm high at edge of ramp; handrails at both sides of the ramp; non-slip surface
  - b. Elevator buttons at 90 – 120 cm height with tactile numbers
  - c. Staircase guideline for comfortable staircases, with handrails on both sides and visual markings on nosings of every step
- Arrow points to 6 adaptable housing units in a 3-storey building, two apartments on each floor as shown in Figure 4, above.
- d. Balcony door minimum opening width reduced to 90 cm.
  - e. Bathrooms – free space in front of toilet 1.20m and minimum 0.90 m at side of toilet.
  - f. Bathroom door –possibility to make it sliding or operating towards the outside.

Arrow points to 6 adaptable housing units in a 3-storey building, two apartments on each floor as shown in Figure 4, above.



Figure 5. Drawing showing part of Nea Efkarpia housing estate in Thessalonika, Northern Greece..  
Source: Workers' Housing Organisation (OEK),

- g. Floors –to be level and with non-slip surfaces
- h. Avoid reflective materials and surfaces.

#### 4. The Athens 2004 Olympic and Paralympic Village Project. Housing for All.

As the owner of the Athens 2004 Olympic Village site, OEK played the leading role in the planning of the Villages, which were constructed by four joint-venture building companies, under the supervision of the Olympic Village S.A.

The Olympic and Paralympic Villages were on the same site, with the Paralympic section being used for athletes and officials at both Games. The village was a major project for OEK, which included a wide range of accessibility and adaptability features.

The Village is located at Lekanes, at the foot of Parnitha Mountain in the Municipality of Acharnes, north-west of Athens' centre. It was one of the largest projects for the Olympic Games, covering an area of 124 hectares.

The Olympic as well as the Paralympic Village each consisted of two zones: the Residential and the International Zone. The residences

were built around a large, green area while the International zone contained many buildings (and temporary structures, to be removed after the Games) with services and common facilities. The Olympic Village residential zone contained 366 blocks (2,292 apartments) for the athletes and officials, as well as public utility buildings. It housed over 17,000 athletes and officials during the Olympic Games. Then, during the Paralympic Games, a further 7,000 athletes and officials were accommodated in the Paralympic Village, which occupied about half the residences of the site. The residential buildings consisted of 19 different types, with two-, three- and four-storey buildings. Each apartment consisted of either two or three bedrooms, a living room, a kitchen and two bathrooms. For the Olympic and Paralympic use of the buildings, the kitchen – without kitchen equipment - was used as an extra bedroom. After modifications to make the dwellings suitable for family living, the Village was handed over to the beneficiaries of OEK as an estate with housing and a wide variety of urban facilities for 10.000 residents. This made it the largest ever permanent public housing project which had been planned and built to satisfy Olympic and Paralympic use. This was a major part of the legacy of the Paralympic Games in Athens. Planning the Olympic and Paralympic Villages for later use as family housing presented a number of challenges, especially with regard to accessibility for people with sensory impairments and/or restricted mobility. OEK's experience in designing adaptable housing was put into practice on a wider scale and was successfully implemented in the various housing types. This dual function

Figure 7. Photos of housing at the Athens 2004 Olympic and Paralympic Village  
© Author's archive.

required a high degree of flexibility and adaptability in the housing design, catering both to the needs of international athletes and officials, and for the future residents of all ages and abilities. All the residential buildings of the Olympic Village were designed as adaptable dwellings and especially the residences within the Paralympic Village zone were designed to be accessible for all, without the need for adaptations. (Fig. 7).



These buildings had ground-floor access via ramps and via elevators to upper floors. Doors and corridors were made wide, to enable wheelchair users to move around easily. Colour contrast on doors, frames, and fittings were used to help orientation of people with visual impairments.

Especially for the main bathroom of each apartment, the adaptable design allowed for specific modifications in those apartments that housed the Paralympic athletes, such as:

- Extra space in bathrooms by not installing the bathtub and providing a shower area
- Sliding bathroom doors or doors which open outwards
- Handrail supports
- Mirrors at a height suitable for wheelchair users

See Figure 8, below.



Figure 9. Photographs of an adaptable bathroom in Athens 2004 Paralympic Village.  
© K. Papamichail

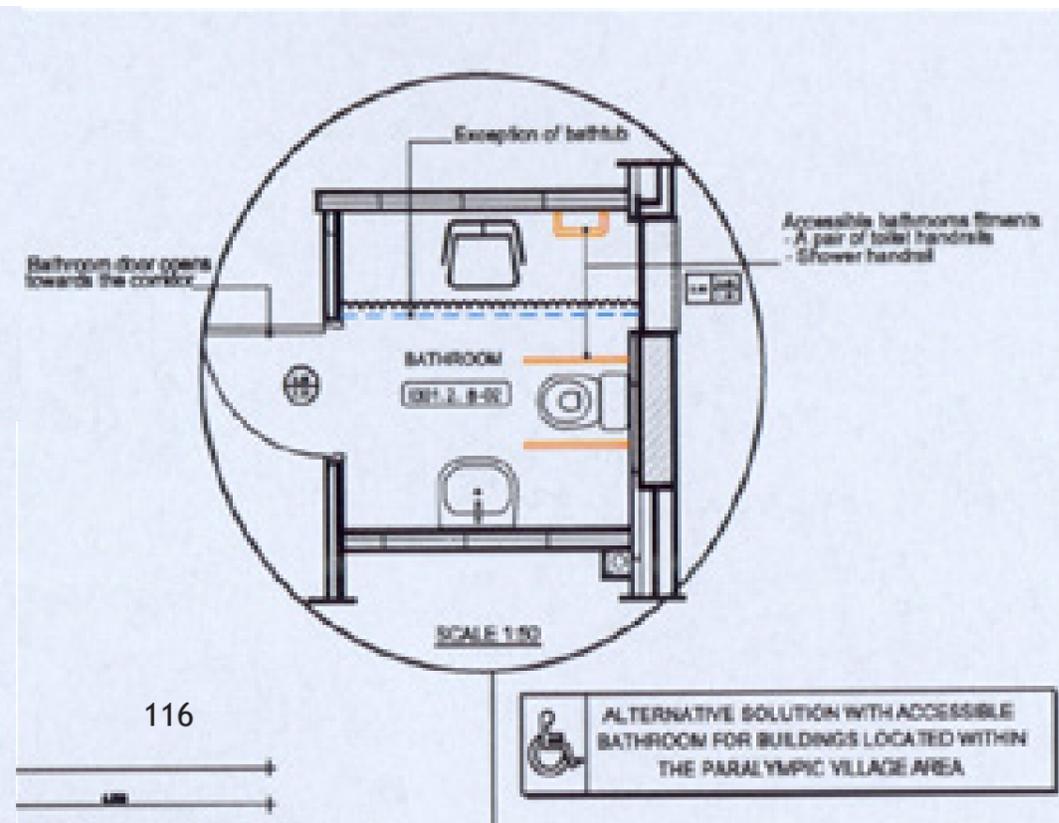


Figure 8. Adaptable bathroom drawing modifications - Athens 2004 Paralympic Village  
© "Athens 2004" Olympic-Paralympic Games Organising Committee. Architect: Katerina Papamichail

Figure 8 shows the standard solution bathroom layout which was made "adaptable" so that it could be modified easily and with minimal cost to become fully accessible (with roll-in shower), which replaced the original bathtub. The door could be opened outwards or be sliding. Provision of support handrails. Water basin with no leg to the floor and lower height of mirror.

The landscaping took into account the need for traffic circulation and pedestrian safety, and all paths were wide, well lit and free of obstacles, so as to allow easy passage for wheelchair users. Tactile surfaces, dropped kerbs, bench seating, shade-plants and clear signage were also included along paths in the pedestrian areas.

## 5. Recent Housing Legislation, 2012

A new Building Code was introduced in Greece in 2012, which, for the first time, referred to adaptability of housing, making it an obligation “...to ensure conditions of easy adaptations of houses for future residents with disabilities or those facing [access] difficulties.” The Code refers to the objective of adaptability and does not describe which specific technical conditions must be met to allow for such adaptations, only referring to the Greek Accessibility Guidelines. Taking into consideration the lack of education and training of architects and designers in accessibility, (both in Greece and also internationally), it may be assumed that this objective will not be easily achieved in practice.

## 6. Conclusion

In February 2012, the Social Housing Organisation, OEK, was closed as part of the government’s austerity measures. Until that time OEK had been the only builder of lifetime adaptable housing in Greece. OEK has been the only Greek housing organisation which planned and built lifetime adaptable housing in the country. OEK contributed to the development of the accessibility guidelines of the Greek Ministry of Environment, Planning and Public Works and in continuation of this it developed and built a series of adaptable housing types. The organisation produced internal design guidelines for this housing and the housing estates. OEK also contributed to European collaboration in the work of CECHODAS - the European Federation of Public, Cooperative & Social Housing.

The achievement of building the Olympic and Paralympic Village for Athens 2004 was the highpoint of this experience, in terms of the numbers and quality of adaptable dwellings that were delivered. The entire Village became a social housing estate after the Games.

With the closure of OEK, the knowledge, experience and example of over 20 years could not be transferred to the private sector designers and builders who must now implement the new Greek Building Code’s requirements for adaptable housing.

## References

- Ambrose, Ivor (1997) “Lifetime Adaptable Homes in Europe and the UK”, the Joseph Rowntree Foundation and SBI Danish Building Research Institute, York / Horsholm.
- Lifetime Homes Standard <http://www.lifetimehomes.org.uk/pages/lifetime-homes-foundation.html>
- Canada Mortgage and Housing Corporation CMHC ([http://www.cmhc-schl.gc.ca/en/co/acho/acho\\_002.cfm](http://www.cmhc-schl.gc.ca/en/co/acho/acho_002.cfm)).
- Greece. Ministry of Environment, Planning and Public Works, Office for People with Special Needs: Greek accessibility guidelines <http://www.minenv.gr/1/16/162/16203/g1620300.html>

The Lab is located in the city centre of Hasselt (Belgium). It is housed in a protected monument, listed as a typical row house dating from 1913. We made sure that the historic character was fully respected and yet the newest technologies available were applied. Floor tiles, wooden staircases and fireplaces were all kept in place. The demonstration house shows different inclusive systems to open doors, an adjustable kitchen, high-tech home automation systems to support daily activities.

The Universal Design Living Lab is a place to conduct research, to offer information and to demonstrate the added values of Universal Design in home environments. The Lab consists of a visitor centre with reception desk and accessible public toilets, a separate information centre, research facilities and two fully equipped and functioning housing units.

The demonstration house intends to show that the need for personal assistance can be reduced to a minimum if the

physical environment is barrier-free and en-abling. Adaptable living and comfort can be supported when a Universal Design attitude is achieved throughout the design process. Consequently the design results support people in an elegant and non-stigmatising way.

The inclusive design process was paradigmatic in itself. It was strongly linked with applied research, with architectural education and knowledge transfer. By means of a real built house, the living lab has to reach a diversity of people in society. This bottom up approach, in which the needs of people in the real world are respected, can push researchers, constructors, policy makers, firms and designers towards new innovative solutions.

A Large amount of time and energy went also into the building process itself. Similar to the design process, different expert teams were chosen to control and to guide the whole building process, as to guarantee accesibility and usability for a diversity of people in all stages of life.

# THE UD LIVING LAB

Place to conduct research, to offer information and to demonstrate the added values of Universal Design in home environments

Mieke NIJS

## 1. Making everyone feel at home

By 2020, 30% of the European population will be over 60. More and more people will need adaptable homes in order to be able to live as long as possible in their own familiar place. Universal design aims at a balanced outcome in usability, elegance and comfort for as many people as possible by means of attractive and elegant design solutions. This inclusive approach supports the vision that good design enables and bad design disables, irrespective of the user's abilities. All people can benefit from improved function, not just people with disabilities. Social participation requires respect and avoidance of stigma.

For these reasons and to raise the general awareness about cities and buildings for all, the national and local authorities, together with academic institutes and regional accessibility offices decided in 2008 to build an inclusive living lab. A place to conduct research, offer information and demonstrate the added values of Universal Design.

The design and building processes took more than four years work and the UD-lab (Fig. 1) opened its doors in March 2013.



Fig. 1: Façade renovated porter's lodge

## 2. The design process

In 2004 Master students of the Faculty of Architecture and Arts of the university of Hasselt were challenged to design an exhibition that would address the needs of people with a disability taking into account the UD concept and principles. Out of the 17 student team projects, the best projects served as a successful source of inspiration and already showed the most difficult challenges.

As soon as funding was secured, the project could start for real. Out of five architectural offices, Victor Simoni Architects (Belgium) was chosen. The choice was based on the inclusive ambitions and vision that this office proposed. Especially for this project he worked together with an interior architect of Toko architects, the founder of this office is a wheelchair-user herself.

On a regular basis the whole design team could rely on the expertise of user/experts as well as experts in UD to check the relevance and

implications of their design decisions. The feedback of user/experts was crucial for all UD-results and elements to assure that there was a non-stop process of UD-ing. By means of "designing", different teams searched for innovative solutions. Researchers, experts, students, designers, constructors and users were all involved.

## 3. The building process

Large amount of time and energy went to the building process itself. Similar to the design process, different expert teams were chosen to observe the whole building process. We unite people around a common goal to discuss different topics on site or during meetings to stimulate productivity. We organised working groups around several domains, like Public Relations, home automation (domotics), interior and Information Technology (IT).

The coordinator of the UD-lab together with professional experts in UD, the appointed architect and an accessibility consultant attended these meetings to remain true to the original concept. According to the topics that were discussed in the different groups, co-workers from the different universities and research facilities attended meetings. In addition different commercial companies specialized in health, e-health, domotics, IT, kitchens, furniture, bathroom equipment,... joined the groups in co-operation with end-users and students.

To work with this diversity of people we increased the productivity and creativity. The process allowed the various stakeholders to work together to develop a mutually acceptable solution. This process was important because there are many problems that affect a diverse group of people with different interests. It allowed



Fig. 2: Former maternity hospital and porter's lodge.

us to make trade-offs between different issues and allowed the development of solutions that meet more peoples needs more completely than decisions that are made without such widespread participation.

#### 4. An inclusive housing lab

The UD Living Lab is located in a larger building complex in the city centre of Hasselt (Belgium) on the campus site of PXL university college Department Healthcare. The typical row house, dated from 1913, is a listed monument. It used to be a porter's lodge of the former maternity hospital (Fig. 2). We made sure that the historic character stayed conserved and yet the newest technologies available were applied. Tiles, stairs and fireplaces were recovered, walls were reinforced with isolation and optimized according to the current national legislation. The UD Living Lab consists of an entrance hall linked with a visitor and information centre, research facilities and two housing units. The total surface area of the lab is 485 m<sup>2</sup> (demonstration house 264 m<sup>2</sup>, visitor center 156 m<sup>2</sup> and open space laboratory 65 m<sup>2</sup>). At the heart of the living lab is the demonstration house (Fig. 3), that shows the latest innovative solutions in design like different inclusive systems to open doors, an adjustable kitchen, high tech domotics to assist people in Activities of Daily Living (ADL) in the environment, ...



Ground floor

Fig. 3: Ground floor, 2nd floor, 3rd floor plan of the housing units.



Second floor



Third floor



Fig. 5: Kitchen on the ground floor level

an easier transfer to the toilet.

A 'Smart Television' in the living room provides, apart from entertainment, a series of services for people with reduced mobility and / or sensorial functional limitations (voice and image recognition, remote control front door). The 'wellness' bed is completely adjustable in height and angle and has all the same functions as a hospital bed, but it looks like an Electric Box Spring.

For people who are tired or with reduced stamina who want to cook while sitting, the kitchen dresser together with the dishwasher can be adjusted to the preferred height and also a special cabinet pull-down shelving system can be lowered electronically (Fig. 5). We demonstrate a hide & slide oven and a servo-drive motorized system for cabinet doors to increase usability.

#### 4.1 Ground floor apartment

The front door opens automatically (switch, badge, and remote control from tablet / smart phone). The original steps (34cm) have been removed and visitors can now use a platform lift (Fig. 4) integrated in the floor of the entrance hall.

All corridors and doors are wide enough for circulation in a wheelchair, for a rollator / walker, or for a person giving support or assistance to someone. Rotating doors facilitate the use for everyone. Doors can be slid in order to create more space or guarantee privacy. For example between the toilet and bathroom we have a sliding door so the toilet can be used as a private guestroom or can be joined with the bathroom to enlarge the space and make

#### 4.2 Upper floor apartment

The living space is furnished with ergonomic chairs and seats, electronically adaptable to individual person's needs (Fig. 6). The kitchen is equipped with single lever mixer tap with swivel spout. Cabinets with an automatic mechanism that opens with a simple tap of the drawer or door, and tactile switches facilitate the use for people with mobility or dexterity issues, or visual impair-

Fig. 4: Lift platform in the entrance hall



vements. Shallow cabinets and pull-out offer the convenience of bringing the stored items into view. The main bed has an adjustable base. With the touch of a button, the bed delivers customized assistance and comfort.

The products and applications shown today in this demonstration house, were donated by over 30 private enterprises. In the future these companies will attend brainstorming sessions, contribute to the search for new concepts for products, applications and services and help design or redesign these together with researchers, designers, architects, students, end users and representatives from the healthcare industry.

Fig. 6: Living room on the 2nd floor level



Through our research and collaboration with private enterprises and experts new knowledge will be generated. This expertise will be applied in training programs for professionals in target industries as well as for the educational programs of both PXL University College and Hasselt University.

The demonstration house intends to show that the need for personal assistance can be reduced to a minimum when a Universal Design attitude is achieved throughout the design process.

The UD living lab is a project from the PXL university college, the Hasselt university and the accessibility office.

With the support and contribution of the European union, the Flemish government, the province of Limburg and the city of Hasselt.

# FRIENDLY SPACES ACCESSIBLE TO ALL

Congress of the International Union  
of Architects Durban

Fionnuala ROGERSON

The XXV Congress of the International Union of Architects (UIA), at which the first edition of the UIA Award “Friendly Spaces Accessible to All” was launched, was held in Durban, South Africa in August 2014. This article gives an account of the Congress activities of the UIA Architecture for All Work Programme culminating in the presentation of the Friendly Spaces Accessible to All Awards. The importance of inclusive design practice was highlighted through exhibitions, presentations, community participation and dance performances.

## 1. Congress of the International Union of Architects Durban

The XXVth Congress of the International Union of Architects (UIA) took place in Durban, South Africa from the 3rd – 7th August 2014. The UIA holds a Congress every three years attended by up to 10,000 architects and students of architecture. Each Congress is held in a different city in a different part of the world and with a different theme. This year the theme was “Architecture OTHERWHERE” placing the emphasis firmly on OTHER methods of practice, reassessing the ethical practice of architecture towards a more equitable, sustainable approach to urban development,

social cohesion and the use of technologies.

It was the first time a UIA Congress had been held on the African continent and this was reflected in the amazing vitality brought to the event by the architects of Kwazulu Natal and their South African colleagues as well as by the 4,500 visiting architects and students. There was also a commitment to ensure that there would be a meaningful legacy from this Congress, and that the city of Durban would benefit from the wealth of ideas generated both at home and abroad, before, during and after the Congress.

## 2. Rivertown

One such legacy project became known as “the Durban Street Project” or Rivertown. The project was to create a public architectural and urban forum in a run-down former industrial area of Durban known as Rivertown. The intention was to act as a catalyst towards the regeneration of the area as an inclusive and sustainable place for living and working. The project included the pedestrianisation of part of a street, lifting the lid of a subterranean canal and creating an accessible urban green space. This space, the surrounding walls and a refurbished historic Beer Hall became a stage for exhibitions, workshops, discussions and performances generating discussion and interaction with local architects and the Durban community around the creation of vibrant socially sustainable cities of the future.

The UIA Architecture for All (AfA) Work Programme, whose primary aim is the creation of inclusive environments through good architecture, joined with other UIA Work Programmes to participate



Fig. 2: Art Workshop  
“A conversation about  
places”.  
Picture: Fionnuala  
Rogerson



in a lively series of events at Rivertown, among them a dance performance by an integrated dance company and an Art Workshop.

### 3. Remix Dance company perform Vanishing Point

Remix Dance Company, from Cape Town, delivered an exciting & inspiring performance of “Vanishing Point”, a duet choreographed especially for the Congress by its artistic director Malcolm Black. Remix is a unique dance company with a deep commitment to dance and dance education for performers with and without disabilities. Remix was founded almost fourteen years ago with the purpose of creating a platform to bring together dance artists from diverse backgrounds and different physical abilities.

Their performance not only inspired the audience of architects but also of construction workers on a nearby site who stopped

Fig. 1: Remix Dance  
company perform  
Vanishing Point.  
Picture: Fionnuala Ro-  
gerson

work in order to watch (Fig. 1).

### 4. Art Workshop - “A conversation about places”

As part of the Rivertown activities Irish architect Tracey Gevers (originally from Durban), organised a workshop with clients of Durban South Skills Development (DSSD).

DSSD is a non-governmental organisation which provides training for people with multiple disabilities. A second workshop on the same theme “A conversation about places” was then organised during the Congress, open to architects, students and the public. The workshop outcome was a series of posters highlighting the participants likes, dislikes and hopes for the future of the built environment which were mounted on the walls of the old Beer Hall (Fig.2).

## 5. UIA Award “Friendly Spaces Accessible to All”

At the Congress, the UIA launched the first edition of its Award “ Friendly Spaces Accessible to All”. The aim of the award is to celebrate excellence in architecture that is accessible to all and respects the principles of universal design.

The award is open to the 1.3 million UIA architects worldwide who may submit projects that have been built within the past five years. These may be urban or rural landscaped open spaces, public or private buildings of any type. The two essential criteria are that the realised projects should be of exemplary architectural quality and welcoming to everyone. Hence they must demonstrate that they have created attractive, inclusive and sustainable environments which have taken full account of the diversity of users, facilitating access, use and enjoyment by people of all ages, abilities and cultural backgrounds.

Over 100 entries were received from approximately 30 countries, ranging from Brazil to South Korea, from Australia to Denmark and many places in between<sup>1</sup>.

The Award process was co-ordinated by the regional work groups of the UIA Architecture for All Work Programme and in particular by work programme directors, architects Krzysztof Chwalibog in Poland and Fionnuala Rogerson in Ireland. Entries were initially

<sup>1</sup> Entries were received from: Bangladesh, Brazil, Denmark, Ecuador, Egypt, France, Greece, Hong Kong, Kenya, Latvia, Luxemburg, Malaysia, Morocco, Pakistan, Poland, Puerto Rico, Romania, Slovenia, South Korea, Spain, Switzerland, Turkey, Uruguay, USA

assessed by juries in UIA Regions I, II, and IV, i.e. Western Europe, Eastern Europe, the Middle East and Australasia. Each regional jury<sup>2</sup> shortlisted up to 9 built projects. These were then submitted to a jury representing all five regions of UIA. In all 23 projects were shortlisted and these were exhibited at the World Congress. A second and final stage jury<sup>3</sup>, chaired by Greek architect and UIA past president Vassilis Sgoutas, met in Durban and chose the three medal winners and nine honourable mentions. The Awards were presented at the UIA Congress Award Ceremony, attended by over 4,000 architects, by Mr Shuaib Chalklen, United Nations Special Rapporteur on Disability of the Commission on Social Development.

When making their assessment jury members were asked to consider whether the design:

- Expressed a culture of inclusion & human values
- Facilitated orientation, navigation and ease of understanding
- Responded to user needs and reflected human scale
- Contributed to health, well being and independence

The jury members were pleased with the overall standard of the shortlisted projects with numerous entries of high architectural

<sup>2</sup> Regional jury members were: Monika Klenovec, Austria; Isabella Tiziana Steffan, Italy; Louis-Pierre Grosbois, France; Joseph Spiteri, Malta; Jane Simpson, United Kingdom; Joan Seirlis, South Africa; Sotiris Papadopoulos, Greece; Krzysztof Chwalibog, Poland; Joseph Kwan, Hong Kong; Eric Martin, Australia; Syed Akeel Bilgrami, Pakistan; Jiao Jian, PRC China; Calvin Luk, Hong Kong; Erno Kalman, Hungary; Jerzy Grochulski, Poland.

<sup>3</sup> Final stage jury members were: Vassilis Sgoutas, Chairman, Greece; Krzysztof Chwalibog, Poland; Eduardo Elkouss, Spain / Argentina; Joseph Kwan, Hong Kong; Fionnuala Rogerson, Ireland.

quality which met most or all of the award criteria.

The three Award Winners which were presented with the first UIA Friendly Spaces Accessible to All Medals were as follows:

- Nikiforidis-Cuomo Architects for the New Waterfront at Thessaloniki, Greece (Fig. 3)
- Ingarden and Ewy Architects for the Malopolska Garden of Arts, Krakow, Poland (Fig. 4)
- Alberto Ferrer and Teresa Hermida from SCF Architects for the Salvation Army Community Centre in Guayama, Puerto Rico (Fig. 5)

Certificates of Honorable Mention were presented to:

- Jim Clemes Architects for the Belval Train Station, Luxembourg (Fig.6)
- Force4 Architects with Cubo Architects for the Vandhalla Water Training & Rehabilitation Center, Denmark

Fig.3 Malopolska Garden of Arts, Krakow, Poland. Ingarden and Ewy Architects, Public Building Award.

Picture: Inigo Bujedo-Aguirre



Fig.4 Redevelopment of the New Waterfront of Thessaloniki, Greece. Nikiforidis-Cuomo Architects, Public Space Award. Picture: Yiorgis Gerolimpos

- Estudio Primitivo Gonzalez Architects for the Palace of Justice, Burgos, Spain
- Daflos & Panagouli Architects for the Melissa Social Centre, Athens, Greece
- Allen Kong Architect for the Potter Street Redevelopment, Dandenong, Australia (Fig. 7)
- Conrad Gargett Riddel Ancher Mortlock Woolley Architects for the Old Government House, Brisbane, Australia
- Ronald Lu & Partners Architects for the Revitalization of Pak Tsz Lane Park, Hong Kong
- Samoo Architects & Engineers for the Buk Seoul Museum of Art, Seoul, Korea
- Naniopoulos, Kalliagra, Papanikolaou Architects for the Prospelasis Project, Thessaloniki, Greece (Fig. 8)





## 5. Special Research Award

A special award was also given to an architect(s) for evidence based design research that makes a significant contribution to improved quality of life through facilitating a better understanding of user-centered design and its application to the design of the built environment.

The Special Award for Research was presented to:

- Magda Mostafa of the American University in Cairo, Egypt, for her project, Autism ASPECTSS Design Index.

Research which received an honourable mention

- Francisco Javier García-Mila Lloveras, Veronica Camisão and Eduardo Álvarez for their project, "Operational Guidelines on Accessibility in Urban Development Projects"
- Andreas Lauesen from Force4 Architects for his project, "Accessible Everyday for Everybody"

The next edition of this award will be in 2017. In the meantime the UIA Architecture for All Work Programme is developing a web based database of exemplary inclusive projects. This is intended

Fig.5 Salvation Army Kroc Community Center, Guaynabo, Puerto Rico. Alberto Ferrer and Teresa Hermida, SCF Architects, Private Building Award. Picture: Luis Yordan

Fig.6 Belval Train Station, Luxembourg, Jim Clemes Architects, Honourable Mention. Picture: Lukas Huneke





Fig.7 Potter Street Redevelopment, Dandenong, Australia. Sheltered outdoor area outside bedrooms, view to garden. Allen Kong Architect, Honourable Mention. Picture: Allen Kong



Fig.8 Prospelasis Project, Interventions on Rotunda Monument, Thessaloniki, Greece. Naniopoulos, Kalliagra, Papanikolaou Architects, Honourable Mention. Picture: Panagiotistsalis

as a source of inspiration to architects and others interested in bringing a human centred design focus to their work thereby adding to its architectural quality. If any readers wish to recommend projects which they believe demonstrate the qualities necessary please send details to [fionnuala.rogerson@rogerson.ie](mailto:fionnuala.rogerson@rogerson.ie).



# EO GUIDAGE's Audio Beacon

A wayfinding solution

## EO GUIDAGE

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## Description

The system uses audio messages to help visual impaired people to find their way both indoors and outdoors. With a free smartphone app or a key fob, people can trigger a message that makes a place localizable by hearing. It can indicate an entrance door, a bus stop, a metro station, a conference room, etc. Up to 3 messages are available in 5 different languages to provide users with specific information.

The next generation scheduled for November 2014 will integrate new functionalities. Users will be able to receive an alert when they are close to a beacon. If more than one pop up, they will even be able to choose which one to trigger. They will also have the possibility to either play a message on the beacon loud speaker or to receive a discrete notification on their smartphones.

## Technologies used

- Messages triggered by radio-frequency (868.3 MHz / 433MHz) or Bluetooth 2.0 (Android)
- 3 messages can be recorded in up to 5 different languages (recognize the smartphone language)
- Volume is self-adjustable to ambient noise
- Sound is MP3 (44.1 kHz – 16 bits)
- IP54 protection class 2
- Updates via Bluetooth

## NEXT GENERATION.

- Bluetooth 4.0
- iOS compatibility
- possibility to receive the messages directly to the smartphone (discrete mode)
- selective activation of the available beacons
- new housing with better acoustic
- greener brand new electronic (more performance, less consumption)

## Innovative characters

Environment will have to be multi-sensorial to be more accessible. Tactile paving surfaces mostly help people in their mobility but do not help them navigate. They can warn people of imminent obstacles like stairs, edge of platforms or crossings. Some of them can guide you at some point but still, it does not tell you where you are going.

EO GUIDAGE's Audio Beacons are a solution to this navigation issue and with a free smartphone app people can trigger the systems via Bluetooth.

## Specifications

### Materials used

The beacon is built in a box of 160x90x60mm made of self-extinguishing ABS.

### Patents (if any)

Yes

### Dimensions cm

160x90x60mm

### Price to the public

Recommended selling price is 499€

### Variants / Colors

CURRENT GENERATION

Grey, other colors on demand.

NEXT GENERATION

Black or white housing

+ one fully customizable element

# ICF CLASSIFICATION OF USER REQUIREMENTS FOR A MORE INCLUSIVE

Laura BURZAGLI

In a society which strives to move towards an ever-growing inclusion of all categories of people, one of the most relevant aspects to be considered is a correct design and implementation of the environments in which people live. Every location must be carefully examined, and a carefully-compiled definition of user characteristics must be prepared.

The importance of introducing ICT into the design of kitchens, considered as a networked environment, is here considered and a systematic approach to the problem presented. The WHO ICF classification has been identified as the reference document, for its characteristics of classification of people and activities.

## 1. Introduction

In a society which strives to move towards an ever-growing inclusion of all categories of people, one of the most relevant aspects to be considered is a correct design and implementation of the environments in which people live. If a place, an office, a classroom, or, even more so, a house is correctly designed, the activities of a larger number of people will be favoured. Thus, in order to attain the best design, every location must be carefully examined, and a carefully-compiled definition of user characteristics must be prepared. Among many different places, the kitchen assumes a

**FIG 1.** An elderly user in the kitchen.  
Source: Borya,  
<http://www.flickr.com>,  
CC BY-SA 2.0



high importance.

This is why, for example, this environment has been selected by a few Italian projects, such as the Italian “e-kitchen” national project. This project aimed to develop the kitchen of the future, with a broad integration between mechanical, electronic, sensoristic, and esthetic-functional solutions, in order to define a user-centered environment of great usability. This project was funded by the Italian Ministry of Economic Development (2011-2013) and had a consortium of 15 international industries and 5 research centers.

Even in this project an important phase was devoted to putting together a collection of user requirements, because it represents the starting point in any design of users’ application, this work describes a methodology used for the specific framework of the kitchen. The said methodology is based on the Design for All approach, with particular attention being given to the ICT aspects and to their connection with a more traditional design approach.

## 2. Traditional approach to the inclusive design

### 2.1 Kitchen and user’s activities

If considered in its broadest meaning, the kitchen is the place where people spend most of their time when they are at home. It is essential for several different activities, such as the preparation of food and household activities, but also for several and different social interactions. Generally speaking, the design of a kitchen for a specific place is based on spatial, economic and stylistic criteria. For a large number of people, these criteria are usually sufficient,

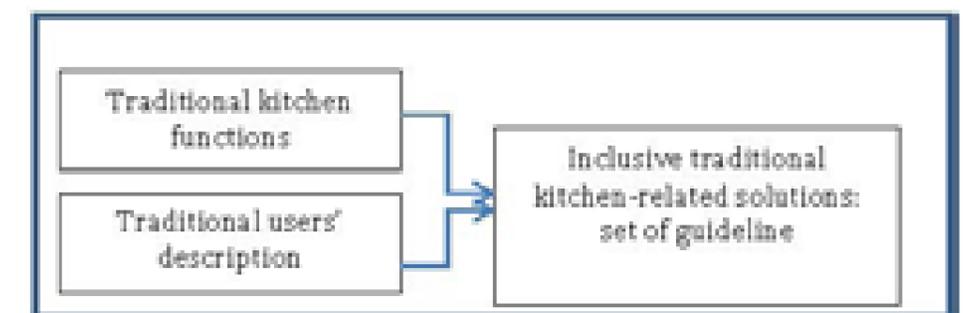
and these people will probably encounter only minor difficulties in performing their daily activities there. On the contrary, for other people, such as children or the elderly, the situation is completely different, since many activities could be difficult for them or might be inhibited if performed there. For people with disabilities, such difficulties are even more complicated, due to reduced mobility or to a reduced ability as regards sight, hearing, or touch, or due to cognitive problems.

### 2.2 Guidelines

In recent years, several sets of guidelines related to a more inclusive design for kitchens have been provided, such as IDEA CENTER GUIDELINES or NKBA guidelines. [1] Access to food storage shelves and cabinets, the use of appliances, and movement inside the kitchen are the aspects mainly examined.

In order to provide a solution to possible problems, these guidelines list a set of basic considerations which refer, for example, to the spatial distribution of the different components and to their shape and colour. Moreover, they make precise recommendations for specific elements, such as countertops, cabinets and appliances. A set of specific guidelines for appliances, which make sepa-

Fig. 2: Traditional elements for an inclusive traditional kitchen design.



rate considerations regarding refrigerators, cooking tops, ovens, dishwashers, and washing-machines, has also been published.

### 2.3 DfA in ICT

In recent years, a rapid and hurried revolution in the field of Information and communication technologies has changed the daily life of many people.

Despite several differences in the various countries, this can be considered to be a worldwide phenomenon. From the user point of view, the concept of information, in its broadest meaning, is the basic element. An exhaustive analysis, one among many, was carried out within the framework of the EC DfA@eInclusion project, which supplies a detailed description of the Design for All approach in ICT [2].

Since this innovation has been applied in several different fields with excellent results, the concept can also be studied for devising a more inclusive kitchen.

Inside the kitchen, a flow of information is continuously present. If correctly stored, processed and presented to the user, it intro-



Fig. 3: Logo of DfA@eInclusion project

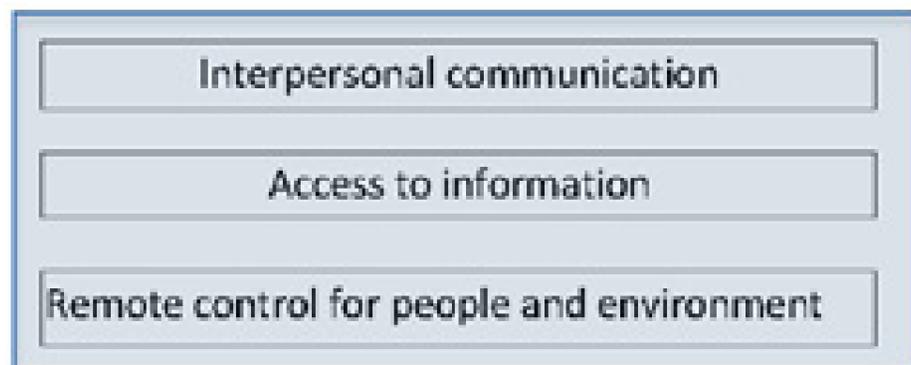


Fig. 4: Three main categories of information

duces several advantages for people, especially those with disabilities, and represents the main difference with respect to past criteria. Information comes from the user in a direct or indirect way, but information also goes to the user, could be requested by the user, or be provided by the system, even if in accordance with the level of privacy chosen by each person or by caregivers.

This new level of information is definitely not separated from the aforementioned traditional aspects, but rather constitutes an essential element to be used to improve the quality of people's lives. For example, for the preparation of food, it is not only the level of access to the storage cabinet that is examined: this activity is considered in all its aspects, e.g. an information flow, starting from the availability of the appropriate ingredients to the sensor for controlling the gas or automatic switches for the cooking fire. Every activity is analysed within a wider perspective: the chain is extended to involve the shop where food is bought, rather than being limited to just one room of the house.

In accordance with the basis of technical design, we can assimilate this level to the level of signals that are to be connected to the other two levels of energy and material. Rather than going more into detail as regards a methodology of this type, the importance of the information level for a more complete description is shown here as follows.[3]

Several examples of the use of information have been presented, such as the level of appliances, in which the presence of a display and a connection with other appliances or with a remote control can provide important information about the status of the appliance, or facilitate its use by guiding the user through the pro-

cedure step by step. [4]. A number of different services and applications can be devised and implemented with the aid of this level of interconnection and exchange of information. What is lacking is a systematic approach to the problem, which could start from the level of the user's requirements.

### 3. Methodology of user requirements

#### 3.1 Introduction of ICF

According to this perspective, also the description of people must be enriched as compared with previous patterns. A more detailed description of users is required, better if with an precise structure. Moreover, this process must also identify and interconnect people's activities with the status of their health.

A new classification could be set up, but without being sure to consider and integrate all the different aspects relevant to the user. The additional critical element could consist of the structure in accordance with which the classification is developed. For this reason, in the process of identifying an appropriate classification, the reference document that has been considered most appropriate is the WHO International classification of functioning and disabilities [5], which the research group studied in the past [6] with respect to a modelling of computer interaction.

At the level of methodology, ICF offers several important elements:

1. a complete description of user characteristics,
2. a description of human activities,
3. a well-defined structure,

4. a definition of qualifiers.

With a complete description of user characteristics, every limitation can be considered in the design of a kitchen, and not only the ones most frequently considered, such as mobility and sensorial limitations. This also includes limitations related, for example, to the digestive, metabolic and endocrine systems, which could create problems, for example, at the level of the preparation of food, rather than at a mobility level. The level of the exchange of information can produce important benefits in this sense, with the adoption of appropriate ICT services. The ICF structure, with several different levels of description, makes it possible to introduce scalability into the design process, depending on the level of detail required by the design process. Moreover, this structure can be easily translated into machine language and be utilized at the software level.

The possibility of defining qualifiers corresponds to the identification of different levels of ability. A knowledge of these levels provides input information for a more accurate adaptation of the kitchen, in terms not only of lay-out, but also of applications and services, even network-based ones, inside or outside the house.

#### 3.2 Description of users

For the description of people, ICF provide two different classifications, where the first is referred to Body Functions, and the second is referred to Body Structures. Even if we limit our analysis to the Body Functions an exhaustive list is presented.

Mental Functions (identified by codes b110-b199)

Sensory functions and pain (identified by codes b210-b299)

Voice and speech functions (identified by codes b310-b399)

Function of the cardiovascular, haematological, immunological and respiratory systems(identified by codes b410-b499)

Functions of the digestive, metabolic and endocrine systems (identified by codes b510-b599)

Genitourinary and reproductive functions (identified by codes b610-b699)

Neuromusculoskeletal and movement-related functions (identified by codes b710-b799)

Functions of the skin and related structures (identified by codes b810-b899)

### 3.3 Description of activities

For the selection of human activities, ICF presents a specific chapter devoted to domestic life.

Four main sections depict the scenario of the kitchen:

Acquisition of necessities, (identified by codes d610-d629) which includes, among others, furnishing a place to live and acquisition of goods and services;

Household tasks , (identified by codes d630-d649) which includes, among others, preparing meals, with a difference between simple and complex and doing housework;

Caring for household objects, (identified by codes d650-d669) which includes, among others, maintaining assistive devices and assisting others.

### 3.4 Qualifiers

Among the nine levels presented by the classification (from “No

impairment” corresponding to level 0 to “Not applicable” corresponding to level 9) in the starting phase three different levels can be adopted.

0 No impairment means the person has no problem (0-4%)

1 Mild impairment means a problem that is present less than 25% of the time, with an intensity a person can tolerate and which happens rarely over the last 30 days. (5-24%)

3 Severe impairment means that a problem that is present more than 50% of the time, with an intensity, which is partially disrupting the persons day to day life and which happens frequently over the last 30 days. (50-95%)

### 3.5 ICF analysis principles

With reference to the list of ICF properties mentioned in the previous section, a first selection of body functions at level 1 and 2 has been identified, which is presented below.

Global mental functions (b110-b139)

Specific mental functions (b140-b189)

Seeing and related functions (b210-b229)

Hearing and vestibular functions (b230-b249)

Additional sensory functions (b250-b279)

Pain (b280-b289)

Functions of the haematological and immunological systems (b430-b439)

Functions of the respiratory system (b440-b449)

Additional functions and sensations of the cardiovascular and respiratory systems (b450-b469)

Functions related to the digestive system (b510-b539)

Functions related to metabolism and the endocrine system (b540-b559)

Functions of the joints and bones (b710-b729)

Muscle functions (b730-b749)

Movement functions (b750-b789)

In principle, all functions have an importance, but - at least in this first phase of design - several elements with a lesser connection with kitchen functions have been omitted.

The same process has been carried out for the activities listed under domestic life and a corresponding list is inserted below.

Furnishing a place to live (d6102)

Preparing simple meals (d6300)

Preparing complex meals (d6301)

Washing and drying clothes and garments (d6400)

Cleaning cooking area and utensils (d6401)

Using household appliances (d6403)

Storing daily necessities (d6404)

Disposing of garbage (d6405)

The list of activities has to be compared with the list of body functions, in order to identify a first correspondence between kitchen activities and body functions. This serve in examining a first selection of barrier/solutions to be implemented by means of mechanical, hardware and software levels. The use of qualifiers earlier identified quantifies the ability in comparison with the activity to be performed. All these activities constitute the basic steps towards a functional modelling, which will lead to the design, prototyping, evaluation and implementation of the product.

#### 4. Conclusions

The importance of introducing ICT into the design of kitchens has been considered by the vast majority of industries that work in this field. In any case, up until now most of the solutions present on the market do not consider a systematic approach to the problem.

Furthermore, many projects for a more inclusive kitchen underestimate the benefits that a networked environment can provide for all users in terms of a larger number of solutions to a larger numbers of difficulties and limitations experienced by users.

In order to develop this approach, the WHO ICF classification has been selected: it has the reference classification, and work is in progress to move towards the subsequent phases of kitchen design and implementation.

#### References

1. A. Mullick, D. Levine, Universal Kitchens and appliances Chp. 41 pp 41.1-41.18 Universal Design Handbook, McGraw Hill 2001 New York
2. P.L. Emiliani, L. Burzagli, et al. D2.1 Report on the impact of technological developments on eAccessibility. Project Dfa@eInclusion, <http://www.dfaei.org/deliverables/D2.1.pdf>
3. G. Pahl, W.Beitz, Engineering Design A systematic approach, London 2007, Springer Verlag
4. V.Aisa, How to accelerate the diffusion of smart appliances – in ICT for sustainable homes, Nice Nov. 2010
5. WHO International Classification of Functioning, Disability and Health (ICF) , World Health Organization 2001, Geneve

6. M. Billi, L. Burzagli A Classification, based on ICF, for modelling Human Computer Interaction. ICCHP 2006
7. Lifetime Homes Standard <http://www.lifetimehomes.org.uk/pages/lifetime-homes-foundation.html>

# REDESIGNING THE ATM

Adaptive interfaces for diverse needs

Jan-Christoph ZOELS, Erin O'LOUGHLIN, Michele GIANNASI

As people's trust in banks is impacted by the global economic crisis and uncertainty about the role of technology in finance, banks are increasingly looking to user-centered (UX) design to help them reconnect with their customers. The user-centered approach helps banks to ensure that they are meeting the needs of a diverse range of customers, and helps to tailor product and service designs to their behaviors, abilities and requirements.

When designing the BancoSmart ATM for UniCredit Bank, UX consultancy Experientia looked at how to design for people with diverse needs, including impaired vision, degrees of technology literacy, and language needs. Through a collaborative

relationship with UniCredit Bank, Experientia used an iterative ethnographic research and design process, to create an ATM that met the bank's goals for driving service uptake by making it easier and more enjoyable for people from all walks of life to use.

User-centered design is critical to implementing a company-wide, holistic approach in financial institutions, one that focuses on people's needs when managing their finance, instead of on the performance of individual products and services. Through designing for all people, banks can make their offering more attractive to a diverse audience, and start to rebuild trust and relationships with their client base.

## 1. Introduction

Over the last 5 or so years, user experience design (UXD) has moved out of its traditional web and mobile areas of application, and became a ubiquitous concern that affects our travel (mobility design), our health and wellbeing (care provision, self-monitoring), our built environment (urban informatics, service design), our corporate practices (process, business and strategy design), our energy use (design for sustainability), and so on. For UXD consultancies, broadening their horizons to new industries requires flexibility, eagerness and capacity to adapt to new practices and develop new models of thinking, but it also requires strong ability to dialogue with new industry partners, and accustom them to implementing a user-centred design approach in their practice. Managing the natural tensions between a conservative business industry like finance, and this relatively young design discipline is one that takes a considerable amount of effort and skill from both parties. However, when applied to financial platforms like an Automatic Teller Machine (ATM), UXD can bring all the benefit and insight that it commonly applies to web and mobile design, ensuring that our daily interactions and tools are accessible for people with diverse needs, and are truly designed for the people who use them.

## 2. UXD for traditional sector and devices

User experience design (UXD), or user-centred design is a consolidated methodology for designing IT platforms. It takes a holistic view of system design, going beyond the mechanics

of how to make the system function, and considering all the experiential aspects of the product or service being designed. Its aim is to achieve systems that are highly usable, accessible to the majority of users, and offer an enjoyable usage experience, from the graphic look and feel, to the interaction with the system. The UXD toolbox is also highly participatory: it engages people in the process, from in-depth research about their needs and requirements, workshops to create and fine-tune ideas, right up to testing prototypes to ensure that they meet the system objectives in the best way possible.

This people-centred, or user-centred, approach has particular value for the financial industry in an economic climate in which people have experienced a large loss of trust for financial institutions. In 2013, Accenture found that young people trusted banks less, and considered changing banks and account types more often. [1] If banks want to rebuild their rapport with their customers, it is vital that they have a solid understanding of people's attitudes to financial institutions and tools, as well as their needs, expectations, desires and behaviours. This is the key to constructing services and products that draw people back to financial institutions by consistently and correctly catering to their needs, and influencing their real behaviours in positive and rewarding ways. This seems obvious for tools that are using new paradigms, like mobile banking, where issues of security and identity are evolving, but increasingly banks are understanding that it is just as relevant for traditional customer touchpoints, which have changed very little in many years, and are in need of an overhaul to ensure that they are in touch with people's current mental models and behaviours.



The Automatic Teller Machine (ATM) is once such device. Italy has one of the lowest annual per capita uses of ATMs in Europe. [2] How people interact with ATMs in Italy has not significantly changed in many years. Most terminals, even those with touchscreen features, maintain legacy analog buttons down the terminal sides as an interaction alternative. New services have been added to existing frameworks, but the menu structure has remained the same, often resulting in functions being hard to find. Many service options are quite hidden, resulting in low uptake.

UniCredit Bank, a large European bank, realised that a user experience approach would allow them to go beyond the definition of what was possible with ATM technology, and instead start from an understanding of what people needed and expected to do at an ATM, and to find out what people's current ATM behaviours were, and how to satisfy and influence them.

From 2011-2013, UXD consultancy Experientia worked with

Fig. 1: The new interface in action. The entire ATM now operates with a touchscreen user interface.

UniCredit to reinvent the Italian ATM interface, using UXD methodologies. The aim was to improve the user experience of the standard UniCredit ATM in order to drive service uptake, and at the same time, relieve the pressure on local branches and staff. The resulting ATM, the BancoSmart (a play on words of the Italian word for ATM, Bancomat), is a full touchscreen ATM that learns and responds to select user behaviours, and improves the way clients navigate, locate and use functions, from simple features like cash withdrawals to more complicated functions like deposits, information retrieval, bill payments and mobile phone top-ups. The interface is visually attractive and easy to read, with large fonts and clear banking function categories. Not only does the ATM offer better services, and offer them more evidently, the interaction has been improved to make it easy to use for the widest possible range of people, so that all customers can feel comfortable using what is effectively one of the most important contact points for personal finance management.

### 3. Methodology and design process

#### 3.1 Researching current behaviours and transferring findings into design features

A typical UX interface design project starts by defining the objectives of the project, and the user requirements. For this project, this meant ensuring that the financial institution was fully on-board with the UX approach, understood the process, and had a clear understanding of the kind of outcomes and documents they could expect. Experientia conducted numerous

stakeholder interviews and workshops with staff from the bank, to build an understanding of user experience issues, technology capabilities and banking needs. As well as offering input into technical limitations and known user requirements, this process resulted in stronger relationships between the two organisations, helping to foster more strategic UX decisions during concept development. For example, geo-localization of bill payment services was proposed early on by Experientia, but the bank was hesitant to approve the extra investment for what they saw as dubious benefits. Through practical examples in workshops, the consultancy demonstrated how it would increase customers' ability to find local/regional services and would therefore facilitate service uptake and upsell. Consequently, the technology decision makers gave it the go-ahead.

To identify needs, the project had a large research component. We began with a secondary research phase, benchmarking best practice and state of the art, in both the client's and competitors' ATMs, and conducted a heuristic evaluation of the current interface. The results guided the more contextual research that followed.

Ethnographic research methods, which explore culture and behaviours over long time-frames, are highly complementary to UX design, because they offer a deep level of insight into people's unarticulated motivations and behaviours that they are not aware of, or may not realise are significant. For the ATM project, the research mix included ethnographic methods such as contextual interviews and shadowing, and participatory design methods such as card sorting activities. Other methods included spot interviews



Fig. 2: The fast withdrawal amounts on the left are visible on the home screen of the ATM, cutting withdrawal time by 30%.

in the street with people after they used a UniCredit ATM, getting an immediate reaction on the experience they'd just had. This gave us perspectives on minor and major problems of ATM use while they were fresh in people's minds.

The main task performed at ATMs is **cash withdrawal**. The bank and the user both want a speedy withdrawal. In addition, the bank's CRM knows the client's favorite withdrawal amount. The research team suggested that offering preferred withdrawal amounts in an immediate and prominent position would improve the user experience, with fewer steps in the process, and around 30% time savings. Currently, users may not realise that the three withdrawal amounts displayed on the home page are their favorite



Fig. 3: Prominent exit (Esci) and menu buttons allow customers to easily abort or return to the home screen. Clear feedback in appropriate colors shows the user if they have entered incorrect information.

The information architecture (IA) of an ATM is quite complex, because it organizes hundreds of features. The new design reorganized the overall IA so that it clearly communicated to customers which tasks they could do at the ATM. Starting from the homepage, customers now have an overview of available functions, with a coherent grouping of features. In addition, the ATM is now a geolocalized touchpoint, displaying features that are relevant for the ATM's city or region, such as local transport subscriptions or bill paying options. Previously, all the ATMs across the country offered the same services, regardless of whether they were relevant to the region the ATM was located in. Other findings include: people's irritation over having to reinsert their ATM card multiple times to conduct more than one transaction (the new ATM allows people to complete multiple tasks in one session, without having to extract and reinsert their card); confusion over the placement of advertising (all advertising is now offered in an ad hoc area of the ATM interface); and the desire for greater personalization. The interface has been influenced strongly by this last desire, with the personalized withdrawal amounts, and tailored advertising and bank offers, based on CRM data.

ones, but their experience at the ATM is much faster because they immediately see what they are looking for.

Research also revealed that users often felt lost, in particular when completing complex payments. The interface needed to guide users, and make them feel confident that they were making the right steps. This led the design team to build in improved feedback and better information hierarchy within the screens. A prominent, always available EXIT button now allows customers to end the interaction at any time.

### 3.2 Ensuring a highly usable system

Usability and ease of learning were highly central to this project. Usability is how easy it is for users to complete their objectives using the system, while ease of learning is the length of time needed to understand how to use the system. Because ATMs are the main touchpoint for banking services for the majority of

people, [3] it was important to understand the needs of people who might find technology intimidating. This included spot interviews and research with elderly people, for example, who might not be so comfortable with new technology, and people with impaired vision, who had trouble reading traditional ATM screens. However, Experientia also conducted email interviews with foreigners living in Italy about their experiences trying to use ATMs in a foreign language. This provided insights into designing interaction flows that were easy to use for even the most challenging users.

From a technical point of view, the BancoSmart interface had to be designed for existing and new ATM technology, without buttons, requiring a low-learning curve. The UX needed to address key considerations such as: safety, low/no-learning-curve, findability, legibility & visibility, process understanding, building on existing mental models, task support, etc.

The design needed to run on two different screen sizes (800x600 and 1024x768px), 3+ device manufacturers and 12+ existing ATM models on the market. Also, ATMs are quite costly investments with ROI over multiple years, so the design had to also address future service needs. The BancoSmart technology and design solution had to enable a provider agnostic solution working equally across the device spectrum, enabling the integration of 'older' devices into the expanded service capabilities.

This meant that the most efficient design was one that "started over" in terms of information architecture and navigation, redesigning the ATM menus from the ground up to maximize findability of features, and to ensure that the most commonly used features were quickly and easily accessible.

Card sorting activities were conducted with users to create a new navigation structure that fit people's expectations of where to find features and functions. Card sorting is an activity in which every single menu item and its various features are listed individually on cards. Users are then free to cluster and arrange the cards in ways that make sense to them, highlighting their personal mental models of how information matches and flows, and helping designers to identify common thought patterns and ways of thinking.

In further participatory activities, multiple usability tests facilitated and validated strategic objectives and UX concepts. These included early shadowing of people as they used ATMs and talk-aloud activities (where people talk about what they are doing and thinking as they carry out real tasks on existing ATMs). Additional activities included card-sorting, testing on low-fi prototypes in lab situations, 'fake' ATM tests in real branches and temporary new ATM tests on existing devices and multi-branch tests during roll-out. This ensured that issues were identified before the interface was presented to the public, and new iterations of the design could address any problems found.

Multiple cycles of design, prototyping and user acceptance testing ensured that the final interface is strongly based on people's banking behaviours and exceeds their expectations and needs for ATM use. The final design is a responsive solution that runs on various ATMs including legacy terminals of different providers with various screen sizes and tech specifications.

During beta-testing, a dedicated team carefully observed users interacting with the new ATM, and interviewed them about the

experience, building a pool of qualitative feedback on the new experience. Initial qualitative feedback from this team includes: **No learning curve:** Clients were not confused by the new layout – although it featured a redesigned navigation system and used a full-touch interface, all the clients observed were able to use it immediately.

**Improved look and feel:** Clients liked the new graphic interface, with elderly users commenting on details like how easy it was to read.

**Improved function:** Clients perceived an increased speed, and commented positively on new features and functions.

During ATM roll-out across Italy (completed in April 2014), initial customer satisfaction was measured by questionnaires sent by the bank to its branches, showing positive results. Initial user tests after roll-out (60+ diverse users) were done, showing high satisfaction level with withdrawal functions, findability of previously hidden services and task completion. One year after initial introduction the reported error rate was > 1% across all ATMs.

### 3.3 The BancoSmart interface

The final BancoSmart ATM offers a full range of ATM services, from cash withdrawals to deposits, information retrieval, bill payments for various service providers, ticketing, and mobile phone top-ups.

It learns certain user behaviours to offer personalised options, and vastly improves on menu navigation, task support and graphics. Integrating users’ perspectives through user research was a crucial driver of this improvement, and the design could not have been

Fig. 4: Even information dense screens like account balance are now easy to read for all users, thanks to more appropriate contrast, color use and font size.

## Conto 05004 0000 0734 9562



**1-10 movimenti di 30** **Saldo disponibile** 11.473,54  
 Pagina 1 di 3 **Saldo contabile** 11.473,54

Data operazione	Data valuta	Descrizione operazione	Importo €
24.10.13	27.10.13	Versamento su sportello automatico atm num 123	100,00
24.10.13	27.10.13	Ricarica prepagata numero 5644 4999	-200,00
24.10.13	27.10.13	Ricarica prepagata numero 5644 4999	-100,00
22.10.13	25.10.13	Versamento su sportello automatico atm num 123	400,00
20.10.13	23.10.13	Commissioni: Ricarica prepagata numero 5644 4999	-1,50,00
18.10.13	21.10.13	Versamento su sportello automatico atm num 123	100,00
16.10.13	19.10.13	Ricarica prepagata numero 5644 4999	-200,00
14.10.13	17.10.13	Ricarica prepagata numero 5644 4999	-100,00
12.10.13	15.10.13	Versamento su sportello automatico atm num 123	400,00
10.10.13	13.10.13	Commissioni: Ricarica prepagata numero 5644 4999	-1,50,00

Menu
Indietro
Pagina 2
Stampa pagina
Esci

so successful without this user-centered approach. User-centered design is vital for successfully integrating new technologies into finance in a way that people trust, can easily learn and use, and addresses their real banking needs and behaviours.

In addition to the improvements discussed, there are several innovations that will drive ATM service uptake for the bank:

**Speedy withdrawal**, with 3 predefined withdrawal options on the Home Page. These are based on the most frequent withdrawal amounts of the user, which the system learns over time. The user can select the amount they wish to withdraw direct from the

home page. This cuts the time for this common task completion by 30%.

**A georeferenced payment service** organises bill payment options and filters them based on what is available in the user's location. People do not need to search through an exhaustive list to find the right function.

**An adaptive interface** offers personalised content based on the user's banking profile (from CRM data). The user sees tailored advertising content in the right-hand column and can touch to see more.

**Contextual support and feedback** keep people informed during interaction, particularly in case of data entry errors or other problems, using a clear language and coherent visual support.

**Inclusive design:** Extensive testing reinforced design solutions for diverse customers: from traditional to professional users, people with and without online banking experiences for complex service design transactions, and customers with vision impairments.

**Tone of voice** was carefully defined to provide a coherent language in all situations, which is more friendly and direct, and offers the correct support during operations.

#### 4. A bank for all seasons: finance meets UX

##### 4.1 Helping corporations commit to UX

A part of creating accessible tools for people is the recognition that this is not always the way design has been approached, and that user-centered design is not just a buzz-word, but is truly a different approach to design. Banks have traditionally focused on

transaction and product performance, and regarded research as an essentially quantitative exercise. However, banks are seeing the value of UX research and design, particularly with new players entering the market with digital finance products that come from a strongly UX school of thought. It is now the role of UX consultancies to show them exactly what implementing a UX approach means – moving away from the focus on the performance of an individual product, towards a holistic, company-wide approach, in which each new touchpoint, product or service implemented is part of a wider UX strategy.

This means that UX consultancies need to focus on illustrating the benefits of UX research – how it differs from quantitative research, how insights are transferred to design, and how this benefits both the customers and the company. For this project, we had to frequently take time to share our insights, and host practical demonstrations of how our graphic design proposals would result in greater readability, for example, or how our new IA would make services easier for all users to find. These client stakeholder workshops had a dual role – information gathering and buy in and consensus to this new direction of the bank. It led to a greater understanding of the value of UX, and a move towards integrating it in further projects.

##### 4.2 Expanding the design brief

Following our stakeholder workshops, Unicredit understood that they drastically had to redesign their service and user interface to increase service uptake of self service solutions for people with different needs and abilities. This focus helped the project

## Avvisi SMS

### Riepilogo dati

Operatore telefonico	TIM
Numero cellulare	339 475 6789
Conto corrente	00000 123 456 789
Deposito Titoli	00000 789 654 321
Notifiche da attivare:	<ul style="list-style-type: none"> <li>Accrediti e addebiti C/C</li> <li>Prelievi e versamenti Bancomat</li> <li>Saldo mensile C/C</li> <li>Titoli in scadenza</li> <li>Saldo mensile titoli</li> <li>Accessi alla banca multicanale</li> </ul>

**i** L'attivazione del servizio è gratuita  
 Il costo per singolo messaggio ricevuto è 0,25 €



Fig. 5: Although UniCredit's corporate color is red, within the interface red is now used to signal errors, or buttons for cancellation of tasks, ensuring that the semantics match people's mental models.

to achieve improvements in the technology (e.g. transition to full-touch interaction), navigation (e.g. quick access to the most common tasks, better menu organization) and content (e.g. personalization of speedy withdrawal amounts, geo-localized and tailored service offerings and advertising).

The BancoSmart UX also had to overcome existing bank design guidelines lasting from the era of print communication. Through usability tests, Experientia showed the client the low viability of existing company-suggested colours for outdoor usage in glare situations, how the use of the red company colour for positive messaging was confusing people who traditionally associated red with warnings, and how messages written in capital letters slowed

down reading speeds. The team proved the validity of alternative solutions even in worst case scenarios, and convinced UniCredit to move beyond the previous 'print' style guide. This means that the final design has a modern and updated feel, and is optimised for the medium of screen communication.

## 5. ROI and impact on company culture: moving to a user-centered bank

### 5.1 Design impact

At a usability level, the reactions during the first year of use to the BancoSmart interface have been extremely positive. People have commented on the increased speed, legibility, appealing graphics, and the improvement in features and functions. People from all walks of life have used the interface easily, with no learning time needed, navigating easily through the clear and logical menus. By offering greater ease of access to services, it will help to drive service uptake and increased ATM transactions for the client. The BancoSmart began its rollout in November 2013, and completed it in April 2014. It is now in use on 6000 ATMs across all of Italy.

### 5.2 Impact on the client

For the client, this project was a commitment to a consistent UX across touchpoints – from mobile to web to various self-service devices. Transaction speed reductions of up to 30% also result in an increased ROI for the bank. For users, it is an effortless experience that helps them to achieve banking tasks quickly, leaving them free to move on with their day.

The iterative process characterizing this project allowed Experientia to identify directions and discuss them with the client (initially with the self-service team, then later also including other teams in the workshop sessions). The team delivered a roadmap with possible improvements, ranking them by low vs high impact on the user experience and low vs high implementation effort for the bank. These were then prioritized together with the bank. On one hand there were easy and feasible improvements with a medium impact - such as the ones related to readability, which everybody agreed must be improved soon. On the other hand there were more complex improvements, which required more effort from the bank. These were the subject of a “feasibility study” by the bank.

The bank wanted to get the most out of the **contact with the customer**. The ATM is a strategic touchpoint for the bank, to get closer to its customers and increase service uptake of self service solutions by people with different needs and abilities.

### 5.3 Diffusing UX beyond the case study

At a more strategic level the BancoSmart ATM design is just the start of an increasing trend of personalization in financial services. Now that technology has the capabilities to offer personalized services in a secure and simple way, banking offers will rapidly move in this direction.

The BancoSmart is an example of how this kind of personalization can also be applied to self-service offers in on-the-go locations, outside of online banking. It is the start of a greater integration across banking touchpoints, leading to the creation of a user profile

that recognizes the user and presents a consistent and familiar interface, whether they are using an ATM, their smartphone or their home computer.

In the world of finance, technology capabilities often move ahead of people’s comfort zones. ATMs in particular need to be accessible to people with all levels of computer literacy and comfort with technology. Touch enabled ATMs need to integrate some core capabilities that select user groups have become accustomed to via smart phones or tablets, while also enabling uptake by people with less device experience. Pushing accessibility and legibility upfront while delivering faster geo-localized and tailored selections or choices to the customer helped to address diverse needs.

### References

1. Winch Jessica. “Young people more likely to switch bank as trust levels fall.” The Telegraph. Last modified March 27, 2013. <http://www.telegraph.co.uk/finance/personalfinance/9957408/Young-people-more-likely-to-switch-bank-as-trust-levels-fall.html>.
2. “ATM Cash Transactions Per Capita 2012.” Ipsos. Accessed June 14, 2014. <http://www.ipsos.ie/?action=statistics&sectionName=EUStatistics&statisticCode=EU&statisticRef=EU09>.
3. Avaya, BT. “Youbiquity Finance 1: Consumers, money and the branch.” Slideshare.com. Last modified July 11, 2012. <http://www.slideshare.net/btletstalk/youbiquity-finance-1-consumers>.

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High-legibility font, excellent for dyslexic readers (Specific Learning Disabilities – SLD), great for everyone

### Description

Reading is together with other human activities an energy-consuming task.

The EasyReading™ font renders reading more pleasant to dyslexic readers thanks to its peculiar graphic characteristics; it enhances reading fluency thus enabling the reader to concentrate more on the text content. The font has been designed with the “Design for All” approach, which does not present any extreme design as often happens with specific dyslexia fonts, which appear “exclusive” and not apt for unimpaired readers. EasyReading™ considers “diversity” not a “problem”, rather an “asset” fostering words comprehension for all readers. EasyReading™ tackles the two main impairing issues as follows:

1) **The perceptual crowding** brought

about by reduced spacing between letters, words and lines. EasyReading™ has wide calculated spaces that render line reading very fluent and prevent the reader from skipping lines.

2) **The perceptive misunderstanding** of shaped-alike letters brought about by a poor letter distinction. EasyReading is a hybrid serif/sans serif font, with an essential, highly characterised design featuring “peculiar” serifs only for letters looking alike.

**Scientific research on the readability of the EasyReading™ font:** EasyReading™ is the only specific font, on an international level, to have undergone independent scientific research on over 600 primary and secondary school pupils. The results obtained by doctor Christina Bachmann

This is the default spacing between letters, words and lines in the EasyReading™ font.

This is the default spacing between letters, words and lines in the Arial font.

EasyReading  
EasyReading Italic  
EasyReading Bold  
EasyReading Bold Italic  
EasyReadingXB  
EasyReadingXB Black



### Specifications

(clinic psychologist and psychotherapist, Centro Risorse, Clinica Formazione e intervento in psicologia, Prato, IT) point out that: **“drawing upon statistically and clinically proven data, EasyReading™ can be considered an effective offsetting instrument for dyslexic readers and a facilitating font for all readers”.**

The EasyReading™ font has been recognised eligible for funding by the Ministry of Economic Development through the foundation “Valore Italia Esposizione Permanente del Made in Italy e del Design Italiano” thanks to its innovative design. Furthermore, it has been approved by the Italian Dyslexia Association (AID) thanks to its peculiar graphic characteristics helpful to dyslexic readers.

**Designer**  
Federico Alfonsetti

**Patents (if any)**  
Brand and community model/design registered by EasyReading Multimedia

**Glyphs**  
EasyReading™ is composed of 808 glyphs (it covers the alphabet of all Neo-Latin languages).

**Styles**  
It includes 6 styles

**Price**  
Licensed for personal and non-commercial purposes, not transferable: 19,00€ EasyReading™ is granted to companies for commercial purposes licensed for use by special contract.

# DESIGN FOR ALL, WHOSE RESPONSIBILITY?

Silvio SAGRAMOLA

Many different terms are still being used in discussions referring to the accessibility or “design” of environments, products and services, but we can observe a growing awareness for the scope of such “design” being much broader than “eliminating barriers for people with disabilities or senior citizens” and that it aims at improving the quality of life “for all” people. We know of course how difficult it is, to make people change their routines, but we also have evidence that the concept of « Design for All » is the only option to

respond to our evolving needs towards a good quality of life. Legislation like the UN Convention on the Rights of People with Disabilities is a strong tool, but it is just a framework. Those who know about the benefits of « Design for All » have the responsibility to mainstream and market that approach in a more consequent and coherent way, combining legislative measures, the creation of tools and strategies, standardization, training for correct implementation, a solid knowledge management ...

Although many different terms are still being used in discussions referring to the accessibility or “design” of environments, products and services, we are quite confident that the importance for promoting a proactive change of attitudes is nevertheless well anchored in people’s minds. We can observe a growing awareness for the scope of such “design” being much broader

than “eliminating barriers for people with disabilities or senior citizens” and that it aims at improving the quality of life “for all” people.

However, when it comes to translate the above mentioned proactive attitude into concrete “Design for All” action, we must admit that it seems to be very hard to identify who should take over responsibility for launching the process and where to start.

The EuCAN publication “ECA for administrations”<sup>1</sup> from 2008 presented a list of 7 interdependent success factors describing how particularly administrations could implement the concept of “Design for All” within their specific fields of competences.

Since then, the authors have observed that the above mentioned success factors can easily be transposed to any other fields like tourism (Neumann et al. 2008)<sup>2</sup>, small and medium enterprises (Neumann et al. 2014)<sup>3</sup>, disaster risk management (Council of Europe Guidelines for assisting people with disabilities during emergencies, crises and disasters)<sup>4</sup>, and many others.

1 Aragall, F., Neumann, P. & S. Sagramola (2008): ECA for Administrations & Design for All in progress, from theory to practice – ECA 2013. Luxembourg. URL: <http://www.eca.lu>

2 Neumann, P., Pagenkopf, K., Schiefer, J. & A. Lorenz (2008): Barrier free tourism for all in Germany - Success factors and measures for quality enhancement. Study commissioned by the Federal Ministry for Economy and Technology. Münster/Berlin

3 Neumann, P., Knigge, M., Iffländer, K. & S. Kesting (2014): Developing criteria for guiding SME activities aimed at incorporating the Design for All concept in corporate practices. Study commissioned by the Federal Ministry of Economic Affairs and Energy. Münster, Hamburg

4 Alexander, D. & S. Sagramola (2014): European and Mediterranean major hazards agreement EUR-OPA – Guidelines for the Treatment of People with

That evidence lead to the publication of another EuCAN document with the title “Design for All in progress, from theory to practice - ECA 2013”<sup>5</sup> in which the answer to the question “who should start the process” was given: it is “the Design for All advisor” with respect to the prerequisites described in ECA 2013:

*Design for All prerequisites at a glance*

- *Advice on Design for All must be based on real Design for All thinking – having in mind a global approach and not just a one-dimensional solution to one particular problem. Therefore Design for All advice must be based on teamwork, user orientation and on a working method designed to avoid mistakes and loss of opportunities*
- *The implementation of Design for All calls for skilled advisors*
- *The whole Design for All process should follow a clear and transparent line based on success factors*
- *The Design for All solutions should be controllable through a well-defined success evaluation*
- *The expectations of society evolve at the same time as concepts and technologies advance and a good Design for All implementation allows for adaptations towards next steps.*

A lot of expressions are associated with the meaning of “design” like “conceiving or planning” or “process” or “designate” and many others. And in the Oxford dictionaries many synonyms are associated with the term “Designer”, like “creator, deviser, pro-

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Disabilities during Emergency, Crisis and Disaster Situations. URL: <http://www.coe.int>

5 Aragall, F., Neumann, P. & S. Sagramola (2008), *op.cit.*

ducer, inventor, originator, planner, author, artificer, fabricator; maker, fashioner; architect, engineer, builder”. The challenge to be taken up is to put all these terms together in the right way and keeping their sense even when they are translated into other languages.

All this means that there is no strictly anchored “Design for All” recipe, but that the implementation and expected results always depend on the actual context and available opportunities. Accordingly, there is no strictly anchored definition of the “Design for All advisor” as the final achievements are the result of an optimized combination of input from different sources.

According to ECA 2013<sup>6</sup> a “good Design for All advisor” has to be:

- Competent and trustable
- Effective
- Positive and Empathic
- Transparent
- Well skilled
- Cooperative and well-connected

Both ECA publications from 2008<sup>7</sup> and 2013<sup>8</sup> presented practical examples of initiatives taken with the aim of demonstrating the implementation of a “Design for All” approach. Although there is a huge variety in the contents and outcomes of these examples, the starting points have always been the same:

- there had been a demand for changing or planning (context)

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6 *Ibid.*

7 *Ibid.*

8 *Ibid.*

- a Designer was in charge of the work
- the final result was based on the contributions of different actors

The only differences could be found in the quality or the showcase-character of the achievements and we are very keen to pretend that these depend on the experience of the Designer and his or her capacity for using the 7 interdependent success factors.

The author of this article had the pleasure to be the coordinator of the European project “build for all” in 2006, dealing with accessibility and social criteria in public procurement, where we based our work on the slogan:

**“good intentions are not enough”**

Well, this is still true today and it is the advisor’s responsibility to guide decision makers in a way that good intentions are translated into good solutions “designed for all”.

A considerable part of our work in Luxembourg consists in meeting decision makers in municipalities or companies and to motivate them for implementing a Design for All approach in their city or in their company. One of the most frequent reactions during such meetings is that these people believe that “Design for All” is very expensive and they doubt whether it is really necessary to spend this money for the relatively small number of potential beneficiaries.

When, on the other hand, I we ask technicians if they know about Design for All products, they tell us that there is no demand for that and that it is not profitable for them to invest time and money in such products or services.

On the other hand, we know for sure, that there **is** a demand,

because the demographic change is a reality! We know that people want to live their lives in a self-determined way as long as possible, staying at home, and benefiting of equipment and services able to make them overcome the limitations of their age, a chronic disease or a disability. And in the meantime we have learned that it is cheaper allowing people to stay at their homes instead of accommodating them in institutions.

And all of us know for sure, that **we** want to live our lives in the most comfortable and safe way, benefitting of the best possible quality of life for ourselves and for our children.

We cannot anymore just link Design for All to 10-15% of people with disabilities in Europe, but we have to focus on the reality that - quoting the Design for All Foundation –

**it is essential for 10% of the population,  
necessary for 40% and  
comfortable for 100% of the population.**

We know of course how difficult it is, to make people change their routines. Products and services continue to be designed in the “traditional manner”. Many technicians and planners follow the rules and techniques that they learned many years ago. And even if their clients ask for Design for All products, there is the risk that they do not know where to find such products or how to choose the product meeting the particular needs of their client. Should the client be lucky and find a technician who knows about Design for All and about existing offers, than there is a high probability that the adequate product will be much more expensive than the traditional one. An individual client, who wants to live in a self-determined way, will not really have a choice, and he or she

will pay the price, but this is not the case for public buildings or services. In the public context, the price and the easiness of provision risk to make the choice go for the cheaper solution and not necessarily for the best one.

The economic impact of all this becomes obvious when we look at the day-to-day reality with some basic examples:

In Luxembourg the dependence insurance was introduced in our social security system in the year 2000 with the aim of allowing a maximum of people to stay at their homes as long as possible. From 2000 to 2010 the number of beneficiaries of the dependence insurance has doubled (rf. Ministère de la Sécurité Sociale 2011)<sup>9</sup>.

L1. AUGMENTATION DE LA POPULATION DES BÉNÉFICIAIRES DE L'ASSURANCE DÉPENDANCE: +4,9% EN 2010

Année	Nombre	Variation en %	Dont résidents	En % du total
2000	6 810		6 726	98,7%
2001	6 632	-2,6%	6 533	98,5%
2002	7 422	11,9%	7 282	98,2%
2003	8 250	11,2%	8 078	97,8%
2004	8 968	8,7%	8 778	97,8%
2005	9 528	6,2%	9 309	97,6%
2006	9 867	3,5%	9 612	97,5%
2007	10 249	4,0%	9 995	97,4%
2008	10 621	3,6%	10 328	97,3%
2009	11 158	5,0%	10 865	97,3%
2010 <sup>10</sup>	11 706	4,9%	11 378	97,2%

The number of beneficiaries has doubled ( Source: Ministère de la Sécurité Sociale 2011<sup>10</sup>)

A direct consequence of the dependence insurance has been a dramatic increase of workplaces in the home care service system. From 2007 to 2009 (so within 2 years) the number of staff working

9 Ministère de la Sécurité Sociale (2011) : Rapport Général Sur La Sécurité Sociale au Grand-Duché de Luxembourg. Luxembourg

10 Ibid.

for home care and help services in Luxembourg increased by 17,3%. And the demographic change will for sure not slow down this trend.

Type de prestataire	2007	En % du total	2008	En % du total	2009	En % du total
Personnes d'aides et de soins	1 529,9	24,8	1 715,2	24,7	1 829,7	24,7
Centres semi-stationnaires	253,1	3,9	278,8	4,0	321,0	4,5
Établissements d'aides et de soins à séjour continu	3 987,8	60,7	4 188,5	60,1	4 182,3	58,8
Établissements d'aides et de soins à séjour intermittent	764,0	11,6	770,8	11,1	810,8	11,4
TOTAL	6 534,8	100,0	6 953,3	100,0	7 127,8	100,0

the number of people living in institutions (Source: Ministère de la Sécurité Sociale 2011<sup>11</sup>)

We also can observe that the proportion of staff working in institutions is constantly decreasing in comparison with home care services. Since the introduction of the dependence insurance the number of beneficiaries living at their homes is permanently growing and reaches today the double of the number of people living in institutions.

Année	Domicile	En % du total	Variation en %	Établissement	En % du total	Variation en %	Total	Variation en %
2008	7 232	68,1		3 389	31,9		10 621	
2009	7 566	67,8	+4,3	3 590	32,2	+5,9	11 156	+5,0
2010 <sup>12</sup>	7 836	66,9	+3,3	3 870	33,1	+7,8	11 706	+4,9

1) Références au 31 décembre.  
2) Données provisoires.

The number of beneficiaries living at their homes reaches the double of the number of people living in institutions (Source: Ministère de la Sécurité Sociale 2011<sup>12</sup>)

11 Ibid.

12 Ibid.

An immediate effect of the growing number of staff in home care services is an important car park, as all these people need to be mobile, and all these cars need to be maintained.

On the other hand we can observe that the research and market for equipment for distance care and tele-alarm systems is constantly evolving. In the field of intelligent housing and domotics new products appear. In Luxembourg we see very interesting partnerships between product developers and home care services.

Substantial renovation work in private houses has to be achieved, like the installation of elevators or the transformation of bathroom equipment. Training has to be organized for companies working in these fields.

And such trends are not limited to Luxembourg.

Referring to a market study of the sanitary branch in Germany, we learn that more than 33% of the existing bathroom stock in private houses is systematically renovated in order to adapt the Design to evolving needs. In 2010 this generated a turnover of 3 billion euros in this branch.<sup>13</sup>

A study of the German Ministry for traffic, construction and urban development (Bundesministerium für Verkehr, Bau und Stadtentwicklung) points out that till the year 2020 some 3 million housings will have to be renovated in an accessible way.<sup>14</sup>

13 ZVSHK (2011) : Viel zu tun fürs Sanitärhandwerk. URL: <http://www.sbz-online.de/Viel-zu-tun-fuers-Sanitaerhandwerk,QUIEPTMzMzk2NiZNSUQ9MzAwMDQ.html>

14 BMVI – Altersgerecht wohnen Studie : Wohnen im Alter. URL: <https://www.bmvi.de/SharedDocs/DE/Artikel/SW/altersgerecht-wohnen-studie-kda.html>

In France, accessibility is considered to be one of the most important perspectives for the future.

Today 3,5 million people are officially recognized to be disabled, but in reality it is estimated that 22,5 million people (out of 60 million inhabitants) are concerned. All this leads to a new perception of accessibility in the sense of Design for All in all the aspects of everyday life and will affect investments in housing, equipment, commerce, neighbourhood, transport, urbanism, etc.... It opens the way to a new kind of know-how through a better cooperation between the different actors in the field of construction.<sup>15</sup>

In an article published in the Building Specifier<sup>16</sup> we can read that in the UK *“general improvements at places of entertainment, museums and galleries show that visitor numbers have increased by 15% and revenue streams by 40%.” The conclusion is that “combining accessibility with general refurbishment makes sense economically.”*

People staying at their homes want to be active and participate in activities. This means that door-to-door transportation systems have evolved and that accompanying services have to be organized. But we all know that door-to-door transportation is much more expensive than public transport and far from being as flexible. The consequence is that busses and trains, including infrastructure and services, are consequently to be designed in a way that allows people to use them easily even if their individual

15 Source : Bâtimentiers (2004)

16 Mayer, P. (2003): Lifetime costs: Part M access. URL: <http://www.building.co.uk/data/lifetime-costs-part-m-access/1028196.article>.

mobility is limited. The innovation potential in this area is much more challenging than just providing low floor buses. New types of signage inside and outside the vehicles, new concepts for information and communication technologies, modern and easy to use transport systems are to be developed in order to attract a maximum of guests to public transport.

Referring to a study made by ProAsolutions<sup>17</sup> in Barcelona, the metropolitan network of the FERROCARRILS DE LA GENERALITAT DE CATALUNYA (FGC) have a long standing tradition putting into practice accessibility and Design for All. A large number of stations, trains and even the ticket vending machines are designed, engineered and built in a way to facilitate mobility of all people. So in the in the period from 1997 to 2006, due to improvements including accessibility and Design for all, the number of travels has increased by 69%.

A similar trend could be observed with another metro company in Barcelona (TMB) that started the accessibility improvement later and increased the number of passengers by 16% in each station made accessible.

Active people want to travel and take part in leisure activities and according to NeumannConsult in Münster, the German study about the economic impact of accessible tourism has been an important milestone for proving the benefit of Design for All in this field. It pointed out that in Germany travellers with disabilities have the potential for generating a turnover of nearly 5 bn Euros in case of more accessible infrastructure and services along the

<sup>17</sup> Source : ProAsolutions, Barcelona

entire tourism chain.<sup>18</sup>

The City of Barcelona has gained a quite good reputation for the efforts made in the field of accessibility and Design for all. So it is for sure not a simple hasard, that the number of hotels went from 118 hotels in 1990 to 621 hotels in 2009 increasing the number of available hotel beds from 18500 to 60300 in this period.

So, we have evidence that many initiatives have been launched to promote Design for All as the only option to respond to our evolving needs towards a good quality of life. But we still did not achieve to communicate the importance of that message in a way that really is designed for all.

Legislation like the UN Convention on the Rights of People with Disabilities is a strong tool, but it is just a framework. **Those who know about the benefits of Design for All have the responsibility to mainstream and market that approach** in a more consequent and coherent way, combining legislative measures, the creation of tools and strategies, standardization, training for correct implementation, a solid knowledge management ...

*I thank Mr. Francesc Aragall (ProAsolutions), Dr. Peter Neumann (NeumannConsult) and Mr. Ulrich Paetzold (FIEC) for their valuable help in gathering figures for the present article.*

<sup>18</sup> Neumann, P., Pagenkopf, K., Schiefer, J. & A. Lorenz (2008): Barrier free tourism for all in Germany - Success factors and measures for quality enhancement. Study commissioned by the Federal Ministry for Economy and Technology. Münster/Berlin

# EASTBOURNE / DESIGNED FOR ALL

Chris VEICH

Design for All affects us all at different stages in our lives, from when we are young to when we are older. People are now living longer which means many more of us are looking for accessible environments, both built and natural as well as accessible services. Eastbourne, England, is a seaside town with a large population of older people, as well as a growing number of younger families.

Eastbourne Designed for All (EDA) is an example of campaign initiative to promote Design for All in a town engaging with businesses, the public and voluntary sectors, promoting the opportunities that can flow from adopting an inclusive business approach, as well as understanding the consequent social advantages that it also offers.

## 1. Introduction

Eastbourne is a large seaside town on the south coast of England with a population of around 100,000. It grew as a fashionable tourist resort, resulting in a mix of architecture and public realm that is typically Victorian and a key feature of the town. Contemporary Eastbourne is described as “a thriving holiday resort, with modern attractions which fit in well with the town’s more traditional appeal. For those who live and work here it is a flourishing business centre” (Eastbourne Borough Council, n.d.). An

objective of the council is to promote Eastbourne as a place for business investment and as a tourist destination (Eastbourne Borough Council, 2013). The town attracts over 4m visitors annually. Eastbourne has long been known for its large proportion of older people. However, the concept of making the town inclusive and benefitting from Universal Design principles appeared to be largely ignored until a business leader, recognising the inherent benefits of such an approach, set about with others to start a campaign for change and to develop tools to help businesses grasp the opportunities that Design for All offers.

## 2. Promoting Design for All in Eastbourne

In 2013 the Office of National Statistics showed that Eastbourne’s Meads area had an average age of 71.1 years, almost double the national average of 39.7 making it the first place in the country to have a population over 70. However, town officials highlight the fact that from the Census taken in 2011, the average age of the Eastbourne population as a whole is 43 and that over half the population are under the age of 45; and this has increased by 10.2% in the last 10 years. It is also stressed how popular the town has become at attracting younger people and families (The Argus, 2013).

Against this background it is also important to recognise the changing demographics forecast for the UK, where the number of people aged 60 or over is expected to pass the 20 million mark by 2031, and those over 65 is projected to rise by 48.7 per cent in the next 20 years to over 16 million. The proportion of people aged over 65 will rise from the present 17.2 per cent to 22.4 per cent

in 2032, with a greater rise in the percentage of population of those over 60 predicted to rise from the 22 per cent currently to nearly 29 per cent in 2033 (Age UK, 2014). There are implications in these statistics for Eastbourne, and it will be hard to ignore the growing demands to address accessibility to the public realm and businesses in the town.

The concept of “Design for All” or “Universal Design”, where products and environments are usable by all people to the greatest extent possible, is something therefore that sits very well with the needs of Eastbourne and its mix of young and older people. Others who also benefit from this inclusive approach are 11.6 million people who have a limiting long-term illness, impairment or disability in Great Britain (Office for Disability Issues, 2014). These people are potential customers of the many businesses in the town or the hotels and attractions that people will use if living in the town or visiting.

Ensuring accessibility to goods and services is covered by legislation. Businesses in Eastbourne and throughout the whole of the UK are subject to the “Equality Act” 2010. This is not prescriptive in what a business must do to be accessible, but obliges them to make “reasonable adjustments” to their business and makes it illegal to refuse service or charge more on the grounds of disability. Whilst the legislation has empowered people with access requirements it has not necessarily enabled them as some businesses have yet to address their accessibility fully. Despite this legal requirement, local businessman Tom Serpell had for some time observed how there was a focus towards creating a market with a strong youth-orientation. He felt that this risked

neglecting the needs and market opportunities presented by the elderly, people with disability and others who would benefit from improved accessibility such as young people with families.

He believed that some businesses could benefit by catering for this broader market for two key reasons: the first out of self-interest, reflecting that the business case for improving accessibility is probably stronger than the legislative imperative, and the second to make independent living more achievable for increasing numbers of people.

He shared his thoughts with some business contacts who supported a conference in March 2012 to air this idea. This led subsequently to a clearer agenda in favour of “Design for All” a subject which at that time he knew little about but which some delegates introduced. This was followed up by further research with him attending an event on Design for All in London, as well as carrying out online research.

Eastbourne Design for All was established as a campaign to bring about change. Among early supporters were an Inclusive Design activist, running an online retail business for those who are 50+; Age UK; a local housing association; and an architect experienced in designing accessible premises.

EDA encourages local businesses to act more inclusively. They want to create champions/case studies illustrating how serving more people better with what they want is both good for business and good for consumers and the town.

To engage with the local business community they have run a number of workshops where they have discussed aspects of design with them. This has helped them identify a number of key

initiatives, which they are developing to attract local businesses. They have a series of projects planned, including one on Digital Inclusion, to help technophobes to become acquainted with the Internet. Another is relating to businesses opening up use of their toilets to the general public, a key issue for many people with the closure of public toilets, to make the town more user-friendly.

They have also undertaken a mystery shopping project to show how older and people with disability experienced local coffee shops. This attracted good Press attention helping to raise greater awareness of design for all within the local community.

They are connected with a number of local voluntary organisations representing people with a disability, such as those who are wheelchair users blind or deaf, as well as the elderly, who can have accessibility issues but are not labelled as disabled. All of these give expert feedback of their experiences within the town. They have also agreed to work on some further research with the local University of Brighton, doing observations of the obstacles to independence experienced by people with sight-impairment.

Communicating with businesses and engaging with them has been a major issue. Whilst they have generated quite a good awareness of their brand through social media (something which is free in terms of cost, but not in time), they have lacked the vital resource to speak on a face-to-face basis with businesses, probably the most effective way to engage them. However, securing a grant application to employ a part-time Community Relations Officer (CRO) for 6 months will help to improve this activity.

There are 36 Members recruited largely by personal contact by their part-time, volunteer directors. Membership includes

key players from the public sector including Visit Eastbourne, which promotes tourism to the town, to the private sector with businesses such as Southern Rail, the local train operator.

The culmination of their first year's work was the creation of an Inclusive Design Checklist (Figure 1), a valuable resource for businesses. This is based on the learning from all of their workshops and some benchmarking on the Internet. It is intended for businesses to self-assess but also a useful tool for the CRO to use to raise understanding of what ID is about and how to respond to this behaviourally.

A detailed Code of Practice has also been developed, to which any really committed business can sign up. This includes measurement of the impact of this initiative, - but it is felt that this is an incremental process and such total commitment is probably a long way off. This was another reason why the Checklist has been developed. This can be used to obtain commitment to actions, which they can follow up but as yet without metrics.

Eastbourne presents a challenge on two fronts in its bid to address inclusivity; the first is overcoming any barriers in the built environment. The town was developed during Victorian times when accessibility was not a major consideration. Making adaptations and changes to retain the sense of place and not lose the character of the town, by making insensitive adjustments, is not only crucial but is also possible. The other challenge faced is the attitude of business owners and service providers. Engaging with them and overcoming stereotyped perceptions, often based on a real lack of understanding of the issues, is important if change is to happen. EDA is an example of how to challenge the

status quo, and that making premises, services and/or products inclusive is unlikely to happen without having such an organisation in place, both to promote and to provide support and resources to help businesses understand what Inclusive Design is and what each can do to develop their business more inclusively. The Code of Practice and checklist for businesses exemplify such resources for businesses.

### 3. Conclusions

What is demonstrated from this case study is how change does not always need to be led by the public sector; and that the private sector also has an important role to play in being a catalyst for change. In this instance it is the recognition of the business benefits and the desire to enable older people to live more independent lives that brought this local campaign to life.

What is probably required above all else, is a local champion who recognises the value of and need for “Design for All”. In this instance Tom Serpell has a vision and has helped to bring in other like-minded people to help businesses understand the economic benefits that inclusive design offers them, as well as the social benefits for the local community and visitors to the town.

EDA has shown that through individuals sharing a vision and giving their time they can make an impact and begin to raise awareness of this issue. However, assured funding is probably crucial to support the work in the longer term if the full benefits of their vision are to be realised and enjoyed by everyone who lives, works or visits Eastbourne both now and in the future.

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 APPENDIX 1  
 Source: [www.eastbournedesignedforall.co.uk/wp-content/uploads/2013/10/EDA-ID-checklist-v2.pdf](http://www.eastbournedesignedforall.co.uk/wp-content/uploads/2013/10/EDA-ID-checklist-v2.pdf)  
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## APPENDIX 1: Inclusive Design Checklist



### So you want your business to have the widest appeal?

Inclusive Design seems a pretty good idea – making sure that no customer or user has to be lost because of their inability to use the service or products offered. But what does this mean for the business? How can it practically be more inclusive? Below are some questions which may help to assess just how inclusive a business really is and perhaps stimulate some changes. There is no correct number of ticks but the more there are the more the business is **designed for all**.

Products	✓
Could a child (if appropriate) or weaker adult easily hold, handle and use the products we sell?	
Could a child (if appropriate) or weaker adult easily remove the products we sell from their packaging?	
Are all of the products we sell clearly marked with price, instructions and advice relevant to children, seniors or disabled people?	
Are products displayed in such a way as to be accessible to all customers?	
Can a customer buy only the quantity of each product they need, can store or afford (rather than multipacks)?	
Would a customer with an impairment be easily able to set up, use, and clean this product at home?	
In designing, have we considered every user of our product throughout its production, distribution and use?	

Service and Services	✓
Are customer-facing staff aware and alert respecting customers' disabilities which may require sensitivity?	
Are our staff trained in responding to the individual needs of diverse customers?	
Are our staff encouraged to accept that appearances may be deceptive in respect of customers' needs and ability to afford purchases?	
Are our staff aware of the needs of some consumers for social interaction to build confidence?	
Are our staff clearly identifiable with badges and/or uniform?	
When designing our service, have we considered every user of that service from start to finish?	

Premises	✓
Are our premises clearly marked to identify both the name of the business and what its service comprises, so that customers know before entering?	
Is all signage wording both outside and inside the building in size, style and positioning* such that it is likely to be legible to those with impaired vision or in a wheelchair? [*e.g. 1.2m from floor]	
Is the access to our premises and all of its customer areas obvious and convenient for those with mobility or sight issues, or just juggling kids, including use of assistive equipment (wheelchair, frame, buggy etc)?	
What do our toilets say about our respect for our customers? How wheelchair/child friendly are they? Child-changing area for mums AND dads?	
Are door-handles, coin- or card-operated machines positioned such that people of any height or strength may be able to use them?	
Are hearing assistive technologies installed, turned on, and staff trained in their operation?	
Is any music played at a level which readily allows conversation?	
Is lighting sufficient to enable all customers who want to read in your premises to do so easily?	
Do lifts have Braille or speech controls and audible floor announcements to assist those with sight issues?	
If people are unable to access our premises or we do not have premises, what alternative method of access do we offer to our service?	

Above All	✓
Have you experienced your own product/service as a customer would?	
Do you regularly ask your customers or users for feedback?	
Have you asked consumers of all ages and abilities what they think of your business?	
Have you asked people who are not yet customers what they need from a product like yours?	

If you like the idea of your business being designed for all and would like some help to evolve in this way, Eastbourne Designed for All will be happy to help you develop a plan of action. Just contact [info@eastbournedesignedforall.co.uk](mailto:info@eastbournedesignedforall.co.uk) and ask us to get in touch.

**Eastbourne Designed for All is a campaign aimed at improving the performance and results of local businesses through increasing custom, raising workforce skills and delivering excellence of customer experience.**

### **Subscriber Commitment:**

To adapt services, products and facilities to the abilities, necessities and expectations of users and consumers of all ages

### **The principles of Design for all**

- To develop and market mainstream products and/or services which are accessible to and usable by as many people as reasonably possible without the need for special adaptation or specialised design;
- To make the use of products and services easier for everyone regardless of physical limitations resulting from age, gender, capacity or cultural background
- To embed the right skills and attitudes so that staff can become more customer-centred;
- To support an ethical approach to providing excellence thus improving quality of life for staff, customers and the community.

This CoP gives businesses a practical set of guidelines for compliance with the campaign, demonstrating commitment and implementation through their processes, procedures, actions and behaviours.

according to the principles of Design for All.

Below we illustrate the 3 aspects of commitment which constitute the route towards excellence in Design for All. Each has a series of questions that we would expect you to ask of yourself and your organisation. Your response will vary depending on whether you provide a service or product, whether you are a sole trader or limited company, the size of your company and a host of other factors.

In the commentary section we would expect a short statement from you about what you have done. In our sample (attached), we have assumed that you employ 15 people and given an example of statements that we would consider demonstrate a commitment or understanding of the Code. Excellence in existing products, services and facilities are taken into account; plus a commitment to specific continuous improvements in meeting the needs of all generations of customer.

### **Benefit**

Having completed this matrix and been accepted as meeting the requirements of EDA, your company can expect:

- Public recognition of achievement of the EDA standard
- Preferred referral status resulting in in-

### **The case for Design for All**

The strategic future of a company lies in its capacity to adapt itself to the needs of the market and the continuous technological and social changes that occur in an ever-increasing basis. Together with incoming legislation and increased societal demands for better service, value for money, courtesy and trust, business need to find a way to allow it to respond to that. In Eastbourne & District we have a growing and hitherto largely untapped multi-generational profile. Eastbourne Designed for All proposes adaptation of a company's service or product so that it can respond to all consumers so that it will:

1. Develop the market in accordance with the demands of more users and unlock business opportunities

creased business opportunities

- Use of logo on all stationery, web site etc.
- Increased staff competence, commitment and retention

2. Innovate in the product and/or service provided or planned to meet the needs of all users/consumers

3. Increase competitiveness and ensure success of any new offering

4. Gain recognition throughout the business world and its customer base of its commitment to improving people's lives

5. Gain skills, expertise and mutual support from other members in creating excellence within your business

The outcome will be that everyone, regardless of age, gender, capacities or cultural background can participate on an equal basis, be that through designing for all in the built environment to IT platforms, from product development to service provision.

By considering an existing product or ser-

vice and asking who are those that will have difficulties using/accessing it, or not be able to use it at all, and designing out that issue, it will allow for all users to access the product/service increasing sales potential. On a very simple level, a jam jar used only to be able to be opened by those with strong wrists (usually 25-55

age group). By designing a top that can be opened by those whose wrists are not strong (the young and elderly) the market is enlarged and all consumers are happier. By gaining a reputation for excellence in meeting the needs of all, Eastbourne will attract more consumers and businesses to bring their money here.

**Accreditation Matrix: Eastbourne Designed for All**  
**The principles of Design for all:**

- To develop and market mainstream products and/or services which are accessible to and usable by as many people as reasonably possible without the need for special adaptation or specialised design;
- To make the use of products and services easier for everyone regardless of physical limitations resulting from age, gender, capacity or cultural background
- To embed the right skills and attitudes so that staff can become more customer-centred;
- To support an ethical approach to providing excellence thus improving quality of life for staff, customers and the community;
- A willingness to share expertise with others to provide mutual support and help create a community of excellence.

**Assessing your current situation mapped against the EDA**

Question	Commentary	Evidence included in submission
How have you identified the diverse needs of your customers/ clients?		
What are the differing needs of your customers/clients?		
How have you taken into account the diverse needs of your customers/ clients?		
What changed as a result of taking customers/clients needs into account		

**Understanding the benefits to the company from following the EDA principles**

Question	Commentary	Evidence included in submission
What benefits are there to service/product delivery/development?		
What benefits are there in relation to service?		
What benefits are there in relation to improved turn-over?		
What benefits are there in relation to staff?		
What other benefits are there in following the principles?		

**Demonstrating proposed/active implementation**

Question	Commentary	Evidence included in submission
What has been identified that needs to change as a result of undertaking this assessment?		
What steps are you planning to take and when?		
What steps are you already taking?		
What have you already got in place that demonstrates excellence in meeting the needs of all?		
What are you planning to do over the next 12 months to embed EDA into your organisation?		
How will you support shared learning within your organisation and others Members of the EDA community?		
How will you monitor your progress and determine that your actions have led to the improvements sought?		
What will success look like in your business		

Source: [www.eastbournedesignedforall.co.uk/how-it-works/engaging-with-us](http://www.eastbournedesignedforall.co.uk/how-it-works/engaging-with-us)  
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## References

- Age UK (2014) Later Life in the United Kingdom. Retrieved from: [http://www.ageuk.org.uk/Documents/EN-GB/Factsheets/Later\\_Life\\_UK\\_factsheet.pdf?dtrk=true](http://www.ageuk.org.uk/Documents/EN-GB/Factsheets/Later_Life_UK_factsheet.pdf?dtrk=true)
- Eastbourne Borough Council (n.d.), Eastbourne's Story. Retrieved from: [www.eastbourne.gov.uk/EasysiteWeb/getresource.axd?AssetID=226&type=full&servicetype=Inline](http://www.eastbourne.gov.uk/EasysiteWeb/getresource.axd?AssetID=226&type=full&servicetype=Inline)
- Eastbourne Borough Council (2013) Eastbourne Borough Plan 2001-2011. Retrieved from: [www.eastbourne.gov.uk/about-the-council/council-policies-plans-and-strategies/planning-policy/local-development-documents/eastbourne-borough-plan/saved-policies/?assetdet4700515=216993](http://www.eastbourne.gov.uk/about-the-council/council-policies-plans-and-strategies/planning-policy/local-development-documents/eastbourne-borough-plan/saved-policies/?assetdet4700515=216993)
- Office for Disability Issues (2014) Disability Prevalence estimates 2011/12. Retrieved from <http://odi.dwp.gov.uk/docs/res/factsheets/disability-prevalence.pdf>
- The Argus (2013) Eastbourne capital of the south for the over 70s. Viewed on 16th May, 2014. [www.theargus.co.uk/news/10749504.Eastbourne\\_capital\\_of\\_the\\_south\\_for\\_over\\_70s/](http://www.theargus.co.uk/news/10749504.Eastbourne_capital_of_the_south_for_over_70s/)

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# EQUALITY, INCLUSION AND BUSINESS OPPORTUNITIES

Jane SIMPSON

As an architect and Access Consultant, Jane will explain from a UK perspective, the approach to ensuring a universal and inclusive environment; this article will;

- Explore the necessity and aspiration of an inclusive environment, why do we need it and what are the benefits?
- Discuss who are disabled people and how does this affect your business?
- What the process would be to enable a business to identify a suitable strategy and way forward for their premises and operations.
- Explore the mechanism to achieve an

inclusive business within site constraints, legislative obligations and affordable costs.

- Identify the pitfalls of the briefing, planning and construction process.
  - Outline those areas which require detailed consideration in a sequential journey approach.
  - Provide top ten tips to ensure success.
- This will be a document to assist all businesses, no matter their size, scale or function, to meet their aspirations, as well as, obligations.

The revenues gained from facilitating disabled customers are substantial, the proceeds of which should not be underestimated. Understanding the diversity of your disabled client base and identifying the barriers to their buying process will help businesses to attract disabled customers, their friends and relatives and more importantly, retain them. As an Architect and Access Consultant

Jane explains how and why inclusive environments are important to business.

In the current economic climate many buildings within the UK are being built ignoring inclusive design without any consideration of the implications this may have for the future. It is often heard that inclusion and 'disability' is too expensive. Is this truly the case?

Surely, we should be asking; what is the ultimate cost to living in an environment that is not inclusive? The risks are; reduced revenue, loss of customers, decreased employment pool, negative publicity, legislative action and costly future adaptations. An inclusive environment would be accessible to the majority and result in repeat business and clients.

It is estimated that there are over 11 million disabled people protected by the Equality Act in the UK and that they have a disposable income of over £80 billion per annum. Statistics show that we are an aging population. By the year 2037, people over 85 will account for five percent of the UK population. This is a two and half fold increase since 2012 with those over 65 accounting for nearly a quarter of the population. To ignore these statistics, notwithstanding the legislative imperative, is foolhardy: at least a quarter of all families have a relative who is disabled. None of us are average. We all age, are tall, short, fat, thin and have children who will affect our needs and influence our demands and many will suffer from temporary disabilities; the environment should suit all.

What is the process to an inclusive environment? It is not as complicated as one may think; the methodology that I use when approaching any building project, is:

- Risk and added value assessment
- Establishing the criteria
- Operations review
- Identify existing site conditions
- Design team consultation
- Agreeing detailed arrangements such as evacuation, operational policies and handover

Businesses must identify their clients, customers, users and employees. Once this is established, identify the services and employment prospects. In effect, undertake a risk assessment (added value);

- what does the business provide
  - how do you provide the service and employment;
- against the full demographics of users.

Once this is completed you need to set the design criteria to establish that your premises and design proposals meet expectations, or if not, ascertain the failings. Within the UK, other than children's needs for which guidance is sadly lacking, we have a key number of documents which assist in inclusive design. For example, some best practice guidance documents available are, BS8300:2009 Design of buildings and their approaches to meet the needs of disabled people, Approved Document M, K & B, the Sign Design Guide, Accessible Sports Facilities, Inclusive Mobility . When dealing with an existing building an access audit may be appropriate, this would be to identify key barriers to inclusion using the sequential journey of all users. However, it may be appropriate for an audit to be completed later when a more defined design

has been identified. If this is the case, then a very simple audit of major barriers to assist in the design process may be applicable. The UK legislation requires reasonableness within the ability to pay. The obligations on public sector bodies are more onerous; however, the principle remains the same, is the service equal? If not, why not and is this reasonable within the constraints of site, economics and other factors such as listing?

The process then for the design and construction professionals continues through briefing to handover. My advice is that at each stage the scheme is reviewed, any changes and their relevance to the design standards and anticipated users are identified. A stage closure report should be provided, which states the decisions made and those in abeyance, for future consideration.

Many in the UK do not fully understand the equality legislation. This is compounded by the fact that the legislation is civil rather than building led. There is no technical guidance to follow; the building regulations are a minimum standard and as described above, best practice guidance may need to be used to inform the design. The brief is key to informing the design team of any inclusive design considerations.

In addition, best practice guidance and statutory obligations are cyclic and have different responsibilities. There are often conflicts between guidance and other matters, such as planning; for example, light overspill versus acceptable light conditions for visually impaired people.

Another consideration is the procurement process; who is the lead consultant, what is the decision process? In particular, design freeze or planning permission, which define the shape and room

dimensions, are often undertaken too early.

So to reduce risk and provide added value we would recommend an inclusion champion. For small projects, this could be one of the design or client team; for larger more complex projects, it may be advisable to instruct an Access Consultant. Within the UK we have the National Register of Access Consultants (NRAC) who are an independent register of accredited Access Consultants and Auditors; it is the only UK wide accreditation service for individuals who undertake access auditing and consultancy. NRAC consultant members are increasingly being used to add value and provide advice as part of the design process.

All aspects of design need to be considered including, access and approach, parking and drop off, entrance and reception, circulation, sanitary amenities, facilities and evacuation. These must be considered taking into the account the sequential journey of all users of the building.

In conclusion, inclusive environments make economic sense; why would businesses want to exclude this market? My top ten tips for an inclusive building are:

1. Consider inclusion from the outset.
2. For appropriate projects get a specialist (NRAC) involved from the start.
3. Understand the user demographics and any management policies.
4. Set a design criteria standard.
5. Ensure the brief provides sufficient information to the design team.
6. Hold engagement meetings with interested parties.

7. Review the design against agreed standards at the end of each stage.

8. Review ...

9. Review ...

10. Provide a close out report (Access Statement).

Inclusive integrated environments for all, within budget and client expectations are possible, as Jane explains.

Jane Simpson Access (JSA) was part of a team who designed and constructed Thamesview Secondary School. JSA became involved after design freeze and the plan form of the building had been set. This is a mainstream school with an SEN unit for children with PMLD. It is a three storey structure which required access for all to the whole of the building and site. When JSA joined the design team it was clear that evacuation for disabled people still needed to be resolved.



It is an atrium design with five wings which radiates around the heart space. The lift sizes were agreed and set as 13 person lifts; car dimensions, nominally 1400 x 1600mm. This is larger than the minimum required for Building Regulation Approval but after JSA advice, given the needs of the PMLD unit, it was agreed that the two lifts needed to be larger. This was the starting point, the Regulatory Reform Order (RRO) requires that those who enter a building should be able to evacuate safely and that if they wish to be evacuated in their own wheelchairs, they should have that choice.

A lift of this size can accommodate motorised wheelchairs but not stretcher users. Neither of the lifts was an evacuation lift as the cost was prohibitive; additionally, it was identified that some pupils would need to be evacuated in their own large motorised wheelchairs. Therefore, it was recommended that a stair based evacuation using mechanical equipment would be necessary.

Fig. 1: Long shot showing the central atrium and four of the five wings  
Credit: Fieldon Clegg Bradley Studios

Improvements were necessary to allow the day to day functioning of the school alongside safe evacuation of a number of profoundly disabled pupils. Working with the architects Fieldon Clegg Bradley and fire engineer ARUP, we developed an evacuation strategy, using compartmentation and stair evacuation. Five compartments were created, each with an internal circulation stair that also acts as a means of escape for independent evacuation and an enlarged external refuge point to the end of each wing. Originally, these stairs had a dog leg turn; however, to facilitate the use of mechanical evacuation equipment, JSA advised that these became a straight flight. All the external stairs were reviewed to enable the use of mechanical equipment capable of



Fig. 2: The straight flight stairs utilised external seating to provide protection to the underside of the stairway.

Credit: Fieldon Clegg Bradley Studios and Amos Goldreich

evacuating individuals in large motorised wheelchairs.

To ensure free movement during the normal school opening times and maintain the compartments, 60 minute fire rated double doors, each leaf 1350mm wide, were installed at the entrance to each wing. These were on hold open devices but close automatically in the event of a fire. Other techniques implemented were sprinklers, clear circulation routes, wayfinding and colour coding of zones, all of which facilitated easy access and egress.

Thamesview School demonstrates that through a collaborative open minded approach to design, the fire and access strategy can result in an innovative safe school for all. JSA reviewed all aspects and details of the school ensuring that all students can fully participate in the school environment.

Fig. 3: Colour coding of the 'Houses' were linked to the large house entrance doors and evacuation stairs.

Credit: Richard Chivers





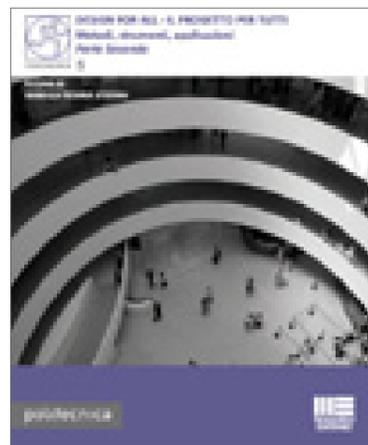
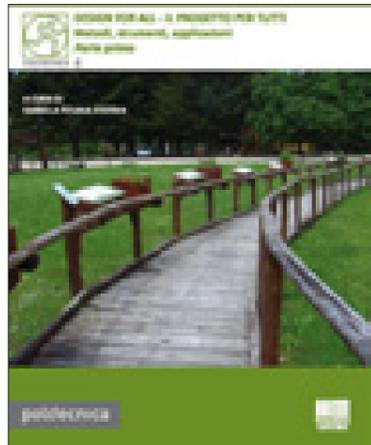
Fig. 4: Colour coding of the wide open doors to first floor and the use of carpet provided wayfinding, directional clues and ease of use for all disabled people.



Fig. 6: Balconies were designed to provide views for all pupils whether standing, sitting or of short stature, whilst maintaining safety. Credit: Richard Chivers



Fig. 5: Disabled students participate in classes with able bodied pupils.



Isabella Tiziana Steffan

**Design for All. Il progetto per tutti. Metodi, strumenti, applicazioni.**

Maggioli Editore, Santarcangelo di Romagna (RN) Italy, dec. 2012 - Vol. 1-2

The publication highlights the multidisciplinary and cross-disciplinary of the Design for All approach, both in terms of issues addressed and of field of application. The accessibility of places and objects is nowadays a minimum requirement: it is only the starting point to allow their use by the widest range of people possible. Through professional experience and research, the books tackle problems, methodologies and working tools, benchmarks.

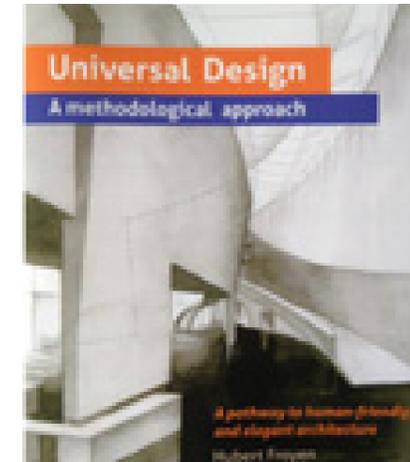
The lack of compliance of the built environment and of the products, with people's needs that can be very different, causes a state of handicap. The lack of ability is a handicap only if the project has not taken it into account.

With these books we intend to stimulate debate, in-depth research, specialized studies. By 2014 the on-line English version will also be available.

*"Ideas, even good ideas, flourish only when practitioners commit to sharing their experiences, perspectives and aspirations. By organizing this publication and convening a distinguished international group of contributors, Editor Isabella Tiziana Steffan helps to establish the current state-of-the-*

*art and affirms the significant potential of Design-for-All. She also delivers fresh inspiration to an expanded audience critically important to engage if Design-for-All/Universal Design is to realize its promise in the coming years.(...)" (Valerie Fletcher)*

- [http://ordini.maggioli.it/clienti/product\\_info.php?products\\_id=8832](http://ordini.maggioli.it/clienti/product_info.php?products_id=8832) Volume 1
- [http://ordini.maggioli.it/clienti/product\\_info.php?products\\_id=8831](http://ordini.maggioli.it/clienti/product_info.php?products_id=8831) Volume 2
- <http://www.maggiolieditore.it/ebook/tecnica/design-for-all-the-project-for-everyone-first-part.html>
- <http://www.maggiolieditore.it/ebook/tecnica/design-for-all-the-project-for-everyone-second-part.html>



Hubert Froyen

**Universal Design, A Methodological Approach.**

Institute for Human Centered Design (IHCD), Boston MA - USA. nov. 2012

The central theme of this publication is the accessibility and usability of built environments for a great diversity of people, in a great diversity of circumstances, and throughout all phases of life. Human functional limitations must be endured not only by a (stigmatized) group of 'disabled persons,' but are inherent to, and dynamically connected with, the course of life and aging for everyone.

The intrinsic capabilities of a person are

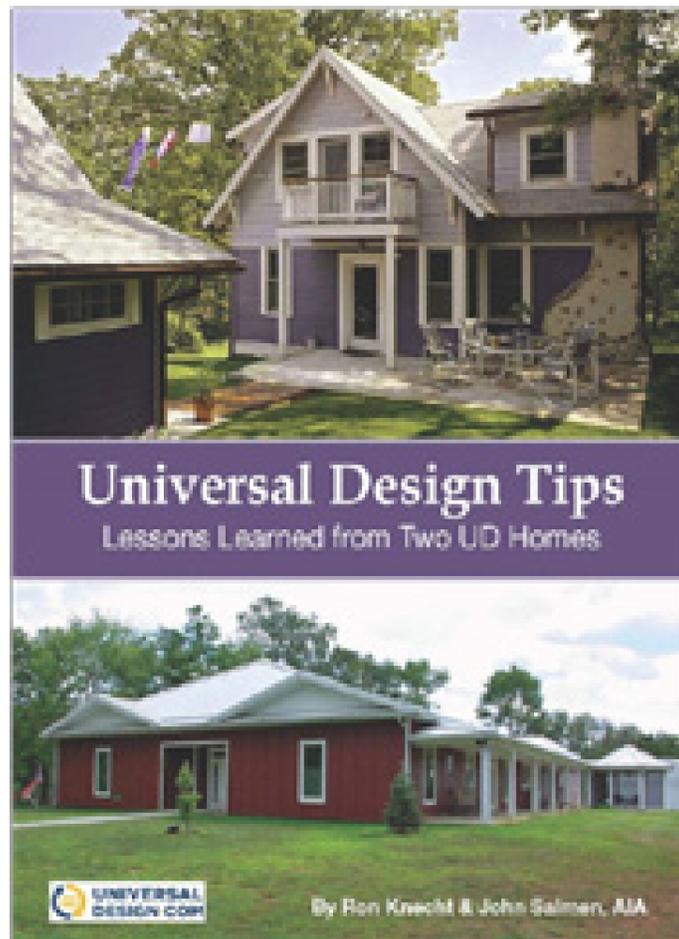
not the only cause of barriers, but extrinsic factors in an obstructive human-made environment also play a role. In the academic and professional field, this shift in the social perception of 'disability' (person-related) to 'disability situation' (environment-related), is gradually moving from 'designing for disabled persons' (Design for Special Needs) to 'integral and inclusive designing for everyone' (Universal Design).

*'Professor Froyen has written an extraordinary book that captures the history and context of the inclusive design movement internationally. He analyzes the opportunity for moving beyond the conceptual commitment to universal design and shares a*

*strategy for tying Christopher Alexander's Pattern Language to user/expert engagement on a large scale that would deliver a greater diversity of ideas, forms and materials for the spectrum of man-made environments to be more inclusively designed.'*

TO ORDER please contact Willa Crolius at [wcolius@ihcdesign.org](mailto:wcolius@ihcdesign.org) or call (617) 695 1225 x235. Books are also available at IHCDstore located at 200 Portland St., Boston MA, 02114. USA

1



**Universal Design Tips.  
Lessons Learned from Two UD Homes**

This new electronic book from UniversalDesign.com is filled with tips and ideas that will help guide anyone through the process of designing and constructing their own Universally Designed home. The book was co-authored by John Salmen, AIA, the publisher of Universal Design News and founder of UniversalDesign.com, and Ron Knecht, whose durable, energy efficient Universally Designed

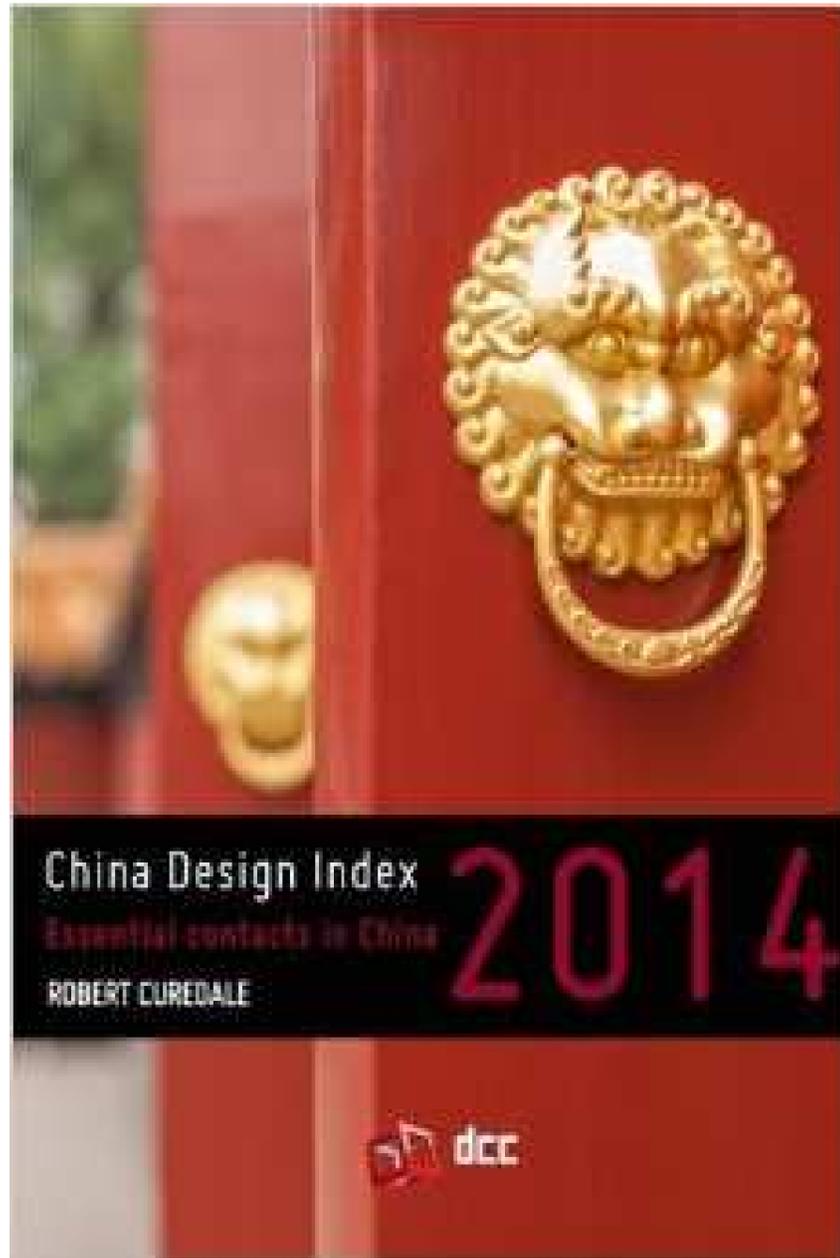
house was featured in the January 2012 issue of Universal Design News. The first section of the book deals with the planning process, providing insight on how to choose a location for the house, consider activities of daily living during planning, best use various types of design professionals, finalize a floor plan and develop a building schedule. The rest of the book is organized

according to different areas or elements of the home (i.e. exterior doors, bathing, and kitchen counters, just to name a few.) Whether designing a whole house or simply remodeling one area, Universal Design Tips makes it easy to quickly refer to the relevant section and find valuable tips that ensure success. Each of these sections includes design tips, photos and important lessons that the two authors learned through their personal projects.

John Salmen has been working in the field of accessible architecture and Universal Design for over 30 years, and he put this expertise to good use when remodeling a historic property to create the Universally Designed house he and his wife hope to live in for many years. Salmen's "Home for the Next 50 Years" has been featured in various media outlets: including The Washington Post, Fine Homebuilding,

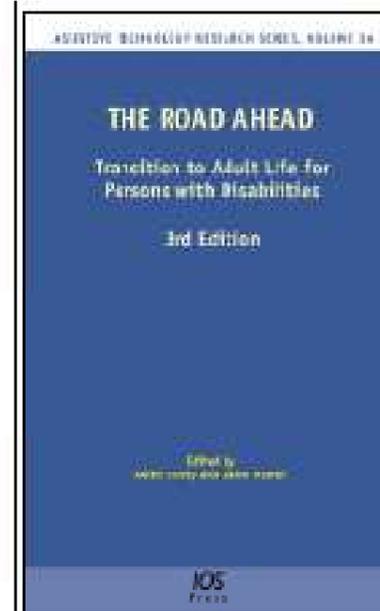
AARP's television show Inside E Street and the book The Accessible Home: Designing for All Ages and Abilities. Now, readers will be able to explore Salmen's home in even greater detail and apply his experience to their own Universally Designed home projects. Ron Knecht's experience with Universal Design started after his wife of 46 years became ill with cancer. As her health worsened, Knecht learned first-hand the importance of accessibility for maintaining independence, safety and one's quality of life. Before Knecht's wife passed away, she extracted a promise from him that he would move to a Universally Designed house located closer to their daughter. Knecht was underwhelmed by both the houses that he saw on the market and the UD house plans that he found online; he realized that he would have to plan and build a custom house in order to fulfill his promise.

2



**China Design Index 2014. The essential directory of contacts for designers**  
 Paperback – February 1, 2014 by Robert A. Curedale (Author)

3



### The Road Ahead

Transition to Adult Life for Persons with Disabilities

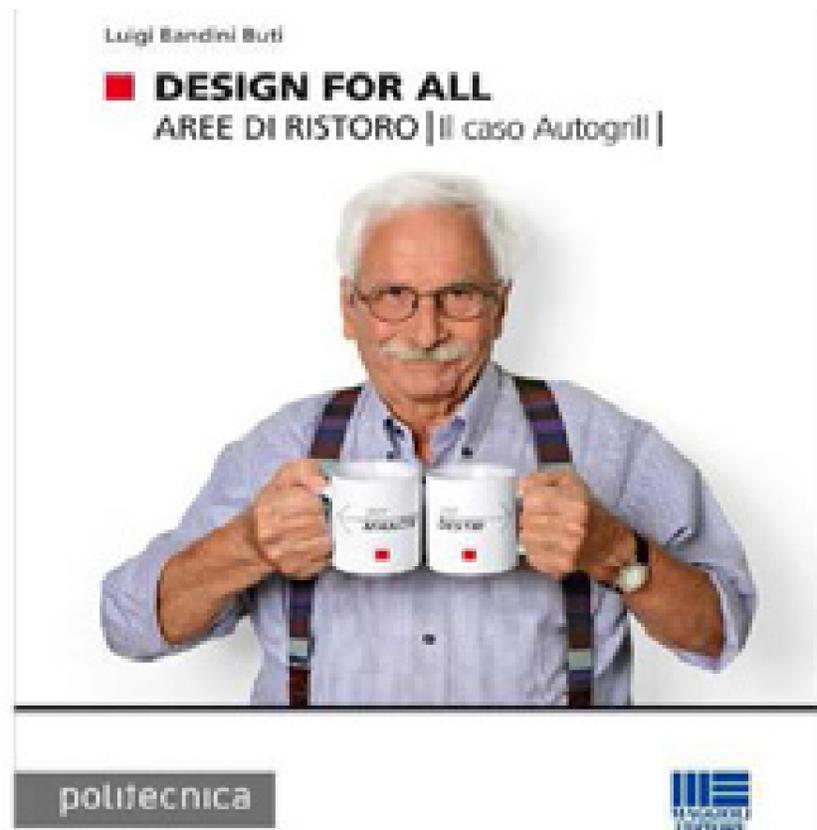
Volume 34 Assistive Technology Research Series  
 Editors: Storey, K., Hunter, D.  
 December 2013, 318 pp., hardcover (revised 3rd edition)  
 ISBN 978-1-61499-312-4 (print)  
 ISBN 978-1-61499-313-1 (online)  
 Price: €69 / US\$100 / £59

Successful transition from school to adult life has always been difficult for people with disabilities, especially in the area of employment. The vast majority of people with disabilities are either unemployed or underemployed with low wages and few benefits, and many governments are struggling to find a way of providing employment and benefits to people with disabilities without creating disincentives to work.

This book provides strategies and ideas for improving the lives of people with disabilities, exploring new ways of enabling a successful transition to an integrated adult working life by providing effective instruction and support. Following an introduction which outlines the importance of transition services and meaningful outcomes, topics covered in the remaining chapters include: person centered transition planning; enhancing competence and independence; employment assessment and career development; collaboration between agencies for a seamless transition; independent living and supported living; and community functioning skills.

The book will be of interest to all those who work with transition age students as well as those who work with adults with disabilities and want to enable them to have the best life possible. To paraphrase Helen Keller: "People with disabilities not only need to be given lives, they need to be given lives worth living."

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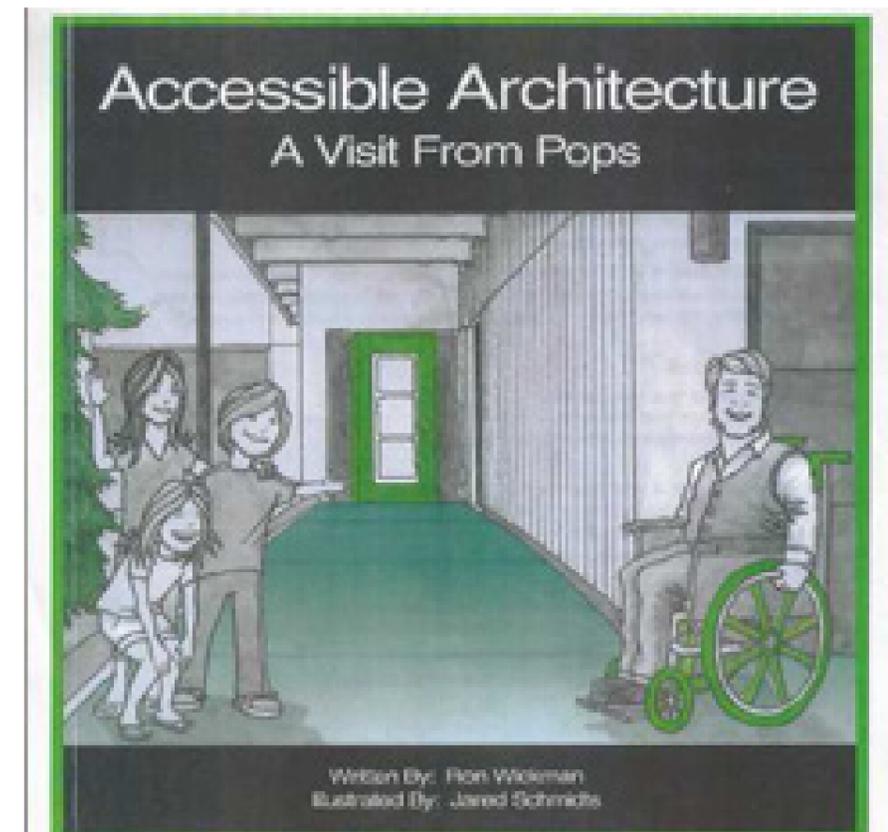


Luigi Bandini Buti  
**DESIGN FOR ALL | AREE DI RISTORO | il caso Autogrill |**  
 Maggioli Editore, 2013  
<http://shop.wiki.it/risultato/cerca.aspx?indice/cerca=luigi+bandini+buti>

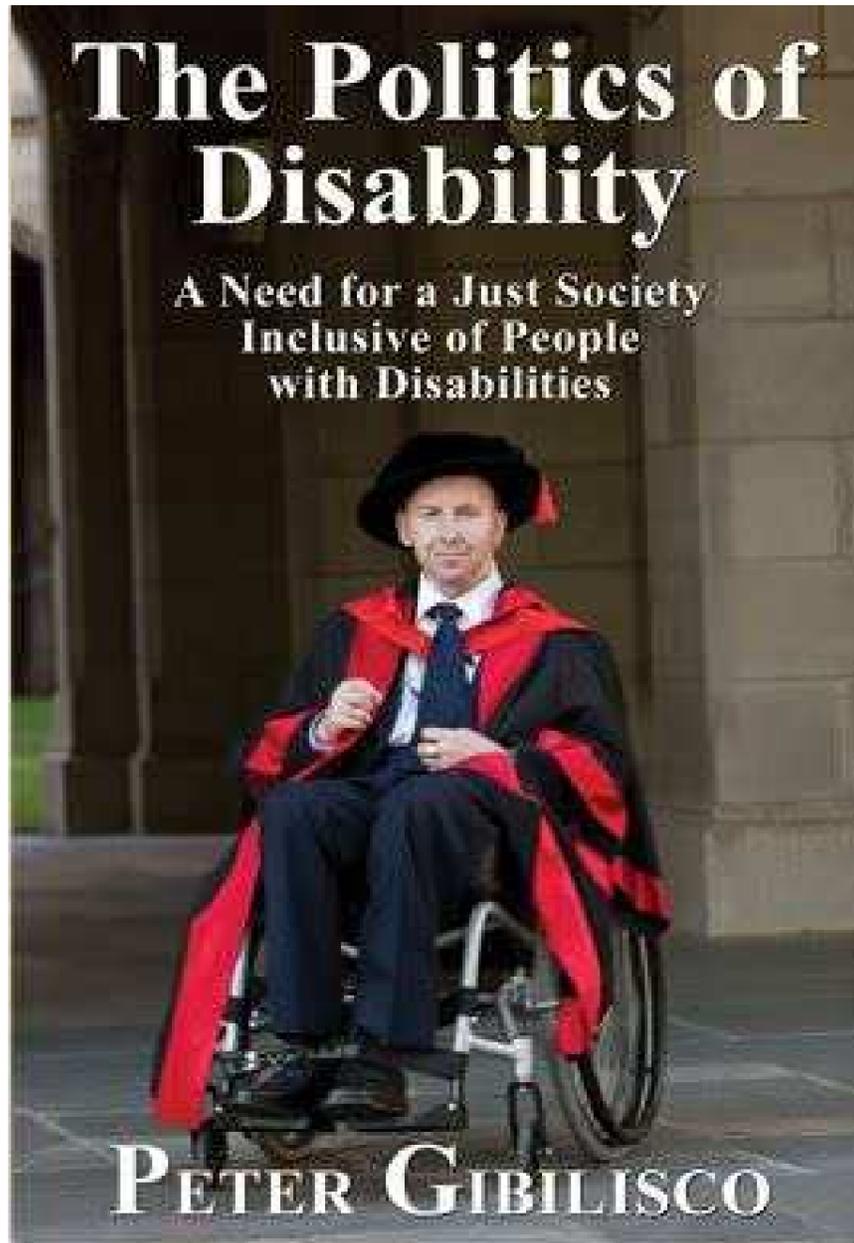
This book has been born following the collaboration with Autogrill that, for its new facilities "Villoresi Est", has developed an innovative, Design for All oriented project. We then realized that the cares foreseen for "all" would not be noted by "the majority".  
 If you are not on a wheel-chair, or blind, or you are not travelling with a large family or you don't have to look after your old grand-father, you will not be able to appreciate many of the attentions included into the project. It was therefore necessary to make more visible the virtuosity of the planning process and its results, which may not appear obvious to many people.

This publication is not meant to be a mere description, it is rather a critical analysis of the Villoresi Est rest area, included in a context that wants to examine in depth the methods and the means of Design for All.  
 Its main objective is therefore to use the "Autogrill case" to investigate the necessary steps to develop projects Design for all oriented, hopefully in an authoritative way.

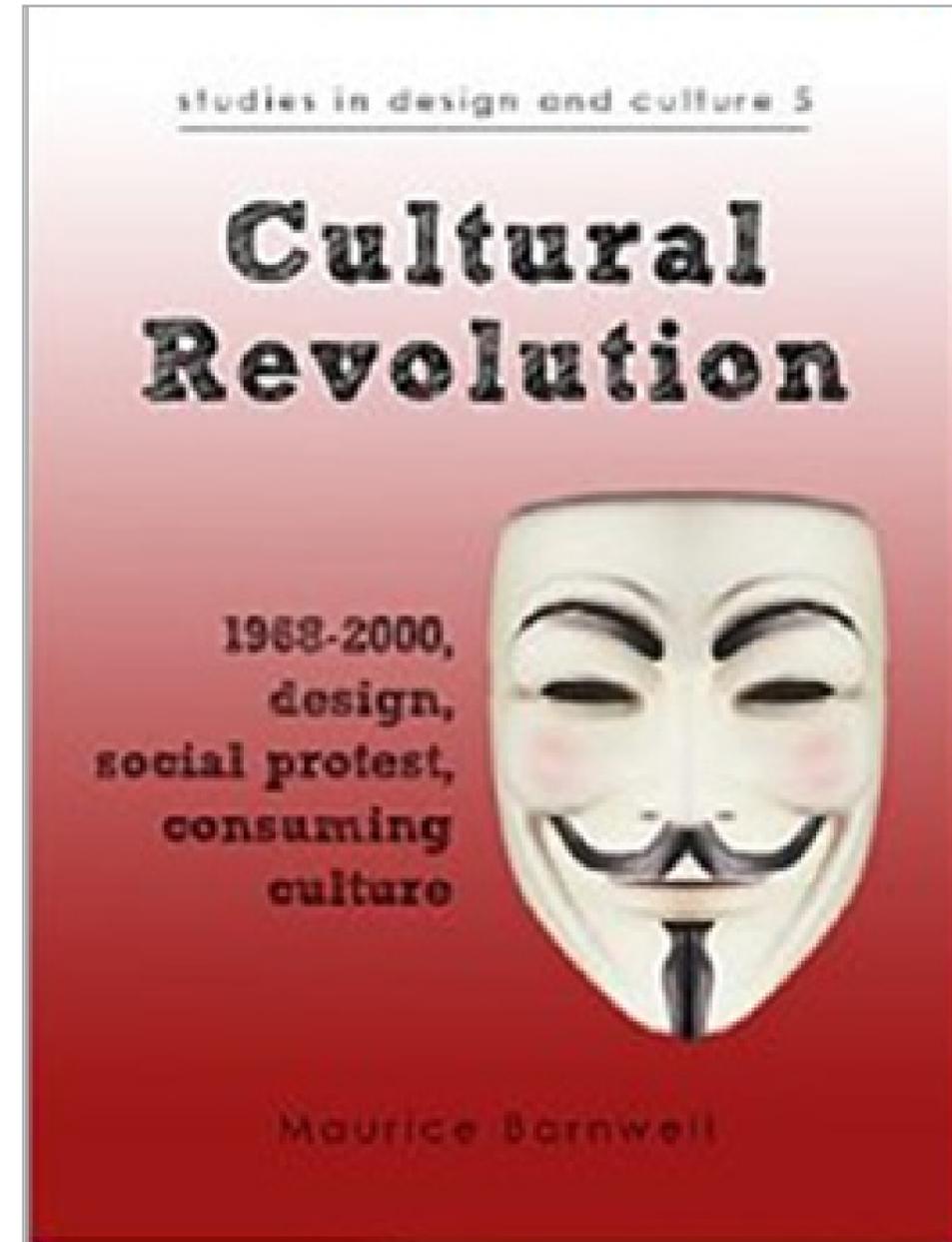
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This book will retail for a recommended price of \$19.95 USD ISBN 978-1-77143-155-2, with an ebook version also available at a recommended price of \$7.95 USD ISBN 978-1-77143-156-9. You'll be able to buy it from all the usual places - Angus & Robertson, Bookworld, Fishpond, Amazon, Kobo, iBookStore, and Google's Play Store, amongst others.

# FORTHCOMING ISSUES

“Women Designer year of 2014”



## November 2014 Vol-9 No-11

ANNAGRAZIA LAURA joined CO.IN. (Cooperative Integrate Onlus and then ConsorzioSociale COIN), an organisation involved in creating job opportunities for people with disabilities, also through accessible tourism, with the responsibility of developing the Tourism Dept. at national and international level. She is presently responsible for Int.'l relations and European projects and represents CO.IN in several EU funded projects will be the Guest Editor..



## December 2014 Vol-9 No-12

Lee Christopher is the Director of eLearning at Arapahoe Community College and also an ACC instructor. Lee has a BA in Philosophy, an M.Ed, and a M.F.A in Writing and Poetics. Lee is currently in the dissertation phase pursuing a Doctorate in Education from Capella University. Her dissertation title is Universal Design for Learning: Implementation and Challenges of Community Colleges. Lee's publications include: "Digital Storytelling" in Handbook of Research on Transformative Online Education and Liberation: Models for Social Equality, Kurubacak and Yuzer, Eds., IGI Global, 2011, "Hype versus Reality on Campus: Why eLearning Isn't Likely to Replace a Professor Any Time Soon" with Brent Wilson, The E-Learning Handbook, Carliner and Shank, eds. Pfeiffer, 2008, and "What video games have to teach us about learning and, Lee literacy," located at <http://edrev.asu.edu/reviews/rev591.htm> is on the Colorado Community College



## January 2015 Vol-10 No-1

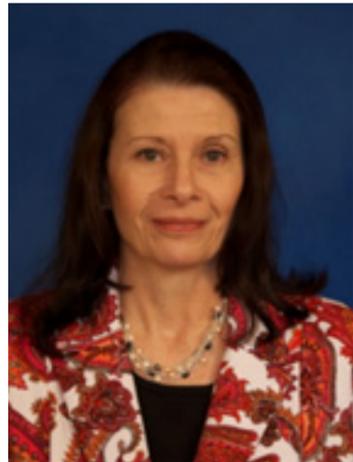
Stephanie Battista, Senior Design Program Manager . Stephanie directs medical and wearable technology design programs at Modern Edge. She is responsible for project management, client relationships, business development, sourcing, and studio culture. For over a decade prior to joining Modern Edge, Stephanie was the principal of her own product design and development firm specializing in lifestyle product design, soft goods, and wearables for technology-driven start-ups. Stephanie brings expertise in medical devices, textiles, consumer goods, and wearable technology. She will be the Guest Editor and invite different authors of her choice on concept of universal design and it will be our fifth special issue on different occasions with IDSA, USA. Website: [Modernedge.com](http://Modernedge.com) Email: [s.battista@modernedge.com](mailto:s.battista@modernedge.com)



## February 2015 Vol-10 No-2

Prof Mugendi K. M'Rithaa is an industrial designer, educator and researcher at the Cape Peninsula University of Technology. He holds postgraduate qualifications in Industrial Design, Higher Education, and Universal Design. He is passionate about various expressions of socially (responsive and) responsible design, including Participatory Design; Universal Design; and Design for Sustainability. Mugendi has a special interest in the pivotal role of design in advancing the developmental agenda on the African continent. He is associated with a number of international networks focusing on design

within industrially developing/majority world contexts, and is currently the President-Elect of the International Council of Societies of Industrial Design (Icsid). He will be the Guest Editor and his passion for universal Design is real driving force for establishing the concept in Africa continent.



**March 2015 Vol-10 No- 3**

Paula Sotnik, Institute for Community Inclusion, School for Global Inclusion & Social Development, University of Massachusetts Boston .

Paula Sotnik developed and directed 12 federal and state training and technical assistance projects (past and current) supporting individuals from traditionally underrepresented groups, including persons with disabilities. She is a recognized expert consultant, trainer and author on access and accommodations; culture brokering; diversity; outreach and recruitment strategies; team and partnership development; measurable outcome oriented strategic planning; national service, volunteerism and disability legislation, policy knowledge and practice acquired through years of personal, educational and professional life experiences. She serves as a consultant reviewer and trainer for an international fellowship exchange program. She will be Guest Editor of special issue and will focus on Universal design development in USA.



**April 2015 Vol-10 No-4**

Debra Ruh is a Global Disability Inclusion Strategist, ICT Accessibility Training and Social Media Thought Leader on Disabilities. She focuses on Disability Inclusion, EmployAbility, Corporate Social Responsibilities, ICT Accessibility, Corporate Social Responsibility and Social Entrepreneurs. She is also the author of several books including “Uncovering Hidden Human Capital: How Leading Corporations Leverage Multiple Abilities in their Workforce” and “Finding Your Voice by Using Social Media”.



**May 2015 Vol-10 No-7**

afUD ( French Association of Universal Design) President Jean Rene Moussu has accepted our invitation for Guest Editor for our special issue. He is enthusiastic to popularize the concept of Universal Design in his country because he feels it is social responsibility of every citizen of the world to make the world accessible to all. He is inspired by Ron Mace and believes his word his philosophy  
\*The UD is a collective thought. Think different !UD\*think!  
The UD\* is notan evolution, it is a revolution.



**June 2015 Vol-10 No-7**

Dr.Antika Sawadsri is a full-time lecturer in the School of Interior-Architecture at King Mongkut’s Institute of Technology Ladkrabang (KMITL). She received a PhD from the School of Architecture, Planning and Landscape, Newcastle University, UK. She has qualifications on interior Architecture and Planning and is a specialist in an interrelationship between social construction of ‘disability’ and the designed environment. Her academic interest focuses on inclusiveness in the process of creating living spaces. Recently, Antika has taken parts in both the State’s agencies and non-government’s movement in mobilising equal access to the buildings and city of disabled and ageing groups in Thailand.



**August 2015 Vol-10 No-8**

Dr. Bijaya K. Shrestha received Doctoral in Urban Engineering from the University of Tokyo, Japan (1995-’98), Master in Urban Design from the University of Hong Kong, Hong Kong (1993-’95) and Bachelor in Architecture from the University of Roorkee (now Indian Institute of Technology), India (1983-’88). Dr. Shrestha has got working experiences of more than two decades. He had already served to the Department of Housing and Urban Development, Ministry of Housing and Physical Planning, Government of Nepal, United Nations

Centre for Regional Development (UNCRD), Japan and various architectural schools in Nepal before taking the present job at Town Development Fund (TDF). He has initiated a new master program in Urban Design and Conservation at Khwopa Engineering College, Purbanchal University, where he served two years as Head of Post-graduate Department of Urban Design and Conservation.

Dr. Shrestha is the recipient of numerous gold medals for his excellent academic performance and decorated by 'Calcutta Convention National Award 2006' by Indian Society for Technical Education for his best paper at the 35th ISTE Annual convention and National Seminar on Disaster – Prediction, Prevention and Management. He is also member of numerous professional bodies and life member of various alumni associations. He has already contributed more than five dozen of papers, published in various forms: book chapter, international journals, conference proceedings, local magazines and journals including in local newspapers. Moreover, he has been invited in numerous international conferences for presentation of his research findings. Finally, his field of expertise includes sustainable urban development, disaster management, housing, local government capacity building and development control. He will focus on universal design concept on Nepal.



**September 2015 Vol-10 No-9**

Min Wang Dean of School of Design CAFA, Beijing Beijing City, China Design Currently with AGI, China Central Academy of Fine Arts School of Design and previously worked with Square Two Design, ICOGRADA, Beijing 2008 Olympic Committee. His education is from Yale University will be Guest Editor and he will highlight the contribution of China in Universal Design.



**October 2015 Vol-10 No-10**

Prof Ravi and Dr Ajanta Sen of IIT Mumbai India will be the Guest Editor and theme of the special issue is Design and Children.



**November 2015 Vol-10 No-11**

Ewa Golebiowska, Poland is the president of EIDD Design For All and she has accepted our invitation of Guest Editor and she will invite the authors from European countries for special issue.



# NEWS

## 1

### IIT students developing low-cost portable Braille printer

In a bid to make technology affordable and accessible to people with vision disabilities, Sandeep Konam, a B. Tech. final-year ECE student at Indian Institutes of Technology (IIT), Idupulapaya, and a group of IITians are engaged in not only developing a low-cost portable Braille printer that could cost as much as an average Android mobile but also in integrating graphics, tables and images in Indian languages.

Mr. Konam and other B. Tech. students — P. Laksh Kumar, V. Shakti Priyan, Ayushman Talwar, Amara Ali, Aparna Hariharan, Sai Revanth Tadepalli, Syed Junaid Ahmed and Rohith Sirpa — from diverse branches such as design, electronics, mechanical and computer science from IITs and NITs across India, demonstrated a prototype at a workshop titled “ReDx: Engineering the Eye” at Hyderabad recently. A portable working model of a Braille printer was expected to be optimised by December this year, Mr. Konam said.

Mentored by Elliott J. Rouse, Post-Doctoral Associate of Biomechatronics Group, MIT Media Lab, and assisted by premier institutions such as L.V. Prasad Eye Institute Innovation Centre, Cyient (formerly Infosys) and the Tata Centre for Technology and Design, the low-cost Braille printer, a counterpart to ink printers, using solenoids to control the embossing pins, could revolutionize the facility for people who are blind and low vision. “Developing a prototype that can be used in open source community and qualitative enough to meet the needs of people with vision disabilities is our goal,” says Mr. Konam. “We have hacked a vinyl cutter and reverse-engineered it for usability as Braille printer.”

*Source: Hindu*

## 2



Suzan Santiago

### Boonton Township interior designer receives state award.

Her 44th award includes recognition for all-accessible offices Suzan Lucas Santiago of Boonton Township received a Gold Award for excellence in interior design from the New Jersey Chapter of the American Society of Interior Designers at a ceremony on Wednesday, Sept. 19 in Red Bank. She is part of Santiago Design Group, based in Parsippany.

Santiago received the Gold Award in Large Corporate (50+ employees) for designing the 40,000 square foot corporate offices for New York Life Insurance Company, located in New York City, and the Gold Award of Design Excellence in a Single Corporate Space for designing the 6,000 square foot 300 seat Auditorium of New York Life Insurance Co., located on Madison Avenue in New York City.

Santiago also earned a Gold Award of Design Excellence in the Health Care category for the design of a 4,000 square foot Corporate Employee Health Department.

Universal Design Recognition Awards were also presented to Suzan for the three Gold Awarded projects, noting they are interior spaces accessible to all people, regardless of levels of ability or mobility, age, gender or physical stature without the need for adaptation or specialized design.

This is the 16th consecutive year Santiago has received Awards for Excellence in Contract Design from the American Society of Interior Designers, totaling 44 since the Awards' inception in 1992. She resides in Boonton Township with her husband, Philip Santiago.

*Source The Citizen*

3



**The world deaf day was celebrated on the 28th of September with full gusto.** Over 400 parents of deaf attended, participated and enjoyed their day out with family and friends. A series of presentations and a collective march past was organized in Dombivli, where the drums beat to mark everyone's solidarity

for the deaf community and their family and friends who have dealt with all those troubles, all those years, all so silently.

On the 27th of September, a workshop was conducted by The Youth Association of the Deaf. Parents of deaf children were in key focus this year. A series of presentation were made by deaf professionals for the parents in attendance. Here they shared their lives, their joys and their pains. An open platform was created where parents, children, social workers and doctors came together and touched on relevant issues and exchanged notes and solutions.

Sunil Sahasrabudhe, who is deaf from birth, shared a wonderful presentation on how sign language builds relationship between parents and their children. Social worker Smt Neeta Mukerji emphasized how education in sign language was of prime importance to develop comprehension of a deaf child.

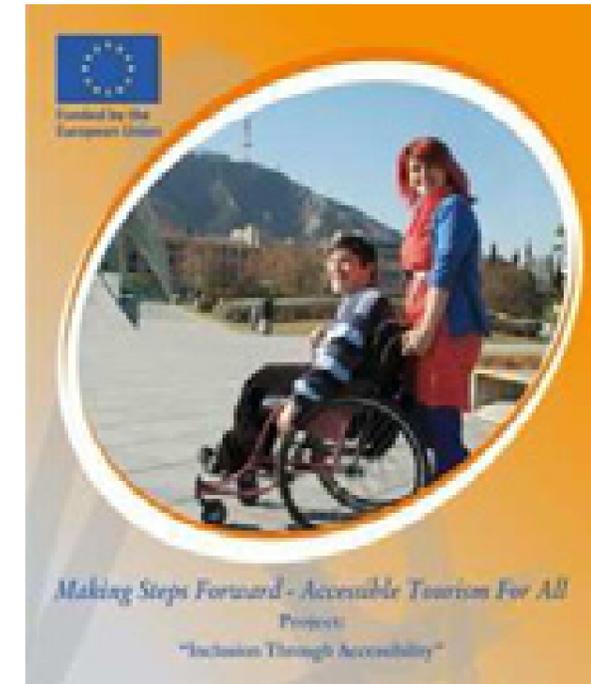
Dr Dilip Deshmukh shared his vast international experiences and explained the key benefits of sign language. Smt Madhu Keny shared her experiences on how the ISL cell at AYJNIHH assisting deaf in training for sign language is hugely benefiting them and the results are there for everyone to see.

On the 28th of September, Several Deaf people from South and Central Mumbai gathered at The Gateway of India to celebrate WDD. The assembled deaf people showed the audience how the deaf community speaks. Some of the deaf people brought products and paraphernalia like flags, badges, t-shirts etc to sell. It was a mutually beneficial business and people supported each other financially. New deaf people got introduced to each other thereby enhancing their social outreach. Children of Deaf Adults

too participated in this get together.  
The series of events gave great joy to everyone including myself. I wrote to my media friends and their friends who are working in prime news channels of the country. Not one person came forward despite having been informed well before time. I request all my friends and their friends in media to get involved and show support, help and highlight key issues and together we will find solutions. I hope to see you all there next time around.  
*Courtesy: Puneet Kumar Gupta*

# PROGRAM & EVENTS

1



2



3 **Transportation connects us all.**

Whether it's simply getting from home to work or using products shipped over distances near and far, in every region of the world transportation impacts our daily lives.

At first glance, transportation may simply appear to be about the movement of people and goods. But looking deeper, it's also closely linked to equality, access to healthy food and good schools, and wildlife impacts, for example.

As the mobility demands of people and freight have grown, so too has the need for products, systems, and services that will make the transportation sector more life-friendly, for both people and the planet.

**Registration is now open**

Learn biomimicry and how to apply it while competing for cash prizes with students from around the world.

Register your team for immediate access to the biomimicry design resources and start developing your design solution today!

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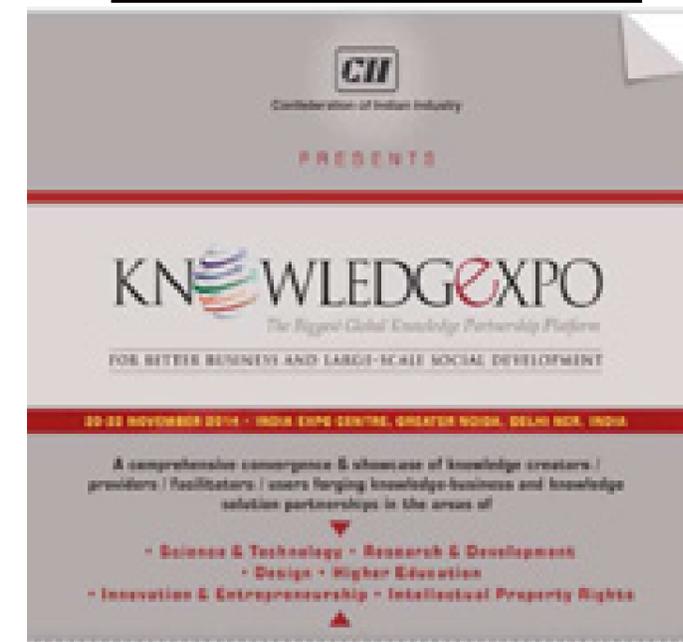
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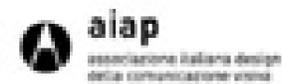


The Biennale Internationale Design SaintÉtienne 2015

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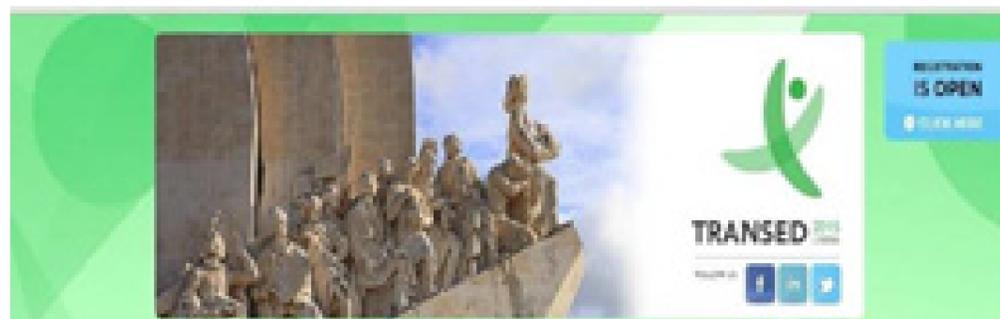
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Aiap Summer School con Martin Foeszleitner  
Emergency / Emergenza

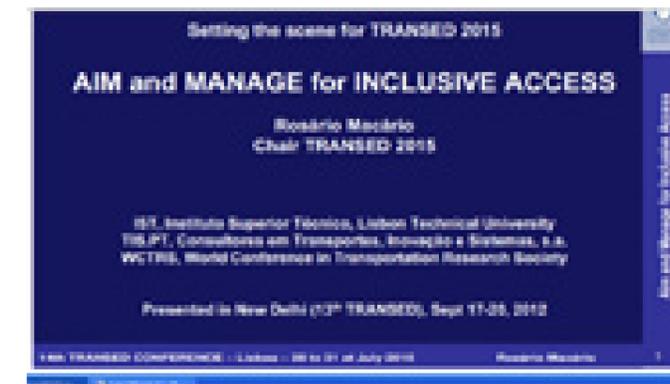
Da venerdì 27 a lunedì 30 giugno 2014  
dalle ore 9:00 alle 17:00  
Associazione Summer School venerdì 27 alle ore 9:45  
Accademia di Belle Arti di Genova  
via Accademia Bertani, 3 - 10125 Genova  
Scorri apertamente le iscrizioni con i social per tutte le aperture entro il 9 giugno!  
Potete leggere e scaricare il modulo a questo link.

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### Welcome to the Faith & Form/IFRAA International Awards Program for Religious Art & Architecture

The Annual Religious Art and Architecture Design Awards program is co-sponsored by *Faith & Form* Magazine and the Interfaith Forum on Religion, Art and Architecture (IFRAA), a knowledge community of the American Institute of Architects. The awards program was founded in 1978 with the goal of honoring the best in architecture, liturgical design and art for religious spaces. The program offers five primary categories for awards: Religious Architecture, Liturgical/Interior Design, Sacred Landscape, Religious Arts, and Unbuilt Work.

#### Awards and Recognition

Award recipients receive significant recognition including printed and framed citations, recognition at an IFRAA awards presentation, full-page coverage in *Faith & Form's* Annual Awards Issue and project based exhibition at the AIA National Convention.

#### Award Categories

Entries are welcomed and encouraged from architects, landscape architects, designers, artists, students, and consultants. Our entry categories and entry requirements are detailed below.

#### The 2014 Jury Panel

- Chair/Liturgical Design:** Terry Byrd Eason  
Terry Byrd Eason Design / Chapel Hill, NC
- Architect:** Craig Rafferty  
Rafferty Rafferty Teitelbaum Lindke Architects / St. Paul, MN
- Architect:** Douglas Johnston  
William Rouse Associates / Boston, MA
- Artist:** Michael Benkowitz  
Presentations Gallery / Mount Vernon, NY
- Clergy:** Robb Webb  
The Dove Exchamber / Charlotte, NC

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Design in Motion: the 4th Annual Seattle Design Festival From Sept. 5 to 19



Mark Your Calendars for the 4th Annual Seattle Design Festival From Sept. 5 to 19, there will be a little something dazzling for everyone

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# Typography Day 2015

7th - 9th March 2015,

Organized at IDC, IIT Bombay with support from InDeAs and Aksharaya

<http://www.typodays.in>

Theme:

Focus on 'Typography, Sensitivity and Fineness'

## Introduction

Typography Day will be organized for the eight time from 7th to 9th March 2015 at the Industrial Design Centre (IDC), Indian Institute of Technology Bombay (IIT Bombay) with support from India Design Association (InDeAs) and Aksharaya.

The theme for this year's event is 'Typography, Sensitivity and Fineness'.

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## The Vision for Equality Award

The EBU Vision for Equality Award is given to European organisations, institutions, policy makers, enterprises or individuals in recognition of their commitment to protect and promote the rights of blind and partially sighted people and to improve their living conditions. The Award, which consists of a certificate and a piece of art by a visually impaired artist, is presented every four years on the occasion of EBU general assemblies.

Nominations may be put forward by EBU national members and are processed by the EBU Awards Working Group.

CALL FOR NOMINATIONS FOR THE 2015 EBU "VISION FOR EQUALITY" AWARD

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Open call for designers for the fifth edition. Operæ invites design studios, handicraft designers, makers, design publishers and digital designers to participate with their self-productions in the fifth edition of the event, to be held in Turin from the 10th to the 12th of October 2014.

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5th International Conference on Accessible Tourism (ICAT) 2014 organized by Beautiful Gate Foundation for the Disabled, will be held on December 4-7, 2014, at MBPJ Civic Hall, Petaling Jaya, Selangor, Malaysia.



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Policies and measures to promote universal accessibility in tourism will be at the center of the 1st UNWTO European Conference on Accessible Tourism, jointly organized by UNWTO and the Government of the Republic of San Marino in November 2014.

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**BIO 50** 50. biennale oblikovanja  
50th Biennial of Design  
18. 9. – 3. 10. 2014

**3, 2, 1... TEST**

Countdown to the opening of BIO 50:  
The Biennial of Design in Ljubljana unveils the results of a six-month-long collaborative process

On 18 September 2014, over three 100 designers and multidisciplinary agents decided upon Ljubljana for the opening week of BIO 50, the Biennial of Design. Over the course of four days, they will unveil the results of a six-month-long collaborative process, offering perspectives on possible futures for design. The awards for best collaboration will be presented by the BIO 50 jury, comprising industrial designer Konstantin Grcic, design critic Alice Rawsthorn and designer and professor Steffen J. Miesing. Before the opening, the lab will host a Roundtable, Justin McCourt and Jan Steiner will be in session.

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DISCUSSION ON  
**DRAWING AS A  
COGNITIVE TOOL**  
ON 27 28 29 OCTOBER 2014  
AT PUNE (SADHANA VILLAGES)

SADHANA VILLAGE, 1, PRIYANKIT, LOKMANYA COLONY, PAUD ROAD, PUNE-411038.  
SADHANA ENGLISH SCHOOL, AT KULE, TALUKA MULSHI, DIST. PUNE, MAHARASHTRA.  
E-MAIL:- SADHANAVILLAGESCHOOL@GMAIL.COM

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2014  
12<sup>th</sup> ISE **HWWE** Conference  
Humanizing Work and Work Environment Indian Society of Ergonomics  
International Ergonomics Conference  
December 3-5, 2014  
Pre-Conference workshop: December 1-2, 2014  
Indian Institute of Technology Guwahati

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**EUROPEAN INNOVATION WORKSHOPS  
IN INCLUSIVE DESIGN**

**European Innovation Workshops in Inclusive Design: Oslo 16-17 October**  
What is missing from many design or development processes? What can make you more competitive and creative? How can you better understand what your clients need? Find the answers at a two-day Executive Education event in Inclusive Design. Learn from international experts such as Marco Steinberg, Anna Kraff, Dan Formosa and Rama Gheerawo who will show how inclusive design can be a tool for innovation at both operational and strategic levels.

Through inspiring lectures and method-based workshops, you will develop your personal expertise, and expand your professional and international network.

This event is open to designers, architects, urban planners, educators, marketers or business people wanting to create better products, services and environments.

The event is part of the Oslo Innovation Week.  
Practical information:  
The Norwegian Centre for Design and Architecture, Oslo, Norway, 16-17 October 2014  
Read more and sign up for the event

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Beautiful Gate Foundation  
For The Disabled
E-Newsletter

**Upcoming Events**  
*Tourism For All*

THE 5th INTERNATIONAL CONFERENCE ON ACCESSIBLE TOURISM (ICAT 2014)  
4th - 7th December 2014  
[View More...](#)

**IN AID OF BEAUTIFUL GATE FOUNDATION FOR THE DISABLED'S TRAINING FUND (SPONSORSHIP)**

We are seeking for your kind generosity to contribute to Beautiful Gate Performing Arts Troupe, for its 'Embrace The Diversity', Dance Festival Concert, to be held at the following:

**Date:** 4 December 2014  
**Time:** 7:30pm (sharp)  
**Venue:** Auditorium, HSPJ Civic Hall, Potlating Jaya.

Beautiful Gate Performing Arts Troupe was officially launched on 13 August 2003. It aims to promote a kindred spirit, passion for arts, demonstrate determination of learning and self-development, as well as, to reveal the potential of people with disabilities.

'Embrace The Diversity' Dance Festival Concert celebrates and embraces us as individuals, despite the differences in race, religion, gender, nationality, or disability. Diversity will continue to grow as a one of the greatest challenges and we hope to create more opportunities for the disabled and to cultivate a strong integrated society through the shared love and passion of performing arts. The Dance Festival Concert aims to raise funds for Beautiful Gate's Training fund for Year 2013 which channels towards:

- Employment Skills and Education training.
- Job placement and services for the disabled.
- Welfare, Care and Outdoor Activities.
- Awareness Workshops and Campaigns.

A Reply Slip is attached at the back of this page. Please log on to our website on <http://www.beautifulgate.org.my>. For enquiries, please contact Shanny Liao (Tel:+603 78728933, Fax:+603 78728996, E-mail: [shanny@beautifulgate.org.my](mailto:shanny@beautifulgate.org.my) or [info@beautifulgate.org.my](mailto:info@beautifulgate.org.my))

In whichever way you start to support us on this event, we appreciate your consideration of our request. Thanking you in anticipation, and looking forward to a favorable reply.

**With Best Wishes,**  
**Sia Siew Chin**  
**Executive Director, Beautiful Gate Foundation For The Disabled.**

All rights reserved.

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**National Social Innovation Seminar**  
17th of November 2014, Pune

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ICONIC  
HOUSES  
2014

CONFERENCE

**Conference Countdown**  
In the eight weeks between now and the Iconic Houses Conference in Barcelona on on November 25th at La Pedrera

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MILANO

# JOB OPENINGS

## 1.

Elephant Design is looking for a Graphic Designer (Experience: 2-5 yrs) to be a part of their creative team in Gurgaon office. Candidate will be expected to work across various graphic design domains like corporate branding and communication, packaging design, print campaigns, event branding, retail and environment graphics etc.

Interested candidates can send their resume + portfolio link at [tanu.sinha@gmail.com](mailto:tanu.sinha@gmail.com).

## 2.

Fiserv India is looking for User Experience Architect to join their "User Experience Center of Excellence" (UXCoE) at Pune location. send your resume with a link to your online portfolio to [kunal.pimplikar@fiserv.com](mailto:kunal.pimplikar@fiserv.com)

Position- User Experience Architect

Industry Experience: 7 to 10 years

An UX Architect will be required to perform a strategic role along with occasional project specific roles.

Responsibilities:

Strategic-

- Work with product owners to define the UX strategy and roadmap for individual business unit.
- Work towards developing capabilities within the UXCoE
- Oversee various engagements within UXCoE

Project Specific-

- Work with Business analysts, product management, software developers to produce a world class user experience for Fiserv

products.

- Translate high level business requirements into tangible user interface design proposals that integrate the latest standards in interaction design and trends in visual design
- Create low-fidelity and high-fidelity task flow mockups and prototypes while integrating feedback from the product teams and our end-users
- Influence and educate the product teams in user-centered design principles and development processes
- Help define standards and best practices for consistent user experiences across Fiserv products

\*Skills:

- Formal education in Human computer interaction design, Industrial design, Communication design from reputed design institutes like IDC, NID or similar
- Strong conceptual skills and demonstrated ability to rapidly prototype and design
- Must demonstrate strong interaction design skills and have a solid understanding of usability principles and user centered design process
- Experience with working on various mobile platforms ( iOS, Andriod, Windows Phone 7, etc) will be an added advantage
- Good understanding of user interface technologies ( HTML/CSS, Silverlight, Flex,etc)
- Ability to work independently and prioritize and manage work to meet project timelines
- Must have an eye for detail and be able to quickly put ideas into a tangible form

- Has internalized a rigorous design process and is able to tailor it to the needs of different types of projects
- Must have a good understanding of visual design and hands on visual design skills is a plus
- Must have extensive experience working closely with development teams on implementation of designs

\*About Fiserv Inc\*.

Fiserv, Inc. (NASDAQ: FISV) is the leading global provider of information management and electronic commerce systems for the financial services industry, driving innovation that transforms experiences for financial institutions and their customers. Fiserv is ranked No. 1 on the FinTech 100 survey of top technology partners to the financial services industry.

Fiserv drives innovation in solutions for Payments, Processing Services, Risk & Compliance, Customer & Channel Management, and Insights & Optimization. Fiserv is trusted by more than 16,000 clients worldwide including banks, credit unions and thrifts, mortgage lenders and leasing companies, brokerage and investment firms, and other business clients. For more information, visit [www.fiserv.com](http://www.fiserv.com)

\*About Fiserv India

\*Fiserv India Pvt Ltd. is one of the fastest growing IT Services firm in India, specializing in the BFSI domain across technology platforms. It is a 100% owned subsidiary of Fiserv Inc. Fiserv India aims to become the preferred partner for offshore services (IT, QA, BPO and Infrastructure) for the financial services industry globally. Fiserv India is ISO 2700:2005, PCI DSS compliant and has been assessed against CMMI Level 5 V1.2 in November 2009. For more information, visit [www.fiserv.co.in](http://www.fiserv.co.in)

### 3

- Looking for Product Designers with experience in designing consumer electronics/products.
- Ability to come up with a creative enclosure design for both sheet metal as well as plastic for a computing device we have developed.
- Majority of the work involved is tweaking an existing design to make it more aesthetically pleasing and also provide alternate solutions for mechanical components such as latches and hinges.
- expertise in softwares such as Solidworks, ProE and other CAD/CAM related software.
- The design should be done keeping manufacturability in mind.
- Freelancers based out of Bangalore would be preferred so that an in person meeting can be scheduled to have a look at the product prototypes to take this forward
- Should be able to provide a committed timeframe in which the project can be completed.

Any interested freelancers can send their profiles and portfolio of work done to [nachiketh@chipster.in](mailto:nachiketh@chipster.in)

### 4.

Aricent has openings for UX Designer and Interaction Designer between 2 - 4 years of experience. You must be good in understanding and providing solutions for complex systems.

About Aricent

Aricent develops software and provides technology services to application, infrastructure, and service providers with operations in 19 countries worldwide.

The company with more than 800 customers, and employs more

than 10,000 consultants, designers, and engineers at 36 locations worldwide. The company licenses its own software products for use in telecommunications design, manufacturing, and service with 40+ years' design experience through frog, including products for Apple, Disney, GE, HP, Sony, and many other Fortune 500 brands.

Interested candidates, please share your updated resume and portfolio at [sunir.mehta@aricent.com](mailto:sunir.mehta@aricent.com).

## 5

TI Cycles of India is looking Design consultants and Freelance Designers to partner with for Retail Design and Product Graphics. Following would be the kind of work involved;

1. Retail Design: Help in creating Retail layout based on the Retail Brand guideline/format for new stores.
2. Product Graphics: Creating Product Surface Graphics to enhance the product appearance working within Brand framework.

The work would be on project basis, remote operation from would not be a constraint. Interested people may write to me with their profiles.

[sushant\\_jena@yahoo.com](mailto:sushant_jena@yahoo.com)

## 6

UX designers to join Persistent's 150+ strong design team, Persistent Interactive, at Pune, Bangalore, Hyderabad, Santa Clara (California) and Columbus (Ohio). About 5-10 years of hands-on experience will be good enough (all of us are hands-on). I am sure JD is not required by experienced designers (who takes

JDs seriously anyway?). But we would certainly like to see your portfolio.

Persistent is one of those technology companies where design is a part of the core strategy for organization's growth. Here design and design thinking are seen as drivers that differentiate the way projects are delivered.

Most of our clients are in the US... so ample opportunities to travel and work with Silicon Valley startups as well as large organizations.

Reshma - [reshma\\_deshpande@persistent.co.in](mailto:reshma_deshpande@persistent.co.in))

## 7.

HFI has been in the business of transforming lives through UX since 1981. Now we're looking for individuals like yourself who share a strong passion of impacting the world through richer experiences.

We are looking for candidates with energy to work on fast paced and diverse projects across the globe from post-colonial Pondicherry to the depths of Johannesburg.

Please reach out to us, If you are interested, up to the challenge and if you are a User Experience Professional who thinks they can perform a combination of the following roles:

A Researcher who has a unique ability to connect with end users and understand their needs

A Designer with the ability to create design solutions that are efficient, easy to use, build trust, are persuasive and motivate people.

An Analyst with a unique ability to derive insights and communicate findings.

We are looking for people with 3+ years of relevant experience. A formal education in HCI / Interaction Design or advanced certification in User Experience (e.g. CUA and CXA) is a plus.

We have vacancies in 2 locations, Mumbai / Pondicherry. The job involves frequent travel and may require the person to be onsite for 1-2 years.

If interested please write to us at [deepika.s@humanfactors.com](mailto:deepika.s@humanfactors.com).

### 8.

Keyur Sorathia, faculty member at department of Design (DoD) IIT Guwahati. I am looking for 2 design researchers and 2 technology researchers at my lab, Embedded Interaction Lab, on a Nokia sponsored project. The theme of the project is “generation of invention reports for future of mobile communication”. The project gives immense opportunity work on new and fascinating areas of novel mobile interfaces, gestures, wearable computing and internet of things. The aim of the project is to learn future trends, analyze them and build on new concepts on above themes. Interested candidates are requested to send their resumes to [keyur@iitg.ernet.in](mailto:keyur@iitg.ernet.in) or [keyurbsorathia@gmail.com](mailto:keyurbsorathia@gmail.com)

### 9.

Disney Interactive is looking for Senior UI Artists (UI Designers). The job is based in Mumbai. Please follow the link below to see job details and apply if you are interested.

<https://xjobs.brassring.com/tgwebhost/jobdetails.aspx?partnerid=25348&siteid=5039&jobid=210169>

### 10.

One of India’s top 5 footwear companies is looking for a footwear designer for their studio. I am posting here on behalf of the management. The designer would be responsible for creating Shoes and Sandals design.

The requirements are Footwear designer/Industrial designer with an impressive portfolio and 3 - 5 years of experience.

- Creative and imaginative
- Excellent sense of style, trends, colours, form and ergonomics.
- Knowledge of molding processes and considerations.
- Strong Conceptualisation, visualisation and design communication Skills backed by free hand design sketching, Adobe Photoshop/Sketchbook Pro/Corel Painter/Gimp, Corel Draw/Adobe illustrator.
- Expertise in Rhinoceros/Solidworks/Catia/Autodesk Inventor Strong understanding of processes, materials and production mechanism
- Able to understand practical aspects and fine tune design processes to suit large volume batch productions
- Strong market research skills and ability to comprehend preferences of a wide consumer spectrum.

The applicants can send the resume to [rainbowlab9@gmail.com](mailto:rainbowlab9@gmail.com)

### 11.

Currently we have an opening for the below mentioned Position

1. Visual Designer
2. Information Architect (UX Designer)

Experience – 2-4 years

Job Location: Bangalore

Company Website: [www.echidnainc.com](http://www.echidnainc.com)

Interested candidates are requested to Send your Updated profile along with the Portfolio Samples to [shilpa.b@echidnainc.com](mailto:shilpa.b@echidnainc.com)

Desired Candidate Profile for Visual Designer Position:

- High-level proficiency with Adobe Creative Suite, including Photoshop, Illustrator, InDesign, and Acrobat as well as other major production and design software.
- Ability to design for web, mobile and tablet; Practical experience and knowledge of designing across multiple device types.
- High-level communication skills, including verbal proficiency in English.
- Who enjoys being part of a team, sharing in the collaborative process and leading in the design process equally.
- Team player with the ability to creatively manage multiple projects in a fast-paced in-house design environment.
- Ability to develop visually compelling marketing and advertising pieces.
- A deep understanding of visual balance, harmony, color theory and unity
- Creative Writing skills.

Desired Candidate Profile for Information Architect Position:

- Bachelors degree or equivalent in the Interactive Design / Information Architecture arena plus 2-5 years of experience as an Interactive Prototyper / Information Architect.
- Capable of wire framing experiences across devices and platforms.

Other Knowledge, Skills and Abilities

Organization and multitasking skills a must.

- Excellent interpersonal, written and oral communication skills.
- Ability to work with an international team.
- Highly proficient in Microsoft Visio and other types of interactive applications.
- Excellent knowledge of Microsoft Office Suite and Adobe Products.
- Knowledge of current Advertising, Graphic, Web Design and Ecommerce industry trends.
- Excellent communication skills.
- Strong attention to detail
- Highly proficient in MAC and PC environment

“Choose a job you love, and you will never have to work a day in your life.” - Confucius

## 12

Pearl Academy Mumbai is looking for two senior positions detailed below

1. Head School of Design – This will have the sub schools of Interior architecture, Product and Jewellery
2. Head School of Communication, Media and Films

We are looking at progressive academicians and industry professionals who can give leadership and vision to each of these schools. The expected compensation is aligned to the best in this sector in India.

1. TITLE: HEAD – School of Design, This will have the sub schools of Interior architecture, Product and Jewellery
2. TITLE: HEAD – School of Communication, Media and Films

## JOB DESCRIPTION

1. TITLE: HEAD – School of Design, This will have the sub schools of Interior architecture, Product and Jewellery

Reporting to CEO

2. TITLE: HEAD – School of Communication, Media and Films

Reporting to: CEO

## GENERAL SUMMARY

This positions are responsible for providing academic and business leadership to the above named Schools of the academy. These position will provide academic excellence and overall direction to the respective schools. This role will be responsible for managing the academic resources, the quality of the product, operational efficiencies and profitable results of the respective schools.

This role will report to the CEO of the academy. This role will have P&L responsibility for every aspect of the school. The position requires vision, discipline, innovative thinking and superb leadership skills.

## KEY DUTIES AND RESPONSIBILITIES

1. Develops and implements strategic and operational plans for the respective School of the academy.
2. Promotes and supports multi disciplinary teams (marketing & academic) for the design and roll-out of new programs. Ensure compliance with all regulatory and statutory regulations.
3. Works with faculty and staff to foster a student-centered learning environment.
4. Works closely with ADO and AQS teams to ensure maintenance of academic systems, process, quality and standards.
5. Designs and implements the product portfolio in the School

based on market intelligence, the optimal delivery approach (campus-based/hybrid / on-line) and differentiates it from similar product in the market place.

6. Focuses on continuous quality improvement in academics and every other functional area.

7. Fosters partnerships with the higher education community, and professional organizations.

8. Partners will HR team to recruit, retain and develop faculty.

9. Manages the P&L of the School to ensure profitable operations and sustainable growth.

10. Implements adequate measures (scorecard) to meet the School KPIs (Financial Performance, Faculty Utilization, TQ- MQ scores, NPS & Employability standards pertaining to faculty & students of the school) to grow its assets and to maintain an effective system of budgeting control.

11. Monitors the dynamics of the market to enables us to maintain an innovative advantage of products, content and delivery.

12. Works closely with Sales & Marketing team for a comprehensive understanding of the market segments and customers, the development of competitive advantage and helping the sales & marketing team develop effective marketing and sales strategy and campaigns.

13. Align and engage with industry to match industry expectation with student outcomes and curriculum.

14. Align with the Laureate Network to position the School with competitive differentiation and innovative products.

15. Position the school as intellectual/thought leader in its domain through relevant research outputs, academic and industry

engagement and events.

**OTHER DUTIES AND RESPONSIBILITIES**

The incumbent will be expected to perform other duties and responsibilities which management may deem necessary, from time to time.

REPORTS TO: CEO of the Academy

POSITIONS SUPERVISED: Staff of The respective School of the academy

**PROBLEM SOLVING&COLLABORATION**

1. This position is responsible for resolving any issues related to the School's management and business performance processes.
2. The incumbent has wide latitude in resolving problems and issues. They work with management, functional leaders, external resources, consultants, and all levels of the organization to resolve problems.
3. The incumbent must typically determine the selection of short-term tactical and long-term strategic projects, project timeframe, project deliverables, and the general operation of these functions.
4. Addresses problems that impact the School.
5. Works effectively with employees at various organizational levels
6. Demonstrates ability to work with diverse workforce, ethnic groups, cultures and associated viewpoints leading to appropriate problem resolution and decision-making.
7. The position will work collaboratively with the campus directors in effective functioning specially in the areas of – new products, faculty recruitment and appraisal.

**TECHNICAL, MANAGERIAL and PEOPLE SKILLS REQUIRED**

1. To perform this job successfully an individual must be able to deliver both quality products and successful business results. This is only possible with close management of the business, innovation, focus on the student experience, student outcomes, and Network cross collaboration and sharing of best practices.
2. Excellent planning and execution skills allied with well-developed analytical and problem solving skills.
3. The ability to build positive relationships with country, regional and Laureate Network representatives.
4. In-depth understanding of Laureate's DNA and modeling these values and attributes daily.
5. A team player, mature with initiative
6. Self-confident, ambition and energy.
7. Effective relationship building skills, allied with the ability to listen.

**BUSINESS COMPETENCIES**

1. Must have advanced interpersonal and communication skills.
2. Must have strong qualitative and analytical skills and have the ability to perform statistical calculations and evaluate results.
3. Able to design and manage projects, resources, stakeholders, participants and deadlines.
4. Able to provide leadership, coaching and mentoring to the members of the school.
5. Able to manage a budget, control costs, plan and schedule around cost concerns for the School
6. Able to manage multiple segments and functional areas of a subsidiary or business unit.

7. Able to direct long-range planning and the development of programs to maximize organizational resources.

8. Must have the ability to work in a fast-paced environment.

#### EDUCATION & EXPERIENCE

Minimum requirement is a relevant Master's Degree with 15+ years of experience in a senior academic/business role. Exposed to best-in-class business practices, strong financial acumen, and knowledge of corporate governance. PhD a plus.

2. Knowledge of the regulatory environment in the Education sector in the country

3. Ability to drive forward innovation and change in an organization

4. Proven track record of successful business results.

5. A market focused and analytical approach to operations of the Fashion & Textile School

6. A track record of personal excellence in leadership and management

#### LEADERSHIP COMPETENCIES

1. Analytical

2. Innovative

3. Inquisitive

4. Passion

5. Team Oriented

6. International

7. Influential

8. Entrepreneurial

9. Over Achiever

10. Flexible

11. Customer focused

12. Organizational savvy

13. Market aware

This job description may be revised at any time.

Neither the performance of the essential duties and responsibilities in this job description shall create an obligation or expectation by either party that the Associate will continue employment with the Company, nor willing to obligate the Associate to continue such employment. The employment relationship between the Company and its Associates is, and shall remain, at will.

Applicants may communicate directly with Pearl Academy, Mumbai or at the Head Office at New Delhi by post at this address here or call for more information.

Email Ritika Agarwal, Head, Talent Aquisition, Pearl Academy  
[ritika.agrawal@pearlacademy.com](mailto:ritika.agrawal@pearlacademy.com)

Pearl Academy, Mumbai

SM Center,

Andheri Kurla Road,

Opposite Marol Metro Station,

Andheri (East)

Mumbai – 400059

Tel. No. : +91 75064 12262

Pearl Academy, New Delhi

A-21/13,

Naraina Industrial Area, Phase II,

Near Shadipur Metro Station

New Delhi – 110028.

**13**

Survey says 61% of designers are looking for a change in their career every day. They want to be a part of an organisation with great UX maturity (atleast level 5), where design has a seat in the board room. Everyone in the company understands and appreciates design thinking and great design. They want to be a part of an exciting team where collaboration is key towards innovation.

Are you one of them? Are you looking forward to be a part of a fastest growing startup in Bangalore? Are you an excellent visual designer with great competence in Web and Mobile experiences? If you are nodding while reading this mail and your answer is yes to all the above, please send your profile and portfolio to [karthi@oghmadesign.com](mailto:karthi@oghmadesign.com).

Want to checkout for 6 months and then take a decision on permanent position, please feel free.

**14.**

CSTEP, a research organisation located in Bangalore looking for Graphic Design interns for 6-12 months.

Key responsibilities includes converting technical data into easy infographics, video and animations if required.

To know more about CSTEP visit Welcome to CSTEP | CSTEP

[www.cstep.in](http://www.cstep.in)

For any queries contact [bhawna@cstep.in](mailto:bhawna@cstep.in)

**15.**

LIVELABS is the Innovation Practice of IMRB International, a WPP

Group (UK) company. We co-create a pipeline of new products and services with clients to drive business growth and provide competitive edge. Our multi-disciplinary team of specialists from backgrounds of product design, architecture, user experience, design strategy and business design apply design thinking process in a highly collaborative environment. Our clients include Philips, PepsiCo, ITC, Godrej, The World Bank, Zee Network, Airtel, among others.

We are looking for a Communication Designer with a minimum of 3 years of working experience and portfolio across graphic design, web design, packaging, identity design, interface design, project documentation or related areas. We expect the Communication Designer to raise the bar in all our visual communications and branding related work across all media – presentations, online and print with a distinctive approach and eye for detail.

The position is full time and based in Bangalore. Please send portfolio link along with profile to:

Lead Innovation Consultant, LIVELABS

IMRB International, Bangalore

[yugandhara.singh@imrbint.com](mailto:yugandhara.singh@imrbint.com)

[livelabs.co.in](http://livelabs.co.in)

**16.**

Times of India group is looking for a smart UX designer to join their team. This is an opportunity for someone to build a great product and see it in the hands on millions of users in shorter time. Candidates interested can get in touch with [mukesh.kalra@gmail.com](mailto:mukesh.kalra@gmail.com)

Who are we?

We are a group of passionate entrepreneurs who are disrupting the centuries old personal finance space with latest tech. We are an independent startup inside India's Largest Internet Product Company - Times Internet Limited part of the Times of India group.

Why join us?

If you believe in changing the world and having a real impact on personal lives of millions of Indians, you would love this opportunity. The challenge is to make personal finance and managing money which is usually considered to be boring and stressful to something that's refreshing, assuring and exciting.

You will be part of the founding team to help shape the consumer experience grounds up. We are a team who breathe pixel perfection in everything we build and expect the same from you.

What are we looking for?

A passionate individual with deeper understanding of the UED process and who loves delivering engaging user experience on mobile/tablets.

What will you do?

- Work with the product team and build the use cases to be solved.
- Translate requirements into concepts and elegant user experience design
- Design interaction models, user task flows, screen designs, and UI details that promote ease of use and optimise the user experience
- Design wireframes, visual design screens and UI specifications, and interact with front end developers to aid development
- Collaborate effectively with other designers where overlap

between product areas and features naturally occur

What you should have?

- At least 2 years experience in designing consumer responsive web application interfaces
- 2+ years experience in mobile app design
- A passion for designing compelling, user experiences and attention to detail
- A good understanding of end-to-end user experience design process and best practices
- An educational background in Interaction Design, HCI, or related field
- Sound knowledge of design tools like Photoshop, Illustrator, Omnigraffle/Visio etc.
- Ability to independently design and own parts of the product
- Knowledge of HTML/CSS/JS and front end best practices
- Ability to prototype your work in HTML/CSS/JS/Flash a strong plus

## 17.

In context to an upcoming project, we are looking to partner with firms with expertise in developing Social Media Strategies.

Firms with proven track record please write to [jonak@lopezdesign.com](mailto:jonak@lopezdesign.com)

## 18.

Senior Associate, UX & UI design (Bangalore, India)

Experience level: 3 - 5 years

Position/s vacant: 3

Education: UG - B.F.A , PG - M.F.A., Design Degree

Job description:

- Create intuitive websites, responsive design, web and mobile application/product interfaces
- Ideate and implement cutting-edge designs based on trends and client expectations
- Translate ideas into a storyboard to create visual designs
- Collaborate with UX & UI, technology, content and digital marketing teams
- Your learning curve has to be two steps ahead of your peers

Desired profile:

- Strong knowledge of Photoshop, Illustrator and Flash
- Firm understanding of information architecture, storyboard and interaction design
- In-depth knowledge of visual, interface design and motion graphics
- Flash action scripting experience preferred
- HTML5 knowledge is preferred, but not mandatory
- Thorough understanding of Apple's Human Interface Guidelines and Google Material Design
- Should be more of a designer than an artist
- Comfortable working with iterative development methodology

[aarthi@peppersquare.com](mailto:aarthi@peppersquare.com)

**19**

Position : UX Designer

Industry experience: 3 to 7 years

Responsibilities:

- Work with Business analysts, product management, software developers to produce a world class user experience for Fiserv products (online and mobile)
- Translate high level business requirements into tangible user interface proposals that integrate the latest standards in interaction design and trends in visual design
- Create low-fidelity and high-fidelity task flow mockups and prototypes while integrating feedback from the product teams and our end-users
- Develop detailed interaction and visual design specifications and work closely with the development teams to implement them
- Influence and educate the product teams in user-centered design principles and design process
- Help define standards and best practices for consistent user experiences across Fiserv products

\*Skills:

Formal design education from institutes like IDC, NID or similar will be preferred but is not mandatory

- Strong conceptual thinking skills and demonstrated ability to prototype the design solution
- Must demonstrate a strong interaction design skills and have a solid understanding of usability principles and user centered design process
- Experience with working on various mobile platforms ( iOS, Andriod, Windows, etc) will be an added advantage
- Good understanding of user interface technologies ( HTML/CSS, Java Script,etc)
- Ability to work independently and prioritize and manage work

to meet project timelines

- Must have an eye for detail and be able to quickly put ideas into a tangible form
- Has internalized a rigorous design process and is able to tailor it to the needs of different types of projects
- Must have a good understanding of visual design principles. Hands on visual design skills is a plus
- Must have extensive experience working closely with development teams on implementation of the designs

[kunal.pimplikar@fiserv.com](mailto:kunal.pimplikar@fiserv.com)

## 20

WeAreHolidays.com are looking for a passionate, awesome, kick ass 'someone' to execute WeAreHolidays' vision of being the largest managed marketplace for holidays in this part of the world. WeAreHolidays is one of India's fastest growing travel startups. WeAreHolidays (WAH Holidays Private Limited), a 2011 company, was founded with the vision of creating the largest marketplace offering vacation options for Indians traveling abroad. Its founding team has extensive experience of working at MakeMyTrip, and includes Engineers (from IIT & other reputed institutes), Management graduates (from IIM & other reputed institutes) and numerous souls who've chosen the road less travelled on their entrepreneurial journeys.

It is a venture-funded company with Matrix Partners (Silicon Valley & India based) as the lead investor. The company also has Blume ventures as one of its investors. Blume Ventures has investments in some of the leading companies in the Indian internet space.

It also has Rajesh Sawhney (Founder GSF accelerator) and Sachin Bhatia (Co-Founder, MakeMyTrip.com) as investors. Since its launch, WeAreHolidays has been in numerous national publications and media outlets including the Times of India, Mint, The Economic Times, CNBC Awaaz, Corporate Dossier, Your Story and many others. WeAreHolidays has thousands of customers and is growing at a phenomenal pace in India.

You'll be leading our efforts to drive a design centric thinking across our company, business & products. You will be someone with deep understanding and appreciation of information architecture, user experience and usability principles. You're someone who has applied his/her skills to real-world human problems (not just artistic or academic exercises). You have a deep understanding of user-centred design principles, excellent interaction & visual design skills and are able to pay attention to detail. Bias for action is a must-have quality.

You need to be a self-starter with a passion for independent, creative problem-solving and show strong ownership/commitment. Above all we're looking for an 'I Will' attitude over 'We Shall'.

Key Responsibilities

- Owning and evangelizing a UX vision across the company
- Work on complex, ambiguous projects and provide strategic influence on products.
- Work on the layout, information architecture, visual appearance and usability of the web site. Ensure the designs are visually effective, easy to access & interact with and support the business goals and vision.

- Work with product and business teams and translate product requirements into design briefs, wireframes & Information Architecture layouts.
- Iterate on the wireframes and conduct post formative and summative testing.
- Work with different personas, user scenarios, UX specs, task flows, wireframes, site maps, storyboards, taxonomies, task flows, mockups, prototypes, visual designs and design patterns.
- Have understanding of and be able to appreciate the advantages and disadvantages of the primary form factors, viz. desktop/laptop computers, tablets and mobile devices and be able to create distinct user experiences for each of them
- Ensure designs are optimized for different form factors, browsers, resolutions etc.
- Work on low and high fidelity mockups on paper.
- Work with developers and testers to make sure what's designed gets translated in code.

The ideal candidate for this profile will be someone

- With at least 2 years of relevant work experience in Interaction Design (1 year necessarily has to be in Interaction Design / Visual Design / Information Architecture).
- Is a great “systemic thinker”, capable of imagining, designing and communicating complex systems or systems-level challenges. You can apply this systemic thinking to areas beyond software.
- A graduate / post graduate from a recognized university/college.
- Proficient in Axure, Balsamiq or Visio.
- Proficient in Adobe Master Collection CS5 (Photoshop, Illustrator etc.)

- Working knowledge of technologies such as CSS, HTML, JS, AJAX is an added advantage

This position will be based full time at Gurgaon. Salary and perks will be no constraint for the right candidate. To apply for this role, please mail your most recent resume/CV to [careers@...](mailto:careers@...) or [sonam.sehgal@...](mailto:sonam.sehgal@...) with references to your portfolio / past design projects and do include a few lines in the mail on why you think you are the perfect fit for this role and can excel at it.

## 21

### WHAT WE DO

Qikwell ([www.qikwell.com](http://www.qikwell.com)) is a technology startup, which is improving healthcare access to consumers using the most ubiquitous device out there - the mobile phone. Qikwell is processing tens of thousands of transactions every day, making it easy for consumers to access healthcare services. We are fast-expanding across India, aiming at making healthcare access for millions of consumers better.

Qikwell is backed by top investors, has a result oriented work culture and a fun loving team. Qikwell is looking for best in class talent to join them to make healthcare more accessible and consumer friendly.

### WHAT YOU'LL BE DOING

We are looking for a UX designer with strong interests and capabilities in the design and development of engaging web and mobile experiences. Candidate will be able to come up with unique design concepts backed by research, data and experiments.

### ROLE REQUIREMENTS

Bachelor's / Master's degree / Certification in interaction design, new media design, HCI or related field

- 3 to 6 years of experience working across B2B / B2C products leveraging emergent technologies.
- Thorough understanding of contemporary user-centered design methodologies and user interface design patterns is a must.
- Candidate must have worked on at least one full life cycle product (concept to delivery).
- Exceptional design skills, production value and attention to detail.
- Ability to create wireframes and convert them to an aesthetically pleasing visual design concepts.
- Must have expert level knowledge of prototype and design tools like Balsamiq, UXPin, Photoshop, Illustrator etc.
- Working knowledge of HTML5, CSS3, JavaScript, jQuery & Prototype Frameworks like Bootstrap and Foundation etc.
- Strong written and verbal communication skills.
- Startup work experience will be added advantage.

Salary will be commensurate with experience and skills

Send across your detailed portfolio and resume to Rahul Arora [rahul@qikwell.com](mailto:rahul@qikwell.com)

## 22.

Talent Acquisition Specialist at Practo, an IT company into Healthcare domain HQ at Bangalore.

they're looking for designers to help create a platform for doctors to manage their practices and help patients manage their health.

There's a lot of work to do, with a great team and they are well

funded. If you're interested in the opportunity or would like to know, share your contact details with her so that she can get in touch with you.

Please contact her with your portfolio with your contact number.

Talent Acquisition Team,  
Practo Technologies Pvt. Ltd.

Mob :- + 91 7829983696

## 23.

seriously. We're looking for the key people across seniority. We value talent, creativity, and a sense that anything is possible.

We've created a beautiful office space located in serene suburbs of Bangalore ( Whitefield). With lots of greenery outside, collaborativeworkspaces, just the right amount of meeting space and an open canvas, we are constantly inspired to think aloud.

Job Openings:

1. Sr Graphic Designer ( Bangalore) 5-7 years experience in branding, packaging, printing. Hand illustration skill would be an added advantage.
  2. Client Servicing ( Mumbai) - to manage large MNC account, with minimum 4-5 years experience with ad/design agency.
  3. Jr Product Designer ( Bangalore) - 2-3 years of experience in Product Design. Good eye for detailing and forms. Knowledge of 3D software, basic understanding of engineering is must.
  4. Design writer/ blogger ( anywhere in India)
- Young fresh graduate with flair for creative writing, excitement for design and social media knowledge.

Please share short write-up about yourself and portfolio to

[work@studioabd.in](mailto:work@studioabd.in)

#### 24.

We at Ness Technologies are looking for UI/UX Developers , Kindly apply if interested else refer your friends for the same .

E-mail : [Vani.Mekala@ness.com](mailto:Vani.Mekala@ness.com)

Job Description :

- HTML5/CSS3, Javascript/Jquery, WC3 standards and modern coding practices, cross-browser and cross-platform development and testing.
- Experience: Sass (or Less), various dev environments & platforms, UI Dev frameworks such as Bootstrap, JQuery, ExtJS, Agile development environment
- HFI Certification added plus ...
- Experience : 4 Plus Years.



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