

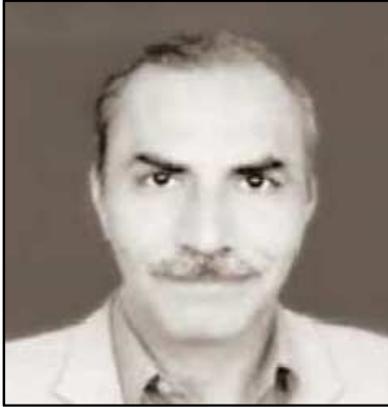
# Design for All



**Guest Editor: Prof Beth Tauke and Prof Korydon Smith ,  
University at Buffalo – State University of New York**

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## **Letter from the Chairman's Desk**

**By Sunil Bhatia PhD**

**I was purchasing groceries from local market and my intuition suggested since a friend of mine was greeting from a distance and as I looked in that direction it came true. His calling voice was fading because of noise level of market and I failed to reason out why I saw in that direction from where my friend was trying to have my attention. I could not hear what he was speaking but I was able to see his waving gestures. As I noticed he was moving toward me and suddenly fell on the ground, I rushed to pick him up from the ground. He was crying with extreme pain and I immediately took him to hospital where doctor informed me "he has suffered hip bone ball socket fracture". I questioned him as it was shocking news for me 'there was no apparent reason of falling and even he did not meet any accident. How come it was possible?' Doctor further added that his bones were weak and just happened that moment it could not bear his body weight and he fell because of fracture not fracture has happened because of any untoward accident.**

**While coming back from hospital, I was thinking about role of break in our lives. We are so fragile and any moment can break and it may invite fatal accidents and prove reason of death but still we aim to live more than hundred years. It is the beauty of human progress that every moment can prove fatal but still we design our lives in**

such a fashion we continue survive and to live. Other aspects are break is natural process and our ancestors understood at an early stage of their development. All is created in cosmos is bound to get destroyed sooner or later by breaking and it is nature's law and no one can alter. Sometime nature is responsible for breaking because of inbuilt character of destruction and then generally it is deliberate manmade efforts for break to meet changing needs and in rare phenomena other reasons are responsible for break. Just imagine the quantum of problems if our ancestors were living in joint family structures and they still continue to live as they did .If families were not breaking. It was impossible to cook food at one fire kiln for increasing members or hunt the animals that could feed the entire huge family. It means our limited resources were guiding for breaking of family and it proved good for social fabric for working with various ideas for progress of the society because of fragmented groups designed their own ideas to make their life longer and comfortable. Modern person's life style is amalgamation of best of various practical ideas practiced in past by various segmented groups in attempt to make life workable, easy and comfortable. Our cosmos is believed to be beginning with breaking and big bang theory is not still replaced with better theory.

In modern times our technologies are improving and we are encountering different types of breaking. In primitive times breaking was either natural process or man was using physical strength. As he acquired knowledge about fire his concept about breaking was no more on physical strength. Knowledge of chemical, liquid and air properties added new dimensions in breaking philosophy. It is my belief that development of language is nothing but art of breaking the air by tongue using upper and lower jaws for creating various

**adulation voices and gradually we linked particular voice adulation with specific actions. Modern people designed the bridge and it was not missing in ancient time and we faced unusual concept of break from unexpected quarter as troops were marching over the bridge there was high chance that it might collapse. We found that breaking of bridge was because of vibrations of synchronized movements of foots of soldiers that generated high intensity of resonance and cross beyond the limit of the vibration of bridge. To prevent they allowed them to disperse for marching.**

**Human body is fragile and our ancestors were hurt because they had limited knowledge of survival and met accidents that might prove to be reason of fracture or bleeding. And in attempt to control the pain or bleeding either they were tightly holding the affected parts and compressed for reducing pains and by product of holding for long time was controlling the immobility and healing appeared fast. Some people for curing the fracture might have tried by wrapping the wet soil around the fractured areas and noticed when it dry turns to hard and control the mobility and works as cast or some people did the experimentation by tying hard dry branch of tree for immobility or allowed person to rest with minimum mobility of fractured parts. Generations on modern people learnt the better solution by discovering plaster of Paris for casting for controlling immobility of fractured parts. How did primitive people manage the fracture of bone or any break of body parts that was responsible for bleeding? One thing was common in all possible cure that mobility did not allow the fast healing and controlling it helped in better cure.**

**Before the discovery of fire, they knew soaking in water or liquid for those items absorbed turned soft and it could easily break by applying external force or apply that level of physical force that**

**allowed break and used this concept in killing enemies by stone pelting or designed the arrow that pierce or sword for instant cutting that could be reason of breaking for bleeding or killing or different level of wind pressure that was responsible for easy breaking of leaves and high intensity could uproot the trees. They designed soaking of hard nuts overnight to break with little efforts and even we still use overnight soaking of dirty clothes for better cleaning with fewer efforts, winnowing fan for separation of unwanted elements from food items. As we hurt and blood ooze out, we act with the instinct for controlling the bleeding by applying physical force by pressing with hands in affected area and helps in curing fast. Application of external physical force later allowed our ancestors to experiment the same for crushing, extracting and grinding and designed various instruments. Even they designed axe or various knives for breaking after the discovery of fire and learning of its management. With the discovery of fire concept of breaking took to different level by heating, boiling, grilling, or steaming.**

**At times undesired breaking invites sorrow, pain and when we wish to allow break it brings happiness. A successful blast for breaking mountain for making road generates happiness and other side friend's fracture was painful incidence. Break can happen because of weakling of inner strength or applying external forces and it may be physical, chemical or even sound wave or shock wave that can break. Dynamite or nuclear energy concept is releasing sudden energy with sound that destroys by breaking the nearby areas into pieces.**

**Our primitive people were aware about concept of breaking and used it for killing the animals for food by breaking their neck or for controlling that attacking animals he used concept of breaking**

fragile body parts by holding the tail and circulate for breaking the spine bones for making passive in movement and could be killed easily. While eating food, they realized the limitation of size of mouth and opening of jaws and learnt the art of breaking the food in size that should fit into mouth. Discovery of fire and management of it allowed them to think for tinder in such size that should help in catching quick fire but it should last long. They found dry log catches fire faster and for breaking from plants either they were relying on man power and after learning of management of fire led it to design of axe. I think it has revolutionized the society and primitive people used breaking concept for construction as well as for destruction. Before the discovery of fire people were relying on physical strength for breaking. I still find difficult to break the thread if there is no scissor close to me and I tried to break it by using my teeth. If my teeth fail I tried to hold the thread and rub against the edge of wall or platform or any sharp elements by applying force for breaking. Using teeth for breaking is primitive practice but applying force and rub against the sharp surface is knowledge acquired by man. Design of knife was the result of extension of using sharp surface for breaking by applying external force. Design of mortar and pestle is conceptualized in similar way by using external force of hitting by stone to harm others in self defense or killing animals for food. Scissors for cutting cloth is purely manmade design from his knowledge. They might have noticed that a stone falls from the height of mountain breaks into pieces by the time it reaches ground that allowed applying external force for designing grinding.

Reverse of breaking has also contributed a lot for our progress and allowed us to think for stitching, using glues, staplers, nailing etc for

**joining. Combination of breaking as well as joining concept contributed a lot for human progress and has given us new way of living and contributed a lot for progress for modern man. I think first manmade design was rope with knot and it was one kind of physical glue that helped in joining two broken ends of rope. I called it first physical glue designed by man to join broken ends. Man knew natural glue of plants and used it for joining as well as food and as medicine for cure for specific disease but knowledge of chemical glue designed by man has revolutionized the concept of joining. Use of button holes has given us that we can prevent the opening and it is nothing but break and push the button into for joining is we wish and this has revolutionized our thought process. Zip Velcro, are based on this concept of breaking and joining at will. Design of windows, doors and other opening structure are nothing but based on breaking and joint and that allowed the design of hinges. Fire also used for avoiding break by using the concept of tempering of metal by heat and suddenly dip into liquid that enhances non breaking properties.**

**In cooking, we use knife for cutting , grinding to break the food items and sometime we use steaming , boiling to turn it soft for better and easy management of break. We break the bread for eating what our mouth can easily intake and to support break in desirable shape modern person has designed various type of spoons, knives and cutleries. Breaking was not confined to solid. Our primitive people were aware to break the liquid as well as gas. When a person learnt the art of folding the palm in the shape of cup for holding the water from water reservoir was an act of break. Similarly lungs required air for oxygen for survival and act of inhaling is nothing but break of air from atmosphere. Plucking the**

**fruits is nothing but an act of breaking. Thrashing for separation of seeds from shell is designed because of break. Silk worm are boiled to extract the silk is nothing but breaking.**

**Sometime we do not allow break and it serves our purpose. Primitive people realized that there should not be any break of air supply for burning of logs and they learnt the art of management by allowing smoke should go up in the air and designed the kiln is such way that air supply should reach without break to burning logs for keep fire alive and it led to design of various chimnies. Prevention of break has given us new thought like RCC that led to beam, column and slab design and it led to freedom to design structure of our own choice. This philosophy has added a new dimension in human progress and humans all efforts started to focus in avoiding break that may invite disaster. Break of skin allows passage for blood that is dangerous and sometime prove fatal. To heal wound we designed bandages for minor break, medicines are for medication for prevention of external factors that may increase the break by infections and even stitches are applied where bandage fails in controlling that situation where break is major.**

**Physical breaking is clearly visible to us and we have designed various tools for breaking as well as for joining the broken parts. All living beings cannot live without breathing and it is present in different form in different species. Man's lungs naturally intake that volume of air that provides sufficient oxygen for survival is an act of breaking air from atmosphere. Similarly plants and animals kingdom also required air for their lives and they also do the breaking by inhaling but man learnt more and identified that our body needs oxygen and in emergency they provide manmade oxygen to patient for saving life. It helped in designing our languages and refinement**

led to art of singing and various musical instruments .That breaking of air led to designed bellows for ironsmith for achieving high intensity of fire for melting. With the discovery of fire they used fire balloon for transportation. Even they used concept of breaking wind flow for movement of sailboat by using cloth.

Surgery is specialized training for curing the diseases and first official recorded history of surgery was performed for Julius Caesar for his birth. They used various knives for performing for cutting mother's womb for safe delivery of child and cut was large and healing time for mother was long. In modern times we use laser for performing the surgery with minimum invasive that reduced the healing time and faster recovery.

To break the motion we have designed brake for retardation of speed , voltage regulator for cut off electrical surge that can damage the equipments and various valves for controlling and braking the liquid as well as gas. Pistons and jets are designed by applying the concept of breaking of gas or liquid and compressing for throwing of gas or liquid to desired destinations. Toilet flush by applying the forceful stored water by using cistern pump is nothing but beautiful example of breaking. Our publication since 2006 has never faced any break in continuity of monthly publication and it is blessing of divine power that we never missed single monthly issue. It is the love and affections of our contributors, readers that they made our success story.

Prof Beth Tauke and Prof Korydon Smith of Department of Architecture at the University at Buffalo-SUNY, and project director in the Center for Inclusive Design and Environmental Access (IDEA), has accepted our invitation for Guest Editor and it is our honor that

**person of such great stature is our Guest Editor. It is new trend started by Guest Editor by emphasizing more on interviews that provide more freedom in covering the past as well as future work plan of an individual who has achieved a name in his/her respective areas. I request the readers that kindly read the interviews appeared in this issue with little care**

***With regards***

***Dr. Sunil Bhatia***

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## Forthcoming Issues

### May 2016 Vol-11 No-5

**Prof Pekka Harni Artist, Professor; architect and designer at Harni - Takahashi Ltd will be the Guest Editor. He is an architect MSc. and industrial designer MA, who works widely on applied art, furniture design and architecture. He has been teaching at the University of Art and Design (now Aalto University) in Helsinki since 1988. He has been a visiting lecturer in several European design universities and a leader of several design workshops in Europe and in Mexico. His study about morphological "object categories", delves into the possibility of dividing basic home objects into seven main categories, which correspond to different functional and morphological categories of objects, has already been applied in several European design schools. This study is published by Aalto University in his book "Object Categories" 2010. In 1999, he received the Design Plus Award from the Ambiente Frankfurt Fair. In 2011 he was awarded as "the industrial designer of the year" by the Finnish Designers**



association. Since 2012, he is Artist Professor for 10 years, appointed by the Arts Council of Finland.

## **June 2016 Vol-11 No-6**

**GAATES (GLOBAL ALLIANCE ON ACCESSIBLE TECHNOLOGIES AND ENVIRONMENTS) Mukhtar Al Shibani – President will be the Guest Editor for special issue**



## **July 2016 Vol-11 No-7**

**Prof Cigdem Kaya Associate Professor at Istanbul Technical University, Turkey will be the Guest Editor.**



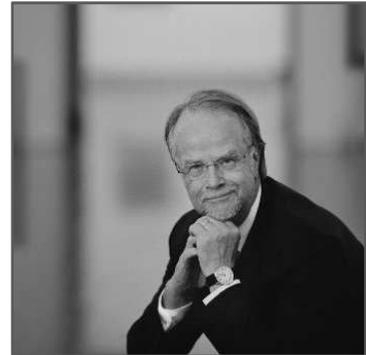
## **August 2016 Vol-11 No-8**

**Asst. Professor Yasmeen Abid Maan In charge Architecture Program, LCWU, Lahore Pakistan.(Associate MIAP, MPCATP) will be the Guest Editor**



## September 2016 Vol-11 No-9

**PROFESSOR YRJÖ SOTAMAAPRESIDENT  
EMERITUS University of Art and Design Helsinki  
and Cumulus Association, ADVISORY DEAN  
AND PROFESSOR College of Design and  
Innovation, Tongji University and DEAN LOU  
Yongqi of Tongji University will be the  
guest Editor**



## October 2016 Vol-11 No-10

**David Berman Accessible design thinker,  
expert speaker, author (Do Good Design), UN  
advisor on IT accessibility, GDC ethics chair.  
Communications strongly believes that we can  
design a better world that leaves no one  
behind. We've been leaders in the online  
accessibility field for over 15 years, and we're  
eager to help you gain from the benefits of inclusive design. David is  
a senior strategic consultant to the Canadian government, as well as  
other governments on four continents**



## **November 2016 Vol-11 No-11**

**Prof Niraja Tikku and Associate Prof Kirty Gera of Industrial Design of School of Planning and Architecture Delhi will be the Guest Editor**



## **January 2017 Vol-12 No-1**

**Gerhard M. Buurman is the founder of a couple of programmes, initiatives and institutes at the Zurich University of the Arts (ZHdK). Hochparterre called him a steady initiator and Bernhard Bürdek commended his distinguished ideas on the university level. As theorist and vibrant researcher he worked in international groups at the ETH Zürich and Harvard Law School as a practitioner. He will be the Guest Editor.**





***Beth Tauke, M.F.A. is an Associate Professor of Architecture and former Associate Dean of Academic Affairs in the School of Architecture and Planning at the University at Buffalo – State University of New York, Buffalo, New York, United States. Professor Tauke’s research focuses on design education and inclusive design’s relationship to the senses. She was co-principal investigator of the Universal Design Identity Program, Bridging the Gap: Increasing Access to Universal Design to Meet the Needs of African American Communities, and The State of Universal Design Education in University-Level Design Curricula, all sponsored by the National Endowment for the Arts. She co-edited Universal Design: New York (2001), Diversity and Design: Understanding Hidden Consequences (2015) and has written numerous chapters and articles. Professor Tauke is a co-founder and current editor of Universal Design Education Online, the primary website for UD education.***



***Korydon Smith, D.Ed. is Associate Dean of Academic Affairs and Associate Professor of Architecture in the School of Architecture and Planning at the University at Buffalo – State University of New York, Buffalo, New York, United States.***

***Dr. Smith teaches courses in architectural design, theory and methods. His primary research investigates the roles that design plays among marginalized groups, while a second line of scholarship investigates alternative models of design education. He is the lead author of *Just Below the Line: Disability, Housing, and Equity in the South* (2010), co-editor of the *Universal Design Handbook, 2nd Ed.* (2010) and *Diversity and Design: Understanding Hidden Consequences* (2015), and editor of *Introducing Architectural Theory: Debating a Discipline* (2012). Dr. Smith is Associate Director of the *Global Health Equity Community of Excellence* at the University at Buffalo. This community addresses the challenge of global health inequity by bringing together faculty and students from many disciplines to tackle problems ranging from a lack of access to sanitation for women and girls in poor countries to high rates of non-communicable diseases due to complex sets of factors, including tobacco use and the environment.***

## **Introduction**

***BETH TAUKE and KORYDON SMITH***

***School of Architecture and Planning, University at Buffalo  
– State University of New York, Buffalo, New York, United  
States***

***Recall the face of the poorest and weakest man you have seen, and ask yourself if this step you contemplate is going to be of any use to him.-Mahatma Gandhi***

**Universal design (UD), sometimes called inclusive design or design for all, is one of the most important design movements of our time because of its emphasis on empowering all individuals, particularly those who otherwise have not had voice. Based on the principles of social justice, this global movement seeks to improve not only the built environment, but also social and institutional systems for the widest possible range of people.**

**This issue of *Design for All*, devoted to universal design education and research, features individuals who have dedicated themselves to social justice issues across an array of design disciplines—architecture, interior design, industrial design, urban design and planning. Contributors range from world-renowned UD educators and researchers to those at the beginning and mid-levels of their careers. Interviews, short essays, and longer articles provide a spectrum of viewpoints that offer new ways to think about universal design in our changing world. The issue begins with a personal reflection from Professor Craig Vogel, director of the well-known**

**Live Well Center at the University of Cincinnati, who tells the story of how a book and a boy with autism led him to a life-long career in inclusive design. Following this is a set of macro-level thoughts by Dr. Edward Steinfeld, director of the State University of New York at Buffalo's Center for Inclusive Design and Environmental Access (IDeA), the premier research center on universal design in the built environment, on the need to develop a global community of UD practice. As an experiential learning expert, Professor Mary Jane Carroll, Chair of the Interior Design Program at Sheridan College in Ontario, Canada, introduces four essential elements of inclusive design education. Furthering discussion on the multi-disciplinary aspects of UD education and research, design anthropologist, Dr. Jo-Anne Bichard, writes about the importance of considering sustainability in relation to inclusive design. Recent graduate student, Kristen Gabriele expands on the social sustainability aspects of her thesis, which addressed improved housing design for transitional villages. Another recent inclusive design graduate student, Daniel Nead, summarizes his thesis, which examined the viability of re-using residual military equipment in Afghanistan to develop mobile classrooms for young girls who otherwise would not receive an education. Bridging the disciplines of universal design for learning (UDL) and UD, Professor Eric Dolph reveals the various ways that students learn in the design studio setting, and encourages inclusive teaching strategies. Dr. Jennifer Webb focuses her essay on workplace design changes, and the need to accommodate workers with various working/learning styles and physical abilities. The issue ends with Professors Kavita Murugkar's and Abir Mullick's comparative study, which explores the ways that those with vision loss understand form through touch. Clearly, a**

**wide variety of topics are presented; yet all of the interviews, short essays, and longer articles allude to a common set of questions: How does universal design challenge our conventional concepts of making? How does UD affect the ways we teach, learn, research, and practice in ever-changing pluralistic conditions?**

**The contributors to this issue are leaders in moving the universal design paradigm from one focused primarily on accessibility to a broader concept that includes all marginalized groups--those with low income, victims of disaster, women, and others whose needs are often neglected in design. This new paradigm gives priority to providing a higher level of access, safety, and convenience in all products and places. Moreover, it extends UD to domains outside the built environment to include the design of systems, services, and business practices. This work is timely. According to Dr. Edward Steinfeld, several global trends are driving the need for new initiatives in inclusive design:**

- *The increasing diversity of societies in race, ethnicity, income, age, and disability***
- *The recognition that supporting social participation of women and minorities is a necessity to reduce discrimination and segregation, and increase independence***
- *The aging of the population, which is driving increases in disability rates throughout the world***
- *Devastation caused by disruptive natural and human-caused disasters that leave large populations in states of emotional and physical distress***
- *The globalization of business that is providing opportunities for positive change, but also leading to widening income gaps***

- *The rapid pace of technological change that is increasing the potential for design to make positive differences in people's lives*
- *The crises in health care and education in many countries that demand innovative solutions, particularly in rural areas*
- *Population growth and rapid economic growth in developing countries that is taxing global resources, especially energy and food.*
- *Global warming that threatens major disruptions in ecosystems, especially along the seacoast.*

**Not only do these global transformations and attitude shifts indicate areas in which UD is needed, but they also open opportunities for education and research. For example, design curricula could include the areas of human diversity; health, safety, and wellness; sensory perception; and social justice as core elements of study for all students. Researchers could examine the gaps in knowledge about relief-system effectiveness in meeting the basic needs of victims of natural and human-made disasters. Studies that explore the roles of planning and local government policies in facilitating sustainable food systems could help to provide access to healthy food in marginalized communities. These few examples demonstrate the call for new ways of designing, and could drive efforts for change. Design disciplines have started to respond with organizations such as Design for Good, Design Action Collective, and Design Corps. However, it is the responsibility of UD educators and researchers to ensure that students and professionals are equipped with the necessary knowledge and skill to effectively practice design for social justice. Inclusive design methods provide the evidence base**

**and critical details required to develop work that benefits the broader population. In that sense, universal design is a process of social construction – a representation and shaper of attitudes, values, customs and trends. The role of UD educators and researchers, then, is to identify and develop the knowledge needed for designers to best respond to social realities. Design educators, researchers, and practitioners need to understand these processes and their implications on one hand, and, by taking on leadership roles, develop new socially responsive visions of design on the other. In that way, inclusive designers assume catalytic roles in communities through work with positive societal impact, and become arbiters of change.**



***Beth Tauke, M.F.A***



***Korydon Smith, D.Ed***



***Craig Vogel, M.I.D. is Associate Dean for Research and Graduate Studies and Professor of Industrial Design in the School of Design, Architecture, Art, and Planning at the University of Cincinnati, Cincinnati, Ohio, United States. He is a Fellow, Past President Elect and Chair of the Board of the Industrial Designers Society of America (IDSA). He is co-author of the Creating Breakthrough Products and The Design of Things to Come: How Ordinary People Create Extraordinary Products (2001) and Design of Things to Come (2005). Professor Vogel co-founded the Live Well Collaborative, a non-profit organization at the University of Cincinnati that creates cross-functional teams to design products and services for 50+ consumers. During the last 25 years, Professor Vogel has been a consultant to over 20 companies, and has advised and managed dozens of research projects and design studios collaborating with industry. He was recognized, in the 2008 and 2011 Design Intelligence publication listing the best design and architecture schools, as one of the most admired design educators in the US.***

# **On inclusive design education and research**

**CRAIG VOGEL**

*College of Design, Architecture, Art, and Planning at the University of Cincinnati, Cincinnati, Ohio, United States*

**I would define inclusive design as the ability to help others achieve their optimum potential. Everyone should also be able to achieve a state of flow that balances their ability with their challenges and opportunities.**

**When I was an undergraduate psychology student at Marist College, in Poughkeepsie New York, I volunteered and visited many of the public institutions in the region, from prisons to a facility that housed adults with cognitive disabilities. I had the opportunity to work with a boy with severe autism at Hudson River State Hospital. Needless to say, all these facilities were horrible places for humans to be “housed” and for people to work. I realized that David was not receiving the stimulation he needed through behavior modification therapy, and hoped that one day I could find a way to do better. Talking him for walks and talking to/with him was more stimulating than the therapy I was asked to use to get him to talk.**

**When I graduated with my undergraduate degree, I was accepted into the Master of Design Program at Pratt Institute. Shortly after starting the program at Pratt, the book *Design for the Real World* was published. It was Victor Papanek’s book that made me realize that I could connect my interest in improving the lives of people who were not well served through design. I have kept that promise to**

**improve conditions for humans ever since. I also was raised in a three-generation family; my grandmother lived with us and later my great aunt also came to live with us as well. This experience made me aware of the differences and needs of children, middle age and older adults all living in one house in a diverse neighborhood in Brooklyn. The concepts of universal design and inclusive design were very easy for me to embrace because they gave a title and a definition to a world I had experienced most of life.**

**Individuals either turn away from opportunities to help people or sympathetically/empathetically embrace opportunities to reach out to those in need. I could have been appalled by the condition of the autism ward at Hudson River State where I found David. Instead, I responded to the fact that he needed help. Design gave me the tools to take insight and convert it into action to develop solutions. Design as a discipline for inclusive design starts with human beings and their needs, and works backward. Teaching and conducting research at several design programs and universities has allowed me to evolve my thinking and translational ability along with greater awareness in society with the growing recognition for embracing diversity on every level. I have been able to pass my interests and beliefs on to decades of students who, like me, embrace the ability to make a difference in people's lives.**

**During my career the word 'cripple' evolved into the use of the term 'disabled'; these terms were coupled first with words such as 'accessibility', 'adaptive design', and then evolved into 'universal' and 'trans-generational design'. I believe the words 'inclusive design' match the conceptual evolution of designers' and societies' attitude and awareness of meeting the greater needs of society. Inclusive design implies solutions that embrace the greatest range**

**of people. The term also covers the opposite approach to designing for specific needs with a non-stigmatizing approach.**

**Most of my career has been devoted to the goals of inclusive design but I have not been able to make it a sole focus until my recent opportunity in the College of Design, Architecture Art, and Planning (DAAP) at the University of Cincinnati (UC). For the past eight years, I have worked with others at UC and Proctor and Gamble to form the Live Well Collaborative. I have been able to take 20 years of experience and, with support, turn from being a fisherman to help to teach others to “fish” for inclusive opportunities. My recent work has been to establish a working relationship with Children’s Hospital, which is affiliated with the University of Cincinnati. This work has been the most rewarding work of my career. I have also been able to connect this work to other universities in the world, specifically in China.**

**There are wonderful opportunities for designers in this century to continue to expand our concept of inclusive design. Social awareness and technology with appropriate economic support could continue to make inclusive design a globally integrated part of every society, for everyone across the lifespan and across economic levels. There are, however, also threats that come with ignorance, limited views of how resources should be allocated, and even if helping others in need is a valid practice. It is important to realize that the counter to inclusive design is the practice of exclusivity, and I would define it as the act of deciding who should not be included. This practice is going on throughout the world in every country. Inclusive design as an area began with serving the needs of people with limited physical and cognitive abilities. I have found that this concept can be expanded. Those of use who are perceived as “fully**

**functional” often have short term and long term needs for inclusive design solutions. Steve Hawking is physically challenged and requires a wheel chair and artificial voice to talk. He is also one of the most influential thinkers of the past and present century. Many of us with limitations accept them and get on with life and have become acutely aware of the importance of valuing every moment. On the other extreme, Bruce Jenner was arguably one of the most abled individuals and an icon of the 20<sup>th</sup> century male when he won the decathlon gold medal in the Olympics. No one realized that he was dealing with his own challenge of feeling he was a woman trapped in a man’s body. He is now a symbol of 21<sup>st</sup> century sexual awareness and inclusivity.**

**I think we have new dimensions of exclusive design that are threatening the basic assumption of what our connected global society could be. The most destructive force challenging inclusive design is political and religious rhetoric that preaches hate and attempts to define good and evil. The best exclusive design is not a luxury car for a limited elite; it is an individual with a cell phone and bomb vest. While growing up in Brooklyn, I was taught to fear communism and the atomic bomb. The A bomb was and is a weapon capable of killing hundreds of thousands. Today we fear a completely different scale of exclusivity and destruction. One or two humans with vests of limited destruction but complete mobility can paralyze a city. The current political rhetoric of division and isolation could derail all of the work of inclusive design that I have been fortunate enough to be a part of. I remain committed to the goal of global inclusivity and fulfilling the mission that started when I volunteered to help David and failed, and was then enlightened by a book that gave me a path to potentially make a difference.**



***Craig Vogel, M.I.D. Associate Dean***



***Edward Steinfeld, Arch.D. is a Distinguished SUNY Professor of Architecture in the School of Architecture and Planning at the University at Buffalo – State University of New York, Buffalo, New York, United States. A registered architect and gerontologist, Dr. Steinfeld has special interests in universal design, accessibility, and design for the lifespan. He is Founder and Director of the Center for Inclusive Design and Environmental Access (IDeA), which was established in 1984. (See <http://idea.ap.buffalo.edu> ). Dr. Steinfeld has directed over 30 sponsored research projects, including two centers of excellence grants from the National Institute on Disability and Rehabilitation Research (NIDRR), one on Universal Design and the Built Environment (RERC-UD) and the other on Accessible Public Transportation (RERC-APT). He has over 100 publications and three patents. Many of his publications are considered key references in the fields of accessible and universal design; he was a co-author of the seven Principles of Universal Design, Inclusive Housing: A Pattern Book (2010) and Universal Design: Creating Inclusive Environments (2012). Dr. Steinfeld is internationally known for his research; has travelled widely to lecture in many countries; is a frequent consultant to government agencies, building developers and attorneys; and has experience in architectural practice as well.***

# **Interview with Dr. Edward Steinfeld**

***Center for Inclusive Design and Environmental Access (IDeA)***

***School of Architecture and Planning, University at Buffalo – State  
University of New York Buffalo, New York United States***

***What do you believe to be the essential elements of inclusive design education?***

**All students need at least three courses in inclusive design with high quality, relevant readings and projects for each: 1) an introductory course for all university students that would get them interested in universal design. *Diversity and Design: Understanding Hidden Consequences* is a great text for that. 2) a foundational lecture course on universal design that provides concepts, identifies issues, and identifies best practices. We developed a textbook that can be used as the basic reading for such a course, *Universal Design: Creating Inclusive Environments*, and 3) a studio or clinical practice course, depending on the discipline. It is particularly important that these courses do not become courses on accessibility regulatory compliance. Such content should be part of a general course on regulatory issues, ideally taught to all students.**

***What do you see as the major challenges of the inclusive design field? How would you address these challenges?***

**Building a constituency is a major challenge. To do this, we need to change paradigms from legally mandated accessibility for people with disabilities to a broader approach to design that seeks to**

**improve usability, health and social participation for all people, including those often marginalized and under-represented in the design process. We are addressing this challenge through university education, continuing education, improving codes and standards and development of a UD recognition program based on the adoption of clearly defined universal design strategies.**

**Building capacity to teach UD also is a challenge. Not many faculty in design schools really have adopted UD. They pay it lip service, but do not have the knowledge and skills needed to teach it in a comprehensive way and are not active in research. The solution is to provide advanced degrees with a concentration on UD for graduate students who want to become educators.**

***What do you see as the major opportunities of the inclusive design field? How would you address these opportunities?***

**Industry sees the value of universal design more so than the design professions. But, whatever the client wants, the professionals will do. So, finding early adopters among clients is the key to taking advantage of this interest. One way to do that is to publicize best practice examples and demonstrate their value through design research. Another is to organize communities of practice in UD among existing communities, e.g. housing, arts facilities, workplace environments, health facilities, etc.**

***What changes do you see on the horizon in inclusive design education?***

**Universal design is starting to take on a broader emphasis, going**

**beyond the traditional disability focus to address issues of income disparity, health promotion, social integration and a broader approach to design participation**

***What changes do you see on the horizon in inclusive design research?***

**It is important for universal design researchers to increase emphasis on knowledge translation by mining the scientific literature. Research is needed that addresses priorities in practice and gaps in the literature, especially in the ambient environment, e.g. acoustics, lighting, thermal comfort, etc. In addition, research is needed that develops useful tools for practice, e.g. virtual and digital tools for incorporation in the design process.**

***What changes do you see on the horizon in inclusive design practice?***

**First, validation of UD knowledge is a next step. At the present time, anyone can say they practice universal design. I think there will be a move toward an accreditation or credentialing program to demonstrate that a practitioner really has the knowledge and skills needed to implement a UD approach.**

**Second, there needs to be a stronger community of practice in UD across the globe. Sharing information and coming together on key concepts and initiatives will help everyone achieve their goals more effectively. This is starting to happen.**

***What aspects of your inclusive design teaching/research/practice are most compelling and/or satisfying to you? Why?***

**I am encouraged to see the interest that students have in design for diversity. They are hungry for knowledge that they can use to solve real human problems that are evident all around them. While they value the technical skills they get in design education, aside from sustainable design, they are more interested in human problems. The educational establishment has not addressed differences related to the body, social class, race, culture and others sufficiently. While educators may provide courses with content on diversity, it is often addressed in a critical way rather than in a productive and problem solving context.**

***What changes have you brought to inclusive design education?***

**My colleagues and I developed the first graduate concentration program on UD in the U.S. The IDeA Center also has the first online series of courses on the subject that are available as continuing education for practitioners. I am particularly heartened by the excellent students from all over the world who we are attracting to our graduate concentration.**



***Figure 1. Dr. Ed Steinfeld working with an M. Arch. student in the Inclusive Design Graduate Research Group.***

***What are your current research interests? How have you involved your students in your research?***

**I direct a federally funded center of excellence in universal design and the built environment in which we are doing targeted human factors research on anthropometry for people with disabilities, safer stairway design, reduction of slips and falls and developing products for improved way finding. We are also developing evidence-based design strategies that will be available for use in recognition programs like certification.**

**I also co-direct a federally funded center of excellence in accessible public transportation in which we are studying how to improve accessibility to large and small buses, how to reduce barriers to accessing transit systems and developing accessible software for next bus apps.**

**We have launched a consulting program for product manufacturers through which we help them develop and test products with UD features.**

**We also have services directed specifically to design for disability. Our staff design about 60 home adaptations a year for local households with accessibility needs and we have an increasingly active accessibility consulting practice focusing on design reviews and access audits.**

**I am also involved in a collaborative study with the University of Limerick on continuing education needs in UD among Irish architects. We are doing this work for the Irish Centre of Excellence in Universal Design. We hope to expand this shortly to Australia and the U.S.**



*Figure 2. Dr. Edward Steinfeld conducting a workshop in Dublin, Ireland for UD educators and clients.*

### ***What will drive adoption of UD in the future?***

**The aging of the population is the most important driver of interest in universal design in first world economies. As you know, I am a gerontologist as well as an architect and I have always advocated for applying UD to issues of aging. In particular, I believe if we had universally designed communities, older people would have very little interest or need for age segregated retirement settings. The IDeA Center is a partner in leading a local Age Friendly Communities initiative with the American Association of Retired Persons (AARP) and our county government. Through this work we are finding many ways that UD can be applied to issues of aging.**

**In developing countries, the focus needs to be on addressing the needs of the most marginalized people. This includes addressing**

**problems of homelessness, access to adequate sanitation and water, resiliency in response to disasters, etc. The new University at Buffalo Community of Excellence in Global Health Equities is taking on these challenges, and we hope to play an important role in showing how UD can be applied to these problems effectively.**



***Edward Steinfeld, Arch.D.is a Distinguished SUNY Professor***



***Mary Jane Carroll, M.Arch.is Chair and Professor of Interior Design at Sheridan College in Toronto, Canada; she also teaches courses at the University of Toronto. Professor Carroll has been teaching and researching person-environment fit for the past 12 years. Current research projects include inclusive design and public housing, with a particular focus on accessibility; the development of federal standards for the home modifications industry in the US, in conjunction with the Center for Inclusive Design and Environmental Access (IDeA); and an aging in place certificate program for working professionals. She was published in Universal Design: Creating Inclusive Environments (2012), has authored many journal articles, and has presented at conferences both in Canada and abroad.***

# **Interview with Professor Mary Jane Carroll**

*Department of Interior Design, Sheridan College, Mississauga, Canada University of Toronto, Toronto, Canada*

***What do you believe to be the essential elements of inclusive design education?***

**I believe that there are four essential elements in inclusive design education. The first element is *advocacy*: that is to raise student awareness so that they will become advocates of inclusion, both in policy and practice. If they become advocates as students, they are more likely to become advocates as practitioners. The second element is *to make inclusive design key in content across the curriculum*, and not limited to courses that are specifically focused on inclusion. If inclusive design becomes ingrained as an expected component of a design strategy, then inclusion becomes a part of normal practice for the design student, and later the design professional. The third is *to offer inclusive design curriculum that is open to non-majors*, thereby creating greater awareness and potentially greater advocacy across disciplines and beyond the educational realm. The fourth is *to make inclusion a part of the delivery model for the teacher*. This means the recognition that student groups are by nature diverse and therefore attention to methods of delivery to include different learning styles, as well as differences in physical and cognitive ability benefit the learning experience.**

***What do you see as the major challenges of the inclusive design field? How would you address these challenges?***

**In my experience, one of the greatest challenges in practicing inclusive design has centered on client misconception. Specifically, clients incorrectly believe that inclusion and accessibility for people with disabilities are synonymous terms, and that inclusive design solutions are an expensive luxury. I try to address these myths by raising client awareness. As the bottom line is generally the prime motivator for clients, I have found the best method in advocating for inclusion is through the use of a comparative cost breakdown. This helps clients to understand that they need not invest more money in the job for it to be inclusive. And, at the same time, they need not compromise on aesthetics to create an inclusive environment. Of course, this approach is dependent upon the type of job. It is easier to advocate for inclusion in commercial work rather than in residential work as building codes are more stringent and as clients are less personally invested in commercial projects. In residential design, advocacy is more complex. In these cases, I generally advocate for lifespan decisions, and show design decisions that speak to these decisions. Personalizing the need is also important. Life events such as a broken leg, bringing in heavy loads of groceries or aging in place resonate with most clients. However, I have found that this lifespan argument can be age sensitive. Older adults are more likely to be persuaded than younger adults to employ lifespan strategies.**

**Another issue facing the inclusive design field is that it has not received the level of public attention that other initiatives, such as the sustainable built environment initiative, have received.**

**Sustainability has become an essential part of practice for designers through the establishment of LEED standards. A building that meets LEED standards is celebrated with public awards, given substantial financial incentives and is heralded as socially responsible. Most design firms now have practitioners on staff that are LEED certified. Although I realize that there are initiatives to this effect in process for the inclusive design field, this type of widespread industry recognition has not been achieved.**

***What do you see as the major opportunities of the inclusive design field? How would you address these opportunities?***

**I think most designers would agree that the changing demographics in North America will provide a major opportunity for the inclusive design field. Now that the rights-oriented boomer population has reached senior status and now that we have a greater portion of our population than ever in our history that is over the age of 65, new opportunities will emerge for this area of study and practice.**

**Some of the opportunities related to the age-quake will be job-based and some academic. For instance, at present, we have a decided lack of professionals who are trained to work in this area of design, and so I see this as a potential niche market for emerging young designers and education to address. Likewise, not all post-secondary design programs include inclusive design curriculum content, and so that is also an area of opportunity and perhaps of specialization.**

**The other opportunity that I see for the inclusive design field concerns inter-disciplinary research. The design disciplines have been slow to embrace evidence-based research studies and to work**

**closely with other disciplines, such as gerontology or public health. The changing demographics provide a real impetus for interdisciplinary research to occur.**

***What changes do you see on the horizon in inclusive design education?***

**One of the most dramatic changes on the horizon for design education is the inclusion of inclusion in the curriculum, and as a focus for design research. The past few years have seen a renewed focus on the end user in design education, and this has led to greater importance being placed on environment-behavior research and curriculum content. For instance, educational accreditation bodies such as CIDA (Council for Interior Design Accreditation) now include whole standards that are devoted to human factors and universal design. And for Ontarians, the new standards act, the AODA (Accessibility for Ontarians with Disabilities Act), will mean increased emphasis on training to work in a more inclusive manner. This will occur both within the traditional academic curriculum but also as part of the continuing education seminars and workshops available to professionals.**

**Likewise, the shift in demographics and the needs of the client base that is associated with these demographics will also provide incentive for academic programs to include content that addresses issues such as aging in place, and public accommodations.**

***What changes have you brought to inclusive design education?***

**Over the past decade, my course content has focused on experiential learning, self-reflection, and community outreach rather than**

following a case study and lecture approach as in the past. For example, I now encourage students to evaluate public interiors using sensory impairment exercises. These exercises reinforce the need to be inclusive early in the design process rather than removing barriers later. I have also developed a community outreach program that requires third year students to work with a local not-for-profit organization to raise awareness through design. Each student group works with a different community group. These include a First Nations organization, an LGBTQ organization, two mental health organizations (one for youths and one for adults), an elder abuse organization, an eating disorder organization and so on. The final realized project is a built exhibit/booth that showcases issues important to the organization. Each kiosk is sited prominently within the college for a one-week period.

And finally, I have developed a *first year*, multi-sensory design project, the design of a Snoezelen room (a controlled multi-sensory environment used in cognitive therapy) for autistic children.. This project asks students to design with all of their senses, particularly as they are asked to go beyond the layout and design of space to design a new multi-sensory element that could be used for this group.

***What are your current research interests? How have you involved your students in your research?***

In the past few years, I have focused two areas of research: affordable aging-in-place and people over the age of 50 returning to the classroom for a second career. Students work with me through small internal grants from the college, or alternately through their thesis projects in year 4.



***Mary Jane Carroll, M.Arch.is Chair and Professor of Interior Design at Sheridan College in Toronto, Canada***



***Jo-Anne Bichard, Ph.D. is Professorial Fellow in design research at the University of Brighton and a Senior Research Fellow at the Helen Hamlyn Centre for Design at the Royal College of Art. She works with users and designers in creating ethnographic encounters for participatory and inclusive design and lectures on Design Anthropology. Her PhD in Architectural Studies from University College London involved over 150 able and disabled informants and focused on how collective and shared experiences of the body can create more inclusive design. Dr. Bichard's work has predominantly centered on access to public toilets and she currently sits on a number of British Standards Institute committees that are reevaluating the designs of these essential public facilities.***

# **Interview with Dr. Jo-Anne Bichard**

*University of Brighton, Brighton, United Kingdom*

*Royal College of Art - Helen Hamlyn Centre for Design, London, United Kingdom*

***What do you believe to be the essential elements of inclusive design education?***

**I believe the most important element is that the student *wants* to design inclusively. At the Helen Hamlyn Centre for Design we used to have long debates about 'teaching' inclusive design as some universities offered it as a module. However, we felt the desire had to come from the designer in the first place--they are designers first, then they find inclusive design. So we offered workshops for newly arrived students and tutorials for those who were further on in their courses, but who wanted to undertake inclusive design. We also had a mantra that inclusive design is *just good design*. Ideally we are looking for design to be automatically be inclusive, and I am beginning to see this. More and more design has considered the wider population as part of its process, and a current design committee I am working with definitely sees inclusion as mainstream.**

***What do you see as the major challenges of the inclusive design field? How would you address these challenges?***

**I have always felt inclusive design to be a philosophy, in that it is a way of thinking and, therefore, beginning the process of design (and**

it works far better if it is inclusive from the start), but this philosophical perspective might also be because I am a design anthropologist. The challenges remain the same as those that have always been there--how to convince business that despite the overwhelming evidence that inclusive design is good business, it should be incorporated in the design of new products environments and services. It is not mainstream yet. I do not know how to address the inertia of business--one would think the business case would be enough--but it seems the perceived outlay is still considered too costly. So I guess that is one thing we could change. The other is that I often see inclusive designers become facilitators on projects, especially when they have been trained in inclusive design; they know how to work with people and how to engage them in the design process. Subsequently, they are sometimes sidelined, acting as the conduit between users and other designers. This is worrying as there might be key insights that the inclusive designers might be able to contribute, but that might not be taken up by their non-inclusive peers as it did not come directly from the users. Sometimes it is overlooked that it is not just giving the users what they want, but also reading between the lines of what they desire as well. Finally, I do think from a philosophical perspective, we should challenge when inclusive design is merely special needs design--there is still quite a lot of confusion between the two.

***What do you see as the major opportunities of the inclusive design field? How would you address these opportunities?***

**The biggest opportunity is that more consideration is given to inclusive design, we train more designers to undertake it, and they**

carry the inclusive design philosophy throughout their careers. It has to be remembered that it is not a process that serves every designer. There are a number of skills that are needed that go beyond merely being good at design--being good with people as well as having patience and empathy. There are some people who have tried inclusive design and have not enjoyed it. So from a perspective of introducing it to students, I always emphasize the training in resilience, both professionally and personally, that it also provides. So the opportunity lies in bringing designers to the inclusive programme so that they are aware of it; even if they are not the type to undertake it themselves, they could contribute through their own skill set.

***What changes do you see on the horizon in inclusive design education?***

Well, I read somewhere that European legislation would make it compulsory that all architecture students are taught inclusive design. I don't know the details as I don't teach, but I do have reservations about this. Firstly, this action would require clarification about what exactly inclusive design is, as in the UK, the practice in built environment construction is radically different from the practice in built environment research. These need to be somehow brought together or we are going to continue to have poor quality environments that have merely met the letter of the law rather than use creative problem solving to address people's needs. This again may come down to the question--can we actually teach inclusive design or is it something designers have to come to and which we mentor?

***What changes do you see on the horizon in inclusive design research?***

The innovation in research will come from the engagement processes designed to bring people into the inclusive design process. These are key in communicating with users, understanding their perspective and experience, but in a way that speaks creatively to designers. Having used techniques from the social sciences, I now see social scientists using these research methodologies developed from design, and it could be that design leads the way in creative interaction with research subjects across all disciplines. Having worked across many medical, engineering, and social disciplines I am very excited to see design methodologies being engaged across disciplinary boundaries.

***What changes do you see on the horizon in inclusive design practice?***

I am beginning to see a more engaged consideration of sustainable elements in inclusive design, in an attempt to tackle our most serious global concern of climate change. Unfortunately, these design perspectives have often been treated as singular movements when, in my view, they are closely aligned. Inclusive design is, by its nature, a socially sustainable practice and can be argued to be economically sustainable. Now it needs to make the case for being environmentally sustainable and bringing in considerations of the circular economy. However this also means it needs to engage with the very controversial perspective that population ageing is contributing to climate change. Hence it is, in my opinion, that inclusive designers do so from a sustainable design perspective.

***What aspects of your inclusive design teaching/research/practice are most compelling and/or satisfying to you? Why?***

For me, it will always be making the difference for just one person. So the student who attends one of my workshops in the early stages and then returns throughout their two years, and then possibly becomes a research associate is a great satisfaction. In research, it comes from the users who have engaged with the process and come forward for further studies. It is always very hard to recruit a diversity of people for research, and so I am always grateful for those who willingly share their time and experiences with us, especially in my particular area of built environment and public toilet research as it often takes a long time for the research to be realized in practice. And finally in practice--I would say it is the excitement of seeing your research delivered. For me, this has been the creation of The Great British Public Toilet Map and having it go live for people to use.

***What changes have you brought to inclusive design education?***

I have set up a dedicated Design Ethnography workshop that introduces design students to the structure and processes of undertaking ethnographic research, and gives them a foundation to begin exploring their interaction with users. This has now been delivered at the Royal College of Art, the IE School of Architecture and Design in Madrid and the University for Art and Design in Berlin. One of my aims is to introduce as many social anthropologists to designers as possible, so that they can share knowledge and

experience that helps bring the user to the forefront of design research.

***What are your current research interests? How have you involved your students in your research?***

**My current research interests focus on the development of the design anthropology field within inclusive design, as well as the access/inclusive debate that is still evidenced in the design of the built environment. At a micro scale, I am still interested in the design of public toilets and their failure to meet people's needs from a functional design perspective, but also am currently interested in the problem of dog fouling. Pet ownership is an excellent way for older people and those with disabilities to combat feelings of loneliness. However what happens if dog owners, whilst benefitting from the companionship cannot meet the civil responsibility of cleaning up after their pets? I am very inspired by the work of Hen power who have introduced chickens into older people's lives. I would like to not only explore how pets can help combat loneliness and increase well-being, but also how design may possibly help those who are less able, to take care of their animal friends.**



***Jo-Anne Bichard***



***Kristen Gabriele, M.Arch., works as an architectural designer at ElkusManfredi Architects in Boston, Massachusetts, United States. She is a LEED Accredited Professional, who currently is pursuing her path towards architectural licensure. While enrolled as a graduate student in the School of Architecture and Planning, University at Buffalo – State University of New York, Buffalo, New York, United States, Ms. Gabriele was a member of the Inclusive Design Graduate Research Group. She was selected to present her award-winning thesis entitled Strategies for Micro-Housing Units in Transitional Villages or the Homeless at the 45<sup>th</sup> Annual Environmental Design Research Association Annual Conference in 2015.***

# **Interview with Kristen Gabriele**

***M.Arch., Inclusive Design Graduate Research Group University at Buffalo - State University of New York, Buffalo, New York, United States Architectural Designer at ElkusManfredi Architects, Boston, Massachusetts, United States***

## ***Describe your thesis.***

**Homelessness has become an increasing problem among low-income individuals and families all over the world. In 2012, over 630,000 people in the United States experienced some form of homelessness on any given night in January. Thirty-eight percent of this group was classified as “unsheltered homeless,” indicating they were unable or unwilling to find temporary housing within their local shelter system. Derived from the phenomenon of tent cities, transitional villages arose in response to the lack of appropriate or available housing. This housing model provides a basic level of safety and shelter to residents, as well as a sense of home and community. The transitional village is a unique form of transitional housing because it offers residents an opportunity to inhabit private micro-housing units, an aspect that is a dignifying amenity for many otherwise house-less individuals. Selecting a village in Eugene, Oregon, this study sought to research and analyze two micro-housing prototypes from which to learn successes and shortcomings of the designs. The study was comprised of a series of in-depth, qualitative interviews with prototype designers, village organizers, and village residents, as well as a typological analysis that yielded a collection**

of common themes related to the prototype designs. Following research and analysis, design suggestions were generated for the units studied, as well as for future micro-housing prototype designs. The design suggestions are a reflection of the results found in the study, specifically the positive and negative experiences that relate to the selected micro-housing prototypes as chronicled by the participants. It is a goal of this study that the design suggestions provided will help to further improve the lives and living conditions of future transitional village residents through improved and well-educated micro-housing design alterations. The full thesis is available at

[http://idea.ap.buffalo.edu//idg/pdf/theses/gabriele\\_k.pdf](http://idea.ap.buffalo.edu//idg/pdf/theses/gabriele_k.pdf)



***Figure 1. Micro-housing units at Opportunity Village Eugene. Photographer: Kristen Gabriele.***



***Figure 2. Various styles of units at Opportunity Village Eugene. Photographer: Kristen Gabriele.***

***What aspects of your thesis are most compelling and/or satisfying to you? How do these aspects relate to inclusive design?***

**One of the most satisfying aspects of the thesis was being given the opportunity to connect and converse with a community that is often overlooked in design. Unfortunately, in regards to architecture for the homeless population, there can be an attitude of "something is better than nothing," implying that any form of shelter is better than having no shelter at all. The intention of the thesis was to go beyond**

that mindset and learn how the key features of a physical space can help improve a homeless individual's life by way of comfort, aesthetics, pride in ownership, etc., as opposed to being simply shelter from the elements. As everyone, typically, is passionate about their home, it was a wonderful experience to be able to talk with a group of people, many of whom were first-time "home-owners" who exhibited an incredible amount of pride in their micro-house.



*Figure 3. Interview with Conestoga Hut residents. Photographer: Kristen Gabriele.*

### ***What are some of the complexities of your thesis?***

Drawing overall physical design conclusions from such a specified environment with a particular population group was the most complex task of the thesis. From conversations with the villagers,

direct design recommendations were able to be made for improvements to the particular housing units studied, as well as for units in the region that shared similar climatic and spatial qualities. However, taking the implications to a broader level and developing overall design recommendations for transitional micro-housing became difficult. Information from participants had to be broken down and categorized, then recategorized, in order to determine patterns of similar responses that could be interpreted at a scale larger than that of the interview group. The five key results of the thesis were highly generic (i.e. design for human comfort) so that they could be applied to a global effort of micro-housing for the homeless, and were not the physical, direct design strategies I originally envisioned when I began the thesis. However, the end results are very representative of the overarching ideas that were consistent among interviewees.

***Now that you are working as a young professional in practice, what aspects of your education in inclusive design are most valuable to you?***

Having focused exclusively on inclusive design in graduate school, I find that the mentality for creating inclusive environments has remained with me. In practice, unfortunately, I have found that inclusive design - especially accessibility - can often be an afterthought in the design process. My experience with inclusive design throughout my education has allowed me to bring these issues back to the forefront of a project, keeping them in mind throughout the entirety of the design process, and helping my team members to do the same.

***In your opinion, what are some of the most important issues in inclusive design education and practice today?***

**I think one of the most important issues related to inclusive design is the consideration of accessible design in practice, and the need to bridge the gap between the work being produced in firms and accessibility. Again, from my experience, this is a design consideration that is often lost in the process, and addressed at a time when it is "too late" to then create an equal experience for all users. However, I hope that with more students entering the profession with an inclusive design education, future generations of architects will work from an inclusive approach at design conception, and carry this mentality through projects as a key consideration.**

***What questions related to inclusive design are you thinking about these days?***

**As I mentioned earlier, based on my graduate school experience with inclusive design, I find myself often thinking about the environments I am in every day, and how they satisfy user needs of different abilities. For example, taking public transit every day in Boston has me constantly thinking of ways that the system disadvantages those who require elevators or lifts, whether because of disability, or simply because they are on the main route to the airport carrying heavy bags. No matter the reason, the path of accessibility is less convenient, more time-intensive, and difficult to determine by way-finding. I am always asking myself, what would make this work better - and how can I, as a designer, avoid situations like this in the projects I work on. Especially in a case**

**such as public transit: we are all paying equally to use these facilities, shouldn't the facilities treat us equally in return? As such a diverse society, it is important for all of us to be devoted to creating a diverse, and equal, environment.**



***Kristen Gabriele, M.Arch***



***Daniel Nead, M.Arch., M.U.P., is a Project Architect and Engineer for Clark Patterson Lee Design Professionals in Rochester, New York, United States. He works on a range of municipal and educational projects in both the civil engineering and architecture departments. While enrolled as a graduate student in the School of Architecture and Planning, University at Buffalo – State University of New York, Buffalo, New York, United States, Mr. Nead was a member of the Inclusive Design Graduate Research Group. His award-winning graduate thesis focused on the potential for post-conflict reuse of military assets for rebuilding civilian infrastructure in Afghanistan.***

# **Thesis summary: Post-conflict reuse of military systems - the applications of mobility in the delivery of education and stabilization**

***DANIEL NEAD***

***Inclusive Design Graduate Research Group, University at Buffalo - State University of New York, Buffalo, New York, United States***

***Clark Patterson Lee Design Professionals, Binghamton, New York, United States***

In recent conflicts , militaries have recognized that the reality of war often causes the line between the martial and the civil to become blurred and exceedingly complex. The complexity of post-conflict rebuilding is alluded to in Reyner Banham's *Design by Choice* where he challenges the imposition of conventional infrastructure rebuilding as a default solution.<sup>1</sup> Banham writes in reference to the 'gizmo'. While the reuse of military systems may in part utilize 'gizmos', the main point is that underdeveloped and war-torn countries may benefit from immediate solutions as well as, or opposed to, the more conventional, high cost, and often incongruous practices.

***Instead, such countries find themselves being bullied into sinking aid funds in massive infrastructure of a kind the U.S. got along without for several generations, whereas small sophisticated devices that can work without much capital investment under them might produce better immediate results and leave the ground free for even more sophisticated developments in these countries later on.<sup>2</sup>***

**While many systems within the military may only qualify as a 'gizmo' in the most liberal interpretation of Banham's definition, his definition surely entertains some relationship with many tools that the military employs. The gizmo is defined by Banham below.**

*...a small self-contained unit of high performance in relation to its size and cost, whose function is to transform some undifferentiated set of circumstances to a condition nearer to human desires. The minimum of skill is required in its installation and use, and it is independent of any physical or social infrastructure beyond that by which it may be ordered from catalogue and delivered to its prospective user.<sup>13</sup>*

**A key feature of most of the 'gizmos' described by Banham is the ability to be moved. It is this quality of mobility that makes it an ideal application for both military mission goals and civil recovery and stabilization. The military has coined the term 'force-multiplication' as a means to describe the effect that high performance and mobile systems have in a tactical role. Fundamentally, whether it is the military world or the civilian world, force multiplication is the practice of getting assets to the place they are needed most without them being tied down to where they would otherwise collect dust.**

**Mobility is now ingrained in military design. If mobile systems are to be reused for civil applications, it is then critical to identify what problems they may be targeting. The strategic and interim plans issued by the Afghan Ministry of Education were used for this thesis**

as a framework so that the exercise became an example of how the mobile options could fit within the broader education system. In summary, the purpose of this study was to open up a discussion about the potential for mobile systems within an educational framework. The end goal is not an exhaustive quantitative analysis; rather it is to provide a catalyst for generating interest in the employment of mobility.

## **Challenges to Education in Afghanistan**

Students and teachers face continual resistance in efforts to improve access to education in Afghanistan. Difficulties with ensuring security, infrastructure, incentive, and accommodation are barriers for the general student population. Barriers for administration and government include fiscal dispensation, competition for resources, reliance on foreign sources, and poor internal organization.<sup>4</sup>

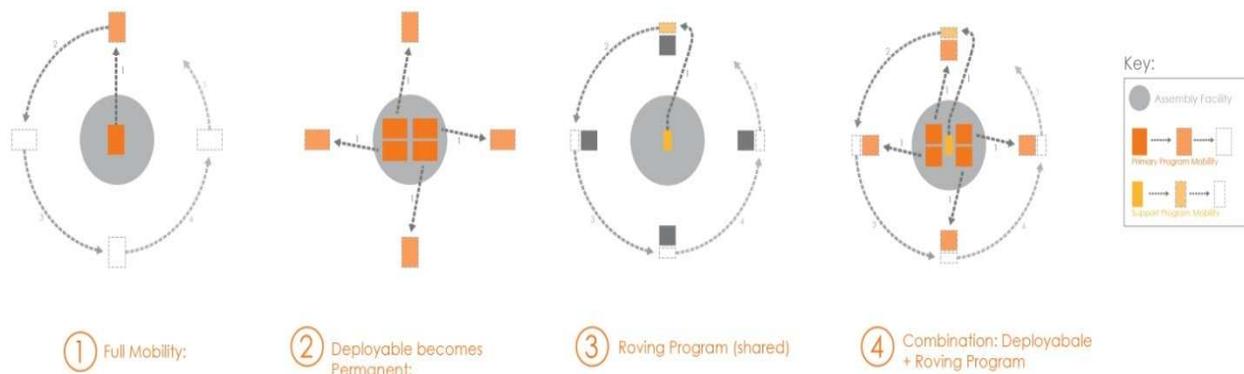
Security is the most fundamental barrier to the expansion and maintenance of education opportunities in Afghanistan; this sentiment cannot be overemphasized. The education system has become a target of violence and threats of violence by extremist elements such as the Taliban. Girls and teachers face disproportionate abuse. In addition to this, the provision of qualified teaching staff is a severely limited resource in general.

Remoteness can be influenced by geographic isolation, access to electricity, lack of quality transportation, and reduced relevance of the national government. This is further reinforced by large disparities in access to all forms of education by geographical region. Walking distance is one of the most important

considerations for both access and security as students and teachers are most vulnerable at this point. In remote environments, many students face burdensome walking distances that limit their time spent in class and expose them to dangers.<sup>5</sup>

## Basics of Mobility

The concept of mobility could become very broad and far-reaching. However, for the purposes of standard educational delivery, it can be reduced into four basic forms. Centralized production is a shared theme among all four types. Full Mobility is defined by the intermittent movement of a facility catering to a specific priority program from one location to the next. Deployable-to-Permanent hinges on a one-time movement from a production facility to a permanent location. The Shared/Roving Program is a specialized program that would rotate in support of and to augment a static facility associated with a priority program. Lastly, the second and third examples of mobility may be combined to form a Combination (Deployable-Shared) where a shared program is rotated between deployed facilities.

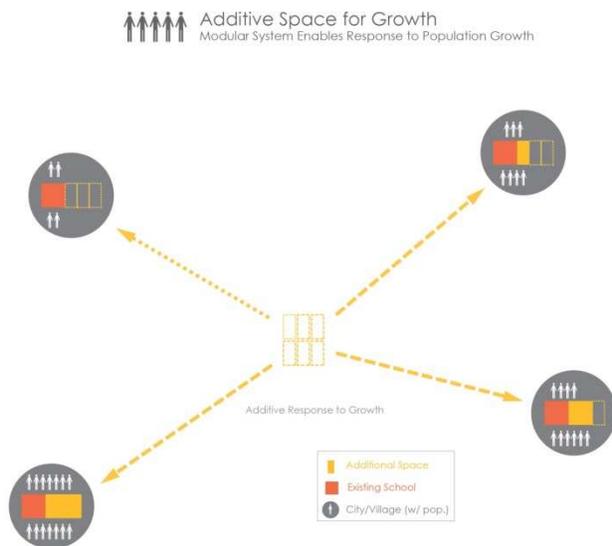


**Figure 1. The basics of mobility**

## Non-Exhaustive List of Mobility Applications

**Rolling Construction:** A fully mobile system would complement a rolling construction strategy. If a school was without buildings, a fully mobile school could be deployed. When funding and operations begin with the construction of a standard, permanent facility, the mobile school could be sent to the next location awaiting facilities. In this manner, the mobile facility would not lose its value upon completion of its service in one location.

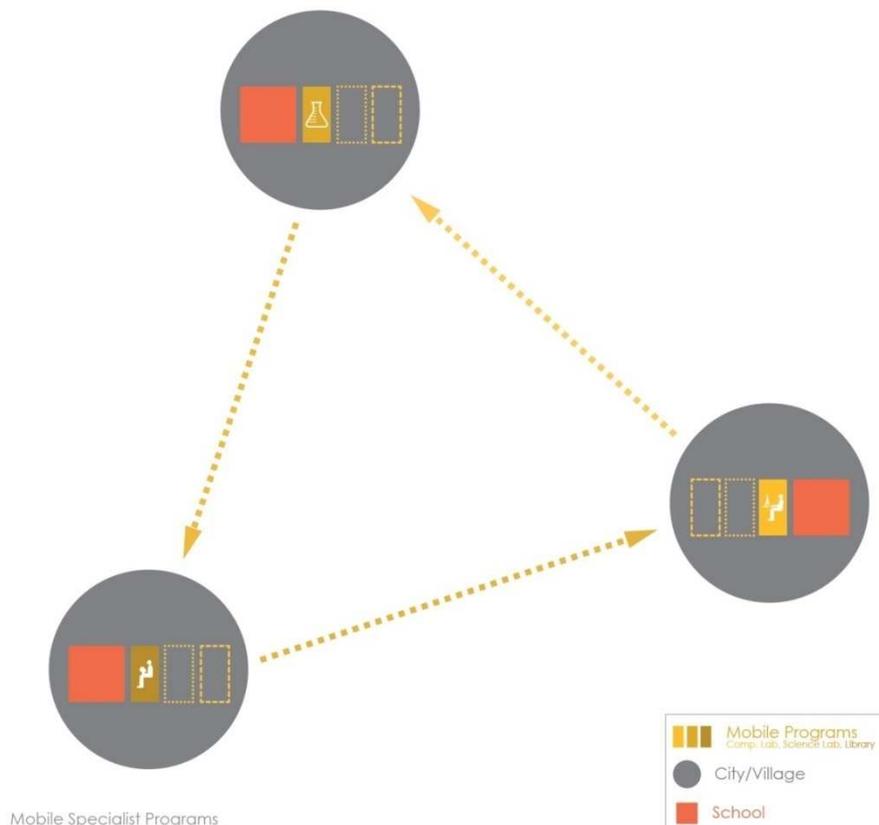
**Additive Space for Growth:** As a modular system, components could be added on to a mobile facility as student bodies grow and access is increased. This is a rapid means to address issues of population displacement, population growth, and rapid increases in demand for access.



**Figure 2. Additive Space for Growth - As a modular system, components could be added on to a mobile facility as student bodies grow and access is increased. This is a rapid means to address issues of population displacement, population growth, and rapid increases in demand for access.**

**Shared Programs: Expensive and therefore limited specialized programs could be shared between schools. This would work best for secondary school programs that are attempting to increase access to science labs and libraries. Nevertheless, the general application of shared/roving programs could be very broad.**

 Resource Multiplication through Mobility  
Standard Static Construction vs. Mobile Facilities Specialized Programs

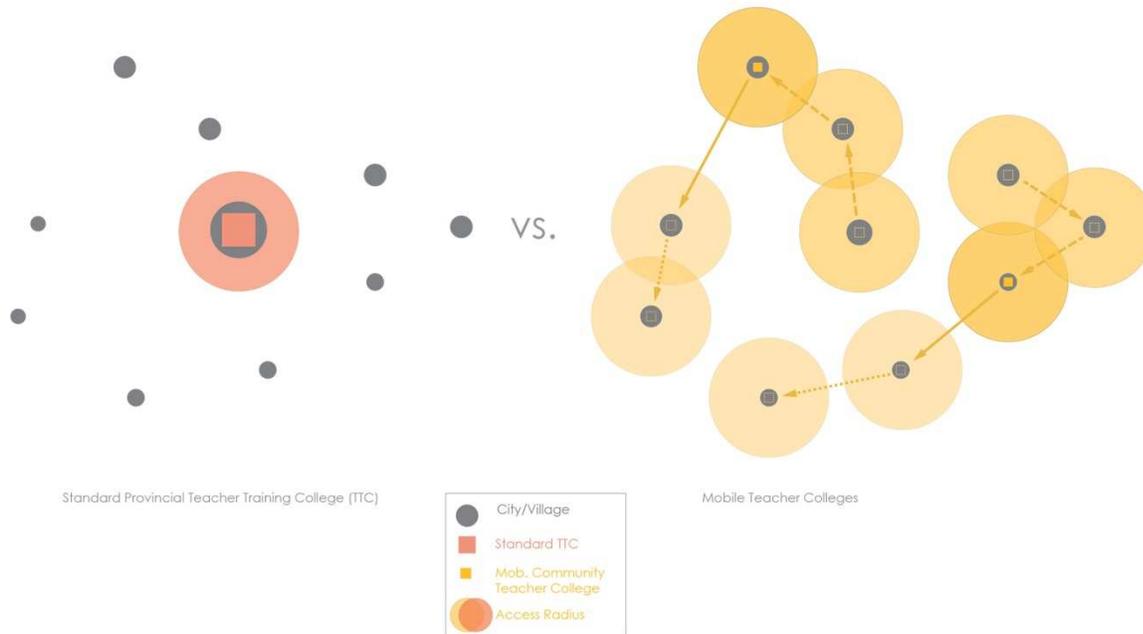


**Figure 3. Shared/Roving Programs Concept- Standard facilities could be used as stations for shared/roving courses. This would aid in reducing costs, as it is expensive to both equip the facilities and train the associated staff. It would help to reduce redundancy if the programs rotated on a cycle between district schools. All of the materials needed for the courses or activities could travel in a self-contained unit.**

**Nomadic School Options:** By its nature, the nomadic school is the most reliant on a mobile system. The Kuchi, a nomadic people of Afghanistan, are typically settled during the winter and summer months. As such, there are at least two options available in order to extend education opportunities to this portion of society. A highly mobile system could follow the daily and weekly movements of a Kuchi community, mimicking a more standard learning schedule. This application of mobility is an example of where a container-based system may not be appropriate. Another challenge would be to find teachers willing to live a nomadic lifestyle. The second more conventional option would be to have additional capacity in a mobile unit that would alternate between winter and summer settlement locations. These units could seasonally attach to a standard school.

**Highly Mobile Retraining Unit:** This form of mobile education would be mainly directed at training existing teachers while providing oversight and inspection. It is likely that this application would be one of the most mobile as a typical training session is about 2 weeks in length. The mobile facility could be self-contained and move from one school to the next throughout the year

**Mobile Localized Teacher Education:** A fully mobile system may be most appropriate for supporting a two-year, pre-service training or technical education; after a class of local candidates is fully trained, the facility could proceed on to the next village. The system might take the form of smaller schools that could be transported from rural centers as a means of tying them into the broader provincial and national education administration.



**Figure 4. Mobile Localized Teacher Education (Compared to Centralized Regional Hub) – A mobile teacher training system would be able to provide a much higher degree of access to the populations of Afghanistan. The majority of education opportunities, especially above the primary level, are concentrated in urban centers. This presents a significant barrier to the rural populations who comprise 75% of the total population. Access is often limited via walking distance. This radius is even more severely limited for females in Afghan society. If a facility were to move from town to town on a periodic basis providing training, the access footprint would consequently increase.**

**Mobile Localized Technical Education:** Due to widespread need for trade skills, technical training could also operate locally for a limited period of time before moving on to the next rural center.<sup>6</sup>In some ways this is more logical than a centralized hub as each village only needs a certain quantity of individuals skilled in a specific trade.

**Working on a rotation, each rural center could be exposed to a variety of training centers over a several year basis.**

**Mobile Secure School:** Security is the greatest barrier to education access and expansion. A school could be designed to respond to certain types of security threats. While this school could take the form of a more robust design, it could also have increased measures of surveillance and other intangible or less conventional forms of protection. As subsequent districts become stabilized, the facility could move on to the next insecure region.

**Home Based School + Teacher Settlers:** The community school and the home-based school practices have proven to be two of the most resilient forms of education. These types of schools are often the only access to education available to insecure areas. The Afghan Ministry of Education had an incentive concept based on a land grant system. A consciously designed mobile dormitory space could be transferred to a student following graduation. If the candidate is from a rural/insecure area, the mobile unit could be deployed to the new teacher's assigned position and operate as a home school until more standard facilities are available.

**Conversion of Training Facility to Locally Guarded School Facility:** The Afghan national forces have their own difficulties with an illiterate body of recruits. Specifically designed mobile facilities could be employed by Afghan National Forces to train local recruits. Once a sufficient number of recruits are trained and stationed, the facility could be converted into a protected school facility. One advantage of this application may be the existing avenues used to transfer former ISAF equipment for use by Afghan National Forces.

**The emphasis of this thesis was in the exploration of mobility in an effort to provoke future investigation by agencies into the concept. Consequently, if a decision to reuse former military containers as part of a mobile education system is made by consenting parties, it will lead to a host of other practical considerations. In the end, these practicalities will be the main arbiter on which the form of mobile systems has a chance to be realized.**

**The full text of this thesis is available at:**  
[http://idea.ap.buffalo.edu/idg/pdf/theses/nead\\_d.pdf](http://idea.ap.buffalo.edu/idg/pdf/theses/nead_d.pdf)

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**[5] *Ibid.*, 36.**

**[6] *ibid.*, 24.**



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# **Applying the principles of universal design for learning in the instruction of universal design**

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## **Abstract**

***Though developed as a separate field of study, Universal Design for Learning (UDL) takes seriously the charge of Universal Design as "Design for All" in an educational context by acknowledging the variation in learning styles and aptitudes and conforming course content to the needs of the individual learner. This article reviews the history of UDL and evaluates the common strategies instructors use while teaching Universal Design principles within a design studio context. It also considers the ways in which Universal Design instruction in a design studio context has already embraced tenets of UDL and where there may be room for improvement.***

***Keywords: universal design, universal design for learning, design education, studio education***

## **History**

**Universal Design for Learning (UDL) is a term coined by David Rose and Anne Meyer of the Center for Applied Special Technology (CAST). UDL is based in neuroscience and identifies the ways in which humans learn. Early in their work, CAST researchers were focused on using technological solutions to create and provide**

**adaptive content with the goal of reaching students with mental or physical disabilities. During the course of their research, however, Rose and Meyer discovered that the content and strategies being created were also appealing to students who had a significantly wider diversity of abilities. Their earliest forays into widening the scope of students they were targeting were referred to as Equal Access software. (Meyer, Rose & Gordon, 2014)**

**Shortly thereafter, David Rose met with Ronald Mace of the Center for Universal Design at North Carolina State University. Ronald was one of the early pioneers in the field of Universal Design and agreed that Rose and Meyer's work should rightly be considered within the field of Universal Design in an educational context. In order to link the concepts but maintain a separate identity, CAST agreed that the term Universal Design for Learning was an appropriate moniker. (Meyer, Rose & Gordon, 2014)**

**The principles of UDL are based on three networks within neuroscience that identify how the brain processes and relates to the introduction of new information. The challenge for faculty in attempting to achieve understanding by the greatest number of students is to activate each of the networks as thoroughly as possible. CAST identifies the networks as the Recognition Network, the Strategic Network, and the Affective Network. Each network plays a different role in helping the learner relate to information.**

## **Applying Universal Design for Learning**

**One of the advantages of UDL is in challenging faculty to identify the purpose of each component of the curriculum. Through reflecting on**

**what is expected from each assignment, faculty are able to consider alternative ways that the same content can be presented in order to reach the goal of learning. For example, if a student is asked to read a passage and write a response, students who are challenged by reading or writing experience an inherent barrier to learning that may not be related to the content of the assignment. In challenging themselves to answer the question “what should my students learn from this exercise?” a multitude of other ways of approaching the content can be considered.**

**In many ways, Universal Design (UD) instruction already includes aspects of UDL, though there also are areas of divergence in which instructors of UD could benefit from the concepts introduced by UDL. Through its genesis within the field of architecture, Universal Design is often presented to students in the context of a design studio. According to Afacan, “it is important to introduce big ideas and focus on complex concepts, such as universal design, within the challenge of design studios.” (2011) This is an instructional environment that inherently encourages students to learn-by-doing under the guidance of an instructor who provides support, expertise, course-correction, and encourages refinement of the students’ work. “The studio... remains a place where art and craft are blended in a process of intuition and reflection. It is a place that, to a large degree, has not embraced scientific and systematic thinking.” (Green & Bonollo, 2003)**

**In their 2002 work entitled *Teaching Every Student in the Digital Age*, David Rose and Anne Meyer outline the neuroscience and implications for instructors in the field of Universal Design for**

**Learning. The organization of this article will reflect the recommendations presented within this text.**

## **1. The curriculum should support multiple means of representation**

**The recognition networks of the brain are responsible for our ability to identify and interpret patterns received by our senses. They also allow us to recognize faces, voices, words, cadence, intonation, and abstract concepts like justice. (Rose & Meyer, 2002) It is through recognition networks that we are able to apply background knowledge to unique circumstances and incomplete or distorted information to gain understanding.**

**There are significantly diverse ways through which individuals are able to process sensory information and which types of sensory input are more easily decoded. For example, while some learners benefit from a heightened aptitude for letter and word combinations, others may be strongest in spatial concepts.**

**To reach all learners regardless of aptitude, CAST provides recommendations regarding the way information is presented.**

***a. Instructors should provide multiple examples of a concept or topic:***

***Students learning Universal Design concepts are routinely provided with existing precedents, case studies, and examples of both successful implementations of Universal Design as well as unsuccessful design concepts from a UD standpoint. This concept of referencing what has been done in the built environment and offering critique is part of the most***

***fundamental instruction of a designer and helps the novice designer to develop a critical eye and hone their own professional voice.***

***b. Instructors should highlight critical features:***

***Since the publication of the Principles of Universal Design in 1997 by The Center for Universal Design, the critical features that a successful UD space or product should include have been routinely included in the presentation of how students can accomplish a successful universal design. Often these concepts are presented alongside the laws and codes that govern the minimum requirements for accessibility. The clarity provided by the seven succinct Principles encourage a greater grasp of Universal Design concepts.***

***c. Instructors should provide multiple media and formats:***

***The instruction of architecture is inherently an interdisciplinary study. Students are routinely presented with information from a variety of sources, including art, business, music, anthropology, material science, physics, etc. Each of these fields has a nomenclature and shorthand that must be decoded in order to obtain a thorough grasp of the concepts presented. Use of multiple media is helpful in the encouragement of students to expand their knowledge and embrace ideas outside their chosen fields of study.***

***Additionally, design studio instructors are challenged with conveying spatial concepts in a displaced environment. While***

*images and videos can approximate the communication of spatial complexities, they are poor substitutes to the experience of inhabiting a space. Contemporary innovations such as virtual reality and augmented reality are beginning to bridge this gap in communication. Further innovation in technology will likely become an integral component of the Universal Design learner.*

***d. Instructors should support background knowledge:***

*Appealing to the experiences of students while learning Universal Design concepts is an important tool and provides students a launch pad from which to imagine the experiences of those who perceive their environment differently than they do. Providing additional resources to students for self-study of unfamiliar terminology or concepts is another critical way instructors can support Universal Design learners.*

**2. The curriculum should support multiple means of action and expression**

The strategic networks of the brain are responsible for planning, execution, sequencing, preparation, and movement. Regardless of the relative simplicity or complexity of the task being undertaken, the strategic networks formulate a process that is most likely to result in a positive outcome. The strategic networks also are responsible for self-monitoring the results to determine whether there was, in fact, a successful result.

Learners are not equally strong in all areas of strategy. While a student may excel in preparing for a task, they may stumble while

attempting to execute a plan. Another student may have difficulty monitoring their progress or evaluating their degree of success or finding a more efficient method of study. All of these are due to differences in the learner's strategic network and represent differences in the way students solve problems.

Design studio education is problem-based. Students are typically provided with a set of requirements and a functional result that is desired and are given some latitude in how they achieve the stated goals. To reach all learners regardless of strategic ability, CAST provides recommendations regarding the way information is presented.

***a. Instructors should provide flexible models of skilled performance:***

*Instructors who provide demonstrations for solving a particular problem or provide the voice of experience while drawing from similar circumstances in their own life are already familiar with the application of this concept to a design studio environment. Through experience, instructors may provide recommendations to students for how to begin, things to keep in mind, common pitfalls students experience, etc. Faculty will sometimes present students with work that has been successfully accomplished in the past - both by professionals and by other students.*

***b. Instructors should provide practice with supports:***

*When first introduced to Universal Design concepts, students may find it challenging to understand how the ideas can be applied to their own work. One of the goals of instructing*

***Universal Design is to train designers to expand their definition of the people for whom they are designing to include the widest possible group. Getting to the point that this is a prerequisite in their design work requires time, practice, and effort.***

***Design studio instruction is built on the notion that students must iterate and that the process of design is often as valuable as the final product. Indeed, while the studio is a problem-based learning opportunity, it is often one in search of an unattainable "perfect" solution. (Green & Bonollo, 2003) Students are trained to continue refining their ideas and solutions in search of new ideas and solutions.***

***This is one of the areas in which the design studio environment is particularly well suited to the concepts of UDL. While other programs of study struggle with the idea of giving students permission to fail, this continual-revision process is a fundamental part of the design studio.***

***c. Instructors should provide ongoing feedback:***

***Another area in which design studios excel is in providing students with continuous feedback. Instructors will typically allot significant class time to reviewing student work in an effort to provide new insights or perspectives that may not have been considered. This is particularly true during the instruction of Universal Design principles, as students are required to consider a lived experience that is foreign to their own, perhaps for the first time. In these instances, it is the***

*instructor's role to offer points of view that the student may not have yet considered in an effort to further refine the work.*

***d. Instructors should offer multiple tools for skill expression:***

*Universal Design education has a variety of tools at its disposal for the introduction and reinforcement of student work. Design instructors typically require that students explore a wide variety of media to allow them latitude in which to explore their design ideas. Sketches, photographs, models, drawings, written analysis, video, etc. - all of these are tools routinely used in the instruction of Universal Design and through which students find a level of comfort to best fit their mode of expression.*

**3. The curriculum should support multiple means of engagement**

The affective networks of the brain are responsible for motivation, persistence, and our emotional state. Affective networks attach emotional significance to what we see and do. The ways in which students approach the understanding of external stimuli is, in part, a result of their internal emotional state at the time. (Rose & Meyer, 2002)

The variation of emotional state and degree of engagement to coursework can be highly variable. Indeed given the same stimulus, every person does not experience the same emotional response. Additionally, students exhibit a preference to certain modes of

engagement, from body position to surroundings to degree of independence within the curriculum.

To reach all learners by encouraging emotional engagement, CAST provides recommendations regarding the way information is presented.

***a. Instructors should offer choice of content and tools:***

*Linking instructional outcomes to background knowledge in which a student is already interested can be an effective method of achieving student engagement. In the context of Universal Design instruction this could include a role-playing scenario in which students are compelled to imagine various types of users navigating a space.*

*Of particular note in this area is the role that technology can play in increasing student engagement. Students of higher education today are increasingly 'digital natives' and can be challenged to engage in discussions and research through the use of online tools and networks already familiar to them.*

***b. Instructors should provide adjustable levels of challenge:***

*In a higher education design studio context, adjustability in the challenge level of Universal Design education is primarily transferred to the students. In a traditional design studio, students are provided with the minimum requirements for a project and are expected to work toward that goal. Some students struggle to meet these requirements while others*

***seek out additional sources of inspiration or complexity. In this way, students take the opportunity to customize the project to fit their own interests even while raising the bar of expectation for themselves. So while there is rarely an opportunity to adjust the level of challenge in a higher education context, students can be encouraged to seek out a level of challenge appropriate to their aptitude.***

***c. Instructors should offer a choice of rewards for learning:***

***While external rewards are inappropriate, even counter-productive in certain circumstances, faculty teaching Universal Design do generally provide grades to students for their work. It is useful to consider the intrinsic reward system that also typically plays out within a studio context, such as the words of praise or congratulation from instructor and peers for a notably innovative or creative solution. It may even be meaningful for students to collect certain achievements or certificates over the course of a project in order to keep their engagement level high.***

***d. Instructors should offer a choice of learning context:***

***As mentioned previously, body position, lighting, ambient noise, degree of structure all play a role in the engagement level of a student. While there are certainly times during which headphones and dim lighting would be inappropriate in a learning environment, there are also are times during independent studio work during which students may benefit from some flexibility in these matters. What is distracting to***

*one person may be just right to block out the world to another, and the degree to which instructors can accommodate this variability in context, the more engagement they are likely to see as a result.*

## **Conclusion**

**In a sense, Universal Design for Learning expands the promise of Universal Design by extending the concept of “Design for All” beyond the physical environment, adapting the curriculum to the student rather than the student to the curriculum. It seems fitting, therefore, to return to the instruction of Universal Design to explore the fitness to principles of UDL. While there is certainly room for improvement, there also are substantial areas of overlap between the principles of UDL and the current instructional practice of design studio based UD instruction.**

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# **Changing workplace models pressure diverse workers**

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**The last decade heralded change in the workplace as the age cohort called Baby Boomers began to retire and younger generations moved up or moved in. Originally focused on differences with regard to work styles and values, the movement between generations has combined with other trends resulting in workplaces that can both engage and alienate workers with a diverse range of functioning. Workplace design experts such as Gensler and Herman Miller identify a variety of influencing trends: development trends to attract new (e.g., young) employees, economic constraints reducing spatial allocations per employee, collaboration between employees and with clients, and efforts to make the workplace feel more homelike.**

**Development is increasingly focused on the conversion of existing, quirky building stock and new, mixed-use projects to attract younger workers. Both strategies utilize dense urban areas near amenities, public transit, and typically more walkable communities supporting a more diverse workforce. While the allure of manufacturing facilities and warehouses create interesting spaces with history, large volumes result in a variety of challenges for occupants. White noise from mechanical systems used as an**

**antidote to poor acoustics impacts individuals with even mild hearing loss. Poorly controlled day lighting results in glare and poor visual conditions for many users. In mixed-use developments, movement through space is increasingly interrupted through the use of offset cores. These interruptions create opportunity for social encounters while emphasis on interaction and health has brought grand stairs to the forefront. This de-emphasis of elevators has pushed them to the fringe of spaces thereby isolating their users.**

**Individual workstations are also decreasing in size. Economic pressures continue to reduce space allocations for employees in both open and closed workspaces. One study by Gensler suggests that workstations will have shrunk from 225 square feet per person in 2010 to 100 square feet per person by 2017. Some space has shifted from individual workstations to collaborative spaces. Nonetheless, the constraints of circulation and access to amenities faced by users can significantly reduce inclusion. Benching systems, long desks with little division between workers, are space efficient but often result in poor acoustical conditions.**

**Workplace collaboration is not new though its prevalence today has significant implications for diverse workers and, increasingly, collaboration occurs between employees and their clients. This workspace type can be located adjacent to individual work areas but may also be located in more remote areas of the office and require some travel. For an employee using an assistive device, alternate meeting locations may require additional preparation and even a loss of critical aids. Because these spaces may be combined with dining areas, in circulation areas, or out-of-doors, acoustics may be compromised. Additionally, collaborative spaces are intended to contrast with traditional workstations and frequently feature raised**

**or lowered areas with steps, nontraditional openings and approaches (e.g., tree house concept or high-tech cave), and especially restrictive footprints with little or no circulation.**

**Efforts to attract and retain younger employees has resulted in stylistic trends blurring work and home. Collaboration areas often feature low upholstered furnishings, novelty items such as bean bag chairs, shaggy rugs, and floor lamps. Picnic tables, bars, and game tables are the places where interaction is both social and professional and not always inclusive. Other trends include finish palettes that are homogeneous and lack little variation in value or texture. Combined with excessive day lighting, spaces may have little contrast and distinguishing edges of surfaces or changes between horizontal and vertical planes can produces visually confusing spaces. Super graphics on walls and floors or over scaled patterns that move across multiple surfaces can be problematic. High gloss materials and frameless glazing also create disorienting views.**

**Social interaction, collaboration, and economic constraints are real constraints in workplace design though one must wonder at whose cost? Despite significant increases in the number of people over the age of 65 continuing to work and efforts to create a diverse workforce, the emphasis on recruiting and retaining younger employees has transformed the physical workplace in a potentially alienating manner. The desire to create spaces that resonate with employees, clients, and stakeholders must be balanced with the needs of all human beings. Good design is not a space devoid of**

**innovation or interest, but also provides for optimal participation and performance.**



***Jennifer Webb, Ph.D. is Associate Professor***



***Kavita Murugkar, M.A. is Associate Professor of Architecture at the Dr B N college of Architecture in Pune, India. Professor Murugkar has founded a Research and Training Centre for Universal Design at BNCA for promoting people- centric and inclusive design education and practice. She is the first architect recipient of the AVISHKAR AWARD for best research project at the State level Inter-university research competition in 2012. She has also received the NCPEDP-MPHASIS UNIVERSAL DESIGN AWARD 2014, for the work done to promote accessibility and Universal Design in the built environment. In 2014, she was honored by the Indian Institute of Architects, Pune Centre and the Maharashtra Association of Schools of Architecture with the Best Teacher's Award 2014 for her outstanding contribution to architectural education. Currently, she is studying for her doctoral degree under the guidance of Professor Abir Mullick.***



***Professor Abir Mullick is the Provost and Vice Chancellor of Navrachana University in Baroda, India. Professor Mullick is an educator and administrator; he is the former Director of the Industrial Design Program in Georgia Institute of Technology and he has taught architecture at the University at Buffalo and Industrial Design in Purdue University, West Lafayette. A scholar, researcher and designer, he holds many patents and his work has won several international design awards. Professor Mullick is a strong proponent of universal design and is one of the authors of the Seven Principles of Universal Design. Professor Mullick has published extensively in design, architecture, planning, rehabilitation and human factors journals and his work has appeared in reputable publications like the Wall Street Journal, Popular Science and Business Week (India). He is a recipient of Fulbright-Nehru Award and has served as a scholar-in-residence at the National Institute of Design in India. During that time, he served as an Endowed Chair, Jamshedji Tata Research Initiative for Universal Design. He has contributed over 100 articles in peer-reviewed publications and serves as a reviewer for major publications. He is on the editorial boards of international journals, advises on international conferences, and reviews grants for national and international organizations.***

# Comprehension of shapes and tactual depth in different age groups having vision loss: A comparative study

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***Abstract.*** *That visually impaired people lack the ability to comprehend the morphology of the physical environment and its spatial characteristics is a general assumption in the world of sighted people. This study builds on the previous attempt to reassess the contention that vision limits comprehension of form. It is a part of a research that examines the relationship between vision loss, learning ability and comprehension of form vocabulary. It examines the comprehension of different shape categories by visually impaired people and explores the role of tactual depth perception for the same. The findings from the previous study (Murugkar & Mullick, 2014) conducted with two populations (elderly and youth) suggested that visually impaired people prefer textual information in relief rather than in recess and that circular shapes are easier to comprehend over angular shapes. This paper compares the inferences from the previous study with that drawn from a similar study conducted with a third type of*

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*population (children). The results confirm the findings from the previous study and also point out the influence of age of non-sighted people over their ability to comprehend form vocabulary.*

***Keywords.*** *Vision impairment, sense of touch, tactual shape comprehension*

## **Introduction**

**People with vision impairments are almost invisible in the public realm of life as very little attention has been given to their needs and abilities in the course of design and development of the physical environment. It is assumed that lack of vision in visually impaired people limits their comprehension of the spatial characteristics of the physical environment, thus overlooking the role and potential of their other sensory abilities in the process. As such, the development of physical environment has taken place with a clear bias towards the need for vision and visual perception for successful comprehension and navigation through the space. Contrary to this viewpoint, researchers like Juhanni Pallasmaa (2005) believe that instead of mere vision, several realms of sensory experience interact and fuse into each other while perceiving the physical environment. In fact, it is the collaborative mechanism of all the sensorial systems in our body that enable us to comprehend the world (Gibson, 1962/1966). As per the 'difference' theory, visually impaired individuals are functionally equivalent to those with sight due to abilities resulting from sight loss (Andrews, 1983; Fletcher, 1980). Does this mean that other sensory abilities in visually impaired people compensate for the vision loss and help develop coping**

**mechanisms needed to achieve effective comprehension of the physical world? How effective is touch-perception of people with visual impairment for comprehension of form and its spatial characteristics like shape and depth? This study draws its objectives from these fundamental questions and seeks answers through an empirical study that examines the cognition and perception of form vocabulary by visually impaired people.**

**This study is a part of the research that aims to reassess the contention that vision limits comprehension of form and examines the relationship between vision loss, learning ability and comprehension of form vocabulary. It builds on the previous exercise that explored the role of tactual depth perception in shape comprehension, examined how different shapes are understood, and how form vocabulary and shape characteristics influence levels of comprehension by visually impaired people. It investigated the relationship and effect of age of visually impaired people on their performance and ability to comprehend form using touch. The study adds to the existing knowledge about spatial abilities of visually impaired people.**

**Such a study is relevant to Indian conditions as almost 2.1% of the total population in the country are people with permanent disabilities out of which 48.54% are people with vision impairment; that is almost half of the total disabled population (Census 2001). Moreover, visually impaired people in India live a dependent life within the family, leaving very little room for them to perform on their own, live independently, or make visual judgements for themselves. A developed understanding of the spatial abilities and needs of the visually impaired can help to design better and more functional physical environments from their point of view.**

## **1. Role of 'TOUCH' in form comprehension and past research**

**The sense of touch is supreme, and all senses are regarded as specializations of the skin and extensions of the sense of touch (Pallasmaa, 2005). Based on body movement, Morton Heller (2000) distinguishes three ways of touching - active, passive and dynamic touch (Carello and Turvey's (1996). Haptics enable a person to 'deduce' the shape of an object using touch by going beyond perceptual experience (D'Ánguilli 2002). Past researchers suggest that the sense of touch is best suitable for comprehending three-dimensional objects and their surface qualities (Revesz,1950; Kennedy, 1993). There have been studies on how blind and sighted participants identify raised line drawings and tactile information (D'Ánguilli, Kennedy and Heller 1998; Kennedy & Bai, 2002). Few studies have compared haptic communication with visual identification of raised forms, two- and three-dimensional unfamiliar shapes (Bryant & Raz, 1975; Cashdan, 1968; Rock & Victor, 1964). These studies demonstrate that either touch is ineffective for reading, comprehension and shape identification or that touch is so dependent on vision that pattern perception and understanding of shapes are minimal. Whereas, a study based on haptic identification of hand-sized real objects showed that touch can help identify very common forms with considerable competence (Klatzky, Lederman & Metzger, 1985). There does not appear to be a study in the past that involved Indian people with visual impairments and hence little is known about their performance. More research is required to bring greater understanding of form comprehension by visually impaired people. The current study informs about the abilities of different age**

groups of visually impaired people from India for comprehension of three-dimensional representational shapes of different kinds. It also examines the effects of tactual depth on the speed and accuracy of form comprehension across the different age groups.

## **2. Research questions, the study and methodology**

The study was designed to examine the following research questions: Can people with visual impairments comprehend shapes through touch? How accurate is touch perception for shape recognition? What texture – relief or recess – is best suited for shape recognition through touch? What shape type is easier to comprehend through touch – geometric or natural shape?

The study was conducted in two parts, the first with two population: the elderly and youth (Murugkar & Mullick, 2014); and the second (that is discussed here) with a third group: children. For all the groups, the study consisted of four stages as listed below, through which participants were asked to comprehend:

- 1. Basic geometrical shapes in recess and relief***
- 2. Moderately complex geometric shapes in relief and recess***
- 3. Very complex geometrical shapes in relief and recess***
- 4. Shapes of familiar or known objects***

Two methods were used to collect data in order to understand the participant's problems and preferences, namely:

- 1. Participant performance observed and recorded using still photographs and videos***
- 2. Open ended interview with participants.***

The first study involved two groups of ten visually impaired participants each, youth (age 17-30 years) and the elderly (age 50 to 70 years). The second study involved a group of ten visually impaired children (age 10-15 years). All three groups consisted of both totally blind and partially sighted participants. Three different age groups and two vision impairment types were chosen to determine the role of age and vision on performance and shape perception. The study was conducted for the first and third group at their blind homes and for the second group at their place of study and work place, all in Pune, India.

## **2.1 Stimuli and Apparatus**

For Stage 1, tactile boards depicting three *simple shapes- the circle, triangle and square* were made using thermocol and mountboard, with three different depths for each in relief as well as in recess, making a total of 18. The maximum relief/recess chosen was 20 mm and minimum 2 mm. For Stage 2, five samples of *moderately complex shapes* - oval, semicircle, parallelogram, hexagon and octagon were developed. For Stage 3, two samples of *very complex shapes* - *cross / plus and star / stellate shape* were given for shape identification, for which a plastic tactile board with 10 mm deep cut outs of the shapes and their respective three-dimensional plastic shapes were used. For Stage 4, cut outs of *familiar fruit shapes* along with *three-dimensional fruit shapes like apples, bananas and mangos*, 4 mm deep made in wooden tactile board, were chosen.

## **2.2 Procedure**

For all stages, participants were invited for the study, given an explanation about the process, encouraged to ask questions, and given the option to decline. All participants were taken through each

stage one by one, and were asked to identify the given shapes on tactile boards through active touch. No practice session was conducted before, and the time taken for identifying and naming was recorded for each participant. Participants were given category-related information or prompted wherever required, and the assistance offered was recorded. To avoid patterning, no set sequence was followed for showing the shapes at every stage.

After the identification and observation round, questions like the following were asked:

- *Which shape was easiest to comprehend?*
- *Which one was most difficult to comprehend?*
- *What made it easy to comprehend?*
- *What makes comprehension difficult?*



**Figure 1. Photographic recording of participants comprehending shapes through touch during the first part of the study with the elderly and youth group**



*Figure 2. Photographic recording of participants comprehending shapes through touch during the second part of the study with the children group*

### **3. Salient findings from the previous study**

The results of the first study conducted with the elderly and youth groups suggested that visually impaired people identify simple geometric shapes as accurately and fast as the sighted people, and that both employ similar methods to identify shapes through counting number of sides, alignment, and variation. The results also showed that shapes can be understood in variety of ways and that totally/partially blind people can successfully comprehend complex shapes through prompting of information categories and guided exploration.

The most significant finding was that visually impaired people prefer tactual information in relief rather than in recess. Also, circular shapes are easier to comprehend over angular shapes by visually impaired people. According to the interviews, more depth in tactile models help with touch perception. All the above inferences needed to be tested with other groups of visually impaired people to

**confirm the results from the previous study and hence they were re-examined with a third group of visually impaired people: children.**

#### **4. Findings from the present study and their comparison with the previous study**

##### **4.1 By Observation (Refer Table 1, 2, 3)**

**Like the previous study, all participants attempted to identify given shapes using touch irrespective of their vision level - partial vision or not. Similarly, no significant pattern for identifying shapes in relief versus shapes in recess across varying depths was observed. Almost all participants across all the groups could identify the simple geometric shapes correctly and within 3-5 seconds for both relief and recess. Most participants from all the groups identified the moderately complex shapes correctly without being prompted though they took more time than they needed to identify simple shapes – ranging from 5 to 20 seconds. Participants from the second group (age 50-70 years) required more time for identifying all shapes in comparison to the younger groups. Almost all participants from the first study with total blindness could not comprehend the very complex shapes – plus and star, while some partially blind participants were successful at describing the same shapes. While the second and present study, conducted with the children, showed results otherwise. Almost all children could identify the very complex shapes mentioned above without much prompting and in much less time (less than 20 seconds). Also, most participants from the previous study could not state the common names for the moderate and very complex shapes they were identifying; rather they described the shapes to explain them and associated the shapes with objects in their daily living. Those who identified took**

almost 2-3 minutes to identify the shapes with some known object, For example, the star shape was identified as a flower. However, the children in the present study identified the shapes with their common names. In spite of the information category (i.e., fruit family), only 50% of the participants in the first study could identify the shapes correctly, and they needed additional time and prompting. However, in the second and present study, most of the participant children could identify the fruit shapes correctly and in less time. All participants across both the studies used their fingers and finger tips to move around the object outline to identify shape; most of them counted sides to identify complex shapes. They could differentiate between a relief and recess and also change in depths without much difficulty. They could identify material variations in the tactile boards.

**Table 1. Comprehension accuracy and speed recording by observation for simple shapes**

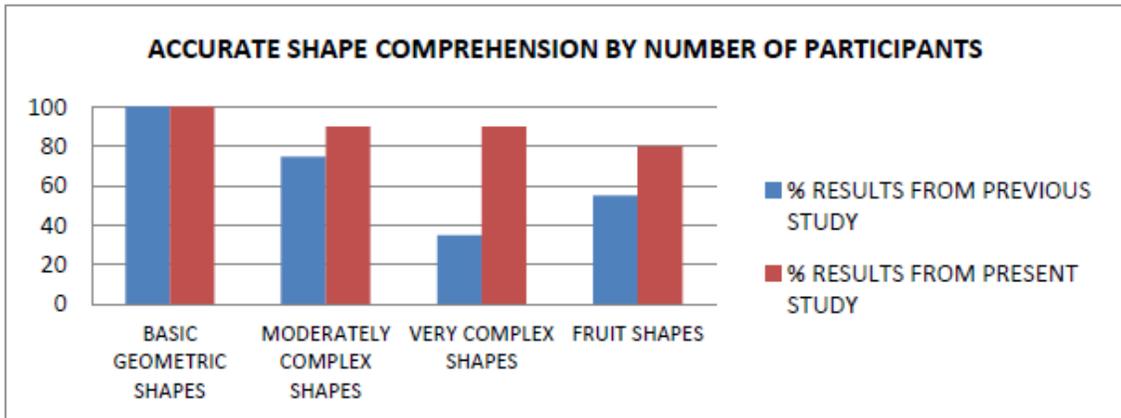
PR NO	TYPE OF VISION IMPAIRMENT	LITERACY (grade)	AGE	COMPREHENSION OF PRIMARY SHAPES IN RELIEF		COMPREHENSION OF PRIMARY SHAPES IN RECESS		COMPREHENSION WITH	
				LESS THAN 5 SECS	MORE THAN 5 SECS	LESS THAN 5 SECS	MORE THAN 5 SECS	CONVENTIONAL TERM	PROMPTING
1	PARTIALLY SIGHTED	4TH	11	●		●		●	NO
2	NO SIGHT	5TH	15	●		●		●	NO
3	PARTIALLY SIGHTED	5TH	15	●		●		●	NO
4	PARTIALLY SIGHTED	7TH	14	●		●		●	NO
5	PARTIALLY SIGHTED	5TH	13	●		●		●	NO
6	NO SIGHT	6TH	11	●		●		●	NO
7	NO SIGHT	6TH	10	●		●		●	NO
8	NO SIGHT	4TH	14	●		●		●	NO
9	NO SIGHT	4TH	14	●		●		●	NO
10	NO SIGHT	7TH	13	●		●		●	NO

**Table 2. Comprehension accuracy and speed recording by observation for moderately complex and very complex shapes**

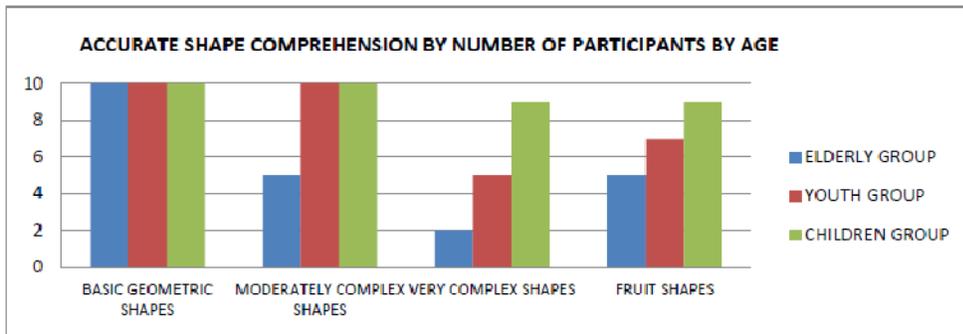
PR NO	TYPE OF VISION IMPAIRMENT	LITERACY (grade)	AGE	COMPREHENSION OF MODERATELY COMPLEX SHAPES		COMPREHENSION OF VERY COMPLEX SHAPES		COMPREHENSION WITH		
				LESS THAN 10 SECS	MORE THAN 10 SECS	LESS THAN 20 SECS	MORE THAN 20 SECS	CONVENTIONAL TERM	DESCRIPTION / ASSOCIATION	PROMPTING
1	PARTIALLY SIGHTED	4 <sup>TH</sup>	11	●		●			●	NO
2	NO SIGHT	5 <sup>TH</sup>	15	●		●		●		NO
3	PARTIALLY SIGHTED	5 <sup>TH</sup>	15	●		●		●		NO
4	PARTIALLY SIGHTED	7 <sup>TH</sup>	14	●		●		●	●	YES
5	PARTIALLY SIGHTED	5 <sup>TH</sup>	13	●		●		●		NO
6	NO SIGHT	6 <sup>TH</sup>	11							YES
7	NO SIGHT	6 <sup>TH</sup>	10	●		●		●	●	YES
8	NO SIGHT	4 <sup>TH</sup>	14		●		●	●	●	YES
9	NO SIGHT	4 <sup>TH</sup>	14		●		●	●	●	YES
10	NO SIGHT	7 <sup>TH</sup>	13	●		●		●		YES

**Table 3. Comprehension accuracy and speed recording by observation for fruit shapes**

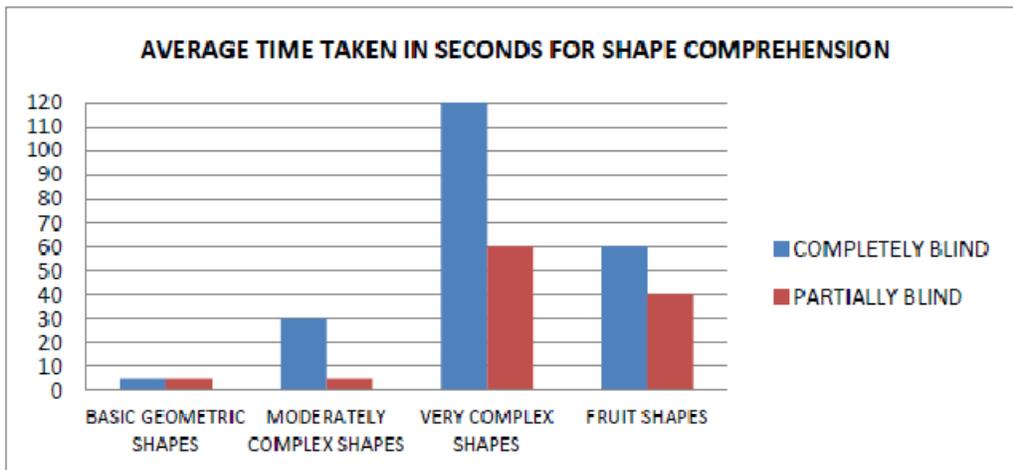
PR NO	TYPE OF VISION IMPAIRMENT	LITERACY (grade)	AGE	FRUIT SHAPES		COMPREHENSION WITH		
				LESS THAN 10 SECS	MORE THAN 10 SECS	CONVENTIONAL TERM	DESCRIPTION/ ASSOCIATION	PROMPTING
1	PARTIALLY SIGHTED	4 <sup>TH</sup>	11		●	●		NO
2	NO SIGHT	5 <sup>TH</sup>	15	●		●		NO
3	PARTIALLY SIGHTED	5 <sup>TH</sup>	15	●		●		NO
4	PARTIALLY SIGHTED	7 <sup>TH</sup>	14	●		●		NO
5	PARTIALLY SIGHTED	5 <sup>TH</sup>	13	●		●		NO
6	NO SIGHT	6 <sup>TH</sup>	11		●	●		YES
7	NO SIGHT	6 <sup>TH</sup>	10	●		●		YES
8	NO SIGHT	4 <sup>TH</sup>	14		●	●		YES
9	NO SIGHT	4 <sup>TH</sup>	14		●	●		YES
10	NO SIGHT	7 <sup>TH</sup>	13		●	●		YES



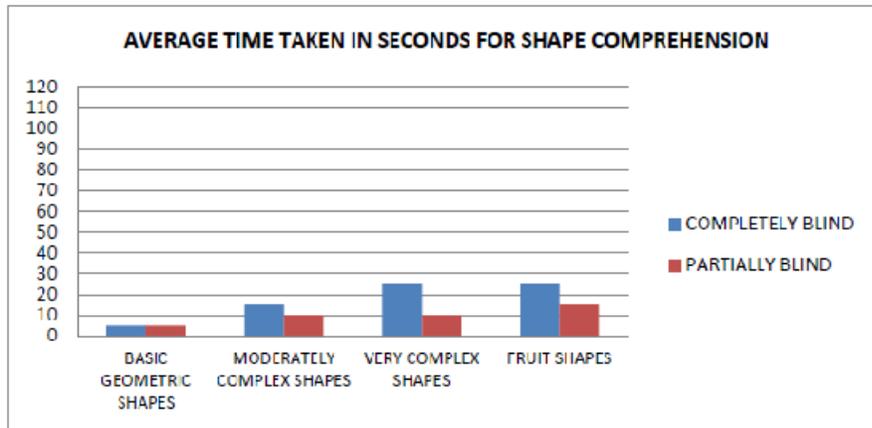
**Figure 3. Successful comprehension of given shapes by number of participants**



**Figure 4. Rate of comprehension of given shapes by number of participants as per age**



**Figure 5. Comprehension speed of given shapes by participants in previous study**



**Figure 6. Comprehension speed of given shapes by participants in the present study**

## 4.2 By Interview

Almost all participants in the previous study had no experience in the past with tactile boards used for the study, whereas most of the children in the present study had been exposed to tactile boards in their schools. Across both the studies, all participants felt that shapes with maximum depth were easier to comprehend than shapes in recess, though they also mentioned that shapes in recess did not raise their difficulty in comprehension. In terms of shape complexity, the majority of participants across all the groups found that identifying simple shapes is easier than complex and very complex shapes because of the lack of shape knowledge and previous experience with little known shapes. Like the previous study, all participants mentioned that the circular shape was easier to comprehend than angular shapes like the triangle, square, and rectangle; and proportion and shapes with more sides created confusion and comprehension difficulty. For example, a square shape was easily confused with a rectangular shape. Most participants from all the three groups felt that higher accuracy could

be achieved if shape categories were presented before the identification process began to reduce guess work and to streamline cognitive deduction of the shapes.

## **5. Discussion (Refer to Figures 3, 4, 5 and 6)**

Both studies, the previous and present, across all the three age groups – the elderly, youth and children, confirm each other and underscore the ability of visually impaired people to comprehend shape characteristics while outlining limitations like error, time and need for prompting. This suggests that visual perception is not necessarily an essential requirement for shape comprehension and that shape can be understood through other senses like 'touch'. The importance of haptic exposure to pictorial representations and the practice needed to comprehend new and unknown shapes is highlighted through the poor performance in comprehending complex shapes by the inexperienced participants. The results do not show significant performance difference between partially sighted and totally blind participants, except the former is a little faster in shape comprehension over the latter. The consistent observation throughout the study, also seen through the figures (3, 4, 5 and 6) indicate that younger participants are speedier at comprehending shapes of all kinds through touch: they also are higher in accuracy for identifying complex and very complex shapes. This clearly suggests the relationship between age and the ability of comprehension of form vocabulary. It was also observed that children participated in this experiment in a more playful manner and were more interactive than the other two groups while they were trying to perceive the shapes. It appeared that children were

**more willing to learn and attempt to answer than the other two groups.**

## **6. Conclusion**

**Based on the above discussion, one can conclude that early education and exposure to tactile forms for learning about the environment can make 'Form Comprehension' for the blind as easy and accurate as it is for sighted people. The overall study draws attention to the untapped potential of the 'sense of touch' in creating universally usable products and environments in a number of fields, especially education, product and architectural design, and leisure and tourism. Findings from this study can be used for designing for a wide range of applications ranging from tactile displays, graphics and public signage to educational resources like tactile pictures and boards, for easy comprehension, learning and enhanced experience for visually impaired people.**

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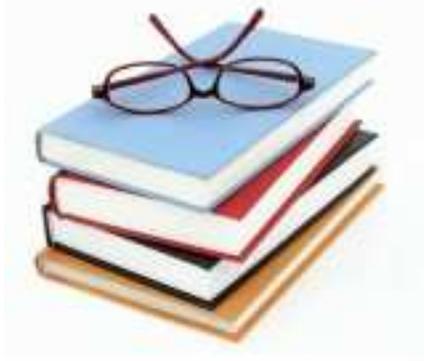
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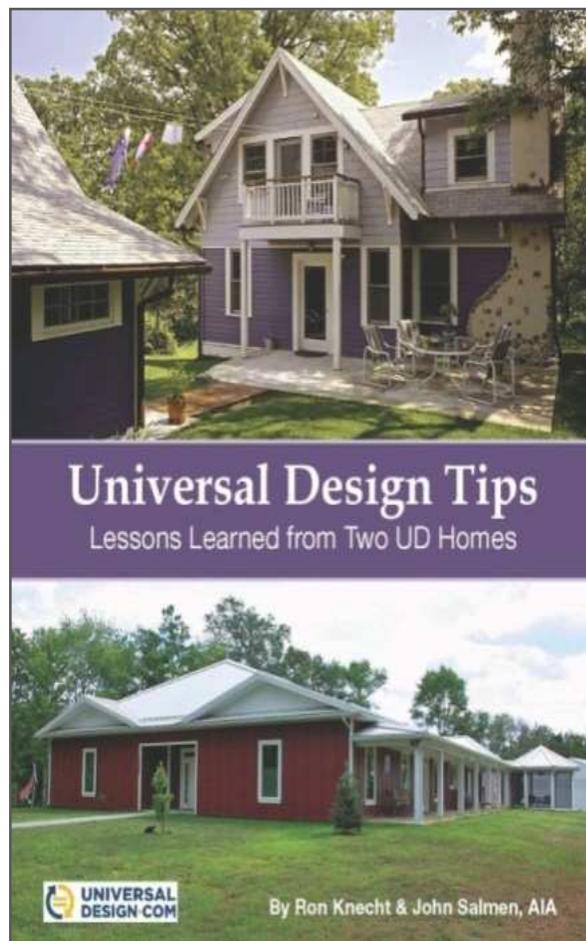


***Professor Abir Mullick is the Provost and Vice Chancellor of Navrachana University , India***



# New Books

## 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*.**

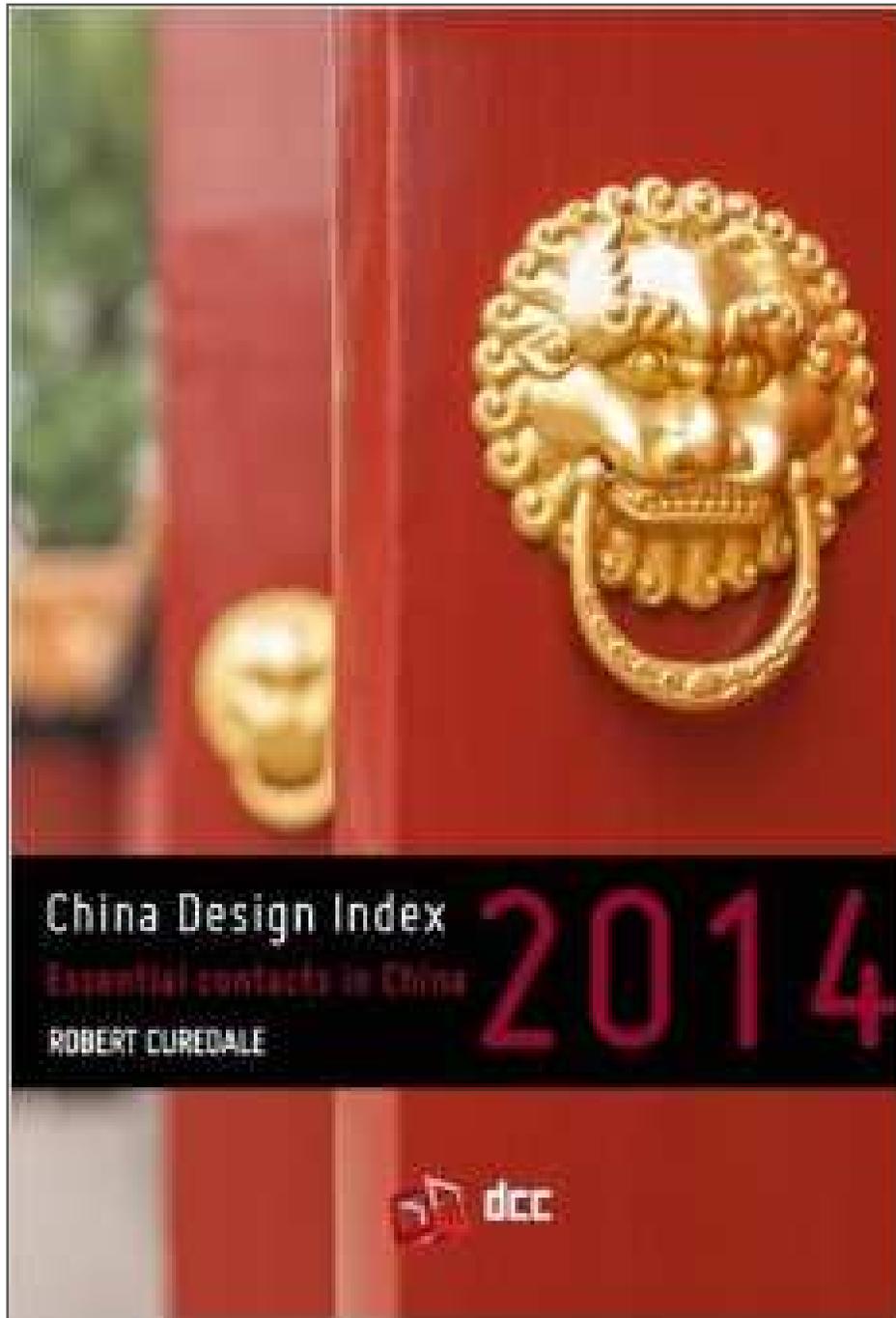
**The first section of the book deals with the planning process, providing insight on how to choose a location for the house, consider activities of daily living during planning, best use various types of design professionals, finalize a floor plan and develop a building schedule.**

**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.**

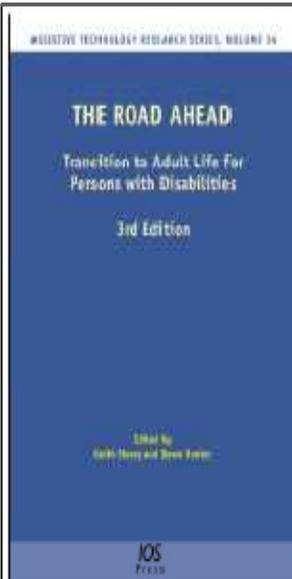
**Ron Knecht's experience with Universal Design started after his wife of 46 years became ill with cancer. As her health worsened, Knecht learned first-hand the importance of accessibility for maintaining independence, safety and one's quality of life. Before Knecht's wife passed away, she extracted 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.**

## China Design Index 2014:



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

# The Road Ahead, Transition to Adult Life for Persons with Disabilities:



## The Road Ahead

Transition to Adult Life for Persons with Disabilities

Volume 34 Assistive Technology Research Series

Editors: Storoy, K., Hunter, D.

December 2013, 318 pp., hardcover (revised 3rd edition)

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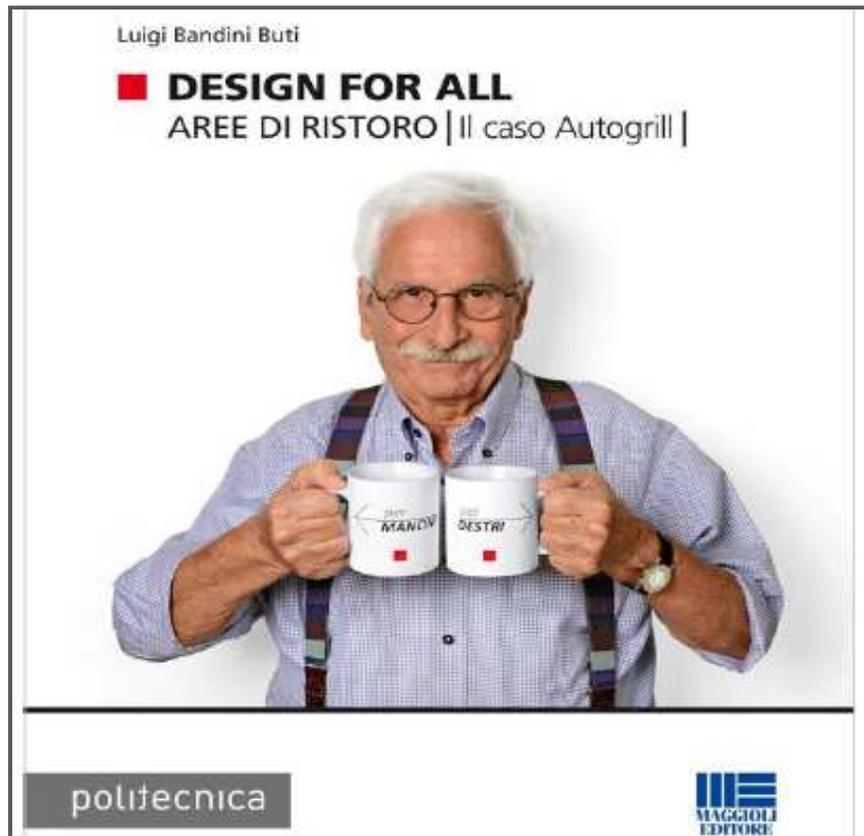
Price: €69 / US\$100 / £59

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."

## Design for All, Aree DiRistoro:



Luigi Bandini Buti

**DESIGN FOR ALL | AREE DI RISTORO | il caso Autogrill |**

Maggioli Editore, 2013

<http://shop.wiki.it/risultatoricerca.aspx?indizioricerca=luigi+bandini+buti>

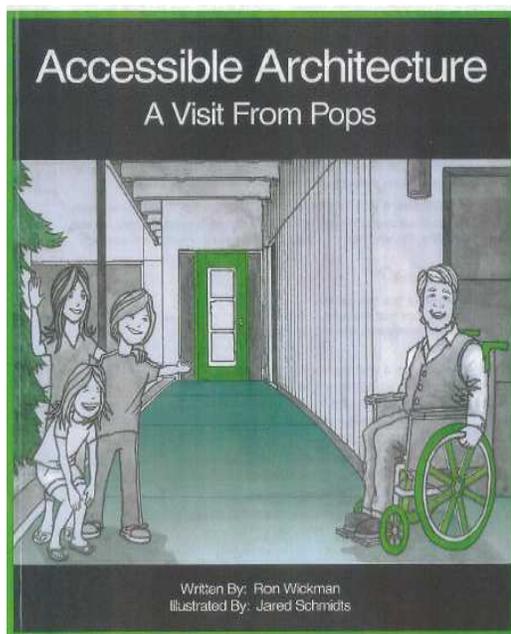
This book has been born following the collaboration with Autogrill that, for its new facilities "Villoresi Est", has developed an innovative, Design for All oriented project. We then realized that the cares foreseen for "all" would not be noted by "the majority".

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.

## .Accessible Architecture, A Visit from Pops:



### **Edmonton Architect publishes - Adult Children's Book—Accessible Architecture: A Visit From Pops.**

Edmonton Architect Ron Wickman launches his first book titled: **Accessible Architecture: A Visit From Pops** at the City Room in City Hall, Tuesday, March 18 at 6 p.m. Ron, son of the late Percy Wickman, MLA Edmonton-Rutherford 1989-2001, is a story written on the focus of Percy and his 3 grandchildren. Ron is best known for his accessible design. His most recent endeavor published by Gemma B. Publishing draws on this knowledge. Edmonton draughtsman Jared Schmidts illustrates with wit and precision the need for a house to be visitable by everyone.

As a child, Ron Wickman learned firsthand about the need for accessibility. His father became paraplegic after being injured by an industrial accident. Ron wheeled his father into many inaccessible places. A longtime Edmonton City Councillor Percy Wickman advocated for people with disabilities throughout his life.

Ron Wickman studied architecture in Edmonton and in Halifax, Nova Scotia, specializing in barrier-free design, designing houses and public spaces that were both beautiful and accessible.

**Accessible Architecture: A Visit From Pops**—is an adult children's book, which demonstrates the three principles for ensuring a house can be visited and enjoyed by everyone equally, including those with a disability. Following Wickman's design and renovation also enables homeowners to age in place.

Visitability principles include

- the front entrance must have no steps;
- all main floor doors must be at least 36" wide
- an accessible washroom must be on the entrance floor.

**Accessible Architecture: A Visit From Pops**, by Ron Wickman, illustrated by Jared Schmidts and edited by Sarah Yates, is published by Gemma B. Publishing, a Winnipeg-based publisher. Gemma B. Publishing creates heroes and heroines living with a disability, in both fiction and non-fiction. The book will be launched at Edmonton City Hall, March 18 at 6 p.m. and available later at Audrey's Books in Edmonton.

Ron Wickman will be available for interviews after the press conference at City Hall. His lecture at the Buildex Conference, Edmonton Expo Centre, Northlands will be held Wednesday, March 19 at 2:30 p.m.

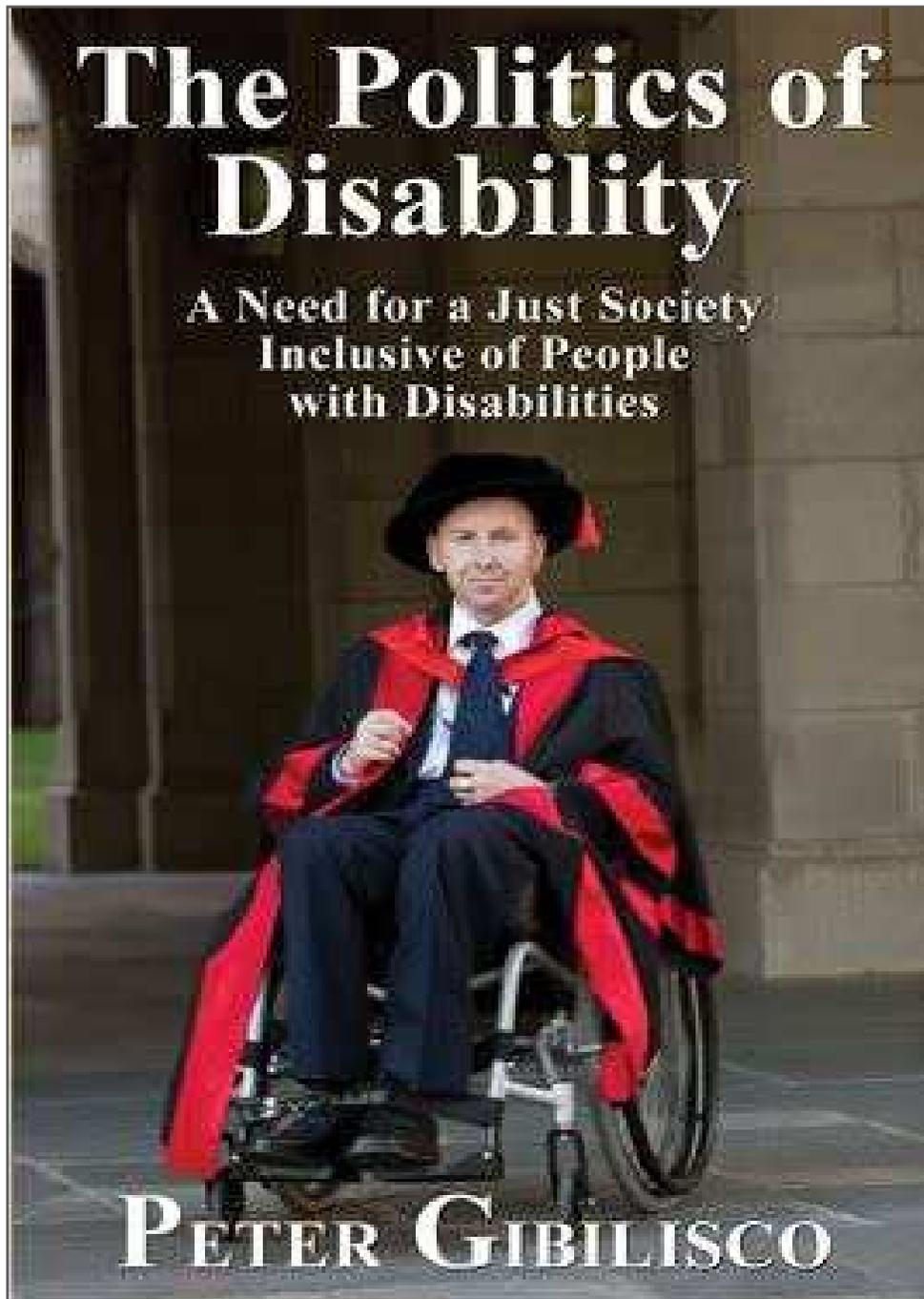
**Accessible Architecture: A Visit From Pops ISBN978-0-991697-0-8** sells for \$20.

- 30 -

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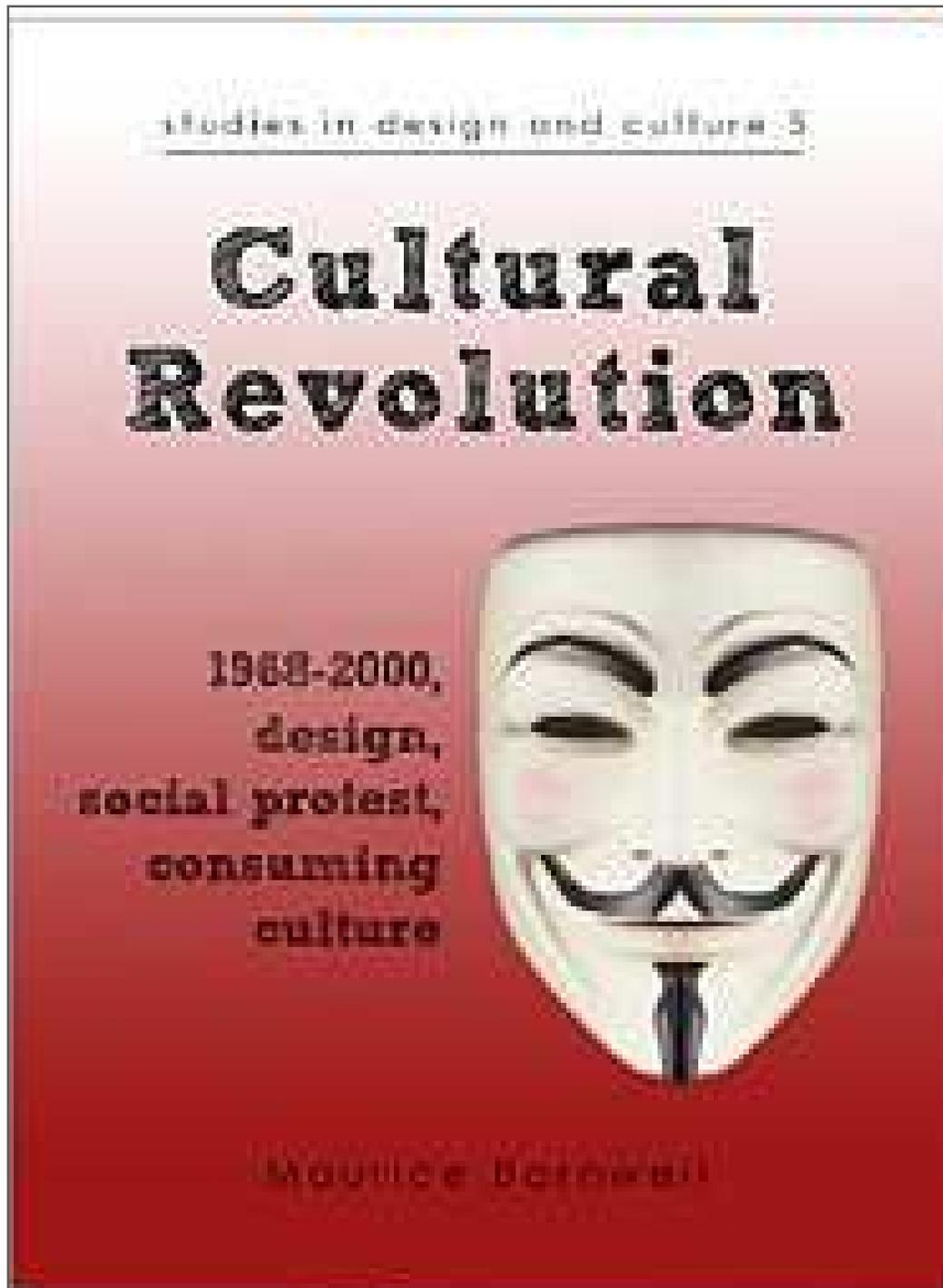
Ron Wickman  
Architect  
780-430-9935  
E-mail: [rwickman@shaw.ca](mailto:rwickman@shaw.ca)

## The Politics of Disability by Peter Gibilisco:



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.

**Cultural Revolution by Maurice Barnwell (Author):**



## Methods, tools, applications. Volume 1–2 (Steffan, 2012):

### **Design for All – the project for everyone. Methods, tools, applications.** Volume 1- 2 (Steffan, 2012)

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 paper tackles problems, methodologies and working tools, benchmarks.

The first volume covers the main areas of research and presents some examples at urban scale; the second volume illustrates examples of architectural design, products, services, university education.

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.

With these books we intend to stimulate debate, in-depth research, specialized studies, so that Design for All can be increasingly known and applied in more and more research and professional areas.



Published in Italian in December 2012 by Maggioli Editore (Santarcangelo di Romagna RN, Italy).

[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=8833](http://ordini.maggioli.it/clienti/product_info.php?products_id=8833) Volume 2

The on-line English version is also available since October 2014:

<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>

*"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.(...)We salute Editor Steffan for her passion, focus and hard work to bring this valuable contribution to fruition."* (Valerie Fletcher)

# Universal Design in Higher Education:

**"Fresh, comprehensive, and engaging, *Universal Design In Higher Education* is expertly written, thoughtfully crafted, and a 'must-add' to your resource collection."**

—STEPHAN J. SMITH, EXECUTIVE DIRECTOR, ASSOCIATION ON HIGHER EDUCATION AND DISABILITY

**Harvard  
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## UNIVERSAL DESIGN IN HIGHER EDUCATION

From Principles to Practice, Second Edition

EDITED BY SHERYL E. BURGSTAHLER • FOREWORD BY MICHAEL K. YOUNG

This second edition of the classic *Universal Design in Higher Education* is a comprehensive, up-to-the-minute guide for creating fully accessible college and university programs. The second edition has been thoroughly revised and expanded, and it addresses major recent changes in universities and colleges, the law, and technology.

As larger numbers of people with disabilities attend postsecondary educational institutions, there have been increased efforts to make the full array of classes, services, and programs accessible to all students. This revised edition provides both a full survey of those measures and practical guidance for schools as they work to turn the goal of universal accessibility into a reality. As such, it makes an indispensable contribution to the growing body of literature on special education and universal design. This book will be of particular value to university and college administrators, and to special education researchers, teachers, and activists.

**SHERYL E. BURGSTAHLER** is an affiliate professor in the College of Education at the University of Washington in Seattle, and founder and director of the university's Disabilities, Opportunities, Internetworking, and Technology (DO-IT) and Access Technology Centers.

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(OFFER EXPIRES 1/8/2016)

**"Sheryl Burgstahler has assembled a great set of chapters and authors on universal design in higher education. It's a must-have book for all universities, as it covers universal design of instruction, physical spaces, student services, technology, and provides examples of best practices."**

—JONATHAN LAZAR, PROFESSOR OF COMPUTER AND INFORMATION SCIENCES, TOWSON UNIVERSITY, AND CO-AUTHOR OF *INSURAN DIGITAL ACCESSIBILITY THROUGH PROCESSES AND POLICY*

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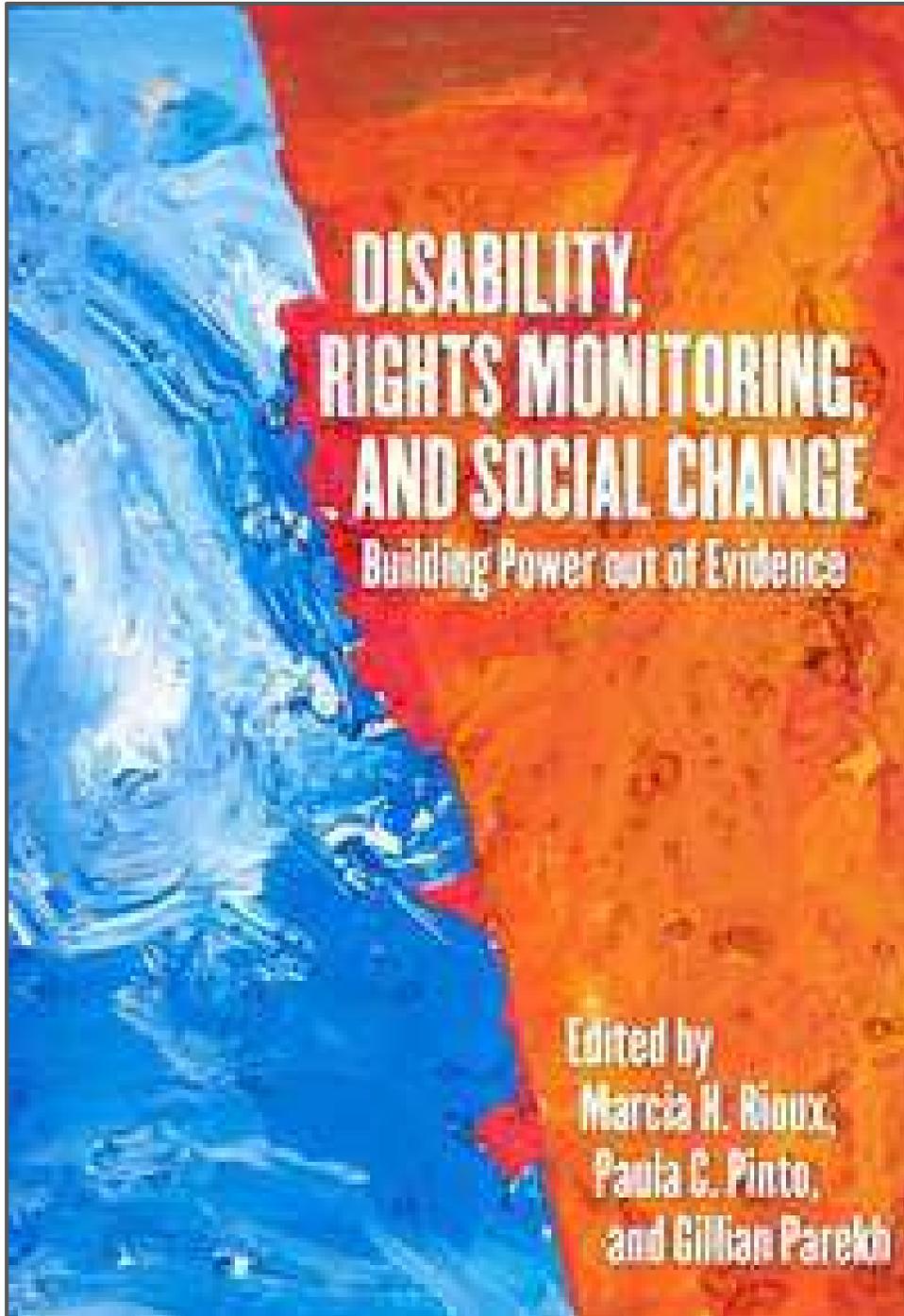
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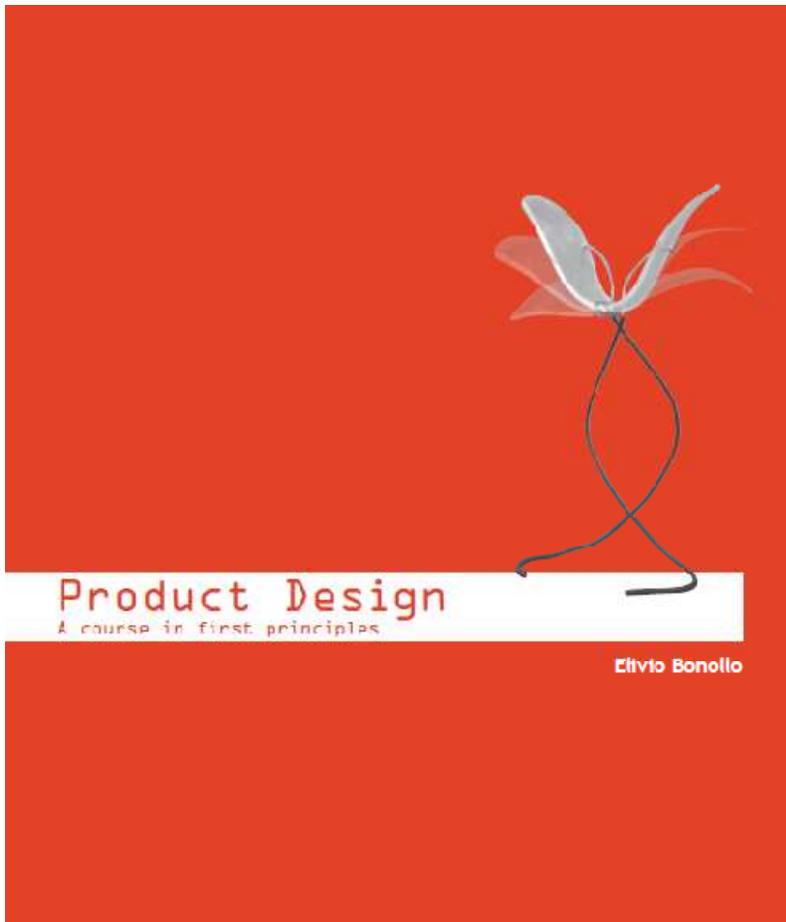
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# Appeals

**Dear 3rd year Bachelors and 1st year Masters students:**

**If you are pursuing Bachelors or Masters degrees in UX design, service design, interaction design, innovation, human centred design or any other related fields,**

**AND**

**are interested in working on a user centred UX design project during summer 2016 (May - July)**

**AND**

**would like to be in Bengaluru, WORK & have fun**

**AND**

**would like to be mentored by seniors UX and Innovation staff**

**Then, this PAID internship may be the right thing for you.**

**You will be working on our client projects out of Srishti Labs studios located in Yelahanka, Bengaluru.**

**Please connect with us at [labs@srishti.ac.in](mailto:labs@srishti.ac.in), with your resume and portfolio AND expected stipend.**

**Details about Srishti Labs is at <http://labs.srishti.ac.in/>**

## **Internship description**

- **Work with multi-disciplinary teams to create desirable, feasible and viable UX.**
- **Gather stakeholder requirements and translating them into design requirements (scenarios and tasks) and mapping the requirements into product / service UI work flows.**
- **Create design solutions that capture business, technology and user requirements.**

- **Create low/high fidelity wireframes (interaction) and detailed designs (visual / graphic).**
- **Create design documents explaining UI specifications and style guides.**
- **Provide input and support for User Research activities. Translate results of user's research findings into the designs.**
- **Conduct user evaluation of suggested UX design.**

## **Requirements**

- **UX Design education from reputed institutes**
- **Ability to create UI prototypes using HTML5, CSS, JS frameworks**
- **Knowledge of mobile and responsive UX design**
- **Design & prototyping tools such as Balsamiq / Axure, Adobe Photoshop, Illustrator**

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# News

1.

## Designing with Dignity exhibition open at Kean University



**Designing with Dignity, a new exhibition celebrating accessible design, opened at Kean University on Thursday, March 31, in conjunction with the 13th annual Thinking Creatively Conference. Pictured, the Prime TC transport chair is featured in a new Kean University exhibit showcasing accessible design. (courtesy photo)**

**Designing with Dignity, a new exhibition celebrating accessible design, opened at Kean University on Thursday, March 31, in conjunction with the 13th annual Thinking Creatively Conference. The exhibition showcases innovative environments and products, created by the award-winning firm Michael Graves Architecture and Design (MGA&D), for those with post traumatic stress disorder (PTSD) and other disabilities.**

**In 2009, MGA&D formed a design partnership with medical technology company Stryker to address "the last frontier in healthcare design, the patient room." The two companies worked together to conduct months of ethnographic research, studying clinical environments and patient use. The result of this joint venture was a suite of patient room furniture demonstrating Graves' philosophy that objects in healthcare environments can have both a practical and aesthetic function, incorporating straightforward solutions that combine simple utility and technical innovation. The furniture collection, co-branded Michael Graves – Stryker, created a new brand identity for Stryker, establishing the firm as a design driven company. Products from the collaboration, including the Prime TC transport chair, are included in Designing with Dignity.**

**"Hospitals are constantly evolving to improve patient outcomes, yet a key piece of equipment that is ubiquitous, the wheelchair, has gone unaltered since it was patented in 1933," said Karen Nichols, FAIA, MGA&D. "The Prime TC is the result of a thorough product development process undertaken to transform seated patient transport. With clearly designed touchpoints, movable not removable parts and the ability to nest for storage, the Prime TC is designed to offer solutions for the patient, caregiver and hospital."**

**The exhibition also highlights the Wounded Warrior Home Project, an initiative designed to improve overall quality of life for the increasing number of service men and women returning to active duty. The Wounded Warrior Home Project called for the design of single family prototype homes intended to serve the needs of wounded soldiers and their families as they continue to serve on active duty in Fort Belvoir, Virginia. The innovative and accessible Graves-designed homes have spurred a national dialogue about the importance of barrier-free design. The homes utilize universal design principles to create dignified solutions with an accessible human-centered focus.**

**Designing with Dignity is on view now through April 30 at Kean University. To learn more visit: <http://michaelgraves.com/kean-design-dignity-exhibition/>.**

***This item was submitted by Kean University.***

**( Source: [Community Bulletin](#) )**

2.

## **Designer of the Year award recipients announced by Interior Design Society**

**The Interior Design Society announced award recipients for its sixth annual Designer of the Year competition Friday evening, April 1, 2016, during a gala at the IDS National Conference at [Dallas Market Center](#).**

**The awards were presented by Dann Foley. Foley has appeared on NBC's "American Dream Builders" and Showtime's "The Real L Word." Aside from television and personal appearances, he works for clients throughout North America and Asia as he designs multiple home and lifestyle products with his licensing partners.**

**He was joined on stage for the awards presentation by Snoa Garrigan, executive director of IDS.**

**"It's clear what a talented group of designers comprise our membership" Garrigan said. "Our members consider it a prestigious honor to receive a Designer of the Year award and it's even more evident after unveiling this year's award-winning projects. The quality of entries really raised the bar for next year."**

**The winners of the Designer of the Year competition are:**

### **Space Designs**

**Kitchens \$50,000 and under: 1st place: Katya Waff Grisaffi, C&R Design Build, Salem, Ore. 2nd place: Jan Cregier, Interior Expressions, Bartlett, Ill. 3rd place: Kara Karpenske, Kamarron Design, Blaine, Minn.**

**Kitchens \$50,000 and above: 1st place: Karen Betz, Elite Kitchen & Bath, Manhasset, N.Y. 2nd place: Esther Golightly, Esther Golightly Interiors, Maryville, Tenn. 3rd place: Toni Sabatino, Toni Sabatino Style, Northport, N.Y.**

**Bathrooms \$30,000 and under: 1st place: Patricia Lockwood, Lockwood Interiors, Palm Desert, Calif. 2nd place: Nicole Yee, NY Interiors, Oakland, Calif. 3rd place: Nicole Arnold, Nicole Arnold Interiors, Frisco, TX**

**Bathrooms \$30,000 and above: 1st place: Nicole Yee, NY Interiors, Oakland, Calif. 2nd place: Ami Austin, Ami Austin Interior Design, Memphis, Tenn. 3rd place: Kara Karpenske, Kamarron Design, Blaine, Minn.**

**Bedrooms \$30,000 and under: 1st place: Kassi Clark, Kasabella, Sammamish, Wash. 2nd place: Jan Cregier, Interior Expressions, Bartlett, Ill. 3rd place: Ami Austin, Ami Austin Interior Design, Memphis, Tenn.**

**Bedrooms \$30,000 and above: 1st place: Michelle Kopfer, Michelle's Interiors, Frisco, TX 2nd place: Traci Connell, Traci Connell Interiors, Dallas, TX 3rd place: Kara Karpenske, Kamarron Design, Blaine, Minn.**

**Living Spaces \$30,000 and under: 1st place: Jan Cregier, Interior Expressions, Bartlett, Ill. 2nd place: Traci Connell, Traci Connell Interiors, Dallas, TX 3rd place: Dorothy Greenlee, Dorothy Greenlee Designs, Carrollton, TX**

**Living Spaces \$30,000 and above: 1st place: Patricia Lockwood, Lockwood Interiors, Palm Desert, Calif. 2nd place: Beth Krupa, Beth Krupa Interiors, Stamford, Conn. 3rd place: Donna Hoffman, Interiors by Donna Hoffman, Yardley, Pa.**

### **Singular Areas**

**Children's rooms, playrooms, nurseries: 1st place: Paola McDonald, Olamar Interiors, Haymarket, Va. 2nd place: Traci Connell, Traci Connell Interiors, Dallas, TX 3rd place: Ami Austin, Ami Austin Interiors, Memphis, Tenn.**

**Laundry rooms, closets, craft rooms: 1st place: Ami Austin, Ami Austin Interiors, Memphis, Tenn. 2nd place: Jeremy Bauer and Jason Clifton, Bauer/Clifton Interiors, Juneau, AK 3rd place: Nicole Yee, NY Interiors, Oakland, Calif.**

**Media rooms, game rooms, home offices: 1st place: Traci Connell, Traci Connell Interiors, Dallas, TX 2nd place: Kassi Clark, Kasabella, Sammamish, Wash. 3rd place: Jeremy Bauer and Jason Clifton, Bauer/Clifton Interiors, Juneau, AK**

**Entry Way/Foyer: 1st place: Irish Hafke, Design Matters Studio, Naples, Fla.**

**Dining rooms: 1st place: Jennifer Fox and Tonia Omeltchenko, Fox + Chenko Interiors, Port Washington, N.Y. 2nd place: Jodie O'Connor, Jodie O'Designs, Whippany, N.J. 3rd place: Beth Krupa, Beth Krupa Interiors, Stamford, Conn.**

**Outdoor rooms/sun rooms: 1st place: Kara Karpenske, Kamarron Design, Blaine, Minn. 2nd place: Nicole Arnold, Nicole Arnold Interiors, Frisco, TX 3rd place: Paola McDonald, Olamar Interiors, Haymarket, Va.**

### **Specialty Awards**

**Sustainable Design: 1st place: Katya Waff Grisaffi, C&R Remodeling, Salem, Ore. 2nd place: Jan Cregier, Interior Expressions, Bartlett, Ill. 3rd place: Paola McDonald, Olamar Interiors, Haymarket, Va.**

**Universal Design: 1st place: Donna Hoffman, Interiors by Donna Hoffman, Yardley, Pa.**

**Sponsor Award – Sherwin-Williams: 1st place: Kimberly Joi McDonald, Designing JOI, Las Vegas, Nev.**

**Window Treatments: Top treatment, full treatment, decorative hardware: 1st place: Deborah Getta, Design Resources, Hinsdale, Ill. 2nd place: Penny Williams, Finishing Touches by Penny, Algonquin, Ill.**

**The award recipients were selected by an expert panel of judges that included Deb Barrett, Mitzi Beach, Leslie Carothers, Kelli Ellis, Justin Shaulis, Erinn Valencich, Barbara Viteri, Jackie Von Tobel, Michele Williams and Michelle Workman.**

**The full list of winners including design project photographs for this year's competition is available at [www.interiordesignsociety.org/dotyawards](http://www.interiordesignsociety.org/dotyawards).**

**(Courtesy: Home Accents Today)**

### 3.

#### International Design for All Foundation Award Ceremony 2016



On 22 March 2016, during the [Urbaccess](#) fair in Paris, the Design for All Foundation award ceremony took place. [See pictures](#)

For the 7th edition of the awards, the Foundation awarded a total of 36 projects/products from 12 different countries as "[Good Practices 2015](#)" as they had met the assessment criteria. These Good Practices were then assessed in terms of their relevance, methodology, outputs, impact and innovation by an [international jury](#) to select the five winners of the trophy 2016. Eight Special mentions were also given.

*( Courtesy : Design For All Foundation )*

### 4.

#### Three factors that make up an inclusive school

It was heartening to read about Kindle Garden, Singapore's first inclusive preschool, in "'Eye-opening' inclusive pre-school programme draws raves" (April 1). The preschool also reports a waiting list of 25 neuro-typical and 100 neuro-atypical children for admission. That is fantastic.

Non-profit organisation AWWA has taken a bold step in promoting inclusivity by embracing the diversity of our young children. It

**should be applauded for its effort to make a difference to the lives of children with and without special needs.**

**Other service providers may want to learn how to set up an inclusive preschool from AWWA so more children with special needs can benefit from an inclusive early-childhood education.**

**I want to highlight three factors in what makes a good inclusive preschool: Episteme, techne and telos – the “what”, “how” and “why” of learning, respectively. These factors constitute what has been termed the triple-T model of learning in special education.**

**In the context of Universal Design for Learning, episteme constitutes the first principle: Provision of multiple means of representation. Since children differ in the ways they perceive information, it is important that information be presented through different modalities and adjustable formats, to list just two examples here.**

**Techne constitutes Universal Design for Learning’s second principle: Provision of multiple means of action and expression. Children differ in the ways they go about learning and expressing what they know.**

**For example, a child with cerebral palsy would struggle with motor coordination in writing; another child with executive function disorder would display poor organisational skills. And so they approach learning tasks differently and manifest their mastery differently, too. Hence, for the child with cerebral palsy, we can provide options for physical action through appropriate assistive technology. And we can guide the child with executive function challenges by setting appropriate, attainable learning goals.**

**Telos constitutes the third principle: Provision of multiple means of engagement. Since there is no one optimal way of engaging all children in their learning, options are important, for example, to maximise relevance and authenticity of lesson content.**

**I look forward to more inclusive preschools being set up to allow our young children with or without special needs to mingle with one another. In this way, when they become adults, they would be more inclusive by embracing diversity.**

**(Courtesy: Today)**

5.

## **Disability-friendly buildings due in Dubai by 2020**

**Dubai's infrastructure is set to be revamped under the Emirate's five-year plan to transform the city into a disability-friendly city.**

**All new buildings and facilities in the city, including offices, residential towers, schools, stadiums, and parks, will be constructed to comply with disability-friendly standards.**

**Existing buildings and facilities will be retrofitted to make them disability-friendly as well, *Dubai Media Office* said.**

**Ottawa-based Gates Foundation is responsible for implementing the project that will last over the course of eight months and will include studying, evaluating and rehabilitating standard facilities as per the Universal Design Standards, as well as developing a final form for the design criteria as per Dubai's requirements.**

**The project, titled 'Accessible Environments for People with Disability based on Universal Design', is in line with the 'My Community - A City for Everyone' initiative to transform Dubai into a disability-friendly city by 2020.**

**Phased schedules have been created for the plan's implementation, with pilot projects due to be delivered following rigorous analyses of regulations and introduction of training programmes.**

**The project is a joint venture between the General Secretariat of the Executive Council, Roads and Transport Authority (RTA), Community Development Authority, and Dubai Municipality, in addition to a number of real estate developers.**

(Courtesy: [Constructionweekonline.com](http://Constructionweekonline.com))



## Programme and Events



Graphic Design: Groupa Ee

Photo: Delfino Sisto Legnani.

### FARAWAY, SO CLOSE

25th Biennial of Design  
Ljubljana, Slovenia  
25. 5.–29. 10. 2017

The 25th edition of the Biennial of Design in Ljubljana is set to strengthen its role as an interdisciplinary collaborative platform where design is employed as a catalyst for change.

BIO 25, under the title *Faraway, So Close*, will be curated by **Angela Rui**, a Milan- and Rotterdam-based design critic and curator, and **Maja Vardjan**, curator of Museum of Architecture and Design (MAO).

In line with their focus on the humanistic side and expression of design, they will use the Biennial **to decode through design the effects** of environmental changes, asset migration, and reactions to the systemic crises.

In the face of the total failure of the theory of Positivism, we are now forced **to confront the crucial and still largely hidden meaning** of the consequences of "post-modernization", for which the city seems to have lost its authority as the territory where we look to find the source of quality existence.

Small changes are already taking place and gaining ground, and new inputs are slowly modifying our urban and rural environments. New frictions emerge out of the co-habitation of remote meanings and contemporary habits, as we look for new territories to signify, places to re-inhabit, ancient relations to re-enact, basic coexistences to re-imagine. **Can this friction between distant conditions produce new scenarios for a different present time?**

Along with the main subject-themes of the biennial, BIO 25 will de-centralize and will be interpreted as **a shift towards new territories** to be seduced by research and discourse, as well as by the idea of an event with which to produce knowledge. In the age of super information consumed in real time, the challenge of a biennial becomes increasingly closer to real conditions of everyday systems; **to provoke and challenge the paradigms** related to design and architecture through their pragmatic application, acting as a "permanent work in progress".

Slovenia, in accordance with its geographical conditions, will perform as a paradigm to stimulate, discuss and test the status of this global shift.

## SAVE THE DATE FOR THE 25TH BIENNIAL OF DESIGN

Open Call      12 May - 5 July 2016  
Kick-off event    15 September 2016  
Process          Autumn 2016 – Spring 2017  
Exhibition        25 May – 29 October 2017

## 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.

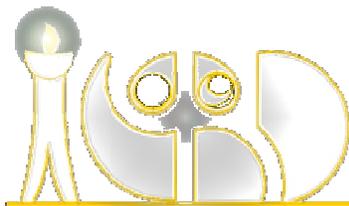
At first glance, transportation may simply appear to be about the movement of people and goods. But looking deeper, it's also closely linked to equality, access to healthy food and good schools, and wildlife impacts, for example.

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!



**6th International Conference on Research into Design - ICoRD '17**

9-11 January, 2017, Department of Design, IIT Guwahati

Call for Abstracts: 15th Feb 2016

<http://www.iitg.ac.in/icord17/org.html>



# FINISTERRA

## IV ARRÁBIDA

film art & tourism festival



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6 de Maio - quarta - 10 horas  
Fundação Portuguesa das Comunicações em Lisboa

Carlos Sargedas, diretor do Finisterra Arrábida Film Art & Tourism Festival, a Fundação Portuguesa das Comunicações, a Câmara Municipal de Sesimbra e Arrábida Film Commission tem o prazer de o convidar para estar presente na Sessão inaugural da 4ª edição do Festival

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# 14th Participatory Design Conference

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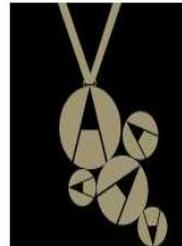
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# i-USER 2016 unbounded

## 4th International Conference on User Science and Engineering

MELAKA, MALAYSIA  
23-25 August 2016





**Real People,  
Real Lives,  
Real Progress**



# DISABILITY INCLUSIVE PHOTO CONTEST

Sponsored by **NEW MOBILITY MAGAZINE**  
and **PhotoAbility.net Stock Images**

*We are looking to break the mold and discover the best inclusive photos that will change the way the public, advertisers, magazine editors and business owners see disability. Your images can help eliminate social, structural and professional barriers!*

Images should depict real people with disabilities of all ages in the following categories:

1. Lifestyle activities (dinner with friends, gardening, working, parenting, or enjoying a hobby)
2. Travel
3. Creative (unusual places, stylized, creative use of wheelchair parts, reflections, shadows, etc.)
4. Sports
5. Business/education
6. Portraits

The contest will run for 4 months, from September 1 to December 31, 2015. We'll announce monthly winners online and award the Grand Prize in the February 2016 issue of *New Mobility*.

- Monthly winners will each receive a \$100 cash prize
- Finalists and winners will be published on PhotoAbility.net (you'll receive royalties for images sold)
- Finalists and winners will be featured in a special gallery on PhotoAbility.net
- Winning images will be published in *New Mobility*
- Grand Prize winner will receive a \$500 cash prize and a write-up in *New Mobility* that includes the Grand Prize image

Photos must be taken with a camera that is at least 8 megapixels and may include iPhones and other mobile. All people featured in the images must be willing participants in the competition and sign a model release. You may enter as many photos as you wish. See all terms and conditions and register for contest and upload images at [photoability.net/disability-inclusive-photo-contest.html](http://photoability.net/disability-inclusive-photo-contest.html)





WORLD HUMANITARIAN SUMMIT

WE WANT TO HEAR FROM YOU

1	8	4	5	people have participated from
1	5	7		countries

The World Humanitarian Summit is seeking ways to better meet the needs of people affected by conflicts and disasters. Show your support for the actions needed to make humanitarian action fit for future crises.

# DESIGN EXPERIENCE

**DESIGN EXPERIENCE** is an initiative conceived by designers, made possible through designers and directed to designers.

We organize a **one-week intense seminar in Barcelona** where we explore the main concepts of Office Management, Project Management, Teamwork, Customer and Space Psychology, Creative Process, Sustainable and Ethic Design.

Important Barcelona designers will open the doors of their offices for us, will show us their construction sites and will tell us about the way they work.

We organize visits and round trips in the most important factories, showrooms, retails, places and sites in the area of Barcelona.

We discuss in a design environment about the most advanced topic about the design process



International Labour Organisation (ILO) – Ministry of Tourism – Red Sea Governorate – Egyptian Hotel Association

Red Sea Accessible Tourism Competition 2016  
“Tourism for All”



## India

### FOCUS

Typographic Culture

### TYPE OF CAMP

Cultural Immersion Learning

### GROUP SIZE

12

### PRICE

### SPECIFIC DATES

January 2017

### LOCATION

Chennai and Delhi

### Registration starts on

September 1, 2016 @ 12:00 AM



### Present at Pac Rim

Pac Rim presentations are in seven formats: Poster Presentations, 30-Minute Topical Presentations, 60-Minute Breakout Presentations, 90-Minute Seminar/Colloquium and 120-Minute Interactive Workshop.

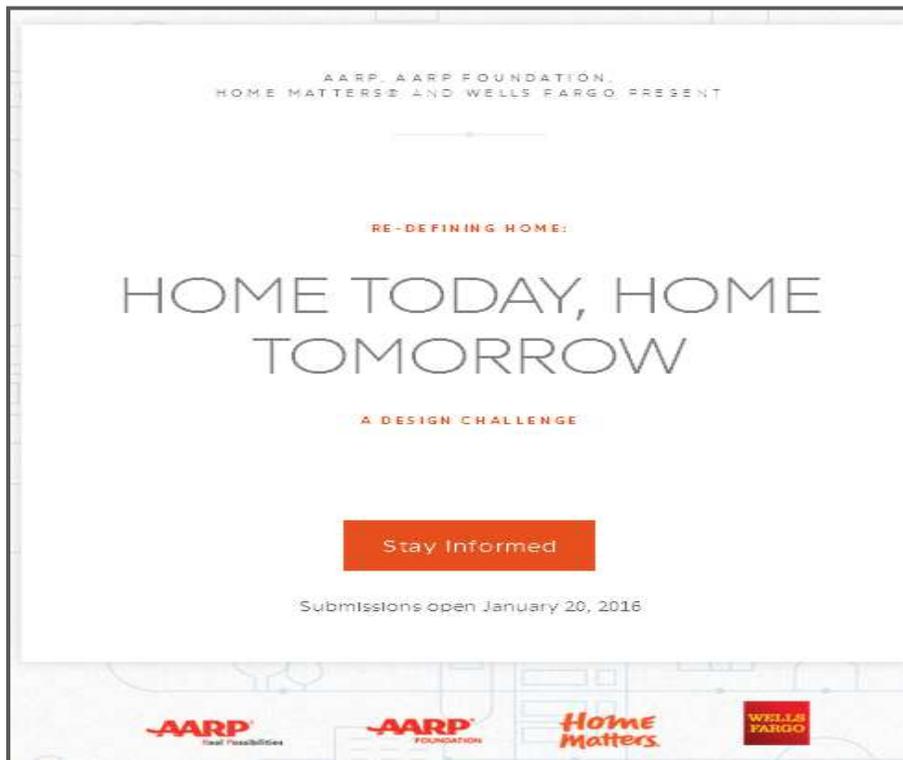
### Present at Pac Rim

## Pacific Rim International Conference on Disability and Diversity

The Pacific Rim International Conference, considered one of the most ‘diverse gatherings’ in the world, encourages and respects voices from “diverse” perspective across numerous areas, including: voices from persons representing all disability areas; experiences of family members and supporters across all disability and diversity areas; responsiveness to diverse cultural and language differences; evidence of researchers and academics studying diversity and disability; stories of persons providing powerful lessons; examples of program providers, and; action plans to meet human and social needs in a globalized world.



Joseph Binder Award 2016





**ETH** zürich

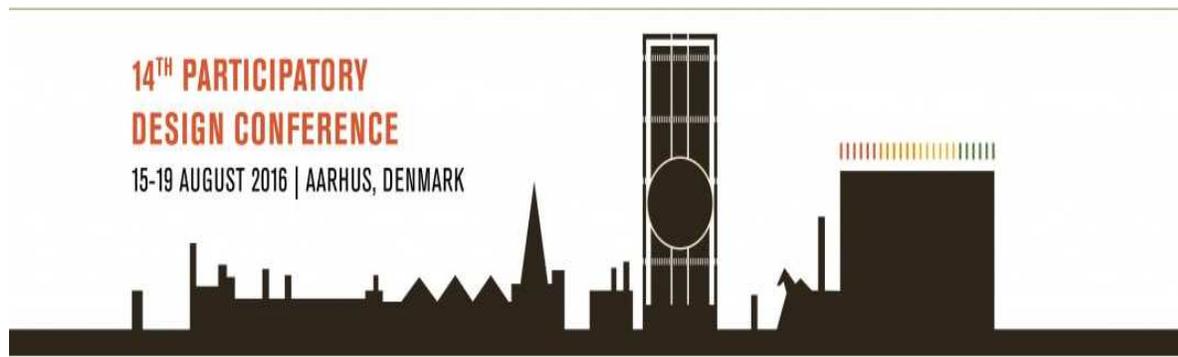
Cyathlon 2016 Homepage

Cyathlon Symposium, October 6, 2016



**Arts Access**  
Awards 2016

Nominations close on **Monday 11 April 2016**.



**The 13th International Conference on Cooperative Design, Visualization and Engineering**

Oct. 24-27, 2016, Sydney

Email: [cdve2016@cdve.org](mailto:cdve2016@cdve.org)

Web: [CDVE2016: The 13th International Conference on Cooperative Design, Visualization and Engineering](http://CDVE2016: The 13th International Conference on Cooperative Design, Visualization and Engineering)



**CDVE2016: The 13th International Conference on Coopera...**

CDVE2016: The 13th International Conference on Cooperative Design, Visualization and Engineering, October 17-20, 2016, Sydney, Australia

View on [www.cdve.org](http://www.cdve.org)



## Innovation for all 2016

- Conference and workshops in Inclusive Design





# Job Openings

## 1. Job Opening

Being a part of the LNJ Bhilwara Group, a billion-dollar conglomerate with significant presence in Textiles, Graphite Electrodes and Power generation, BMD is the largest manufacturer of automotive furnishing fabric in India, Its products are used as fabric for seatings and door trims for automobiles, aircrafts, ships and auditoriums. Its well equipped manufacturing plant located in Banswara, Rajasthan is spread over 1,86,000 sq. mts, produces 8.5 million mts of fabrics per annum.

We have 55% market share with a turnover of US\$42 million. Our Clients are Maruti Suzuki, Hyundai, Tata, Mahindra, Renault, Honda, Nissan, Volkswagen, General motors, Ford, Hyundai, Fiat, Volvo, Skoda, Indian Railways.

BMD has two openings for textile designers for a full time position. It's open on absorbing a fresh graduate or with one year experience in the industry.

The applicant should have a fair knowledge of Photoshop, illustrator, MS office, Nedgraphics.

Interested people can forward their resume on

[Pallavi.pragati@gmail.com/](mailto:Pallavi.pragati@gmail.com/)

[Rajendran.pillai@lnjb.com/](mailto:Rajendran.pillai@lnjb.com/)

## 2. Job Opening

MathWorks India is hiring a Sr. UX Specialist in the Bangalore, India office.

Responsibilities:

You will be responsible for leading user-centered design activities related to MathWorks products, working with development teams to follow a user-centered design approach as you work collaboratively to brainstorm and design innovative solutions to complex problems.

- Make recommendations to team members about which usability methods to use to answer their questions about users and design directions based on projects' needs, goals and constraints.

- Work closely with team members to conduct user research, identify pain points, develop user profiles and create task lists.
- Contribute to requirements and design documents.
- Collaborate on paper and functional prototypes.
- Run usability tests, conduct interviews and site visits, organize surveys, and perform other usability assessments.
- Help the teams interpret and understand user feedback, and provide input for design decisions based on that feedback.

More details and job description here:

<http://www.mathworks.com/company/jobs/opportunities/15400-senior-user-experience-specialist>

**Why Choose MathWorks?**

MathWorks develops MATLAB and Simulink - software that transforms the way engineers and scientists think and work.

Mathworks is listed in [Glassdoor's top 10 tech companies to work in 2015](#) at no 6.

### 3.Job Opening

Looking for a Design Head to head the complete user experience deliverables for an enterprise product company.

12+ years experience in leading UX design teams and owning design strategies in top notch product companies is expected. Mobile design and B2C design experience will be advantageous.

Job location-Bangalore

For more information about the client and JD, please contact

Padma Krishnan | +91.8553503448 | [padma@talentone.in](mailto:padma@talentone.in)

### 4.Job Opening

Freedom Tree is looking to place a resident designer and store manager at their Goa homestore. [www.freedomtree.in](http://www.freedomtree.in)

The designer will have the freedom to continue to create a new visual language in contemporary textiles for Freedom Tree. And bring fresh new print and graphic sensibilities to the brand.

Also looking in the interim short term....anyone based in Goa who is interested in visual merchandising.

Do write in directly to

[Latika@freedomtreedesign.com](mailto:Latika@freedomtreedesign.com)

## 5. Job Opening

Studio ABD, Bangalore, is looking fresh and experienced graphic designers / visualisers. Pl connect with us at [work@studioabd.in](mailto:work@studioabd.in) with your resume and portfolio links.

### 1. Sr Graphic Designer (SABD-GD-001)

5-8 years of experience in branding + packaging design, print technologies, art direction, team leader, illustration (will be nice), master of AI+PS combo. Graduation or PG from reputed design School.

### 2. Jr Graphic Designer (SABD-GD-003)

1-2 years experience, branding + packaging, enthu cutlet, loves hand sketching and dreamer. Love and respect for AI+PS combo. Graduation or PG from reputed design School.

### 3. Sr Graphic Visualiser

Min 5 years of experience, master of Adobe suite, discipline, print technologies knowledge, Graduation or PG from reputed art School.

## 6. Job Opening

UX Design studio for Liquidhub in Hyderabad. He is looking for UX professionals at multiple levels, including UX Head position. Please send your resumes directly to -

([rpatil@liquidhub.com](mailto:rpatil@liquidhub.com))

## 7. Job Opening

Greetings from Dr.Parulkumari Bhati,Dy.Director from Gujarat Technological University(GTU),Ahmadabad,Gujarat.

GTU is a State-wide institution which has 486 engineering, architecture, pharmacy, and management colleges affiliated with it. GTU caters to the needs of more than 4,50,000 students and 17,000 professors. It is initiating new pedagogies in education with research in many areas. GTU has received 14 Awards at national level in different areas of academic and technological work. Today GTU is considered as a benchmark for technological universities.

**its my request to you that kindly forward this mail to your PhD/ME/M.tech students who are interested to contribute in area of Design engineering. pl find more detail below:**

GTU has introduced courses of Design Spine in academic year 2014-15 from 3<sup>rd</sup> semester namely "*Design Engineering*". Design Engineering is very unique and pioneering initiation of GTU based on "Design Thinking", a globally accepted and practiced approach by designers and engineers. One of the key objectives of this initiation is to infuse the Design Thinking mind-set into engineers of future with imparting the methodology into core subjects also.

**GTU's Centre for Industrial Design – OPEN DESIGN SCHOOL** has taken up the huge and remarkable challenge to leverage and implement this course in all affiliated engineering colleges of GTU. The centre has designed unique curriculum which fit to local context of GTU keeping in mind the mindset and practices among the students, faculty members, colleges and industry so that overall positive and innovative culture can be developed. *Centre for Industrial Design – OPEN DESIGN SCHOOL* has successfully completed 1.5 years of this course in which 36 Faculty Development Program (FDP) have been organized for 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> semester with training of more than 2000 faculty members from around 120 Engineering colleges across the states from more than 15 branches.

Now keeping the sustainable growth in mind, we require to strengthen and expand our team so we are in search for dynamic and visionary Design Thinkers for the post of Professors, Associate Professors and Assistant Professors for the Centre for Industrial Design (Open Design School). Kindly find the advertisement for the same here and if you are eligible please apply it before 7th April 2016.

For Advertisement: [http://gtu.ac.in/Recruitment/2016/Emp\\_02\\_2016.pdf](http://gtu.ac.in/Recruitment/2016/Emp_02_2016.pdf)

For Online Application: <http://107.22.240.184/recruit1602/> (last Date 7th April 2016)

Kindly contact GTU - Establishment/Recruitment section (079 - 23267574 or [establishment@gtu.edu.in](mailto:establishment@gtu.edu.in)) for any query regarding these advertisements.

## 8. Job Opening

### Job Description: Design Thinking Analyst

- Ability to demonstrate understanding of design thinking approach to problem-solving.
- Design new business models; improve the connections between external customer and partner-facing services, and the internal processes and operations to deliver them
- Ability to optimize a user's experience when interacting with a specific object or touchpoint (e.g.; an application). Design a delightful, useful and efficient experience.
- Ability to create interactive mockups so as to represent actual user journeys
- Ability to quickly grasp and distill complex user design issues into clean, usable solutions
- Ability to work with a diverse set of stakeholders across different teams
- Ability to articulate reasons behind different design choices through scientific and data driven approach
- Ability to Design what happens when a user interacts with the interface.

- **Understand feature requirements and its objectives to deliver simple and elegant solutions within stipulated timelines.**
- **Should be able to Design visual elements such as icons, typography etc**
- **Good communication skills and should be well versed with storyboard creation, wireframe creation etc. to discuss design solutions**
- **Good understanding of prototyping tools**

#### **Experience**

- **Bachelors or Master's Degree in Design preferably from a reputed college**
- **Between 2 to 4 years of work experience in Design Thinking area**

## **9.Job Opening**

**Studio ABD is looking for UI expert who could help create simulation for UI of consumer product display ( iOS or android)**

**If interested and to know more pl write to [shoubhik@studioabd.in](mailto:shoubhik@studioabd.in)**



## Contact *Design for All Institute of India*

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To advertise in digital Newsletter

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Acceptance of advertisement does not mean our endorsement of the products or services by the Design for All Institute of India

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[News@designforall.in](mailto:News@designforall.in)

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Readers are requested to express their views about our newsletter to the Editor

[Feedback@designforall.in](mailto:Feedback@designforall.in)



## **Forthcoming Events and Programs:**

[Editor@designforall.in](mailto:Editor@designforall.in)

**The views expressed in the signed articles do not necessarily reflect the official views of the Design for All Institute of India.**

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