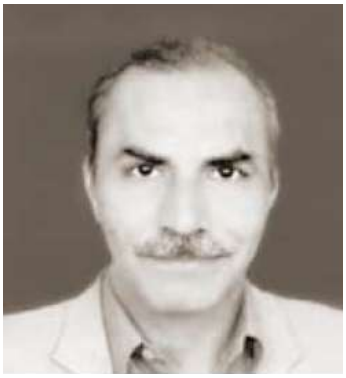
A publication of Design for All Institute of India

February 2013, Vol.-8 No.- 2

Design for All

Indian Institute of Technology Roorkee (IIT Roorkee)

Chairman's Desk:



Dr. Sunil Bhatia

Apparently we human beings may look similar in physical appearances but we are very different inside. We think, act & demonstrate in so many ways still our styles are different. Views & ideas are varied and our reactions to the situations are seldom identical. So our preferences are with different degree of variations. It is surprising that an individual acts under the influence what he prefers and believes his judgment is undoubtedly best. Why does he think he is perfect and disagrees with others? Why does he wish to remain same under similar circumstances and he accepts change with heavy heart. I appreciate the software designers and industrial designers should learn from them & incorporate their style of thinking while designing products/services. Software designer identifies the possible common errors a normal person with common sense can commits and they design the interface in such a way only limited options are exposed and correct procedures with correct judgment is acceptable and others possible actions are blocked. 'Why does he never wish to deviate from his preferences and other side what makes him to change his preferences?'

Some people appear unusual to others who never witness such a different approach of life style and do not know how to react such situation. They simply murmur and sideline this striking idea that is hammering for change of preferences 'This is his life. Let him do what he prefers. Who am I to correct him?' Why does not he sail with time? We are enjoying all possible luxury what we can afford and he is better off compared to us and denying all. What makes him to behave in such style? He may be exception that his preferences are not changing fast as others are changing with passage of time or it may be his fear that does not allow him to deviate from existing status or his mind and body is tuned in such a way that he does not want to put himself in comfort zone. Why does he prefer walking, still believes in using public transport and does not use mobile or even wrist watch is not part of his life style or credit or ATM or debit cards is no way his preference. He never hires tri rickshaw and believes if a person can pull the rickshaw along with him for little money 'why cannot he go by walking?' It is not that he cannot afford these few comforts. These are minor what status he is enjoying in the society but he prefers what he is and wishes to spend his life by least bothering others. He wishes to remain unacknowledged, unrecognized and contributes what he believes good for living beings.

It is taken that established preferences are changing with emerging needs. I am not endorsing this theory and I have encountered many people who wish to remain poor by choice. They can earn a lot but prefer to live unassuming individuals and their needs are what it used to be few decades ago and are satisfied with life. They are undemanding so their earning is limited to satisfy their needs. Craving for comforts is nowhere, greed is absent and welfare for all

is distinct characters that attract everyone. No sign of restlessness, anxiety and calm, peace are prevailing on their face and reflection of hurriedness is not visible in their any actions. Halo around them is such that they never allow taking away eyesight from them and demonstrate unusual calmness to which they encounter. On the other side persons with criminal background or who has accumulated lots of wealth by unfair or criminals means or people who do not deserve to be wealthy prefer in exhibiting their false status by wearing costliest shoes, expensive watches, heavy gold ornaments and designers dresses. It may be they sense they have short life and enjoy as much they can or it is not hard earned money via ethics and live with careless attitude of belief they can earn next time with new means by cheating others. This may be the reason that makes them emotionally detached with money when they go & squander it away on themselves and do not mind exploiting others. There are of course two side of the coin; one who can afford they do not prefer those and those who cannot afford but indulge more in that life style. 'What is preference?' Is it need based or individual personality or it is just mind set or it is gender based? Is gender related to products language, identity, and say preferences? Does man perceive differently from woman" Do they behave differently when someone offers them watches, hair brushes, pocket knives and razors? The appearances of these objects reflect stereotypical ideas of man as plain, strong, and assertive, and of woman as decorative, weak, delicate, and sensitive. The same person behaves in altogether in different way when he encounters his toddler is moving toward knife. He shouts 'Don't touch. It may harm you.' Why does his plain and casual approach vanish and releases sudden nervousness? 'Is preference gender or situation based?

Chrome plated metallic clip for holding the flare of the pant while cycling was common few decades back because most of the people were using bicycles as means of transport. Cycles are not ubiquitous as it was few decades back because these are now replaced by designed automobiles say two wheeler or four wheelers Automobile as on today satisfies the basic need of human beings ` Born lethargic' and it minimizes their physical work and adds comfort when compared to cycling. Automobile has of course reduced the craze of cycle so its clip for holding pants. It has vanished and even professionals are wearing short pants while participating in cycling tournaments as there is no need for clip. It could have been possible; with the introduction of better design of cycle chain cover clip has lost its relevance. 'Does better design product change our preference?' My answer is affirmative and there are numerous examples but latest victim is typewriter. There is need for typing documents but better design product of computer has made the typewriter irrelevant and under the market driven force of demand of commercial viability has made the preference different. Another victim is 'pager' in the hand of mobile phone. Earlier photographs were taken on photographic films and it is now replaced with digital storage and made the said films obsolete. 'Is preference designed base?' One thing is possible needs; preferences and design are interlinked and takes us to level what every human being craves to achieve that is 'creativity'. When I look at the pen, paper and ink, it astonishes me and narrating the interesting journey where man has used the basic instinct of designing to achieve current status. Design of document has elements of characters, ink, paper and writing instruments. Modern ink has come into the existence from use of the tree's milk or latex .After observing people have noticed that it lasts and changes its color as it gets expose to air. They

designed ink pot in such a way with narrow neck it exposes minimal and ink remains longer in its natural state for writing. They have used leaves in place of what we known as modern paper. Ink journey has come to various colors and digitally can be created what color of degree we wish to use. Writing instruments might have started with lump of dry mud to gradually switch to branch of tree by sharping gives and it has taken the form what we call modern pen. Journey of paper is interesting people might have used cave's wall and gradually migrated to leaves to paper and finally in modern time digitized form. As technology is advancing paper is under pressure because it is being made with pulp of tree and depleting our environments. Our preference is changing and most of the documents are stored in digital form and as and when hard copy is required we use paper. If people care about the environment, why don't they buy green products? 'Why preferences are not altering?' Is preference remaining same within the group?' Why woman enjoys the company of sex and other side man prefers to enjoy the company of opposite sex. Why do parents prefer for specific sex of their children? Is parents' gender preference for children are embedded in cultural and religious traditions and community norms, shaping individual attitudes and behavior? I think man is never in position to express what he prefers and his journey ends. He does what others expects to do and dies without unfolding his preferences. On the other side woman dies feeling victim and does not demonstrate courage to revolt. "Does woman prefer to live in ignorance & shame?'

Social behavior of woman is different when she is free from all social pressures while selecting of male companion. She then prefers to move with her basic instincts and chooses to whom she feels can

produce better off springs. 'Is preference governed under some nature's rules or with some genetically code or say under the biological needs?' It reminds me a film 'Blue Lagoon' where hero and heroine are incidentally left & grew in an isolated island. In due course of time biological clock clicks with their ages and left with no preference but to meet the sexual need. They were with no choice and explored one another's body parts. Does preference revolve around central idea: choice?' When I notice the behavioral changes in toddler it surprises and doubt surface in my mind. ''Crawling of infant is understandable but what makes him to stand on his feet is surprising? Is it preference or body compulsion that demands the child stand up or he does what age is demanding?'

Primitive man was living with night that is associated with darkness and day with light. He experienced that darkness is nothing but reflecting his fear, helplessness and limited movements where on other side light made him more comfortable, less fearful, and ready for better movement .This simple idea of preferring the light by the man had revolutionized his thought process and led to discovery of generation of artificial light along natural light to beat the night. In search of light he discovered fire, designed earthen pots for burning natural oil with cotton for longer illumination. The natural progress led to the design of candle from wax, electricity from hydro to nuclear energies. Interesting journey of discovering light came in to existence because of preference. Designing has gone a long way in this direction. Development in human is more a less same in every part of the world inspite of no means of communication that are available today. 'Is it inbuilt in nature that man prefers to promote the likeminded behavior?' A mother gives preferential treatment to the child among all children in which she finds her own reflection

most 'Is preference what we are and wish to see the same in others? Is choice of friends and foes nothing but our preference governed by what attributes we have?'

The designer is required to reflect consumer needs in the aesthetic design while giving consideration to use and function. There is no grammar that will help in designing absolutely perfect products that would meet the preferences of user .Ignoring the role of preference will cost a lot and it is indispensable and integral part of the design. People in general prefer products that exhibit high symmetry and low complexity and role of differences in age, gender and educational groups also play critical part. Woman has basic instinct of receptivity, proceptivity and engages in behaviors that tend to arouse interest. Other side man is in hurry to exhibit his power and fails to hold on longer. Attractiveness refers to physiological and behavioral changes that affect the male. On other side woman prefers her need should be met and functionality is preferred compared to attractiveness. Both genders behave in opposite when they wish to buy the products for use. Is preference based on age, educational qualifications or knowledge? A research of design of perfume bottle reveals astonishing result. Choice probability for different bottle shapes and reveals that customers will most likely choose plastic arts and circle shaped bottles, whereas they like achromatic glass and colored glass bottle most. Moreover, male customers put more attention to perfume selection criteria than females do, and so do customers behaved in different way with different ages Preferences are a powerful point of control for users. There is another popular example two vehicle drivers with similar body dimensions might have different preferred locations for their seating. Their preference can be seen into two components: that

explained by body size and the variability that remains. 'Is preference based on anthropometry? Does user perceive ease or enjoyment for preference?' As a student I felt comfortable sitting in place where normally I sat. I was psychological attached with that chair; table and I feel as I am sitting in familiar environments as I live with ease and comfort at home. I felt uneasy if someone is occupying my chair. Why did I prefer to sit in that specific chair and table in library although I was aware it is public place and everyone is free to sit anywhere in library? I have developed a peculiar habit in me that as I come back home from my working place I feel like to wear the same old dress that looks very odd on my body but it gives me ease. Sometime it is shocking for my visitors who find me in just opposite to what I wear in office. 'Does preference has something to do with habits?' Yes. I think it is true. When the Kellogg Company specializes in cereal breakfast launched in India I was in serious doubts about their successes because in my country people prefer or habit of eating heavy breakfast of fried breads with cooked vegetables that too with heavy dose of butter. That company was financially strong and having capability to bear losses for years. They succeeded in cultivating habits among our selected classes who prefer cereal over stuffed bread with heavy dose of edible oils and butter. 'Is preference cultural driven?' A European scholar woman was my guest in India and wished to site visit historical places and we thought we should visit early morning till evening and dinner would be at my place. She was appearing normal till afternoon and she requested me 'I need to empty my bladder and I have controlled for hours now it is impossible for me to bear. I immediately rushed to near hotel where she relieved. This incidence forced me to think preferences are culture support. If in place of European woman it

would have been from Asian I do not think she would have resisted /delayed her preferences to control the call of nature.

We are thankful to the Assistant Professor Dr. Gaurav Rehaja ,Indian Institute of Technology – Roorkee, India for accepting our invitation for bringing out special issue and allow his students to showcase their works under his supervision. This issue is true reflection of what India thinks for Universal Design/ Design For All and how we are contributing for progress of these areas. It is also setting an example for others to learn and follow.

With regards

Dr. Sunil Bhatia

Design For All Institute of India

www.designforall.in

dr_subha@yahoo.com

Tel 91-11-27853470(R)

A year 2013 dedicated to young designers

March 2013 Vol-8 No-3

Dr. Debkumar Chakrabarti, PhD. Professor and Head Department of Design, INDIAN INSTITUTE OF TECHNOLOGY GUWAHATI, IIT Assam, INDIA will supervise works of his students of undergraduate/ post graduate and Guest Editor will be Aditya Ponnada, a fourth year student of Bachelor of Design program.

April 2013 Vol-8 No-4

Professor Rachna Khare, PhD (Architecture-Fulbright Scholar), Coordinator Doctoral Programme , Center for Human Centric Research (CHCR) School of Planning and Architecture Sports Complex, MANIT Campus, Bhopal, Madhya Pradesh (M.P.), INDIA will supervise her students to bring out special issue. Mr. Piyush Verma and Ms .Deepshikha Sinha will be the Guest Editor.

May 2013 Vol-8 No-5

Dr. Kenneth Joh is an Assistant Professor in the Department of Landscape Architecture and Urban Planning at Texas A&M University, Program Coordinator of the Graduate Certificate Program in Transportation Planning, and an Assistant Research Scientist at the Texas Transportation Institute. He will be the Guest Editor of this special issue

July 2013 Vol-8 No-7

Christian Guellerin is president of Cumulus, the International Association of Universities and Schools of Design, Art and Media since 2007. The organization counts 178 establishments in 44 countries. He is also the executive director of the Ecole de design Nantes Atlantique, which trains professionals to create and innovate for socio-economic development, with an interface between technology, economics, and the sciences. Today they're expanding to China and India. He writes on design and pedagogy. He will act as philosopher & guide for this special issue and students of different streams will participate in this special issue.

August 2013 Vol-8 No-8

Dr. Antika Sawadsri PhD in Architecture, Planning and Landscape University of Newcastle upon Tyne, UK. Lecturer, School of Interior-Architectural Design (2004-present) Faculty of Architecture King Mongkut's Institute of Technology Ladkrabang (KMITL) Thailand will supervise this special issue of student designers.

September 2013 Vol-8 No-9

"Inclusive Tourism: international perspectives, accessibility and inclusion in the Brazilian tourism" is topic suggested by Prof Regina Cohen Pro-Access Group - Federal University of Rio de Janeiro and she will be Guest Editor.

Content of February 2013 Vol-8 No-2

1. *Chairman's Desk:.....2*
2. *Guest Editorial:.....15*
3. *Universal Design Philosophy in Architectural Pedagogy:.....21*
4. *Making the streets of Pune Accessible from a Planner's perspective:.....32*
5. *Perspectives of an Accessible City – Case study Chandigarh;...54*
6. *Railway Station – Towards universal design approach:.....65*
7. *Assistive Technology – A fashionable dimension to inclusion:.....73*
8. *Anushruti social initiative of IIT –Roorkee:.....86*

Other regular features

GUEST EDITOR'S PROFILE

Dr. GAURAV RAHEJA

IIT Roorkee | gr.iitr@gmail.com| +91 – 94120 25455

An Assistant Professor in the Department of Architecture & Planning and Institute Architect at the prestigious Indian Institute of Technology Roorkee, Dr. Gaurav Raheja has greatly contributed to design research in the domain of accessibility planning and universal design.

His doctoral research offers insight into designing rural built environments with a Universal Design approach towards making lives more inclusive. As a strong proponent of inclusion, his research work sheds light towards improving performance of Activities of Daily Living by mobility impaired individuals in rural Indian environments through affordable, indigenous and contextual design solutions.

He is a recipient of the UNIVERSAL DESIGN AWARD, 2010 conferred by the National Centre for Promotion and Employment of Disabled People [NCPEDP], New Delhi. Identified as an Expert by the Ministry of Social Justice and Empowerment in the area of Designing Barrier Free Environments, he has served as Member of prestigious

selection committees of National Award for Barrier Free Environment and conducted several workshops and lectures at various National forums. He has been nominated by the Ministry of Urban Development in the committee to review Indian accessibility standards and guidelines in addition to being an invited guest speaker and design jury at various national institutions.

Dr. Raheja has authored 21 research papers in books(4), journals(2) & conferences(15) and has pioneered design and retrofitting of IIT Roorkee campus buildings to make them accessible for persons with disabilities. He passionately pursues design research, teaching, consulting and photography as his areas of keen interest.

GUEST EDITORIAL

'*Be the change that you* echoed by Mahatma Gandhi, decades ago whose value as a social mass one feels today amidst a rapidly changing *want to see in the world"* were the words global scenario. The key questions being, what of the past should we retain & respond and what of past should we come out of, in order to make a true statement of progress, equity and sustainability. The manyness of India today with its pluralistic societies and mind frames coexisting, makes a unique proposition for all concerned professionals serving them. Design as a responsive act needs to become that agent of positive change that includes with diversity, enables the disabled and in some sense universalises the idea of coexistence.

IIT Roorkee, an epitome of technical education in India has contributed significantly to the world of engineering education since 1847. Started under the British empire of the pre independent India, this institute has undergone several phases of transformation before it evolved as the Indian Institute of Technology Roorkee. With a serene campus of about 365 acres, this characterises a heterogeneous development process. Today, it is a home to over 7000 students from diverse parts of the country receiving education in its environs. While it has been a home to cultural diversity, design had a significant role to play on this campus to include the needs of persons with disabilities. As a humble beginning in 2009, being an Institute Architect and with a strong administrative support, we initiated the retrofitting of campus built environments to make it accessible and barrier free in its first phase. Today, we envision to create a Universal Design model for technical education on the

campus environs of IIT Roorkee and be the inclusive agent of change that we wish to see in the world.

Having engaged in the pursuit of universal design research and education, we have made an effort to bring forth a series of research papers, articles in the form of ideas and the thought processes of some of my students in the Department of Architecture & Planning. Having gone through an understanding of the Universal Design theory, these papers echo their areas of interest, dissertation or research. It includes narratives on Universal design in pedagogic process of teaching, Evaluation of streets of Pune from a Planner's perspective, Accessibility perspectives on city of Chandigarh, Indian Railways and last but not the least on Assistive technology as a fashionable dimension. I acknowledge their efforts in making contributions for this February, 2013 edition of Design for All and wish that they contribute more significantly through the idea of Inclusion and universal design in the real world contexts.

Towards the end of this edition, it showcases to its readers, a unique social initiative of IIT Roorkee, called ANUSHRUTI, (meaning small sound). This is a school committed to the education of children with hearing impairments in and around Roorkee. Founded on a unique model of community supported endeavour in 1989 on the campus of IIT Roorkee,Anushruti today imparts education to over 100 children with hearing impairments from diverse economic backgrounds under its umbrella. We commit ourselves to nurture silence and create lives at Anushruti.

About the Authors

Smita Suryawanshi, is an architect from Pune. She is working as a faculty in Marathwada Mitra Mandal's College of Architecture, Pune from last 14 years. She is currently pursuing her doctoral studies in the area of Universal Design at Indian Institute of Technology, Roorkee, India.

Shreya Sen the author of "Assistive Technolgy - Design for Inclusion" is currently pursuing her Masters in Architecture from Indian Institute of Technology, Roorkee. She is a Robotic i- Limb user herself and that gives her the credential to talk about prosthetic design and it's improvement from a Universal Design point of view. For her, her arm is not just a product but an extension of herself. She completed her Bachelors from University of Mumbai and has held the position of University topper in the academic year 2009 -10. A victim of a terrorist attack on civilians [May 2010] led her to begin writing with her left hand, but it is her indomitable positive spirit which has brought her this far.

Vriddhi Yadav, is currently pursuing Masters of Architecture from Indian Institute of Technology Roorkee. She completed her undergraduate studies from Chandigarh College of Architecture. She acknowledges that while her architectural education was being shaped by the college, the city too played a major role in influencing her mind consciously and unconsciously. Having spent five years in the city, she has been able add her personal experiences as a visitor, and then a continued user of the city.

Vimal Kumar Chaurasia, graduate architect by profession having one year experience of architectural practice. Pursuing masters in architecture from IIT Roorkee. Currently working on accessibility planning for Indian railway stations as his dissertation. Universal design in architecture is also his area of interest.

Vignesh Iyer is a graduate architect from Pune who aims at Optimizing Architectural spaces through design and research, taking the micro level architectural approach to a macro level with the idea of creating a liveable environment for all, to be achieved by a broad based perspective of an urban and rural planner. He is currently pursuing his Masters in Urban & Rural Planning from IIT Roorkee.

Universal Design Philosophy in Architectural Pedagogy

Smita Suryawanshi, PhD. Research Scholar, ar.smitas@gmail.com

Indian Institute of Technology,

Roorkee, India.

(Author is an architect from Pune. She is working as a faculty in Marathwada Mitra Mandal's College of Architecture, Pune from last 14 years. She is currently pursuing her doctoral studies in the area of Universal Design at Indian Institute of Technology, Roorkee, India.)

Universal Design is a term currently used all over the world, emphasizing on increasing awareness for providing inclusive society for all, without discrimination in age, gender, cast and the ability of any person. Understanding the importance of human right of full participation in all activities as well as enjoying a life through quality environment, designers are making efforts to understand and introduce the philosophy of Universal Design which includes human beings at all levels and platforms, whether it is at house, workplace or social environment. This philosophy has an increased relevance in every aspect of Design, like transport, automobile, product, communication systems, technology and built environment. This article briefly ideates upon the role and relevance of Universal Design in architectural education and conveys a possible methodology of traversing the path to include Universal Design in our teaching practice.

The idea of removing barriers is not new to us as Vitruvius, Roman architect, recommends "Laying the building out so ingeniously that nothing could hinder its use." (Ostroff, 2001) While working with new materials, technology and inventions in software, some where

we have forgotten the importance of designing for all, we design exclusively for able bodied people and socially we look at "them" as out casted.

Architecture plays a very important role in providing/achieving inclusive society, as people with disabilities get influenced by physical and social barriers for full participation in all activities. Physical barriers directly exclude 'them' from built environment at house and workplace. The relationship between human behavior and the built environment affects psychosocial and physical ability of any human being because built environment provides positive or negative forces to influence human behavior. Designing of responsive built environment which accommodates the changing needs of differently able people becomes responsibility of architects and designers. This approach helps to complete half way battle towards inclusiveness/ accessible environment.

In India the philosophy of Universal Design is at its infancy level. Built environment is more visible than the invisible social barriers for full participation by all people in various types of activities. The quality of our physical infrastructure helps to build self esteem/ confidence of the people with disability to move in built environment without any fear of getting Universal Design is a term currently used all over the world, emphasizing on increasing awareness for providing inclusive society for all, without discrimination in age, gender, cast and the ability of any person. Understanding the importance of human right of full participation in all activities as well as enjoying a life through quality environment, designers are making efforts to understand and introduce the philosophy of Universal Design which includes human beings at all levels and platforms, whether it is at house, workplace or social environment. This

philosophy has an increased relevance in every aspect of Design, like transport, automobile, product, communication systems, technology and built environment. This article briefly ideates upon the role and relevance of Universal Design in architectural education and conveys a possible methodology of traversing the path to include Universal Design in our teaching practice.

The idea of removing barriers is not new to us as Vitruvius, Roman architect, recommends "Laying the building out so ingeniously that nothing could hinder its use." (Ostroff, 2001) While working with new materials, technology and inventions in software, some where we have forgotten the importance of designing for all, we design exclusively for able bodied people and socially we look at "them" as out casted.

Architecture plays a very important role in providing/achieving inclusive society, as people with disabilities get influenced by physical and social barriers for full participation in all activities. Physical barriers directly exclude 'them' from built environment at house and workplace. The relationship between human behavior and the built environment affects psychosocial and physical ability of any human being because built environment provides positive or negative forces to influence human behavior. Designing of responsive built environment which accommodates the changing needs of differently able people becomes responsibility of architects and designers. This approach helps to complete half way battle towards inclusiveness/ accessible environment.

In India the philosophy of Universal Design is at its infancy level. Built environment is more visible than the invisible social barriers for full participation by all people in various types of activities. The quality of our physical infrastructure helps to build self esteem/

confidence of the people with disability to move in built environment without any fear of getting excluded. In addition to Persons with Disabilities Act 1995, India is also a signatory country to United States Convention for Rights of People with Disabilities (UNCRPD). This expects greater commitment from nation to remove physical barriers in built environment for inclusion. In-depth understanding of philosophy of Universal Design by all architects, designers and planners and implementation of the same through designing Indian context helps towards building an inclusive environment for all.

In 2006, the Council of Architecture made it mandatory to include accessibility issues and related design standards in the curriculum leading to Inclusion of Universal Design philosophy in architecture pedagogy. Currently couple of the Universities had opted for "Barrier-free architecture" as a part of subject or an optional elective at later learning years of a graduate architecture course. At present in India, lot of architects and designers due to lack of awareness and understanding about significance of Universal Design thinks, 'wheelchair users as role representatives of disability', so provide ramps or lifts and solve the issue of accessibility. Few of them consider it as a process of adding accessibility design standards at a later stage of design, is a solution for including all.

The philosophy of Universal Design can be included into architecture curriculum as theory course which can be a part of architectural design studio at graduate and post-graduate level. This helps in teaching all the students benefits of inclusive environment, through inclusive design approach which also will help in removing social attitude/barriers from their mind. It has been proved that early learning outcomes are always remembered at later stages of life,

therefore the importance of inclusive design approach in early years of architecture coursework can be endorsed upon.

Emphasis on inclusion in the subjects of early years in architecture coursework will enhance social aspect of designing built environment. At under graduation level, Architectural design subject needs combined knowledge of various design theories, building technologies and services which helps in designing of any typology of building. (Fig. 01)

Universal Design is a term currently used all over the world, emphasizing on increasing awareness for providing inclusive society for all, without discrimination in age, gender, cast and the ability of any person. Understanding the importance of human right of full participation in all activities as well as enjoying a life through quality environment, designers are making efforts to understand and introduce the philosophy of Universal Design which includes human beings at all levels and platforms, whether it is at house, workplace or social environment. This philosophy has an increased relevance in every aspect of Design, like transport, automobile, product, communication systems, technology and built environment. This article briefly ideates upon the role and relevance of Universal Design in architectural education and conveys a possible methodology of traversing the path to include Universal Design in our teaching practice.

The idea of removing barriers is not new to us as Vitruvius, Roman architect, recommends "Laying the building out so ingeniously that nothing could hinder its use." (Ostroff, 2001) While working with new materials, technology and inventions in software, some where we have forgotten the importance of designing for all, we design

exclusively for able bodied people and socially we look at "them" as out casted.

Architecture plays a very important role in providing/achieving inclusive society, as people with disabilities get influenced by physical and social barriers for full participation in all activities. Physical barriers directly exclude 'them' from built environment at house and workplace. The relationship between human behavior and the built environment affects psychosocial and physical ability of any human being because built environment provides positive or negative forces to influence human behavior. Designing of responsive built environment which accommodates the changing needs of differently able people becomes responsibility of architects and designers. This approach helps to complete half way battle towards inclusiveness/ accessible environment.

In India the philosophy of Universal Design is at its infancy level. Built environment is more visible than the invisible social barriers for full participation by all people in various types of activities. The quality of our physical infrastructure helps to build self esteem/ confidence of the people with disability to move in built environment without any fear of getting excluded. In addition to Persons with Disabilities Act 1995, India is also a signatory country to United States Convention for Rights of People with Disabilities (UNCRPD). This expects greater commitment from nation to remove physical barriers in built environment for inclusion. In-depth understanding of philosophy of Universal Design by all architects, designers and planners and implementation of the same through designing Indian context

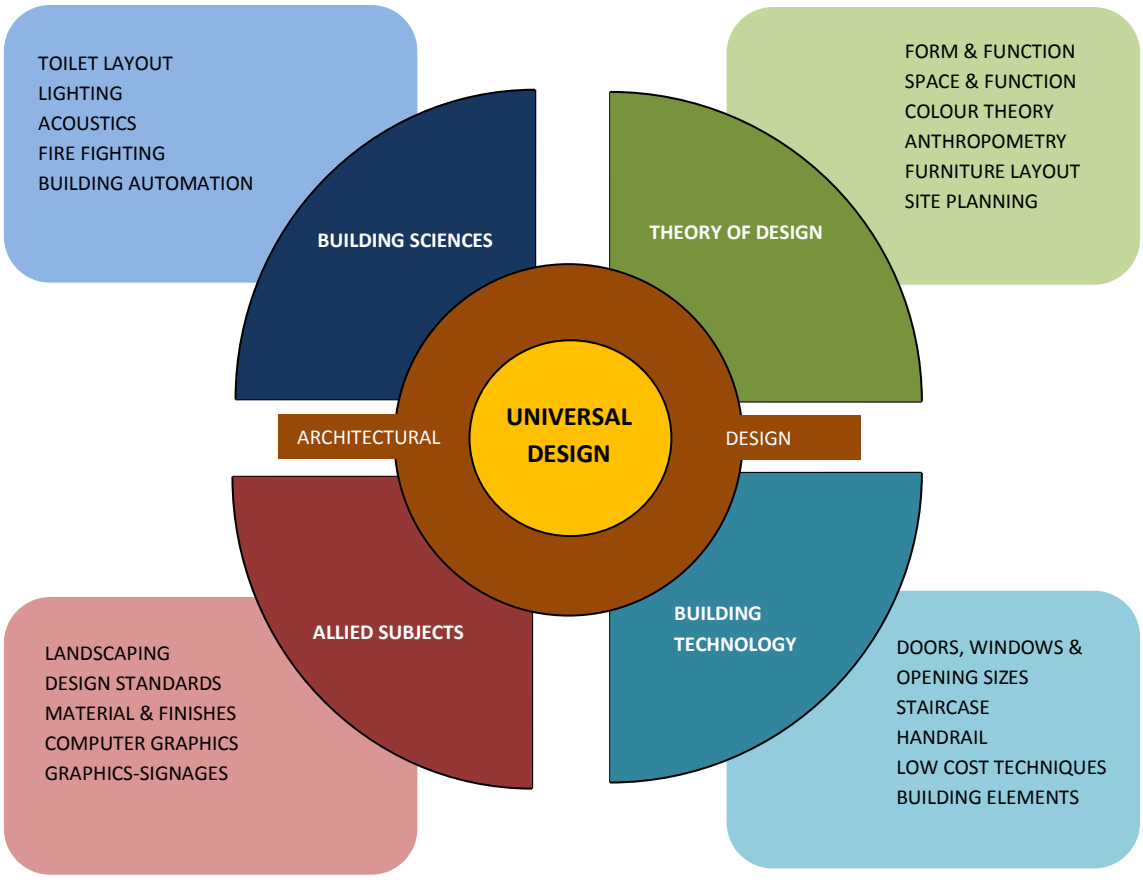


Fig. 01. Holistic Framework of Universal Design in Architectural Pedagogy Source:Author.

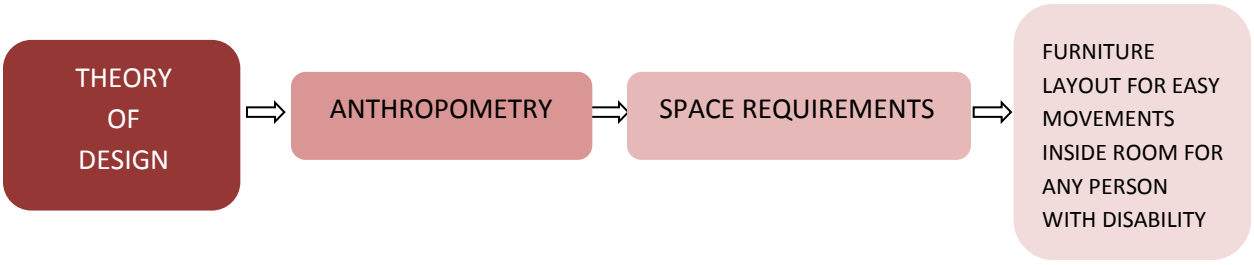


Fig. 02. A typical module in architectural pedagogy Source: Author.

Various methods can be adopted for teaching and including Universal Design theory are: participatory design process, simulation based experiments, user centric designing, evaluation of design by people with diverse needs and design competitions on Universal Design at State, National and International level.

Relevance of Universal Design theory in each subject helps better level understanding. For example, in Building Construction/ Technology subject- door designing of public building can become a project where understanding of design standards, available assistive technology in India, obstructions caused by hardware of door and its positioning to fulfill flexibility to accommodate diverse needs of people. Similarly in Design Theory, most important aspect of design space and function needs anthropometric data of people with disabilities. Students need to collect data of space requirements using case study method as well as by interviewing people to understand the obstructions they face in built environment. This helps students to give design solution of a space/ building accessible to all. (fig.02)

At the post-graduate level, importance of Universal Design theory/ philosophy across all disciplines of design like urban design, urban and rural planning, landscaping and site planning, product design, industrial design, transportation planning, conservation etc. should be included. (fig.03) Currently India is in its developmental process where all these design disciplines plays very important role in shaping the built environment for including all the people with diverse needs. A post graduation course in Universal Design subject itself becomes very important to have research and development approach which brings people from various streams of education like social sciences, law, design and medical etc. strengthens the importance of multidisciplinary thinking in 'inclusive-design processes'.

Fig. 03. Universal Design and its interface with diverse design disciplines Source: Author.

Concludingly, this article highlights the importance of inclusion of Universal Design philosophy in architectural education at various learning levels to realize the vision of an inclusive built environment. It is based on fundamental belief that any positive contribution to the built environment needs to be supported by a strong education base. As a responsible architect and a teacher, this article projects some of the thoughts to include Universal Design as a theme into architectural education in the Indian context. Marian Wright Edelman wrote, "Education is for improving the lives of others and for leaving your community and world better than you found it". Statement leads to the hope, that architects and designers having understanding of Universal Design will design our future built environment to include all of us, as we all need a flexible responsive environment to accommodate our diverse needs.

References:

1.Danford G. Scott and Steinfeld Edward. Measuring the Influences of Physical Environment on the behaviors of People with Impairments. Enabling Environments. Kliwer Academic /Plenum Publishers, New York. 1999.

2.Doke DeeDee. How inclusive design breaks down the barriers. Occupational Health. Feb, 2005. Pp. 20-22.

3.Jones Louise. Integrating Universal Design into the Interior Design Curriculum. Universal Design Handbook. Mcgraw-Hill, USA. 2001.

4.Khare Rachana and Khare Ajay. Teaching Universal Design through Student Design Competition. SPANDREL. SPA Press, Bhopal. Issue 4, spring 2012. Pp.104-114.

5.Kowaltowski Doris and others. Methods that may stimulate creativity and their use in architectural design Education. Int J Technol Des Educ. 2010.

6.Landorf Hilary and Nevin Ann. Inclusive global education: implications for social justice. Journal of Educational Administration. Emerald Group Publishing Limited. 2007. pp. 711-723.

7.Morrow Ruth. Universal Design as a Critical Tool in Design Education. Universal Design Handbook. Mcgraw-Hill, USA. 2001.

8.Ostroff Elaine and Hunter Daniel G. Social Justice in Architecture: Promoting Universal Design and Human Diversity in Architecture Education and Practice through the Accreditation Process. NAAB Validation Conference. 2003.

9.Sandhu Jim Singh. Inclusive Design: Multi-Dimensional Thinking Tools. SPANDREL. SPA Press, Bhopal. Issue 4, spring 2012. Pp.98-103.

10Steinfeld Edward and others. Towards a Responsive Environment: The Psychosocial Effects of Inaccessibility. Barrier-Free Environments. Dowen, Hutchinson & Ross, Inc.1977.

11Wolfe Maxine. Environmental Stimulation and Design. Barrier-Free Environments. Dowen, Hutchinson & Ross, Inc.1977.

Smita Suryawanshi,

Making the streets of Pune Accessible from a Planner's perspective

VIGNESH IYER, Masters in Urban & Rural Planning (MURP) – IInd year INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE

OVERVIEW

This article aims at studying the streets of Pune from the point of view of Accessibility. It specifically looks at the existing pedestrian environment in the city and whether the existing infrastructure encourages users of all age groups, sex and differently abled persons. The objective of the paper is to come up with observations and recommendations from an Urban planner's perspective

Introduction

Cities of today are becoming a collection of residential and commercial buildings with roads as the artery to connect places within the city as well as outside the city. Also the ever improving road infrastructure is making distances smaller and transit vehicular friendly. The advent of freeways, flyovers and expressways sending out a strong message of who is the 'boss' on the road. The respect and right to rule the road is directly proportional to the size of the vehicle, Sports Utility Vehicles, sedan cars, hatch back cars, trucks and buses rule the road as the occupy the most amount of road space thereby justifying the 'road tax' they had to shell out for it. As a result the smaller vehicles like two wheelers have to squeeze through traffic crevices and their speed and ease of parking render them extremely useful in the urban scenario.

But what about those who are on bicycles ? What about those who commute on foot ? Does it mean that just because they occupy a small fraction of the road space they could be neglected and forced to use the left over space between the buildings and the heavy traffic ? Streets occupy approximately 20 percent of the total land area in a typical city, and they are the most important and ubiquitous form of public space. Streets are the stage upon which the drama of urban life unfolds every day. There is an urgent need to understand that streets are not just conduits for the transport of motorized vehicles. Rapid urbanization is slowly eating into public spaces, parks, open spaces rendering the role of the street as an urban space more critical than ever There is an urgent need to look at streets as places where people walk, talk, cycle, shop, and perform the multitude of social functions that are critical to the health of cities. Now that a street is seen as an increasingly important urban space it should ensure access to all.

The study will be based on the existing streets of Pune city, a megacity located in Maharashtra, India

Indian Context

In the Indian context a street was always more than just a means of transporting motorized vehicles, it is a space of multiple activity- a meeting place, a place for playing, a place for food outlets, a parking space may have all of the mentioned activities in the absence of a parked vehicle. Two wheelers moving together parallel at low speeds to enable conversation amongst themselves is a very common sighting, two auto rickshaw drivers moving in opposite directions stopping in the middle of the road to exchange pleasantries is also a common practice. An ill maintained

neighborhood street ensured that vehicles treaded along at a slow pace in a space predominantly used by pedestrians but the last two decades of development has seen a rapid surge of automobile users on the Indian streets, aggressive advertising, improving economical conditions of the people and affordable and competitive pricing of automobiles though have made distances shorter but has brought about a massive class differentiation. Now that even a person belonging to a lower middle class family can afford an automobile, pedestrians and cyclists are looked upon as the lower section of the society whose means of transit reflect their social status and the streets being further designed to be more vehicular friendly reiterates this point, this in turn has discouraged people from using the most basic means of transit of walking and cycling.

An urban environment that encourages and facilitates walking supports community health, vitality and safety. It will increase use of public transit; decrease car dependence; increase pedestrians; lead to cleaner air; green public space; and support green tourism. Such an environment creates opportunities for the informal social interaction that is one of the main attributes of a vibrant, livable city. This phenomenon has also been fueled by the declining quality of public transport which has further pushed pedestrians and cyclists towards the use of automobiles.

The population of India as of 2011 stands at 1.2 billion and encouraging use of automobiles is going to convert this 'important urban space' as only a means for vehicular movement as all other uses that it now enjoys will be rendered impossible. It is high time that the Indian street returns back to its basics of transporting people than transporting vehicles.

The best way to improve urban transport is to improve walking and cycling, thereby increasing the use of non-motorized transport, so that it can restrict automobile travel. However, current transportation planning practices unfortunately tend to undervalue walking.

It leads to the open manhole across the road... A blessing in disgust.

IMAGE SOURCE: CIA REPORT ON WALKABILITY IN INDIAN CITIES

Streets should be designed with the point of view of usability by vulnerable groups such as persons with disability, senior citizens, women and children; this will ensure that they are accessible by all user groups. As per the census of India 2011 the approximate estimate of persons with disabilities stands at 10% which is 120 million, which in ample comparison exceeds the population of Great Britain!. If to this 120 million, the population of senior citizens, women and children are added, the population of vulnerable groups is quite a number.

Existing Legislation

The salient features of the different Indian policies regulating street guidelines are discussed below:

National Urban Transport Policy 2006

It recommends to ensure safe, affordable, quick, comfortable, reliable and sustainable access for the growing number of city residents to jobs, education, recreation and such other needs within our cities. This is sought to be achieved by:

- ***Incorporating urban transportation as an important parameter at the urban planning stage rather than being a consequential requirement***

- ***Encouraging integrated land use and transport planning in all cities so that travel distances are minimized and access to livelihoods, education, and other social needs, especially for the marginal segments of the urban population is improved.***

- ***Improving access of business to markets and the various factors of production***

- ***Bringing about a more equitable allocation of road space with people, rather than vehicles, as its main focus.***

- ***Encourage greater use of public transport and non-motorized modes by offering Central financial assistance for this purpose***

•Enabling the establishment of quality focused multi-modal public transport systems that are well integrated, providing seamless travel across modes

•Establishing effective regulatory and enforcement mechanisms that allow a level playing field for all operators of transport services and enhanced safety for the transport system users

•Establishing institutional mechanisms for enhanced coordination in the planning and management of transport systems

Indian road congress (IRC) Guidelines for Pedestrian and Cycle track design

It provide basis standards for pedestrian and cycle oriented design but need more augmentation.

Central Motor Vehicles rules (CMVR) 1989 Safety Rules

provide passive protection for pedestrians, stating that motorists cannot enter pedestrian way and are liable to penalty.

Urban street vendor policy, 2007 and 2009,

To protect livelihood rights – recommend guidelines for proper vending zones, as they are service providers on sidewalks…

Persons with Disabilities Act 1995

It recommends street design guidelines which will be all inclusive with special mention on need for design of junctions, kerbs, footpaths etc.

Study Area

From a traditional city with an agro-based economy, Pune has steadily metamorphosed into an industrial and educational centre, crowned with labels like the Detroit of India and the Oxford of the East. It is also emerging as one of India's top tech cities as well as a significant agro-business centre.

Supported by its strong economic base, Pune today nourishes a range of diversified activities. With economy in a growth phase and with the local talent available in plenty, Pune's growth is expected to continue at a faster pace, boosted by various policies and programs of the Government of India (GoI).. In the last 50 years, the city's population has grown by more than five times; currently, in excess of three million, the city's population is expected to cross five million by 2021. This rapid growth has an ever increasing strain on the existing street infrastructure as well as public transport infrastructure forcing people to switch to private transport.

Methodology

The methodology adopted is as per that given as per the toolkit provided by Clean Air Initiative (CAI) which adapted the Global Walkability Index developed for the World Bank. The process involves identification and survey of important residential, educational, commercial and public transport terminal streets and analyzing them against the following parameters:

S.no.	Parameter	Definition
1	Walking Path Modal Conflict	Conflict between pedestrians and motorists
2	Availability of Walking Paths	Availability of footpaths on important streets
3	Availability of Crossings	Availability of safe pedestrian crossings at street junctions
4	Motorist Behavior	Respect for pedestrian right of way
5	Amenities	Availability of amenities like benches, tree shade, drinking water, toilets, dustbins etc
6	Disability Infrastructure	Availability of pedestrian infrastructure enabling a barrier free environment
7	Obstructions	Obstruction like illegal shops, parked vehicles, trees etc affecting the pedestrian right of way
8	Security from crimes	Security in use of streets by all users at different times of the day

The streets surveyed should include most of the important streets of the city and each surveyed street is to be rated on a grade of 100 for each of the above specified parameters. The scores will portray the status of each of the surveyed streets and an average of all these parameters will give the walkability index of the city.

Streets of Pune

The rapid urbanization coupled with the growing automobile industry in the city mainly fuelled by lack of efficient public transport

has rendered it as a city of vehicles in stark contrast to it being known as a 'pensioner's paradise' up to just couple of decades ago. A typical cross section of a typical street would portray it dominated by vehicles passing between high rise towers with left over spaces between the buildings and vehicles to be used by pedestrians and cyclists. Despite this an amazing 37% trips in the city are made by vehicles, thereby suggesting that the streets need to be designed to be much more pedestrian friendly as compared to the current situation.

As a first step towards achieving this goal an accessibility survey was conducted on the streets of Pune. The study was conducted as per the toolkit provided by CAI which was adapted from the Global Walkability Index toolkit developed for the World Bank

The walkability survey was conducted in four types of areas:

1. **Commercial areas:** ***This included stretches on Lakshmi road, Tulsibag road, Mahatma Gandhi road, Jangli Maharaj road and University road These covered the traditional commercial districts of 'old Pune' as well as the more modern ones that have developed recently.***

2. **Public transport terminals:** ***The areas covered under this were Shivajinagar bus stand, Pune Municipal Corporation bus stand, Pune railway station, Swargate bus stand and Akurdi railway station This combination of terminals covered important bus stations and railway stations both for commuters within the city as well as inter-city travel.***

3. **Educational areas:** ***Pune University road, Fergusson College road, parts of the core city area covering Ramanbaugh School, Nal***

stop area, Abhinav Vidyalaya (school) etc were covered in this, thus covering many schools and colleges in the city.

4. Residential area: *Pashan road, Aundh ITI road, Paud road, Sinhagad road, Koregaon Park and Balewadi were areas covered under this category. This covered all categories of residential areas; low income, middle income and upper income groups.*

Analysis of Streets

1. Walking Path Modal Conflict

This is the first parameter in the Walkability index which describes the conflict of pedestrians with other modes of transport, such as motorists or cyclists. Modal conflict is a serious matter, particularly when there are no footpaths along busy streets or when due to congested roads vehicles use the footpath, because pedestrians have to then jostle among fast moving vehicles. This is evident even on some roads with footpaths where in two wheelers use it to bypass traffic with myself being party to the practice.

Residential areas and public transit terminals except areas in Koregaon park scored a poor 50/100 in the walking modal conflict as these areas had very few or no pedestrians but are still safe for pedestrians considering the fact that pedestrians have to contend with very few vehicles on residential streets. Educational areas fared better at 60/100 as it becomes a mandate to have safe footpaths near educational areas but for Pune University road and null stop area the educational areas would have scored higher. Commercial areas fared the best at 75/100 as it encouraged pedestrian movement along footpaths flooded with local markets. The average score for Pune for this aspect is 62/100 which is quite low.

Street type	Score out of 100
Commercial streets	75
Public transport terminal street	50
Educational streets	60
Residential streets	50
Average city score	59

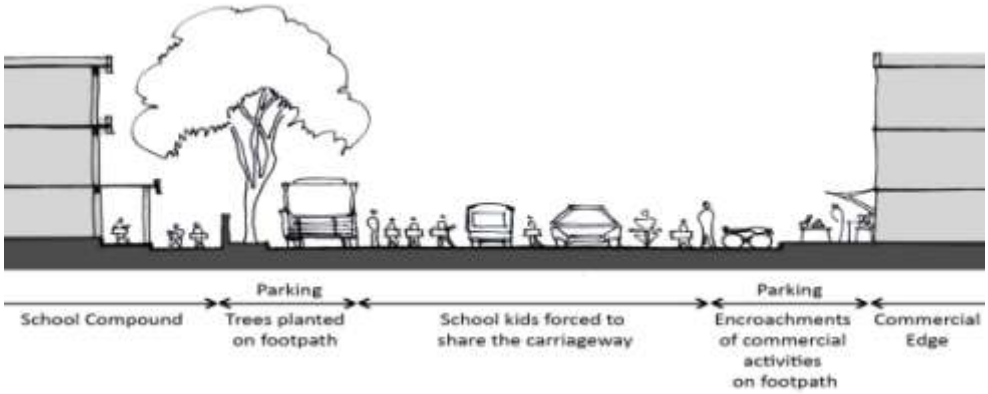
Table 1: Walking path modal conflict

2.Availability of footpaths

The second parameter of Walkability index is the availability of footpaths which are clean, unobstructed and comfortable to use. The Aundh ITI road is one of the few good examples in the city along with some stretches along Fergusson road and J.M. road, but they are very few and too far in between. Residential areas scored very poorly at 40/100 followed by transit terminals at 50/100, educational areas scored 55/100 and commercial areas scored 65/100. The low scores are due to discontinuous and inaccessible footpaths because of which people tend to walk on the road despite the availability of a footpath. The average score is 53/100 which is poor.

Table 2: Availability of footpaths

Street type	Score out of 100
Commercial streets	65
Public transport terminal street	50
Educational streets	55
Residential streets	40
Average city score	53



A Typical educational street cross section

Source: Author

3.Availability of crossings and crossing safety

Most of the important traffic junctions are devoid of proper pedestrian crossings. The Bremen circle junction does have a pedestrian traffic signal but lacks other necessary infrastructure to make it usable by pedestrians. The general practice for pedestrians is to choreograph their timing of road crossing as per the traffic flow, wherein the vehicles stop at the signal rearing for a race on the sight of green. Many intersections have zebra crossings but are never used by pedestrians as vehicles cover it while waiting for the signal. Wide roads with high dividers though difficult to cross are preferred by pedestrians due to the absence of safe crossing intersections. As a result there is a sense of confusion at crossings and accidents are caused due to the mistakes of both pedestrians and vehicles.

On most of the roads that were surveyed pedestrian crossing was possible because of poor road condition, narrow roads and slow moving traffic on the fast lane. Crossing intersections is possible for only young and fit pedestrians who need to coordinate their speed of crossing as per the speed of the approaching vehicle.

Though there are no proper road crossings available throughout the city, it is comparatively easier to cross a commercial street as there are a 'visible' number of pedestrians scoring the highest at 65/100. The transit terminals score just 55/100 as crossing is only possible because of the slow moving public transport which considerably slows down other vehicles. No major intersections are present in the surveyed residential areas. The average score works out to be 60/100.

Crossing at Bremen chowk (by author)

Table 3: Availability of crossings

Street type	Score out of 100
Commercial streets	65
Public transport terminal street	55
Educational streets	50
Residential streets	40
Average city score	60

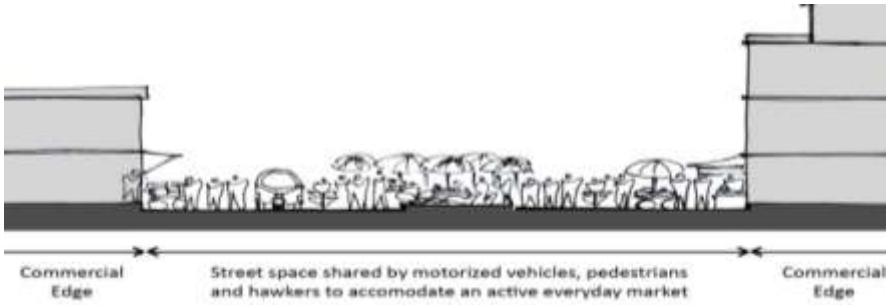
4.Motorist Behavior

Despite there being a high percentage of pedestrians on the streets, they are looked upon as obstacles which are going to reduce the speed of motorized vehicles. They are looked down upon as someone resorting to walking as a result of not being able to afford a vehicle therefore they are not respected. Important roads like the Fergusson college road and J.M. road have been converted into one way streets with no dividers and no signals, because of this even a vehicle finds it difficult to maneuver from one side of the street to the other against the fast moving traffic, there is no question of a pedestrian being able to cross it. To add to that two wheelers resort to riding on the footpath in the wrong way for illegal shortcuts pushing out pedestrians onto the busy streets. Residential areas scored the best at 60/100 because of the slow nature of traffic. Commercial areas score 50/100 due to the sheer volume of pedestrians which demands respect from the motorists. The prime location of educational areas with a huge number of pedestrian students clashing with hurrying traffic the score is lowest at 45/100. The average score of the city is 49/100.

Table 4: Motorist behavior

Street type	Score out of 100
Commercial streets	50
Public transport terminal street	40
Educational streets	45
Residential streets	60
Average city score	49

5.Amenities



A Typical cross section of Tulshibaug street

Source: Author

Pedestrian amenities are features which encourage journey on foot such as benches, toilets, dust bins. adequate shade, signage etc. It is important to add that these amenities need to maintained and should by no means obstruct pedestrian movement. Number of amenities like drinking water, benches and dustbins had plenty of users which is an encouraging sign but still is not an immediate priority. A number of trees providing shade during hot afternoon has encouraged pedestrian mode of transport. The amenities saw a considerable uplift during the 2008 commonwealth youth games but lack of maintenance of these amenities have rendered it to be an absolute eye sore. Residential areas devoid of adequate footpaths have scored a low 20/100 followed by 40/100 on commercial streets and 45/100 on streets of educational area.

Benches and tree shade on Aundh ITI road(by author)

Street type	Score out of 100
Commercial streets	40
Public transport terminal street	30
Educational streets	20
Residential streets	60
Average city score	38

Table 5: Amenities

6.Infrastructure for the disabled

This is a highly neglected parameter on the streets of Pune as most footpaths and walkways are not even fit for physically fit persons let alone being of help to a person with disability. It is required that a barrier free, unobstructed and vehicle free pedestrian infrastructure be in place for the infrastructure to encourage use by persons with disability. A barrier free, disabled friendly environment would be friendly to use for other vulnerable groups such as senior citizens and children as well. Just design such an environment is not enough, proper maintenance is also paramount to ensure its success. As expected the residential streets scores just 10/100 and transit terminal scores 20/100. The average score of Pune works out to be 15/100, which is appallingly low considering the population of persons with disability

Poorly maintained footpaths at university roads (by author)

Street type	Score out of 100
Commercial streets	10
Public transport terminal street	20
Educational streets	20
Residential streets	10
Average city score	15

Table 6: Infrastructure for disabled

7.Obstructions

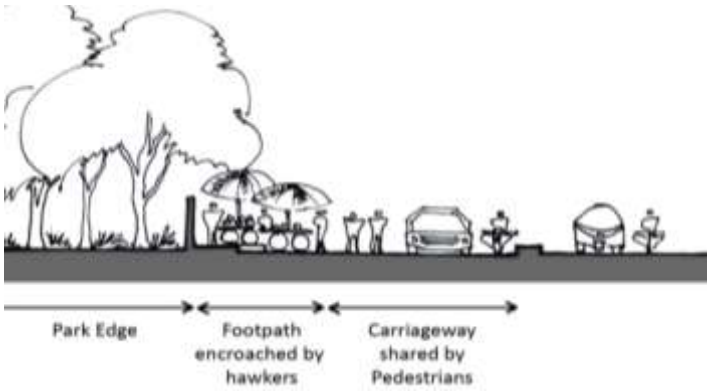
Anything hindering the pedestrian pathway thereby making it difficult to walk can be categorized as an obstruction. An obstruction may be permanent in nature like shops, trees etc and also could be of a temporary nature like stalls, parked vehicles etc. Such obstructions make the user go around it and reduce the Walkability of that space. As the footpath is seldom wide enough the pedestrians are forced to use the road in case of obstructions, making them vulnerable to speeding traffic. Bus shelter is an amenity for people waiting for the bus is harsh sun or rain but it becomes an obstruction for a pedestrian. Street furniture like benches, dustbins, signage boards etc could become an obstruction rather than an amenity on a narrow footpath. A pedestrian in Pune faces all the above mentioned obstructions when using a footpath, Construction rubble is also conveniently dumped on a footpath forcing pedestrians to use the road for commuting. Residential streets with on street parking coming on to the footpaths has a low score of 35/100, commercial streets score the highest at 60/100. The average score for Pune works out to be 44/100

Street type	Score out of 100
Commercial streets	60
Public transport terminal street	30
Educational streets	50
Residential streets	35
Average city score	44

Table 7: Obstruction

8.Security from crime

The aftermath of the gang rape incident in Delhi recently has highlighted the lack of security on Indian streets. It also depends on the time of the day a place is visited. Transit terminals like Pune railway station are crowded even during the night due to which it is safe. Large number of pedestrians will provide an informal surveillance and will check crime, but if the pedestrian infrastructure in the city is not improved it will further contribute to the dwindling number of pedestrians on streets making it much more vulnerable to crimes. But overall the city is quite safe in comparison to other metropolitans thus scoring an impressive 70/100.



A Typical cross section of a recreational street with walkways obstructed by hawkers

Source: Author

Tulshibaug street is totally pedestrianized

Summary

Over all, Pune's Walkability index was about 49 on a maximum of 100, with residential areas scoring the worst at 41, educational areas scoring 55, public transport terminal areas scoring 49 and commercial areas scoring the best at 57.

Accessibility:

Despite the city scoring 50/100 on the walkability index it cannot be rendered 'accessible to all'. This parameter is reflected in 'Infrastructure for the disabled' which scores a low 15/100 which shows that the score of 50/100 is merely the walkability index for fit persons who walk in the poor pedestrian infrastructure. The poor infrastructure for the disabled denies accessibility to vulnerable groups such as senior citizens, children, persons with disabilities and women to some extent. Therefore if accessibility is given the most importance of all the parameters, the accessibility for Pune streets would work out to be around 34/100. This low score portrays that the *streets of the city of Pune fails in being accessible.*

Conclusions

The Indian street has always been an important public space always with a hustle bustle of multiple activities. The high population density contributing to the busy surveillance of theses streets rendering it safe for a wide number of users. Unfortunately, the existing streets have not been able to keep pace with the rapid development due to which streets which were traditionally designed for the movement of people has developed into streets which connect motorized vehicles. The analysis of the streets of Pune have brought forth the fact that the pedestrian infrastructure is sorely inadequate and the city walkability index at 49/100 is a clear reflection of this. Many of the street surveyed either have a lack of footpaths or they are too narrow to be of any use, add to that the discontinuous nature of these pathways forcing pedestrians to use the street even in presence of a footpath. There are also lack of amenities like drinking water, toilets, signage boards, adequate shade etc which further discourage pedestrian movement. The Aundh ITI road is one of the pioneering attempts in street design which has been successful and has encouraged pedestrian use. Despite the poor infrastructure the share of pedestrian commuters is appreciable at 35%. This goes on to suggest that with proper planning and design the city can be redesigned and redeveloped into an 'accessible city'

Recommendations

1. **Redesigning important streets sections giving high priority to cyclists and pedestrians**
2. **Integrate the BRTS and MRTS with a conducive pedestrian environment**

3. **Provide commercial buildings with additional FAR if the setback area is designed as a pedestrian plaza with adequate parking space to ensure no parked vehicles at the side of the road or on the pedestrian plaza**
4. **Encouraging tree plantation on both sides of the road to serve two purposes- create a buffer between motorized and non motorized transport and to provide tree shade to make walking and cycling comfortable**
5. **Provide cross walks, foot over bridges or sub ways on roads with high traffic and high volumes of pedestrian activity like near educational streets and transport terminals.**
6. **Ensure continuous pedestrian pathways with necessary amenities like dustbins, toilets, drinking water, signage boards keeping in mind the needs of persons with disabilities.**
7. **Designing wide sidewalks without any obstructions.**
8. **Improving the pedestrian infrastructure will make it a busy street with thriving local markets which will in turn act as passive surveillance and check crime.**
9. **Street specific designs to accommodate hawkers and adequate parking so that the pedestrian right of way is not compromised**
10. **Design aimed at creating a barrier free environment so that the streets of the city are accessible for all by following a standard and detailed design manual.**

References

Sophie Punte, Sudhir Gota, Bert Fabian & Alvin Mejia, Walkability Surveys in Asian cities
Clean Air Initiative for Asian Cities Center

Christopher Kost (ITDP), Matthias Nohn (EPC), Halak Bhatt (ITDP), Pranjali Deshpande (ITDP), Parul Dixit (EPC) and Advait Jani (EPC)(2011), Better Streets, better cities: A guide to street design in urban India, Creative Commons
Attribution 3.0 License.

Tibbalds, Francis(1992) Making people friendly towns, Longman publishers

Population Census 2011

http://censusindia.gov.in/2011census/censusinfodashboard/index.html

Vignesh Iyer

Perspectives of an Accessible City – Case study Chandigarh

Vriddhi, M.Arch I, vriddhiprasad@gmail.com

Indian Institute of Technology Roorkee

OVERVIEW

This article is an effort to discuss accessibility in Chandigarh from various perspectives. It further renders a thought process, how a successful modern city can be developed as a role model of Universal Design in contemporary India.

Accessibility is connectivity or the ease of movement from one place to another, without any difficulty. Etymologically the word is derived from Latin verbal adjective accessus, "a coming to, an approach."

But when accessibility is taken for a city, different dimensions are added to it. Universal design when incorporated in this scenario will lead to an innovative perspective. The various ways in which accessibility can be evaluated are physical, mental, affordable, equal and cultural.

The first being the planning and current condition of the city. This would give us an idea of the usability and equity offered. The mental accessibility leads us to the dimension of legibility which also deals with the aesthetics of the city. Affordability of access is an important perspective as it shows the equity and economics of public spaces and public transportation. While the cultural acceptance of design, in a country where Chandigarh is one of the few planned cities of Modern India becomes imperative. This panoramic vision will lead us

to evaluate the scope of Universal Design from five principles namely *Usability, Equity, Aesthetics, Economics and Cultural.*

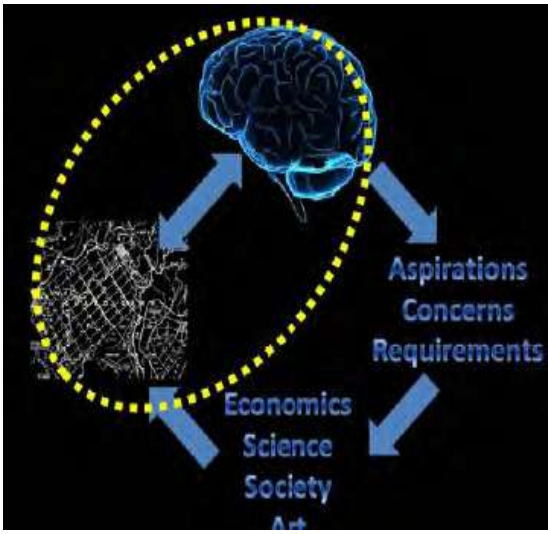
CURRENT SCENARIO

The city according to 2011 census accommodates 10.54 lakh against the 5 lakh population that it was designed for. The developments of Panchkula and Mohali have resulted in an exponential increase in floating population. This puts a lot of pressure on the existing road infrastructure. Chandigarh has a high per capita car ownership. This Increases concerns for car traffic and vehicular volume on the roads and raises questions regarding road safety.

However addition of a new bus stand at sector 43 has eased and taken some load of sector 17. There has been commendable design effort in terms of universal design for Sukhna Lake entrance. The city has also been coined the name of "City beautiful" due to the following:

- ***Cleanliness***
- ***Good transport management***
- ***Well planted trees at adequate distances providing shade, reducing noise levels as well as improving the aesthetics of the streets***
- ***Good drainage system ensures no water logging***
- ***Well maintained parks***

Le Corbusier did the design and planning of Chandigarh.



Why are we discussing these issues?
Can we make a difference?

These questions can be better explained by figure 1. Where the human thought is the creator of the matrix of built environment around. But the matrix also has an effect on the thoughts. So we are just trying to reverse the role of influencer to the influencee.

Figure 1 – *Cyclic process of relation between the Physical and the Non Physical*
Source : Author

For better understanding of the complex working of a city, he compared it to, the abstraction of man. The various sectors were compared to organs and the hierarchal road system was compared to the circulatory system which pumps life (people) into the organs (sectors). Figure 2 demonstrates the idea. These sectors were placed according to their importance of functioning and their interactions with each other. For example the administrative head – Sector 1 was kept away from the city in a beautiful location for better functioning. While the city center – Sector 17 (heart) was given central location and the system of V2 road (artery) for better circulation.

Taking this ideology further the HUMAN (city) will stop working if the flow of life in the organs or the overall system will be restricted.

"A city is as good as its people."

- Anonymous

Private transportation is preferred in Chandigarh over public transport by most sections of the society. Trying to understand this situation we need to go back to the time when Chandigarh was created. The idea of modern architecture stemmed from the inventions of many things, Motorized vehicles being one of them. They were being improved and becoming more affordable in the market. These vehicles not only improved the lifestyle of people but on the larger scenario increased the size of cities.

Le Corbusier designed the network of seven V's, keeping this new determining parameter in mind. He replaced the cross sections from the roundabouts at street junctions, improving the speed and decreasing the travelling time within sectors.

The sector design in Chandigarh was borrowed from Albert Mayer's idea of 'superblock'. The time take by a 'man' on foot to travel a distance, was one of the major defining factor in designing the sector. Superimposing the sector with the network of the city which comprised of: the pattern of circulation, points of conflict and areas of overlap thus achieving the whole. i.e. THE CITY.

Coming to the roads of Chandigarh as mentioned before they have been designed according to a hierarchal system of decreased vehicle volume and speed. Of these V2 and V3 are fast corridors while V4 – V7 are present inside the sectors. The sectors are directed inwards so that, there is no building entry directly on a V2 or V3. Incase of V2's slip roads are provided.

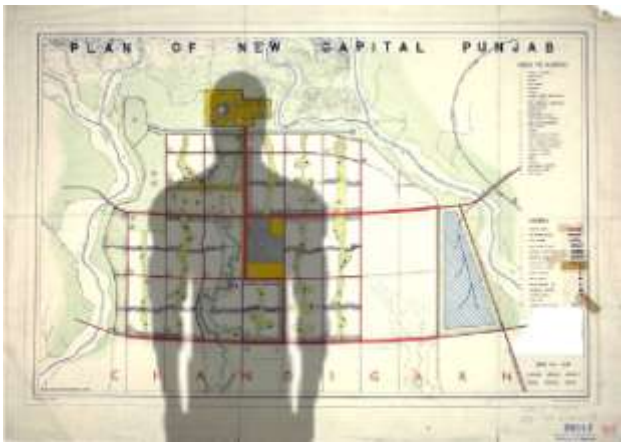


Figure 2 – Abstraction of man over Chandigarh city

(Source: http://renovationanddesign.com)

But overall the intersection of a pedestrian to vehicular lane has been kept to a minimum i.e only at the points of junction at V4 with a V2 or V3.

Public transportation was planned to be in the form of bus transportation. Bus stops were to be provided at the junctions of a V3 and a V4 for each sector. The efficiency and effectiveness of the public transport can be better explained by the following personal experience.

"Travelling from sector 11 to sector 17 on a summer afternoon of 2006. It being an odd hour for public buses resulted in loss of patience on my behalf partly due to absence of any information on the bus route and number. And partly because of the maintainenace condition, I decided to hire a rickshaw instead. Little did I know that this would be my first and last attempt to board a bus in the city. As generally the distances were negotiable and I had friends who gave me lifts whenever needed. I would not put the complete blame on the governing system but, with this experience I am just trying to cite how easy it is to be deterred from public transportation in such a world class city. Being in possession of a sound mental and physical condition, using a bus should not have been a problem. If

this was difficult for me, what would it be for an aging person, a child, and other diverse forms of human existence, including person with disability. I can just wonder ….”

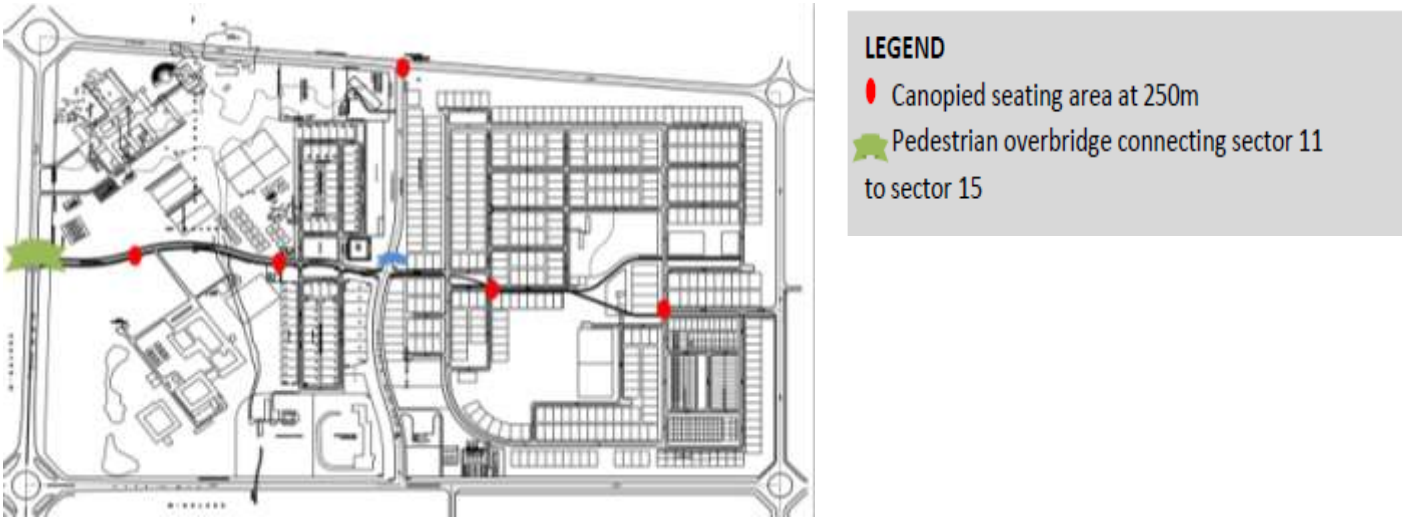


Figure 3: *Showing design Interventions*

The present condition can be upgraded by, retrofitting the existing system according to universal approach without compromising, on energy efficiency and environmental pollution. The later two are inclusive subsets of a larger issue – “Sustainability”. Also, since the government is already planning for a metro transit system for the city, it would be commendable if all the above mentioned points are incorporated in the planning. As the roads V4 – V7 lie within the sectors and the internal quality of sectors. Its possible to retrofit them according to Universal design principles. The sections and plan show some of the possible solutions. This would ensure the accessibility of sector dwellers to their basic needs (living, care of body and spirit).

DESIGN INTERVENTIONS

On a broader scale, pedestrian facilities on streets need to be designed and maintained. Curb cuts can be provided at intersections on V5 – V7. While on the V4, they can be provided according to the

pedestrian crossway. Sensory crossway signage should be provided for visually impaired, simultaneously provision of tactile tiles for reference on pedestrian area adjacent to market and transit stops should be provided.

Important routes to public buildings on the V5 and V4 should be well retrofitted for hassle free movement. U shaped parking spaces should be avoided. Seating with canopy should be provided after every 250m along the V5 for rest. All these design considerations should be taken after a thorough study of the target population at the same, time involving them in the design process will give new possible solutions.

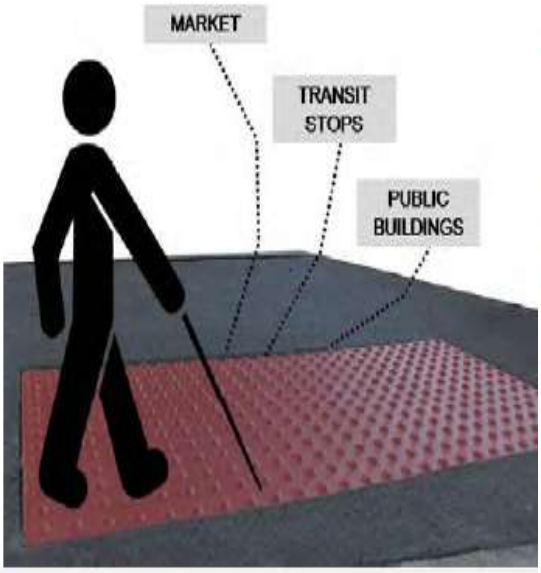


Figure 4 : Tactile tiles placement

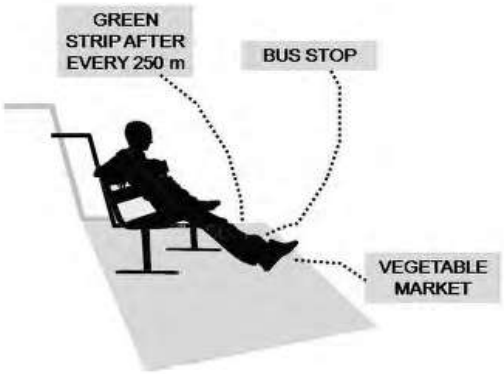


Figure 5: *Canopied seating placements*

Figure 6: *Sensory pedestrian crossing at roundabout lights on V2*

Source: (Fig 4, 5) Author,

(Fig 6) http://www.tribuneindia.com/

For sector to sector pedestrian connection, provisions in layout of sector have been provided already by ensuring a linear belt along North-east, South –west axis, but the problem lies at connection over the V3 and V2 intersections. Strips of green over bridges over these roads could be a possible solution. These strips could be enlivened by rotational rehri markets for vendors.

This completes the entire circulation system of Chandigarh. Where each cannot be designed and retrofitted in exclusion. They are all parts of a larger machine (man) and have to be well galvanized and fitted for an overall universal performance.

The clarity with which, a mental image of any city can be perceived gives a feeling of easy accessibility. In its absence disorientation can be a major factor restricting the movement of people, especially among the elders and children. The fear of getting lost and constant assistance might deter them from going out.

But in Chandigarh chances of feeling disoriented is less as compared to any city, owing to good planning. Using Kevin Lynch's idea of five principles of imageability: landmark, district, edge, node and pathways, it can be inferred that the orientation within the sector and the city is not a problem for the city dweller.

Restriction of material (brick and concrete) has given Chandigarh a distinct identity from any Indian city but the identification of different sectors becomes a problem, due to the same. Signages and maps have been provided at important locations making the city legible for tourists.

The city celebrates equity by the amount of large public spaces provided and welcoming all section of the society, regardless of their gender, age, cultural or religious background. The character of these

public spaces is not determined by a religious structure or a community but brings back everyone at the same place; in the laps of nature or in the concrete character of a modern space celebrating Brutalism. Here no one is rich or poor everyone is equal. Most of these public spaces and buildings are well equipped for accessibility of physically challenged people but, the design of parks fail on this aspect at the entrances, as most of them have U-shaped entrances which are difficult to negotiate for people with lower limb immobility. Also there is no provision for the visually impaired populace. These small issues should be addressed to ensure complete equity.

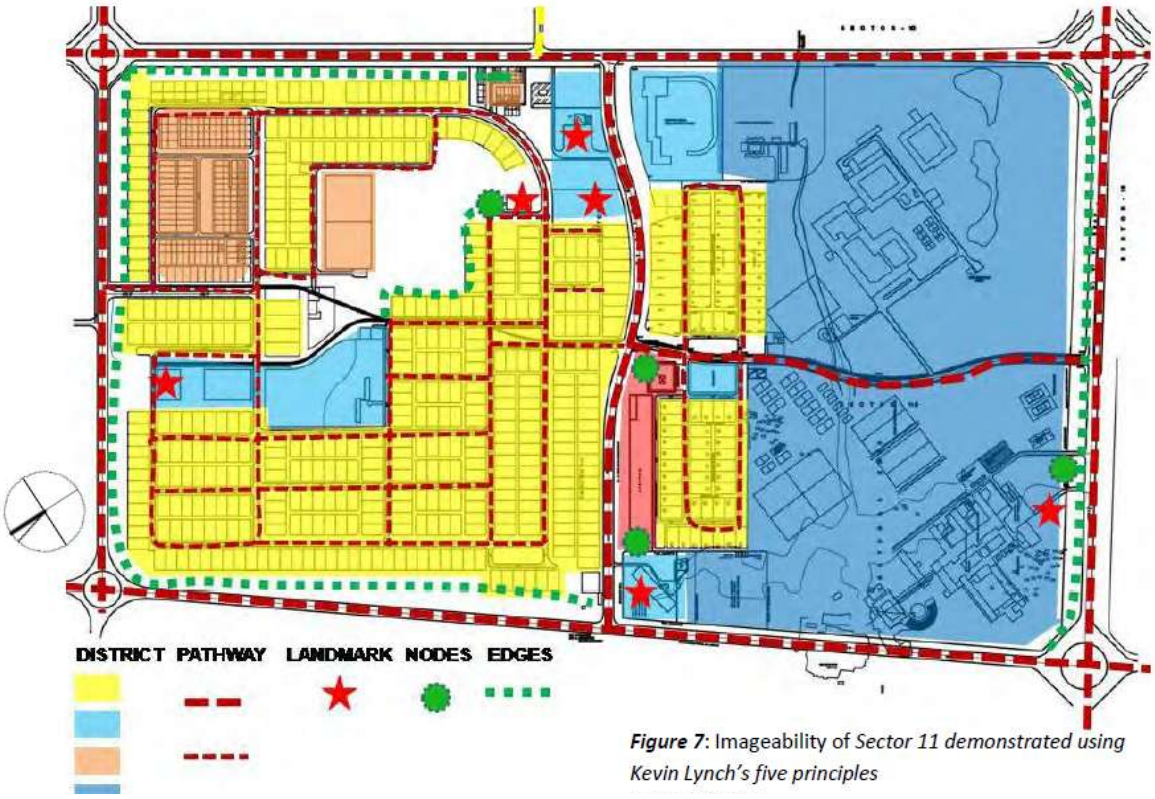


Figure 7: Imageability of *Sector 11 demonstrated using Kevin Lynch's five principles*

In terms of economics when the city is compared to other cities of India it is expensive but relating it again to the per-capita income we can come to a statistical conclusion that its economic for most of the citizens except the lower income group. Plus the quality of living,

which is intangible is much better, this puts the city on a very high pedestal. All the public spaces of the city do not have any entrance fees and everyone can enjoy them. Also the public transportation is comparable to other cities of India, which is considerably cheap for a daily user.

From cultural point of view, it has been well accepted by three major states namely, Punjab, Haryana and Himachal. Apart from these like any Indian city there are people from various parts of India who adapt to the cultural context of Chandigarh. The intermingling of so many cultures and regions has resulted in a new culture which is 'the culture of Chandigarh'; the spirit of the open hand - a tacit vision of Corbusier.

CONCLUSION

While Universal Design as a theory became popular only after 1980's the idea of social inclusion through better planning, better connectivity and architectural controls were well achieved as one of the earliest efforts in Indian context.

However with the understanding of Universal Design principles (Indian), it creates immense possibilities for modifications and improvements, in the built environment of Chandigarh. In case it wants to achieve greater access and be developed as a role model of Contemporary India.

I struggle everyday
I feel I am alone
I feel I have to catch up
For reasons my own.

Is this a permanent condition?
Or just a passing phase
O God! Let there be mercy

As I do not want to disgrace.

I don't want to complain
Every time I am in pain
But, the absence of problem in sight
Doesn't mean everything's alright.

There have to be reasons
For feeling this blown
But didn't you make us all equal?
So what is this zone? (Source Author)

Figure 8: Spring time in Chandigarh

Figure 9: Open hand monument

Vriddhi Yadav,

Railway Station – Towards universal design approach

Vimal Kumar Chaurasia, M.Arch. – IInd year, archi.vimal@gmail.com

Indian Institute of Technology Roorkee

A railway station has always been something more than a mode of transport. A factor of fantasy which involved with long steel tracks howling engines, complex networking and pleasure with speed and comfort makes it much valuable than mere transport system. Railways have offered a lot to the society from essentiality of travel to shaping the cities of India.

Indian railways are the backbone of transport system in Indian. It is one of the world's largest railway network comprising 115,000 km of track over a route of 65,000 km and approx 7,500 small and big railway stations. Indian railways carry about 7500 million passengers annually or more than 20 million passengers daily. Its runs about 10,000 trains daily. It is owned and managed by government of India with the help of over 1.4 million employees. As for rolling stock it houses over 60,000 passenger coaches and about 9,200 locomotives. By all these grand figures one can understand the importance of railways in India.

In India railways is the common mode of transport for common people. Ask any common man, what comes to the mind when he is reminded of a railways station. Most people end up saying 'chaos and congestion, inconvenience, dirty, unpleasant and tiring, confusing. Why is it that? A building which is so important to a city,

a building which is by its very nature a landmark left ignored and untouched by the designers?

Figure 1Indian Railways headquarters Delhi

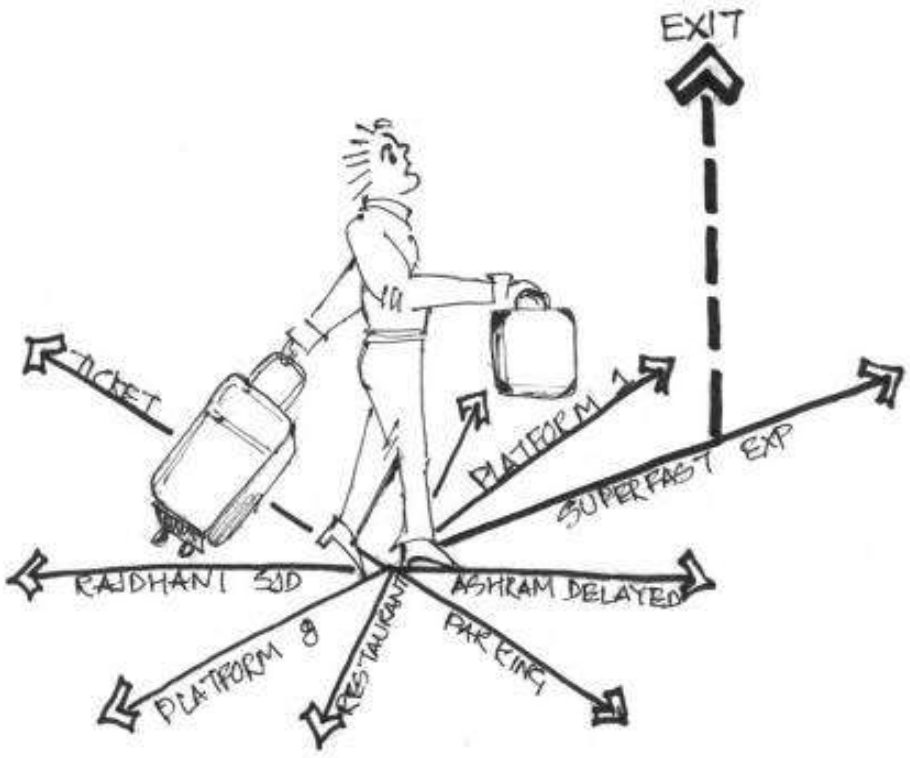
As designer I wanted to gain the insight from the users' perspective. I would like to share my recent observation at a railway station in North India which I made regarding the problems faced the common traveller and the feel of that experience from his/her account. On a bright sunny morning in winter I went to a railway station using public transport, a public bus. It left me to the bus stop nearest to the station. From here to reach the station entrance was kind of a big challenge, had to climb a foot-overbridge to cross National Highway (NH), but reaching to the footbridge was in itself difficult due to unauthorized parking and scattered hawkers all around. Luckily I had no luggage. But someone having luggage would have to do it, then it would be an unpleasant task. Finally I reached the main entrance to the railway station braving all that. People were

rushing here and there as if they didn't know where to go. There were some sign-boards indicating what's where, but in India, I think people don't believe upon sign-boards. They just keep asking "bhai sahib ye pilatefaram kidhar hai, enquiry kounter kidhar hai" etc. i.e sir where is this platform? which way is the enquiry counter?

Figure 2 A railway platform in India

In all this rush an old lady, travelling alone, with two average-sized bags had to take the steps and drag her luggage along to reach the main entrance hall of the railway station, as the ramp supposed to go up to the plinth was not clearly visible. There was a big electronic screen displaying the information of current running trains. She looked at it for a while and took two steps towards the enquiry counter, but immediately stepped back, as there was too much chaos there. Everyone was at the top of their voice there, as their travel is important and the information regarding that is precious. Frightened, the gentle lady came back to the big electronic screen, stood there for a few minutes, silently contemplating and then asked a nearby gentleman to help her with the information that she sought

about of her train. Train will come on platform no. 5, the gentleman told her.



A better information system may avoid such situations. There are information systems available but an intelligent design incorporated with then may make them better, and journey a pleasant experience.

Coming back to the incident, Sighed the lady. She had a big job ahead. Lay ahead a long, over-crowded foot over bridge that she had to walk along taking her luggage to reach the destined platform. Anyway she started climbing. Pausing twice, briefly, to catch her breath, the lady managed to complete the ordeal. She seemed exhausted after reaching the platform no. 5. A place to rest was all that she needed at the moment. But there was none in the sight. People were already sitting on whatever small number of benches

was available there. Left with no other option, she made a bench of her luggage..!

Figure 3 View of a crowded station

Proper handrails and resting spaces may have made the old lady's path a bit easier.

Figure 4 Travel with comfort

Time seemed to pass very slowly. The announcement about her train was made. A mixed expression of pain and relief was very apparent on her face. Pain of the agony caused by the trial she had to go through while manning her way on the railway station, getting requisite information, finding the platform, resting on the bag, etc was all she had in the name of experience of this platform. Relief was that this trial was over. But this was far from the end actually.

Boarding the train was still a job ahead. She asked a young army man "beta ye S4 kidhar aayega?" i.e son where this coach no. S4 will come? as by no means she could get to know about the location of the coaches over the platform. Luckily for her, he was to travel in the same coach. He assisted her safely on board. Seeing all this left me wondering if catching a train could be a Herculean task like this. The next moment I was reminded of the disabled persons. How on earth can anyone with mobility impairment manage all that this lady, though not impaired could not manage without assistance from the gentleman at the enquiry counter or the army man at the platform or so many other such people who had not stumbled upon her while she was crossing the platforms of walking hefoot over bridge……?

Suddenly my attention was drawn towards one young man on the foot over bridge, having two bags in two hands and a big bag on shoulders, anyhow managing to get down the bridge slowly, balancing the load as well as finding the way in the rushing crowd. Despite all his endeavours he stumbled down just before a few steps were remaining. He was lucky to have fallen near the end of the stairs. This could have been dangerous.

Figure 5 Lady rolling her bag with comfort

Its not about only elderly people or the people with disabilities, rather the issue of convenient mobility is important for all including the much able-bodied young man who fell on the steps.

People are diverse. Some are left-handed and some right-handed. The apparent variation in their age, size, and functional capacities, illness or disability (temporary or permanent disability) can also affect person's mobility, reach, balance, strength, stamina, sight, hearing, touch, knowledge, understanding, memory or sense of direction. People with diverse ability should be able to use building and places

Figure 6 Travel with royal feel

comfortably and safely as far as possible without special assistance. People should be able to find their way easily, understand how to use the built space. All these aspects and viewpoints pose a challenge to the decision makers and the designers alike regarding the universal design which 'asks the designer to consider people of all ages and abilities in every aspect of design' (Salmen & Ostroff). The result is a humanistic approach to architectural design that includes accommodation for people with a range of abilities.

.

Vimal Kumar Chaurasia

Assistive Technology – A fashionable dimension to inclusion

Shreya S. Sen, M.Arch – Ist Year, shreyasen1405@gmail.com

Indian Institute of Technology Roorkee

What is Assistive technology? In simple words it is technologically innovative devices which assists us in day to day activities.

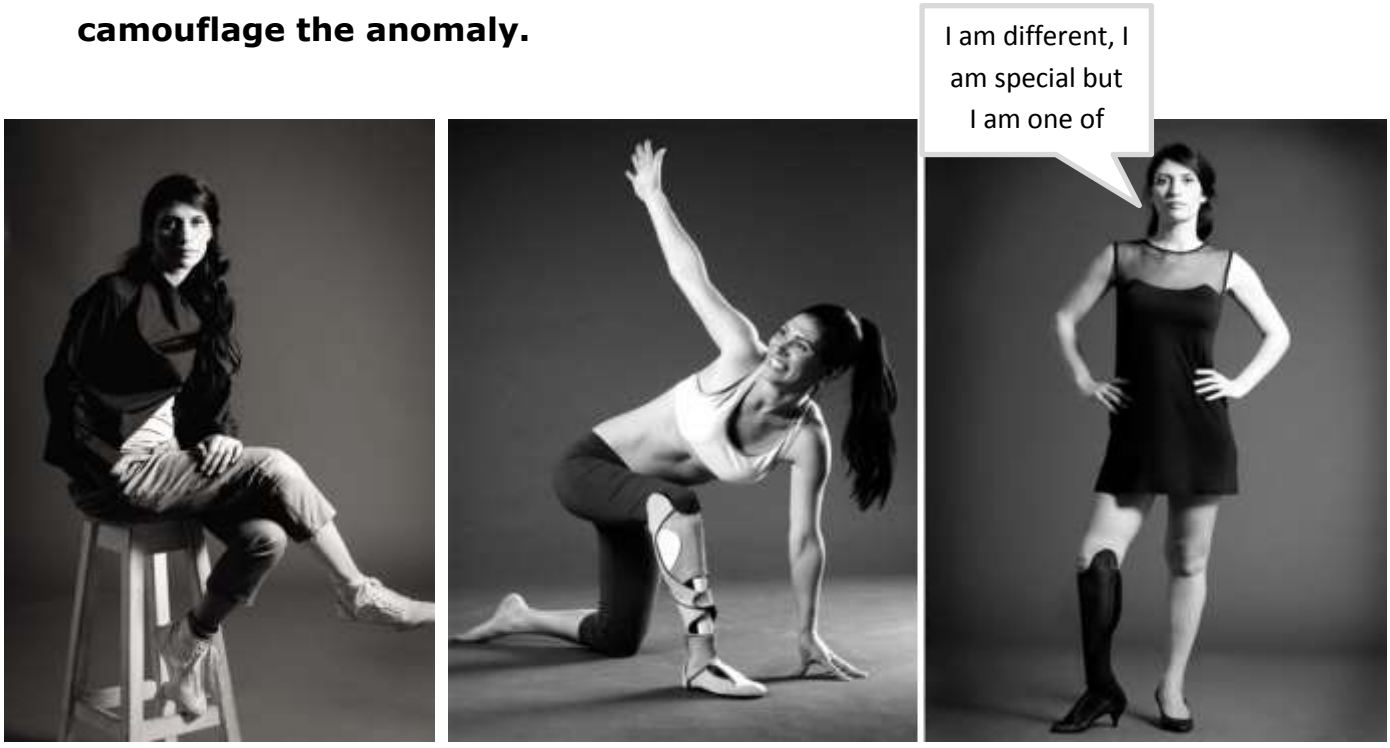
Whom is it meant for ? Everyone faces difficulties in performing daily activities [Eg. brushing one's teeth, cutting vegetables ,etc] at some or the other point of time in their lives due to various reasons [Eg. Old age, Accident recovery]. Assistive technology comes into play in such a scenario & helps overcome the temporary/permanent disability. In search for a better terminology, I would like to call such people with a disability as 'People with special needs'.

Prosthetics are assistive devices for those who are permanently disabled. However, these assistive devices are designed for limited populations with specific special needs and generally are neither useful nor appealing to other users.

In contrast, Universal design can integrate accessibility concerns within devices by making it attractive and appreciable to not only the users but also the onlookers. [Ref :Universal Design of Products].

Bringing the first hand experience of a Prosthetic user ,I would like to share her personal feelings about the design of the device. But first let me give you a little bit of her background information …..The

lady is a 24 year old architect and uses a Myo electric robotic limb as she is an above elbow amputee. This limb is great functionally, however it neither matches in colour nor size with her natural left arm. This automatically puts her in a situation where she wishes to camouflage the anomaly.



The above images show the day wear, workout ad evening wear looks of a prosthetic limb respectively [from L to R].

Image Courtesy : Co. Design Design Courtesy :Israeli industrial designer AviyaSerfaty

But why "Camouflage", when one should be celebrating the advancement in technology, and the variety which comes with it.

My viewpoint is that, if the device is a machine then it should look like a machine, not like some ill conceived natural design. Only then will the rest of the populace be able to appreciate it, simply because it depicts the truth.

(Image & text courtesy : Immaculate prosthetics by Hans houseclepp , Dec 2008 ,Design courtesy :Student project at Oslo School of Architecture and Design)

As architects we always design any environment keeping the needs of the client in mind, and where public utility spaces are concerned universal design is a critical factor deciding the usefulness of the area.

[Immaculate is a concept that explores new possibilities for prosthetic devices. It aims to question the strive for normality and imitation in prosthetics, and instead attempts to incorporate identity and new functionality. Immaculate means flawless, and reflects on

the amputee not being less of a person. As of today prosthetics are technological skeletons covered in silicone. They imitate the look of a natural arm perfectly, but as soon as someone touches it one realize it's a prosthetic. The consequence is then a phenomenon researchers call "The Uncanny Valley", whereas something is so lifelike the realization of it being artificial leads to shock and revulsion.

To avoid this, and to promote the interests of the prosthetic users I want to apply the same philosophy used in eyewear. These support products have gone from being purely functional to become objects of fashion and identity. Furthermore it turns it into an object of beauty instead of a technological object masquerading as a natural arm.

Immaculate is a neurological prosthetic, connected to the users central nervous system. The exterior of the prosthetic is textile clad in Corian plates. The Corian allows embedded technology to be seamlessly integrated, and in union with the textile gives the prosthetic a clear graphical identity. Each joint is a globe joint, allowing a larger freedom of movement than a normal human arm.

Instead of imitating the ordinary Immaculate strives for the extraordinary.]

Assistive technology in Indian Scenario

AFFORDABILITY V/S QUALITY

Assistive technology like any other technologically advanced sector requires in house Research & Development [R&D] so as to increase the affordability and acceptability among the Indian masses addressing the people with special needs.

Example :

Jaipur foot : Affordable prosthesis @ U.S. $28

[Considering 1 U.S. $ = 55 INR.] i.e. 1540 INR

(Reference: Presentation: Changing Indian Science & Technology landscape . Author :Dr. T. Ramasami , Secretary , Department of science & technology, Government of India)

Comparisons & Contrasts of Innovation systems

INDIA	OTHER DEVELOPED NATIONS
Investment into R&D = 0.95 % of GDP whose	Investment into R&D = 2 % of GDP of which
0.7% = public sector & 0.25% = private sector.	0.7% = public sector & 1.3% = private sector.
Under such conditions, public and societal upliftment priorities could drive the purpose of innovations.	In such economies competition among the private sector drives the innovation for gaining leadership in the market space.
Therefore focus is on Affordable innovations for inclusive growth agenda of the country.	Therefore focus of design is Quality Innovations for global competition.

But the million dollar question will always be 'How can affordable innovations be simultaneously high on quality parameters?'

One solution to this would be to formulate quality parameters specifically for the Indian market and simultaneously encouraging private bodies to fund various research initiatives in the sector for design of assistive technologies.Thus any prototype which comes into the market via research comes after undergoing rigorous quality testing.

Also the disabled population at large need to be made aware about quality certification of these devices, and it's importance.

This situation gets further complicated among the poor illiterate disabled section of rural / urban India.

A little boy in a remote interior village of UttarPradesh holding the Jaipur foot of his father who is a daily wage worker.

Image courtesy :Frank Metois @ Demotix.com July 22, 2012

"How can a person who struggles every day to make two ends meet, think about being choosy on the basis of quality?"

Quality of a product helps in long term saving by decreasing the effects of daily wear and tear. Our aim is to spread this awareness among the economically weaker section of our society. Such people may not be able to pay more for better quality, but can certainly devote some time and effort from his/her busy schedule to help make his own personal prosthetic device under the guidance of trained professionals in a local workshop situated in every rural village in India

AVAILABILITY : DEMAND V/S SUPPLY

Currently there are two kinds of prosthetic devices in our Indian market :-

1. ***Cosmetic limb***
2. ***Robotic/ myo electric limb***

Other than Jaipur foot, foreign companies like Endolite and Otto-Bock are the ones which are majorically catering to the needs of this niche segment of our population.

However, since the required prosthesis need to be imported, it takes around 3 to 4 months for the final rehabilitation to be completed. The biggest hurdle in this sector is to get an Indian looking prosthetic cosmetic limb [to match with the Indian skin tone]since most offer European/ African skin colours to choose from. But the cost of these prosthesis are very high, and cannot be afforded by all.

Thus there is need to develop & market affordable prosthesis and demand far outweighs the supply.

In relation to other assistive devices :-A few technologies are actively disseminated by the respective nodal organizations – for example, screen reading software by National Association for the Blind and hearing aids by Ali Yavar Jung Institute for hearing handicapped. These are mostly offered at discounted rates to make them affordable.

There are also state run financing programs such as ADIP – Assistance to Disabled persons for purchase/fitting of assistive devices. However, many available technologies are completely out of reach with respect to these assistance schemes, limiting the devices to the low end of the spectrum. Due to the unorganized nature of these populations, most don't have access to bank accounts and loans, leave alone comprehensive medical insurance coverage to help fund purchase of relevant AT devices for them to learn skills and earn livelihoods.

APPLICABILITY

The technologies should be intuitively usable by majority of the intended audience. That includes elimination of complex controls and user interfaces, localization of graphics and accents, provision of personalized recorded messages instead of synthesized content etc

Top :Ongoing research in the field of mind controlled prosthetic limbs.

Image courtesy : Max Ortiz Catalan, industrial doctoral student at Chalmers University of Technology in Sweden. 28 Nov 2012

Below : cosmetic restoration of a few fingers by prosthetics from Endolite, India.

FUNCTION V/S AESTHETICS Top :I limb + Utah hybrid arm , Below :Cosmetic limb from Endolite

Universal Design + Indian culture

Using exposed titanium for a robotic limb in an urban setting like cities & industrial towns seems like a logical proposition.

But in a country like India, where 70% of population live in villages & only a minority 30% are living in cities, the cost and finish of Assistive devices for this larger segment needs to be addressed, keeping a rustic setting in mind.

CURRENT SCENARIO

Jaipur Foot : catering to majority of lower limb amputees in India for the past 90 years.

ADVANTAGES & REASON OF POPULARITY

- ***LOW COST***
- ***READILY AVAILABLE [local materials used]***
- ***ACCEPTABLE AESTHETIC APPEARANCE [wooden ,therefore close to skin colour]***
- ***LOW MAINTENANCE [Local technology & less moving parts]***

CHALENGE : how to make it technologically up to date , keeping the production and maintenance costs low.

Culture is another critical factor which decides the inclusivity of assistive technologies. In such a culturally rich country like India, many varied traditions and customs co-exist in harmony with each other. The question as Designers of the built environment that we need to address is that

"How can assistive devices be so designed, that they are culturally sensitive "

Expressed Physically via

CULTURE ⟶ ACCESSORIES

Example : flexibility to attach bangles on a robotic limb . Image Courtesy :James sanders.

Flexibility of accessorising the prosthetic limb can make it very indianised, thereby making it easily acceptable by people with special needs in Urban as well as rural India.

Fashion is all about change….to be fashionable is to stand out from a crowd.

It is normal to change clothes, accessories with the time of the day… but imagine changing hand or leg depended on the expected activities to be performed…how cool is that!!

CUSTOMISED APPEARNCES

Everyone desires to be proud owner of exclusive product. Then for that, even be as simple as a wooden bat, with the name of their favorite cricketer inscribed on it . Similarly, adding a stylized patch to the prosthetic design with the owners name/ some other particular inscribed may increase the sense of belongingness.

ENVIORMENT SENSITIVITY: Using Green Energy

All machines require energy to function; same is the case of most of the assistive devices. Dependence on batteries restricts the use. Therefore using solar power to charge batteries is both an eco-friendly and fashionable proposition

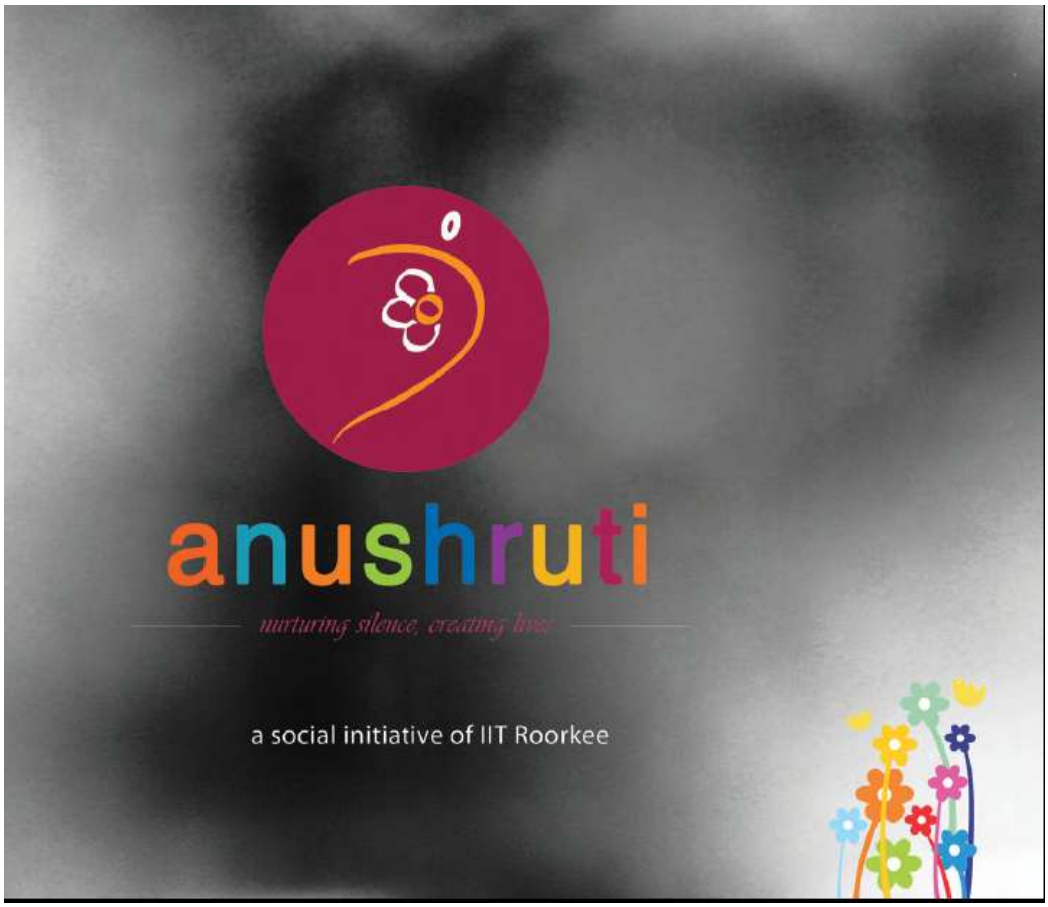
CONCLUDING DISCUSSIONS:

- **Yes, Assistive Technology can indeed be fashionable and at the same time be culturally sensitive.**
- **Should Assistive Technology be limited and defined by technology, or should it be guided by aesthetic sense, or may be a balance of both.**

Time flows with fast pace. And so does the age of the users of such devices, however the device remains the same, or is completely discarded and replaced by a new one . Therefore design needs to be

TIMELESS & ADAPTABLE TO EXTENSION

Shreya Sen



About Anushruti:

Anushruti is a humble social initiative at its own kind, growing under the aegis of IIT- Roorkee. We are committed to deliver quality education to our specially able children with hearing impairment in and around Roorkee. Formally, known as Roorkee School for the Deaf, with its root laid in 1989. Anushruti has risen to be one of the finest initiatives at a national level.

With an excellent team of highly qualified and dedicated teachers and staff, supported by the management of IIT Roorkee, Anushruti aims high to make a mark and carry forward a valuable impact in nurturing lives amidst silence through unmatched professional contributions in the sectors of education & research.

Prof. Pradipta Banerji , Director IIT Roorkee with Anushruti students & staff at the Director's lodge, IIT Roorkee

patron's feelings

I feel honoured that Anushruti Vidyalaya is on IIT Roorkee campus. My interactions with the children and teachers of the school have always left me humbled, invigorated and teary-eyed.

The dedication of the teachers and the administration is just amazing. The hard work that they put in day after day must be totally worth it when there wards excel at some activity or the other. I am fully committed to whatever that IIT Roorkee can do to help them in their work and personal life.

What can I say about the children? They remind me at all times that they are specially abled - being far greater human beings than their "normal" brethren. The love that they shower on me whenever I have been to the school, especially over breakfast, is something that is unforgettable. Their joy and sheer enjoyment in whatever activity that they participate in is catching - I find myself participating with them, although it may be sometimes only in my mind.I still remember the "Kaun Banega Crorepati" event that was organized the first time I visited the school. What an event!

Whatever I say about our donors, can never be enough. Their commitment and their contributions over the years have kept this endeavour going on for so long. I only hope that their participation as major stakeholders in Anushruti continues, and the school moves from strength to strength in the years to come.

May God Bless Anushruti Vidyalaya!

Prof. Pradipta Banerji

president envisions

Our school Anushruti is the first School for the Deaf in India in a Hi-Tech Institute of National importance. It is a unique example,where students and faculty at IIT Roorkee have actively undertaken R&D activities.I was touched by the warmth that I received on the very first day at Anushruti. The dedication of the teachers, staff members cannot be expressed in words. I am thankful to God for giving me the opportunity to serve these gifted little angels. We at IITR should feel proud to have an institution that serves the entire community of Roorkee, Haridwar and Saharanpur. The time has arrived to expand and reach out to all of India to make a difference.

At anushruti, it is our humble resolve to nurture this gifted silence and groom it into a life worth living with dignity. As a direction for the future, we envision to minimize the disabling barriers in the education process of these special children, through greater scientific support in the following areas of key concerns

- Rehabilitation using scientific methods for imparting knowledge to make them self sufficient.
- Introducing newer learning devices and creating an ambience where learning becomes easier.
- Emphasis on sign language, bilingual education and visual techniques.

We solicit and ask not for sympathy but a strong resolve to join our cause which will help us achieve our goals.

Anasuya Banerji

Ms. Anasuya Banerji , President Anushruti blessing Anushruti kids

Prof. S C Handa receiving the National Award for being the 'Best individual serving the disabled' from the then Hon'ble Prime Minister, Sh. Atal Behari Vajpayee in 1998

founders' thoughts

In 1989, the syndicate of the then University of Roorkee (now IIT Roorkee) gave me the prime responsibility to frame the constitution and vision for the school. After we visited over 50 schools in India, USA, Canada & England, we came to certain vital decisions with a proposal that it will be managed by a team of faculty members and some advisors to impart QUALITY education to deaf children. As a Community Based Project contributions from all over - specially our alumni helped meet the expenses.

Direct government funding was chosen to be limited through research projects only to make it grow quickly on a fast track mode and above all to feel proud that an educated community can support such a system. It was also envisaged that the existence of such a school on campus will help generate an environment to start research in the area of disability and so on.

Prof. S C Handa, *founder, Anushruti*

Way back in eighties, finding no good school in the area, we decided to go abroad for the sake of proper education of our deaf son Vivek but with the unfolding of circumstances, we were given the responsibility of developing a school for the deaf children on the campus of IIT Roorkee.

The school was a big family to me where I used to feel like a mother of every child taking care of micro details not only of each & every student but also of my teachers & other school employees. The love & affection, the respect & belongingness that the students & parents gave me during my tenure as principal for two decades is a priceless possession I carry with me even today.Every tear of joy in the eyes of the parents & every smile on the face of the students used to be a testimony that their tomorrows are going to be brighter than today.

Mrs. Kiran Handa, *founder Principal, Anushruti*

Mrs. Handa using e-learning module to teach a deaf child

research model

The students and faculty of IIT Roorkee actively engage in R & D activities which serve as relevant inputs to Anushruti in the development of assistive devices, educational technology, teaching aids, softwares, etc.
In accordance with the national policy of education, several M.Tech & Ph.D. theses have been submitted in the area of hearing impairment and disability.

future plans

At anushruti, we value and wish to develop more research based professional interventions in order to fulfill the dreams of reaching an international level of education for these specially abled children with hearing impairments. We open our doors for global contributions in the facilitating the following endeavours:

a.) Expansion and development of Vocational training activities through organising workshops on art & craft, visual communication skills, photography, mime, etc.
b.) Development & creation of engineering workshops for carpentry, tailoring, etc.
c.) Evolve and develop in house training modules for teachers and special educators in this domain.
d.) Development of state of the art audiometry & speech therapy section.
e.) Creation of an e-library with adequate state of the art computing facilities.

Anushruti students as participants & winners at National Abilympics, 2009 held at New Delhi

success stories

Vivek Handa son of Mrs. Kiran & Prof S.C. Handa, the founders of this school was diagnosed 'deaf' at the age of 3 years due to an ear disease and later became one of the earliest students to pass out from the portals of Anushruti.

With a set of extra ordinary qualities and skills, Vivek mastered a good number of activities in academic as well as co-curricular domains like sports, fine arts, photography etc. He is a true testimony to the success of Anushruti. Having won over 50 prizes and awards, NDTV telecasted a documentary on him with the title 'Photographer with a difference.' He has put up an exhibition of his collection of paintings & photographs at the prestigious Lalit Kala Academy & the American Embassy in New Delhi.

Vivek is a graduate and is currently employed with the State Bank of India at IIT Roorkee campus where he is considered as one of the finest employees. He is extremely reliable, sincere and passionate & goes out of the way to help others. Though he left the school way back in 1997, even today, he is fondly remembered by students & staff of the school.

Vivek Handa receiving the Rajiv Gandhi Foundation award from Smt. Sonia Gandhi in an open painting competition in 1984.

thoughts unfold

My association with Anushruti has been a life time learning experience... a school close to my heart. As a person it gave me the strength to face and overcome challenges and as a teacher, honestly I learnt more than I imparted. As an artist, these special children made me realize that art was not only limited to painting as a form of expression but more so as an expressive mode of communication for the hearing impaired. The school and the children provided me with this invaluable opportunity, taking ART and CREATIVITY to the ultimate. It taught me not to follow where the path may lead, instead to go where there is no path.... and leave a trail.

To conclude, in the inspirational words of Helen Keller - " Optimism is the faith that leads to achievement. Nothing can be done without hope and confidence."

- Kulina Shah, Mentor

Everyday I learn lots of new things during the teaching learning process at anushruti. I consider myself fortunate enough to be associated and serving the hearing impaired children.

- Rajendra Yadav, Teacher

Children with hearing impairment have speech/language delays, social, educational & psychological challenges to overcome. We at anushruti inculcate in them tremendous self confidence and make them aware of their rightful place alongwith their moral duties towards society.

- Parvati Pandey, Principal

Being a part of anushruti is a proud feeling for me. I believe that associating myself with theses sweet children is a noble mission of my life. While these children are equal amongst all, they need the right direction, dignity and love to prove their capabilities.

-Monika Saini, Teacher

These should be better placement & self employment opportunities in the small scale industries for our special children.

- Neelima Aggarwal, Teacher

anushruti©
IIT Roorkee campus, Roorkee - 247 667, INDIA
www.anushruti.in
Phone: +91 - 1332 - 285 838, 286 095
Email : anushruti.iitroorkee@gmail.com

BOOK RECEIVED:

Press Contact:
Linda Stephen, IWPR Group
linda@iwprgroup.com
402-483-0747

The Accessible Home: Designing for All Ages & Abilities
New Book by Architect Deborah Pierce

Newton, Connecticut (October 23, 2012) – The Taunton Press is pleased to announce the publication of *The Accessible Home: Designing for all Ages and Abilities,* by Deborah Pierce. Foreword by Michael Graves, FAIA.

This first-of-a-kind home design book addresses the needs of families, couples, and visitors looking for an accessible home that is both beautiful and functional. The Accessible Home shows how ordinary people with extraordinary challenges can partner with architects, designers, and their own families to create homes that restore capabilities, independence and the grace of daily living.

The book is also a tool for the more than 80 million Baby Boomers to age in place in their current homes and lead a lifestyle with independence, comfort, and safety for decades. A recent survey by AARP revealed that 84 percent of Boomers would like to stay in their current homes during retirement, but only 16 percent have taken any steps to adapt their homes accordingly.

Author Deborah Pierce is one of our nation's foremost experts on universal design. As an architect for the past three decades, she has

been focusing on how a home serves the activities of daily living. As a result, the projects in this book convey the power of universal design – useable by everyone.

Michael Graves, FAIA, says, "Deborah Pierce tackles the small problems along with the large in her quest to make wonderful places where people with disabilities can live comfortably and safely."

Homeowners, architects, designers, remodelers and builders will find ideas, inspiration and courage to create homes that are unique to each household's requirements and at the same time, attractive to broad segments of the population. She shows us that "accessible" can be beautiful and functional, light and airy, low-maintenance, safe and comfortable, and that universal design today is a far cry from the grab-bars and ramps of yore.

***The Accessible Home* features 25 new and remodel projects and 225 photos from across North America to show readers how to create a home that serves its owners for years to come.**

Title: *The Accessible Home: Designing for All Ages & Abilities*
Publish date: October 23, 2012
Publisher: The Taunton Press
ISBN-13: 978-1-60085-491-0
Price: $27.95
Pages: 224
Photos: 225
Drawings: 30
Cover: Paperback
Trim Size: 8 ½ x 10 7/8 inches
Taunton Product: 071400
Web site: http://www.taunton.com

About the author: Deborah Pierce, AIA, is principal of Pierce Lamb Architects in Newton, Mass. and lectures across the country on the topics of architecture, accessibility and universal design.

APPEAL:

EIDD / Fundacion ONCE Book Project
'Design for All in Action – The European Experience'

Call for Submissions

A major new publication on Design for All projects commissioned by EIDD – Design for All Europe and Fundación ONCE

Design for All (DfA) is design for human diversity, social inclusion and equality (EIDD Stockholm Declaration, 2004[1]). It supports the creation of products, services and systems that can be used by as many people as possible without the need for special adaptation and has a people-centred approach at the heart of it. DfA has origins in the field of accessibility but has grown to encompass much more. It can meet the great social challenges of our time such as ageing populations, the need to include differently-abled people in mainstream design as well as engage with people excluded on the basis of social, economic, financial or geographic boundaries. Inclusion is central to a DfA approach, bringing with it better design thinking, improved products and services, market success and socially-centred innovation.

DfA has been appropriated by designers working in different disciplines such as consumer products, packaging and communication design, transport and mobility as well as the built environment and sustainable development. The book will look at issues concerning DfA methods for involving people in the design process, improving quality of life for all and building a case for widespread practice. Case studies describing how DfA policy or legislation has influenced design practice can also be submitted.

There is a need to progress DfA from being just seen as an ideology or philosophy to becoming a practical part of the everyday design process and demonstrating the value of the approach. This publication seeks good examples of DfA that include people whether old or young, differently-abled, of any gender, culture or race.

The aim is to convey the practical experience of implementing Design for All drawn from designers, educators, policy makers, businesses and other organizations, articulating the key elements for success as a good practice guide for others to follow.

It will seek to achieve the following objectives:

• Collect interesting European and global experiences on Design for All in all design sectors including the built environment, products, services, IT, transport and information design.

• Analyze each experience and outline key factors in describing their success. The editorial team will look at each accepted case study to see how other people working in DfA may benefit from the learnings and how work might be transposed or reproduced in other areas, sectors or countries.

• Publish a book in Spanish and English – the first of its kind – that exclusively showcases DfA case studies and the importance of design that considers human diversity. The book will be distributed across the EU.

If you would like to be included please send an abstract of 200 words written in international English for consideration by the editorial team. Guidelines as below:

- Abstracts should describe design stories or case studies that address the publication theme of **Design for All in Action**, explicitly stating how it can be considered to have a people-centred approach.
- Market-ready solutions are preferred but the editorial committee will consider abstracts that describe exceptional work that may not be on the market.
- Abstracts are in international English and NOT academic English. The editorial team will give advice on final contributions.
- Abstracts are solicited from individuals, companies, industry, universities, research facilities, government bodies, voluntary sector organizations or anyone who has a DfA story to tell. Designers, students, start-ups, educators, marketers, policy-makers, managers, academics and business leaders are also encouraged.
- Abstracts should include a short descriptions of: the project: user groups: design process: outcomes; and any measures of success.
- Authors of successful abstracts will be required to submit their completed articles of between 1000 to 1500 words.

Abstracts should aim to include:

- Project description
- Methodology (have users been approximately involved?)
- Description of the process
- Description of impact (has the work had a significant effect / benefit?)
- Outline of innovation (is the work described genuinely new or novel?)
- Pictures, figures and tables

- References

Timetable for submission:

- 1 January 2012 to 15 February 2012: abstracts of 200 words sent to Merih Kunur at merih.kunur@network.rca.ac.uk
- 15 March 2012: the editorial board reviews submissions and advises successful authors
- 30 April 2012: completed articles received
- 30 May 2012: articles reviewed by editorial committee and feedback given to authors
- 30 June 2012: 'Camera-ready' articles submitted by authors for inclusion in the book
- 15 August 2012: ready for print
- Autumn 2012: book launch

Editorial Committee:

Lead editors:

Finn Petrén, President, EIDD Design for All Europe

Jesús Hernández, Dirección de Accesibilidad Universal, Fundación ONCE

Editors:

Avril Accolla, Vice-President, Design for All Italia

Onny Eikhaug, Programme Leader, Norwegian Design Council

Rama Gheerawo, Deputy Director, Helen Hamlyn Centre for Design, UK

Ilona Gurjanova, President, Estonian Association of Designers

Peter Neumann, President, EDAD, Germany

Chris Ramsden, President, Chartered Society of Designers, UK

Key contacts:

Book facilitator: Merih Kunur, Royal College of Art, UK

merih.kunur@network.rca.ac.uk +44 (0) 7789 727272

References:

Ref 1: EIDD Stockholm Declaration, 2004

www.designforalleurope.org/Design-for-All/EIDD-Documents/Stockholm-Declaration/

2.

€ Design | Measuring Design Value

Dear Stakeholders and Partners,

we are happy to enclose for your attention the **Analytical Framework Paper**, as part of the first delivery of the **€Design Project**, an initiative that aims to identify and establish guidelines for measuring design as a factor of economic production and its impact on GDP.

€Design counts with the participation of six European partners: BCD Barcelona Design Centre, Coordinator (Spain); Copenhagen Business School (Denmark); designaustria knowledge centre & interest organization (Austria); Hungarian Intellectual Property Office (Hungary); SVID Swedish Industrial Design Foundation (Sweden) and the University of Cambridge / Design Management Group (United Kingdom).

The project, co-financed by the European Commission, ENISA (Spanish Ministry of Industry, Energy and Tourism), the Swedish Agency for Economic and Regional Growth and the Austrian Federal Ministry of Economy, Family and Youth, with a budget of one million euro, will analyse and define the conceptual framework of design in the economic context, in order to measure it as a tool for user-centred innovation and as economic factor of production. The objective is to obtain tangible results that demonstrate the importance of design as a crucial element to enhance the innovative capabilities of Europe and increasing economic growth and business competitiveness in the global market.

The initiative is part of the 1st Action Plan of the European Design Innovation Initiative, a commitment of the Innovation Union Europe 2020 flagship to exploit the full potential of design for innovation and to reinforce the link between design, innovation and competitiveness.

Please feel free to disseminate this document amongst your associates or colleagues, as well as through your website.

We are particularly interested in receiving your feedback. Please send your comments to: katharina.beran@designaustria.at.

With regards,

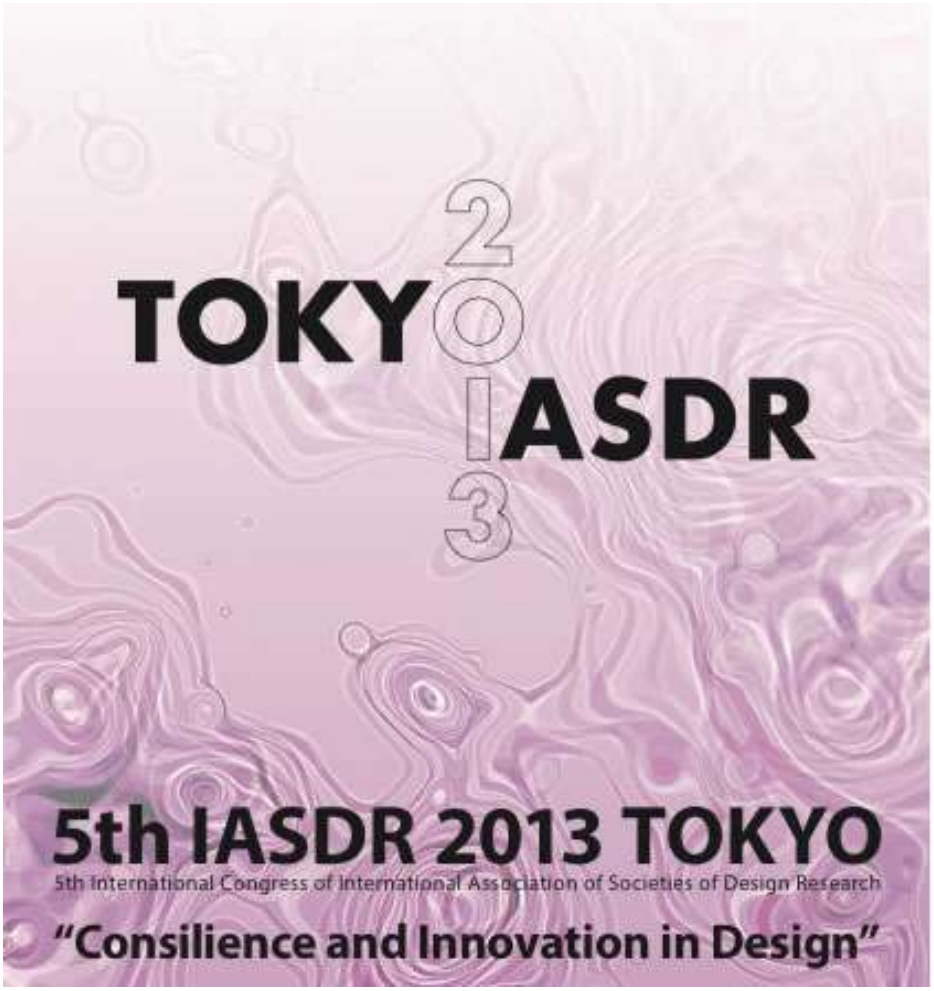
Katharina Beran & Severin Filek
Project Manager Director

designaustria
knowledge centre & interest organization

designforum im MuseumsQuartier Wien
Museumsplatz 1, Hof 7, 1070 Wien
T (+43-1) 524 49 49-0
E katharina.beran@designaustria.at
www.designaustria.at

Program & Events:

1.



2.

International Design for All Foundation Awards 2013

The International Design for All Foundation Awards recognise public, private and not-for-profit initiatives from across the world which aim to enable everyone to participate in society on an equal basis. In so doing, they draw international attention to examples of best practice in Design for All.

The categories for the present edition are as follows:

- **Project undertaken by a not-for-profit organisation.**
- **Project undertaken by a government or other public body.**
- **Project undertaken by a private company or professional.**
- **User-centred design in Living Labs: Project proposal.**

Key dates

- **10 December 2012: Opening of call for applications.**
- **17 February 2013: Deadline for submission of applications.**
- **20 March 2013: Award ceremony during the International Design Biennial in Saint-Étienne, France**

3

entries for the 2013 Mark of Excellence Systems Integrator Awards will be accepted through Sept. 14, 2012. The industry-recognized competition honors excellence in innovation and achievement in custom home electronics, services and installation technologies. The 2013 Mark of Excellence finalists will be announced in November and the winners will be awarded at the Mark of Excellence Awards Reception on Jan. 9, 2013, during the 2013 International CES.

New categories include Tech for a Better World and Accessible and Universal Design Technologies.

4.

5.

6..

HCI International 2013

21 - 26 July 2013, Mirage Hotel, Las Vegas, Nevada, USA

7.

1st Call for Papers: WG 9.4: Social Implications of Computers in Developing Countries

12th International Conference on Social Implications of Computers in Developing Countries

Conference Theme: Into the Future: Themes, insights and agendas for ICT4D research and practice

Ocho Rios Jamaica, 19-22 May, 2013

Submission Deadline: 26 November 2012

8.

1st Call For Papers, 17th Annual EUROMEDIA'2013 Conference, April 15-17, 2013, University of Lincoln, Lincoln, UK

9.

10.

NFPA
CONFERENCE & EXPO
JUNE 10-13, 2013 • CHICAGO, IL
McCORMICK PLACE CONVENTION CENTER

11.

Universal Design Summit 2013
St Louis, MO
As an industry leader we cordially invite you to attend our
5th Universal Design Summit (UDS5).
This event is focused exclusively on housing and communities that meet the interests of your 21st century customers.
Learn about Better Living Design, the new national initiative that will change the landscape of UD practice and consumer demands.
Meet 500 industry leaders from around the country who are including accessible and Universal Design in new and remodeled homes.
Get the latest information about accessible and universal products and designs.
National Conference
Universal Design SUMMIT 5
May 6-9 2013
udsummit.net

12.

13.

products, news, business

2013 IDEA open for entries

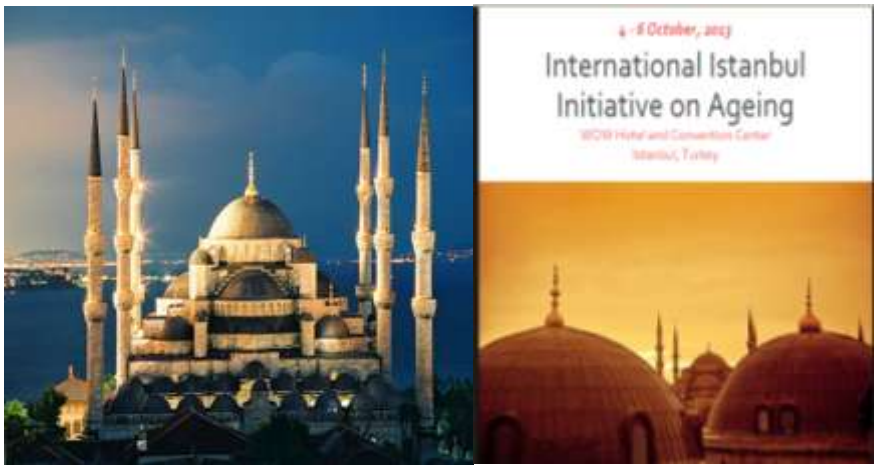
28 November 2012 by Kate Jones

The 2013 International Design Excellence Awards is open for entries.

home / 2012 / november / 2013 IDEA open for entries

The Industrial Designers Society of America (IDSA) are calling for entries for their annual International Design Excellence Awards® (IDEA) competition for 2013.

14.



International Istanbul Initiative on Ageing 4-6 October 2013

Call for Abstracts - Now Open!

The International Federation on Ageing and Turyak Seniors Council Association cordially invites you to **submit abstracts for oral presentations** at the International Istanbul Initiative on Ageing. All abstracts will be reviewed by the Program Committee and assigned to the appropriate concurrent session for oral presentations. Abstracts from around the world are welcomed to share best practices to the regions of the Middle East, Northern Africa, Eastern Europe, and surrounding countries of Turkey.

Abstracts must relate to one of the 13 sub-themes identified.

Abstract submissions are entirely separate from full paper submissions, and will therefore *not* be eligible for financial prizes or publications. For more information about Full Papers visit www.ifa-fiv.org.

Deadline: May 31, 2013 at 5pm EST

15

16.

Type Camp is coming to Delhi, Mumbai, & Chennai!

We are pleased to announce our spring 2013 schedule that features **three** professional urban training workshops in **Delhi**, **Mumbai**, and **Chennai**.

Spaces are filling. Sign up now for your opportunity to attend these professional training workshops!

Type Camp **Delhi**

14-16 March 2013

Type Camp **Mumbai**

20-22 March 2013

Type Camp **Chennai**

25-27 March 2013

17.

18.

النـدوة الـوطنيـة الرابعة للمعلوماتية
The 4 th National Symposium on Informatics
Technologies for Special Needs تقنيات ذوي الاحتياجات الخاصة

April 23-25, 2013. King Saud University, Riyadh, Saudi Arabia.

JOB OPENINGS:

1.

GlobalLogic is looking for UX Architects with expertise mentioned below. The position is based in Bangalore/Noida.

Core UX Expertise

Utilizes Breadth of Core UX Expertise:

*** Consults on User Experience for a large/complex product (R)**

*** Conducts product discovery sessions to understand user and stakeholder needs, sets UX Design goals (R)**

*** Conducts Information/Interaction Architecture definition, task-mapping/analysis using wire-frames to elicit, elaborate, and validate user and stakeholder needs (R)**

*** Conducts UX Heuristic/Expert Reviews (R)**

*** Conducts UX/User Research (D)**

*** Moderates Usability Testing Sessions (D)Depth of Core UX Expertise in any 3 of the above (R) marked areas**

(R) – Required; (D) - Desirable

Domain Expertise

Consults for UX work in atleast one of the following:

*** Media, e-Commerce, Communications, Mobile, Consumer Electronics, Medical Devices, Enterprise, Other domains (R)UX Project Facilitation**

*** Liaisons between clients, UX/Design and development teams and facilitate design and development activities (R)Product Innovation**

*** Guides clients in product innovation using competitive and trend analysis, provides design direction for innovation (R)**

*** Helps the product manager in product road-mapping/creating product backlog on multiple projects, prioritization of features (R)Mentoring**

*** Mentor junior UX Designers (R)Evangelization**

*** Active in UX, Design and/or Innovation communities (R)**

*** Publish one paper per year on Project Case Studies or Research (D)**

Job Requirement

*** 6 - 8 years of industry experience in UX, Design or related disciplines**

*** Hands-on experience in breadth and depth of UX and design activities as outlined in Job Description**

*** Professional Bachelors/Masters/PhD Degree in Experimental Psychology, Cognitive Psychology, Human Factors, Human Computer Interaction, Industrial Design, Communication Design or any other related discipline with a solid foundation in research-based design using both quantitative and qualitative methods (In absence of professional degree must possess sufficient intellect, process-orientation and self-drive to match Job Description)**

*** Excellent communication skills**

Interested candidates can send in their Resume + Portfolio to sushil.dhyani@gmail.com

2.

Job Description

Hands on Usability Specialist with 3 - 10 yrs of experience. You will be handling the entire scope of the Usability function. You will be working with a team.

Desired Skills & Experience

Should have 3 to 10 years of experience in Usability. Should have a very good applied knowledge in all Usability methods and techniques. Should have followed the typical end to end process starting from User research, Business Analysis, Task Analysis, UI Architecture, Interaction design, Information Design, UI Wireframing and prototyping, Usability testing, etc., Should be able to provide winning UI through proof of concepts. Should be able to take a deep dive on every business rule that impacts the UI and should have an eye for details in every design. Should posses good knowledge in tools like Photoshop and Dreamweaver,

knowledge with Balsamiq would be an added advantage. Should also be good in HTMLs and CSS, Should have a fair knowledge in Client side Javascripting.

Job Location: Chennai and Pune.

Send your resume to mdurai@inautix.co.in

Company Description

BNY Mellon is a global financial services company focused on helping clients manage and service their financial assets, operating in 36 countries and serving more than 100 markets. BNY Mellon is a leading provider of financial services for institutions, corporations and high-net-worth individuals, offering superior investment management and investment services through a worldwide client-focused team. It has $26.7 trillion in assets under custody/administration and $1.4 trillion in assets under management, services $11.4 trillion in outstanding debt and processes global payments averaging $1.5 trillion per day. BNY Mellon is the corporate brand of The Bank of New York Mellon Corporation.

Additional information is available on http://www.bnymellon.com/ or follow us on Twitter @BNYMellon

3.

Communication Internships at Auroville

Auroville Consulting provides multi-disciplinary expertise for ecologically responsible development projects. We also manage the Auroville Collaborative projects where we explore innovative and sustainable solutions for integral living at Auroville in partnership with internal and external experts. We have various projects related to sustainability with a strong communication component.

We are looking for two communication interns with background in graphic design, communication design, programming, illustration, audio/video production to join our team in developing, designing and producing brochures, info-graphics and flash animations. The project duration varies but is usually between 2 – 5 months and requires intense team-work with a multidisciplinary and international team. Our projects are suitable for Master's thesis students or fresh graduates seeking working experience.

Projects for which we recruit interns:

*** I-phone application on Vedic Maths (duration 2-3 months)**

*** Auroville Retreat design of brochures and flyers (1 month)**

*** Communication for Vertical Garden and Grow containers (branding, web, brochures, packaging) (duration 4 months)**

Auroville is an international community of about 2000 residents from over 40 countries located near Pondicherry in South India. It offers a unique experience in sustainable living. Every year many students and young professionals from various countries work as interns/volunteers in diverse areas such as education,

forestation, farming, architecture, design and others. Besides the project challenges, interns/volunteers experience serene forested surroundings, a multi-cultural international social life and ecologically conscious living.

If you are a post graduate student or a young professional interested in the internship, please send by email: 1. A one page CV (pdf file) with photo 2. Short descriptions of projects along with a web link to portfolio.

Auroville Consulting info@aurovilleconsulting.com

4

An Independent global branding and design consultancy that focuses on providing clients with branding and design solutions that connect brands with their consumers faster, longer and more robustly than their competitors. They specializing in holistic branding for consumer goods and healthcare products, from multi-billion dollar global brands to small local jewels. With offices in Europe, Asia and North America employ multi-cultural, multi-lingual specialists with expertise across all facets of creating, building and protecting long-term brand equity.

Role: Graphic designers. Previous experience in Branding, designing packaging for FMCG brands is a must. Must have a Degree/ Diploma in Graphic design from institutes like NID. Understanding of Substrates, inks, printing, adaptations, consumer buying behaviour is needed.

Location: 1 position will be based out of Singapore,1 position will be based out of Bombay. International exposure with branding agency will be an added advantage.

Please send in your updated CV and folio to dcosta.francis@gmail.com with notice period and salary details.

5.

We are looking to make some funny / interesting emoticons and need help from graphic designers to do them. If you love funky text based emoticons, graphic art and are looking for a great startup experience, please drop us an email at graphics@plustxt.com

6.

SAP Business Suite division is looking for Visual Designers with 4 - 8 years experience in SAP Labs India (Bangalore)

Key skills we are looking for are:-

1. Detail design addict

2. Ability to understand and innovate within the boundaries of a global brand guidelines

3. Exposure to latest trends and standards in Visual Design and Graphic Design based on the emergence of smart phones, tablets and open web standards.

4. Good communication skills to explain and defend your ideas and view on Graphic Design and Visual Language choice.

5. Ability to juggle with multiple projects

6. Liaison and interact with Interaction Designers, Developers and Product Managers

7. Detailed specification documenting skills

We are looking for people who are very passionate about Visual Design. Experience in studio environments and agencies are welcome. Strong portfolio illustrating visual design skills Preferably a diploma/degree holder

Please send your portfolio and resume to jithesh.ramesh@sap.com

7.

If interested please write to manish.kumar@autodesk.com or shalini.natarajan@autodesk.com

Details about the opening below:

***Senior UX Designers* (3-6 yrs exp)**

Job Description

The Autodesk 360 team is bringing consumer style social interactions to the way architects, designers and engineers share their work and collaborate on projects. If you share our passion for building cloud services that enable social interactions in web, mobile and desktop applications, this may be the place for you. As the Senior User Experience Designer, you will collaborate with product managers, engineering managers, and software engineers to shape the experience of our products used by millions of individuals around the world every day.

As the Senior User Experience Designer you will :

●Define and create compelling user experiences through storyboards,wireframes, mockups, prototypes, and specifications

●Finding creative ways to apply the best user interface design ideas of the consumer web to business applications

●Owning the user experience throughout the entire product lifecycle, from initial explorations to actual rollout to customers

●Collaborate with internal (product managers, user researchers,engineering managers, and engineers) and external (customers, partners) stakeholders

Desired skills and expertise

●A bachelor degree or above in visual design / industrial design, applied art or commercial art from a premiere design / art school.

●3-6 years of Visual / UX design experience in the industry.

●Demonstrated excellence in visual design, interaction design, information architecture, typography and solid understanding of UX design principles.

●Expert knowledge of core design tools and familiarity with current Web technologies

●Must be self-motivated. Independently manage time, prioritize, manage multiple projects and meet tight deadlines.

●Excellent analytic ability and effective problem solving skills

●Online design portfolio demonstrating a strong, clean design sense

About Autodesk

As a global leader in 3D design, engineering, and entertainment software, Autodesk helps people imagine, design, and create a better world. Autodesk accelerates better design through an unparalleled depth of experience and a broad portfolio of software to give customers the power to solve their design, business, and environmental challenges. In addition to designers, architects, engineers, and media and entertainment professionals, Autodesk helps students, educators, and casual creators unlock their creative ideas through user-friendly applications.

8.

Teamdecode Software Pvt. Ltd.-It is a software service and consulting firm providing clients end-to-end product development services. Our offerings range from product usability and design, conceptualization, user experience design, implementation, testing and deployment of the product. We also provide boutique solutions that allow customized selection of services as per the product requirement. We offer specialized services such as heuristic evaluation, usability testing, information visualization, information and technology architecture review and enhancements.

url: www.teamdecode.com

Job Description :

- Looking for Visual designers who have great eye for detail and tremendous visualization skills

- Should have the ability to creatively come up with designs for flyers, Brochures, infographics etc.

- Create concepts that meet the business objectives & stakeholder requirement.

- Should have the ability to apply existing visual design patterns and guidelines.

- Should have expertise using Adobe Creative Suite: Photoshop, Illustrator, InDesign etc.

- Should posses knowledge of typography, iconography, color, logo design and page layout.

- An understanding of designing for mobile platforms such as Android and iPhone would be considered as a great positive.

- Should have 2+ years of experience.

We are looking for people who have an ambition to succeed, keen on working in a startup environment

Job Location: Noida, Sec 63

Interested candidates please send your CV and portfolio to shveta@teamdecode.com

9.

Design Concentrate is a boutique Graphic Design studio based in Mumbai. From branding and identities to packaging and publications, posters and campaigns to books, products, home textiles and websites. Design is always at the heart of what we do.

Find out more about us at: www.designconcentrate.in

We work as a core team out of a lovely studio in Lower Parel and are looking for a new member to get on board. They would have a degree in graphic design or an equivalent qualification and ideally some professional experience.A Proficiency in Photoshop, Illustrator and InDesign is essential. Web development and/or video editing skills would be a plus.

To apply, please send your CV and portfolio (including links to relevant work/PDF no larger than 4mb) to: jobs@designconcentrate.in

Closing date: March 20, 2013

10.

We at Tata Consultancy Services (TCS) are looking for experienced candidates to join UX team as UI and Visual design experts. The position is for our office in Lucknow.

About TCS-iON:

Tata Consultancy Services has launched the first of its kind IT Solutions on Cloud platform through iON. The service provides best-in-class, on-demand business IT solutions using the very latest in scalable cloud computing technology. It has been developed to deliver IT in the third generation service model to SMBs (Small and Medium Businesses). Using a pay-per-use business model, iON helps SMBs leverage world-class technology solutions as a key business differentiator. It removes the need for SMBs to invest in IT assets or retain scarce IT talent.

The UX team:

The UX team at iON is responsible to create unique experiences for its customers. As a team member of the User Experience team, you will actively partner in the development and delivery of dynamic solutions supporting a best-in-class consumer experience for Ion.

The UX team is responsible to develop solutions ranging from websites, web applications to Touch screen interfaces for Stationery and Handheld devices.

Sr. UI Designer (1 Position)

Job Description –

This position is responsible for working closely with Customers, management and technical architects to create highly complex and sophisticated User Interface design for web based applications.

Key Responsibilities

Ensure all UI designs meet usability objectives and user requirements

Coordinate with customers/ users and development teams to gather comrehensive design requirements

Generalize design techniques to apply and contribute to corporate UI standards and consistency with other products

Work on UI designs in the form of sketches, story boards, wire frames, and interactive prototypes

Independently produce detailed user interface designs and specifications

Conduct Usability tests during formative and summative stages of development

Role Definition

A senior level professional role. Evaluation, originality or ingenuity required. Knows and applies the fundamental concepts, practices, and procedures of UI Design. Performs work under general supervision that is varied, and may be difficult, yet typically involves limited responsibility.

Education

Graduate or Masters degree in Human Computer Interaction, Information Design, Industrial Design , Human Factors, Cognitive Psychology, or related HCI discipline

Work Experience

Possesses a portfolio demonstrating 3+ yrs of exp in UI design demonstrating expertise web based applications.

Skills

Expert UI design and prototyping skills. Ability to document root cause of UI design issues instead of symptoms and propose clear solution

Comprehensive knowledge of advanced HCI principles

Comprehensive understanding of UCD analytical methods

Proficiency in the ability to perform usability tests, cognitive walkthroughs, heuristics evaluations, surveys, interviews, competitive analysis, card sorts, task and needs analysis, user profiling, and other usability methodologies.

Possess excellent written and oral communication skills.

Knowledge of Core Java/J2ee technologies and Web UI technologies with programming background is a plus but, not mandatory.

Visual Designer (1 Position)

Job Description

We are looking for an outstanding Visual Designer to work on visual design for web based applications. The designer will be responsible for researching, designing, and prototyping the new user experiences, creating design mockups, producing prototypes for design implementation.

The candidate must be a natural collaborator who prefers to develop designs in a team environment, and must be a passionate about UI design. A passion for elegant design and incorporating new and innovative technologies is a must.

Responsibilities & Skills Required:

Attention to detail and a good eye for aesthetics

Good user interface design skills

Have an affinity for consistency, color use, typography, and a keen eye for subtle details for visual design of web interfaces

Work Experience

Possesses a portfolio demonstrating 3+ yrs of exp graphic design for web and web based applications

The following skills would be beneficial for a candidate to possess:

Understand web interface development technologies like HTML, CSS and JavaScript and knowlegde of possibilites of interactions enabled by these technologies

Strong verbal and written communication skills

Able to use Photoshop, CorelDraw/ Illustrator and Flash (Action scripting) to build Screen designs and mock-ups

Education

Graduate in Graphic design, BFA, MFA or B.Des or any other equivalent qualification.

If interested, please send your Updated CV and Portfolio (file or link) at the earliest to:

Lead, User Experience

Tata Consultacy Services

anant.tambade@tcs.com

Call: 9820788494

11.

We at SAP Labs, Bangalore are looking for UX Designers to join our TIP-Core team. You can read more about the positions and requirements below in the formal JD.

Feel free to reach out to me for any questions you may have.

Interested candidate can apply with their updated resume and portfolio to harshvardhan84@gmail.com

12.

Software Endeavour, Bangalore is looking for Interaction & Visual Designer in Lead, Senior & experience positions.

We work in Mobile platforms like Apple, Android, Windows Phone & Blackberry along with desktop website & Mobile web.

Kindly view profile below & send us your Portfolio, Current CTC, Expected CTC & Notice period details to uxjobs@techendeavour.com

Mentioned job title as a subject line.

Job title: Lead, Interaction Designer

total position: 1, required exp: 5-7 yrs.

Required skills:

- Overseeing all interaction design elements like wireframes & navigation, interaction, user experience briefs across various platforms.

- Promoting strong standards for usability and user centered design practice, with an understanding of both the rules and when to break them.

- Working expertise in Interaction, IA, Navigation & Usability principals.

- Working proficiency of Sketch, Axure, Visio, Illustrator etc...

- Guiding team from the initial phase through design research, idea generation, presentation, user testing and navigational prototyping.

Plus skills:

- Knowledge of HCI guidelines of Apple, Android, Windows Phone and Blackberry.

- Working expertise of visual design principal & visual ergonomics.

Background:

- 5+ Years of experience in Interaction Design, Visual Design, Communication Design or relevant experience.

Job title: Lead, Visual Designer

total position: 1, required exp: 5-7 yrs.

Required skills:

- Overseeing all visual design elements like proportion, visual navigation & ergonomics, desirable experience briefs across various platforms.

- Promoting strong standards for visual ergonomics, with an understanding of both the rules and when to break them.

- Working proficiency of Sketch, Photoshop, Illustrator etc...

- Guiding team from the initial phase through design research, mood board, idea generation, presentation and user testing.

Plus skills:

- Knowledge of interaction/ gesture based navigation layouts among with usability principals.

- Knowledge of HCI guidelines of Apple, Android, Windows Phone and Blackberry.

- Prototype making skills using flash, html, web tools etc...

Background:

- 5+ Years of experience in Visual Design, Communication Design, Animation Design, Fine Arts or relevant experience.

Job title: Interaction Designer

total position: 3, required exp: 2-5 yrs.

Required skills:

- Define and understand user motivation, business objectives, market opportunities and competition to align project scope and schedule.

- Working expertise in IA, Navigation, Interaction & Usability principals.

- Working proficiency of Sketch, Axure, Visio, Illustrator etc...

Plus skills:

- Knowledge of HCI guidelines of Apple, Android, Windows Phone and Blackberry.

- Working expertise of visual design principal & visual ergonomics.

Background:

- 2 to 5 Years of experience in Interaction Design, Visual Design, Communication Design or relevant experience.

Job title: Visual Designer

total position: 2, required exp: 2-5 yrs.

Required skills:

- Define and understand brand guidelines, business objectives, market opportunities and competition to align project scope and schedule.

- Working expertise in visual principals.

- Working proficiency of Sketch, Photoshop, Illustrator etc...

Plus skills:

- Knowledge of HCI guidelines of Apple, Android, Windows Phone and Blackberry.

- Prototype making skills using flash, html, web tools etc...

Background:

- 2 to 5 Years of experience in Visual Design, Communication Design, Animation design Fine Arts or relevant experience.

Advertising:
To advertise in digital Newsletter
advertisement@designforall.in
Acceptance of advertisement does not mean our endorsement of the products or services by the Design for All Institute of India
News and Views:
Regarding new products or events or seminars/conferences /workshops.
News@designforall.in
Feedback:
Readers are requested to express their views about our newsletter to the Editor
Feedback@designforall.in

Forthcoming Events and Programs:
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.

Forthcoming Events and Programs:
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.

Chief-Editor:

Dr .Sunil Kumar Bhatia Faculty Member,
13, Lodhi Institutional Area, Lodhi Road, New Delhi-110003(INDIA)

Editor:

Shri L.K. Das
Former Head Industrial Design Center, Indian Institute of Technology (Delhi), India

Associate Editor:
Shri. Amitav Bhowmick Industrial Designer Small Industries Service Institute. Ministry of Small scale, Government Of India, Delhi

Editorial Board:

Mr. M.L .Dhawan
Mr. Pankaj Sharma
Mr. Pramod Chauhan

Special Correspondent:

Ms Nemisha Sharma ,Mumbai, India
Nemisha.17@hotmail.com

Address for Correspondence:

13, Lodhi Institutional Area,
Lodhi Road, New Delhi-110 003India.

Material appearing in this Newsletter may be freely reproduced. A copy of the same and acknowledgement would be appreciated.

This Newsletter is published monthly, by
Design for All Institute of India,
3 Lodhi Institutional Area,
Lodhi Road, New Delhi-110 003 (INDIA)
Tel: +91-11-27853470

E-Mail: newsletter@designforall.in
Website: www.designforall.in

(Cover Design: IIT-Roorkee)