

# Design for All



**DESIGNING FOR THE PUBLIC GOOD**

Guest Editors: Professor Emeritus Yrjö Sotamaa,  
Professor, Dr. Lou Yongqi

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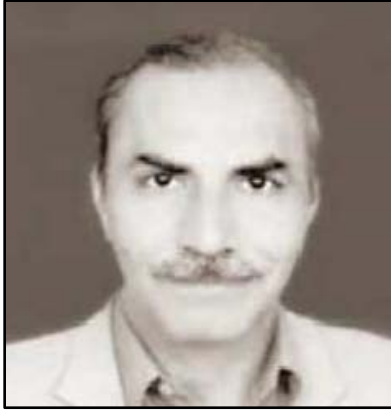
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## Letter from the Chairman's Desk

By Sunil Bhatia PhD

I have never given thought to 'Design of fold' as I did this time when folding my shirts and that exercise was prove to be unusual perspective for me. I did folding many times in past but this time I observed properly folded clothes can be accommodate more in cupboard compared to keep it in unorganized way. Is concept of folding because of civilization or it is inbuilt character of nature?

When concept of folding stayed in my mind and as I brood over I found it is mysterious phenomena and played great role in progress of humans. It is not confined to humans rather all living beings are experiencing in one or many occasions the need of folding and it has inbuilt involuntarily mechanism to counter the challenges. It is common behavior in humans when face winter and to counter with warmth we fold our hands or when lying and experience cold we placed our both hands between thighs and folds our legs to counter it .That folding helps not to release the warmth of the body and exposed body area should be minimize with the cold environments. This is an act of reducing wider surface of exposed body and control the escape of heat of body. Our ancestors folded their body when realized escape was not possible and attack would eliminate their existence to counter it they curled their body in defense. Sometime this trick worked and saved their lives. Intestine is placed in

stomach in folded form because it is the requirement to extract the best from the foods for meeting the basic requirement of different organs and healthy things are extracted and rejects the useless or harmful products for body. Idea of folding struck to our ancestors when they found that folding the fingers helps in holding, folding of arms in lifting the weight and rhythmic folding and openings of legs allowed the person to run faster. Chewing the foods was nothing but folding to turn for desired state suitable for food pipe.

Tongue is twirling and by folding it humans learnt the art of modulation and their voice is different in pain and happiness. Vocal flexibility is akin to folding of band. Foundation of communication is on folding. Verbal as well as non verbal communication foundation is folding and by folding fingers or using by folding eyelid we intend for message. Even many musical instruments like harmonica produces sound when player presses the flap in folding and opening manner that intake as well as passes air that produces the sound. Quality of sound and what note is required to produce desired sound by pressing different keys is the choice of the player by folding of flap and pressing the keys.

Our mind has information and that is gathering through our senses. Problem of timely retrieving the information as and when it requires otherwise it is useless piece of information. Sometime nature helps in retrieving the stored information either by looking at scar on body that helped in recalling the entire incidence just like movie in our brain with minuet details. That scar is nothing but triggering the folded information store in the brain. In computer to retrieve the information we use the concept of folding and maximum eight steps is required to hit the desired data from the storage. Laptop should be easily transportable by users and it should not be taxing

designers thought to use the concept for miniaturization by folding of flaps. Similarly for mobile we use the folding for better management for need of users. Folding helps in miniaturization.

My observation is that concept of miniaturization was extensively used in urban life style compared to rural. Reason is urban people faces big challenges of space constraints compared to rural where open space life style . Rural people products or tools of agriculture are designed not much with folding concept because it should be strong and sturdy but introduced various function in single products because of economy constraints. Other side, urban people have folding chair, table, bed and many more to use less space when not in use and expendable when wish to use it . Army people can carry limited weight in their bags, to make it occupied less space, should be light, preferred have many functions in one product and to meet all requirements they designed army knife based on folding. Nail cutter, filing and removal dirt struck in nail is placed in one product and it is called by people nail cutter. We have designed folding umbrella and spectacles or goggles arms can be folded for placing in small case. An umbrella or parasol is a folding canopy supported by wooden or metal ribs, which is mounted on a wooden, metal or plastic pole. It is designed to protect a person against rain or sunlight.

Wrist watch strap is based on folding around wrist. It is different whether using lather or iron chain as strap. The basic principle of mechanical watch is in folding of spring by using the knobs for twisting and allowed for unfolding in regulated manner gives us time management. Later we designed the automatic watch where knobs was no more use for folding of spring but use the slight more weight

in one end of the spring and as movement of hands gives movement to spring for folding.

A child monkey folds his arm around the neck of her mother for holding and it prevents from falls. A few flower folds when senesces some danger or demand of pollination. While sitting we have to fold legs.

Nature helped in understanding the concept of folding. When certain products were soaked it could easily fold. In Stone Age ,they used grinding as concept of folding and used log or stone and they might have learnt from the jaws that crushed the foods . This concept used for removal of cover of food grains for taking out grains. After the discovery of fire, concept of folding experienced drastic changes and a new technique surfaced like forgings or moldings or castings. They even used hot sands for removal of cover from food grains. When iron pipes that are generally straight need to fold for certain requirement they used hot sands passes through pipes and its energy turns the hard pipe into soft and by using external force turned to desired shape.

As human knowledge progressed and understood the design of rope by twisting the fibers for desired strength and it is called rope was nothing but use of concept of folding. They used pulley for folding of rope for lifting the water from underground. Iron chains and pulley were designed for lifting and unloading the heavy weights products by using folding. Cycle is to peddled and transfer of power for rotating the cycle we use the chain that fixed over large teathed plates with peddled placed in front and small teathed plates at the rear . Later they understood the role of pneumatic they designed pressure machines for folding for desired shapes and designed the

shock absorbers by using folded spring for meeting the challenges of roads.

Doors and windows pans are folded for closing. Before the knowledge of RCC architects were using the concept of arch for strength by placing bricks in such manner it fixes and provides the shape of semi circle. In ancient time , several structures show the blocks cut with an internal angle, so as to 'fold' the stone around corners. It is suggested that this was incorporated as an earthquake 'preventative'. The Inca masonry of South America is probably the finest the world has ever seen and they used fold concept extensively in their tasks. They learnt in early stage of development that simple sheet of paper does not have strength to stand alone but if folded in zigzag, it stays stand and have great strength. Origami is the ancient art of Japanese paper folding. In china, they designed folding screen - is a type of free-standing furniture consists of several frames or panels.

Man has two options one is compression and another is expansion. When he compresses he generally uses folding and expansion is structures unfolds. Calipers are designed on the concept of folding for measuring inner as well as outer surface. Compasses are designed for drawing the circle or measuring the length of the line and there was need to design that can be expandable to desire length. Later we designed the stapler for joining with iron pins. Latest is 3D paper printing by computer is possible because of folding. James Watt engine designed was based on D valve where steam is compressed in one chamber that is folding and pressure of steam allows the valve to move in another direction and unfold the stream. This simple concept has created a history by transforming the linear motion into circular.

Saree or lungi wearing process is based on folding. Even pleats were introduced in pants or skirts that are nothing but folding and came to existence while observing the ergonomics. Human body expands when attempt for sitting and to accommodate and not to stress the clothes or eliminates discomfort of tight clothes. Pants with pleats are nothing but a little fold that expands to meet the challenge of stretch when person sits. Diapers were designed by folding for putting extra cotton layers in the centre of the it for better absorption and it is ancient practice for better management of child raising.

It was the folding that was responsible for various geometrical or non geometrical shapes and ultimately led to design of wheel and that has revolutionized the human progress to next level from physical strength to use to animals to automobiles. This wheel has given us the concept of interface and designed the bullock cart is such way that without taxing the animals pulls the cart. Earlier primitive person was confined to design of interface with holding that stone that could be lift and fit in hands but never thought to use the animals power their benefits. Discovery of fire provided liberty for designing the tools that could easily operated by humans without discomfort and metals were melted and folded with the dyes.

Dialing of telephone was based on folding. Later it was replaced with pressing the key of key pad of mobile or laptop but basic concept remains the same of dialing. In dialing we placed the finger in grooves and dial. That was nothing but folding. In pressing we fold the fingers and pressed the key for dialing.

Packaging industries based on folding. It is the card board or paper container boxes are designed by folding. Medicines stripes are



placed in aluminum sheet by folding. Injection vials has rubber cap for contains should not spill and folded aluminum sheet folds around to tightly hold and leave round rubber cap for insertion needle for medication. Washer man carries the dirty clothes of the customer using long clothes by folding.

Concept of cooking of chapati or bread is based extensively on concept of folding in many stages. We uncover the cover of the food grains for grains by unfolding , grinding to make it flour we crushed and it is an act of folding , making of dough by adding water and manually pressing for proper mixing is an act of folding and at last roll over to turn in desired shape and placed under fire for direct heat or using medium for indirect heat for making bread. When we cut the vegetables or animals meat as food that act is nothing but folding. Folding has helped in designing many techniques of boiling, frying and roasting in food preparation.

Design of bun or braids is act of folding of hairs for proper management. Nature of growth of nails is to curl if it is not properly cut for better management. We cut it before it fold.

In coastal area winds blows in high speed and it is difficult to manage small hairs so local people prefer long hairs folded in bun or in pony tail for better management. In fishing rod the needle is folded for catching the fish. Similarly to catch the wild animals they used catcher that fold around the neck of dogs or placed folded net catcher.

Saluting with folded hands is a traditional Chinese etiquette showing respect to person. India has adopted this tradition and it has become part of our culture. Indian subcontinent saluting was established with folded hands but influenced of other religions changed the

character and waving hands in air that was sign of welcome as well see off in happy note was accepted. Later welcoming by offering the folded beetles as mouth fresheners to guest considered to be sign of intimacy. In modern time offering beverages is sign of mark of respect to guest by unfolding the cap of the container.

Tradition changes but affection, care and concernment from the heart truly reflect our intimacy. This special issue with Guest editors: Professor Emeritus Yrjö Sotamaa, and Professor, Dr. Lou Yongqi is different because they are renowned international acclaimed designers and their contribution for society is such that we cannot write everything in this issue but while reading our readers can understand their thought process. Teaching can be automated but learning that is with passion creates different effects.

Happy Independence Day 15<sup>th</sup> August 2016

*With regards*

*Dr. Sunil Bhatia*

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## Forthcoming Issues

### September 2016 Vol-11 No-9.1

**Professor Ricardo Gomes** has been a faculty member in the Design and Industry (DAI) Department at San Francisco State University for nearly 25 years. He was the Chair of the Department from 2002-2012. Prof. Gomes coordinates the Design Center for Global Needs and the Shapira Design Archive Project in the DAI Department. This non-profit international research and development center is dedicated to promoting responsive design solutions to local, regional and global issues such as: inclusive/universal design, health care, the aging, community development, social innovation and sustainability of the built environment.



## October 2016 Vol-11 No-10

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



## November 2016 Vol-11 No-11

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



## December 2016 Vol-11 No12

**Mainak Ghosh** Assistant Professor  
Department of Architecture & Regional  
Planning, Indian Institute of Technology  
Kharagpur, India will be the Guest Editor. his  
research interest revolves around perception  
studies, cognition and learning, and urban  
design. Presently he is working on various  
facets of visual perception factors cutting  
across various media in an urban domain.



Precisely this delves in understanding concepts between spatial design, Human Computer Interface, Robotics, Information and instructional design, interaction design etc. which could be proliferated at an urban design and urbanscape level. Completing his Bachelor in Architecture, he deep-dived into specialization of visual communication design in IIT Kanpur, Masters in Design. There after industrial experience as design consultant in one of the largest corporations in India. He has worked for various international and national clients working on the fronts of innovation, research & development and design interventions. He is well travelled with collaborations and connections in USA, Canada, UK, China and UAE. He is the founder of Undream Design, a holistic design hub. He has always been keen on academic pursuits, with publications of books, various journal papers and with attending conferences, mainly focusing on bridging the gap between communication design and space, architecture & urban forms. He has been invited speaker to Smart Cities and Countries Congress held in Paris last year. He has been visiting faculty in various institutions such as, Jadavpur

University, School of Illumination Science, Engineering and Design, Kanpur University, Loreto College. Apart from his academic and professional expertise, as a hobby he is inclined towards artistic spurts. His art works has been exhibited in Berlin, Germany in 2012.

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

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



## **February 2017 Vol-12 No-2**

Jim Harrison is a Lecturer at the Cork Centre for Architectural Education in Ireland, and has long experience of teaching, research and publication on aspects of Universal Design and user-friendly design for ageing as well as in integrating these topics into the architectural curriculum. He also has been a supervisor to PhD and Masters thesis candidates in related topics.



He has produced numerous publications on inclusive design related topics with over 50 papers and journal articles, a collection of which

were successfully presented for his Higher Doctorate (LittD) at the University of Sheffield. Whilst teaching in Singapore (1984 – 2002) he became involved in UN ESCAP 'Training the trainers' accessibility workshops in the Asian Pacific Region, in which he is still active. Amongst many other achievements he contributed a section for the Singapore Access Code on the needs of older people and, as a UN Expert Resource Person, continues to participate in projects on Universal Design promotion. He will be the Guest Editor.

### **March 2017 Vol-12 No-3**

#### **Bonollo, Emeritus Prof. Elivio**

**Emeritus Professor, Industrial Design Faculty of Arts & Design ,is one of Australia's leading industrial design educators and researchers.**

**In 2008 he was conferred with the Honour of Cavaliere by the President of the Republic of**



**Italy in recognition of his collaborative work in design and education. He is emeritus professor of industrial design at the University of Canberra (UC), and recently visiting professor in the School of Design and Environment (2004 -2007), and the Department of Mechanical Engineering (2007) at the National University of Singapore (NUS) will be the Guest Editor**

## **Quote, Kyoto Design Declaration 2008**



*Yrjö Sotamaa, Author of the Kyoto Design Declaration*

**Design has the power to make fundamental improvements to our world**

**Human-centered design thinking, when rooted in universal and sustainable principles, has the power to fundamentally improve our world. It can deliver economic, ecological, social and cultural benefits to all people, improve our quality of life and create optimism about the future and individual and shared happiness.**

***Kyoto Design Declaration 2008***



## GUEST EDITORS:



### ***Yrjö Sotamaa***

***Yrjö Sotamaa, Professor Emeritus, Aalto University, Finland***

***Lou Yongqi, Professor, Dr., Dean, College of Design & Innovation, Tongji University, China***

***Yrjö Sotamaa and Lou Yongqi are colleagues who have collaborated for a long time on international arena and in China. They have been building next generation design education and research which focuses on social innovations, sustainability and implementing the ideals of the Kyoto Design Declaration.***

***Yrjö Sotamaa is an internationally awarded designer with an outstanding career in design, design education, research and design strategy&policy work. He is currently Chairman of Ateljé Sotamaa, Advisory Dean and Professor of Tongji University College of Design and Innovation, Member of the International Academic Committee of Tongji University Shanghai International College of Design and Innovation.***

*He is former President of the University of Art and Design Helsinki TAIK (1986-2008), founder and President Emeritus of Cumulus Association (2001-2007) and former Executive Vice President of the Sino-Finnish Centre at Tongji University, China. He has been Scientific Advisor to top Universities in Austria, China, Denmark, England and Korea. He has played a key role in developing design polity programs in Finland, Denmark and EU.*

*His first contacts to social design were established during his studies (1965-1969) in the Institute of Art and Design (later University of Art and Design Helsinki and now Aalto University School of Art, Design and Architecture). Yrjö Sotamaa was President of the Institute's Student Union TOKYO. He was pushing for reforms in design education, founded the Scandinavian Design Students Organization SDO in 1967 and organized by SDO a series of high profile international seminars and conferences (Industry, Environment, Design in 1968 in Suomenlinna and Working Environment in 1967 in Otaniemi) to discuss the social, ecological, economical, environmental challenges facing the Nordic societies and urgent reforms needed in design education.*

*In 1967 and 1968 he invited to the seminars international pioneers of social design, global design thinking and ecology including Victor Papanek, Buckminster Fuller, Christopher Alexander and Hans Palmstjerna. He also published their lectures and writings in the famous &/SDO Magazine in 1968. This led to a close friendship with Papanek and Fuller and later active cooperation with them.*

*The &/SDO magazine had two major articles. A 16 page article "Design Strategy" by Buckminster Fuller and a six page "Do-it-yourself Murder" by Victor J. Papanek.*

*Victor's close contacts to the Nordic design students and his sharp article in the &/SDO Magazine paved a way to publishing of his first book "Miljön och miljonerna" (The environment and the millions of people") by Bonniers in 1970. The English version "Design for the Real World" was published next year in 1971 and the Finnish version "Turhaa vai tarpeellista" in 1973. The book has been translated to 23 languages making it the most widely read book of design.*

*These books and articles, which made Victor a strong advocate of the socially and ecologically responsible design of products, tools, and community infrastructure, have had a deep impact on Yrjö Sotamaa's academic and international career.*

*He has been an active promoter of socially and ecologically responsible design through his academic work, speeches and lectures, several projects. He has organized several international initiatives to forward these ideals including the Varde exhibition in 1994-1996 and the Kyoto Design Declaration 2008.*

*Varde exhibition was produced by six major Nordic Design Universities with the support of the Nordic Council of Ministers. Over 300 students of the six schools were addressing the future social and ecological challenges of the world and producing visions of the future through their works. The exhibition was first presented in the Royal College of Art in London and toured around the world during 1994-1996 in Rome, Berlin, Budapest, Barcelona, Sapporo, Taipei, Seoul, Linz and Helsinki.*

*Sotamaa is the author of the Kyoto Design Declaration, which was approved by CUMULUS Association in 2008. In the Declaration the global community of 140 Art and Design institutions committed themselves to forwarding socially responsible sustainable*

*development in education and research. These are also the ideals of the Aalto University, which was born in 2010 through the visionary initiative of Yrjö Sotamaa.*



***Prof. Dr. Lou Yongqi is Dean of the College of Design and Innovation at Tongji University in Shanghai. He is a full professor at Tongji, Visiting Professor at the School of Art, Design, and Architecture at Aalto University in Finland, and the School of Design of Politecnico di Milano in Italy.***

***Lou is a leading figure in sustainable interdisciplinary design education, research, and practice. He was one of the first designers in China to connect social innovation and sustainable design thinking with rural development. Lou has been the pioneer in China for design-driven innovation education that connects design, business, and technology. He also furthers this agenda through international collaboration.***

***Lou is the board director of ICSID, International Council of Societies of Industrial Design, former vice president of Cumulus Association. He is Founding Executive Editor of She Ji — the Journal of Design, Innovation, and Economics published by Tongji University and in cooperation with Elsevier. He is the Editorial Board Member of the journal Design Issues published by The MIT Press, Journal of Visual Arts Published by Taylor & Francis.***

*Lou currently chairs the international advisory board of University of Applied Arts Vienna, and he serves on the advisory boards of the Alta Scuola Politecnica in Italy, Kolding Design School in Denmark, the DESIS Network. He was invited as the keynote speakers in many top conferences such as IDSA 2016, ACM CHI 2015, WDC 2014 Design Policy Confernce, IIT Design Strategy 2013 etc. In 2014, the President of Finland honoured Lou with the Order of the Lion of Finland as a Knight, First Class.*

## GUEST EDITOR 'S NOTE

*Yrjö Sotamaa*

The theme of this Issue is *Designing for the Public Good*. We have invited prominent designers, architects and researchers who's recent work has been dealing with public environments and public services.

With this selection of writers we have tried to illustrate different approaches and methods to public design and works realized in different areas of Finland (the urban South and the Arctic). The authors come mainly from two major universities in Finland: the Aalto University and the University of Lapland.

Special thanks!

I would like to thank my guest editor colleague Lou Yongqi for his support and all the contributors of this special issue:

Antti Ahlava, Antti Raike, Teemu Tuomi, Pauliina Skyttä, Satu Miettinen, Hanna-Riina Vuontisjärvi, Antti Pirinen, Ira Verma and Minna Lumme for their excellent articles and insights.

I would like to extend my special thanks to Dr. Sunil Bhatia for giving us this opportunity to share our experience with the global community of designers working for the ideals of design for all.



***Yrjö Sotamaa***

***Yrjö Sotamaa, Professor Emeritus, Aalto University, Finland***

***Lou Yongqi, Professor, Dr., Dean, College of Design & Innovation,  
Tongji University, China***



# DESIGNING FOR PUBLIC GOOD IS EMBEDDED IN THE FINNISH DNA

*Yrjö Sotamaa, Professor Emeritus, Finland*

Finns come from a harsh and challenging environment. Severity of all kinds has shaped us: the cold Nordic climate, a land poor in resources and far from the centres of Europe, stretching north towards the Arctic Ocean, challenging neighbours to the west and the east, poverty, and a population of insignificant size.

In the story of our growth and rise to prosperity, to a place among the leading nations of the world, the regenerative and innovative thinking inherent to design for public good has played and continues to play a crucial role. Design represents thinking that is open and human-centred, emphasizing humanist efforts. It is a vital element of the Finnish DNA.

Harsh circumstances have yoked Finnish design to the creation of tools for survival since the earliest times. People's needs and the development of physical objects to facilitate everyday life were unavoidable starting points. *From this grew the ethical goals of Finnish design: the attempt to promote the values striven for and deeply ingrained in Nordic societies, equality and democracy, building equal opportunities for all people.* Without a sense of belonging and cooperation towards a common goal, survival would have been impossible. Equality, security, and mutual trust offer a fertile foundation for the growth of an open society as well.

Poverty, a harsh environment and material scarcity left no room for waste. The search for innovative and long-lasting solutions sprung naturally from these circumstances. The scarcity and the

pronounced functionalism required of solutions turned a necessity into a virtue: everything had to function, for all.

These earliest roots of Finnish design have survived to this day, and have refined into a unique ability to apply design thinking to modern society, to solving its minor and major dilemmas. Human-centred design thinking is embedded in a natural way in everything we do, whether in the design of airports, children's day care centres and learning environments or advanced communication devices and robust forestry machines, public environments and public services.

The building of a young, newly independent nation offered design a new role in the 1920s and 1930s. Schools, hospitals, homes, and production facilities were required – as was everything necessary to realize the economic and social aims of the developing state. The best young architects and designers were tapped to design these, and they adopted human needs and Nordic values as their guiding principles.

Finnish design took on an even more pronounced role in the rebuilding of a country and its industries ravaged by World War II. Finland's greatest design masters – Tapio Wirkkala, Timo Sarpaneva, Kaj Frank, Antti and Vuokko Nurmesniemi, Ilmari Tapiovaara, Yrjö Kukkapuro, Eero Aarnio, Armi Ratia, Aino and Alvar Aalto, and many more – all contributed to the renewal of industry and industrial production. Their work imprinted design onto the Finnish international identity and created a modern lifestyle characterized by rapid urbanization. In the 1950s and 1960s this took shape as Finnish Design, our international reputation for design; the iconic design companies Marimekko, Iittala, Vuokko, Artek, Avarte, to

name only a few; and the evolutionary and deepening integration of design into the renewal of Finnish society, cities, and culture.

The iconic works of Aino and Alvar Aalto, Kaj Frank, Armi Ratia manifest the ideals of products, which all people could afford and which were easy to use. They also represent another important dimension of Finnish design: beauty belongs to everyone, not only for few.

The last two paradigm shifts emphasize the significance of human-centred design thinking and the new ways of approaching the application of technology that arises from it. Design is a unifying force for creative thinking, something that forms a link between individual dreams and the future. Technology is no longer the driver for development. Development springs from a profound understanding of people's needs and hopes and new applications made possible by technology. This goes for the development of environments, products, and services as well.

Nokia's extraordinary rise to the top of its field is a fantastic example of this: its success was propelled by positive user experiences created through design and product desirability combined with the most advanced technology. The same formula has been applied to the development of heavy forestry machinery, forklifts, enormous paper machines, medical equipment, and massive cruise ships as well as to solutions that make life easier for an ageing population and to creative learning environments.

The paradigm shift currently underway has expanded the applicable scope of design to all activities of society, cities, companies, and individuals. Embedded Design aptly describes this shift, which is testing the boundaries of design and is powered by openness, hope

in the future, and the courage to change and renew. Embedded Design also describes a systematic approach to applying design for creation of public good.

The mission of design is building sustainable, human-centred, creative societies. Human-centred design thinking, when rooted in universal and sustainable principles, has the power to fundamentally improve our world. It can deliver economic, ecological, social and cultural benefits to our societies and to all people, improve our quality of life, and create optimism about the future and individual and shared happiness (Kyoto Design Declaration 2008).

The Finnish authors of this special issue come from two of Finland's prime universities, the Aalto University and the University of Lapland. Education of design and architecture in these universities is build on the ideals of Finnish Design and aiming at creating public good through innovative design. Aalto University has done pioneering cooperation with Tongji University in Shanghai in building design education to benefit all people of world's largest nation. University of Lapland has joined the cooperation, too.



*Yrjö Sotamaa*

## ABOUT THE CONTRIBUTING UNIVERSITIES

### Aalto University, Finland

Aalto University is shaping the future by combining knowledge from science and art together with technology and business.

When founded in 2010, Aalto University was given a *national mission* to strengthen the *innovative capacity* of Finland through first-class research, art and education. The global mission of Aalto is to create a better world, a better world for all.

The Finnish Government and other founders made significant investments to launch Aalto University. Aalto was built through the merger of three first-class universities with over 300 years of history: the University of Art and Design Helsinki, the Helsinki School of Economics and the Helsinki University of Technology.

The international recognition of Aalto University has risen quickly due to its unique profile and novel approaches to tackle the challenges posed by a rapidly evolving knowledge economy. Breakthrough discoveries deeply integrated with *design and business thinking* enable systemic solutions and accelerate innovation. Aalto is building a competitive edge by *combining knowledge from different disciplines* to identify and *solve complex challenges*, and to educate *future visionaries* and experts.

The challenge today is not simply to evolve in a changing world, but to do so in a world where the *rate of change is unprecedented*. This acceleration has created a broadening gap between our *traditional structures of knowledge* and the *nature of problems* we are

confronted with. To enable paradigm-breaking innovations Aalto is striving to build a university that is more competitive, more focused but also *more collaborative across disciplines*.

The *three elements* of Aalto's strategy are research and innovation, art and creative practices, and education. These core elements will be manifested in five dimensions: *research and artistic excellence, multidisciplinary collaboration, student-centred learning culture, a culture of entrepreneurship and tangible societal impact*.

[www.aalto.fi](http://www.aalto.fi)

## University of Lapland, Finland

The University of Lapland has an international profile as an Arctic and Northern science and art university. The University of Lapland, established in 1979, is an international and vibrant university community at the Arctic Circle. It is a community of nearly 5,000 students and around 600 staff members. The university is located in the city of Rovaniemi, Finland.

Our interests are in science and art with special focus on research on change in the Arctic and the North. Our research approaches are international and multidisciplinary: sustainable development, law, and justice; Northern well-being, education and work; responsible tourism; and culture-centred service design form a solid foundation for the academic work that we carry out. The impacts of global economic and political changes and global warming are felt more keenly in the Arctic than elsewhere. Research and research-based teaching at the University of Lapland focus on the communities and the environment in the North and on the interaction between these two elements. Service design research at the University of Lapland

taps synergies between art and science to develop tourism and industrial products, improve e-services and well-being services and create barrier-free and safe environments. As a force for research and education in service design, the University will create a foundation enabling public services, educational institutions and the private sector to produce competitive and sustainable services in a multicultural environment.

[www.ulapland.fi](http://www.ulapland.fi)

**Tongji University, College of Design and Innovation,  
Shanghai, China**

College of Design and Innovation, Tongji University draws on the latest ideas and models of world design and innovation disciplines and gathers outstanding talents of design practice, design research, design management and design education management from all over the world in order to cultivate innovative and inclusive value orientation, up-and-coming collaborative innovation style, capability of contributing to the society and transparent and aspirant college culture.

The aim and feature of the College of Design and Innovation are to pursue academic excellence and contribute to social development. The overall goal is to establish an international, innovative, forward-looking and research-oriented world-class college of design with great sense of mission of the era, international perspective and native characteristics.

<http://tjdi.tongji.edu.cn>



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***Ahlava's current projects include Aviapolis Centre at Helsinki Vantaa airport and the urban renewal of Espoo and Finnöö centres. Ahlava's earlier commissions include also Munktelstaden housing development in Eskilstuna, Sweden, urban infill for the City of Helsinki and the urban design of Helsinki City Hall quarters.***



*Ahlava won first prize in Andermatt city centre competition and in Espoo City Hospital competition (with K2S Architects) and third prize in Katara Hills competition in Qatar. He received honorable mention in Helsinki Guggenheim competition. Ahlava's work was recently exhibited in Milan Design Week 2016.*



## **ANTTI RAIKE**

*ANTTI RAIKE (Doctor of Arts, DA) has been working as a senior advisor in accessibility at Aalto University since 2011. He earned the doctoral degree from the University of Art and Design TAIK (now the School of Art, Design and Architecture of the Aalto University) in 2005. Raike has also earned an MA in education at the University of Eastern Finland in 1988 and MA in film production at TAIK in 1997.*

*Projects conducted by Raike are connected with co-design practice and the general aim of inclusion in accessible higher education, which should adapt flexibly to the needs of diverse students. He has conducted the three year post-doc project 'VIPPP –Visual Innovations for Inclusive Projects with Diverse Participants' funded by the Academy of Finland at the Media Lab of TAIK in 2008–2010 and contributed to several inclusive projects and enterprises at Aalto University since 2011.*

*He has been awarded for his multilingual net-based study material on film production, the Elokuvantaju – CinemaSense (2001), and his documentary films "The Dancer from the Silence of 100 dB" (1995) and "Happy in a Hard Life" (1997). Raike has been working as an expert of the World Federation of the Deaf WFD in ICT and*

*accessibility issues in 2003–2011 and the representative of TAIK and Aalto University in the Finnish DfA and ESOK (Accessible studies in higher education) networks.*

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## **TEEMU TUOMI**

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*Tuomi's work consists of variety of projects in different size and function. He has designed both new buildings and renovation projects. His focal points in design are context, memorability, materials and functionality. Also his understanding and respecting of original designers aims have grown their importance within his renovation projects.*

# Aalto University Undergraduate Centre

## The Accessible Renovation of Alvar Aalto's Heritage

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**Abstract.** The main building of the former Helsinki University of Technology (TKK) designed by Alvar Aalto is part of the cultural heritage in Finland. The building underwent a major renovation in 2011–2015 and has now become an awarded Undergraduate Centre for the modern interdisciplinary education of Aalto University. This paper presents how the architectural masterpiece from the 1960's was renovated and updated into a modern and accessible university building. Particular attention was paid for entering the building by wheelchairs, prams and pushchairs. The successful renovation was awarded in 2015 by the '*Esteetön Suomi -palkinto*' (Accessible Finland Award), given every two years as a mark of recognition to activities or locations implementing the principles of accessibility and universal design for all on a broad scale and in a nationally significant way.

**Keywords:** *Accessibility, architecture, enabling environment, heritage, inclusion, renovation*

## **Introduction: *Science and art together with technology and business***

In this paper, we will present the successful renovation project where an iconic architectural masterpiece of *Alvar Aalto* from the 1960s was renovated and updated into modern enabling learning environment. The major result is that the renovated facilities support accessible blended learning in an enabling environment. Particular attention was paid in the renovation to the multi-functionality and transformability of the facilities, as well as solutions supporting learning and knowledge work. We use the *Activity Theory* and collaborative knowledge construction as the frameworks for practical renovation work to explain accessibility in an inclusive academic culture. Thus the objective of this paper is to show which kind of theoretical frameworks may be useful in highlighting the current challenges in the campus renovations of higher education in supporting learning for diverse students. In conclusion, we suggest that these challenges and their solutions found by the community and stakeholders should be addressed explicitly in the strategy and planning process of a university organization by agile and participatory co-design methods. In parallel, we will present a challenge for designers, educators and developers: Make diverse students active members of academia by collaborative renovation practices.

*Aalto University* was established by merging the *Helsinki School of Economics*, *Helsinki University of Technology* and the *University of Art and Design Helsinki* in 2010 as a priority project in the Finnish university renewal. The name *Aalto University* (*Aalto-yliopisto* in Finnish and *Aalto-universitetet* in Swedish) pays homage to the life

and work of architect Alvar Aalto (1898–1976) and the importance of his multidisciplinary work both nationally and internationally: He was one of the most important proponents of organic design already in the twentieth century (Design Museum, 2016). The Main Building of the former Helsinki University of Technology (TKK) designed by Aalto is part of the cultural heritage in Finland and the history of international modern architecture (Figure 1). The inauguration of the Main Building took place in 1966 and it underwent a major renovation in 2007–2008 and 2011–2015. Recently, the building has become an awarded Undergraduate Centre for the modern interdisciplinary education of Aalto University. The '*Esteetön Suomi - palkinto*' (Accessible Finland Award) is given every two years as a mark of recognition to activities or locations implementing the principles of accessibility and *Design for All* on a broad scale and national importance. The competition jury including representation from The *Finnish Association of People with Physical Disabilities*, The *Building Information Foundation* (RTS), and the *Finnish Association of Architects* (SAFA) chose the building as the winner in 2015.



*Figure 1. Aalto University Undergraduate Centre. Aalto University/Tuomas Uusheimo*



The Undergraduate Centre serves and brings together thousands of Bachelor students at Aalto University's six schools from the fields of science, technology, business, arts and design. The BA students of the School of Business transferred to conduct their studies in Otaniemi in 2016 and other BA students will follow in 2017–2020. The renovation endeavour, which took several years and progressed in phases, shaped the highly regarded building into the enabling environment supporting today's learning and working. Although the renovation was completed by the end of the year 2015, the work for improved accessibility continues in maintenance.

## Transformation of the national heritage into a collaboration hub

Aalto University has exposed a clear, strategy based vision to increase equity and equality on all activities of the campus; a barrier-free campus and enabling environment has been a goal both in the campus strategy of the university and *Aalto Campus and Real Estate Aalto CRE* (Figure 2).

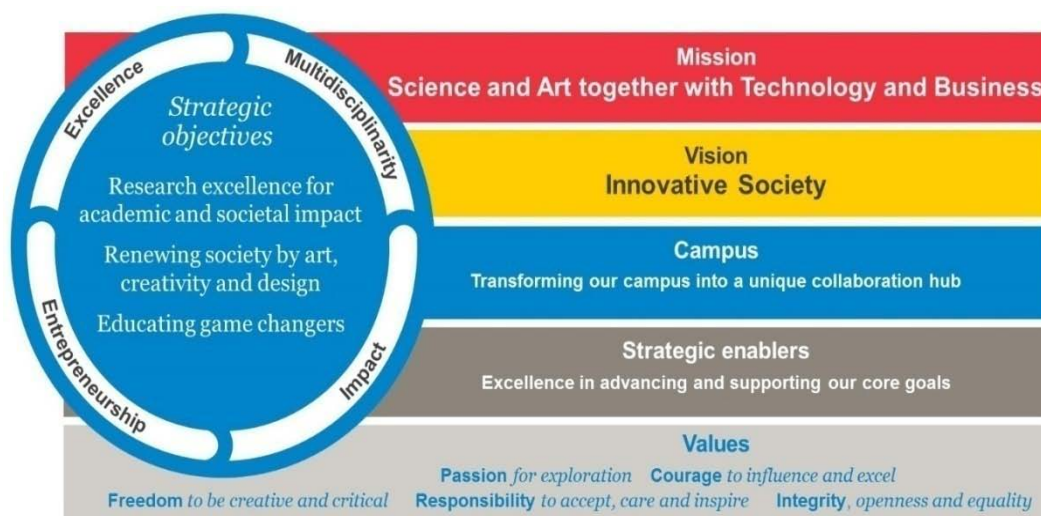


Figure 2. Foundations of Aalto University. Strategy update 2016–2020.

The main challenges in the renovation project were the design principles or rather practices from the 1950s and 1960s. Although Aalto himself had been flexible with changing requirements (Nykänen, 2007, 2014; Penttilä, 2008), financing and policy concerning higher education, the time was different: Students were mainly male and even the very idea of female students or students with disability seem to have been absurd or non-existent for educators and politicians of the 1950s. The building is full of stairs and therefore was severely disabling environment for wheelchair users and people with vision impairments before the renovation. Hence, accessibility has been taken into account in many ways to re-design the Undergraduate Centre into an enabling and barrier-free environment. The extent of the renovation was approximately 45 000 m<sup>2</sup>, the main designer was *NRT Architects Ltd* and the main contractor was *NCC Construction Ltd*. The renovation project undergone in 2011–2015 was successful due to shared principles. The solutions of the renovation were developed with respect to the original architecture and cultural history values in cooperation with Aalto CRE, the *Alvar Aalto Foundation* and the *National Board of Antiquities*. The cooperation was necessary because in connection with the renovation, several museum rooms still containing the original furnishings by Aalto were left in the building. The official accessibility audit in U and A wings was made by *Kynnyskonsultit* in 2012. Students, faculty, staff and other stakeholders using the premises were given an opportunity to participate in conceptualising and designing the spaces in symposiums, workshops and discussions. Often solutions that work on new constructions and technologically sophisticated environments may generally be ineffective in listed buildings and low resource settings. Thus the

best strategy for achieving accessibility is usually incremental improvement: Initial efforts should focus on removing basic environmental barriers. Once the concept of accessibility has become ingrained, and as more resources become available, it will be easier to raise standards and attain a higher level of universal design. Aalto University, ACRE, Architects NRT Ltd and NCC Ltd agreed the following precepts: accessibility initiatives need to be taken into account by utilizing and addressing affordability, the availability of technology, knowledge, cultural differences, and the level of development.

## **Renewing society by art, creativity and design**

The Aalto University strategy postulates that the open and experimental collaboration ecosystem on the campus will attract students, faculty, staff and partners worldwide, supporting the production of new knowledge and innovation. The aim is to build a vibrant campus centre that offers attractive opportunities for partnering, collaboration and sharing ideas and experiences. Exposed development actions include the following themes:

- 1) Structure the campus to support thematic, multidisciplinary clusters and open innovation.*
- 2) Promote new ways of working, shared spaces for a diverse spectrum of users, mobility, flexibility, co-creation and wellbeing.*
- 3) Create high-quality attractive spaces with integrated digital solutions to offer inspiring and productive user experiences.*
- 4) Develop experimental spaces together with experts and users to build an exemplary university campus supporting sustainable development.*

In addition, the university has an implementation plan for accessible learning that is based on the Finnish legislation, University strategy and equality plan, general policies on accessible learning, accessibility guidelines and best practices. Particular weight is put on how the diverse users experience the campus as a work and study environment. Hence, continual iteration on the communities of practice (Wenger, 1998) level among all stakeholders was seen to be essential. As a result, the experiences of *co-design* are promising: Architecture and real estate management are the foundations for success in inclusive teaching and learning. Co-design equals with participatory design and similar methods where users are co-creative partners collaborating with renovation experts (Raika & al., 2009). Especially old buildings expose even unseen problems due to rare materials, changed standards and forgotten working methods. The following simplified diagram is a reaction to explain the complexity of the iterative process of the renovation by design terms where renovators met challenges through the project. Start the process from top and continue clockwise (Figure 3):

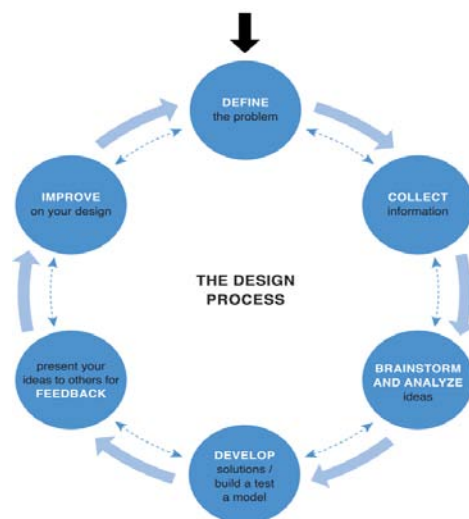


Figure 3. The Design process. Source: Chicago Architecture Foundation, <http://www.discoverdesign.org/design/process>

- 1) Define the main problems of accessibility. The main problem with the Undergraduate Centre was the excess use of stairs and the lack of ramps and elevators. However, it was not possible to enable before renovators were able to see what features disable. Architects needed to meet the diversity of users to define the project.*
- 2) Collect information once the problems have been defined. An accessibility audit was made, faculty, staff and students interviewed. Workshops and symposia were arranged. Photographs were taken and plans sketched for future renovation projects. It was essential to meet users and collect information on the natural environment in the building.*
- 3) Brainstorm and co-design spaces with the faculty, staff and students. Results of the interviews and workshops were analysed. Renovators had to decide how all the collected data and information would impact the renovation of the building.*
- 4) Develop solution scenarios and personas and demonstrate them to stakeholders who will be the future users.*
- 5) Collect feedback and continue collaboration and discussion with the community members.*
- 6) Improve and revise the renovation plan when new evidence is available and feasible. University representatives and the architects worked closely with the general contractor responsible for the renovation. It was useful to have an iterative collaboration with other partners like acoustical and electrical engineers, interior and lighting designers, landscape architects and audio visual designers and engineers involved in the renovation.*

The integrated architecture and real estate management are the foundations for success in inclusive teaching and learning as exposed in the implementation plan for accessible learning, university strategy and equality – all based on the Finnish legislation. Moreover, the continuing iteration of the plans amongst user communities seems to be essential as well. The main challenge is to encourage and empower students – the most important user group – by collaborative renovation practices. Therefore, we suggest challenging the community to agile and participatory co-design methods. Merely architectural and design concepts are not sufficient in a complex renovation project but they assist in translating the non-physical design problem into the physical building product. A renovation project for improved accessibility will face critical issues, themes and problem essences from social, cultural and medical domains. Thus some other factors along the human factors need to be considered like the academic function, form and spaces, affordances and last but not least: economic constraints. These could be addressed with co-design methods where users are taken as partners (Ylirisku, Vaajakallio & Buur, 2007). Since many elements and factors fall under these categories, much consideration should be paid to the broader general issues, along with the technical details. The broadest issue is the question of equity and equality and how they are linked to the renovation principles.

### **Towards innovative society following in Aalto's footsteps**

The Aalto University Otaniemi campus is located in the City of Espoo in the vicinity of technology and media corporations such as Kone Ltd, Fortum Ltd, Neste Ltd, Capgemini Finland Ltd and Rovio Ltd. The campus has expanded to include innovation accelerators like

collaborative workshops, technology parks, business incubators and facilities for start-ups. As a result, nowadays some 11,000 people work and 14,000 study in Otaniemi and the campus is under an intensive building and renovation era that should continue until 2025. The forest campus is more than 50 years old, based on the urban plan by Alvar Aalto. The plan for the Otaniemi campus had a long history before the realisation. Moving the University of Technology (TKK) from the centre of Helsinki to a more spacious area in the outskirts of the city or, for example was already discussed in the 1910's and escalated during the Second World War and the expanding activities of TKK. As the city grew, various plans were made for moving to the outskirts of Helsinki to districts that were at the time largely undeveloped. After the Second World War, TKK and the *Technical Research Centre of Finland* (VTT) needed substantial amounts of land to build laboratories to expand the operations due to the rapid advance of technical sciences but the city of Helsinki did not give permission to substantial growth in the centre. Finally, an architectural competition was held in 1945 and Alvar Aalto won the first prize for a new campus based on his vision of a campus based on the structure of large-scale landscape on site. In his plan, the main building of the university is located on a hill at the site of the former manor house as the dominant of the landscape. Other clusters of buildings are placed in a loose manner following the geometrical lines of the borders between fields and forest. The planted lines of trees from the gardens of the manor house remain part of the main pedestrian connections in open valleys, separated from car traffic, which takes place on the ridges of the landscape. In the manner of classic Greek city planning, the

buildings are visually and optically connected to the contours and sight lines of the landscape.

The Finnish State bought the lands of Otaniemi Manor from KOP bank to serve as the campus of the TKK and the VTT in 1949. In the 1950s and '60s Otaniemi became one of the most prominent sites of Finnish architecture (Böök, N., Lehtovuori, P., Mannerla-Magnusson M., Meriniemi, M., Mälkki, M. 2014). Aalto designed the Otaniemi campus in 1949–1966 and completed the TKK main building in 1965 (Figure 1, Figure 5, Figure 7). Alvar Aalto's office was also in charge of the *Otahalli* sports hall (built for the Olympics 1952) and of several other buildings as the Library (under renovation in 2015–2016), *Saha*, *Valimo*, the Shopping Centre, and the Water Tower. The campus development began with housing for students in a student village called *Teekkarikylä* in Finnish. The first functions of the TKK moved to Espoo in 1955 and finally the move from Helsinki to Espoo was finished in 1974 (Panu Nykänen, 2014). The original plan can still be experienced today, including many architecturally remarkable designed by other Finnish architects such as Reima and Raili Pietilä, who designed *Dipoli*, and Heikki and Kaija Sirén, who designed the oldest dormitories, the *Servin Mökki* restaurant and the *Otaniemi chapel* (Aalto University, 2016).

### Alvar Aalto's creative contribution to renovators

Aalto designed towards economy and efficiency in 1950's and towards rationalism in the 1960's (Böök, N., Lehtovuori, P., Mannerla-Magnusson M., Meriniemi, M., Mälkki, M. 2014). MacKeith (2013) outlines Aalto's design approaches and distinctions by three comparative examples: form and ordering principles at the scale of the site and program; environmental responsiveness to climate and



natural light in particular; and tectonic approaches from structure and enclosure to secondary elements and details. MacKeith (2013) explains how Aalto's creative doubt in the virtues and sustainability of technological solutions and his realistic understanding about environmental conditions is equally visible along the same spectrum. A similar dialogue on the relevance of nature and response to the natural environment is also evident. MacKeith illustrates this by two Alvar Aalto quotes:

*"Standardization borrowed from the domain of pure technology, which has recently invaded architecture, is of an entirely different nature. This invasion springs from the fatal misconception that architecture is a form of technology. It is not ... In fact, the problems of architecture cannot be solved at all with the methods of modern technology ... Of course, architecture uses technology, but it does so by applying various technologies simultaneously, and its principal goal is to bring these technologies into harmony. Architecture is thus a kind of super-technical creation, and the harmonization of many disparate forms of activity is central to it."* (Alvar Aalto in MacKeith 2013)

Alvar Aalto strived to synthesise rationalist architecture with an organic language of form and used this skill to combine materials and make the landscape part of the building. The Main Building and Library complex of TKK can be considered one of the main works of Alvar Aalto, a designed, creative contribution reaching from the town planning level all the way to small details. The chief materials are dark red brick, black granite and copper, that has turned in green verdigris during decades (Figure 1, Figure 5 and Figure 7). For Aalto, *"every project at TKK is a dense juxtaposition of theater and*

*courtyard typologies allowed to patina, weather and soften into a near-natural constructed landscape" (MacKeith 2013).*

The focal point of the campus and the university centre is the auditorium building with two large halls A (Aalto Hall, Figure 4) and B, which result from the division of the planned large festival hall. Its staircase-like ascending rows of windows suggest an amphitheatre from the outside (Figure 5).

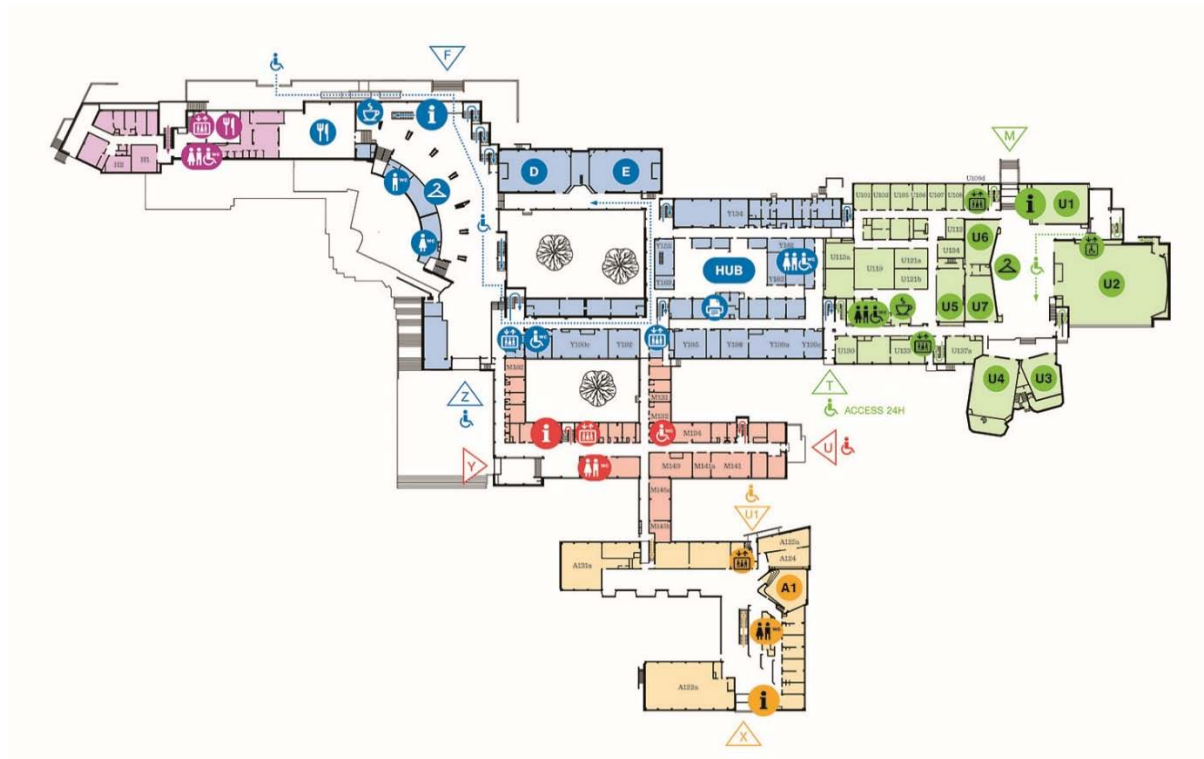


*Figure 4. Aalto Hall. Aalto University/Tuomas Uusheimo*



*Figure 5. Aalto Hall of the Undergraduate Centre. AaltoUniversity/Tuomas Uusheimo*

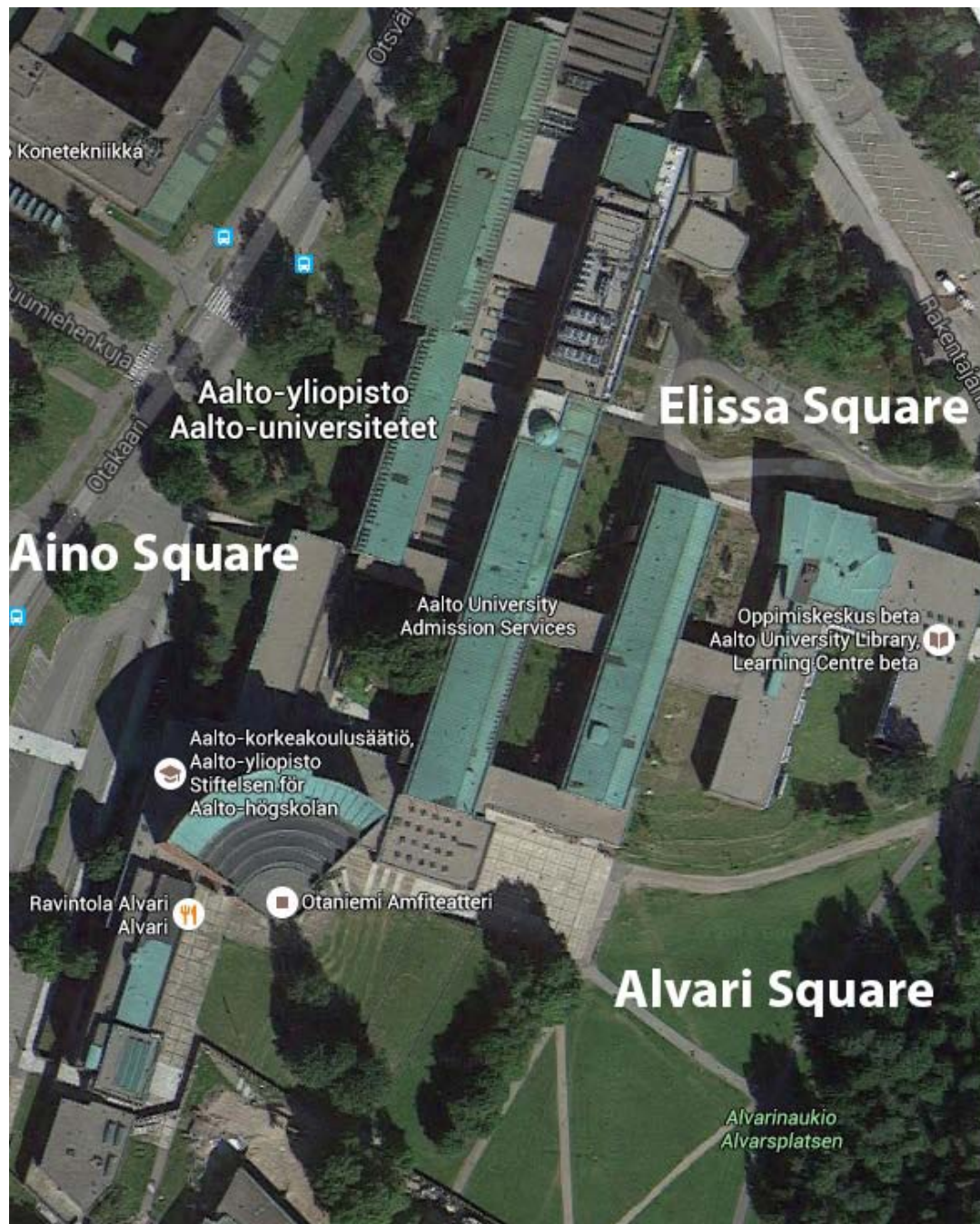
According to the competition programme in 1949, the Main Building should include “a 1000-seat festival hall (also intended for congresses), two auditoriums with foyers, a student canteen with a kitchen, a so-called General Department (for the first and second year students), and Departments of Architecture and Civil Engineering” (Penttilä, 2008, 23). Beside these, the building has the smaller lecture and faculty rooms and laboratories. All tuition rooms are in adjacent buildings grouped about small internal courts (Figure 6) and the building is surrounded by three squares: Elissa Square in the north, Alvar Square in the south and Aino Square in the west (Figure 7).



*Figure 6. Aalto University Undergraduate Centre, 1st floor. Tuition rooms are in adjacent buildings grouped about small internal courts.*

The renovated Undergraduate Centre is still divided into three principal wings based on the original departments: general (Y wing, blue in Figure 6), geodetic (M wing, red in Figure 6) and architectural (A wing, yellow in Figure 6) with the later additions. Thus the present Undergraduate Centre comprises five wings: K-H (purple in Figure 6), Y, M, A, and U (green in Figure 6) designed by Alvar Aalto. The latest U-wing was finalized under the supervision of Alvar's wife Elissa Aalto 1975. The extension of U-wing was designed by *A-konsultit Ltd* and completed 2002. Entrances run clockwise from A to Ä, beginning from the A entrance of the K wing and ending at the Ä entrance of the H wing (This confusing letter system has caused some accessibility challenges indeed. Figure 6, accessible entrances F, M, T, U, U1 and Z).





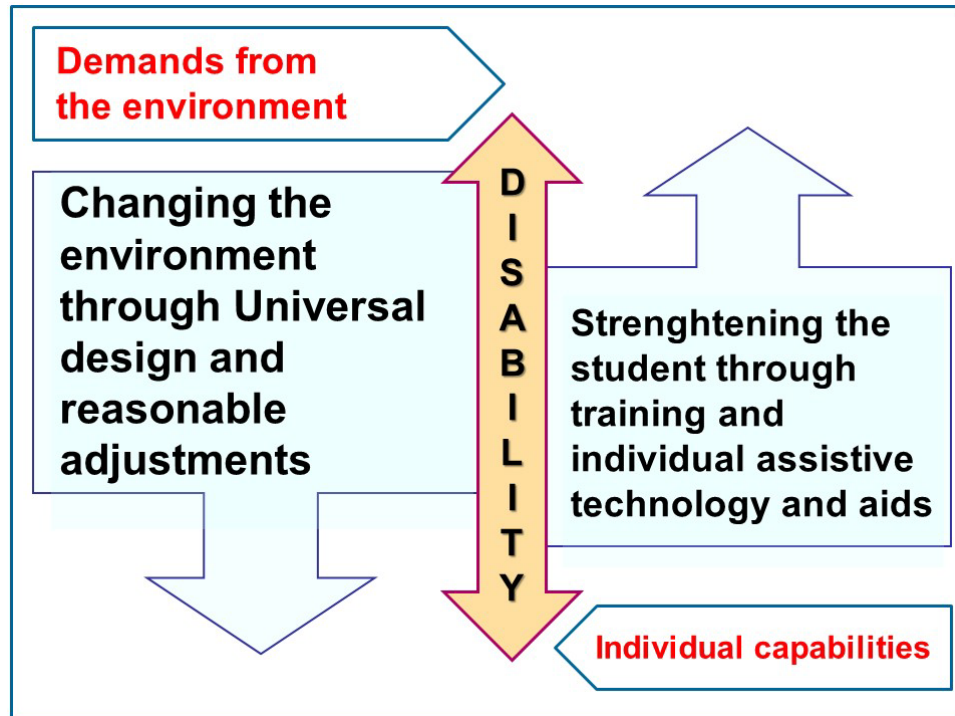
*Figure 7. Undergraduate Centre surrounded by three squares. Source: Google Earth.*

In addition to lecture halls and rooms, the Undergraduate Centre has premises for group assignments and more informal activities. Student services have also been placed in the building along a

corridor through Y and U wings on the first floor. Language Centre and Learning Services staff work in the U wing second floor in a new type of a large, multifunctional office. However, already Alvar and Elissa Aalto understood the need to modify premises under changing situations and technology and had designed this kind of flexible office space (Nykänen, 2008). Aalto University Campus Library provides its services as the Learning Centre beta in the A wing while the original library building is undergoing a renovation until the end of 2016. (Aalto University News & Events, 2015).

## **Enabling campus environment to advance and support learning**

*'Disability'* is a vague concept in academic context where learning to collaborate and learning from collaboration is a must to the community. Both old and new campus environments can either disable and exclude people with various ways or foster their full participation and inclusion in studies, research and social life. According to the *World report on disability* (WHO, 2011) an environment – physical, social, and attitudinal – can either disable people with impairments or foster their participation and inclusion. Thus different domains and activities of the campus including buildings and roads, transportation, information and communication are interconnected – students with disabilities will not be able to benefit fully from improvements in one domain if the others remain inaccessible. The relational model comprises an individual student and environmental factors: Disability is seen as a “gap” or a misfit in the interaction between a student and the environment (Figure 8).



*Figure 8. The relational model comprises student and environmental factors: Disability is seen as a gap in the interaction between a student and the environment. Presentation by Kjetil Knarlag at LINK-conference in 2014. Modified for Aalto University by Antti Raike.*

Thus particular attention was paid for entering the Undergraduate Centre by wheelchairs, prams and pushchairs. This kind of basic improvement of access to a building contributes to the creation of an enabling campus environment; it benefits not only people with disabilities but other community groups as well. Therefore, the prerequisites for progress in enabling campus accessibility are

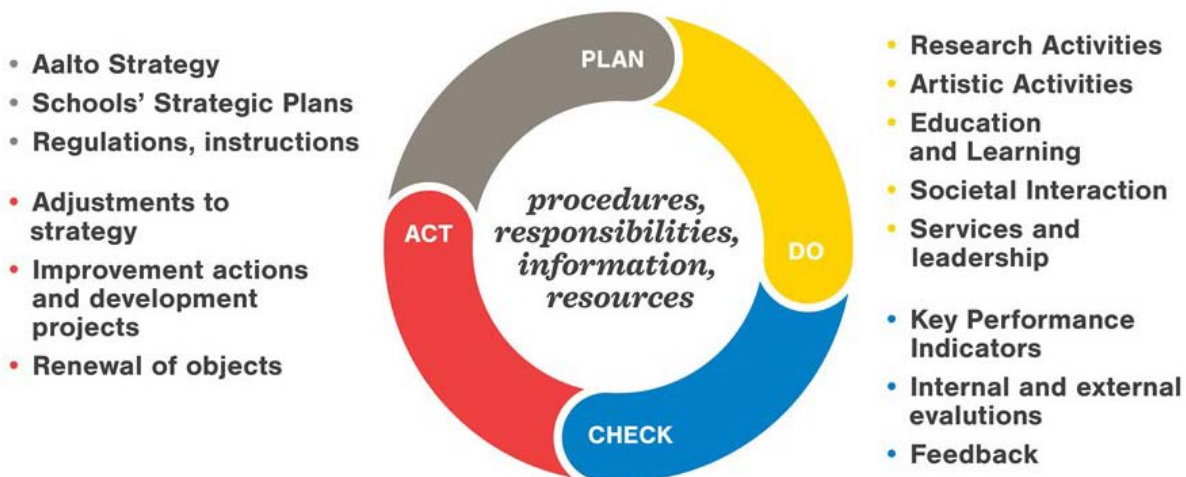
- 1) *The creation of a “culture of accessibility”,*
- 2) *The effective enforcement of laws and regulations,*
- 3) *Better communication and information sharing on environment concerning the strategic enablers of accessibility:*
  - a. *Activity towards equity, economy and efficiency*
  - b. *Adapting to Alvar Aalto’s architecture*

The Undergraduate Centre premises for the bachelor's students in Otaniemi enable students to study and work in groups in a creative learning environment (Sursock et al., 2016). Well-designed easy access gives people positive user experience and first-hand knowledge about the benefits of universal design in practice. This in turn addresses negative attitudes that are a key environmental factor across all domains of accessibility.

### **Creation of a culture of accessibility based on Aalto's work**

Accessible campus is the enabling collaboration hub that means maximised access to the services, teaching and research, as well as reliability and usability of operations. Safe, healthy and accessible operation environments on the campus serve the entire Aalto community. Alvar Aalto's original work and the renovation relating the Finnish legislation with the university strategy constitute the premises for the renovation project. Aalto University has created a comprehensive and well-functioning quality system designed to support the strategic goals. This was the assessment of the *Finnish Education Evaluation Centre (FINEEC)*, which conducted an audit of Aalto University's quality system (Sursock et al., 2016). FINEEC awarded Aalto a quality label, which is valid for a period of six years starting from 13 June 2016. At Aalto University, the practice of reviewing and revising objectives and developing activities is considered a spiral, a continuous process in which each round of development takes us closer to the objectives we have set. Performance improvement, or quality management, at Aalto University and its six schools is based on the PDCA (Plan, Do, Check, Act) cycle (Deming circle), a tool for continuous improvement (Figure 9).





*Figure 9. Aalto University Quality System approach: PDCA (Plan, Do, Check, Act) principle for continuous improvement.*

In accordance with the Aalto University's quality system approach and implementation plan for accessible learning the accessibility work of the university is handled in a decentralised manner:

- *At university level, we provide the basic services set forth in the [university strategy](#) and give advice to [six schools, which decide the services of their units independently](#).*
- *Six schools develop and support the accessible operating culture as defined in the strategy by following up on the progress of its implementation.*
- *At the levels of departments, degree programmes and units, equal opportunities to participate in studying, research and teaching are ensured.*

Training, advice and monitoring of the accessibility has been decentralised to different units of the university including the Learning Services (LES) of six schools. The LES service desk staff of each school will guide, instruct and advise in accessibility matters in more detail if necessary.

The effective enforcement of laws, regulations and guidelines in quality system

Aalto University and Aalto University Campus and Real Estate (Aalto CRE) have a plan for a barrier-free built environment complying the *section F1 (a barrier-free building) of the National Building Code of Finland*, the *Non-discrimination Act (1325/2014)* and other legislation. *Section F1 of the Finnish Building Regulations* defines a barrier-free building by regulations and guidelines (*Ministry of the Environment Decree on accessible building, adopted on the 1st October 2004*). In accordance with the Decree, the following regulations and guidelines on barrier-free building, applicable to construction, shall be enacted under *Section 13 of the Land Use and Building Act (132/1999)*:

- 1) *Section 117(3) of the Land Use and Building Act* postulates that *"A building must conform with its purpose and be capable of being repaired, maintained and altered, and, in so far as its use requires, also be suitable for people whose capacity to move or function is limited"*.
- 2) *Section 53(1-3) of the Land Use and Building Decree* postulates, that *"Administrative and service buildings, commercial and service premises in other buildings to which everyone must have access for reasons of equality, and their building sites shall also be suitable for use by persons with restricted ability to move around or function otherwise"*. For purposes of equality, buildings with work space shall be designed and built so that they provide the persons with disabilities with sufficient opportunity to work, taking into account the nature of the work.

The purpose of the *Non-discrimination Act (1325/2014)* is defined in Chapter 1: *"The purpose of this Act is to promote equality and prevent discrimination as well as to enhance the protection provided by law to those who have been discriminated against."*

In addition the legislation, Aalto University and Aalto CRE have agreed to observe the following principles in renovations:

- *Good acoustics serve everyone but especially hearing or visually impaired persons and non-Finnish-speaking people.*
- *The colour scheme and materials should support prompt and safe indoor navigation. However, some fairly strong constraints exist due to the protected nature of the Undergraduate Centre.*
- *Sufficiently large and clear fonts are used in guidance material and general information is formatted for the clear perception of the layout of spaces and operations.*
- *Storage space should not block pedestrian passage.*
- *Ramps, if they fit in naturally with other planning, are used as a first choice in elevation differences between building levels.*
- *Assisting services are smoothly combined with a building's own functions and resources (wheelchair accessible taxis, speech-to-text and sign-language interpreters, personal assistants, and guide and assistance dogs).*
- *Hearing, seeing and mobility devices (microphone systems, special computers, mobility guiding devices, Bluetooth indoor navigation, wheelchairs etc.) are included in Bring your Own Device (BYOD) principles.*

These have been taken into account in the renovation of the Undergraduate Centre and will be followed in future renovations and construction projects.

## **The renovation project as an activity towards equity, economy and efficiency**

This chapter examines accessibility in the inclusive teaching and learning context in Aalto University. The main object of the activity was to make learning accessible for all in the Undergraduate Centre. Instead of focusing on the various disabilities, addressing the needs and the diversity of all students was adopted as a starting point in the renovation ('Define' in Figure 3). To succeed, accessibility renovation as an activity needs to take into account external constraints including affordability, competing priorities, availability of tools like the technology and knowledge, and cultural differences of the community. The renovation in higher education institution should also be based on sound scientific evidence.

Often, accessibility is more easily achievable incrementally – for example, by improving the features of a building in stages. Initial efforts should aim to build a “culture of accessibility” and focus on removing basic environmental barriers. Once the concept of accessibility has become ingrained and as more resources become available, it becomes easier to raise standards and attain a higher level of universal design on the whole campus. Making progress in accessibility requires the engagement of international and national actors, including international organizations, national governments, technology and product designers and producers, and people with disabilities and their organizations. (WHO, 2011). An accessible operating culture is created by adhering to the following principles:

- *Accessibility is developed proactively rather than reactively only after problems have arisen in the process.*

- *Each member of the community has the right to report any barriers identified and suggest a change in the operating culture.*
- *Equality is promoted continuously in all operations*
- *Open discussion strengthens positive attitudes and enhances expertise, which helps us solve everyday challenges.*
- *Aalto University as a community follows the principles of sustainable development, meaning that accessibility is in line with research knowledge and with the tacit knowledge of the community and justifiable in the different assessments of our operations.*

Before launching a renovation project, it is valuable to understand how the collective and cumulated knowledge of the academic community in its entirety can be exploited as a resource (Raike 2012).

## **Adapting to Alvar Aalto's architecture in the renovation**

During the construction work of the Main Building at the 1960s, many changes to the drawings were needed (Nykänen, 2007; Penttilä, 2008). Financial thrust, altering guidelines from the client and trouble at the construction site were reasons why Alvar Aalto was asked to make changes to the original plans. Similar challenges occurred during the renovation. However, the iconic value of Aalto's work was the core of the renovation. Aalto was a master solving unexpected changes and was open to change original plans by inventing new solutions, turning a trouble to a victory. For example, a too big ventilation shaft was covered by a curving wooden grill as if it was planned to be that way originally. During decades, these spontaneously solved details turned into valuable building heritage

that may not be changed. That means that new changes have to be different; they have to hide and leave Aalto's contributions visible. In the renovation work, spaces were modified differently in different parts of the building. In the most valuable parts (the General Department and the Department of Architecture) only minor changes were executed. In the U-wing which was completed later in 1975, much larger changes were possible: The whole segments of work rooms were transformed into open flexible working spaces (Figure 10) and some auditoriums were modified by replacing fixed seats with chairs and tables (Figure 11).

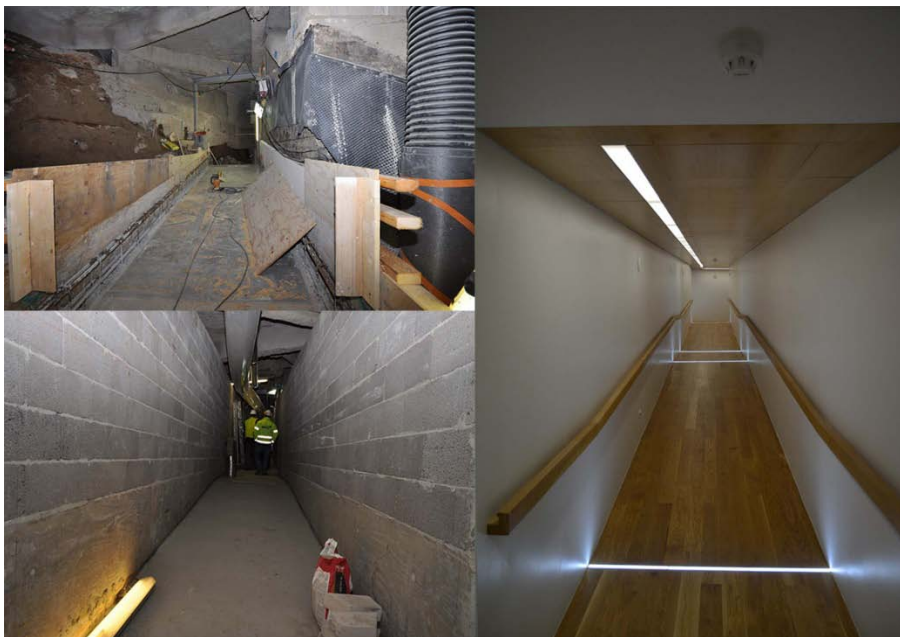


*Figure 10. U wing work rooms transformed into open flexible spaces. Aalto University/Tuomas Uusheimo.*



*Figure 11. U wing auditorium modified by replacing fixed seats with chairs and tables. Stair lift on the left. Aalto University/Tuomas Uusheimo.*

However, the most difficult task was to fit in the HVAC-systems and making the building accessible. Thus some small work rooms were turned into technical spaces in order to prevent additions to the appearance of the building. Accessibility issues needed hours of planning and innovating. For example, the stage of the Aalto Hall was not a wheelchair accessible. After many plan variations, a new tunnel route was dug behind the auditorium walls directly from the main lobby to the stage (Figure 12).



*Figure 12. Tunnel to Aalto Hall stage. Aalto University/Jarmo Tiirikainen.*

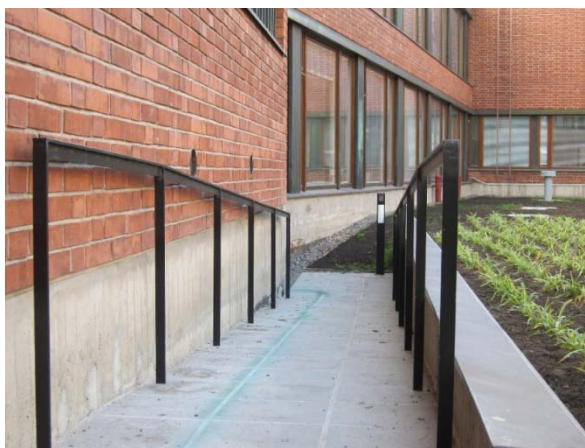
Since the tunnel was a totally new element in the building, it has been possible to design with new architecture: There was no need to perfectly adapt to Aalto's architecture. On the contrary, the situation was different in the design of new seats for spectators with disabilities in the same auditorium. They were designed to hide well in existing seat rows so, that the atmosphere of the Aalto Hall would have as little disturbance as possible (Figure 13 and Figure 4).





*Figure 13. New seats for spectators using wheelchair were designed to hide well in existing seat rows of the Aalto Hall. Aalto University/Jarmo Tiirikainen.*

It is essential how the diverse users experience the accessible Undergraduate Centre as an equal environment and see the benefits for a broader range of people. For example, after the renovation users like parents pushing baby strollers, suppliers and restaurateurs learned rather quickly to use new curb cuts (ramps, Figure 14), automatic door openers and stair lifts (Figure 15, Figure 16).



*Figure 14. New accessible entrance to A wing with a push button switch. Aalto University/Antti Raike*





*Figure 15. Stair lift in U wing. Aalto University/Jarmo Tiirikainen.*



*Figure 16. Stair lift in the main lobby, Y wing. Aalto University/Antti Raike.*

In addition, clear information and signposts help non-Finnish speakers and people with learning disorders (Figure 6). Clearly, the integral planning of accessibility, the availability of information and implemented practices enhance inclusion (Verma, Hätönen & Aro, 2010). In conclusion, not only one type of new architectural language was used. All situations were separately considered and the suitable diction of architecture selected. In some cases, new additions are very close to the original design. In some other parts, the renovating architect's own design can be seen more clearly. Perhaps, have the architects of the renovation succeeded if a visitor does not notice the difference?

#### **Discussion: The collaborative design activity in a renovation project**

Development of inclusion is also a very practical issue of activity. The success of inclusive higher education is influenced by how all the stakeholders within an institution respond to external drivers for accessibility such as legislation, guidelines and standards (Seale 2006c). Thus we suggest an iterative cycle using a PDCA tool used in quality management (Figure 9) and the Activity Theory to realise enabling learning environment (WHO, 2011). Raike, Sunikka & Saarinen (2013) divided collaborative knowledge building on three operational domains:

- 1) Non-discrimination and disability: Accessibility research, in general, focuses mainly on accessibility legislation, guidelines and standards, and the rules contained within them. E.g. The Finnish Non-Discrimination Act (1325/2014) requires reasonable steps to be taken to help people with disabilities to cope and advance in their career. However, the objective of*

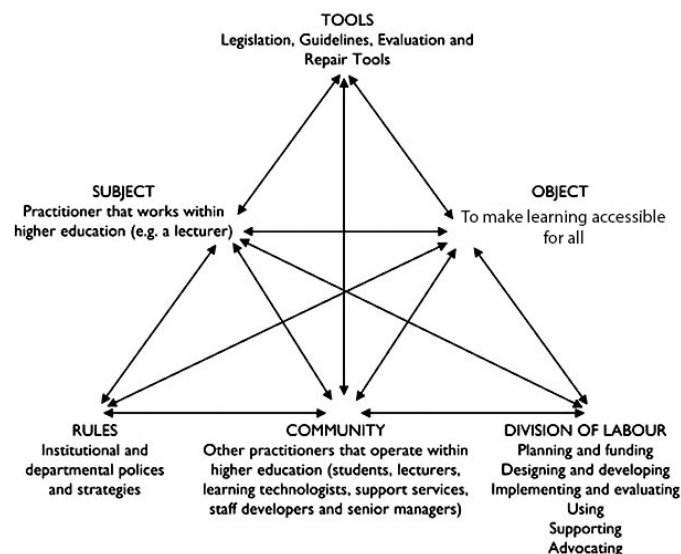
*higher education actors should not be only to comply with legislation but to address the needs of students (Seale 2006a, 2006b).*

**2) PDCA (Plan, Do, Check, Act) cycle (Deming circle, Figure 9).** *PLAN is gathering information on the process and on the basis of that information to plan improvement. DO is simply to carry out the plan, establishing objectives and communicating the change. CHECK means monitoring performance against the plan to ascertain if the objectives are being achieved. ACT means to standardise the changed process once it is in control and it has been determined that it actually delivers the planned improvement.*

**3) Actual teaching, learning, research and artistic activity taking place everywhere on the campus (STEAM).** *Diverse stakeholders are faced with collisions of interests and clashes of views almost daily.*

Raike, Sunikka and Saarinen (2013) proposed designing *enabling blended learning environments* (facilities including networked learning) rather than concentrating on special services or disability issues per se. This kind of approach could promote more inclusive strategies for a university. An enabling learning environment would keep the community knowledge building and innovative mind-set alive empowering the whole academic community. Inclusive research, teaching and learning are relevant for not only “disabled” (the first domain) students, faculty and staff, but for all learners of the community (third domain). The effective use of the quality management (second domain) ensures that the university allows students to learn also with unconventional methods.

Next, we break down the design elements and the collaboration with stakeholders, practitioners and community members using the PDCA cycle and the Activity Theory as a framework to get better understanding about the design requirements of the renovation project. Consider the following paragraphs in relation to the renovation project presented earlier; we reflect the complex Undergraduate Centre renovation project in the combined PDCA and activity framework. The combination of the Activity Theory (Figure 17) with the PDCA cycle (Figure 9) is based both on the practical collaboration in renovations and on the findings from co-design projects made at the Aalto University to promote inclusive and enabling environments. The aim is to improve the quality management of the university renovations when a PDCA tool is used. The main issue is when and how a renovation related task could most effectively be offered to faculty, staff and students for knowledge construction?



*Figure 17. Application of Engeström's systemic model of activity to the accessible e-learning practice of a higher education practitioner (based on Seale, 2006a, 165).*

Three principles of the Activity Theory are often accepted in co-design research projects:

- a) People live in a reality that is objective not only according to natural sciences but socially and culturally defined properties as well;*
- b) Internal activities cannot be understood if they are analysed separately from external activities, because they transform into each other. Internalization is the transformation of external activities into internal ones;*
- c) Human activity is mediated by tools in a broad sense and the use of tools is an accumulation and transmission of social knowledge.*

The zone of proximal development is the move from the present level of development to the new potential level of development. It is determined by the cognitive tasks a stakeholder can first complete in collaboration with an advanced peer but later is able to accomplish alone. In the university real estate setting, context intelligence can be seen as an index of what a stakeholder can do and is capable of doing or willing to do while interacting with experts either in a workshop or using the collaborative tools providing feedback for renovators.

The Engeström's model of the Activity Theory (2009) is useful for understanding how a wide range factors work together to impact an activity in a renovation process. Engeström (2001) summarizes the activity theory with the help of five principles:

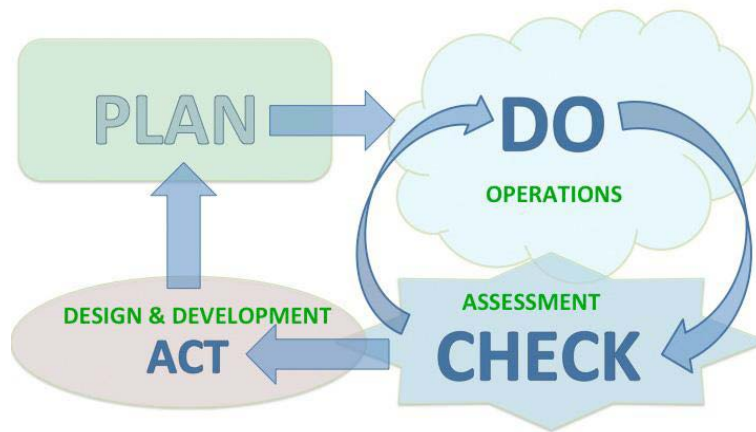
- 1) A collective, artefact-mediated and object-oriented activity system, seen in its network relations to other activity systems, is taken as the prime unit of analysis.*

- 2) *Activity systems are multi-voiced. An activity system is always a community of the multiple points of view, traditions and interests. The division of labour in an activity creates different positions for the participants, the participants carry their own diverse histories, and the activity system itself carries the multiple layers and strands of history engraved in its artefacts, rules and conventions.*
- 3) *Activity systems take shape and get transformed over lengthy periods of time, that is, the problems and the potential of an academic community can only be understood against the history of university. Thus, renovation work needs to be analysed against the history of its local organization and against the more global history of the higher education concepts, procedures and tools employed and accumulated in the local activity.*
- 4) *The central role of contradictions as sources of change and development. Contradictions are not the same as problems or conflicts. Contradictions are historically accumulating structural tensions within and between activity systems. When an open activity system adopts a new element from the outside (for example, a new technology or a new object like a Bluetooth navigation system), it often leads to an aggravated secondary contradiction where some old element (for example, the rules or the division of labour) collides with the new one. Such contradictions generate disturbances, but also innovative attempts to change the activity.*
- 5) *The possibility of expansive transformations when activity systems move through the relatively long cycles of qualitative transformations. As the contradictions of an activity system are*

*aggravated, some individual participants begin to question and deviate from its established norms. In some cases, this escalates into collaborative envisioning and a deliberate collective change effort. An expansive transformation is accomplished when the object and motive of the activity are reconceptualised to embrace a radically wider horizon of possibilities than in the previous mode of the activity. A full cycle of expansive transformation may be understood as a collective journey through the zone of proximal development of the activity. (Engeström 2001).*

In order to reach an outcome like an enabling learning environment for a multi-lingual body of students, it is necessary to produce certain objects (e.g. experiences, knowledge, and physical products). Instruments (artefacts) mediate the subjects' (stakeholders') activity (e.g. tools used, documents, mobile devices and schedules) with the community (university organization or the student community). Also, the community may impose exposed or hidden rules that affect activity like the BYOD and 24/7 principles. The individual student or a staff or faculty member as a subject works as a part of the community to achieve the object in this framework (Figure 17). Any activity normally features a division of labour, i.e. the roles of faculty, staff, students and external stakeholders. We applied Engeström's systemic model of activity due to dimension of blended learning that should take place in the Undergraduate Centre. Based on Aalto University experiences, Raike, Sunikka & Saarinen (2013) modified the PDCA cycle (Figure 9) slightly further (Figure 18) when the activities of the academic year and challenges of the personal views in the practices of science, technology,

engineering, art and mathematics (STEAM) with the evolving construction of collective academic knowledge are taken into account.



*Figure 18. The modified PDCA cycle for students and staff facing every-day challenges on the campus.*

The modified sub-iteration in 'Do-Check' cycle includes the systemic model of activity presented in Figure 17 and the simplified design process presented in Figure 3. The inner 'Do-Check' cycle should be supported by the university management and organized promptly and lightly inside the whole renovation project. This would give a real opportunity for the community and stakeholders to propose incremental improvements and innovations for the next design and development round. Taking into account the sub-iteration cycle and the more general PDCA-cycle, our recommendations for creating enabling learning environments in higher education are the following:

- 1) **PLAN:** *Analyse what types of academic tasks might be the most conducive to fostering intellectual development. Prepare the syllabus with teachers so that a flexible personal study plan is easy and possible to construct. Contact staff organising first*



*year activities and faculty in schools in order to define the zone of proximal development.*

- 2) DO: Support field-based research to obtain data on the diversity of the student body especially within technologically enhanced learning environments. Collaborate with researchers at your own university. Collaborate also with different service organizations (library, campus and facilities, IT and communication) in order to solve practical issues.*
- 3) CHECK: Evaluate how the earlier experiences and syllabus affect learning within the university. Check and follow how a personal study plan is composed and how it supports learning.*
- 4) ACT: Practice co-design methods with students to reveal the social, cultural, and political character of the design process for learning tools.*

These rather simple administrative modifications can give voice to the expertise of students and staff and turn student motivation into academic activity with the support of university management, faculty and staff.

**Conclusion:** Renovation project as a collective knowledge construction

The academic community is multiplied in networks of interacting activity systems present on campus. It is a source of trouble and a source of innovation, demanding the actions of translation and negotiation (Engeström 2001). Campus renovators are confronted with a pluralism of values, both in management and in their interaction with a diverse academic body. The essential knowledge construction is to refine knowledge artefacts like plans, surveys and reports and address the complex problems of the renovation to the

future users of the building. Williams & al. (2010) believe that collective intelligence, defined as the general ability of the group to perform a wide variety of tasks, stems from how well the group works together. According to their research, those groups whose members had greater levels of "social sensitivity" were more collectively intelligent. Thus, what matters in renovation is what experts can do with the academic community and other stakeholders (i.e., collaboration), especially with the use of technology to augment accessibility. The knowledge construction for accessibility addresses the need to educate renovators and future users for a practice in which knowledge creation and innovation are incessant. The knowledge construction of a renovation project may be defined as the production and continuous improvement of ideas of value to a community, through means that increase the likelihood that what the community accomplishes in the renovated building will be greater than the sum of individual contributions and part of broader cultural efforts of the university. This is the core reason to modify the administrative PDCA quality tool in the activity theory framework. The knowledge construction in the present renovation project took place in student groups, academic teams, and faculty communities of practice, either in workshops or using feedback tools and interviews. Within the planned, given and defined project, stakeholders constructed necessary knowledge in their role as a partner in the co-design process. Thus, a renovation project is not a simple entity that exists independently of the community and its stakeholders; especially faculty need to be concerned about the possible insufficiency of the appointed learning environment where students interpret and evaluate complex and even contradictory

information and make decisions vis-à-vis the multifaceted problems of the university and academic studies.

*"The TKK landscape and buildings can all be seen as assertions of a worldly, wise acceptance of limits and contingencies, bespeaking the presence of the human in material form, and the consequent vulnerability, indeed mortality, of our lives."*  
(MacKeith 2013)

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# **"Rethinking the Marginal – Service Design for Development"**

**SATU MIETTINEN AND HANNA-RIINA VUONTISJÄRVI**

## **Abstract**

*This article is asking how service design can be used for development and improving livelihoods in the margin? The margin can be geographical but it can also be created around complex wicked problems that have resulted from historical or societal reasons. The article presents two case studies where the margin is constructed around two different situations. The first case is looking at the arctic context of Lapland where geography causes marginalization and isolation. This case study is connected with "IKÄEHY" project focusing on designing services with the elderly. The project was run in 14 Lappish communities to increase accessibility, inclusion and wellbeing. The second case is looking at indigenous San communities in South Africa where historical and societal context is creating a challenging situation for the local youth. The second case study is presenting "PARTY" project (Participatory Development) with youth where service design is used to increase the youth participation in open democratic society and in designing their services.*

*The article has a strong social design ethos. The article gives a brief overview on social design debates and uses that as a framework to analyze the case studies. Both case studies contribute to the rethinking of the marginal, how it is constructed and how service design can be used to create new solutions to overcome the challenges.*

## 1. Introduction

This article is asking how service design can be used for development and improving livelihoods in the margin? The margin can be geographical but it can also be created around complex wicked problems that have resulted from historical or societal reasons. The article presents two case studies where the margin is constructed around two different situations. The first case is looking at the arctic context of Lapland where geography causes marginalization and isolation. This case study is connected with "IKÄEHY" project focusing on designing services with the elderly. The project was run in 14 Lappish communities to increase accessibility, inclusion and wellbeing. The second case is looking at indigenous San communities in South Africa where historical and societal context is creating a challenging situation for the local youth. The second case study is presenting "PARTY" project (Participatory Development) with youth where service design is used to increase the youth participation in open democratic society and in designing their services.

The article has a strong social design ethos. The article gives a brief overview on social design debates and uses that as a framework to analyze the case studies. Both case studies contribute to the rethinking of the marginal, how it is constructed and how service design can be used to create new solutions to overcome the challenges

## 2. Social design

Miettinen (2006) published a World Design Research group manifesto for social design, which was a collective process of

conceptualize social design. This manifesto described social design as strategic thinking that facilitates discussions between tradition and market economy. It described social design as professional activity to improve local economic development or livelihood. It stressed the importance of developing ownership and profitability. One of the main statements was formulated around social design as design for systems where communication, new product development and environment are joined. Later on Miettinen (2007) edited a book of World Design research group about social design in practice this illustrated how to implement policy or good practices around social design in practical setting. The book linked crafts development, social and design education and new models on improving the local design development. Both publications stressed the importance of considering 1) economic development 2) policy development 3) and strategic management. Further 4) contextual understanding of the development setting, 5) sense of ownership and commitment when working with social design and innovation and 6) design for systems construct the core of social design. World Design research group initiated a Wikipedia page on Social design ([https://en.wikipedia.org/wiki/Social\\_design](https://en.wikipedia.org/wiki/Social_design)) that presented a framework, which included 1) responsibility, 2) strategic thinking, 3) performance design, 4) designing systems, and 5) social world as core elements of social design. Both cases studies "IKÄEHY" and "PARTY" reflect this ethos of social design. In both cases design is a tool for improving and empowering local communities. The implicit motivation is the positive change.

Margolin (2002) discussed design as a vehicle that revealed human intentions for making of the world and study of design as culture. Phenomenological research approach is familiar to design research

in general and well used in order to understand the human behavior (Rodgers & Yee, 2014, pp. 431-444). Papanek was studying the role of design and the designer and discusses the social and moral responsibility of the designer both look at his or her own society as well as what he calls “underdeveloped” and emerging countries and issues of sustainability. Papanek discussed creative thinking and the basic tenets, which included contextual understanding that relates products to sociological, psychological and ecological contexts, interdisciplinary teamwork, participatory design approach and systems for design approach. Papanek’s thinking has endured time well as these themes are in the core of design thinking and “the IDEO way” (Brown, 2008). These themes are applied well within service design practice as well. One can see in both case studies “IKÄEHYT” and “PARTY” designer is claiming social responsibility and discussing the social responsibility. The tool for designer’s process is service design which enables “the IDEO way” where need finding, ideation and prototyping with users is essential.

Further the Margolins (2002) introduce social model for product design and introduce “affordable housing, and the redesign of government tax and immigration forms” as social design examples. These examples could be about service design as well. Further they discuss the social design and social work practices in parallel including the idea of improving the position of marginalized people. Bonsiepe (2006) calls us “to focus on the excluded, the discriminated, and economically less-favored groups” in our design activities. The work of Ezio Manzini (2014) and social innovation as a process of change emerging from the creative re-combination of existing assets, bottom-up approach and that social innovation should be driven by the local communities is essential to social

design. In “PARTY” case study the designing of the social model is important. Local San youth community needs sustainable service system that enables them with education and other possibilities for capability building. Manzini’s thinking discusses well with Amartya Sen. Reijonen (2010) uses development economist Amartya Sen’s (1999) capability approach and discusses multi-dimensional role of welfare and it’s perceived through “individuals’ capability of achieving the kind of lives they have reason to value”. Sen discussed that “the freedom to achieve wellbeing is of moral importance and that capabilities are person’s real freedom’s or opportunities to achieve functionings”. Design is, or should be, a culture and consequently designer has, or should have, their own view about world (Manzini, 2011). The goal for the both case studies “IKÄEHY” and “PARTY” was to transfer capabilities and identify social models which would support this transference.

### **3. Case Party**

PARTY project aims to carry out international and inter-sectoral collaboration in the field of developmental cooperation through research and innovation staff exchanges and sharing of knowledge between researchers, the target group, local actors in Southern Africa and international aid organisations. The project advances service design approach in the field of developmental research and at the same time develops innovative, participatory methodology and tools for developmental cooperation. This project aims to endorse human development and assist in reducing youth unemployment by increasing the involvement and inclusion of young San people in service development in South Africa and Namibia using participatory and explorative service design tools.

The project builds on the background of service design prototyping, which offers new innovative methods and approaches that could facilitate change and capacity building with the young unemployed people in Southern Africa. The aim of the research is to contribute to human development and reduction of youth unemployment by way of human-centred design process where co-design with the youth helps to discover new solutions and service models that can contribute to youth empowerment. The hypothesis of service design is that when the customer or the end-user participates in the design process, new ideas, service needs and different ways of utilizing technology are encountered. Service design processes and methods can help in innovating human-centred service concepts (Miettinen 2011). The research project focuses on the means and tools for enabling the San youth to participate in the service development in their own communities and recognizing the stakeholders that can enable the transformational change and increased inclusion in decision-making in their communities.

The strong focus on participation and co-creation links a service design approach to user centred design processes, where the theoretical background comes from human-centred design theory (Beyer and Holtzblatt 1998). and cultural probes (Mattelmäki 2006). The epistemological and methodological background of service design can be identified to be consistent with participatory action research (Reason 1996, Selener 1997, Smirh et. al. 1997). The emphasis in these related approaches is on action and participation. Also the statement by McTaggart (1997) about the general goal of participatory action research (pp. 2): "it is participants' own activities which are meant to be informed by the on-going inquiry" fits accurately with this project. Adapted versions of participatory



action research into community-based co-design approaches have been established in past rural design projects in Namibia (Winschiers-Theophilus et. al 2012) supporting fundamental principles of service design.

When co-designing, one of the challenges seems to be equality in practice. In PARYT project equality is reached via interaction with the youth or with the group of youth and starts from creating positive, equal atmosphere and building trust by understanding environment and life of the young person. This kind of process requires openness and is very personal when sharing one's experiences, expectations and dreams as talking issues related to marginalization or unemployment. The role of researcher or designer is to be equal participant with the skills of facilitation and empathy. Knowing culture, history and environment is helping e.g. on selection of tools and methods. In the PARTY project natural ways of expression such as storytelling, singing and acting have been identified together by organizing workshops where tools have been tested and evaluated together with the youth. Ethical aspects, documentation has been developed together with the youth and research text has been transcribed on more understandable and concrete language for stakeholders and local actors working with the youth.

In the case of "PARTY" the marginal is resulting from historical, societal and geographical contexts. The San youth are located or relocated in the margins cities or in the outback of the north. The challenges with unemployment, substance abuse and lack of educational opportunities are huge. In this case service design can be used to facilitate dialogue between the youth and the

stakeholders and for creating new kind of capabilities for the youth to carry on and develop this dialogue.

#### **4. Case IKÄEHYT**

IKÄEHYT - promoting older adult's wellbeing and coping in Northern Finland was a multidisciplinary research and development project located in northern parts of Finnish Lapland, including fourteen municipalities, numerous 3<sup>rd</sup> sector actors and SMEs. The project was combining the fields of design, art and social sciences.

Overall aim of the IKÄEHYT-project was to co-produce knowledge of the lives of older adults. This knowledge was used as a basis to co-develop services and working methods to support older adults' wellbeing and inclusion e.g. in assisted living facilities, hospitals and urban zone by piloting co-design methods with service providers and older adults. Research focus was on role of co-design methods and tools in user participation, inclusion and subject positions.

The main data was gathered in co-design workshops organized in assisted living surroundings located in Northern Finland during 2011-2013. Participants in workshops consisted of older adults, local private and public service providers and numerous 3<sup>rd</sup> sector actors, geriatrics experts, service designers and Social Sciences researchers. Creating positive and equal atmosphere when one's voice could be heard was starting point of the workshop. Creating common understanding, allowing every attendee to present their view, creating empathy and supporting ability to put oneself in another's situation became a major factor in the early phases of the development work. During the development process, which lasted almost two years, the most radical change could be seen in thinking

and operating models. Group of individuals seemed to become a group or small community and they started to produce new content by themselves by using co-design methods such as visual year clock, stakeholder mapping and even embodied methods.

When comparing data gathered from workshops it could be seen that co-design methods had positive influence in hearing peoples voice and needs and that workshops increased feeling of belonging and sense of inclusion. As long as people are offered the right tools they are able to express themselves and their own desires. Co-design methods were in themselves inclusive in providing sense of community, community spirit and hearing of people's voices. The following results showed that co-design workshops offer a new kind of discussion forum for the decision-makers, service users and local residents. We also found that by using co-design methods users' voice and needs are raised and listened to at the early planning phase of services. Co-design methods are also in themselves inclusive in providing sense of community, community spirit and hearing of people's voices and changing behavioural models.

In the case of IKÄEHYTY the marginal is constructed through northern geography of remote distances and small communities that lack similar services to bigger cities and of course the older age which effects the elderly and places them in position where they need help to carry out daily activities. In this case service design enables the elderly and their stakeholder in a co-design process which results solutions that give the elderly more power to define their environment and services that are offered to them.

## 5. Conclusions

There is a very strong link between social design and cultural studies. Cultural studies trying to understand and define cultural phenomena and social design both trying to make sense of the phenomena around development issues and culture and use this understanding to improve livelihoods. Arjun Appadurai's (1996) proposed a framework constructed around scapes: ethnoscaples, mediascaples, technoscaples, financescaples and ideoscaples to study cultural flows and disjunctures between economy, culture and politics in the globalized world. Bello (2008) came up with goodsaples that refer to the intertwined global and local structures and paths produced by the conception, production, distribution, exchange, use and disposal of goods in meta-relationship with Appadurai's scapes. In both case studies "IKÄEHYT" and "PARTY" service design is a tool for creating insights and understanding how the marginal was constructed. In addition to this service design initiated co-design processes that suggest more equal positions between different stakeholders.

Involvement of designers, local entrepreneurs, actors and citizens, students and researchers has been both rewarding and challenging in both cases. Working in a multi-disciplinary community is a fairly recent development approach and requires new ways of working together that service design can offer. This kind of co-design process between different stakeholders can be a way how to redefine power relationships between different parties and create common understanding for redefining the marginal.

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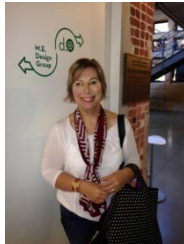
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# **Levels of Inclusion – Design Concepts for Supporting the Everyday Living of Young Persons with Intellectual Disabilities**

*Antti Pirinen and Ira Verma*

## **Abstract**

Housing and services for the elderly or persons with disabilities have traditionally been developed solely by experts. The residents themselves have not been perceived as active individuals who could contribute to design. This view is questioned by approaches like co-design and Design for All that emphasise the individual experiences and capabilities of users as driver for innovation.

The built environment can enhance inclusion and independence of people regardless of their individual characteristics. The barriers in the environment can also hinder people from using all their capacities. Accessible housing, the immediate surroundings that support the resident as well as possibilities for mobility increase participation and quality of life. Access to public transportation, daily services and meaningful places increase opportunities and social connections. From the perspective of residents, all levels of the environment from devices to the urban space should be seamlessly inclusive. Aside from the built environment, services and digital solutions can have a crucial role in enabling everyday living.

This article opens up the levels of inclusion by describing the process and outcomes of a study project. The students of architecture, spatial design and industrial design worked with ten young persons

with intellectual disabilities and their parents to develop design concepts for supporting the everyday living of the residents. The study project was related to a real housing project that is planned to be realised in Helsinki, Finland. Three concepts, related to facilitating the collaborative housing development process, to making the transition between personal, social and public spaces easier and to managing the daily activities among the community are discussed more in detail. As a conclusion, we state that both large-scale measures of urban planning and architecture and small-scale, community-based design innovations are needed to mitigate the barriers to inclusion.

**Keywords:** *Concept Design, Empathic Design, Persons with Intellectual Disabilities, Special Housing*

## **Introduction – Challenges in Housing for People with Special Needs**

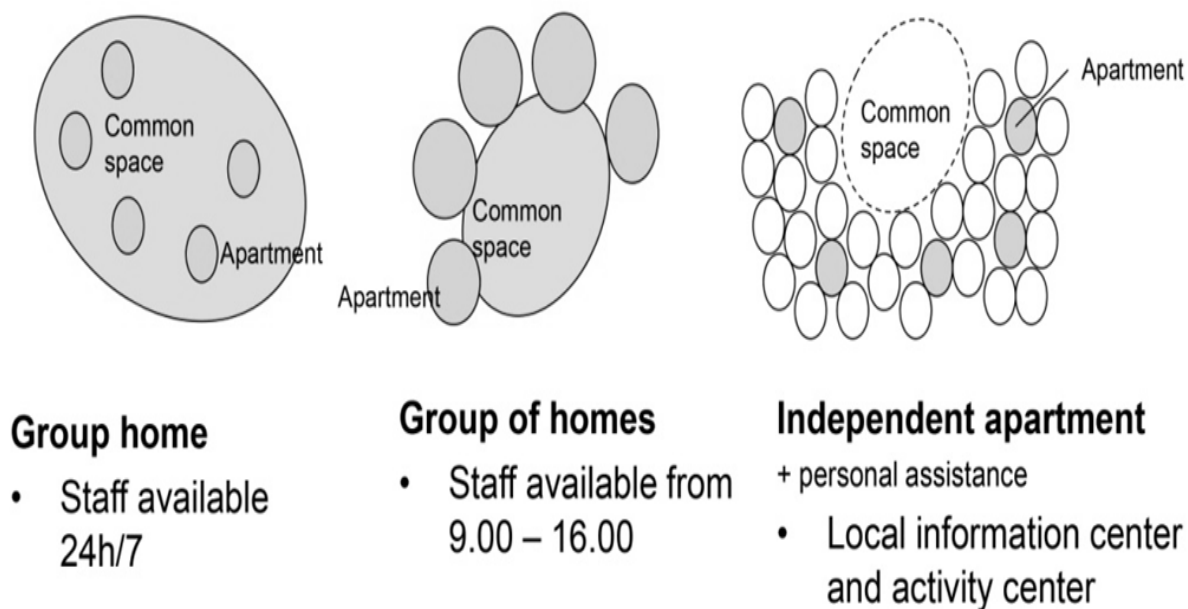
Socially sustainable cities provide opportunities for housing and participation for all citizens regardless of their personal characteristics. Designers and architects have an important role in creating opportunities and affordances for all. Housing and services for "special" groups such as the elderly or persons with disabilities have traditionally been developed solely by experts (e.g. Clarkson et al. 2003). The residents themselves have not been perceived as active individuals who could contribute to design.

Finland has recently (in June 2016) ratified the UN Convention on the Rights of Persons with Disabilities (United Nations 2016). The convention recognizes persons with disabilities as individuals with different needs and desires. The convention also declares that they have the right to be actively involved in decision-making processes directly concerning them. In the building process, the residents can be regarded as experts of their own daily life. Residents' involvement in the design process concerning their living environment enhances the development of better solutions and may lead to innovation.

Building design and urban planning can promote inclusion of all people. Spatial design that supports the capacities of the user enhances independence and reduces the need for assistance from another person. On the other hand, obstacles in the built environment may increase the need for help and hinder participation. The UN Convention on the Rights of Persons with Disabilities states that persons with disabilities should have "*the opportunity to choose their place of residence and where and with whom they live on an equal basis with others and are not obliged to live in a particular living arrangement*" (Article 19).

In Finland, institutional care and group homes for persons with disabilities have been prevailing. However, during the last decades, living independently on one's own home with assistance is becoming more common. This is supported by housing policy and services for the disabled. According to statistics, since the year 2000, institutional housing for persons with intellectual disabilities has decreased by 55 percent and assisted living has increased by 157 percent (Väyrynen and Kuronen 2015). In Finland, the municipalities are in charge of providing housing for people with special needs. The

aim is to develop more housing choices and better individual solutions. Housing and services are offered by different service providers. This ensures that the person does not need to relocate if the service provider is changing. A few initiatives where parents of young people with disabilities act as housing developers have been realised. The aim has been to develop supportive housing options for young adults moving away from home for the first time.



*Figure 1. In Finland there are in principle three different housing models for people with disabilities.*

The residents with disabilities need their individual apartments, but practical and social support as well for their daily living. Semi-private spaces inside the building are important for social activities and collectivity. This also creates new demands regarding housing design. The Design for All / Universal Design concept is to produce mainstream solutions that are not segregating any user group.

These solutions can enhance independent coping in daily life and at the same time promote participation and social belonging.

The Finnish building codes and accessibility regulations basically ensure the physical accessibility and functionality of housing for people with special needs. The law also grants them the right for care services. However, persons with disabilities and their families still meet many financial, bureaucratic and other barriers in the face of the complex housing and care provision system. Access to good quality housing and services can vary according to municipality and depend on the activeness of individuals. Attitudes towards persons with disabilities can be condescending. Rather than demanding customers or skilled individuals who could have a say about their living environment, they are seen as passive subjects. To contrast this view, a study on the modifications made by persons with physical disabilities in their homes showed that some of them can be seen as creative and innovative lead users (Jacobson and Pirinen 2007).

The inclusion/exclusion of people with different characteristics and abilities in the living environment is largely determined by *design*. Design as a discipline and its outcomes thus participate to the creation of disability (e.g. Clarkson et al. 2003). Products and environments designed for persons with disabilities may stigmatise the users and alleviate their disability (Jacobson 2013). As an example, the bathrooms and other facilities in special housing are often hospital-like. The users' individual characteristics and lifestyles should be taken into consideration also when designing for persons with disabilities. Ideally, assistive products and environments do not aesthetically differ from mainstream solutions and attract "regular" users as well.

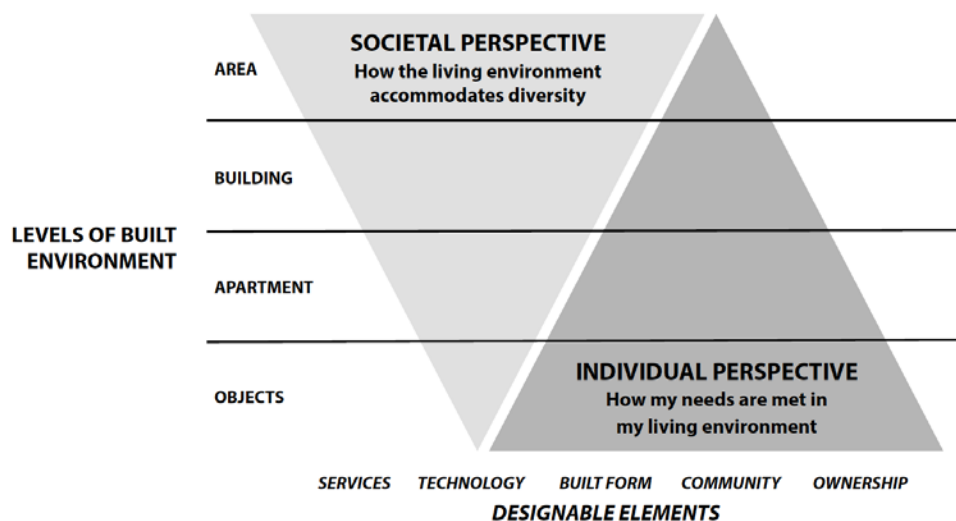
## **Approach – Empathic Design Across the Levels of Built Environment**

In the design field, approaches like user-centred design, empathic design and co-design emphasise the users' everyday experiences as basis of design and the inclusion of them to the design process, providing methods and tools for user involvement ranging from mere inspiration to complete design control (Koskinen et al. 2003, Till 2005, Sanders and Stappers 2008, von Hippel 2005). Design has expanded from products to more immaterial, systemic issues, such as services and public policy, and is harnessed as tool for societal transformation (Buchanan 2000, Meroni and Sangiorgi 2011, Bason 2014, Manzini 2015). Designers are increasingly present in the fields of healthcare and wellbeing (Keinonen et al. 2009).

Regarding persons with disabilities, the Design for All / Universal Design paradigm stresses the importance of a barrier-free environment that accommodates to diverse users. It tends to focus on physical accessibility rather than social needs or engaging the users. How to approach persons with intellectual disabilities as a designer? The study case described in this paper is an experiment in applying empathy in design education, where design students interacted with persons having intellectual disabilities and created concept level designs for their needs. The hypothesis was that inclusion requires design across the scale of built environment and that elements like services can be important enablers of everyday living as well. The assignment was challenging for both students and the young persons with disabilities.

As outlined by architectural scholar John Habraken (2000), the built environment is organised into hierarchic levels, each enclosed by the

higher level and controlled by specific professional and other actors. In urban housing, the levels of built form range from objects to the interior fit-out and plan of the dwelling, the building and its common facilities, the neighborhood and the urban area. The immediate levels can easily be modified by individuals, while the higher levels of buildings and cities necessitate professional and public control. Aside from the built form, housing and dwelling as a product also includes other designable elements such as services, technology, funding models and the community (Pirinen 2014, see Figure 2).



*Figure 2. The levels of built environment and two perspectives on inclusion.*

The inclusion in the society is possible when it is taken into account in all scales of planning and design. In the case of housing and daily activities, access to the neighborhood and possibility for mobility has to be considered. The integral design of walking paths from home to local services, public transportation and leisure activities enhance independent coping and social participation. At the personal level, the possibility to do activities and go to places that are meaningful is important for wellbeing and quality of life. Design for All principles



can be used to improve the safety, accessibility as well as overall perception of the space. It also promotes household appliances and technical aids that are easy to use. Visual guidance and use of different paving materials, for example, can enhance wayfinding and navigation outside home.

An apartment that is functional and accessible can help the resident in accomplishing the daily activities (bathing, eating, etc.). The activities of daily living can also be assisted by user-friendly design. Especially the bathroom and kitchen are places where safety is a matter of significance. Furthermore, daily tasks can be facilitated by dwelling layout that is logical and promotes intuitive use of space and appliances. In the following, we complement the understanding on the levels of inclusion in daily life for persons with disabilities by opening up the process and outcomes of the case project.

### **Case – Design Students Meeting "The Other"**

This paper describes the process and outcomes of a study project where students of architecture, spatial design, industrial design and creative sustainability worked with ten young persons with intellectual disabilities and their parents to develop new spatial and service concepts to support the social interaction, wellbeing and independent living of the clients. The course was realised in conjunction of a real housing project that is planned to be realised in Helsinki, Finland. The housing project, named *My Home* (Mun koti) has been initiated by a group of parents who have got to know each other through their children. The parents have founded an association (My Home Association) that would act as the developer of the house.

The *My Home* study project was organised by the Department of Design at Aalto University in Helsinki, Finland in autumn 2014. The seven week project was initiated by art educator Laura Isoniemi, herself one of the parents active in the My Home Association. The authors of the paper, together with Laura Isoniemi, planned the course and acted as teachers, with Antti Pirinen as the leader. There were 20 masters level students from eight different countries enrolled in the course. The educational and practical objectives for the course were 1) to learn to apply approaches from co-design, service design and concept design to a real housing project, 2) to challenge the stereotypical conceptions on disability and special needs in housing and living and 3) to sensitise future designers to working with "non-average" users. The task was divided into four main phases:

- *Emphasise with the residents and gain an understanding on their individual needs.*
- *Define a core design problem to focus on.*
- *Formulate design drivers and generate alternative solution ideas.*
- *Design a viable spatial or service concept suited for the My Home house.*

The course was started by watching together the French movie *Intouchables* (2011, directed by Olivier Nakache and Éric Toledano) that describes the relationship of a quadriplegic man and his caregiver, approaching disability in an unconventional and touching way. We also organised a small workshop where the students identified basic needs and qualities related to the home based on their own experiences. It became evident that many aspects of the home and everyday living are rather universally shared.

We also visited with the students different types of housing units for people with intellectual and physical disabilities, such as the *Käpytikka* (Woodpecker) house in Arabianranta (Figure 3), Helsinki, which can be considered a socially and aesthetically successful example of housing initiated by a group of parents ([www.kapytikka.fi](http://www.kapytikka.fi)). Moreover, there were lectures by various experts opening up the medical perspective to intellectual disability, current services for the disabled, accessible design and special housing.



*Figure 3. The entrance of the Käpytikka house creates a landmark in the neighbourhood (architect Stefan Ahlman, artist Annika Bergvik-Forsander).*

During the user study and concept design phases the students worked in teams of two, where one student was Finnish-speaking to enable better communication with the clients. The empathy process started with a common get-together where all the future residents attended with their parents. Each student pair had been assigned one of the young clients beforehand. In the event, the students and the youngsters introduced themselves and got familiar with each other in an informal atmosphere.

This was followed by series of individual meetings in the homes of the clients, where the goal was to gain in-depth knowledge on their individual characteristics and way of living. The teams selected their methods depending on the ability level of their client. They discussed and asked questions, followed the clients around in their daily activities and documented their living environment. Some teams used drawing tasks or other visual methods to elicit information. Also the parents and some service providers were interviewed.

## Needs and Challenges Identified Through the Empathic Process

The findings from the user study, site visits and lectures were collected and categorised in a common workshop based on their affinity. Ten main themes related to the everyday needs and challenges of young persons with intellectual disabilities emerged from the material. They are briefly described below.



*Figure 4. The design students visited the homes of the young persons with intellectual disabilities and discussed their needs, challenges and dreams through designerly methods. Photo: Johanna Laukkanen.*

## **BEING ACTIVE**

Most of the young people that the student interviewed were active, went to work or school and had hobbies outside home. One of the main requirements for them was easy access to public transportation from home and possibility for independent mobility. Active living is promoting social belonging and inclusion. However, it is also important for the physical health and wellbeing of a person. Physical exercise such as walking help to maintain the functioning capacities of a person.

Music, handicrafts and cooking were hobbies of many young persons. They would enjoy doing these activities, playing and singing together with friends or other persons living in the building. Common spaces in the building can promote these activities and invite persons to spend time together.

## **BOUNDARIES**

The young people wanted to be active and participate in the society. However, they need a lot of support and encouragement to do so. It seems that they also need clear, safe social and physical boundaries in everyday living. Semi-private spaces inside and semi-public spaces outside the building create buffer zones that increase the feeling of safety. The transition from home to the city is done through sequence of places from private to public. Access from one level of privacy to the other has to be smooth and continuous.

The daily activities and managing their own lives may be challenging for some young people. Persons with intellectual disabilities may also be exploited or mislead more easily than others. Reliable

solutions for managing daily routines, timetable and finances, for example, are needed.

## **COMMUNICATION**

Verbal communication was problematic to many of the residents. Helping with communication is therefore an important issue to consider when designing the new house. How to help communication in the house with other residents, especially in the beginning? How to help the residents to create a new community?

Considering all the residents, the more they are able communicate with each other, the more they will probably feel at home in the new place. We found out that the young persons with intellectual disabilities had many different ways to communicate and everyone had their own way. Often the parents were acting as "interpreters" for their child, which is not possible when they move on their own. New ways to support communication with the staff and neighbours should be facilitated.

## **INDEPENDENCE**

A major challenge for the young clients was how to live independently as an adult. Many were dependent on daily assistance and were used to someone else telling them what to do. However, they were also enthusiastic about the prospect of becoming more independent. Independence of the residents can be supported by both the design and the practices in the *My Home* house. An apartment with your own key and your name in the front door is a tangible symbol of privacy and independence.

Leading a self-contained and independent life regardless of disability enhances residential satisfaction. Being able to use public

transportation and navigate in the city increase inclusion. The information about travel routes and timetables for planning a trip are important. Previous studies (Verma et al. 2010) suggest that the majority of persons with disabilities use only familiar routes and public transport connections they have already mastered. Persons may not be confident of managing independently on a new route. Assistance and guidance are necessary in unfamiliar environments.

## **NATURE**

Nature and being outdoors was very important for many of the clients. Nature has a stimulating and healing effect. It enhances wellbeing and helps to recover from stress. Nature also gives us the notion of time and seasons. The cycle of day and night as well as summer and winter is experienced through the nature. Furthermore, the sounds, smells and taste as well as haptic experience of the nature is therapeutic. Access to nature and outdoor spaces is therefore important for persons with intellectual disabilities. Parks and green areas that are accessible are not segregating any user group. When users who have a disability are neglected in the design of public green space, complimentary services or special solutions are needed.

## **PERCEPTION**

From the interviews with the youngsters and their parents, we found out that almost all residents had a problem on perception of abstract concepts like time, space, money and dreams. What's more, because they had trouble in understanding these abstract things, sometimes what they told us was not true compared with their parents' interviews. These kinds of problems affect their everyday living and

communication with others. On the other hand, we felt that they had the enthusiasm and aspiration to learn things to make them more independent. They just need some appropriate support.

## **THE SCALES OF SPACE**

Social activities can be promoted by offering both spaces for large get-togethers and intimate talks in the apartment building. Entrances and staircases are spaces for daily encounters. In Finland, because of the climate conditions at winter, inside premises are important. However, outside spaces can offer a common living room for the residents in the summertime. All scales of the residential space from the intimate sphere of the dwelling to common spaces and the neighbourhood contribute to inclusion and should be designed so that they support the living of persons with disabilities (cf. Habraken 2000).

## **SOCIAL INTEGRATION**

Many of the future residents were socially active and had a lot of friends. Most of them were attending school and one was also working. However, there were challenges related to the social integration of the residents both regarding the house and the broader community. For example, how to find new friends when moving away from home and how to keep in touch with the old friends. The parents were worried that their children would withdraw to themselves when moving on their own. Many have difficulties in initiating and sustaining relationships. Also the surrounding society is sometimes hard to understand. The residents need ways for being in contact with the local neighbourhood that suit their special abilities.



## THE SENSES

Many of the young persons with intellectual disabilities had something special with their senses. They could be hypersensitive or hyposensitive, i.e. overtly sensitive and easily affected by sensory stimuli, or the opposite, having for example difficulties in hearing loud noises or smelling something bad. It is therefore important to create a living environment that suits different ways of sensing. The sensory load should not be so heavy that it distresses some residents, but the environment should also be stimulating and interesting enough. Everybody should be able to express herself while others still have enough “sense space”. For example, the acoustics, colours and materials in the common spaces are important.

## ROUTINES

Everyday routines came up as one of the key themes in the user study. On one hand, the youngsters (as all people to some extent) need familiar, recurring practices to feel safe and manage in the everyday. Following an established pattern also eases the workload of parents and other caretakers. On the other hand, many of our clients were very fixed in certain behaviours or ways of doing things. For them it would also be good to be able to change the routine if the surrounding situation has changed. Keeping up the good routines, letting go of unbeneficial ones, and building new routines suited for life in the *My Home* house was deemed as one of the key design drivers that the developers should attend to.

## Design Concepts for Supporting Everyday Living

The students took the themes outlined above as the starting point for developing concept level design solutions that could potentially be realised in the *My Home* house. The expected outcome was a new and innovative resident-centred concept that would support the social interaction, holistic wellbeing and independent living of young persons with intellectual disabilities. The concept should be realistic and viable so that it can be utilised in the further development of the house. The students were encouraged to go beyond the immediate needs of the residents and seek for truly transformative concepts.

The student teams themselves defined the focus of their concept. In total, nine concepts were created, some of which targeted the architecture or interior space of the house while others focused on furnishings or digital solutions. Some teams were looking into the operational model of the house and its development process. Three concepts are described more in detail here. They demonstrate how inclusive design operates on different levels of the living environment and in different phases of the design process.

### CONCEPT 1: FACILITATING THE COLLABORATIVE HOUSING DEVELOPMENT PROCESS

*Designers: Eloise Smith-Foster (UK) and Reko Laurilehto (Finland)*

The first concept targets the housing development process for persons with disabilities. The students identified absence of meetings and community building, differing needs and opinions left undiscussed and inappropriate solutions due to lack of stakeholder empathy as key problems in the process. It also seems that the projects initiated by laypeople always start from the scratch, as

learning from previous projects are hard to disseminate. To facilitate a more collaborative and cumulative process, the students suggested a design game named "Homelab". Three flexible game sessions with real stakeholders would occur during the concept development phase, proceeding from community building to gaining user insight and to structured concept generation and evaluation. Each session would be documented and shared via online service to the stakeholders. The outcomes could later be used by other projects as well. The game would not only benefit the user community but also designers, investors, builders and service providers.



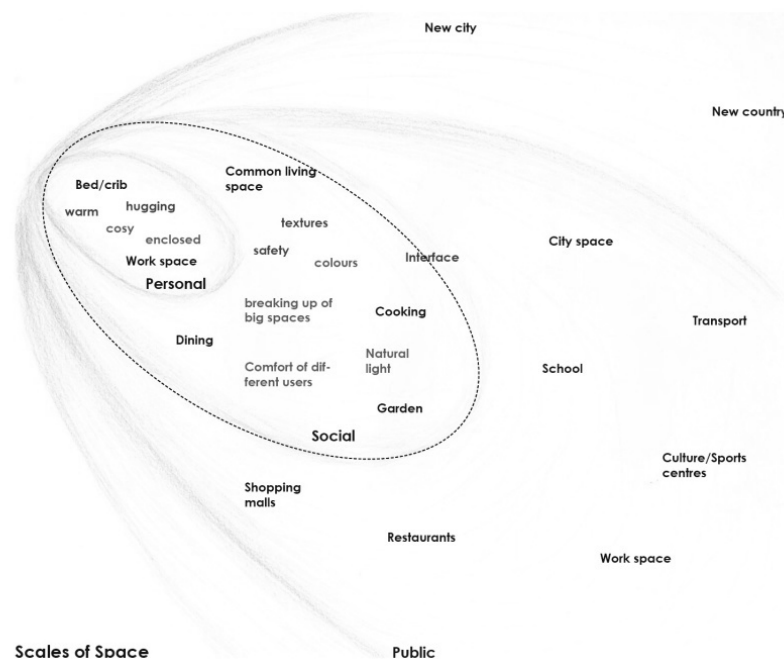
*Figure 5. Illustration of the "Homelab" design game for facilitating collaborative housing development for persons with disabilities (Eloise Smith-Foster and Reko Laurilehto).*

## CONCEPT 2: SMOOTHING THE TRANSITION BETWEEN PERSONAL, SOCIAL AND PUBLIC SPACES

*Designers: Sudar Oli Gunasekaran (India) and Byungmin Youn (South Korea)*

The second concept targets the spatial organisation of the house and the transition between the private dwelling, common spaces in the

building and the surrounding city. The students were reflecting on the personal, social and public sphere of daily life. They were identifying activities of the residents and the level of privacy needed to accomplish them. They were also considering which activities the residents might do together. Their concept was to create transition spaces to encourage the shift from more private spaces to the more public ones. For example, the interface with private and semi-private spaces, bedroom, common living room and garden to the city space was discussed. The visual access from one space to the other was found important. The students also identified different qualities of space associated with private spaces (warmth, cosiness) and semi-private spaces (comfort, safety). The end result was a series of sketches of "threshold spaces" in the building that allow active or passive social participation.

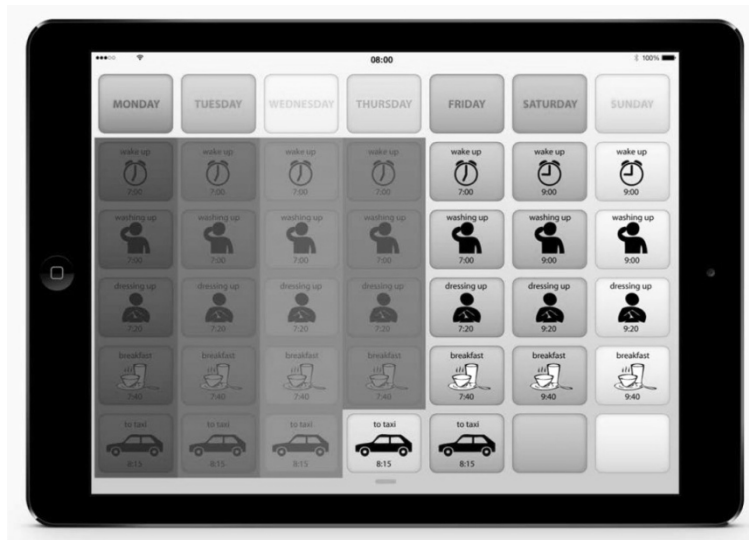


**Figure 6. The spheres of daily living from private to public (Sudar Oli Gunasekaran and Byungmin Youn).**

### **CONCEPT 3: MANAGING THE EVERYDAY ACTIVITIES AMONG THE COMMUNITY**

*Designers: Hengjia E (China) and Mikko Heiskanen (Finland)*

The third concept seeks to solve the challenges among people with intellectual disabilities in managing the everyday schedules and chores through a customisable, accessible digital calendar application named "Rainbow Calendar". The easy-to-use, visually simple calendar reminds the users of their daily tasks and indicates the passing of time. Its inspiration were the colourful, low-tech, manual calendars used in care homes and the finding that many of the clients were very familiar with using technology such as iPads. The idea was to have one calendar system in the house for easy synchronising between users. Each resident is provided a personalised interface based on her individual ability level and schedule. The calendar would be visible inside the house on screens and in the personal devices of the residents. Content can be provided by staff, parents or the residents themselves. The solution helps residents manage their daily lives, makes communication easier between residents and between nurses, assistants and parents. The application also serves an activating function. Another team ideated a "coach service" for helping the residents to try out different hobbies and activities that could be connected to the calendar.



*Figure 7. A resident's personalised view of the Rainbow Calendar (Hengjia E and Mikko Heiskanen).*

## Conclusion – Design for Us All, Across the System

Returning to the model of hierarchic levels depicted in Figure 2, we can see that the concepts created by the design students target different levels and elements of the composite housing product. Concept 1 provides a tool for the collaborative need elicitation and development phase preceding implementation design. Concept 2 addresses different levels of the built environment, in particular the transition spaces between private flats, semi-private common spaces and the public outdoor environment. Concept 3 targets the daily living inside the finished house through a digital application that could also be made available to broader markets. All three concepts are grounded in the needs of persons with intellectual disabilities but would be viable for other user groups as well.

In the light of the *My Home* project, both large-scale measures of urban planning and architecture and small-scale, community-based design innovations are needed to mitigate the barriers to inclusion.

From the perspective of residents, all levels of the built environment from domestic objects and appliances to features of the dwelling, the building and the urban space should be seamlessly inclusive. Aside from the built environment, services and digital solutions can have a crucial role in enabling everyday living. The collaboration with the future residents enabled us to recognise their personalities and expectations regarding their new home. It also helped the students to better embrace the challenges that young persons with intellectual disabilities face in daily living.

Based on our tentative exploration, it seems that barriers easily arise in-between levels where professional territories and scales of design meet. To overcome them, designers, architects and other experts should develop more holistic (cross-disciplinary) approach to design. However, more rigorous research would be needed to validate these initial thoughts and to develop the model of the levels of inclusion further.

An important educational outcome of the *My Home* project is that it seems to have developed the empathic design skills of the future designers. In light of the feedback we received, many participants had experienced a shift of mindset regarding persons with intellectual disabilities. During the empathy process, they came to realise that the needs and experiences of people whom they initially perceived as fundamentally "different" in fact were rather similar to their own needs and those of any young person. However, their fulfillment often is more complicated and requires creative design skills.

The Convention on the Rights of Persons with Disabilities urges to combat stereotypes, prejudices and in all levels of the education system to foster an attitude of respect for the rights of persons with

disabilities. Universities are in a key role here in arising awareness and educating future professionals.

## **Acknowledgements**

*We should like to thank our young clients and their parents from My Home Association (Mun koti ry) for collaboration and Laura Isoniemi for initiating the project. Thanks are also due to all students who participated to the course, especially those whose outcomes are utilised in this article.*



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***Dr. Antti Pirinen***



***Mrs. Ira Verma***



***MINNA LUMME (M.Sc. in Education) is preparing her Ph.D. in Aalto University Helsinki. Her research concerns co-designing for wellbeing in schools. The author has a long career in National Board of Education and City of Espoo in development and managerial positions. She has also been involved in developing well-being services for students with disabilities in Association of People with Disabilities. She has given lectures in service design and worked as an expert of inclusive education in international various assignments.***

# Co-designing with diverse students for wellbeing

*Minna Lumme*

## Abstract

Finland has recently ratified The United Nations Convention on Rights of Persons with Disabilities. One of the central principles of this agreement is to support the right of diverse children and adolescents to study in inclusive learning environments. Their membership in the learning environment poses specific organisational challenges for the child's and adolescent's participation. According to recent research results a specific feature in Finnish schools is a large social distance between students and adults in the school community. Co-design offers subtle and negotiative planning practices. Methods respect individual students' privacy but at the same time offer various means for self expression and participation. Co-design practices offer a platform for increasing the degree of participation. Some students have limited abilities to work in groups or they are unable to express themselves verbally. They also can have physical limitations in using their hands. Information technology in various forms (photographs, personal devices, social media) can offer an opportunity to express their wishes, needs and ideas.

## Co-design project for enabling spaces for interaction and relaxing

The aim of my research is to study what kind of co-design practices can be developed in schools in order to design for students' daily

well-being. My claim is that co-design offers opportunities for enhancing experienced subjective well-being in school. Co-design offers useful and alternative approach to develop negotiative and participatory practices in schools instead of traditional ways of participation. My study is based on Konu's (2002) theoretical framework of well-being in school.

This exploratory design project was carried out in a Finnish vocational college, where I have worked as education director. All students in the college have diverse needs. Students were aged between 16 – 25 years. The college was involved in a national program for developing students' well-being funded by National Board of Education. Three sub-projects were implemented during the course of one year and they tangled temporally and functionally with each other. One of design projects was carried out in collaboration with students from University of Applied Sciences Laurea and Aalto University. College students acted as co-designers. Implemented design project consisted of co-design project for enabling spaces for breaks between lessons, co-design project in student dormitory and co-design event for food and meeting with decision makers. The first project is described in this article.

Co-design project for enabling spaces for breaks between lessons was carried out with students from University of applied sciences Laurea and Aalto university. The aim of the project was to develop spaces and activities for breaks. The structure of project was based on service design process and it was created in collaboration between college and teachers of the University of Applied Sciences Laurea. Service design students worked in four teams during four months. They organized several participatory workshops and focus groups and they used basic service design tools. Students prepared

four implementation plans in the end of process. Final reports included several proposals for improvement.



*Figure 1. Evaluating ideas in participatory workshop.*

**Students of University of Applied Sciences Laurea proposed following improvements:**

Three halls and one classroom were reorganised as spaces for students' breaks between lessons. One of them would be a lounge for relaxing and interaction, one for small art activities, drawing and colouring and one space for playing games. A classroom would be

changed as space for breaks with coffee and cosy furniture. Style of furniture and colours was intended to be informal, recycled and joyful. It included street art paintings prepared in workshops during school breaks. Students from Aalto university and a street art community were called in to assist students and college staff in completing four spaces.



*Figure 2. A space for drawing and craft.*



*Figure 3. A student space for breaks between lessons.*



Changes in physical spaces produce changes in social practices. It is reasonable to understand that change of physical space is just a beginning for new interaction and social practices in school. I interviewed students and teachers in the end of the project. Teachers told that new informal spaces create new less formal interaction between teachers and students. It seemed that diverse groups of students started to use different spaces. Lounge gathered together diverse students to relax and chat with each other. On the other hand the space prepared for making different source of craft attracted more the silent ones, who wished for more adult support in their interaction with each other. Thirdly the space prepared for various games attracted more restless students with difficulties reaching understanding within the group.

Annual and everyday time structure at school offers a good platform and resource for development. According my observations, some co-design activities can be based on knowledge and cultural tradition in schools. Co-design activities can be integrated to various contents in curriculum. Some design activities require capacity building for certain design skills. However, co-design activities improve interaction between students and adults. Co-design workshops are good ways to enable people to give their voice and make their opinions and wishes visible. All participants' attitudes play a major role in the success of design process. In the current study teachers gave positive feedback about the co-design events. They told that they got new ideas for their work and that participation was a refreshing experience in every day work. It is important to note that the case study at hand indicated an incline in teachers' motivation.

Based on my observations my conclusion is that the best way for co-design in school is based on a well structured process. On many

occasions they also meet some level of resistance. Planning for co-design based change in environment also creates promise of better future and it is highly important that this promise also can be fulfilled in reality. Participants in the process justifiably expect to see tangible results of their efforts. Discussions about opportunities are easily experienced as promises. Based on observations people don't always recognise their own role and responsibility for implementation of ideas. Lack of concrete skills complicated self-imposed implementation of ideas. However, participants should be aware of the fact that the right to expect positive change also places responsibility upon their shoulders.

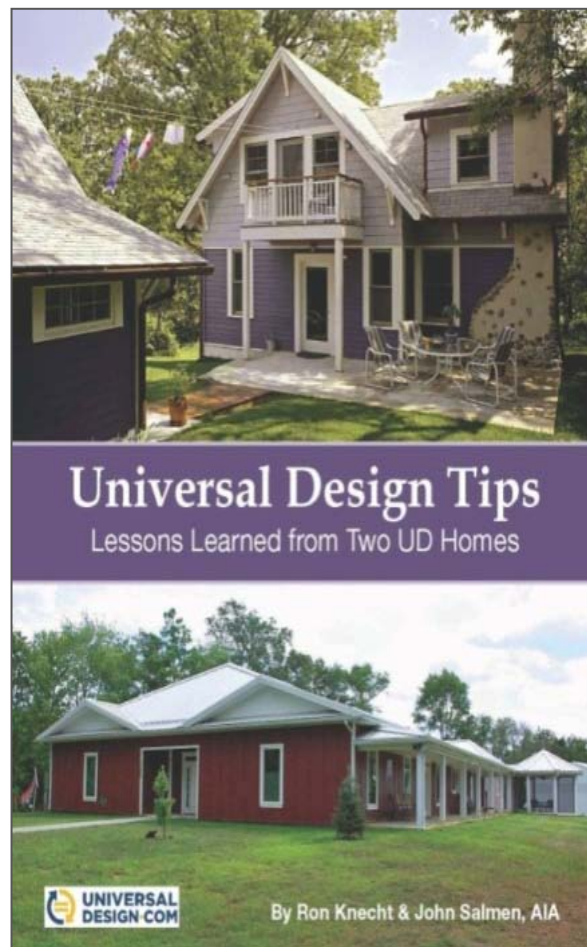


*Minna Lumme (M.Sc. in Education) is preparing her Ph.D. in Aalto University Helsinki.*



# New Books

Universal Design Tips: Lessons Learned from Two UD Homes:



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

Knecht, whose durable, energy efficient Universally Designed house was featured in the [January 2012 issue](#) of *Universal Design News*.

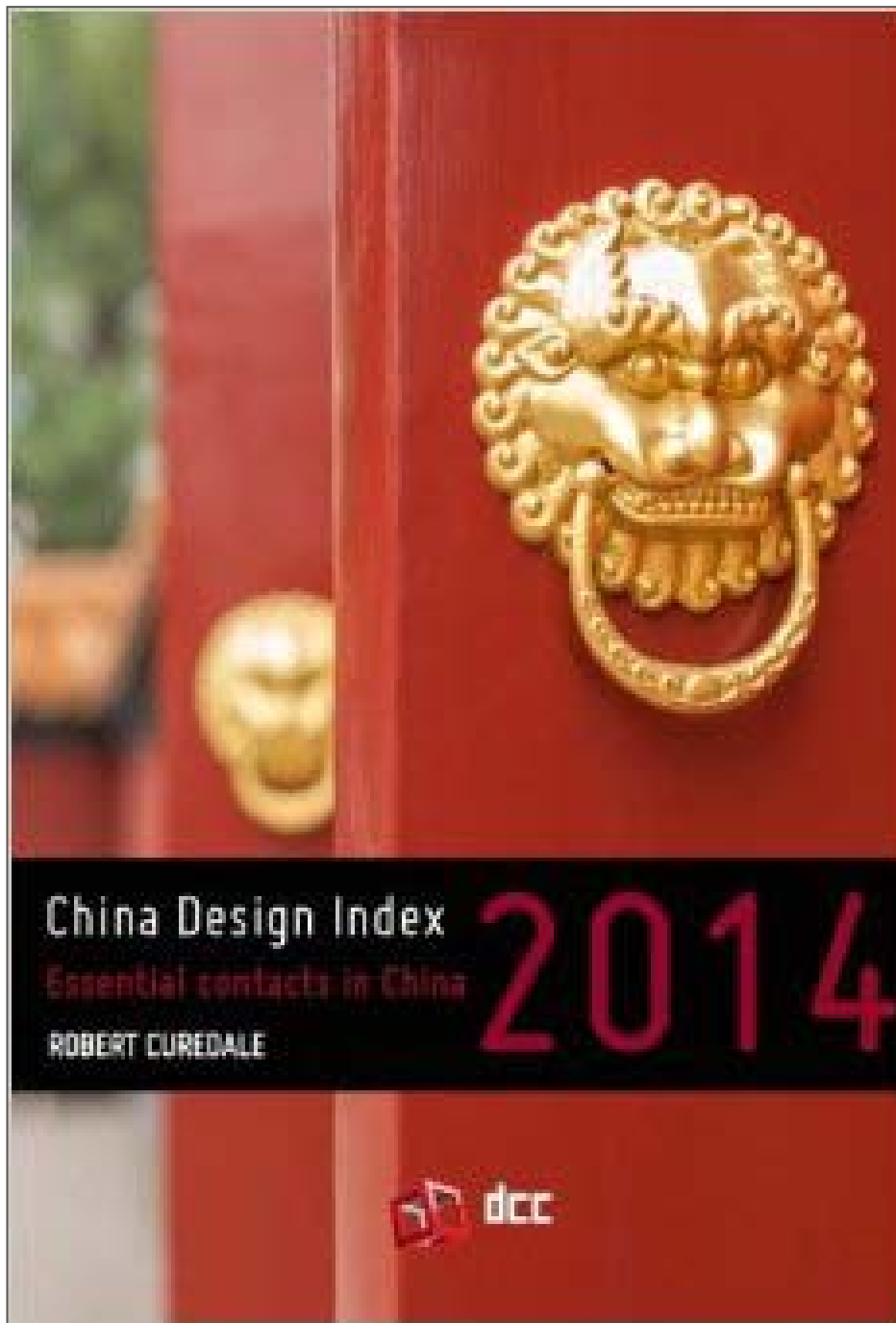
The first section of the book deals with the planning process, providing insight on how to choose a location for the house, consider activities of daily living during planning, best use various types of design professionals, finalize a floor plan and develop a building schedule.

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

John Salmen has been working in the field of accessible architecture and Universal Design for over 30 years, and he put this expertise to good use when remodeling a historic property to create the Universally Designed house he and his wife hope to live in for many years. Salmen's "Home for the Next 50 Years" has been featured in various media outlets: including *The Washington Post*, *Fine Homebuilding*, AARP's television show *Inside E Street* and the book *The Accessible Home: Designing for All Ages and Abilities*. Now, readers will be able to explore Salmen's home in even greater detail and apply his experience to their own Universally Designed home projects.

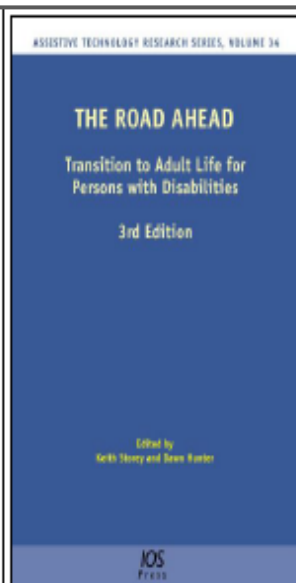
Ron Knecht's experience with Universal Design started after his wife of 46 years became ill with cancer. As her health worsened, Knecht learned first-hand the importance of accessibility for maintaining independence, safety and one's quality of life. Before Knecht's wife passed away, she extracted a promise from him that he would move to a Universally Designed house located closer to their daughter. Knecht was underwhelmed by both the houses that he saw on the market and the UD house plans that he found online; he realized that he would have to plan and build a custom house in order to fulfill his promise.

## China Design Index 2014:



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

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



### **The Road Ahead**

Transition to Adult Life for Persons with Disabilities

Volume 34 Assistive Technology Research Series  
Editors: Storey, K., Hunter, D.  
December 2013, 318 pp., hardcover (revised 3rd edition)

ISBN 978-1-61499-312-4 (print)

ISBN 978-1-61499-313-1 (online)

Price: €69 / US\$100 / £59

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

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

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

## Design for All, Aree DiRistoro:



Luigi Bandini Buti

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

Maggioli Editore, 2013

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

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

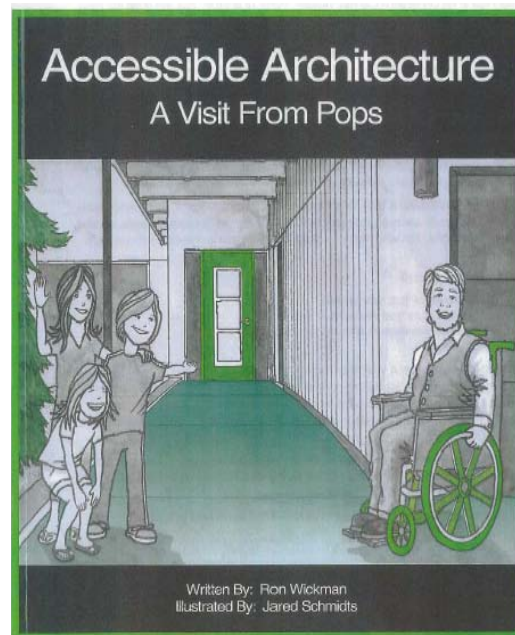
If you are not on a wheel-chair, or blind, or you are not travelling with a large family or you don't have to look after your old grand-father, you will not be able to appreciate many of the attentions included into the project. It was therefore necessary to make more visible the virtuosity of the planning process and its results, which may not appear obvious to many people.

This publication is not meant to be a mere description, it is rather a critical analysis of the Villoresi Est rest area, included in a context that wants to examine in depth the methods and the means of Design for All.

Its main objective is therefore to use the "Autogrill case" to investigate the necessary steps to develop projects Design for all oriented, hopefully in an authoritative way.



## Accessible Architecture, A Visit from Pops:



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

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

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

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

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

Visitability principles include

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

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

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

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

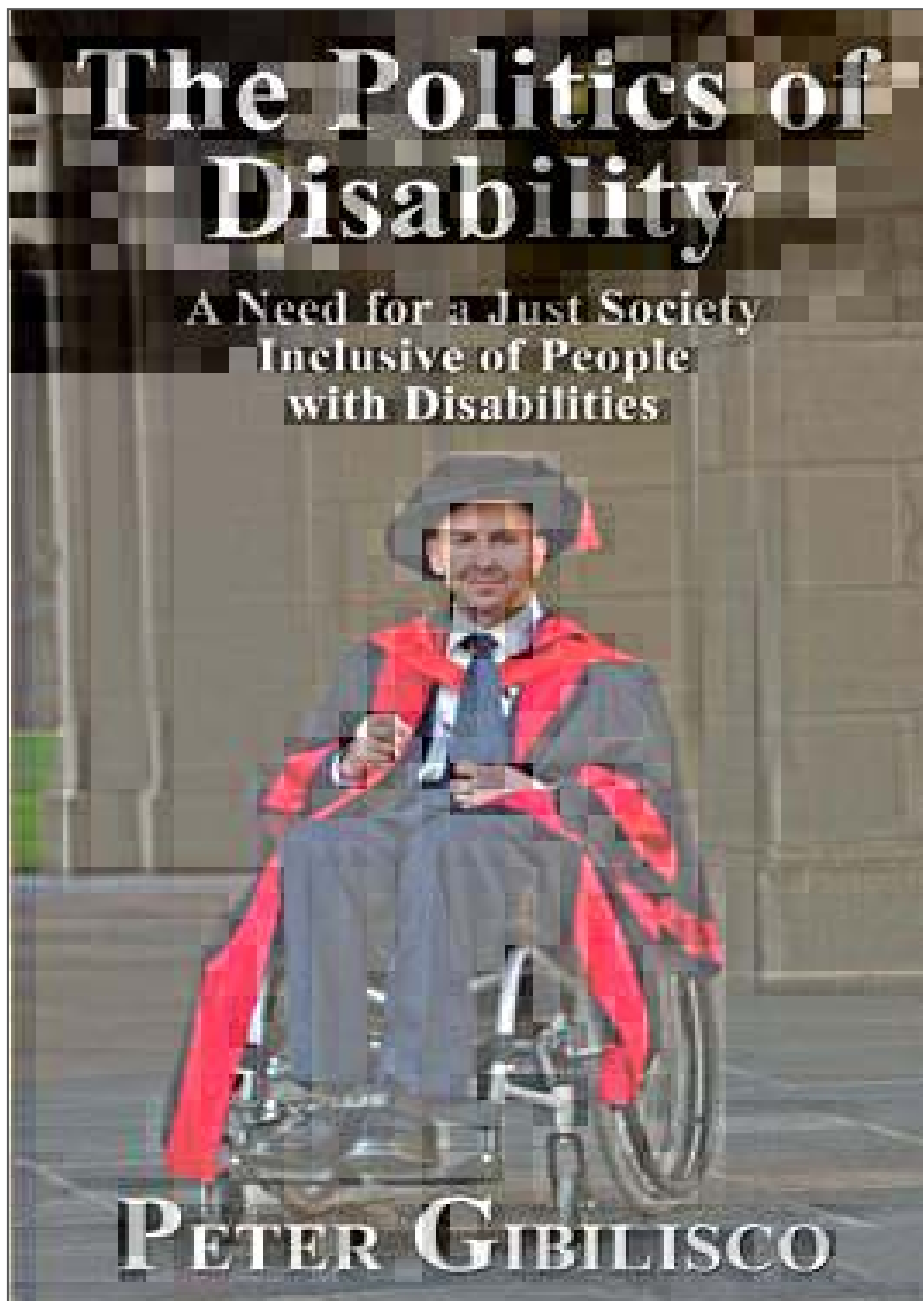
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For additional information, contact:

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E-mail: [rwickman@shaw.ca](mailto:rwickman@shaw.ca)

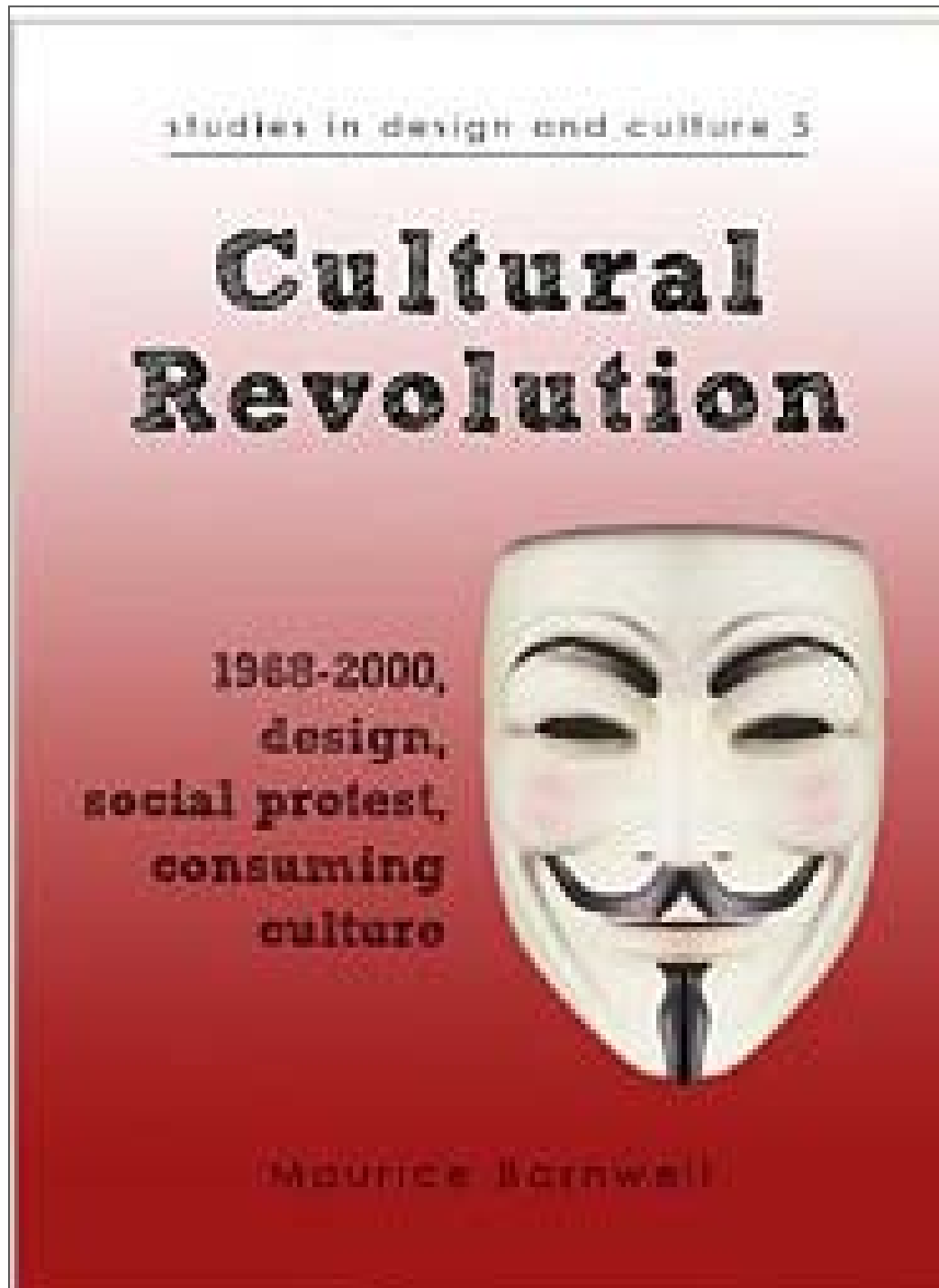


## The Politics of Disability by Peter Gibilisco:



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

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



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

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

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

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

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

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



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

[http://ordini.maggioli.it/clienti/product\\_info.php?products\\_id=8832](http://ordini.maggioli.it/clienti/product_info.php?products_id=8832) Volume 1

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

<http://www.maggiolieditore.it/ebook/tecnica/design-for-all-the-project-for-everyone-first-part.html>

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*"Ideas, even good ideas, flourish only when practitioners commit to sharing their experiences, perspectives and aspirations. By organizing this publication and convening a distinguished international group of contributors, Editor Isabella Tiziana Steffan helps to establish the current state-of-the-art and affirms the significant potential of Design-for-All. She also delivers fresh inspiration to an expanded audience critically important to engage if Design-for-All/Universal Design is to realize its promise in the coming years.(...)We salute Editor Steffan for her passion, focus and hard work to bring this valuable contribution to fruition." (Valerie Fletcher)*

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

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

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

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

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

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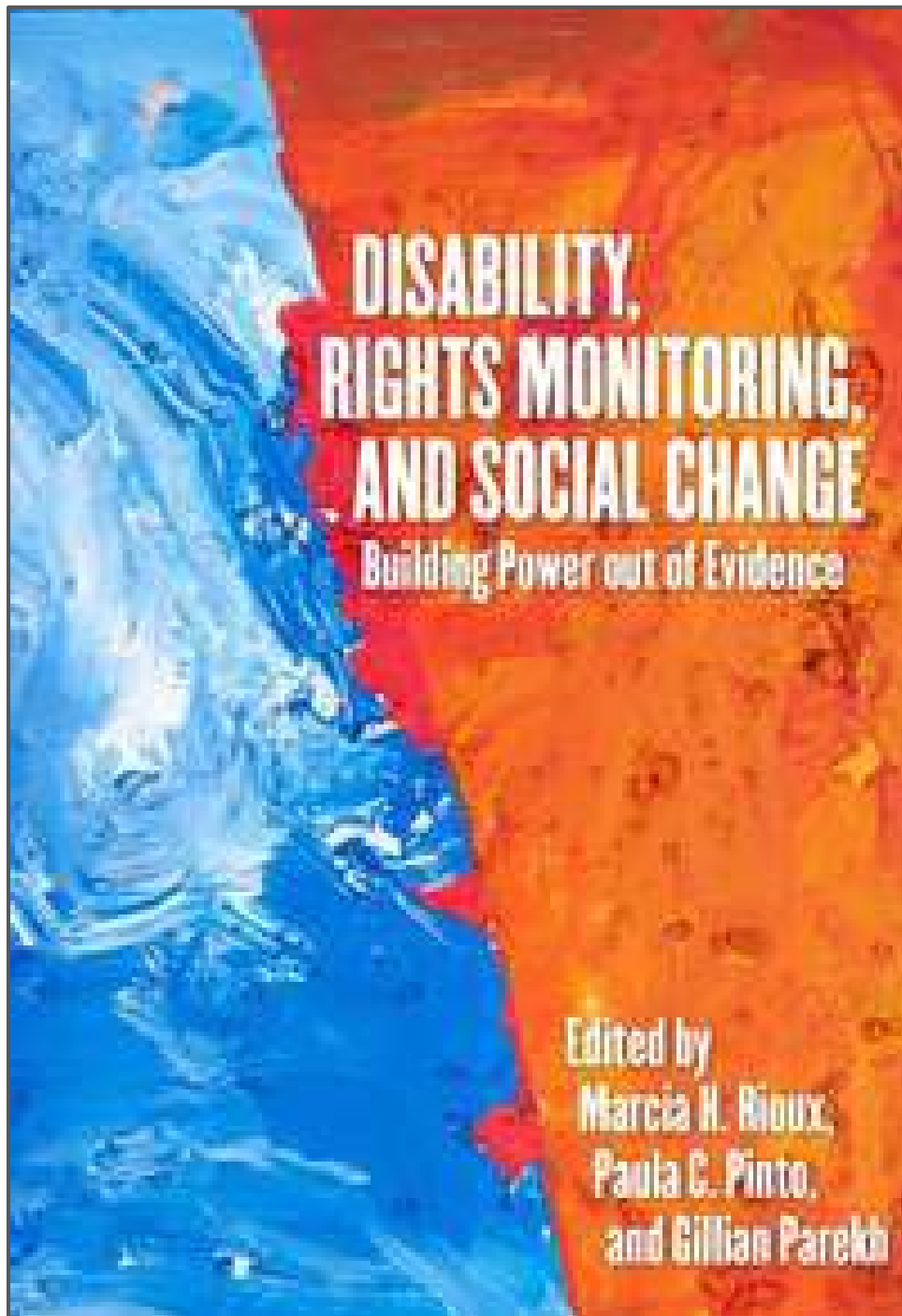
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## Disability, Rights Monitoring and Social Change:





**Amazon.co.uk**

[http://www.amazon.co.uk/Product-Design-course-first-principles/dp/1784562939/ref=sr\\_1\\_fkmr0\\_1?m=A2U321JN96E0UZ&s=merchant-items&ie=UTF8&qid=1456434788&sr=1-1-fkmr0&keywords=Bonollo+Prroduct+Design%3A+A+course+in+first+principles](http://www.amazon.co.uk/Product-Design-course-first-principles/dp/1784562939/ref=sr_1_fkmr0_1?m=A2U321JN96E0UZ&s=merchant-items&ie=UTF8&qid=1456434788&sr=1-1-fkmr0&keywords=Bonollo+Prroduct+Design%3A+A+course+in+first+principles)

**Amazon.com**

[http://www.amazon.com/Product-Design-course-first-principles/dp/1784562939/ref=sr\\_1\\_sc\\_1?ie=UTF8&qid=1456434322&sr=8-1-spell&keywords=Bonollo+Product+Design%3A+A+course+infirst+principles](http://www.amazon.com/Product-Design-course-first-principles/dp/1784562939/ref=sr_1_sc_1?ie=UTF8&qid=1456434322&sr=8-1-spell&keywords=Bonollo+Product+Design%3A+A+course+infirst+principles)

### Product Description

In this book, Elvio Bonollo takes us on a 'learning journey' about design including a scholarly explanation of the characteristics and power of the design process. It provides valuable insights into the attitudes, knowledge and skills that underpin the design discipline at an introductory level of expertise, and has been developed to meet the needs of aspiring designers in many areas including industrial design, design and technology, art and design and architecture. Elvio uses an operational model of the design process - along with related educational strategies, learning outcomes and an ordered set of design briefs - to develop a systematic, problem-based method for learning design from a first principles viewpoint. The beauty of this approach is that it brings structured learning to aspiring designers whilst being mindful of diverse cultures and backgrounds. Each part of this book encourages self-expression, self-confidence and exploration: it has been carefully designed to take the reader on a highly motivating journey of design thinking and creativity, supported by excellent sample solutions to design problems, lucid discussions and extensive references. These solutions, developed by design students, serve as novel examples of how to solve real problems through innovative design without restraining creative freedom and individual personality. The design learning method and strategies in this book will greatly assist design and technology teachers, students of design, aspiring designers and any individual with an interest in professional design practice.

I cannot recommend this book highly enough, it was a complete lifesaver throughout my undergraduate studies and honours degree and now continues to serve me well as I move into industry practice. The content is easy to understand and follow, providing a practical guide to understanding design principles and every aspect of the design process. It includes great project examples and reflects the wealth of knowledge and experience possessed by this accomplished educator. I have purchased multiple copies of this book for peers and would suggest any student who is studying a design discipline to pick up their own copy as this has quickly become the most useful book in my design collection.

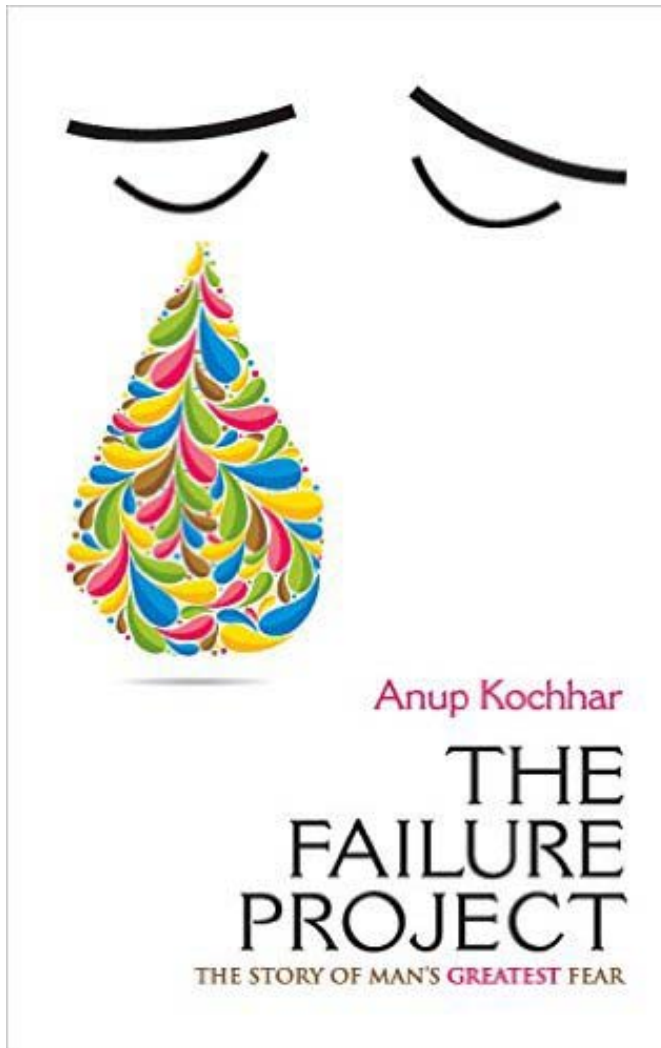
Comment | Was this review helpful to you?   [Report abuse](#)

★★★★★ A 'Must Have'.

By [Amazon Customer](#) on 7 April 2016

As a Design Education professional of many years standing, I endorse this book without reservation. It is comprehensive, lucid and above all, useful in a very accessible level at the coalface. Professor Bonollo has an enormous cache of experience as an engineer, designer and design educator and his experience is well demonstrated in this book. A 'must have' for anyone in the business of educating or being educated in the product design arena.

# The Failure Project: The Story of Man's Greatest Fear



This amazing, comprehensive and compassionate book helps us understand the anatomy, psychology and management of failure - the greatest, and often the most secret, fear of Man.

Failure destroys lives. It damages confidence and crushes the spirit. Throughout our lives we endeavour to manage our thoughts, actions and results so as not to be branded as failures. Despite our best intentions, life does have a way of throwing curve balls and surprising us. Things do not always go the way we planned or wished for. Failure happens. And it will continue to happen. For most people failure is akin to a dreaded disease that must be prevented at any cost.

Failure is like fire - it has the power to singe or destroy completely. Few of us remember that failure can also be harnessed creatively. All that it requires is a different perspective.

What do we know of failure? More importantly, how much do we know about it? The first step to overcoming our inherent fear

of failure is to know the enemy - inside and out.

**The book is now available in paper back and as an e-book from Amazon**

[http://www.amazon.in/Failure-Project-Story-Mans-Greatest/dp/9352015789/ref=sr\\_1\\_1?ie=UTF8&qid=1461578229&sr=8-1&keywords=the+failure+project](http://www.amazon.in/Failure-Project-Story-Mans-Greatest/dp/9352015789/ref=sr_1_1?ie=UTF8&qid=1461578229&sr=8-1&keywords=the+failure+project)

[http://www.amazon.in/Failure-Project-Story-Mans-](http://www.amazon.in/Failure-Project-Story-Mans-Greatest/dp/9352015789/ref=sr_1_1?ie=UTF8&qid=1461578229&sr=8-1&keywords=the+failure+project)

[Greatest/dp/9352015789/ref=sr\\_1\\_1?ie=UTF8&qid=1461578229&sr=8-1&keywords=the+failure+project](http://www.amazon.in/Failure-Project-Story-Mans-Greatest/dp/9352015789/ref=sr_1_1?ie=UTF8&qid=1461578229&sr=8-1&keywords=the+failure+project)



# TAPPING INTO HIDDEN HUMAN CAPITAL

How Leading Global Companies Improve their  
Bottom Line by Employing Persons with Disabilities



DEBRA RUH





# Appeals

A promotional poster for UX India Impact by Design. The background is blue with a pattern of small white dots. In the top left corner is the 'ux india' logo, with 'ux' in a red circle and 'india' in orange. Below the logo, the text 'Submit your talk summary by Aug 15' and 'Later, work on the final deck' is written in white. In the center is a large white outline of a megaphone. Below the megaphone, the text 'ux-india.org' is written in white. At the bottom, the words 'IMPACT' and 'BY DESIGN' are written in large, light blue, sans-serif capital letters.

ux india

Submit your talk summary by Aug 15  
Later, work on the final deck

ux-india.org

IMPACT  
BY DESIGN

**Speak at UXINDIA 2016**

**UXINDIA 2016: International Conference on User Experience Design on 20, 21 & 22nd Oct at Westin, Hyderabad, India ([www.ux-india.org](http://www.ux-india.org))**

**Speak at UXINDIA 2016**

**2.**

**Ministry of Defense, Government of India has launched two International Design Competitions for**

**1. National War Memorial**

**[www.nationalwarmemorialofindia.org](http://www.nationalwarmemorialofindia.org)**

**2. National War Museum**

**[www.indiannationalwarmuseum.com](http://www.indiannationalwarmuseum.com)**



# News

1.

## **Government taking steps to educate people with vision disabilities: Minister**

**PESHAWAR, PAKISTAN:** Khyber Pakhtunkhwa Minister for Social Welfare and Special Education and Irrigation, Sikandar Khan Sherpao has stated that people with disabilities are part of the society and the Provincial Government will take all possible steps to ensure they get quality and modern education so they can become skilled members of the society saying that the next Annual Development Plan (ADP) includes establishment of new schools for people with vision disabilities in every division of the Province and later on such schools would be extended to every District in the Province.

These views were expressed by the Minister during a ceremony organized at the Blind School in Hashtnaghri regarding distribution of computers to special schools throughout the province.

The ceremony was attended by Additional Secretary for social welfare and special education Adil Shah, Director for Social Welfare Naeem Khan and heads of the schools for visually impaired people from all over the province. Sikandar Sherpao presented desktop computers to the heads of the schools for people with vision disabilities so they may be educated in operating computers.

Addressing the event, the minister stated that it is our social responsibility to ensure that people with vision disabilities are able to take active part in the society by providing them with quality and technical education. The minister further added that a special printing press will be established for publication of books for the new classes in these schools from Sept 1st, 2016. Moreover, the

minister also expressed the need for taking steps for making all the schools for people with vision disabilities in the province functional while establishing a separate Directorate for establishment of new schools for special education in the province, he added.

(Source: thefrontierpost)

2.

## **NCPEDP-Mphasis Universal Design Awards given away in the capital**

*The NCPEDP-Mphasis Universal Design Awards were given away in the capital on 14th August, 2016*



Shri Krishan Pal Gurjar, Hon'ble Minister of State for Social Justice and Empowerment presided over the event, in the presence of Som Mittal, Jury Chair and Chariman, NCPEDP, Dr. Meenu Bhambhani, VP & Head - Corporate Social Responsibility, Mphasis Ltd, and Javed Abidi, Honorary Director NCPEDP, several corporate and winners.

The National Centre for Promotion of Employment for Disabled People (NCPEDP)-Mphasis Universal Design Awards were inceptioned in 2010. Conservative estimates of the World Bank and World Health Organization suggests that there are about 70-100 million individuals with a disability in India.

One of the biggest challenges faced by people with disabilities is accessibility. Accessibility not only means access to physical spaces but also means access to information, technology, transport, services, aids and appliances, etc.

The awards aim to raise awareness about accessibility. This year, about 60 applications were received from across the country. The awards are the brainchild of Javed Abidi, who is also the global chair for Disabled People's International (DPI).

The 12 award winners were as follows:-

**Category: Organisations**

Indigo Airlines, University of Hyderabad, National Informatics Centre (NIC), Newshook, Planet Abled, Sap Labs

**Category: Working Professionals**

Prem Nawaz Khan Maraikayar of PayPal Inc; Sandeep Sankat, Associate Professor in the Department of Architecture, School of Planning and Architecture, Bhopal; and Sujatha Srinivasan of Rehabilitation Research and Device Development (R2D2) lab in the Department of Mechanical Engineering at IIT Madras bagged the awards.

**Category: Persons with disabilities**

Danish Mahajan and Divya Sharma of Radio Udaan; Nirmita Narasimhan, policy director with the Centre for Internet and Society; and Sathasivam Kannupayan of [www.enabled.in](http://www.enabled.in) won this award in the in persons with disabilities category.

Shri Krishan Pal Gurjar, Hon'ble Minister of State for Social Justice and Empowerment observed, *"Commuting for the handicapped is a challenge in our country. Therefore all modes of transport should work towards this cause. We have to create a code of benefit for persons with disabilities, which ought to be complied with by all government and non-government institutions."*

*"Through this award, we want to be able to tell organizations in India that accessibility is a huge commercial opportunity as well as a social responsibility. We are delighted with some of the work we*

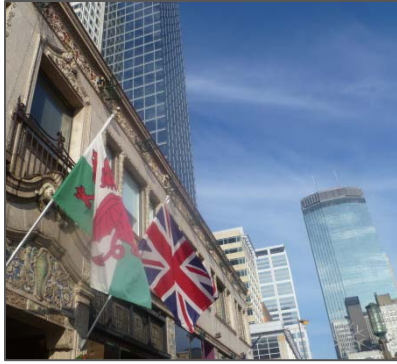
*have seen this year, but sincerely hope that more and more organizations come into the fold, " said Javed Abidi.*

Dr Meenu Bhambhani, VP & Head- Corporate Social Responsibility, Mphasis Ltd said,

*" Mphasis started supporting universal design because we didn't want accessibility to just be an afterthought. From the very beginning, be it transport or building or policy or the system, persons with disabilities should be included in the services. It warms my heart to see so many young people winning the award this year."*

Shri Som Mittal, Jury Chair and Chariman, NCPEDP, *"I've been witnessing this award function for the past seven years and every year we assume we're not going to get applications. However, when the jury sits every year, sometimes it takes us all day to come to a decision. Universal design just needn't be an idea but it needs to be commercialised."*





## Programme and Events



Photo: Delfino Sisto

Legnani. Graphic Design: Groupa Ee

### FARAWAY, SO CLOSE

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

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

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

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

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

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

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

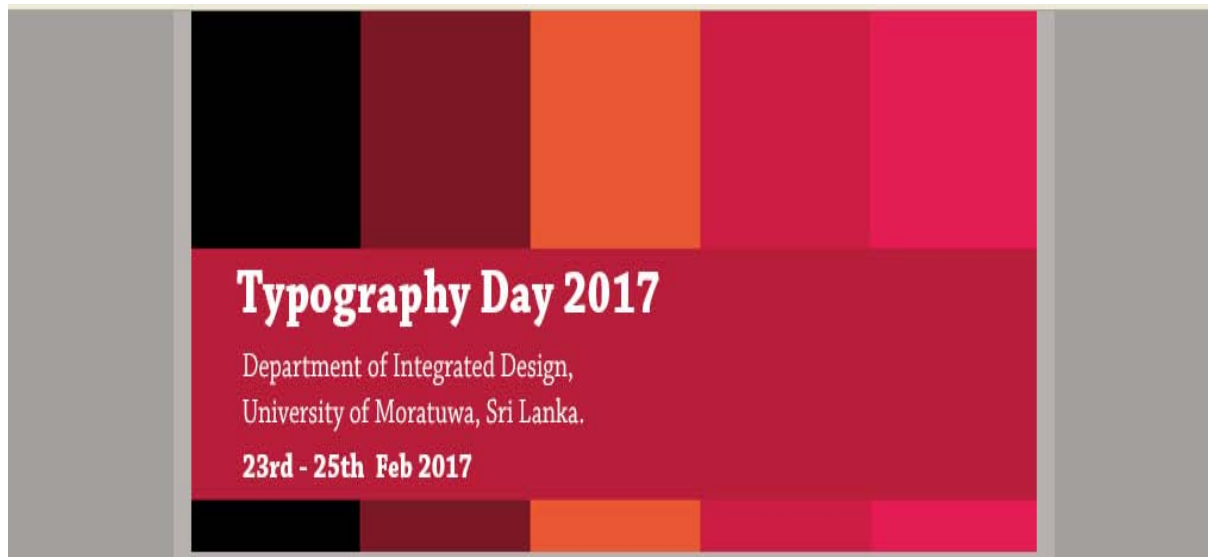
Slovenia, in accordance with its geographical conditions, will perform as a paradigm to stimulate, discuss and test the status of this global shift.

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

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







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

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

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

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

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



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

Red Sea Accessible Tourism Competition 2016  
“Tourism for All”



## India

### FOCUS

Typographic Culture

### TYPE OF CAMP

Cultural Immersion Learning

### GROUP SIZE

12

### PRICE

### SPECIFIC DATES

January 2017

### LOCATION

Chennai and Delhi

Registration starts on

September 1, 2016 @ 12:00 AM



## Pacific Rim International Conference on Disability and Diversity

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



Joseph Binder Award 2016

Organisation und Information

designaustria  
designforum Wien / MuseumsQuartier  
Museumsplatz 1, Hof 7  
1070 Wien  
Österreich  
www.designaustria.at  
Tel.: (+43-1) 524 49 49-25  
E-mail: hedi.resch@designaustria.at

2013 endorsement by

ico-D International Council of Design leading creativity

BEDA The Bureau of European Design Associations

In Kooperation mit:

aiap associazione italiana design della comunicazione visiva

alliance française des designers

ILLUSTRATOREN ORGANISATION E.V.

BDG Attitude Knowledge Network

CZECH UNION OF GRAPHIC DESIGN



6th IFIP TC.13 International Conference on Human-Computer Interaction - INTERACT 2017

Theme: Global Thoughts, Local Designs

at IDC, IIT Bombay 25-29 September, 2017 <http://interact2017.org/>





Cyathlon Symposium, October 6, 2016

**14<sup>TH</sup> PARTICIPATORY  
DESIGN CONFERENCE**

15-19 AUGUST 2016 | AARHUS, DENMARK



The 13th International Conference on Cooperative Design, Visualization and Engineering Oct. 24-27, 2016, Sydney

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

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



International  
CONFERENCE ON DESIGN

**CODE**  
2016

International Conference on 3D Printing and Rapid Manufacturing  
at the School of Fashion and Design, GD Goenka University, Sohna, Gurgaon, Haryana,

17- 18December2016

<http://www.designconference.in/>

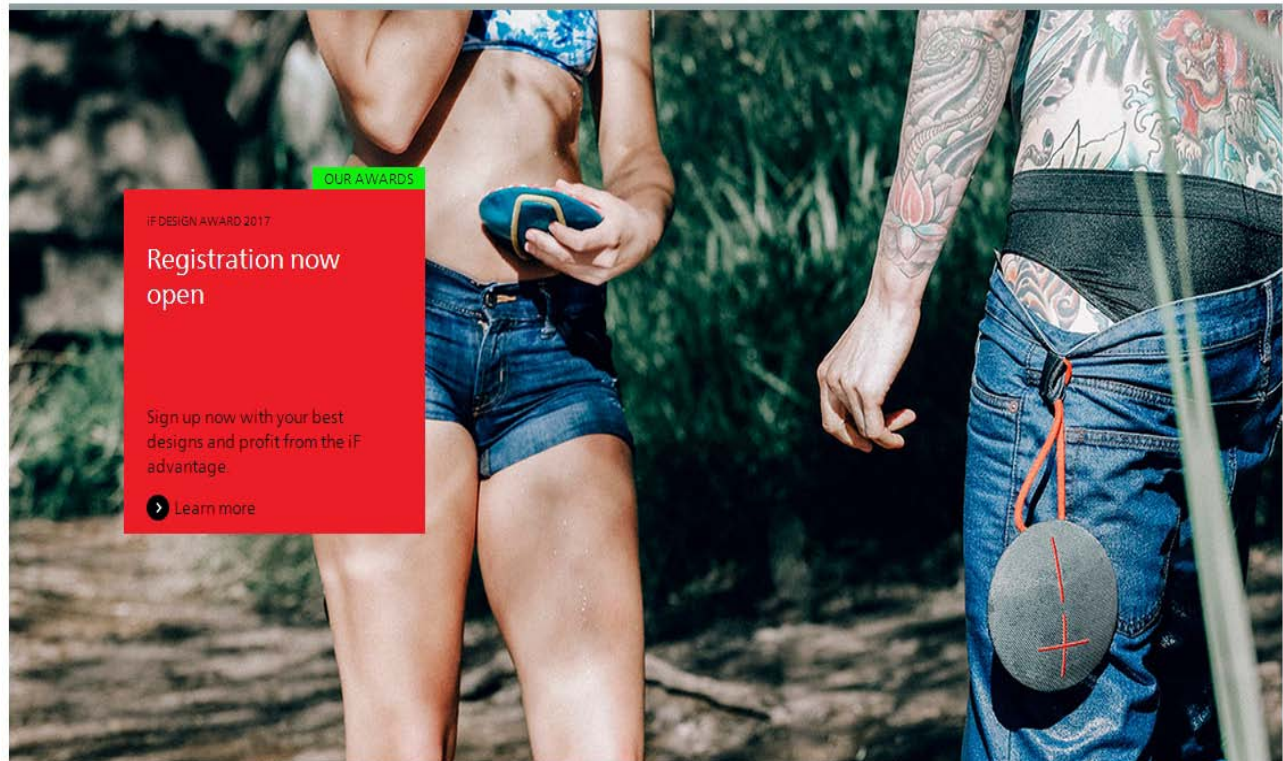
THE NORWEGIAN CENTRE  
FOR DESIGN AND ARCHITECTURE

Innovation for all

## Innovation for all 2016

- Conference and workshops in Inclusive Design





  
 Confederation of Indian Industry



Endorsed by  


## THE ULTIMATE ACCOLADE IN DESIGN

Inviting applications for  
CII Design Excellence Awards 2016

**32 AWARDS**  
 4 Category Winners  
 28 Sub Category Winners

**MAIN CATEGORIES**  
 Visual Communication  
 Industrial Design  
 Interaction Design  
 Mobility Design

Application accepted from 29 April to 30 September 2016

For more information visit [www.ciidesign.in](http://www.ciidesign.in) or  
 Contact Ms. Pooja Sanchala T: +91 124 4592960 Ext.: 442 E.: [pooja.sanchala@cii.in](mailto:pooja.sanchala@cii.in)





3 Day Workshop:  
'Exposure to Product Design and Innovation'

25 - 27 August 2016 at IDC, IIT Bombay  
<http://www.idc.iitb.ac.in/events/expo-pd-in-2016.html>







Drishti 2011  
Drishti 2012  
Drishti 2013  
Drishti 2014  
Drishti 2015

# **Drishti 2016** **Creative Contest** to promote **eye donation**



**short film**  
**audio jingles**  
**poster**  
**design**

do you know?  
more than 5 Million  
people are waiting  
for eYe donation

entries are invited till  
**29 September 2016**

for more information & submit entry online check  
[drishti.org.in](http://drishti.org.in) | [icareinfo.in](http://icareinfo.in) | [antardrishti.org](http://antardrishti.org)



email us at  
[drishti@antardrishti.org](mailto:drishti@antardrishti.org)





# core77 conference designing here/now

2016 SEPTEMBER 29 - 30  
LOS ANGELES, CA




The Core77 Conference returns to L.A.'s vibrant design community — same venue, more activity. This year, we've put together two days of panels and presentations, workshops and tours, catered meals, and fabulous evening receptions. Come join designers, scientists, entrepreneurs, and business leaders in exchanging innovative ideas on working and tools for cultivating exceptional interdisciplinary success.

Nominate a Distinguished Leader of the Disability Community. 2016 nominations now being accepted.

About the Awards >

VISIONARY ★ ROLE MODEL ★ LEADER



MENTOR ★ INFLUENCER ★ ADVOCATE



# Job Openings

## 1. Job Opening

The IBM Kenexa team is creating a brand new Design team in Vizag and currently looking for User Experience Designers! If this sounds of interest to you, please check the attached job posting for more details.

To apply for the User Experience Designer role please send your\* CV\* and \*portfolio\* to \*rohinigo@ie.ibm.com\* <rohinigo@ie.ibm.com>.\* Please note, candidates must send a portfolio to be considered (URL or PDF).

## 2. Job Opening

**Requirement: HEAD- CONCEPT & DESIGN DEVELOPER for Automobile Interior fabrics.**

**Qualification:**

**Graduate or Master in Textile Designing from NID or equivalent institute having at least 5 years of work experience. OR,**

**Degree/diploma in Textile Designing from NIFT or equivalent institute having at least 9 years work experience.**

**Location:**

**Candidate from Delhi, Noida, Gurgaon, Faridabad. To work from home or own studio. Expected to travel to development centre & factories around 10 working days in a month (about 2 & ½ drive from Delhi). Coordination office in Delhi.**

**Reporting:**

**Director Development at development centre and M.D in Delhi.**

**Main Responsibility:**

**To create concepts, styling, designs for conversion into fabrics for seats and Interiors for Cars (mainly) and Buses.**

**To achieve excellence in assigned responsibility the job Description Involves:**

- Research of events, Trade shows, Online information from important web sites for interpretation for styling & Designs for automobile interiors.
- Based on research, development of vision for future trends. Design trend forecasting, concept trend forecasting, material trend forecasting.
- To study current and future trends of automobile interiors & interior fabrics in cars & buses.
- To study newer techniques in fabric making.
- To create design material and coordinate with designing and development team at the development centre for conversion into samples and fabrics.
- Simultaneously interpretation of concepts given by customers and based on it to create design ranges for customers.

Apply to Mr. Hemant:

hemantchatur@yahoo.co.in

+919313553336

### 3. Job Opening

We are rapidly running towards the world of autonomous vehicles. There is a dire need to guide the drivers as they are introduced to more and more advanced automotive features. HMI and User experience is playing a key role worldwide for the successful adoption of autonomous vehicles.

We in Tata Elxsi are working on many exciting projects where we help create this future. This excites us and we hope it will excite some of you who want to be a part of this with us.

We are seeking experienced UX designers who want to work on Car HMI and related interfaces and experiences.

if interested ghate@tataelxsi.co.in

### 4. Job Opening

Please email shreyanschopra@rtbdemand.com in case you are interested

#### Mission and Vision

To provide a safe environment to our Advertisers/Publishers and provide brand safety to platforms both on buy/sell side when scaling up the business and meeting objectives for our publishers/advertisers. We partner with content

providers,demand players and tech platforms. RTB DEMAND harnesses programmatic buying and selling across the ecosystem. Lear more at [www.rtbdemand.com](http://www.rtbdemand.com)

#### **About the Founder**

Graduated from University of Pennsylvania and has pivoted and successfully run several startups in Financial,Ecommerce space.Learn more at

<http://goo.gl/S5jehj>

If you want to be part of this growing team which is changing the way business is done in digital space Join us

#### **Other perks of Joining us**

- Weekends off
- Yoga sessions weekly
- Extensive international travel opportunities

Besides below skills listed below we look for 2 traits in all our candidates "Extremely hard working,having fire in the belly"

#### **Ad Network Marketing Analyst/Affiliate Marketing Executive**

Positions Open:10

#### **Basic Qualification Requirements**

Min 70% plus with any bachelor degree in Engineering or MBA

Excellent communication skills written and oral

Hard working, self learner, ready to learn and eager to make a career in digital marketing with a great aptitude

Excellent hands on MS office

Looking for someone who has demonstrated leadership skills and have executed real time projects in Marketing/Finance/Engineering area

#### **Specialization**

Requirements (Finance / Marketing/Btech)

Marketing and Finance Background both ok.Prefer candidates having inclination in digital marketing

#### **Job Profile(s)**

Will be managing media budgets for our advertiser

**Managing relationships with publishers**

**Will be responsible for ongoing optimization on account for Domestic/International clients**

**Will be working on Adnetwork piece/Affiliate Marketing**

**Web/Tech Developer**

**Position open :2**

**Work Responsibility**

**Work with Marketing team to scope out new requirements and build in stipulated times**

**Involved in developing, maintaining and testing our applications**

**Working with our supply and demand partners with their APIs**

**Requirements**

**Bachelor in computer Science or Masters in MCA or equivalent courses**

**Having min 4 + years of experience**

**Experience in PHP/LAMP stack and working with Amazon ec2 environment**

**Excellent in creating scripts and managing Unix servers**

**Excellent in managing MYSQL environments, backups,etc**

**Excellent experience in working with JQUERY,JAVASCRIPT and other front end technologies**

**Having experience in Android/IOS environments is a plus**

**Having experience working with JSON/XML and REST API structure**

**UI Designer**

**Position Open:1**

**Work Responsibility**

**Working with marketing team to create concepts basis requirements**

**Be extremely creative and able to come with innovative ways of achieving the same**

**Requirements**

**Having min 3+ years of experience**

**Excellent hold on Adobe Photoshop/CSS/HTML/etc environments**

**Having experience in Javascript/Jquery/AJAX etc a big plus**

**Excellent in creating Flash skills**

**Account Executives**

**Number of position:2**

**Work Responsibility**

**Working on with our US clients for payments collections and for making payments in timely manner**

**Give report to concerned people on MIS of reconciliation of payments/Invoices**

**Working with Accounting team to reconcile bank accounts and party accounts**

**Requirements**

**Having 2+ years of experience in Tally**

**Having experience in handling TDS/PT/PF/ESI and other compliance matters a plus**

**Having worked in CA office a big plus**

**HR Manager**

**Number of position:1**

**Basic Qualification Requirements**

**Min 70% plus with HR as specialization**

**Excellent communication skills written and oral**

**Min1 year of experience in HR field**

**Hard working, self learner, ready to learn and eager to work in fast paced environment with out of box thinking to hire candidates**

**Job Description**

**Work on hiring requirements and coordinate with colleges, HR consultancies, referrals,etc**



Work on managing the admin part of the company as well in terms of Payroll, Office supplies and team building activities

Work on with candidates for joining/exit formalities

## 5. Job Opening

Godrej Innovation and Design Center is seeking a talented Designers and Engineers to join our Healthcare design team.

The Innovation and Design center team comprises of designers, engineers, researchers, analysts and subject matter specialists. We are challenged to develop innovative solutions for healthcare payers and providers by using design thinking methodologies and approaches to impact outcomes by creating patient centric experiences.

At Innovation and Design Center, we are leveraging our structured innovation approach and design thinking capabilities to create future ready user-centric design solutions. We operate within an entrepreneurial, start-up culture. We offer a collaborative atmosphere that affords our team numerous avenues for professional growth and advancement. We have a core purpose of delivering design excellence and creating of meaningful innovations that will make a significant difference to the healthcare experience in human life.

Position:

Industrial Designer -Healthcare

Masters in Design

(Product / Lifestyle / Automobile)

1-3 years Experience in relevant domain.

Design Engineer -Healthcare

Post graduation in

(Mechanical / Bio-Medical / Computer Science)

1-3 years Experience in relevant domain.

Please be aware that will need all of the following for your application:

- Cover letter in English, stating career objective
- Current CV or resume in English
- Digital work sample ( PDF less than 5MB) or link to your on-line portfolio.

Send your applications to [vazir@godrej.com](mailto:vazir@godrej.com)

## **6. Job opening.**

**We are India's leading Adtech Company based out of Mumbai**

**The marketing team here requires Freelance Graphics/Visual designers for their work to help them with creatives for Social media campaigns, Mailers, Websites, Viral content, etc.**

**The opportunity will be freelance on a project basis. Also it would be preferred if the designer is based out of Mumbai for occasional meetings**

**Should you be interested in the opportunity, please drop me a mail with a portfolio / link / any other way to show you work**

**Write to me at [ankur.v@vserv.com](mailto:ankur.v@vserv.com). You can also whatsapp me at 9167610162**



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