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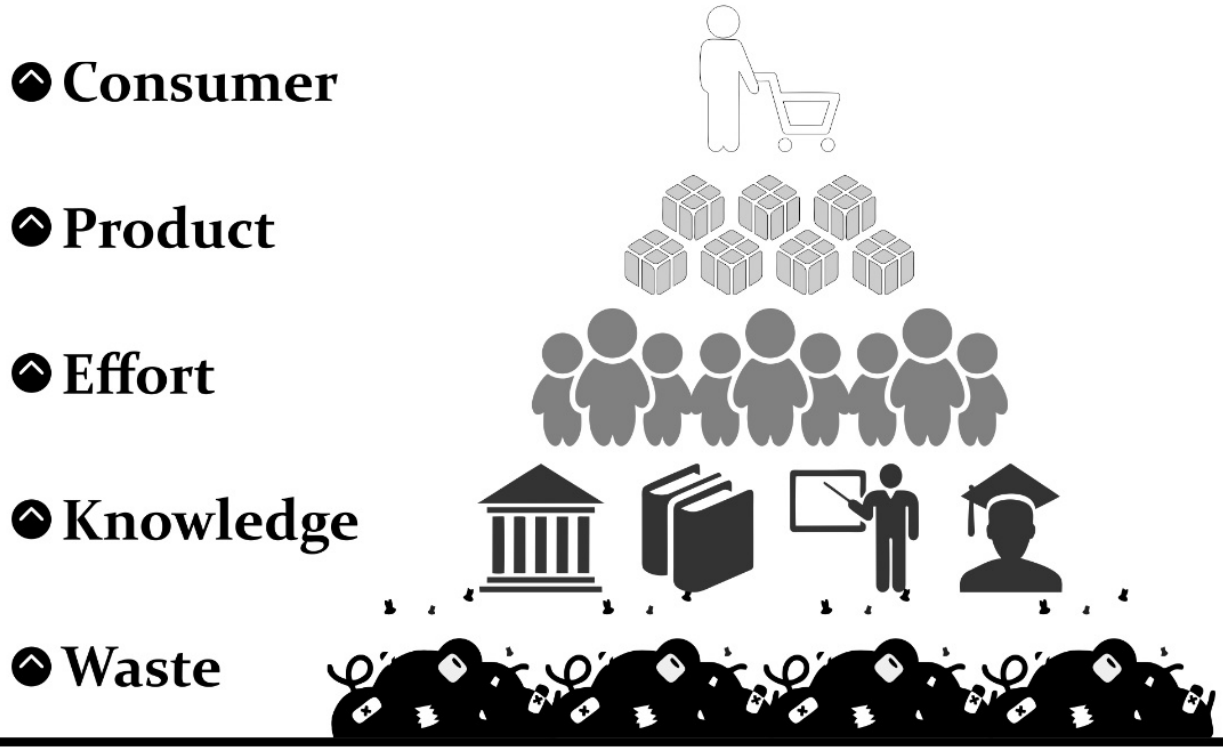
Design for All



Design from Waste

Guest Editors : Prof. Puneet Tandon and Amaltas Khan

PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur, India

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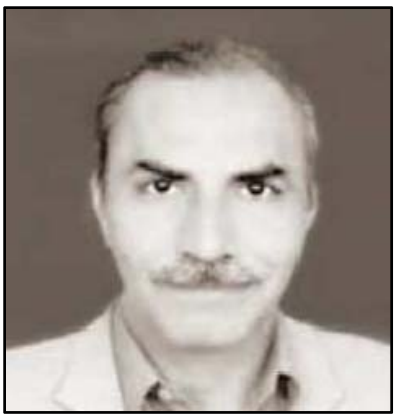

Letter from the Chairman's Desk

When a woman makes her braid herself or assisted by other person in making it, what does it signify? Was she aware about act of compression? Does healthy hair signify beauty and fertility that's why she manages her crowning glory with utmost care? It might be possible that original ancient purpose of management of hairs by compression lost somewhere in between modern concepts but it has transformed mind set of women by practicing from one generation to another into habit of use of compression for hair management and still in use in different forms. How does practice of management by compression of crowning glory come to existence? What were their parameters which forced the primitive people to think for management of hairs by compression?

One day my friend asked my company for buying fish and since I am vegetarian do not know what steps should be considered for buying fresh fish. He was pressing the body of dead fish with a finger for a moment and observing its reaction after releasing. Out of curiosity, I inquired what he was compressing with finger. He informed me that fish body response to compression indicates the approximate time of its death confirming possible time of expiry. Compression proves as a tool for quality control. Animal doctor or farmer compresses the buttock of animals to find her approximate age milking.

I was amazed to notice that numbers of products around me are basically designed with the compression or its applications but I never gave serious thought over its role. It is a primitive practice and that played significant role in progress of our civilizations. Entire foundation of packaging industries is just avoiding compression by external forces that damage the content or applied compression of the contents for better management of logistics. It is extensively used in medical sciences and latest technique of placing stunt or ballooning in heart for opening of blocked vein or valve is based on compression and once it is placed, it is allowed to function.

What made the ancient people to do the management of hairs by compression and allowing hair to grow long? Was the lack of suitable cutting tools for hairs or realized the importance of long shining hairs for attracting opposite sex or later found that hair were indication of fertility in woman? I have noticed in India where a small but prosperous community has ancient ritual of transforming an ordinary follower into saint by plucking the head's hairs who wished to renounce the worldly affairs and it was done manually by twisting hairs with fingers without using any tools by another saint who performed the rituals. It means tools were not required for removal of hairs but art of plucking was known and there had been possibility that our ancestors succeeded in managing hairs in absence of tools. Similarly Hindu saints applied extracted milk of specific plants which bind fixes and compresses hairs. Does crowning glory disturbing elements in human life and need proper management? Why did they think to compressed hairs and devised many ways for management and even started tying or converting to artificial baldness or fixing with plant extract milk?

Ancient people were not worried about the hairs of other parts of their bodies but head hairs proved to be challenging. Woman used many techniques for removal of unwanted hairs by rubbing hard with powder of fire ash. It was a popular method for removal of unwanted hairs and it is still practice in some rural area in India where sex is taboo. The same woman is worried about crowning glory and applied various techniques for retaining management for avoiding any damages. Why does hair of one body part is unwanted and other gets lots of attention? Why did they wish to tie and it proved reason of beginning of idea of compression?

Coastal area experiences high speed wind where I can understand its requirement of keeping long hairs with tying otherwise it would have been difficult to manage against strong wind. It is my experience that my small hairs cuts one disheveled by strong wind and headache is experienced by me. As I stay little longer time in strong wind, I realized my attention to perform certain task was not as good as I am not in strong wind. There might be other possibility that allowed them to tie hairs.

It is my hypothesis that a piece of hair somehow escaped into digestive system along with food and that create havoc in our stomach and sometimes it leads to long chain of vomiting because of inbuilt system throws out those unwanted elements since these are unacceptable to our system . This vomiting allows the ancient people to think for better digestion and that led to think that should that we should have digestive fiber in food for better health. Earlier his sole food of animal meat was troubling and that led to discover other alternative foods. Gradually that led to discover jute, coconut, mango, wool, silk and many more that has fiber and helped in designing various applications. Before the metal Age, people were

using compression and relying on jute fiber or dry branches of wheat or rice bran for designing mattresses and design of metal spring added new dimension in compression in it ultimate comfort evolved with the design of foams.

At what point, management of hair became sign of beauty is a mystery. I think hair management practice was prevailing even before the discovery of cotton and people used to twirl and made buns out of hairs and later they used cotton thread or piece of cloth as ribbon for tying and discovery of rubber helped in designing bands and in metal age they used clutches by using property of spring. Washing of hairs with alkaline soil of river bank is old practice but use of plant seed of soap nut soak overnight was another method. Washing with vinegar or mild alcohol in water for proper bounce of hair was ancient practice among woman and was known when to compressed hairs and expand by retaining originality .Discovery of petroleum has revolutionized the management of hairs by designing shampoo and conditioner. Is it not attempt to compress hairs but as if untied it should come back to what it was before tying? They were aware compression should not lose originality and we still use same principle of compression in computer graphics and other areas. Washer man sprinkles water over clothes before ironing and he might be unaware about compression or latent heat of steam is higher but performs without questioning.

When we fold fingers it is compression and we call fist and that serve different purposes where open fingers indicate expansion has different purposes for performing various tasks. Idea of compression and decompression came to people by observing fingers or they gradually realized foods slipped to stomach by contraction and expansion of food pipe. It might be possible someone might have got

hurt and blood was oozing out with pain. In controlling blood or to reduce the pain he pressed that area from blood is oozing out and by compressing he succeeded in controlling flow of blood and that provided sufficient time for clotting and it proved beginning of compression. Later on this practice might have given the birth to massage where rhythmic compression and decompression of muscles allowed the blood to flow with sudden high pressure that opens the blocked veins and person experiences relaxation. Some animals have defense mechanisms of biting in releasing venom or some chemical allergic to human and result was either they died or experienced high pain. To counter extreme pain or spreading of poison they used tightly tying of thread at both end of bite area for controlling inflow as well as outflow of blood. That compression proved reason of saving life or say relief from pain.

Man devised technique of compression of one eye for communication and it has many meanings but best meaning is designed by the sender as well as the receiver. Primitive people learnt of extracting oil from seeds by compressing between fingers or putting under two palms. Later they designed oil extraction mechanical machine using animal or no animal. This idea later gave birth to use of compression for making powder and first was grinding grains to flour. Series of different forms of compression are used at different stages in making bread or roti. Our ancestors devised methodology for enhancing shelf life of fruits by compressing by evaporating water content putting it under sun and we call dry fruits. In dress when we use string for tying the dress around the waist is actually art of compression.

I very often ask myself as to how idea of compression strike in the mind of ancient people did. It is our biological function that to

counter the winter our body compressed and either we place our hands between thighs or under arms to feel warm. The first air compressors weren't machines, but human lungs: Primitive people blew on cinders to create a fire. Bellows driven by foot or by water wheel proved a reliable compressor. After the discovery of fire people realized heat helped in faster cure and gave relaxation. They used heated stones wrapped under animal skin or bark or clothe placed by compressing on pain area helps in curing. Gradually fire was put to use for metal age and people learnt the use of pressure as well pressure with needle to puncture and pressing of specific nerve for treatment and we know by acupuncture or acupressure. Our heart beats compressed and expands as our blood flows in our veins. Nature has compression also and to pollination flower compressed to trap bees for carrying its parts to other flowers. In metal age, Ironsmith used animal skin for blowing air for fire of attaining high intensity by compression and expansion. Modern era encounters compression in combustion engine. Automobile has compressed air in tyre tube to meet the challenges of earth terrain. Pressure cooker cooks the food by using heat for allowing the trap to expand and result it compressed for pressure. Theatre curtain are opened by compressing i.e. folding and closing by expansion.

The history of building, houses and other huge structures is full of number of trends. One is the increasing durability of the materials used. Early building materials were perishable. People used for covering with leaves, branches, and animal hides. Later on they switched to more durable materials that could protect and meet the challenges of attack by wild animals allow to use of clay, stone, and timber. Idea of using timber pole was based on compression to bear the stress of tent made with animal skin. Another is a quest for

buildings of ever greater height and span; this was made possible by the development of stronger materials and by knowledge of how materials bear compressed and how to exploit for to greater advantage. Raising of modern buildings are skyscrapers is achieved by compression of reinforced concrete techniques.

Compressed air or liquid that is pneumatics helps in designing various hydraulics and jets. Spring principle is using metal to bear sudden pressure by compression. Rubber components in shoe designing are used to bear the shock by compressing the sole or upper. Foam mattresses are designed to create air bubbles in rubber sheet in such a way to bear the weight of the person by compression and this has replaced metallic springs used in bed and it come back to original shape as we lift the weight. Sometime creating air bubble in mattresses serve the compression and sometime by removing the air gaps in container helps in storage of more content by jerking. When we compressed and suddenly releases gases gets cooler and this has helped designing refrigeration. When we reverse the process it helped in designing fire pistol for igniting fire.

It is interesting to record that cotton does not have strength if we do not twist or say compress and that turns into threads. Threads next level movement was natural to knot and our ancestors designed various knots for different purposes. Rib knot is one that compressed the fabric but stretchable when force applied and suits our body movement. Knowledge of rubber helped in designing socks that are stretchable and stay where it is supposed to. Socks has compression zone. Bandage is designed for mild pressure for controlling blood from wound is based on compression principle. Orthopedic bands are designed for support as well for compression

to stay fix for fast healing. Compression leg or sleeve or wrist is designed with cotton material with elasticity for better result in orthopedic cure.

Man learnt the producing sound by compressing vocal cord, clapping by compressing air between hands, even placing hand under armpit and does the moment of hand in such way it produces sound and blowing compressed air from mouth by twisting tongue and lips that produces some sounds in designing musical instrument. It was designed by compressing air by using dead animal skin. Coconut drum or bone flute are designed by using compressed air for production of sound.

Internet has compressed the world in space and time but modern people are still hungry for more and do not know what way it will turn out. Compression was all right in reducing the pain of labor pain during child birth and either assisted by holding by hands or tied with piece of clothes for steady compression of abdomen and the following down of the child in its descent. It is bad in society part to encourage the people to use the compressed energy in the form of Nuclear or Hydrogen bomb for destruction. It is good as along we design application for benefits for all living.

We are grateful to Prof. Puneet Tandon for submitting the publishing materials of special issue of 'Design from Waste' in very short time and that too of international standard but relevant to India where cleanliness derive is initiated by present government. He is assisted by research scholar Mr. Amaltas Khan and he coordinated and collected the material with utmost care. Thanks to students of M.Des of PDPM Indian Institute of Information Technology and

Manufacturing, Jabalpur, India for showcasing their projects in special issue.

With regards

Dr. Sunil Bhatia

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Forthcoming Issues

March 2016 Vol-11 No-3

Dr. Shatarupa Thakurta Roy is presently an Assistant Professor at the Indian Institute of Technology Kanpur. She is associated with the discipline of Fine Arts in the Department of Humanities and Social Sciences offering courses in Art Appreciation and Criticism and History of Art. She has been jointly associated with the Design Programme at IIT Kanpur teaching courses on Design Theory, Graphic Design, and several other courses on visual communication. She completed her art education in Kala Bhavana, Visva Bharati Universtity, Shantiniketan followed by a PhD in Design from IIT Guwahati.

April 2016 Vol-11 No-4

Prof Beth Tauke is an associate professor in the Department of Architecture at the University at Buffalo-SUNY, and project director in the Center for Inclusive Design and Environmental Access (IDEA), the leading research center on universal design in the built environment in the U.S. Her research focuses on design education and inclusive design, especially the empowerment of minority groups through design. Tauke was principal investigator of the Universal Design Identity Program and Increasing Access to Universal Design to Meet the Needs of African American Communities, both sponsored by the U.S and Prof Korydon Smith is an associate professor and associate dean in the School of Architecture and Planning at the University at Buffalo-SUNY, USA.

May 2016 Vol-11 No-5

Prof PekkaHarni Artist, Professor; architect and designer at Harni - Takahashi Ltd will be the Guest Editor. He is an architect MSc. and industrial designer MA, who works widely on applied art, furniture design and architecture. He has been teaching at the University of Art and Design (now Aalto University) in Helsinki since

1988. He has been a visiting lecturer in several European design universities and a leader of several design workshops in Europe and in Mexico. His study about morphological "object categories", delves into the possibility of dividing basic home objects into seven main categories that correspond to different functional and morphological categories of objects, has already been applied in several European design schools. This study is published by Aalto University in his book "Object Categories" 2010. In 1999, he received the Design Plus Award from the Ambiente Frankfurt Fair. In 2011 he was awarded as "the industrial designer of the year" by the Finnish Designers association. Since 2012, he is Artist Professor for 10 years, appointed by the Arts Council of Finland.

June 2016 Vol-11 No-6

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

July 2016 Vol-11 No-7

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

August 2016 Vol-11 No-8

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

September 2016 Vol-11 No-9

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

October 2016 Vol-11 No-10

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

November 2016 Vol-11 No-11

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

Guest Editors

Puneet Tandon

Professor of Design

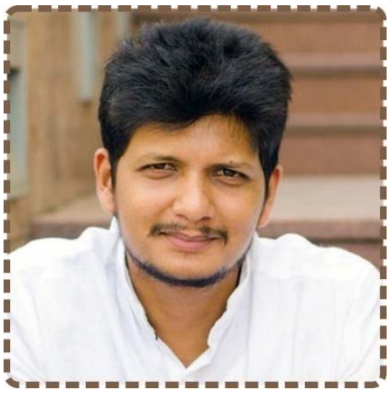
Professor of Mechanical Engineering

PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur. India

Puneet Tandon is a joint Professor of Design and Mechanical Engineering at PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur, India. His primary research interests are Innovative Product Design, Knowledge Based Engineering Design, Nature Inspired Design, Computational Support to Early Design Phase, Computer-Aided Design, and Advanced Manufacturing Technologies. He graduated in Mechanical Engineering from NIT Kurukshetra. He received his Masters and Doctoral degrees from IIT Kanpur. He has authored more than 150 papers in refereed journals and international conferences. He has been an author of one textbook titled "Cutting Tool Geometry: 3D Perspective" and a few conference proceedings. He was also the organizer of International Conference on Innovations in Design and Manufacturing (InnDeM) 2012, and Design Workshop (DeW) 2014

and Design Workshop (DeW) 2010. He was the Principal Investigator to a joint Indo-Japan Project, and to numerous projects sponsored by Department of Science & Technology, Department of Atomic Energy, Ministry of Human Resource Development, etc. He is a member of the International Programme Committee of CAD Conferences, Conference Chair to ICMME series of conferences and on advisory committees of various international conferences. He is a co-editor of one International Journal on Manufacturing and has been a reviewer for several international journals.

His research and teaching interest is focused on design interventions for the hidden grassroots sectors. He has developed courses specifically to teach design interventions for the bottom of the pyramid people. His courses include "Product Design" focused on design interventions for demanding sectors, e.g. biomedical equipment, rural development, agricultural development, social security, etc. Recently, he along with his student developed a novel practice-based coursework on "Design from Waste" focused on the design of artifacts from non-recyclable waste to generate local employment through the business model. Of late, his research and academic interests include 'Frugal Design', 'Cradle-to-Cradle Design' and 'Design for Multiple Life Cycles' to name a few. The work of his students in the field of innovative designs is recognized at national and international levels.



Amaltas Khan,
Research Scholar,
Design Discipline,
PDPM Indian Institute of Information Technology, Design and Manufacturing, Jabalpur. India

Amaltas Khan is a research scholar at Design Discipline, PDPM Indian Institute of Information Technology, Design and Manufacturing Jabalpur. His field of research is focused on Practice-based Design Interventions for Waste Recovery and Waste Reduction, and Sustainable Packaging Design. He is a graduate in Mechanical Engineering and received his post-graduation in Product Design from Indian Institute of Information Technology, Design and Manufacturing, Jabalpur. He is a guest reviewer for 'International Journal of Sustainable Design' published by Inderscience and has authored few papers for international journals and conferences. He holds an Honor Code in 'Delft Design Approach' offered by TU Delft, Netherland. He was also the student coordinator of International Conference on Innovations in Design and Manufacturing (InnDeM) 2012 and Design Workshop (DeW) 2010, 2012, 2013 & 2014. As a designer also, he has contributed to various national and international projects. To name a few, he assisted as a 'visiting

researcher' at TU Darmstadt, Germany where he worked on Interface Design of "Conduct-by-Wire" technology, sponsored by Opel Automobiles, Germany. He also designed and fabricated portable (backpack) transportation device for urban commuters to encourage the use of public transportation system, as a part of his Master's thesis.

His teaching and learning interest includes sustainable design aspects for people, planet, and learners. His teaching work is focused on method development for life-cycle efficiency, Cradle to Cradle (C2C) design, recycling efficiency, sustainability education and packaging design. Along with the course instructor, he has developed novel design courses "Design Projects", "Design from Waste", "Design for multiple life-cycle", "Sustainable Design" and "Frugal Design" for both UG and PG design students. The course work methodology and resulting designs have been recognized in international platforms. He believes that in a country like India, there is an imminent requirement for development towards well-being for both population and its environment. A progressive education system of sustainable design caters such a need and connects the ethical parts of the technology, science, and arts, and hence fulfills the country's concerning requirements.

Editorial from the Guest Editor

By Prof. Puneet Tandon & Amaltas Khan

You cannot solve a problem with the same mindset that created it-Albert Einstein

The world is striving hard to control the direct and indirect adverse effects of enormous population, particularly due to limited resources. Waste generated out of numerous households, unorganized waste accumulation, exponential increase in the quantity of the waste dump sites, etc., are some of the critical issues where policy instruments have been unsuccessful. Irrespective of the novel initiatives of Government of India, like 'Swatch Bharat Abhiyan' (Clean India Mission), the expected effect is not visible. There are numerous considerations, e.g. varying user behavior, people mindset, technology adaptation, empathetic modeling, contextual environment, and influencing services and systems, to develop an effective solution catering a huge population. It is for sure that in the upcoming decade considerable amount of waste will be still be present in the system.

In industry, broadly, a product designer is briefed with a problem and to address that, he identifies suitable materials, develops a concept with the provision of mass production, test it, and deliver it to the market. For most of the industries, sustainability is not a profitable concept and is, therefore, not considered during product development. Each time, a mass produced item utilizes a considerable amount of natural resources without the surety of

recovery so as to balance the environmental effects. However, the designer possesses immense curiosity and creativity, which is sufficient to cater such problems. The starting point of such 'miracles' is ethical and constructive design education. An ideal human evolution should, therefore, be based on ethical and constructive education system.

In nature, nothing goes as a waste. Everything is planned and is being utilized in one way or another. We identified that the man-made waste is just a form of material combination without an expected deliverable. However, there is a need to utilize knowledge base and manpower, and convert it into a meaningful entity. To do so, the best way probably would be to incorporate designer in a guided creative process, to derive novel interventions and to utilize solid waste in new product forms. A design education is an ideal platform to train the future designers, imbibe sustainability culture and values, and to derive novel outcomes out of the fresh minds. Upcycling is an ideal process which focuses on reuse of discarded products or materials, in such a way so as to create a product of comparatively higher value. If upcycling can be incorporated into practice-based education, it would provide effective results to the pertaining issues.

A coursework on 'Design from Waste' (DfW) was designed for the Master of Design (M.Des.) students of the Institute. This course was planned in the second semester of their curriculum so that the students would have gained elementary design knowledge by then. The coursework guides and engages design students in identifying and collect waste materials and designing an artifact to fulfill customers' expectations. During the design of coursework, the existent organizational up cycling interventions (e.g. Terra cycle,

Spiral Foundation, and Remade in Chile) were identified, and the lacunas in its application in Indian context were explored. It was identified that massive manpower is needed to produce solutions based on outcomes of DfW methodology. Accordingly, local *marginalized communities* were recognized as the potential manufacturers to produce the upcycled designs derived by the design students. DfW method was developed considering the capability and limitation of participant designers, contextual marginalized communities and target customer. Summarily, the DfW method, the intent, and the motivation is briefed to each of the participant students, and students were guided to perform the DfW method, resulting in an upcycled design. The resultant solutions were suitable for decentralized production and facilitate local waste conversion into useful artifacts.

During the implementation phase, the design students surveyed the waste disposal sites, recycling units and related stakeholders (e.g. rag picker and labors in the recycling units), and insights were gathered behind the inefficiency in the waste management system. The students collected the discarded materials from the community disposal sites, and later sterilized and studied them in lab environment. Further, they considered the customer expectations from an existing design and surveyed the local marginalized communities to harness their potential as futuristic manufacturers. The marginalized communities were surveyed for their intellectual, physical and financial capability as a manufacturer and also for the tools and techniques they were familiar to work with. The designers organized all the information and interconnect them to derive the concepts for the redesign. The students focus of providing uniqueness regarding aesthetic features in the designs, using the

collected material such that the redesign could positively influence the customers over the other mass produced competitors. Further, they tested and detailed the design as per feedback from the stakeholders.

This issue of 'Design for all Institute of India' focuses on the teaching-learning pedagogy of 'Design from Waste', with an intention of participatory waste recovery. As a result of this coursework, the design students had a better understanding of global issues and their sustainability impacts, along with design knowledge and skills. The students perceived the system level solution to a problem and then derived concepts to reduce direct and indirect adverse impacts. We expect that through the few selected projects provided on this issue, other organizations would be excited to join us in putting efforts for a better tomorrow.

Regards,

Puneet Tandon

Amaltas Khan

Deepshikha

Deepshikha believes in coherent research and originality of individual expression that enriches knowledge for multi-disciplinary congruence relevant at all levels of dynamic progress. Her interests include Sustainable Design, Visual ethnography, Visual identity design, Graphic Design, Industrial Design, User Experience Design, Textures and Media exploration, Textile prints and weaves, Trend research and documentation, and Handloom.

Footwear for Construction Workers

Deepshikha Jha

Abstract

The project is aimed to improve the understanding the importance of Personal Protective Equipment for the construction site workers and introduce the newly designed Footwear because workers are negligent about PPE which creates hazardous health conditions at the worksite. This footwear is made of discarded tyre tube and can be made by the local cobblers, so is easily available and affordable. The design is comfortable and breathable providing optimum protection at the work site. The work methodology includes literature survey, on-site analysis, interaction with users, material exploration, and interaction with cobbler, their working equipment, and prototyping.

1. Introduction

The construction industry is one of the largest employers of unskilled labors which comprises of either building workers involved in the construction of houses, offices, shops, etc. or civil engineering works such as roads, tunnels, dams, etc. It is labor intensive, and most of the workers are unskilled or semi-skilled migrants from remote villages. They are not cautious about preventive measures, have increased work load, no medical care, less pay, improper nutrition and poor living conditions with lack of basic amenities. According to statistics, Indian construction labor comprises 7.5% of

the total world's workforce, and construction sector is the largest employer after agriculture.

1.1 Personal Protective Equipment (PPE) such as helmets, boots, goggles, work clothes are garments or equipment that protect workers from hazardous substances – heat, electrical, chemical, airborne particulate matter or biohazards. It creates a barrier between worker and environment preventing in exposure to the environment or hazardous substances. They may create additional strain on the body and impair their efficiency of working and sometimes may also be inconvenient; still they are necessary protective shields.

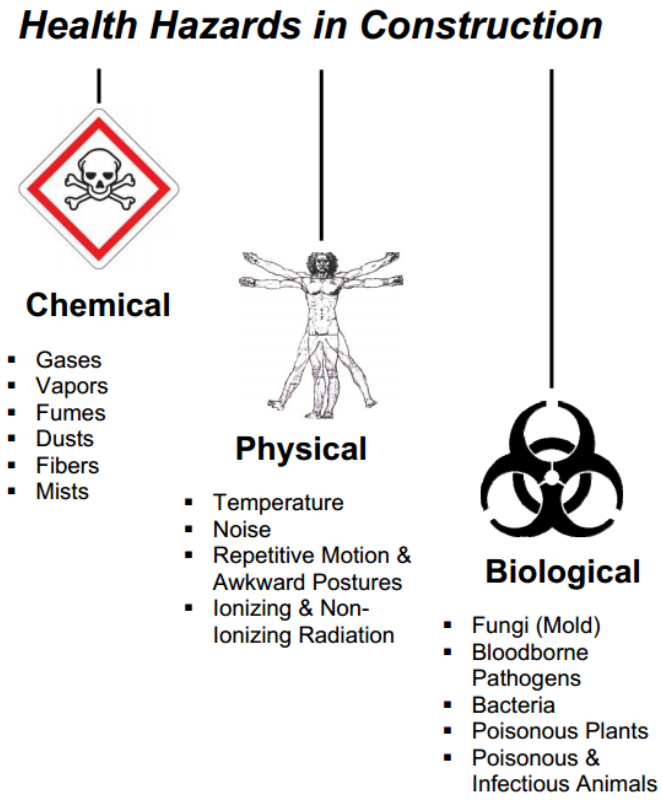
1.2 Occupational Skin Diseases -The most common occupational disease are respiratory disorders, followed by impairment of eyes and ears and next skin diseases. Physical agents (UV, temperature), Chemical agents (aerosol, immersion, and splashes), Mechanical trauma (friction, pressure, abrasion) and Biological agents (parasites and microorganisms) are the four categories that may cause occupational skin diseases.

Article 1 of Directive 89/686/EEC European Union defines personal protective equipment as any device or appliance designed to be worn or held by an individual for protection against one or more health and safety hazards. *PPE, which falls under the scope of the Directive is divided into three categories:*

- ***Category I: simple design (e.g. gardening gloves, footwear, ski goggles)***

- ***Category II: PPE is not falling into category I or III (e.g. personal flotation devices, dry and wet suits)***
- ***Category III: complex design (e.g. respiratory equipment, harnesses)***

1.3 Industrial Hygiene is the anticipation, recognition, evaluation and controlling of a workplace to prevent injuries or illnesses to workers. Industrial Hygienists apply several tools to assess and employ engineering to control potential health hazards.



Hazardous conditions on construction job sites include –

- ***Enclosed spaces***
- ***Contaminated soil***
- ***Poor hygiene and sanitation***
- ***Hazardous materials in the atmosphere (concrete, silica)***
- ***Fungal/microbial growth in old buildings***

- ***Extreme environments – heat, cold, rain***
- ***Excessive noise***
- ***Welding, Cutting***
- ***Dangerous parasites, animals present in the area***

1.4 Biological Monitoring and Surveillance – The level of chemicals absorbed by the body by inhalation, etc. needs to be measure effectively to ensure accurate treatment. Blood, Urine may be tested for this purpose. However, the method of testing depends on the type of ingestion in question.

2. Existing Products Study

The type of products can be broadly divided into three categories –

- ***Disposable (medical purposes, etc.)***
- ***Medium durability (rubber gloves, etc.)***
- ***Long term durability (PVC or leather boots for construction, mining, etc.)***

Medical gloves are made of different polymers including latex, nitrile rubber, vinyl, and neoprene; they come un-powdered or powdered with cornstarch to lubricate the gloves, making them easier to put on the hands.

$ 294

Powder free Latex Examination Glove $ 5

Plumbing Neoprene/rubber blend $ 5

Outer material
PVC
Insole EVA
$ 13

PVC boots
$ 13

PVC boots with steel toe
$ 15

Leather boot

Chemically protective anti-static over boots to EN 13832

Knee Spat. Woven aramid, Velcro's fastening.

Aluminized Knee Spats with Velcro's fastening

Biotech Trends examples-



TPR (thermoplastic rubber)

3. Contextual Survey

3.1 Construction Site Survey – IIITDMJ Campus


Construction site near Hall 4


Construction of a toilet. ***Worker watering bricks. Ankle length shoe.***


Worker wearing rubber chappals and laying bricks and cement (left).

Worker mixing cement with hand (right). He is wearing ankle length thick canvas shoe.


Workers are mixing concrete. PVC boots. ***Women are breaking floor tiles.***


Floor tile area. ***Workers fitting railing.***

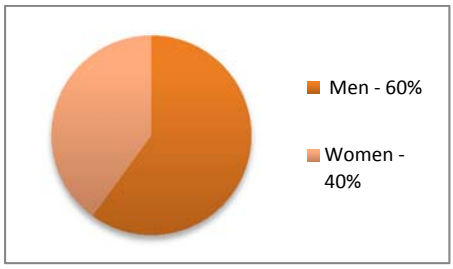
Workers involved in concrete mixing, carrying and trashing. (Wearing rubber chappals)

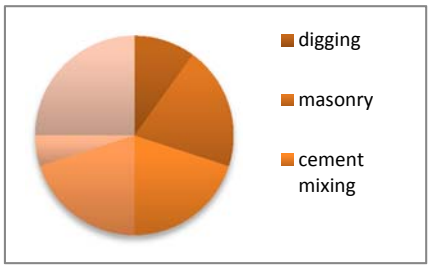
Workers shoes made up of thick canvas with hard rubber sole.

Rubber/plastic slipper worn by workers

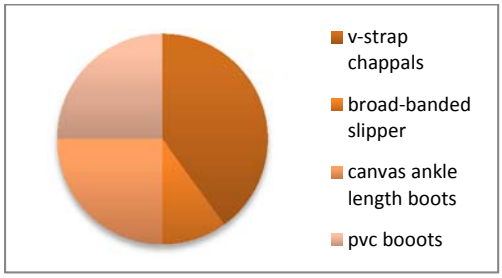

Temporary shelters for workers.

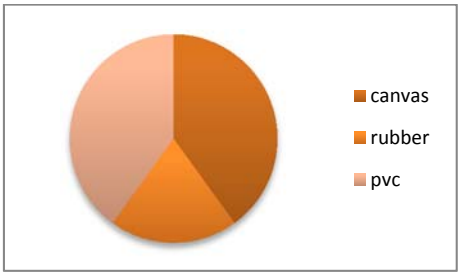
3.2 Inference from Construction Site Survey -





Workers involved ***Type of works***





Types of footwear worn ***Material of boots worn for protection***

Other information-

- ***8-10 hours of work six days a week***
- ***Barely two or three workers out of 50 were seen wearing masks***
- ***No awareness about the use of PPE was noticed. Boots were very dirty and lying around everywhere at the construction site and outside the temporary shelters***

- ***Sharp metals- nuts, wires, and nails were strewn. Water pits were uncovered, not demarcated and other construction materials were haphazardly strewn***
- ***Women breaking tiles sat on plastic sacks and hammering. Bits of tiles are very sharp and may enter exposed body parts. They were sitting barefoot also no protection for eyes were used for bits of tiles that might enter while breaking***
- ***Shoes worn were not of correct size, so cement enters through the openings***
- ***Also, they share / exchange footwear which is unhygienic***
- ***The boots were very old, so the hard rubber sole had cracked in some cases***
- ***Wearing boots become difficult for 8-10 hour duration with only lunch break in between for one hour***
- ***Apart from foot, hands were also not covered with gloves. Workers were seen touching the cement, concrete and tile breaking with bare hands***

4. Problems Identified

- ***Foot, hands, face, are constantly exposed to concrete, cement, other construction materials that are harmful to skin***
- ***Working equipment may fall on feet and injure (damage will be less if feet are covered)***
- ***Chappals worn normally may slip off or are not comfortable / suitable***
- ***Boots other heavy footwear may hinder ease of working and breathability as work continues for 8-10 hours***

- ***Personal Protective Equipment (PPE) are ignored by uneducated workers and are not purchased due to price concerns***
- ***Unhygienic as they get very dirty, are not cleaned and may be shared.***

5. Objectives

- ***To come up with a Bio-Tech footwear for construction workers as a Personal Protective Equipment made out of waste material***
- ***It forms a symbiotic skin that protects feet from exposure to hazardous construction materials and injuries and is breathable and provides comfort***
- ***It can be made by workers themselves or is easily affordable if purchased***
- ***Primarily it caters to the construction workers but may also be used by vendors, other workers, for protection from rain, etc. (secondary users)***

6. Material Considerations

Used Rubber tyres and tubes

Tyres are one of the voluminous wastes, ecologically harmful and difficult to discard. More than half of tyre wastes are burnt for the value of fuel generation in advanced countries. In many countries, however, they are recycled for new product components in sports goods and accessories, etc. According to estimation 259 million tyres are discarded annually (1980-90).

7. Cobbler's tools (IIITDMJ, Hall – 1)

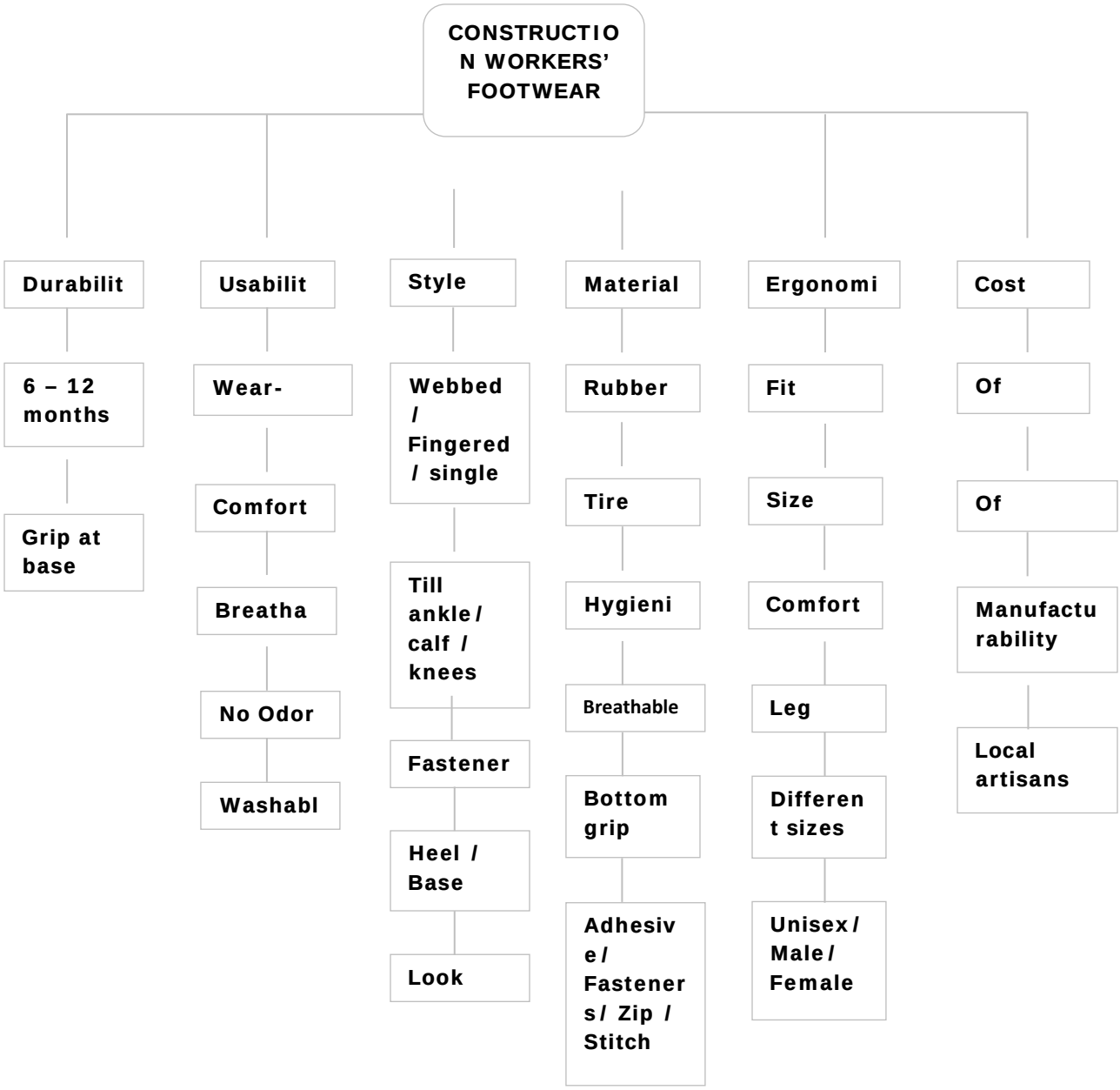

Cobbler's explanation of a basic sock pattern with pen on plastic sheet


Tools / Materials - Scissor, Hammer, Plier, Chisels, Emery paper on wooden bat, Screwdriver, Iron stand, Needle, Rubber soles, brushes, Adhesive, Laces, oil, nails, nylon thread



Wooden shoe last used to make the shoe pattern for correct fitting

8. Mind Map Analysis



9. Paper Styrofoam Model Exploration

Pores required for breathability

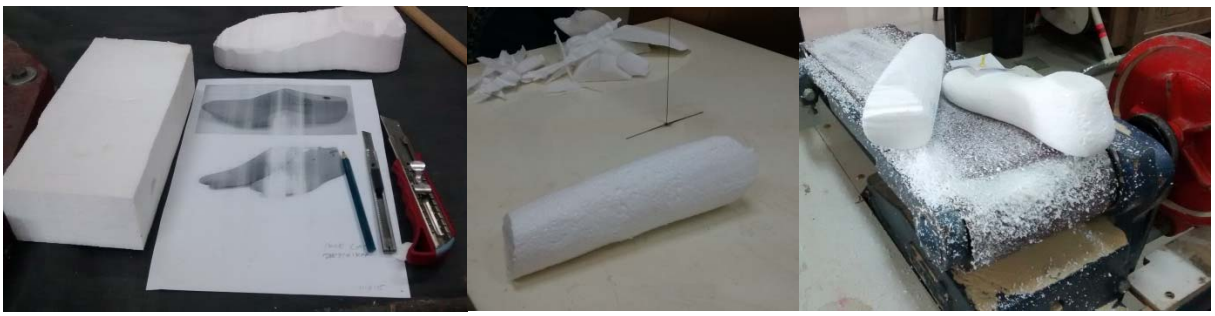
Shape has to be comfortable around toe

Base needs to be thicker for grip and abrasion resistance

Fasteners required at the top to hold it

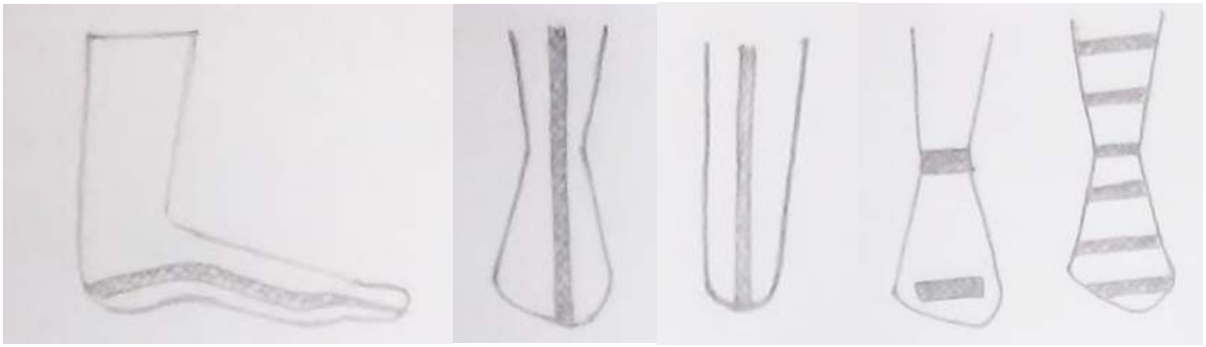
Webbed feet or separate fingers might increase the complexity of the shape

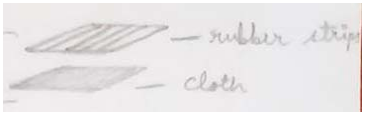
Making of the paper and Styrofoam Cole models –



10.Concept Sketches

Breathability

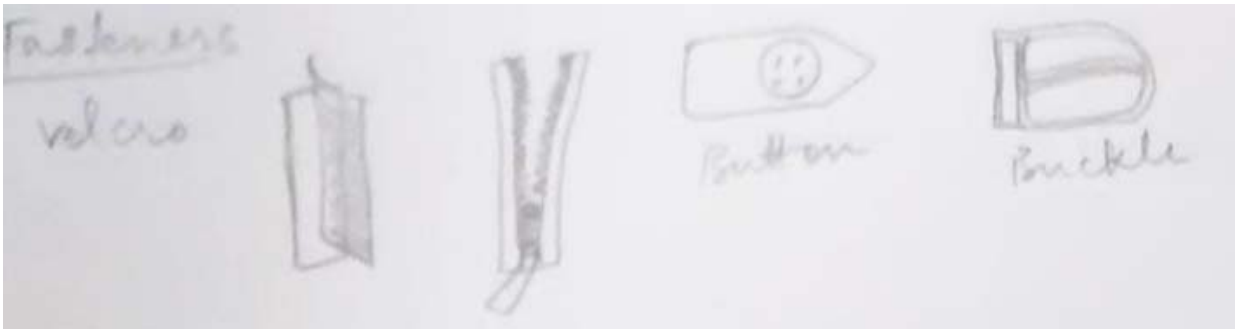




Two layers of rubber strips and cloth layer beneath along the sides, length (front and back), only in the front and ankle or as horizontal stripes throughout – for breathability.

Base grip –

Fasteners - Velcro, Zip, Button or Buckle –



11.Reference images from the internet

PROBLEMS - The fitted ones are not breathable at all while others do not cover till calf or knees

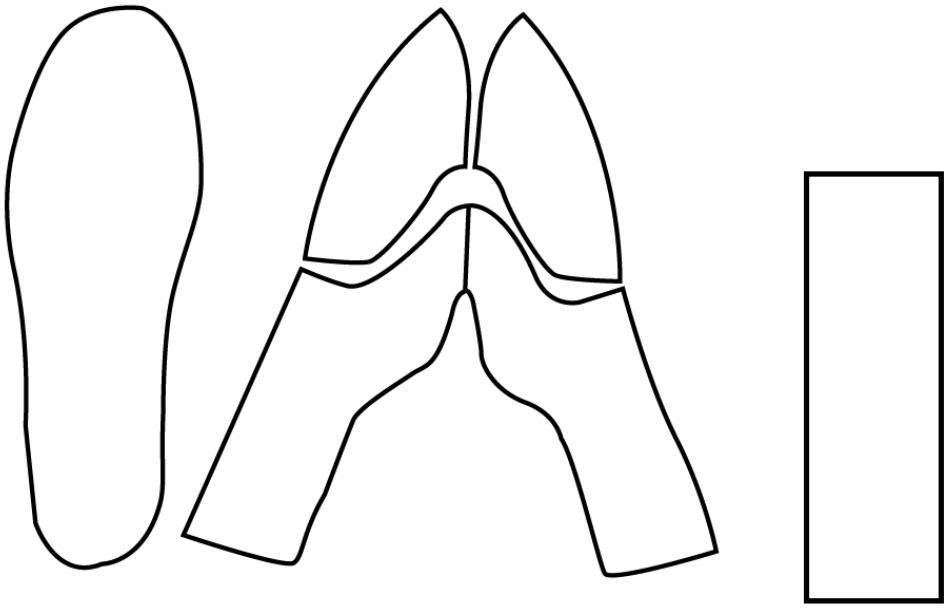
12. Embodiment Design

12.1 Configuration Design -

The various elements of the footwear include –

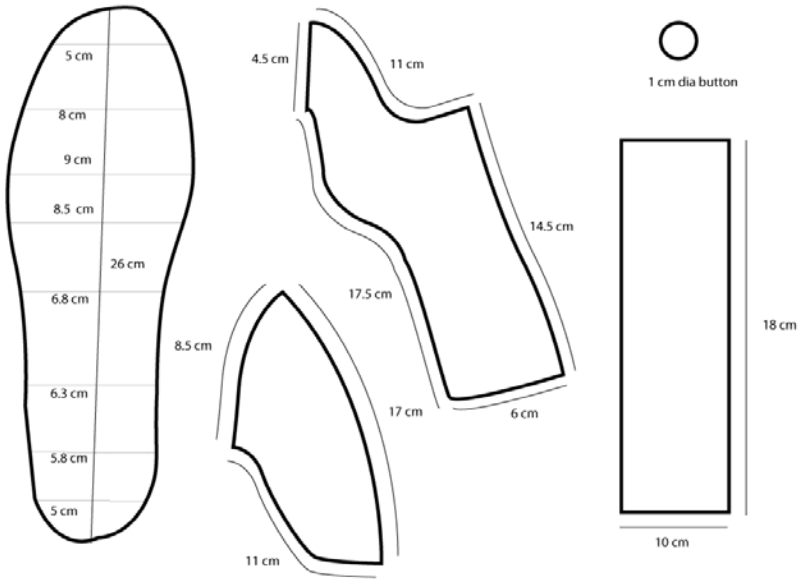
- ***2mm waste rubber tyre tube***

- ***Ventilation pores on the upper and the boot extension***
- ***2 layers of same material as base***
- ***Button as fasteners on the side***
- ***1 cm seam allowance throughout finished to shape***



Pattern of the footwear

12.2 Parametric design –



Sole, Upper, Button, Extension – seam allowance of 1 cm for all patterns

12.3 Detail Design –

Sr no	Parts	Description	Material	Quantity
1.	Upper	The upper part of the footwear	Discarded rubber tube	
2.	Rubber tube sole	2 layers for the base	Discarded rubber tube	31 X 11 cm 2 strips
3.	Ventilation pores	For breathability	Holes	1 mm size
4.	Buttons	1 button for fastening	Plastic	1 pc 1cm dia
5.	Muslin Cotton	Inner lining	cotton	50 cm X 50 cm

13. Making the Prototype

Shoe last covered with masking tape

Masking tape pattern on paper

Running stitch, double running, loop stitch and edge to edge stitching in swatches

Stitching of the upper of the footwear

14. Final Prototype Images

15. Result and Conclusion

Personal Protective Equipment is a necessity for construction workers without which they might get occupational skin diseases. The attitude of the workers and contractors has been found negligent – workers are neither rich nor very literate while contractors are not bothered about health, hygiene and safety of their employees. This Footwear is a step closer to making them aware of their rights and necessity of owning PPE. This footwear is made out of discarded tyre tubes. It can be easily made available by

local cobblers. It is comfortable, breathable, and affordable and can be used for six months to one year easily. The making price of the product should not be more than Rs 50 due to easy construction and tube being a flexible material to handle. This product has minimal design, functionality and light weight – as per bio-tech construction.

16. Scope of Future Work

Improvements can be made to make the sole stronger. More materials can be explored to make footwear – affordable, easy to make and comfortable for the use of PPE. It needs an inner lining, the material can be explored for easy procurement, hygiene and comfort. Similar products like gloves, masks, etc. can also be made with various materials that are discarded after first use.

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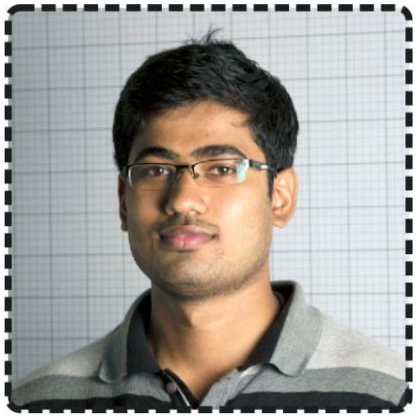
Deepshikha Jha



***Ganesh S** is student of M.Des program at Indian Institute of Information Technology, Design and Manufacturing, Jabalpur, India. He is also a Teaching Assistant for various Bachelors program at the institute. He has completed his Bachelors in Civil Engineering under VTU, Belgaum. He holds IGNOU credits for Disaster management. He was intern under professors at IISc Bangalore where he was introduced to the world of Sustainable Architecture. He is particularly interested in sustainable design. His Dissertation work for Master's program is in the area of medical equipment, especially preventive medicine. He is committed to help the vulnerable, lesser privileged and differently-abled people. He believe passion is vital ingredient for success and want to be judged by individual performance and rewarded for his efforts based on ability to execute.*

Design of Durable Weapon System for Residential Security Guards.

Ganesh S

1. Introduction

The most environmentally resourceful, beneficial, economically efficient, and cost effective way to manage waste is not to have to address the problem in the first place. Waste minimization should be seen as a primary focus for most waste management strategies. Correct waste management can require a significant amount of time and resources. Therefore, it is important to understand the benefits of waste minimization and how it can be implemented in all sectors of the countries economy, in an effective, safe and sustainable manner.

In product design waste minimization and resource maximization for manufactured goods can be easily done at the design stage. Reducing the number of elements used in a product or making the product simpler to take apart can make it much easier to be repaired or recycled at the end of its useful life. In few cases, it may not be logical to minimize the quantity/volume /quality of raw materials used to make a product. But the serious attempt must be towards reducing the volume or toxicity of the waste created at the end of each product's life or the environmental impact of the product's use.To relieve the pressures placed on the finite resources available in the country it has become more important to prevent waste. To achieve zero waste, overall management has to move from a linear scheme to being more cyclical so that materials, products and substances are used as proficiently as possible. The important of,

Materials must be chosen such that it can either return safely to a cycle within the environment or remain viable in the industrial cycle.

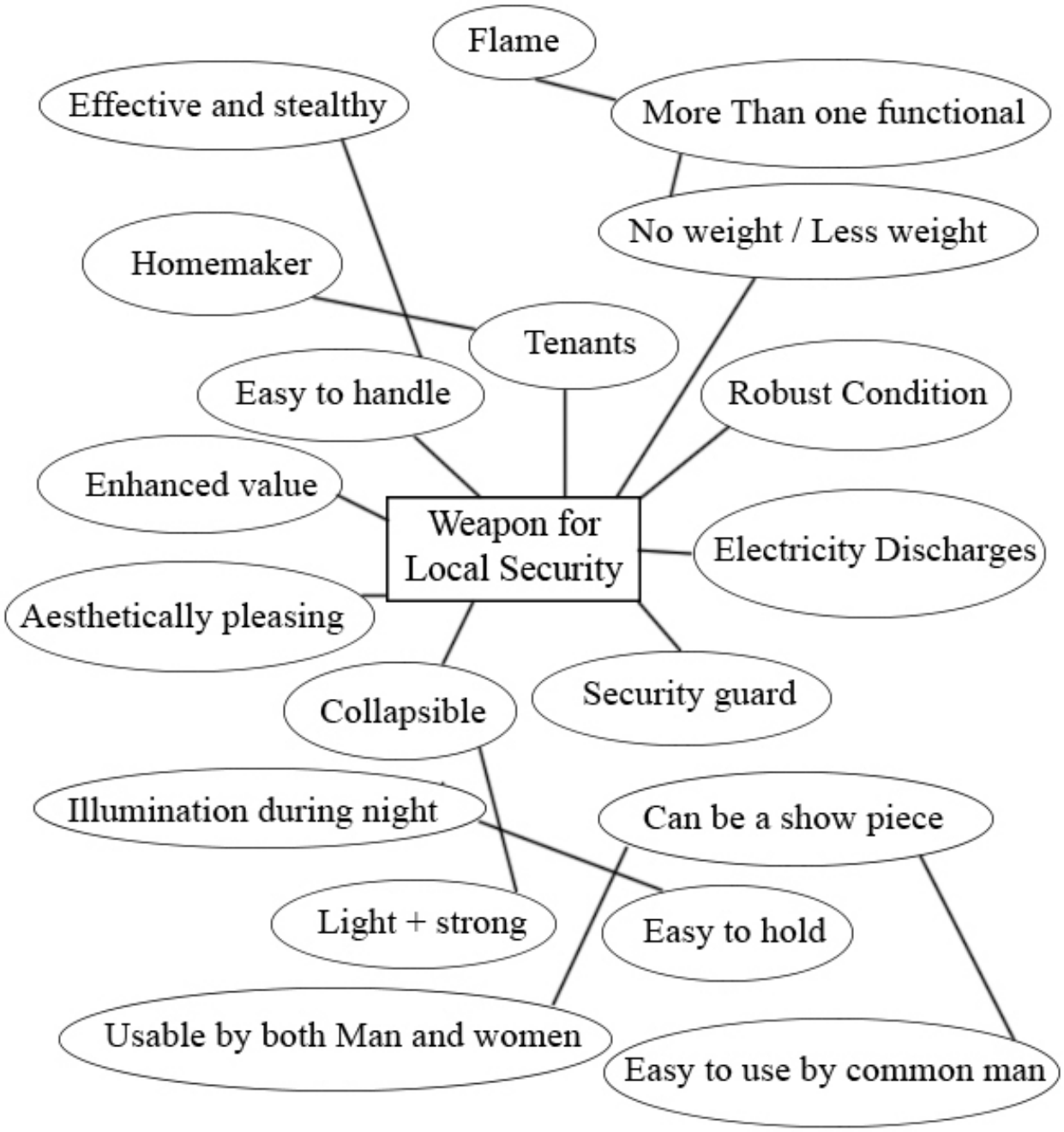
Zero waste promotes not only reuse and recycling. This concept promotes prevention and product designs that holistically considers the product life cycle.Zero waste designs strive for reduced materials use, use of recycled materials, longer product lives, repairability, and ease of disassembly at end of life. A Zero Waste methodology may be applied to businesses, communities, industrial sectors, schools, and homes.Zero waste strongly supports sustainability by reassuring the environment, reducing costs and producing additional jobs in the management and handling of wastes back into the industrial cycle.(zerowaste.org)

2. Objective

Project research is inspired by the ideas of industrial ecology, cradle to cradle and decoupled growth. The main objective of this project will be to emphasize on Zero WasteZero waste is a course of thought that encourages the redesign of resource life cycles so that all products are reused. No trash is sent to landfills and incinerators. The process endorsed is one similar to the way that resources are reused in nature. Complete removal of waste from the outset requires heavy involvement primarily from industry and administration since they are presented with more advantages than individuals. Zero waste will not be possible without evidence of efforts and actions from industry and government.

2.1Mindmap for project planning

Mind mapping Design from Waste



3 Problem Statement–*Design of Durable Weapon System for Residential Security Guards.*

3.1 Project Description– This project is focused on optimization of waste materials which are generated in our day to day activities. Waste minimization should be seen as a primary focus for most waste management strategies. Proper waste management can require a significant amount of time and resources; therefore, it is important to understand the benefits of waste minimization and how it is going to implement in all sectors of the countries economy, in an effective, safe and sustainable manner.

Waste minimization is a continuous process of elimination that involves reducing the amount of waste produced in society and enables to eliminate the generation of harmful and persistent wastes, supporting the efforts to promote a more sustainable society. Waste minimization involves redesigning products and changing societal patterns. It also concerned with consumption and production, of waste generation, to prevent the creation of waste.

3.2 Existing solutions:

	
Weapon Detection Equipment	***Pepper Spray***

This wonderful device works as an excellent deterrent right from the start. When most criminals or acts of violence are about to occur, not only will the uniformed Security Guard take immediate effect, so will our metal detection equipment that detects all sorts of metal objects from; guns, knives, blades and most other weapons that may be used for harmful actions.	***Security guard pepper spray is for some security guards, the only immediate self-defense weapon that they have at their disposal.The Security guard pepper spray is called "pepper spray" because the main element found in the spray comes from the pepper plant. The effective ingredient, Oleoresin Capsicum, is produced by common plants in the genus Capsicum. It is found in greatest concentration in the pepper produced by the mature plant.(securitycameraking.com)***
 ***Stun Guns: are a Direct Contact Weapon*** ***Stun guns are most effective contact weapon, but you must physically be in contact with the person with the prongs of the stun gun. It is also best to hold it on them for few seconds. Stun guns work by increasingly overworking the muscle group and depleting it of blood sugar. In addition to terrible and immobilizing pain and***	 ***A Taser or conducted electrical weapon (CEW) is an electroshock weapon sold by Taser International.It fires two small dart-like electrodes, which stay connected to the main unit by conductors, to deliver electrical current to disrupt voluntary control of muscles which results in "neuromuscular incapacitation". Someone struck by a Taser experiences stimulation of his or her sensory nerves and motor nerves, resulting in strong involuntary muscle contractions(selfdefensegearco.com)***

extreme exertions of muscle contraction, the result is similar to muscle failure	
 ***Guard Dog Security 160 Lumen Tactical Flashlight with Stun Gun*** ***The flashlight is always able to give off as much as 150 - 160 lumens while the stun gun is heavily packed with 4.5 million volts. The casing of the device is made up of aircraft grade aluminum alloy with the anti-roll design. The bulb is capable of working till 100,000 hours. Its length measures 6.75 inches. Among the other features of the product are enhanced reflector system, safety switch and one hand operation for all functions.***	 ***A club-is among the simplest of all weapons right from ancient days. A club is essentially a short staff or sticks commonly understood.usually, this is made of wood, and wielded as a weapon since prehistoric times.*** ***Most clubs are small enough to be swung with one hand, and two-handed variants are known. Many kinds of clubs are used in martial arts and other specialized fields, including the law-enforcement baton. The military mace is a more sophisticated descendant of the club, typically made of metal and with added features like a spiked, knobbed or flanged head attached to a shaft(military.wikia.com)***

LATHI (Wooden / Polycarbonate): Polycarbonate Lathi that is used across the country for riot control purposes. This lathisare fabricated on a large scale by utilizing thermoplastic polymers, also known as polycarbonate that is sourced from reliable market sources. Lathis is manufactured by using many types of polycarbonates and easy to work on, to mold.(tradeindia.com)

4. Survey and analysis

4.1 Questionnaires

1. ***How long is your daily shift?***
2. ***Are you comfortable with Guarding equipment provided to you?***
3. ***How safe do you feel during night watch?***
4. ***Should there be more complex weapon system***
5. ***Assembly of weapon takes time, do you like simple or sophisticated weapons?***
6. ***Have you ever fired from a rifle?***
7. ***Do you have a license to own a weapon?***
8. ***What features would you like to add to suit your needs during day time or night watch?***
9. ***Does weight of the weapon disturb you?***
10. ***Have you lost your equipment or has it ever been stolen?***

4.2 Important facts recorded

Security Guards have different shifts,

1st shift: 11 pm to 7 am;

2nd shift: 7 am – 3 pm;

3rd shift: 3pm – 11pm;

Every shift contains 18 persons.

Every Guard has his lathi, some inside the perimeter prefer no weapon but just the walky-talky. Few security guards carry licensed arms, which is confiscated during election/local riots/emergency situations.

Guards are very comfortable with the usage of lathi but improvisation is always is required.

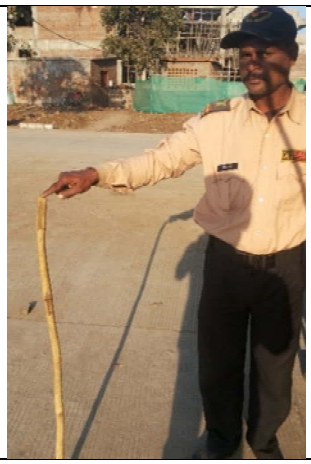
They use three different types of weapon:

1. Manual rifle (weighs about 4kgs)

2. Thick lathi (Weight ranges from – 300gms – 2kgs)

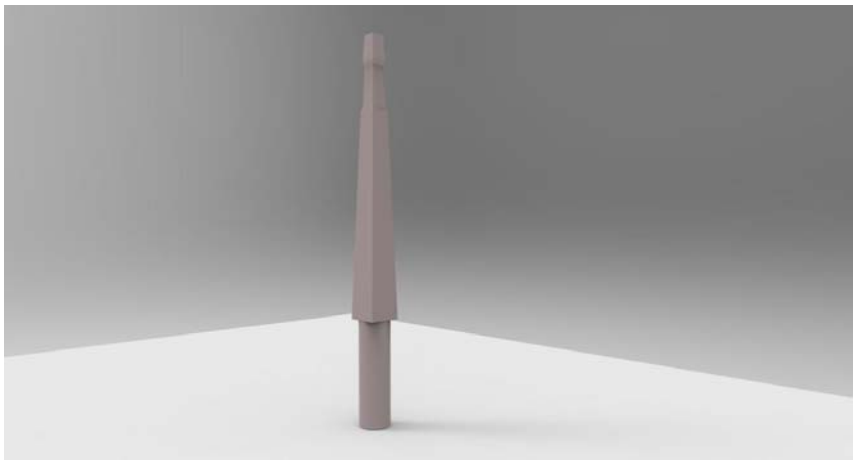
3. Blum (Weights around 5kgs)

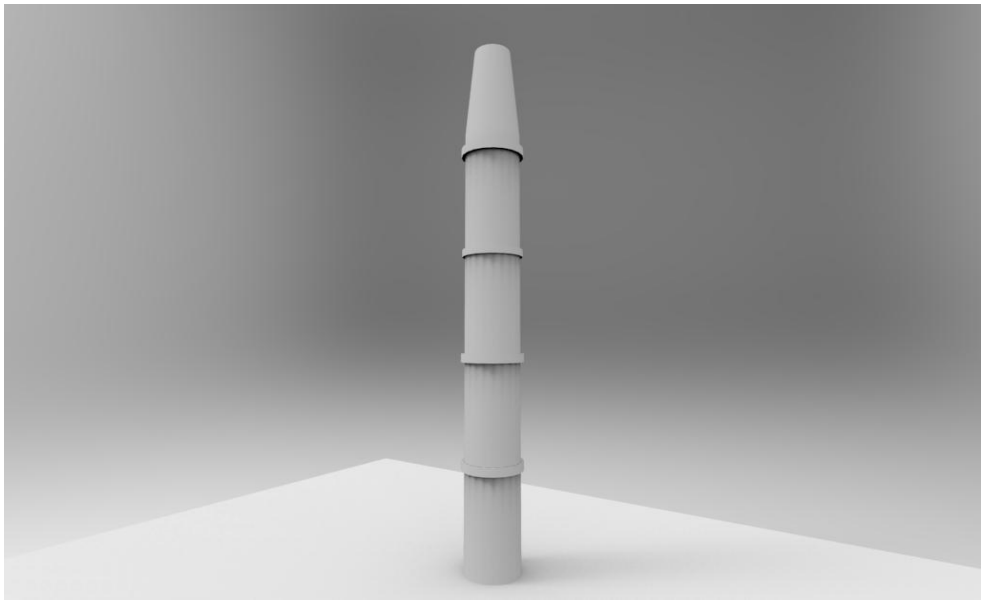
Few recommended electric discharge or fire as an inbuilt mechanism in the weapon system; they feel it will enable them to be a more efficient in term of alertness, reaction time and increase their confidence.

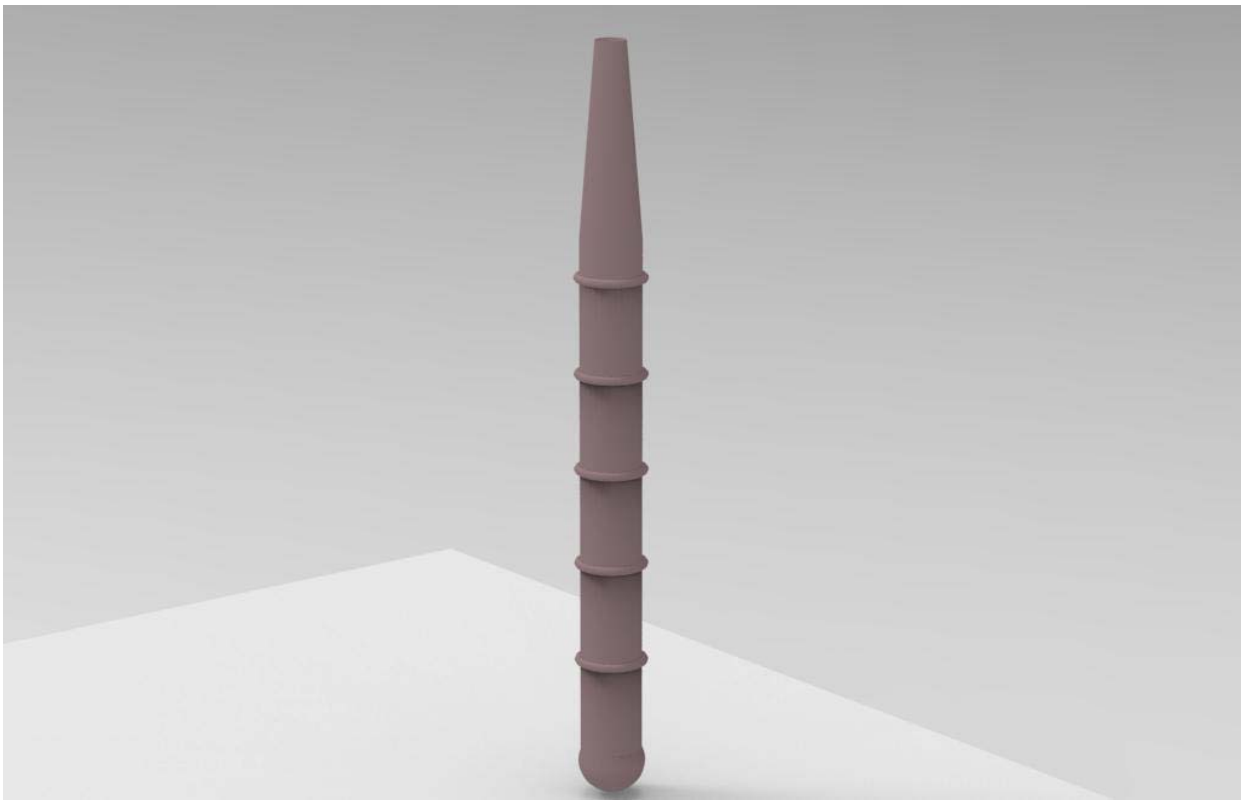




5. Concepts

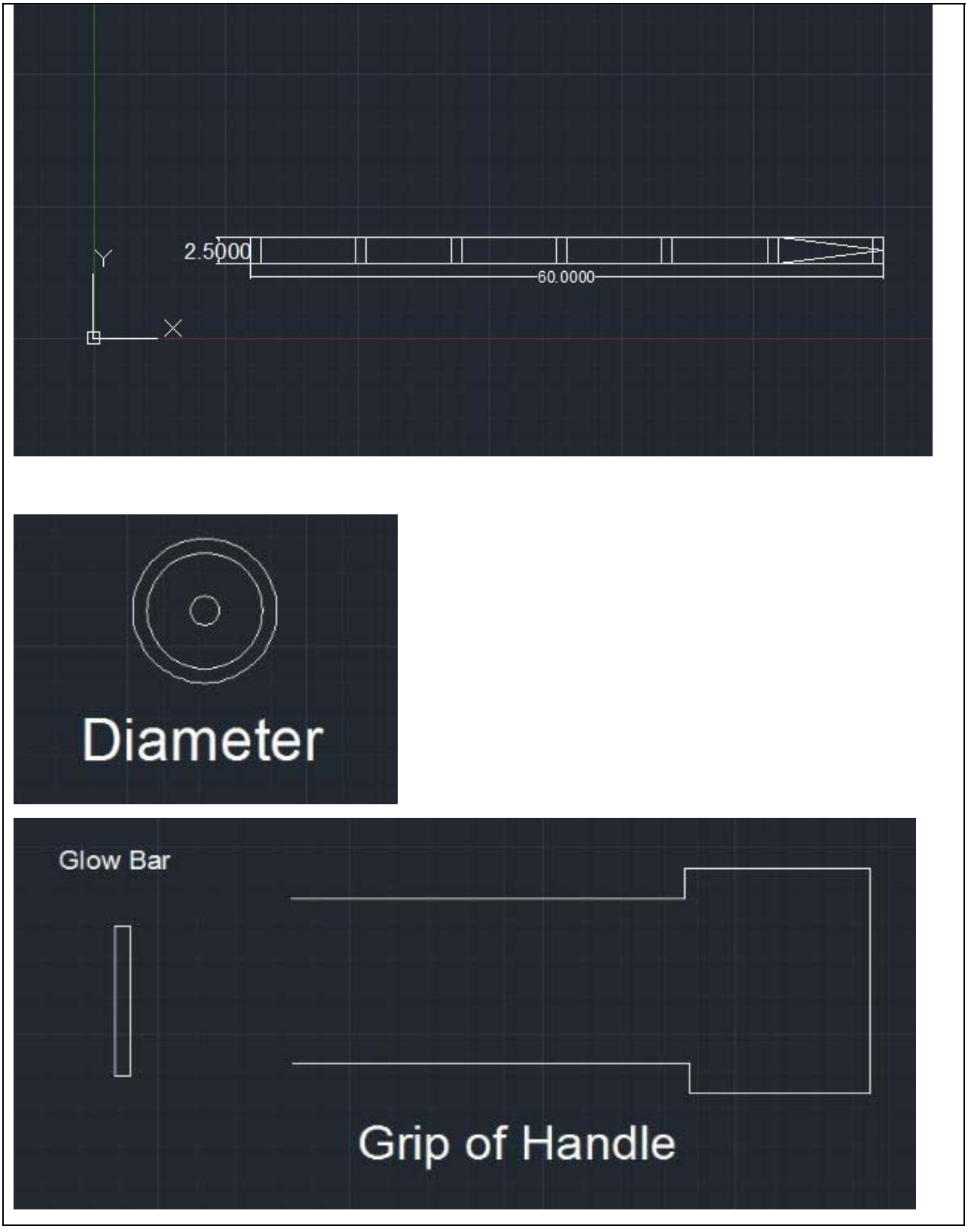
5.1 Abstraction

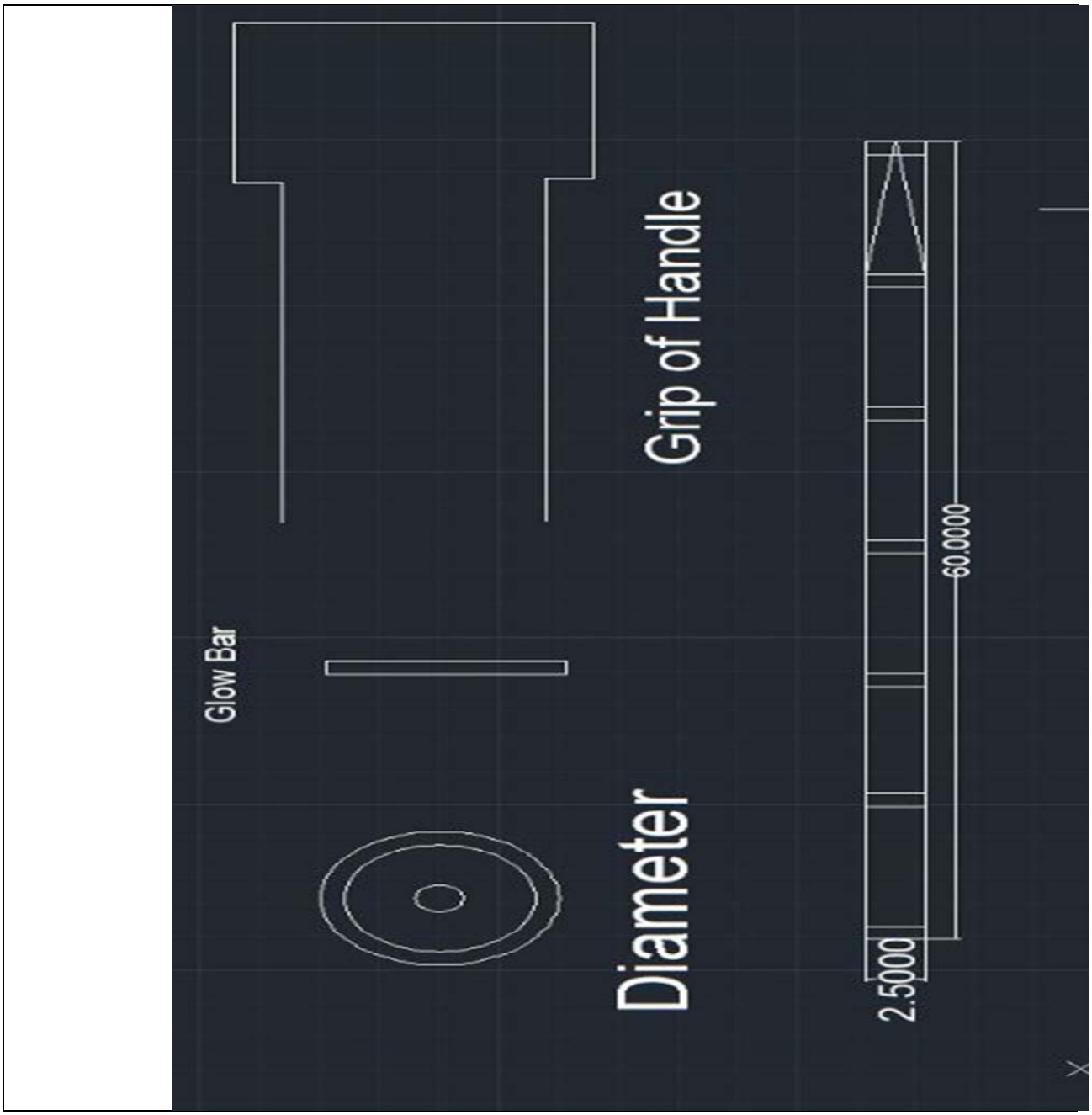






5.3 Parametric Design




Grip of Handle
Glow Bar
Diameter
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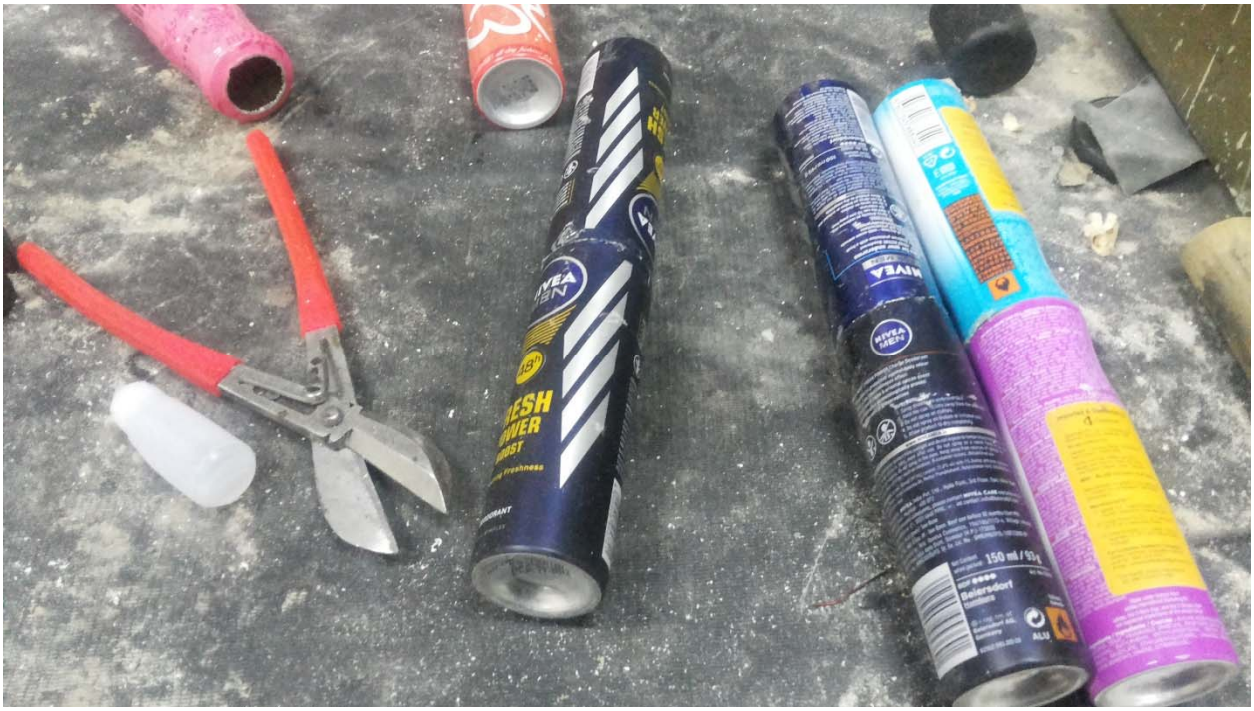
Autodesk CAD 2013 draft

5.4 Materials Exploration

6. Prototype

Prototype at different stages of production




Vitalit
perfumed deo
150 ml


Pure
lightness

6. Conclusions and Result

Outcome of new product design:

The point that we have to realize, design solution is in connection with the manufacturing with waste material to create the right motivations to redesign your product. Ultimately this means developing the system for the product. There is a growing global population that is facing the drawback of resources from the environment. To distance the pressures placed on the finite resources available to mankind, it is becoming more important to prevent waste. To achieve absolute zero waste, it has to move from a linear system to being more cyclical so that materials, products, and all the substances are used as efficiently as possible. Materials must have to be chosen so that it may either safely return to a cycle within the environment or remain viable in the industrial cycle. This project is an attempt to provide a new opportunity for full usage of discarded materials.

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Ganesh S

Prarabdh Dhomne

Prarabdh Dhomne is pursuing his Masters of Design at PDPM IndianInstitute of Information Technology, Design and Manufacturing, Jabalpur. He completed his Bachelors in Mechanical Engineering from Shri Ram Institute of Technology, Jabalpur (Rajiv Gandhi Technical University Madhya Pradesh). His field of interest includes products and systems related to Waste Management, Transportation and Household products.

“DIBBA” Light source and passive sound amplifier

Prarabdh Dhomne

Abstract

When utility of any product or object is over, it is discarded and termed as waste. Waste is generated directly or indirectly due to various human activities which can be classified according to the source of its origin, its nature, material composition or its properties like biodegradability, recyclability, etc. Non-biodegradable and non-recyclable waste is the most harmful to the environment. This type of waste reduces soil fertility and permeability when goes it to the earth in the form of landfills. It also results in drainage choking in urban areas and produce harmful gasses when burnt. When products made of plastics are discarded it is termed as plastic waste. Plastics are non-biodegradable but can be recycled. Plastics marked with recycling factor 1 and 2 are mostly recycled, but plastics like polystyrene with recycling factor 6 have high volumes and low scrap value hence it is not recovered generally. Food packaging materials are made up of metalized plastic films and are not recycled. Although individual materials of packaging are recyclable since its sorting and separation pose technical and economic difficulty, it is not recycled.

According to central pollution control board recycled plastic is more harmful than virgin plastic so its use should be minimized and source reduction and reuse should be promoted. In this project, the discarded polystyrene cups, polystyrene foam packaging, metallized as well as laminated food packaging is reused to come up with a product. The product is intended to be used by the workers,

shopkeepers, vegetable sellers, etc. in their houses or shops. This product will serve as alight source as well as a sound amplifier for the lower economic class people.

2. Facts on Waste

According to the Basel Convention, "'Wastes' are substances or objects, which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law."

2.1 Municipal solid waste - According to the Municipal Solid Waste (Management &Handling Rule 2000), garbage is defined as Municipal Solid Waste, which includes commercial and residential wastes generated in a municipal or notified areas in either solid or semi-solid form. Municipal solid waste consists of household waste, construction and demolition debris, sanitation residue, and waste from streets.

2.2 Composition of municipal solid waste-Waste composition depends on factors such as culture, economic development, and climate. Low-income countries have the highest proportion of organic waste whereas high-income countries have the highest percentage of paper, plastics, and other inorganic materials. In India MSW is composed of mainly organic waste(40–60%), ash and fine earth (30–40%), paper (3–6%) and plastic, glass and metals (each less than 1%)[10].

Types of waste and their sources

Type	Sources
Organic	Food scraps, yard (leaves, grass, brush) waste, wood, process residues
Paper	Paper scraps, cardboard, newspapers, magazines, bags, boxes, wrapping paper, telephone books, shredded paper, paper beverage cups
Plastic	Bottles, packaging, containers, bags, lids, cups
Glass	Bottles, broken glassware, light bulbs, colored glass
Metal	Cans, foil, tins, non-hazardous aerosol cans, appliances (white goods), railings, bicycles
Other inert	Textiles, leather, rubber, multi-laminates, e-waste, appliances, ash, other materials

Source: siteresources.worldbank.org / INTURBANDEVELOPMENT

Although the composition of plastic waste in MSW is less but, plastic waste is non-biodegradable and causes damage to the environment. According to central pollution control board, recycled plastic is more harmful as compared to virgin plastic.

Harmful effects caused due to plastic waste(as mentioned in central pollution control board website material)

- ***Land fertility is reduced due to improper plastic waste disposal.***
- ***Burning of plastics waste releases toxic emissions.***
- ***Multilayer, metalized pouches and other thermoset plastic pose disposal problems.***
- ***Indiscriminate and littered plastic waste pose unaesthetic look and choke the drain***

3. Plastics and plastic waste.

3.1 Plastics-Plastic has become a necessary material in human life. Nearly every product is composed of some plastic whether household or industrial product. Products like Packaging materials, shopping bag, fluid container, toys, etc. are made up of plastics

Plastics are petroleum based synthetic polymers that are non-biodegradable. Polymers are madeup of long-chain hydrocarbons. These polymers are broken into monomers like ethylene, propylene, styrene and benzene, which are then chemically polymerized to get different categories of plastics. Categories of plastics:

- ***Thermoplastics: It includes PET, HDPE, LDPE, PP, PVC, PS, etc. Thermoplastics are recyclable. Thermoset & others: It includes Multilayer & Laminated Plastics,***
- ***PUF, Bakelite, Polycarbonate, Melamine, Nylon, etc. Thermoset plastics are not recyclable***

3.2 Plastic production - About 150 million tons of plastic products are produced globally per year.
About 80 million tons plastic products are annually consumed in India.

3.3 Plastic waste- When utility of plastic products is over, it is discarded and is called as plastic waste

Although no authentic data is available on the total generation of plastic waste in India, it is assumed that 70% of the total plastic consumed is converted into waste which is approximately 5.6 million tons per annum which amount to 15342 tons per day[8]. Out of total plastic waste generated 60% is recycled, and 40% remains

uncollected [8]. Therefore, approximately, 6289 tons of waste produced per day goes uncollected and causes environmental damage [9].

Plastic waste is not biodegradable, but it is recyclable. Virgin plastic can be recycled 2-3 times only as plastic material deteriorates after every recycling. Since recycled products contain additives, they are more harmful to the environment. According to the report, Commonly littered plastic wastes include mainly the packaging waste like polythene carry bags, plastic wrappings, styrofoam packing, plastic plates, cups, spoons, etc. as recyclable plastics and *gutkha* pouches, multilayer packaging, laminated packing, etc. as non-recyclable plastic waste [9].

4.Packaging and packaging waste

4.1 Packaging - Packaging is a tool that enhances product characteristics like safety, quality, and at tracts consumer to use the product. The packaging material can be broadly classified as food and non-food packaging materials. Commonly used material for food packaging includes metals, plastics, metalized plastic, laminated films, multilayer plastics, etc. and for non-food packaging Cardboard, Thermocol, Cellophane and other transparent and opaque plastics, Paper, Wood, etc. are used. Food and Beverage packaging are high volume but have low weights, making up only 15-20% of all packaging whereas non-food packaging makes up almost 80-90% of packaging by weight[9]

4.2 Packaging Waste - When packaging of any product is discarded, it is termed as packaging waste. Collection and disposal of packaging waste are a challenge. Packaging waste is made up of a wide range of materials that are derived from various packaging

materials. Plastic is the one of the most common material used for packaging. Food packaging has a considerable impact on health and environment. Styrofoam or Polystyrene (PS), Polyvinylchloride (PVC), Polypropylene (PP), Polyethylene Terephthalate (PET) are considered unsafe as food packaging. Polystyrene breaks down to styrene at low temperatures which are highly carcinogenic. Fused Aluminum and plastic used for packaging food materials is completely non-degradable and emits toxic gasses on burning. It also reduces soil fertility, if it gets embedded in it[9].

A report on Road map to waste management by the ministry of environment and forest recommends encouragement and promotion of safer packaging design, sorting, separating, reuse, recycling and safe reprocessing.

5. Material Exploration

5.1 Plastic waste used

Polystyrene - Polystyrene is a petroleum-based plastic which is derived from the styrene monomer and is one of the most commonly used plastics in the world [1].It is used in its hard plastic state as well as in its foamed state. Polystyrene foam is made in three configurations: extruded polystyrene, expanded polystyrene foam, and extruded polystyrene foam [3]. Extruded polystyrene foam is also called as Styrofoam. Styrofoam is the trade name of a polystyrene foam product that is used for insulation purpose[2].Polystyrene finds some applications in domestic as well as commercial areas.

Eduard Simon in Germany discovered the substance in 1839 [1]. He experimented with distilled oily substance obtained from a gum tree.

But it was only after a century, that scientist came to know that heating the substance caused a reaction that created a new substance. This new material is known as polystyrene.

Properties of Polystyrene - Polystyrene is easily formable material and has an extremely long life. Polystyrene takes a lot of time to biodegrade [1]. Polystyrene is a light-weight material and contains about 95% air which makes it highly buoyant and provides it good insulating properties[3]. Also, polystyrene could be mass produced very cheaply and easily.

Uses of Polystyrene - Polystyrene is used for making disposable cutlery, drinking cups , CD cases, and packing material for electronics and other breakable articles. It is also used as buoyant material in life rafts, surfboards, etc. In the industrial sector, it is commonly used as an insulator.

Recyclability - Polystyrene is not easily recycled, it has recycle factor of 6. Technology for recycling polystyrene is available, but recycling programs do not accept it as it has little scrap value, lightweight and bulky nature which makes it difficult to store.

The harmful effect caused by Polystyrene - Styrene is the basic building block of polystyrene which is a serious environment and health concern. International Agency for Research on Cancer (IARC) classifies Styrene as a possible human carcinogen. Polystyrene manufacturing is the 5th largest creator of hazardous waste (1986 EPA report on solid waste). The National Bureau of Standards Centre for Fire Research identified 57 chemical byproducts released during the combustion of polystyrene foam[2].

It also has as severe impact on the ocean life where it is one of the primary pollutants.

5.2 Packaging material used

Laminated and metalized films -Laminated films and metalized films are used for snacks packaging. Laminated films are made up of multiple layers of different materials joined to form a single sheet [6].Usually, a thin aluminum foil is bonded to paper or plastic film. Whereas metalized, films are polymer films that are coated with a thin layer of metal. Usually, aluminum is preferred for metal coating, but nickel or chromium are also used sometimes. Physical vapor deposition process is used for metallization. The metal is vaporized under vacuum and condensed on the cold polymer film.

Polymer sheets are made up of either PET, BOPP or CPP[4]. Metalized films are less expensive as compared to laminated packaging. Laminated packaging is used to package high-value foods, and less costly metallized films are mainly used to package snacks[7].

Plastic film coated plain cardboard boxes -This type of material is widely used for packaging of different items including clothes, food, electronic items, toys, etc. The cardboard part of this material can be easily recycled, but since it is covered with a plastic film which is not recyclable, it is not taken by the recycling centers.

Advantages of using above material - A combination of properties is obtained by combining different materials together to make laminated films which are not provided by any single material. These films enhance protection against light moisture, oils and gas

(oxygen)and their highly reflective and glossy finished surface attracts the consumer[7].

Metalized films are also used for decorative purposes and particular applications in insulation and electronics.

Recyclability -Individual components of laminates and metallized films like aluminum, PET is recyclable, but since this combined material are difficult to separate and sort out recycling is not feasible economically.

Similarly, cardboard is easy to recycle, but its separation from plastic film is not feasible economically.

6. Site Survey

Construction workers living in IIIT DM Jabalpur campus use the incandescent bulb as the light source. It is observed that a common ambient light source is used that serves all purpose, and mobile

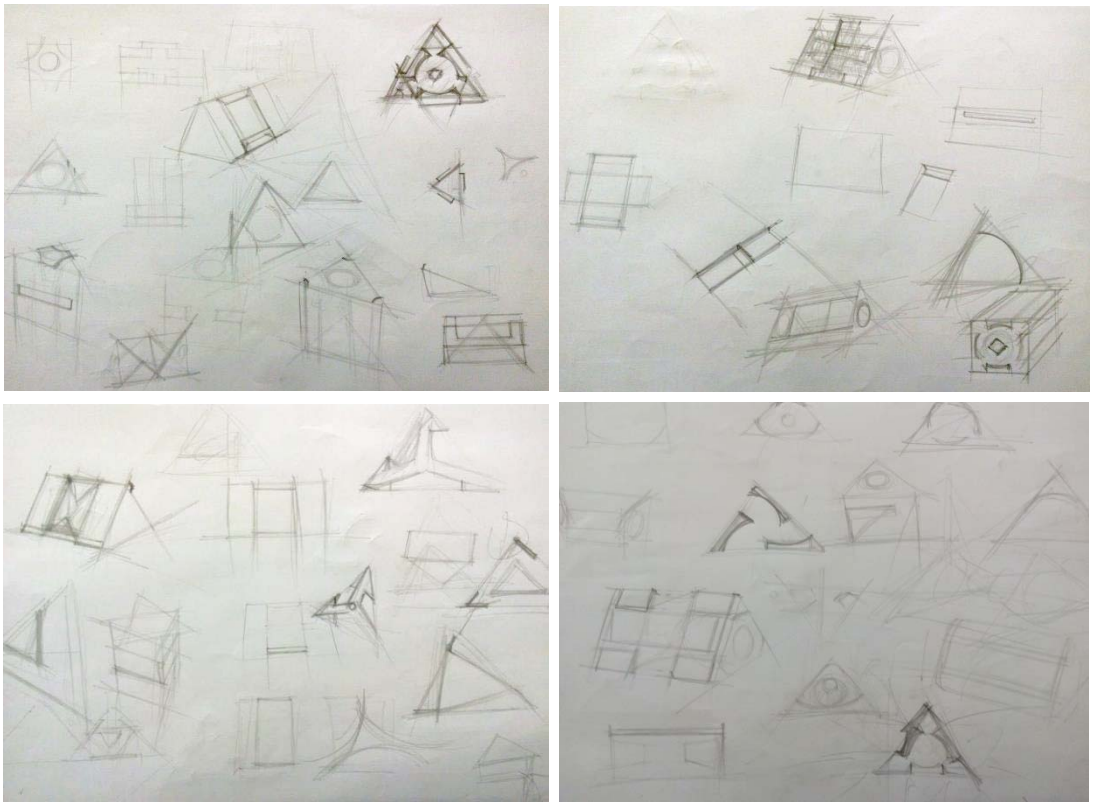
phones are being used for the entertainment and source of information. It is also observed that there is no focused light source available for the tasks like cooking.

7. Existing Products Study



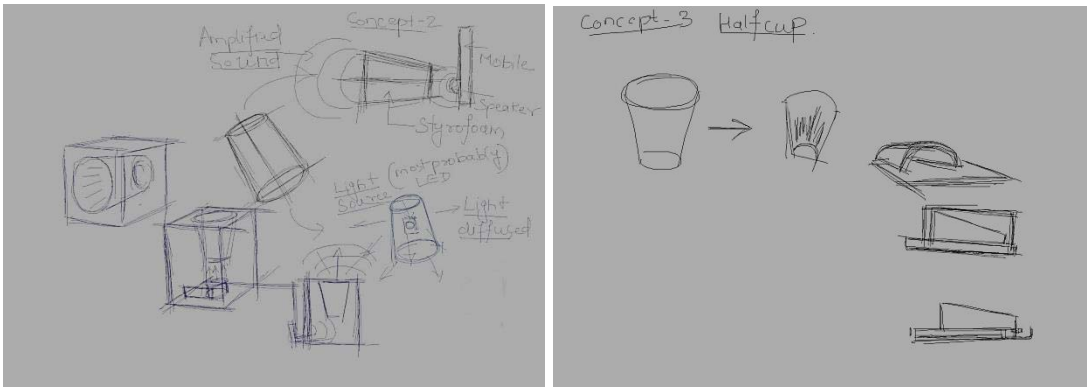
Different types of the passive sound amplifier for cellphones available.

8. Ideation and form generation



Concept 1

Concept 2 and 3



9. Experimentation

Concept 1 - A paper prototype is made for this idea. Since it was so bulky it is not tested with the actual materials to be used.

Concept 2 - This concept uses complete Styrofoam cup form for the passive directional amplification of sound. The inner surface of the

Styrofoam cup is covered with reflective surfaces. The reflective surface is obtained from the inner reflective coating of the metallized packaging waste.

The outer box body of this concept is initially made with corrugated plastic film coated cardboard and in then it is made with plain cardboard laminations.

10. Result

The corrugated cardboard box produces poor sound amplification.

The result obtained with the laminated plain cardboard box is comparatively better.

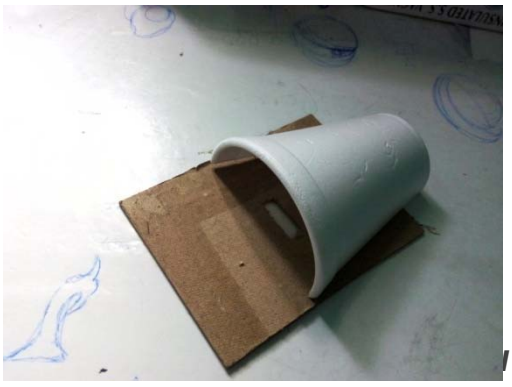
The sound amplification produced is better when the sound source is kept near to the narrow base of the Styrofoam cup.

Concept 3 - In this concept, the half side of the cup is used for sound amplification and inner reflective coated surface for light reflection. This concept has a minimal design and the plain rear side is made up of plain cardboard.

This concept is tested with Styrofoam cup and a paper cup.

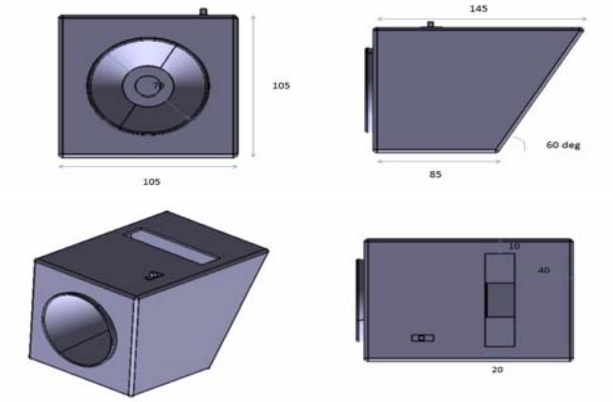
Result-Styrofoam half cup provided better sound amplification compared to a paper cup.

Concept 2 and three experimentation



Final concept - Finally, concept 2 is selected, and some modifications are made to increase its usability.

10.0 Modified final concept and Dimensions



All dimensions in mm

11. Product Prototyping

Materials

Laminated cardboard sheets: Used for making entire body.

Styrofoam in cup form: Passive sound amplification

Laminated metalized films: light reflector

Plain cardboard boxes are used for this purpose as its recycling is difficult. Plain cardboard boxes are widely used for packaging of clothes, electronic devices, food items, etc. Since they are bulky and consume space , therefore they are mostly discarded in the form of waste.

- **Firstly the cardboard boxes are collected and opened up.**
- **The folded portion is then separated out.**

- ***Different templates are prepared according to the form required, and marking is done on the suitable cardboard sheet separated in the previous stage. The cardboard sheets are then cut out according to the markings were done***
- ***Since these cardboard sheets are covered with plastic films, they are difficult to stick together. Therefore, the plastic film side of* the cardboard is made rough using sand paper.**

- ***The cut out cardboard pieces is then pasted together using Fevicol MR (white adhesive). To prevent the bending of the glued sheets, they are kept between the plane surfaces under*** **the load until the adhesive dries.**
- **The generated thick laminated cardboard shapes are then joined to get the required form.**

12. Final Product

The product uses eight high focus LEDs. 9volt battery is used as the power source

13. References

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[9]Road Map on Management of Wastes in India A report by Ministry of Environment and forests, Government of India March 2010

Prarabdh Dhomne

Vijay Singh Thakur

Vijay Singh Thakur is pursuing Master of Design in Industrial Product Design from IIITDM Jabalpur. His focus is on sustainable design, process design, 3D form exploration and design for disassembly. He completed his graduation in computer science and engineering from IIITDM Jabalpur. Vijay Singh is passionate about design for environmental sustainability dn has completed various projects considering the environmental and social sustainability aspects.

Design of Multipurpose Kitchenware using discarded Tetra Pack

Vijay Singh Thakur

Abstract

The purpose of the project is to reduce the solid waste, turn the waste into some useful product. In this project a method of product making has been discussed along with the prototype .which provides the job opportunities and healthy environment. The product is made up of tetra packs, urban areas of India produces 1.3 billion ton solid waste a year, India consumes 8.5 million tetra packs a year and every 2 of 5 are recycled. Rest of them become solid waste, the motive behind this project to sell the process, not the product.

1. Introduction

Since it is nearly impossible to manufacture products with materials that can be totally reused or burnt in incinerators, it is also unlikely to attain a 100% recycling rate. The only alternative is to produce less waste since products that have tile, porcelain, insulation, asbestos and miscellaneous construction and demolition debris cannot be burnt safely and have to be dumped in a landfill.

Consumption of food is increasing day by day. People don't get fresh food every time, so they start storing of the food, for storage of any item packaging is an essential part, especially for those edible which are in liquid form. Companies use tetra pack for that kind of foods to keep it fresh and safe. In the world only 73% of tetra packs are being recycled and rest of 23% tetra packs are being disposed of the nature, which creates the problem of living things, generally, it

contains the food item, it has very high chance to eaten by animal which may cause to death, recycling also consume large amount of energy and also produce co_2 .Now the people are aware of their environment and also know some of them their responsibility towards the environment so they are using remaining 23% of tetra pack which are not recycled to make some product so that they can help to save nature, My objective to add one more product which can also contribute to the same and could create job opportunities for the people.

Tetra packs are the better environmental packaging choice. Good packaging has to protect, preserve, handle, transport & present its content. It must withstand heat, light and cold and be able to be transported& unloaded without breaking. Good packaging also makes a major contribution to the environment by preventing food from being wasted.

Facts:

- ***India consumes 8.5 million tetra pack every year, and every 2 of 5 tetra packs are recycled. Rest of them become a part of the solid waste.***
- ***Urban areas of India generates 1.3 billion solid waste a year.***
- ***It will reach 2.2 billion by 2025 according to the World Bank.***
- ***Trash requires one Sq. Km. Additional to landfill every year in India.***
- ***India invests $205.4 billion for managing waste by 2025 it will increase up to $375.5 billion.***

2. Literature Review

Waste, "use or expend carelessly, extravagantly, or to no purpose."

Depending on the material we name them like Waste, or rubbish, trash, junk, garbage. It is totally unwanted or undesirable things, which is left over during the manufacturing process or from community or household activities. One of the biggest reason we are unable to control over the waste our inefficiently use of manufacturing process.

Waste generated by nature is always biodegradable. While the artificial material is not biodegradable which affects the Earth and its environment so badly.

Type of waste

- ***Industrial Waste (including manufacturing)***
- ***Hazardous Waste***
- ***Construction and Demolition Waste***
- ***Mining Waste***
- ***Waste from Electrical and Electronic Equipment***
- ***Biodegradable Municipal Waste***
- ***Packaging Waste***
- ***End-of-Life vehicle (ELVs) and Tyres***
- ***Agricultural Waste***

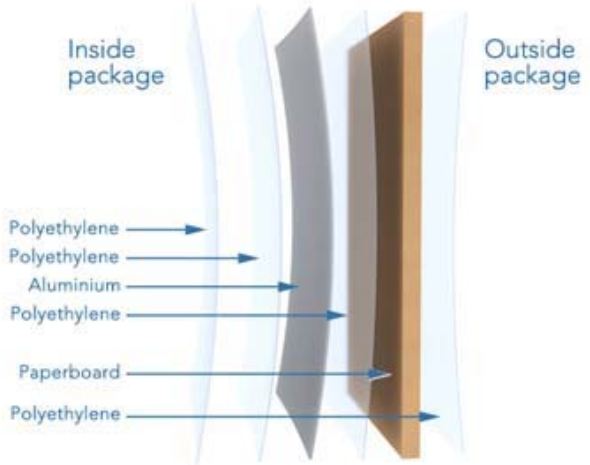
Now a day's things are coming into several types of packaging, due to market strategy. Especially fast food items. Packaging is defined as any material which is used to contain, protect, handle, deliver and present goods. Items like glass bottles, plastic containers, aluminum cans, food wrappers, timber pallets, and drums are all classified as

packaging. Packaging waste can arise from a wide range of sources including supermarkets, retail outlets, manufacturing industries, households, hotels, hospitals, restaurants and transport companies.

Packaging waste represents up to 17% of the municipal waste stream. As it has a relatively short life, it soon becomes a waste that must be treated or disposed of. Some different methods are used to manage packaging waste. These included reuse, recycling (mechanical, chemical and feedstock), composting, thermal treatment and landfill, approximately 50 percent of packaging waste was recycled, 41 percent of packaging waste was landfilled, and remaining 9% are left to nature.

Packaging and packaging waste can have some impacts on the environment. Some of these impacts can be associated with the extraction of the raw materials used for manufacturing the packaging itself, impacts associated with the manufacturing processes, the collection of packaging waste and its subsequent treatment or disposal. Also, packaging may contain some critical substances e.g., PVC and heavy metals which may pose a risk to the environment.

Anatomy of Tetra pack



The main material in all our packages is paperboard. We use just enough to make the package stable, without adding unnecessary weight. Paperboard is a renewable material, made from wood.

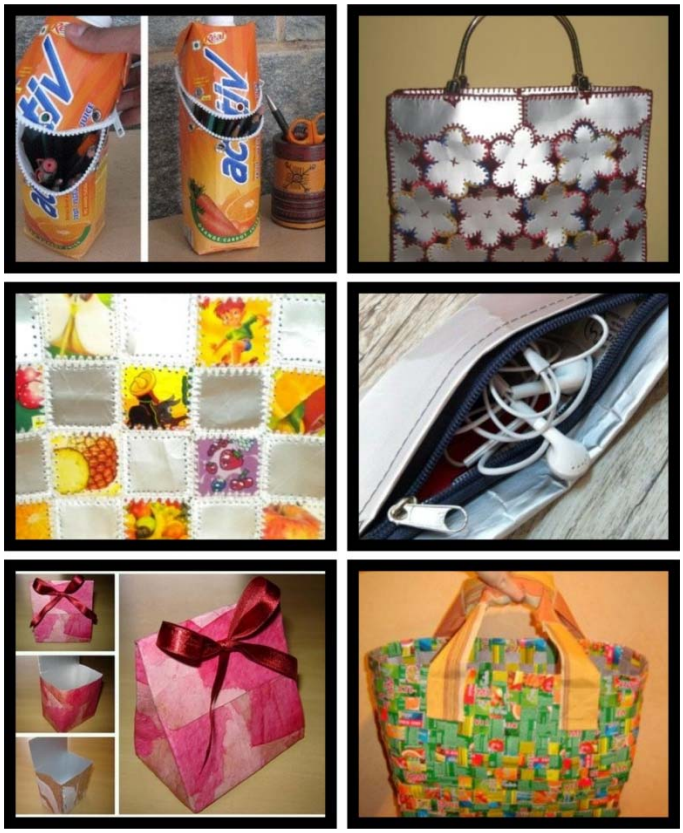
Paperboard is the main material in our cartons. It provides stability, strength and smoothness to the printing surface.

Polyethylene protects against outside moisture and enables the paperboard to stick to the aluminum foil

Aluminum foil protects against oxygen and light to maintain the nutritional value and flavors of the food in the package in ambient temperatures.

3. Existing Products

Bag



Lamp

House

Other

4. Project brief

My target group are middle and lower middle class of people. People will get means of entertainment or will find something interesting to do in a home their self, for the industry, it will give the opportunity for jobs especially for labor class people. Every home must have spoon stand on their dining table or in their kitchen, to make things

systematic, people will use more tetra packed food to use it and try to make something interesting and new, people will get new means of entertainment as well as new product too, jobs and also gives the ideas what else can we make from it.

1. My idea is to make a spoon stand from used tetra pack and toothbrush. If people know that tetra packs and used toothbrushes can be used in this manner they will stop dump it, no energy will be use to recycling anything which save transporting and recycling cost and also will save the time, and saving energy adds some life to earth.

2. I am suing the waterproof quality of tetra packs, which helps to keep the things dry land make the product washable, flexibility so get the shape of the product with ease. The stiffness of toothbrush which reinforces the product and helps to maintain its shape, avoid the noise when it falls.

3. That product can be made in the home so people will get new means of entertainment, also, can be manufactured in large scale so it will increase employment especially for labor class.

Type of spoon

Iced-Beverage Spoon

The iced-beverage spoon, also known as an iced-tea spoon, is used to stir sugar in cold beverages served in a tall glass, such as iced tea or iced coffee. The iced-beverage spoon is the longest spoon in a set of flatware, a utensil made with a small bowl and a long handle, approximately 7 to 10 inches in length.

Oval Soup Spoon

The oval soup spoon is made to eat soup, namely, soup made with particles of solid food, such as meat, vegetables, grains, and pasta. The oval soup spoon is similar in size and shape to a tablespoon, only the bowl is a little smaller, and tapers slightly to a tip and the handle is shorter. The overall length of the oval soup spoon varies from approximately 5¾ to 8¼ inches.

Dessert Spoon

The dessert spoon lies midway in length between the tablespoon and teaspoon, approximately 7 to 7¼ inches long.

Place Spoon

The shape of the bowl is oval and slightly larger than a teaspoon, and the length is approximately 6½ to 7½ inches.

Cream Soup Spoon

The cream soup spoon is approximately 6 inches long list is made with a round bowl to fit the shape of the cream soup bowl.

Tea Spoon

The average teaspoon measures approximately 5½ to 6¼ inches in length.

Five O'Clock Spoon

The five o'clock spoon is a specialized spoon found in older sets of silver. Made for an era when afternoon tea was taken at five o'clock, the spoon is approximately five ¼ to 5 ½ inches long.

Ice-Cream Spoon

The ice-cream spoon, also known as an ice-cream scoop looks like a miniature shovel. It is approximately 5 inches in length and made with a wide shallow bowl to afford a generous bite.

Citrus Spoon

The citrus spoon features an elongated bowl and a pointed tip, a shape used to eat segmented fruit, such as a grapefruit or an orange. The overall length is approximately 5½ to 6½ inches.

Bouillon Spoon

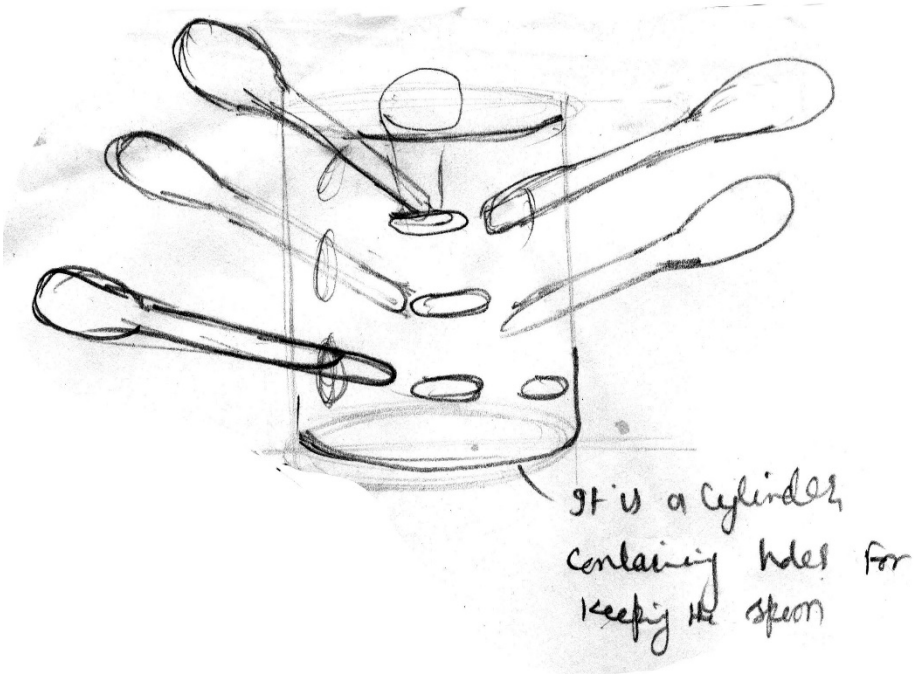
The bouillon spoon looks like a cream soup spoon, only the bowl is smaller, and the handle is shorter; it is approximately 5 to 5 ½ inches long.

After-Dinner Coffee Spoon

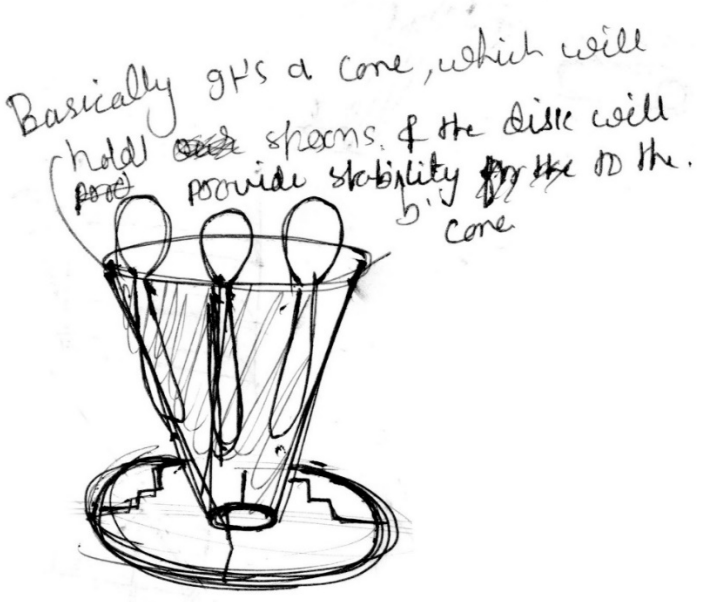
The after-dinner coffee spoon is approximately 4½ to 5 inches long, a length that balances the after-dinner coffee cup.

5. Concept Generation

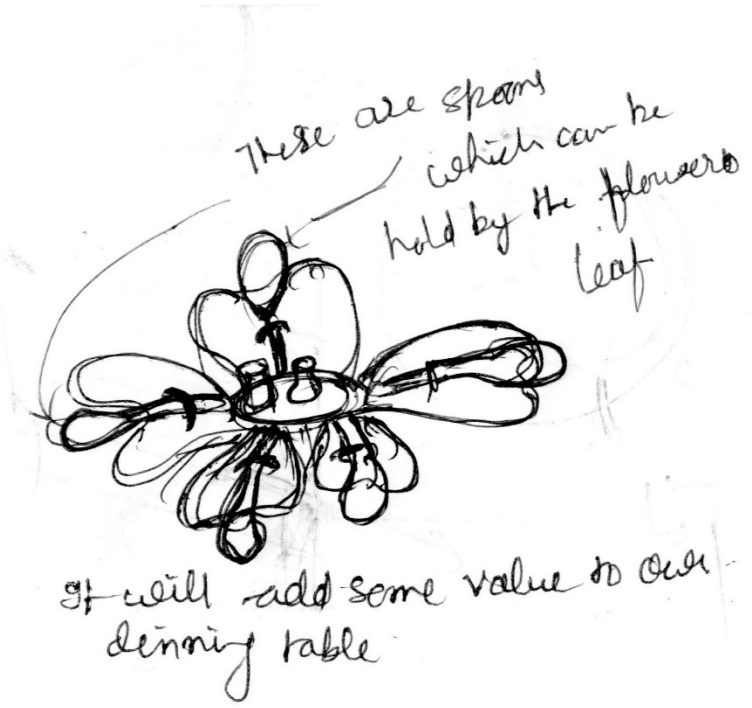
1. Concept



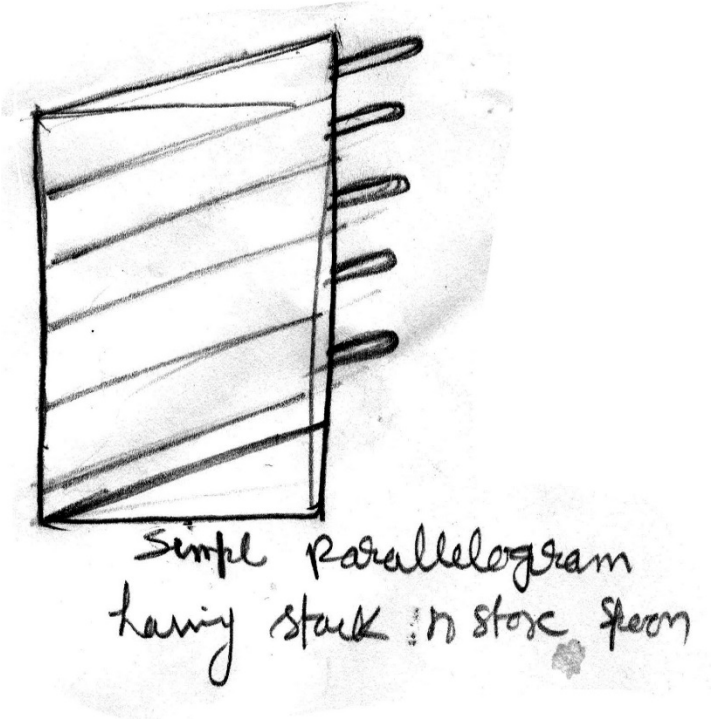
2. Concept



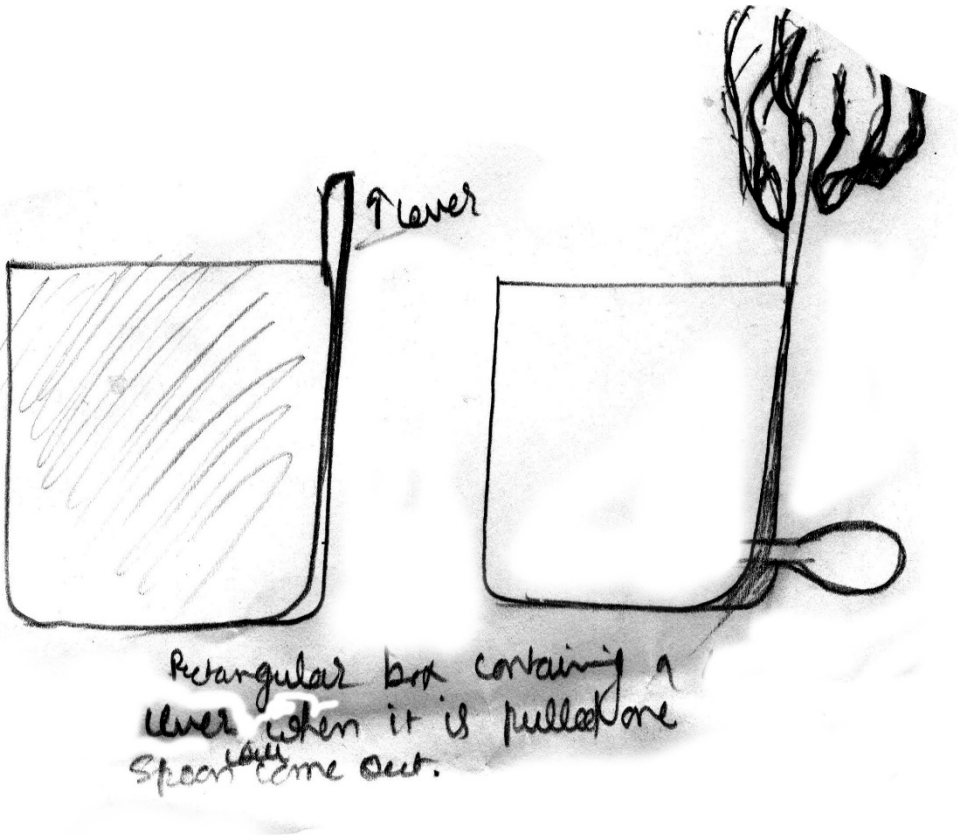
3. Concept



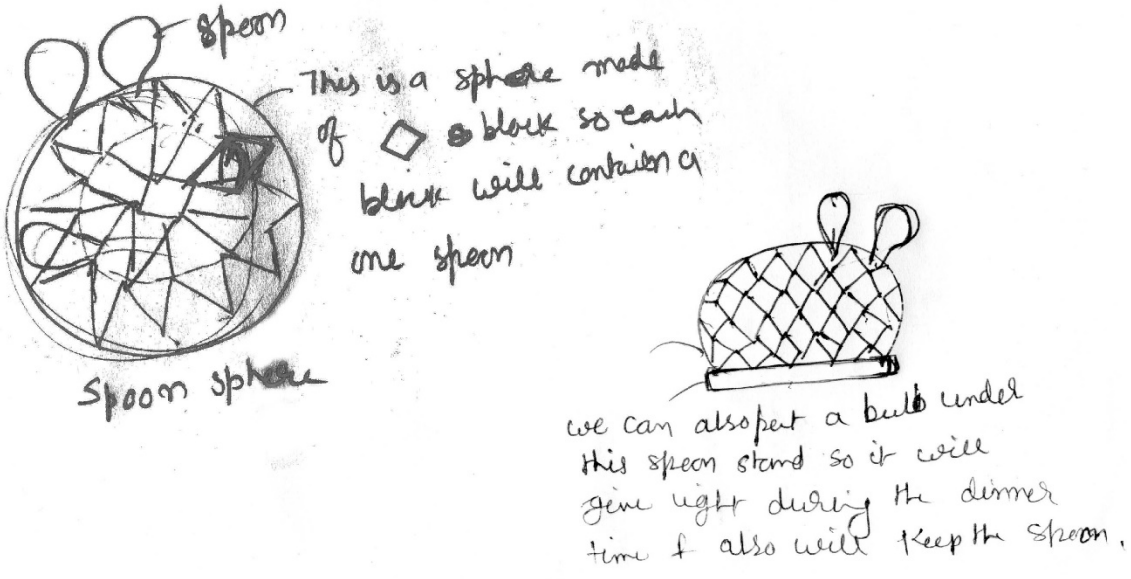
4.Concept



5. Concept



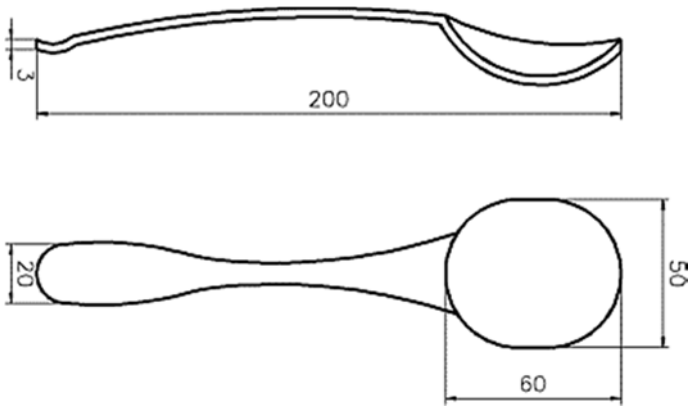
6. Concept



6. Concept Evaluation

Attributes	Concept 1	Concept 2	Concept 3	Concept 4	Concept 5	Concept 6
Functionality	4	4	3	4	2	4
Space	4	2	2	5	3	3
Secandory use	0	0	2	0	1	4
Aesthetics	3	5	4	2	3	4
Total	11	11	11	11	9	15

Embodiment design

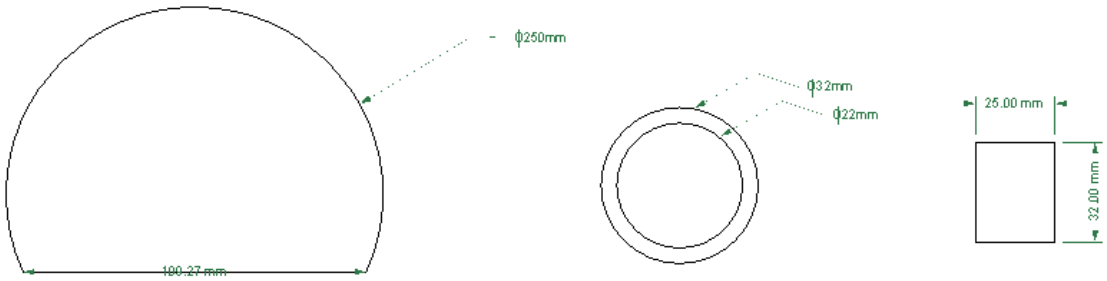


The so maximum length of the spoon is 240mm, and minimum length of the spoon is 128mm.scoop width 60 and 50 mm, 20mm width of the tail.

Among all concept I have selected concept six the triangular block ¾ sphere because it is spoon stand along with dining table lamp and you can use it as a bucket.

The diameter of the circle is 250 mm so that all type of spoon can be fitted into the triangle without touching the bulb, which is inside the sphere.

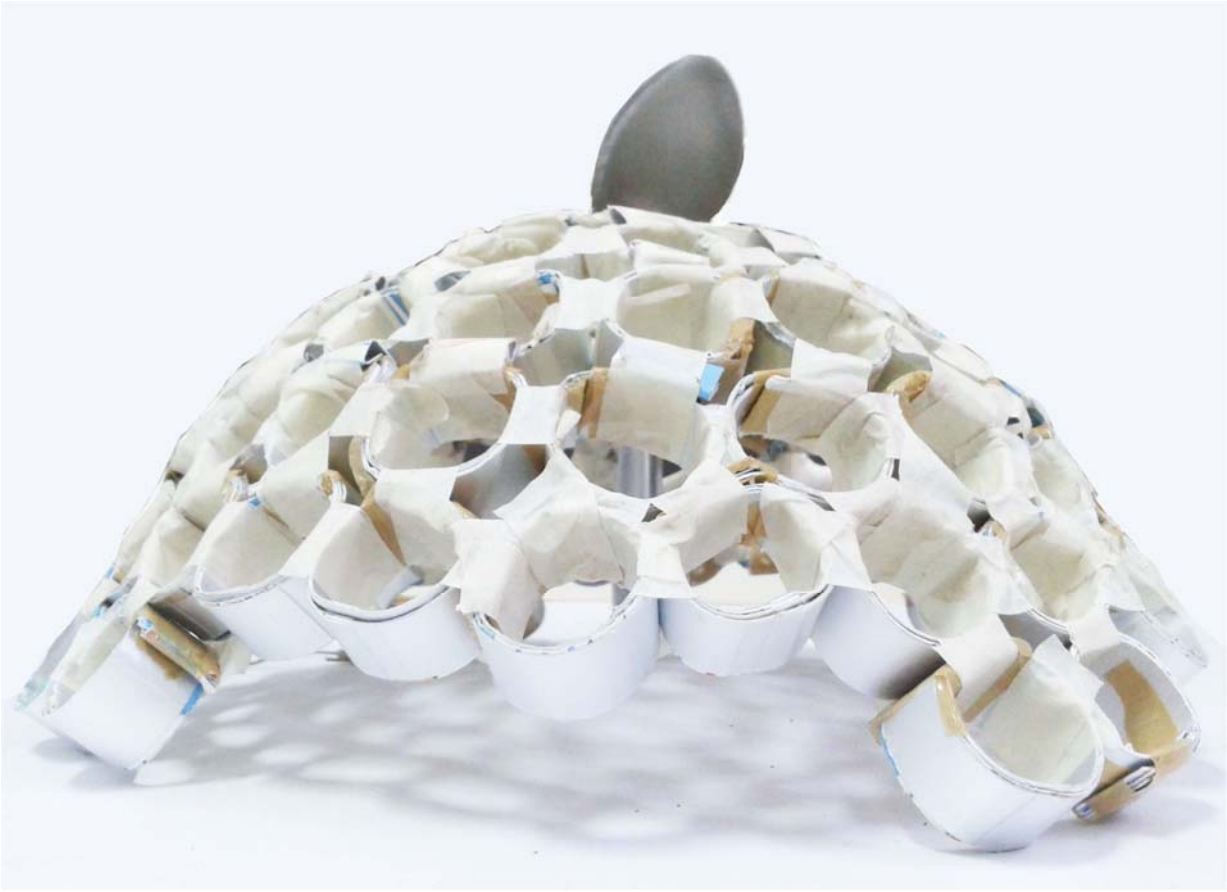
This triangle will be arranged such to make ¾ part of the sphere, so that it could sustain the weight of spoons. And a single bulb can be **put into the ¾ sphere.**



7. Final Design

Product Material and Equipment

Prototyping



Product usage

8. Result and Conclusion

This product is made of tetra packs, glue, and tap and it can be made in-house, it is helpful for those people who lives below poverty line. The construction of a unit ring takes few seconds, and the whole product takes ½ hr to build by only human effort. Production of this kind of product can increase the living standard of a person who can't effort the basic needs.

Since this product is totally made by the waste, now things can be recycled but not 100%, reuse it rather than recycle keep the environment healthy, because it consumes less energy to make the product.

9. Future work

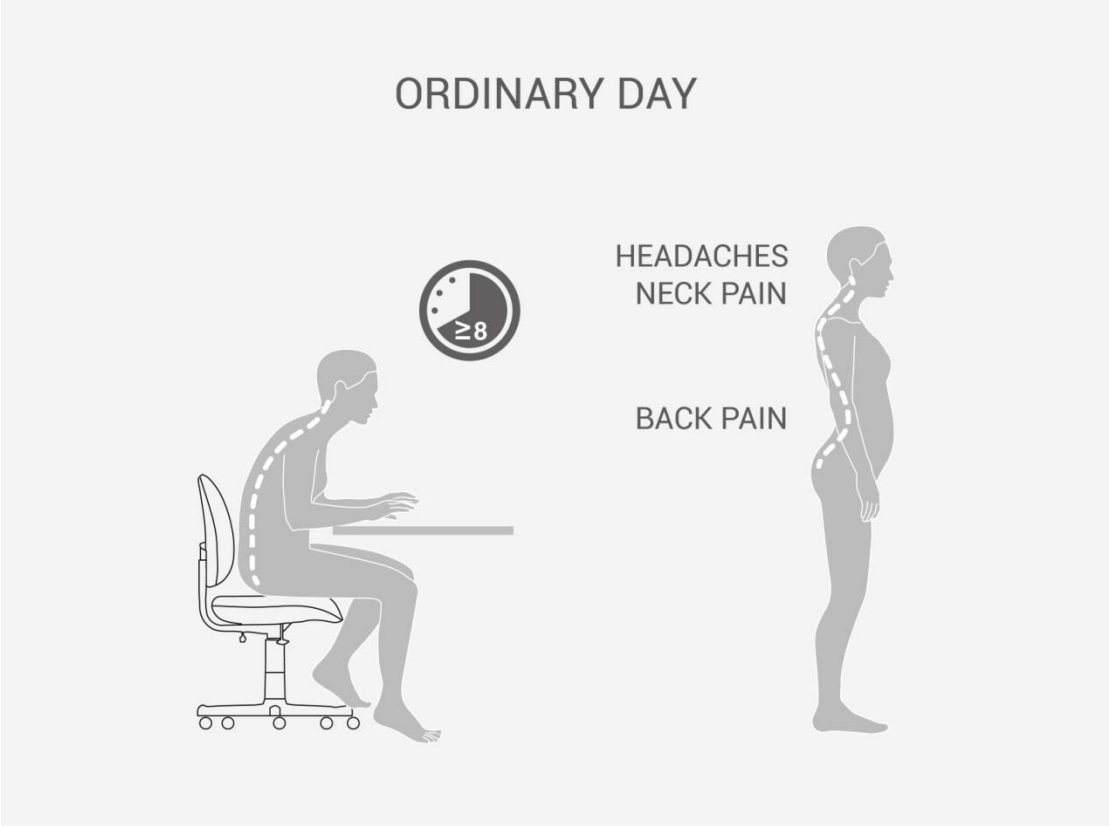
Future scope of this project, this product can be mass manufactured, In this project one use has been shownto the product, rings or unit can be arranged in a different manner to make several products.

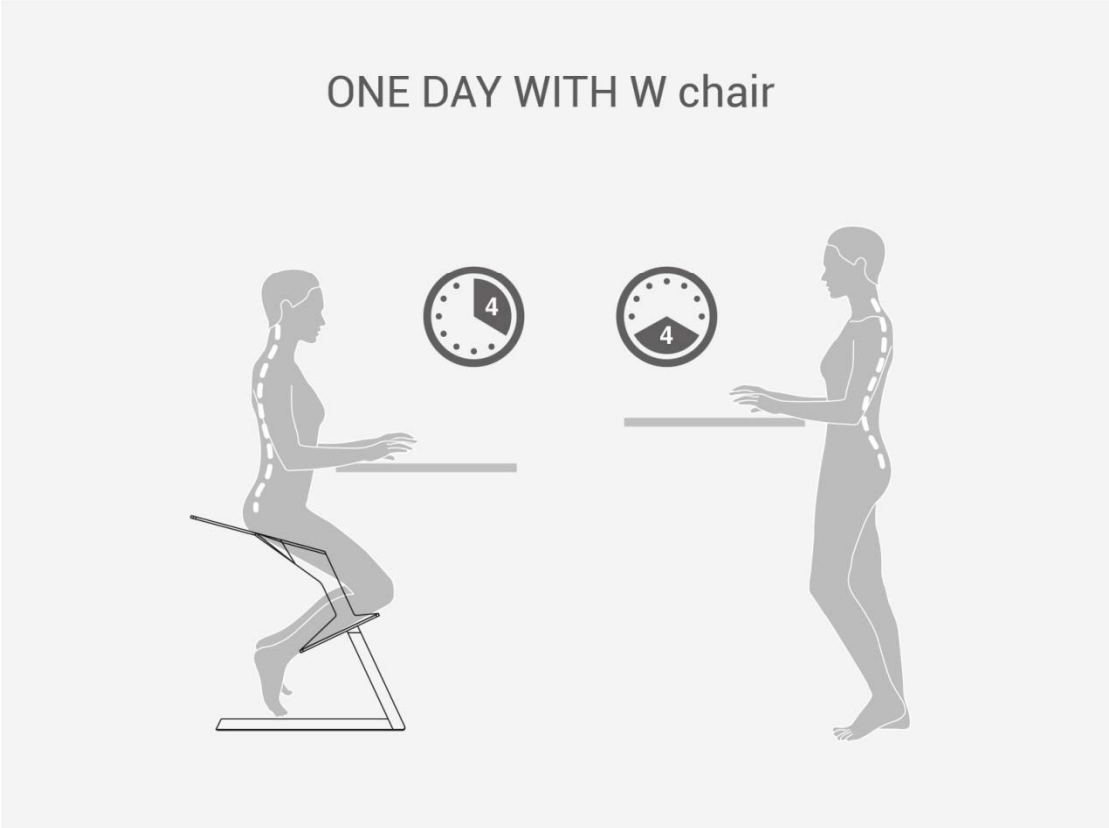
Vijay Singh Thakur

Product:

W Chair _ Healthy sitting
W chair is a new ergonomic chair with unique geometry that keeps the back straight during working hours and improves concentration and productivity.

For more than a year I designed W chair in a close collaboration with doctors and ergonomy experts. The chair can be used everywhere – at the office in combination with a standing desk or at home for reading and meditation.
About
"The idea came into my mind during long hours of sitting at a meditation retreat where I kept adjusting cushions to reduce pain in the back and my knees. Later I thought, why not to try and use the same principle for healthy sitting and mental activity in the office or at home?"
Guntis Zingis
Architect and designer of W chair


ORDINARY DAY
≥8
HEADACHES
NECK PAIN
BACK PAIN

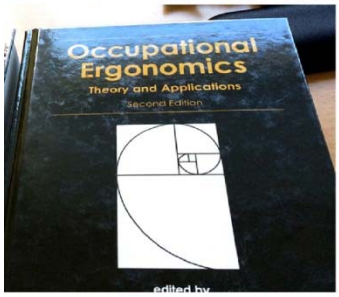

ONE DAY WITH W chair
4
4

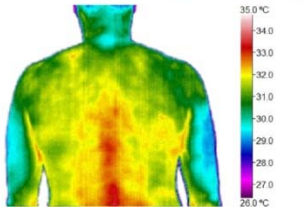
Design

The Chair's geometry and angles are designed to reduce pressure on the backbone. It is made from a continuous 3D surface and combines saddle type seat with two knee supports. Patent Number: 002717645-0001

Science

"After a year of research, design and testing together with best ergonomy experts, we have come up with a conclusion that ergonomic sitting in combination with standing desk is the best for reducing sitting hours". Recent studies have found that sitting for a lengthy period of time is not only bad for us but is damaging to our body in the long run. Long fixated positions will guarantee aches and pains, but they can also cause bigger problems that can lead to premature terminal illnesses.



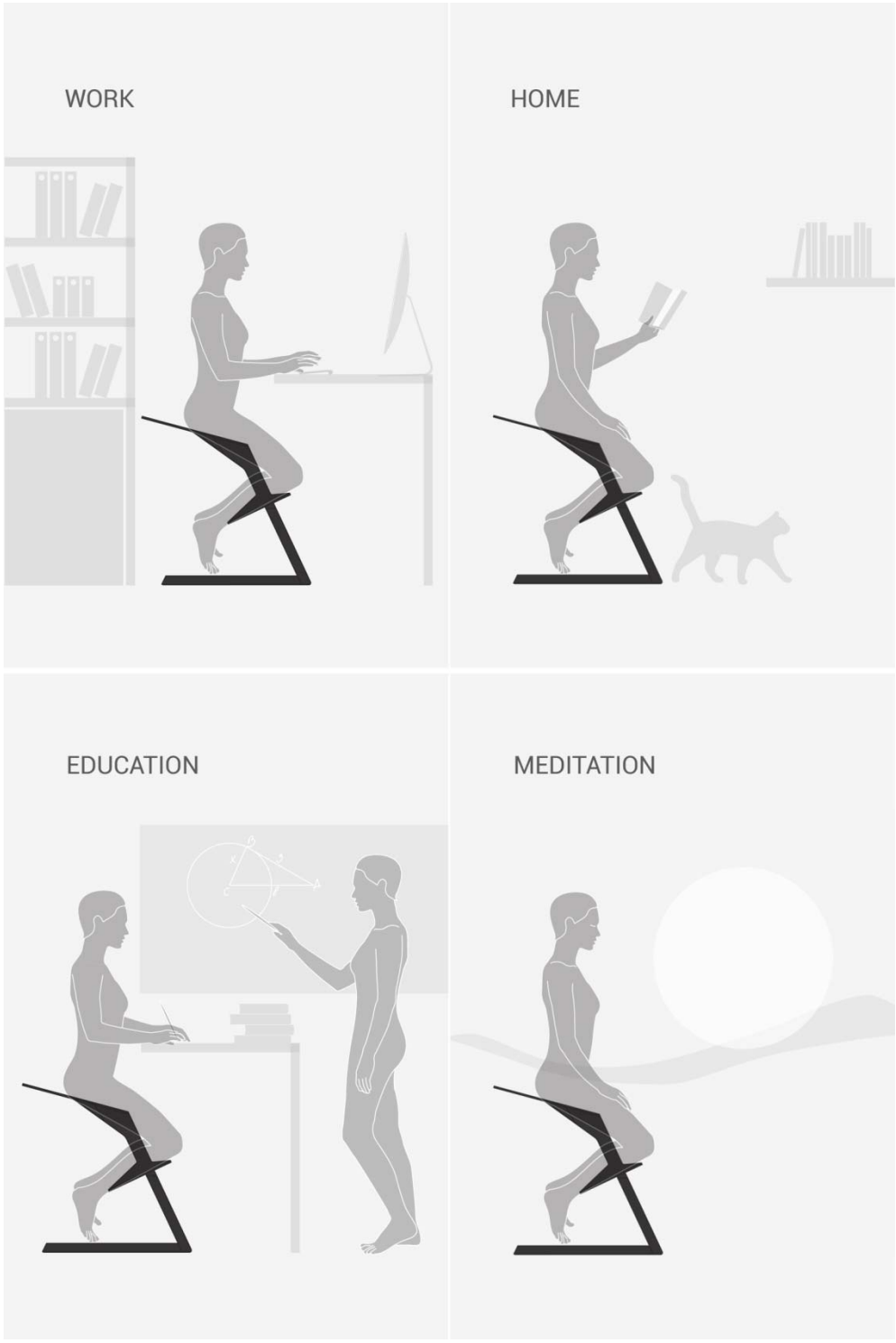


We wanted to do something about it.

Use

With our chair, we want to change the common habit of sitting into something that is actually beneficial to the body.

Since sitting for long hours is bad for ones health, we recommend using the chair at the office in combination with a standing desk. It can be also used for reading or meditation.



Size

To suit all possible body dimensions Wchair will be produced in small, medium and large sizes.

S	M	L
Choose S size if Your height is 1.65m ±7cm | 5.41ft ±2,8"	Choose M size if Your height is 1.77m ±7cm | 5.80ft ±2,8"	Choose L size if Your height is 1.90m ±7cm | 6.23ft ±2,8"

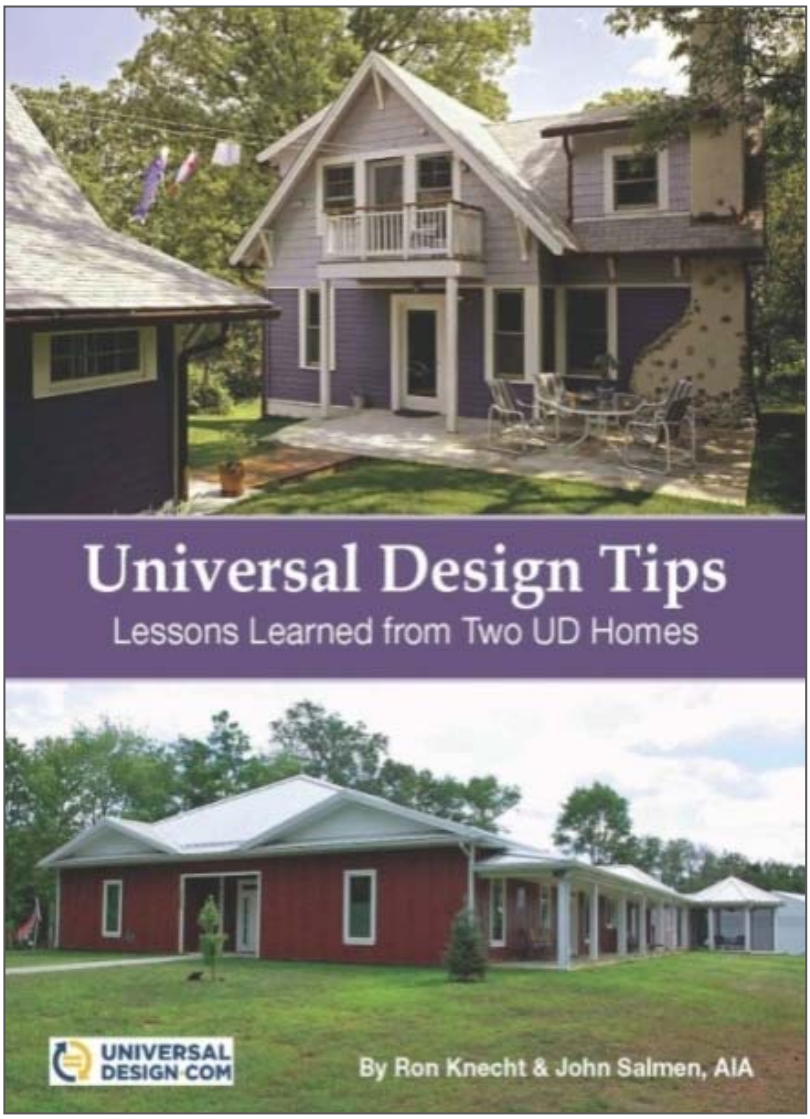
I believe W chair can make people to sit in a way that is actually beneficial to the body.

For more information go to

Kickstarter: kck.st/1muczm8
mywchair.com
vimeo.com/140766871

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.*

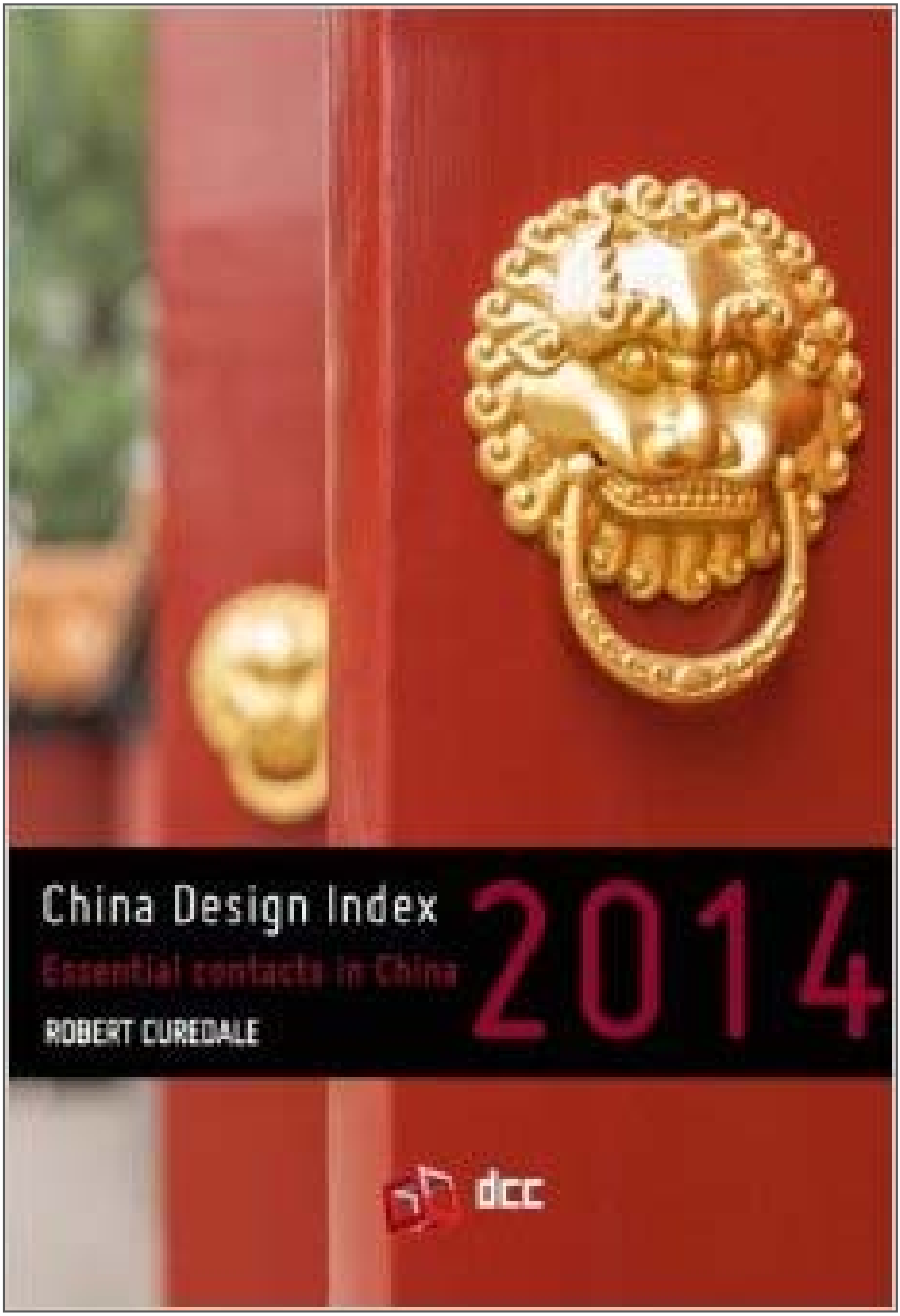
The first section of the book deals with the planning process, providing insight on how to choose a location for the house, consider activities of daily living during planning, best use various types of design professionals, finalize a floor plan and develop a building schedule.

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.

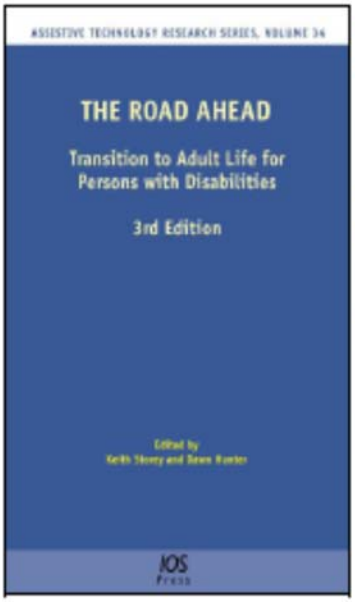
Ron Knecht's experience with Universal Design started after his wife of 46 years became ill with cancer. As her health worsened, Knecht learned first-hand the importance of accessibility for maintaining independence, safety and one's quality of life. Before Knecht's wife passed away, she extracted a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

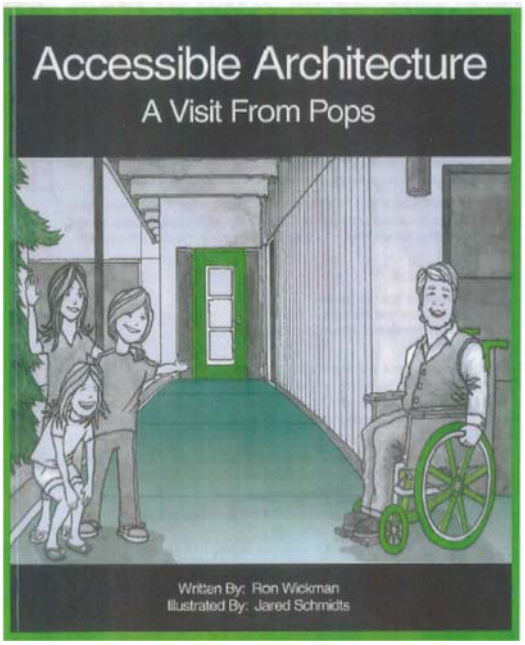
Design for All, Aree DiRistoro:

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 Councilor Percy Wickman advocated for people with disabilities throughout his life.

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

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

Visitability principles include

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

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

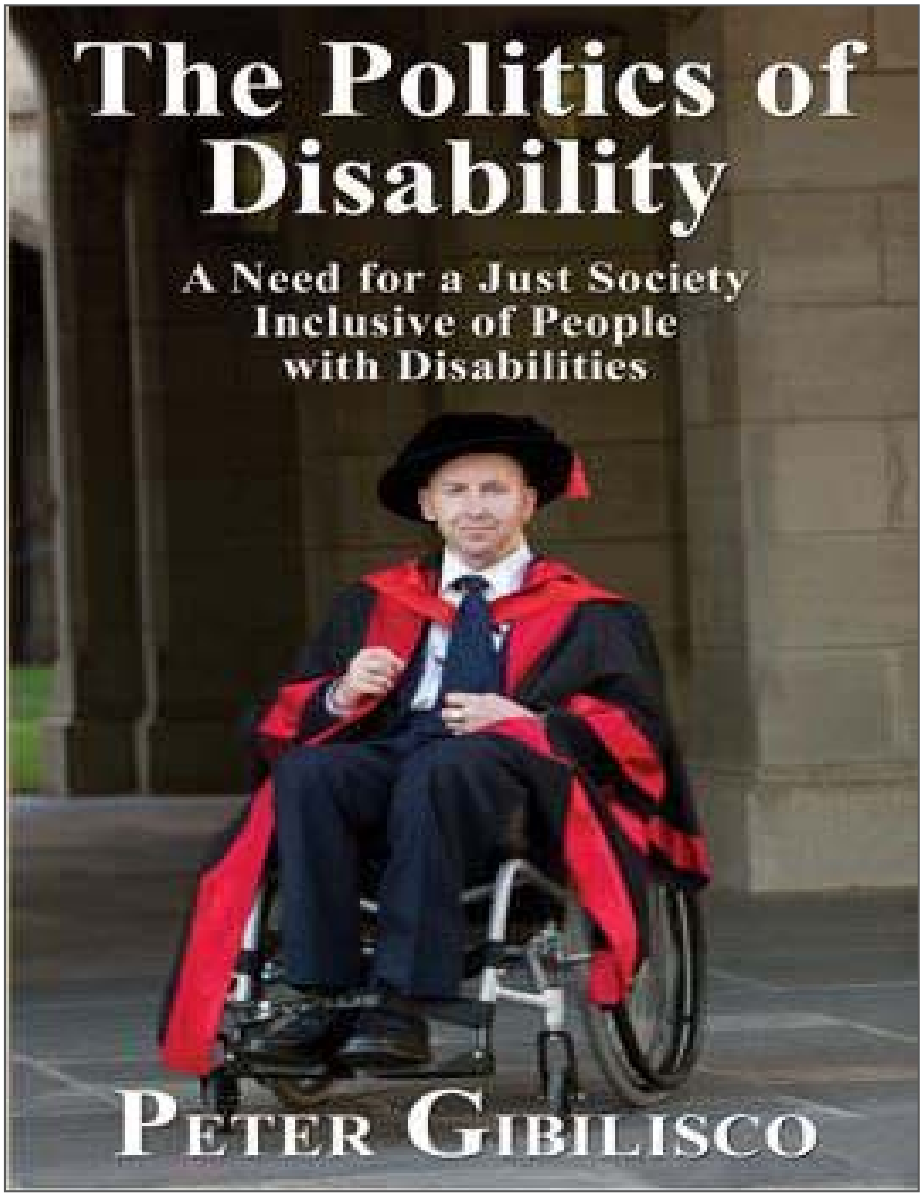
Ron Wickman will be available for interviews after the press conference at City Hall. His lecture at the Buildex Conference, Edmonton Expo Centre, Northlands will be held Wednesday, March 19 at 2:30 p.m.

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

– 30 –

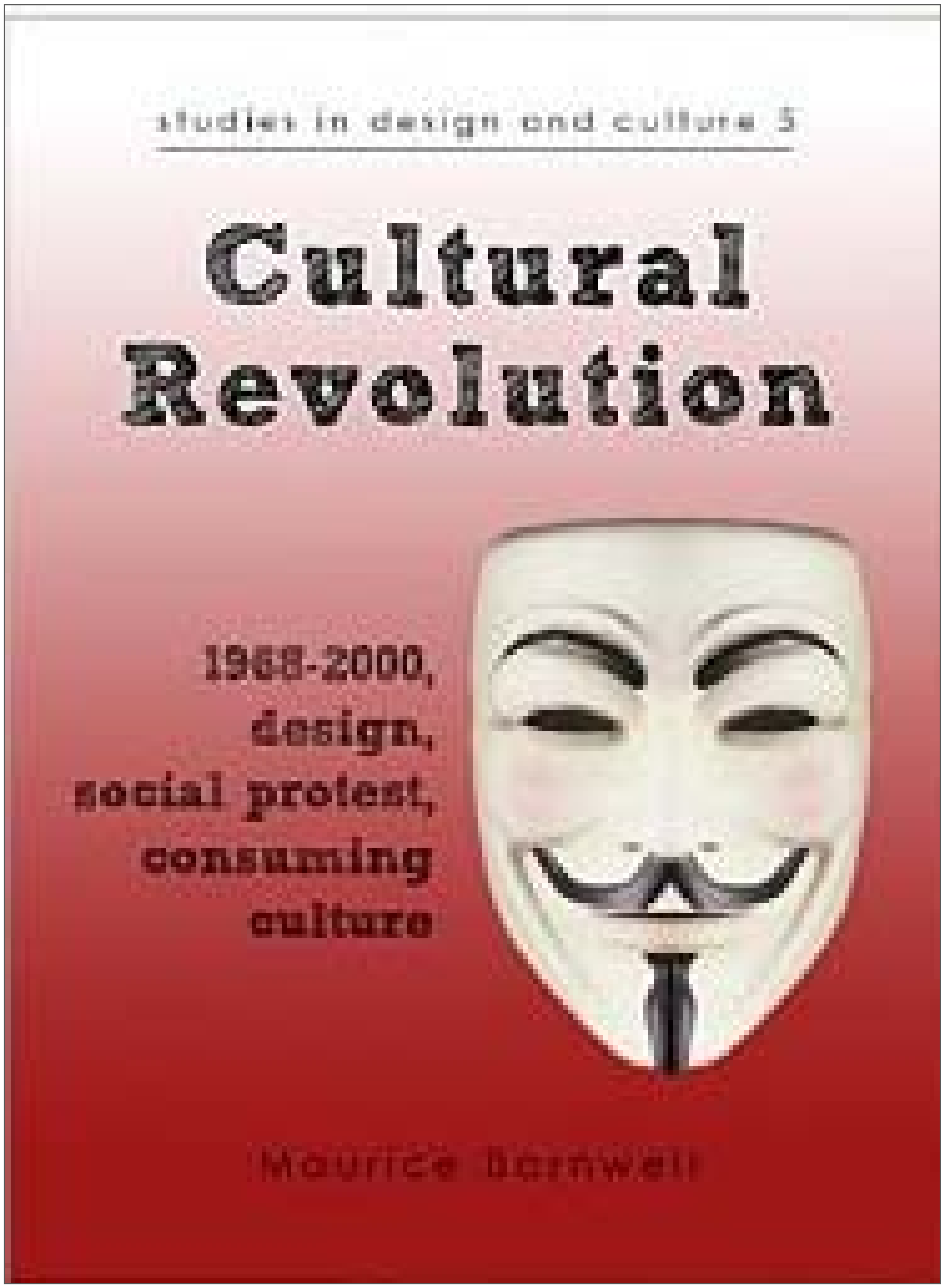
For additional information, contact:
Ron Wickman
Architect
780-430-9935
E-mail: rwickman@shaw.ca

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):



Design For All – the project for everyone. Methods, tools, applications. Volume 1–2 (Steffan, 2012):

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

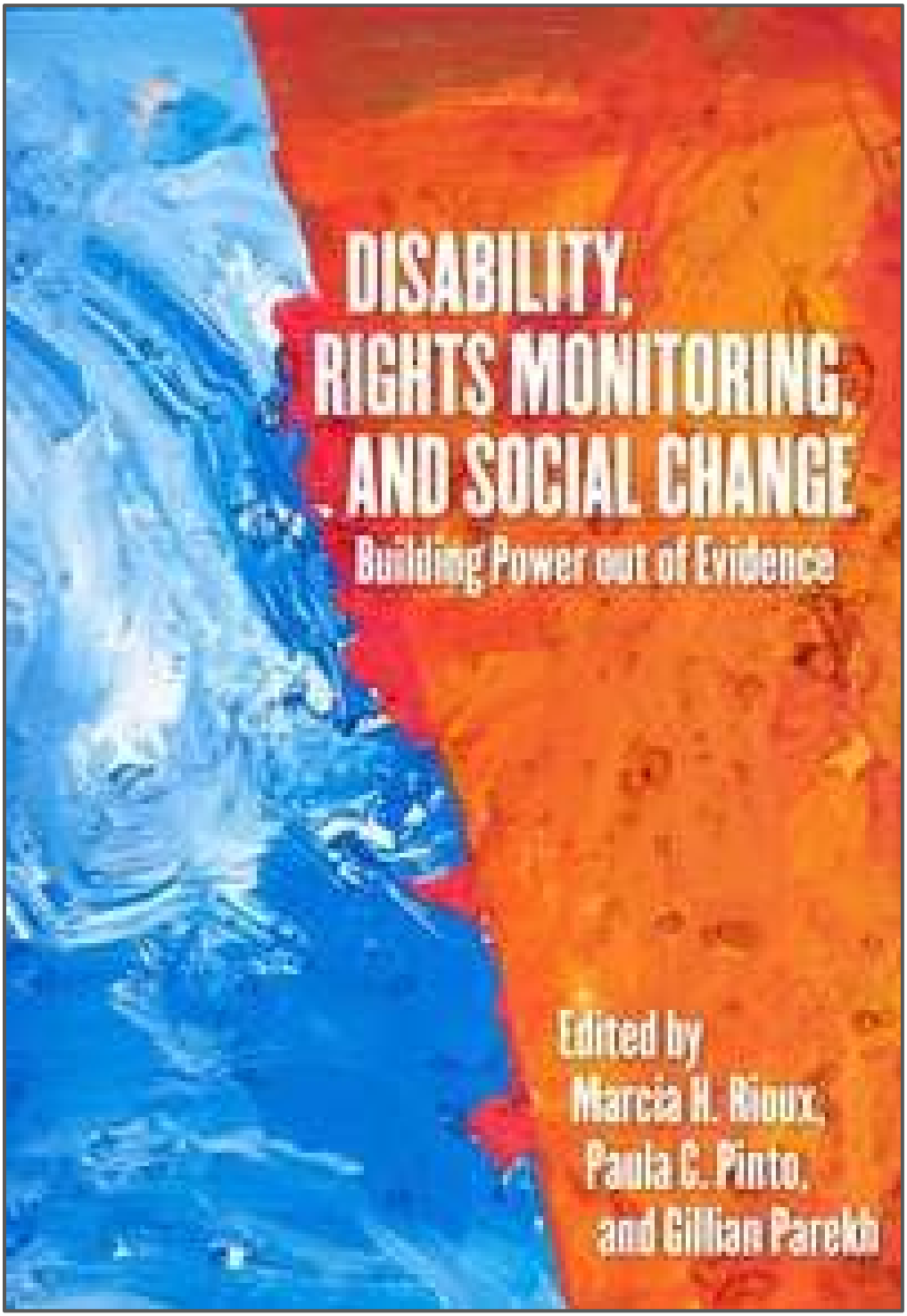
The publication highlights the multidisciplinarity and cross-disciplinarity of the Design for All approach, both in terms of issues addressed and of field of application. The accessibility of places and objects is nowadays a minimum requirement: it is only the starting point to allow their use by the 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 Volume 1
http://ordini.maggioli.it/clienti/product_info.php?products_id=8831 Volume 2
The on-line English version is also available since October 2014:
http://www.maggioli-editore.it/ebook/tecnica/design-for-all-the-project-for-everyone-first-part.html
http://www.maggioli-editore.it/ebook/tecnica/design-for-all-the-project-for-everyone-second-part.html

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

Universal Design in Higher Education:

Disability, Rights Monitoring and Social Change:



Appeals

THE UNIVERSITY OF MEMPHIS
Driven by Doing.

St. Jude Children's Research Hospital

Announcing the ALSAC/St. Jude Children's Research Hospital Business and Design Ethnography Fellowship

We are pleased to announce a **new fellowship program** for prospective MA students in **applied anthropology** at the **University of Memphis** seeking to work in **customer experience and business anthropology**. The ***ALSAC/St. Jude Business and Design Ethnography Fellow*** will receive **core training in ethnographic methods** and apply their skills in a business environment 20 hours a week throughout the Academic Year in a research support role within the ALSAC/St. Jude's Donor Experience Management department.

In return for their work at ALSAC/St. Jude, fellows receive *full tuition reimbursement (up to $10,000)* as well as a *$10,000 stipend*.

Now taking applications for Spring 2016!

To apply: Submit your application for MA study to the Department of Anthropology *plus* (1) a separate letter of intent specifying why you are interested in gaining experience in a corporate environment like ALSAC, (2) a writing sample showcasing your research capabilities, and (3) a resume.

Questions? Contact Dr. Keri Brondo at kbrondo@memphis.edu or visit *www.memphis.edu/anthropology*

Department of Anthropology
studying the cultures and behaviors of people throughout time
College of Arts & Sciences

3.

We are offering a fully-funded 3-year PhD studentship to investigate the intersection of established industrial User eXperience (UX) and design professions, with the emerging productisation of 'Internet of Things' (IoT) technologies for the workplace, the home, and beyond. As part of this the PhD will explore the relevance of 20+ years of ubiquitous computing research to this area.

Full details can be found here:

http://www.cs.nott.ac.uk/~str/files/iot-studentship-further-info.pdf

To apply, please use the following jobs website for University of Nottingham:
http://www.nottingham.ac.uk/jobs/currentvacancies/ref/SCI1516

Closing date: 30th June 2016 – Interviews: mid July 2016 – Start date: 1st Oct 2016

4.

6th International Conference on Research into Design (ICoRD '17) Design for communities 9-11 January 2017, Indian Institute of Technology Guwahati, India.

Design is ubiquitous; it pervades all spheres of life, and has been around as long as life has taken up the task of purposefully changing the world around it. Research into design and the emergence of a research community in this area has been relatively new. Its development has been influenced by the multiple facets of design (human, artefact, process, organisation, the micro- and macro economy and the ecology by which design is shaped) and the associated diversification of the community depending on the facets of focus or that of their applications. Design is complex, balancing the needs of multiple stakeholders, and requiring a multitude of areas of knowledge to be utilised, and resources spread across space and time.

ICoRD '17 is the sixth in a series of conferences intended to be held every two years in India to bring together the international community from diverse areas of design practice, education and research. It aims to showcase cutting edge research about design to the stakeholders; aid the ongoing process of developing and extending the collective vision through emerging research challenges and questions; and provide a platform for interaction, collaboration and development of the community in order for it to take up the challenges to realize the vision. The conference is intended for all stakeholders of design, and in particular for its practitioners, researchers, pupils and educators.

The theme of ICoRD '17 is "Design for communities". While Design traditionally focused on the development of products for the individual, the emerging consensus on working towards a more sustainable world demands greater attention to designing for and with communities, so as to promote their sustenance and harmony - within each community and across communities. ICoRD'17 is hosted at the foothills of the Himalayas in the North-East of India, which is home to myriad linguistic and cultural communities with their own traditions, heritage and aspiration. It is only appropriate that the theme for ICoRD '17 aligns with this ambiance.

The conference will have:

• Invited/keynote presentations from eminent international experts and practitioners;

• Presentations of refereed papers as podium, poster, panel or theme presentations;

• Industrial sessions to present perspectives from industry and studies in practice.

• Presentation of ICoNNN Awards and Keynotes

• Doctoral Symposium

• Networking Sessions for Young researchers

The organizing committee invites submissions of research papers in all areas of design. This includes all dimensions, e.g., people, product, tools, processes, economies and environments of design, with research results contributing to its understanding and support. Some example topics are listed below:

• Design Theory and Research Methodology

• Human factors in Design

• Design for X (Safety, Manufacture & Assembly, Cost , Reliability etc.)

• Enabling Technologies & Tools (Computer Aided Conceptual Design, Virtual Reality, Haptics, etc)

• Design Management, Knowledge Management and Product Life Cycle Management, Design Analytics

• Applications in Practice (Automotive, Aerospace, Biomedical Devices, MEMS, etc.)

• Eco-Design, Sustainable Manufacturing, Design for Sustainability

• Design Creativity, Synthesis, Evaluation and Optimisation

• Design Lexicon, Taxonomy, Ontology

• Design Collaboration and Communication

• Design Aesthetics, Semiotics, Semantics

• Design Training and Education

Prospective authors should send an abstract of their paper (500 words) including paper title and author details, by uploading the abstract on the conference management tool latest by 15 February 2016, through the ICoRD '17 website: http://www.iitg.ac.in/icord17.

All abstracts will be checked for their novelty and relevance for ICoRD '17; all papers relevant to the conference with novel content will be asked to submit full paper for peer-review. Authors will be notified of the acceptance decision of their abstract by 1 March 2016, which can be checked by the authors by logging into the conference management tool on the website.

A Poster/flyer for ICoRD '17 is available for download here - http://www.iitg.ac.in/icord17/images/Poster_ICoRD2017.pdf. Please feel free to download, print and display this poster in your department premises for a broader visibility of the conference.

Important Dates:

Submission of abstracts: 15 February 2016

Acceptance decision of abstracts: 1 March 2016

Full papers: 1 May 2016

Acceptance decision for full papers: 1 August 2016

Copyright form and final paper submission: 1 September 2016

Early Bird Registration (Mandatory for at least one author per paper): 15 September 2016

Conference: 9-11 January 2017

For More Information, Contact:

Conference Chair:

Prof Debkumar Chakrabarti,

Department of Design,

Indian Institute of Technology Guwahati, India;

Tel: +91 361 2582 453;

Email: dc@iitg.ernet.in

Programme Chair:

Amaresh Chakrabarti,

Centre for Product Design and Manufacturing,

Indian Institute of Science, Bangalore, India;

Tel: +91 80 2293 3406; Fax : +91 80 2360 1975;

Email: ac123@cpdm.iisc.ernet.in

Conference related queries: icord17@iitg.ernet.in

Programme related queries: icord17-prog@cpdm.iisc.ernet.in

Conference Website: http://www.iitg.ac.in/icord17

5.

UNBOUND

A Journal of Discourse & Creative Practices

Unbound is a non-disciplinary multimedia journal of Discourse and Creative Practices, including art, design and other imaginative expressions. It aims to break out of traditional disciplinary territories and boundaries considered self-evident markers of knowledge by giving expression to ideas and everyday practices that operate simultaneously on contiguous and often overlapping domains.

We believe, like thought and everyday practices, scholarly discourse too should be boundless and open. Hence, nondisciplinarity will free scholars and practitioners from the constraints, normative requirements and open possibilities for radical thought. The goal is not an avant-gardist rejection of all that is traditional, inherited or historical. Nor is the aim to renounce philosophers, theoreticians and scholars of past and present. Instead, the objective is to rescue and highlight non-disciplinary ideas, frameworks, practices and theories from ancients and moderns alike to think anew about theory and practices in art, design, humanities and the social sciences.

ISSUE 02: October 2016

Design in Contemporary India

Submission Deadline: July 01, 2016

India has been undergoing unprecedented change, albeit at dissimilar rhythms. Everything—spaces, places, sights, sounds textures, tastes, bodies and movements—is being subjected to visible transformations. The magnitude of this new phenomenon that encompasses all dimensions of life is yet to be measured. Hence, we would like to venture, however provisionally, to describe, analyze, understand and possibly advance theoretical concepts about the contemporary in India. In this adventure of mind and creative expression, Design will serve as Ariadne's thread to guide us through the labyrinths of transformations.

Talking about design in India is challenging given that there are no common threads that we can follow. The design consciousness is non existant; there has never been an influential design movement or dominant style. Hence, we have set on the task of weaving the interconnected foreground and background together—analyzing design in India today and using design as a way of understanding the contemporary. For this dual endeavor we view design as both a surface practice and a configuration. As a practice of giving purposeful form to spaces and objects we want to bring together insightful ideas and observations about design offerings, choices and analyses of design trends from the perspective of form, function and eye appeal in India today. Following design as configuration we would like thought provoking arguments on the relation between the surface and structure, contemporary circumstances, historical continuities/discontinuities, ideological exigencies and negotiations between tradition and modernity.

As a guide to both, editors and contributors, we have identified following areas for provisional grouping of the material.
Domestic Landscape | Spaces of Solidarity & Solitude | Leisure and Pleasure | Place of Work and Production | Support and Mobility | Design Education

Submissions

Prospective contributors may choose to submit their work in any of the categories listed below, as long as it follows the category requirements.

We prefer that your contribution conform to the theme identified for the issue.

Critiques: Well-researched articles that rigorously examine ongoing debates and legacies, point to new directions and articulate new ideas. Article length: 2000 to 5000 words. All Critiques will be subjected to blind peer review.

Praxis: Practitioner notes and notes on ideas or a singular topic of interest, written by the practitioners themselves or by others who expound practice of an artist or designer. Article length: 750 to 1500 words. All notes and short articles in the Praxis section will be subjected to blind peer review.

inClass: Notes about design, art and new humanities pedagogy and interesting classes / studios delivered. Article length: 750 to 1500 words. All inClass notes will be subjected to blind peer review.

Emerging Talent: This section is reserved for undergraduate and postgraduate students. Students may submit work under any of the above categories or submit their designs and artwork for review. For art and design review see submission guidelines below.

Curated: This category invites writing, multi-media presentations, films and other audio-visual forms that attempt to explore and subvert the flexibility, immateriality of cyberspace. Cyberspace, which came with the promise of being a new and radical space, has been colonized by commerce, employed as an easy instrument of overbearing surveillance and in many ways a replica of the real world. This category invites a fundamental rethinking of what cyberspace is.

For detailed submission guidelines, visit:
www.unboundjournal.in

News

1.

Scottsdale-Based Interior Designer Bonnie Lewis Wins HGTV 2016 NKBA Kitchen + Bath Trend Awards for Certified Aging-in-Place Project

Bonnie Lewis, a Scottsdale-based interior designer and owner of 55+ TLC Interior Design, has been announced as the winner of two People's Choice Awards in HGTV's 2016 NKBA Kitchen + Bath Trend Awards competition.

Scottsdale, Arizona (PRWEB) January 31, 2016

Bonnie Lewis, a Scottsdale-based interior designer and owner of 55+ TLC Interior Design, has been announced as the winner of two People's Choice Awards in HGTV's 2016 NKBA Kitchen + Bath Trend Awards competition.

Lewis, a certified aging-in-place specialist, won People's Choice awards for the "No-Threshold Shower" and "Shower Lighting" categories.

The awards come just days after Lewis was announced as the winner of NKBA's Universal Design award during the National Kitchen & Bath Association (NKBA) in Las Vegas, highlighting her work for an Arizona universal design project.

The NKBA award was presented to Lewis during the Kitchen & Bath Industry Show (KBIS) at The Cosmopolitan of Las Vegas. KBIS is North America's premier annual event dedicated to the kitchen and bath industry and the Universal Design award includes the aging-in-place category, for which Lewis is a certified expert.

It's the second national design award in three months for Lewis, following up on a "Homes for Life" award from the National Association of Home Builders (NAHB) Remodelers in October. It was one of five awards Lewis received for her design projects in 2015.

"This is a design category that's close to my heart and one that I feel deserves much more recognition than it receives," Lewis said. "With more than 8,000 Baby Boomers turning 65 each day, the need to provide spaces which function well for this growing demographic will continue to grow in importance with designers across the country."

Lewis, whose credentials include membership in the American Society of Interior Designers (ASID), International Interior Design Associations (IIDA) and National Kitchen and Bath Association (NKBA), considers her Certified Aging in Place Specialist (CAPS) designation to be one of the most important.

Lewis' NAHB award was in the Single Space remodel category for a north Scottsdale remodel that will allow a retired couple to remain in their home rather than move due to accessibility issues that may arise, says aging-in-place priorities are not being addressed enough by today's interior designers.

"Homeowners need to plan for the future when they remodel or purchase a new home," she said. "It's my hope they will turn to aging-in-place specialists like myself to ensure that their next home fulfills their long-term needs."

For more information on living-in-place design options and interior design, please visit http://copperstarinteriors.com/about-55tlc/.

About 55+ TLC Interior Design
Based in Scottsdale, Arizona and founded by Bonnie J. Lewis, an Allied ASID, Assoc. IIDA, CAPS certified interior designer, 55+ TLC Interior Design is focused on providing living-in-place options for its clients. The company caters to discriminating Baby Boomers and seniors who want a beautiful, specially-designed, individually tailored living environment that makes life easier and sustains independence as long as possible. For more information, please visit http://copperstarinteriors.com/about-55tlc/.

About the National Kitchen & Bath Association and the Kitchen & Bath Industry Show

The National Kitchen & Bath Association (NKBA) is the not-for-profit trade association that owns the KBIS®. With nearly 14,000 member companies representing tens of thousands of members in segments of the kitchen and bath industry, the NKBA has educated and led the industry since the association's founding in 1963. The mission of the NKBA is to enhance member success and excellence, promote professionalism and ethical business practices, and provide leadership and direction for the kitchen and bath industry worldwide. For more information, visit NKBA.org or call 1-800-THE-NKBA (843-6522).

(Source : Benzinga)

2.

Maracay wins three 55+ Gold Awards

The Traveler Interior (Photo: Mark Boisclair)

Maracay Homes' Freedom Collection of homes at Victory at Verrado in Buckeye earned three gold awards in the National Association of Hombuilder's (NAHB) Best of 55+ Housing Awards competition.

The Arizona homebuilder received top honors for Best 55+ Universal Design Home or Community, Best 55+ Detached Home 1,701 to 2,400 square-feet for its entertainer floor plan, and Best 55+ Detached Home Over 2,400 Square Feet for its traveler floor plan.

"These awards not only represent the pinnacle of achievement in the 55+ industry, but are a testament to the hard work and expertise that went into the development of Victory, Phoenix's premier active-adult community," said Maracay Homes President Andy Warren. "We

partnered with the award-winning architecture firm KTGY to create this all-new collection of floor plans because we knew KTGY's innovative approach to active adult design would help us build something truly special."

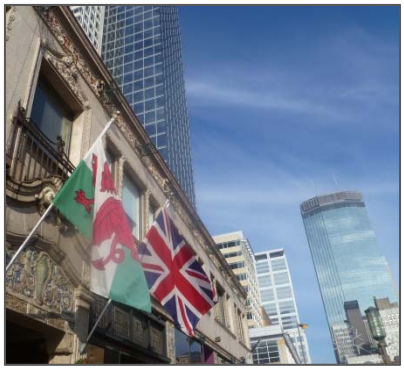
Located in the 55+ Victory district of the all-ages Verrado master-planned community, Maracay Homes' Victory at Verrado boasts homes designed for baby boomer preferences – with a new level of livability and thoughtful features throughout.

The Traveler and Entertainer are among five single-level FlexDesign floor plans showcasing accommodating universal design elements that enhance the ease of living without sacrificing style.

With notable conveniences, such as split master bedrooms, wider hallways and doors, sitting showers, raised ovens and dishwashers and storage within reach, each home seamlessly supports the active adult lifestyle.

The NAHB Best of 55+ Housing Awards is the industry's only national awards program honoring excellence in building, design, lifestyle and marketing of housing that appeals to boomers and beyond. Finalists were selected from entries in 41 categories representing active adult housing, service-enriched housing, lifestyle and marketing activity and four categories representing individuals and firms.

(Source: AZ Big Media)



Programme and Events

connects us all.

Whether it's simply getting from home to work or using products shipped over distances near and far, in every region of the world transportation impacts our daily lives.

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

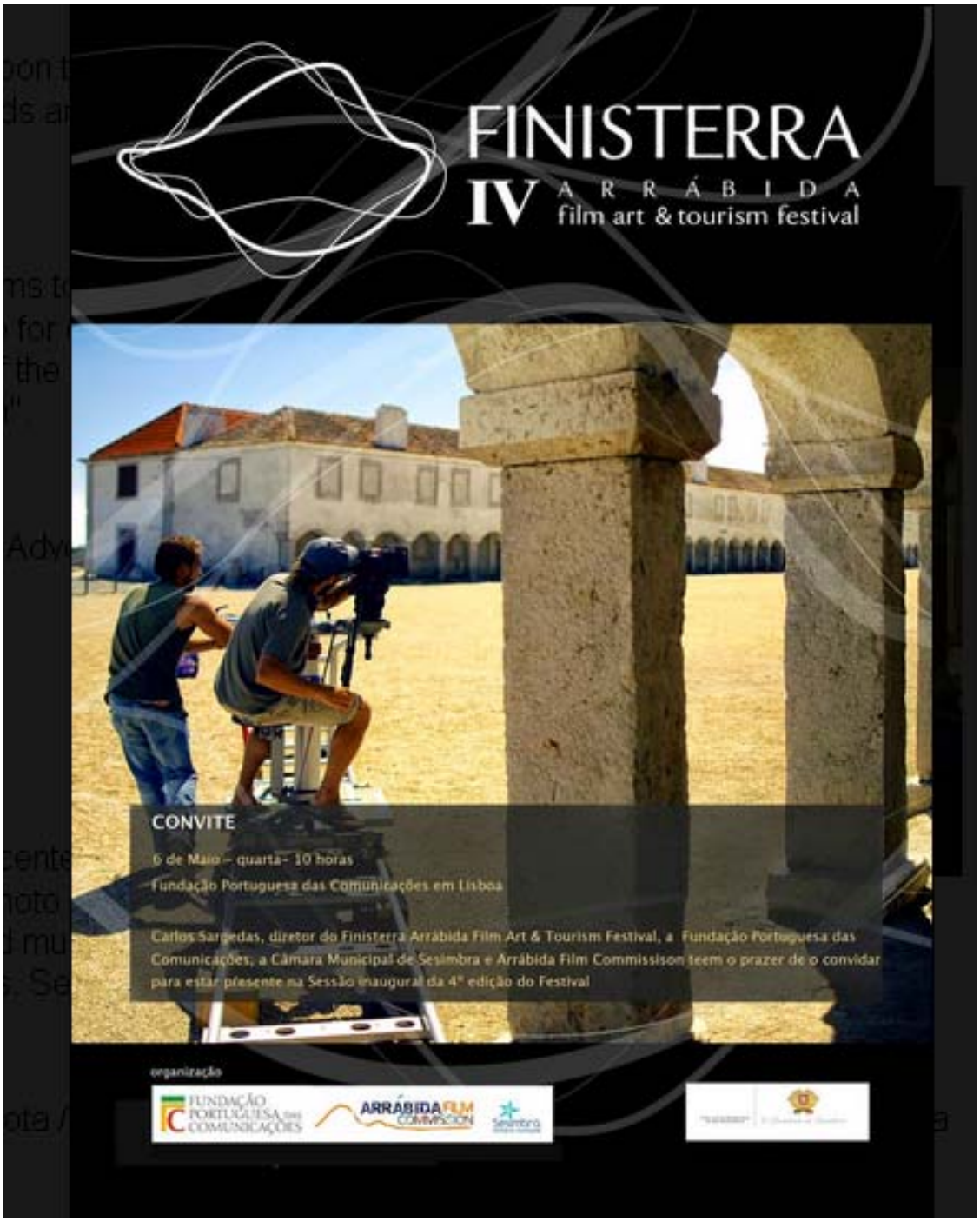
As the mobility demands of people and freight have grown, so too has the need for products, systems, and services that will make the transportation sector more life-friendly, for both people and the planet.

Registration is now open

Learn biomimicry and how to apply it while competing for cash prizes with students from around the world.

Register your team for immediate access to the biomimicry design resources and start developing your design solution today!

6th International Conference on Research into Design - ICoRD '17
9-11 January, 2017, Department of Design, IIT Guwahati
Call for Abstracts: 15th Feb 2016
http://www.iitg.ac.in/icord17/org.html


FINISTERRA
IV ARRÁBIDA
film art & tourism festival
CONVITE
6 de Maio – quarta- 10 horas
Fundação Portuguesa das Comunicações em Lisboa
Carlos Sargedas, diretor do Finisterra Arrábida Film Art & Tourism Festival, a Fundação Portuguesa das Comunicações, a Câmara Municipal de Sesimbra e Arrábida Film Commission teem o prazer de o convidar para estar presente na Sessão inaugural da 4ª edição do Festival
organização
FUNDAÇÃO PORTUGUESA DAS COMUNICAÇÕES
ARRÁBIDA FILM COMMISSION
Sesimbra


14th Participatory Design Conference
15 - 19 August, 2016
Aarhus, Denmark


AIAP WOMEN in DESIGN AWARD
aiap
associazione italiana design della comunicazione visiva
AIAP
WOMEN
in DESIGN
AWARD
PREMIO BIENNALE DESIGN
DELLA COMUNICAZIONE
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in DESIGN
AWARD
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on
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and Engineering
MELAKA, MALAYSIA
23-25 August 2016

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Real People,
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Real Progress

DISABILITY INCLUSIVE PHOTO CONTEST

Sponsored by New Mobility Magazine
and PhotoAbility.net Stock Images

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

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

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

NM NEW MOBILITY

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

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

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

DESIGN EXPERIENCE

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

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

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

We organize visits and round trips in the most important factories, showrooms, retails, places and sites in the area of Barcelona.
We discuss in a design environment about the most advanced topic about the design process

International Labour Organization

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

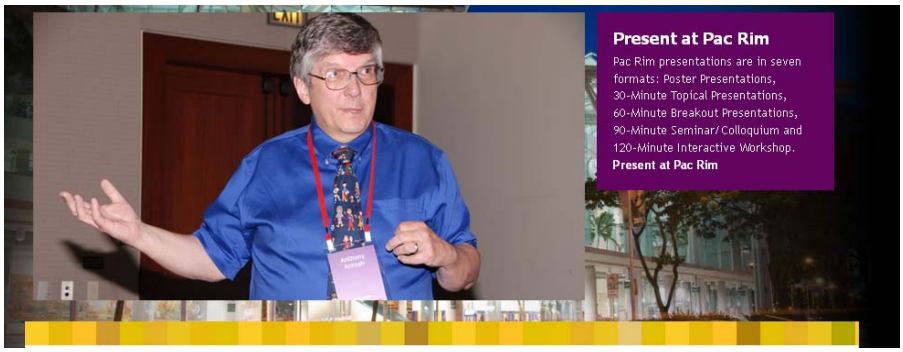
GROUP SIZE
12

PRICE

SPECIFIC DATES
January 2017

LOCATION
Chennai and Delhi

Registration starts on
September 1, 2016 @ 12:00 AM

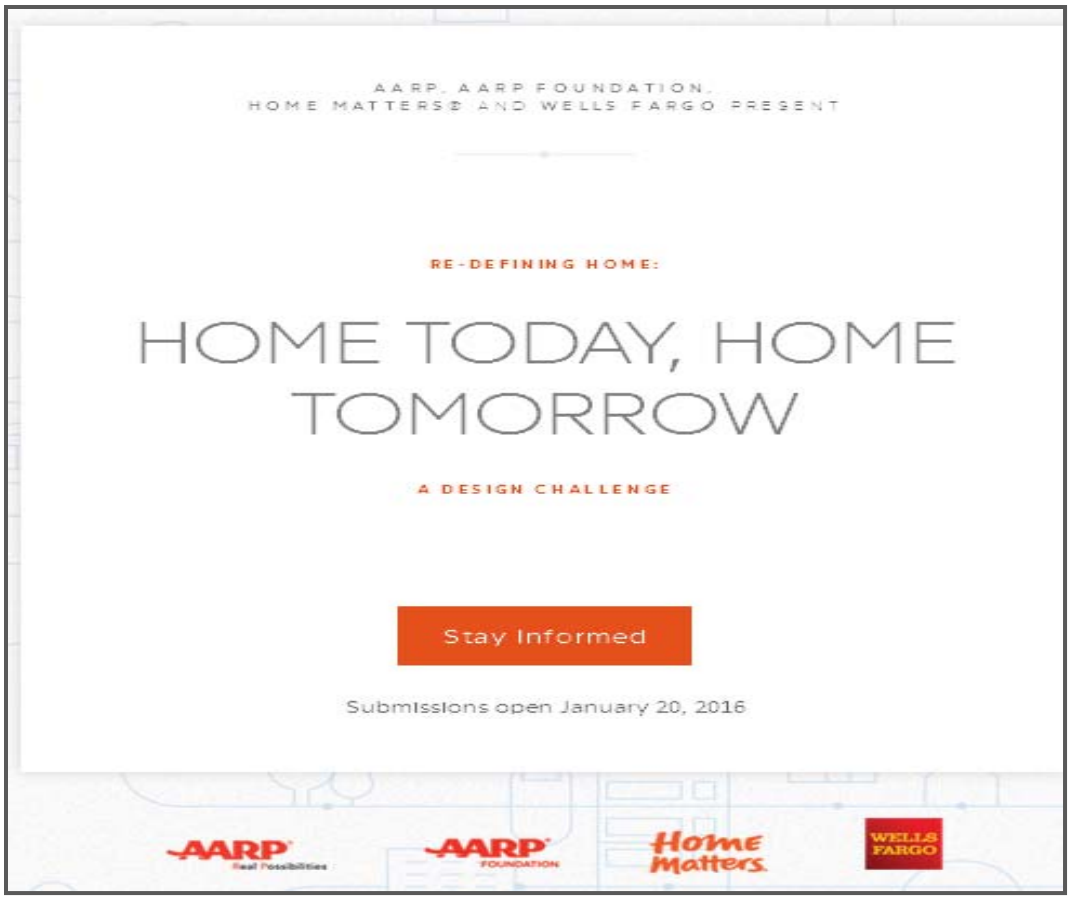


Pacific Rim International Conference on Disability and Diversity

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.

April 25 26, 2016 Honolulu, HI: Hawai‘i Convention Center

Joseph Binder Award 2016


AARP, AARP FOUNDATION,
HOME MATTERS® AND WELLS FARGO PRESENT
RE-DEFINING HOME:
HOME TODAY, HOME TOMORROW
A DESIGN CHALLENGE
Stay Informed
Submissions open January 20, 2016
AARP
AARP FOUNDATION
Home Matters
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SAVE THE DATE : 17-19 APRIL 2016

Arts Access
Awards 2016

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


14TH PARTICIPATORY
DESIGN CONFERENCE
15-19 AUGUST 2016 | AARHUS, DENMARK

Job Openings

1. Job Opening

Pineapple Consulting (www.pineappleconsulting.biz) is hiring Freelance / Fulltime Copyrighter.

Pineapple Consulting is a Multidisciplinary Strategic Design Firm, operating from Mumbai, Dubai and Kuala Lumpur.

We're looking for someone who brings a deep understanding of business along with the conent writing skills. Passionate about brands and have a strong point-of-view which reflects in the body of work. Ideally somebody with at-least 3 years of work experience in areas like Branding, Print & Online Communication, & Packaging. Would be great if this is coupled with well-articulate presentation skills, and a flair for presenting to teams outside the design studio.

All interested candidates/ references can be sent to Info@pineappleconsulting.biz

more information about us is available at www.pineappleconsulting.biz

2.Job Opening

NexGear is a hardware startup from Mumbai who announced it's first product Frodo, an Intelligent Adventure Camera (http://www.frodocam.com). It is a wearable action camera that self-edit's your adventure videos. It's designed to solve the problem that all us travellers face, when we do absolutely nothing with the footage we record during trips.

I joined them last year, and since then I have been in charge of Branding, UI and UX. Since our launch at CES 2016 in Vegas, we have been featured by NDTV Gagdets, Conde Naste Traveller and various tech blogs. Currently we are gearing up to launch an Indiegogo crowd-funding campaign in early March. We have working prototypes and will be creating new content for our campaign as well.

Since I am moving out of Mumbai, I am looking for some great folks to build the design team at Nexgear. Ideally, a UI, UX and a junior designer is what I'm looking for. You will have the chance to work in a small team, with smart people and in a great office.

If this sounds interesting to you, please get in touch with me at rohit.tandon@nexgear.co or at +91 9892702018

3.Job Opening

Dropbox has multiple, 6-month contracts available for experienced UX researchers. These full-time contracts will begin as soon as possible. Contractors must be willing to work on-site from our San Francisco office.

Contractors will join the Research Team at Dropbox and work directly with interdisciplinary product teams that include designers, product managers, and engineers. We're looking for researchers who can own their research project from start to finish—from framing the research questions, through execution, to the presentation and dissemination of findings.

What we're looking for:

- **Relevant work experience in user research for tech companies**
- **Mastery of a variety of qualitative and/or quantitative research methods**
- **Track record of discovering, reporting, and presenting actionable research insights**
- **Ability to work independently to design and execute research projects**
- **Experience collaborating with product managers, designers, and other disciplines**

Interested? Please send resumes and portfolios (if available) to research-contractors@dropbox.com.

4.Job Opening

The World School of Design (WSD) invites applications and nominations for the position of Dean/ Associate Dean of the following schools.

ARCHITECTURE	**Architecture**
DESIGN	**Product Design; Interior Design; Lifestyle Accessory Design**
FASHION	**Fashion Design; Textile Design**
COMMUNICATION	**Graphic & Communication Design; Advertising & Media Design; Digital & New Media Design**
ART	**Painting; Photography; Fashion Art; Contemporary Art Practice**

MANAGEMENT	**Design Strategy & Management; Fashion Business Management**
HUMANITIES	**Art & Design History; Curation of Contemporary Arts**

Located in the culturally rich, design-centered national capital region of Delhi, and a part of the proposed World University of Design, WSD offers the largest portfolio of creative career options on a single campus, focusing on a cross-disciplinary approach for synergistic learning. Deatails at www.worldschoolofdesign.in

As the chief executive and academic officer of the school, the Dean will work with faculty, staff, students and other key stakeholders to create a unified vision for the school and advance its aspirational goals. The Dean will be called upon to increase the reach and resources of the School, building on its strong design-based and human-oriented research and teaching excellence to drive growth. The Dean will attract and retain field-shaping faculty and encourage the development of innovative programs and research. Working closely with others in the School and the University, the Dean will promote a highly engaged design education culture that promotes collaboration and shared problem solving. The overarching goal for the Dean is to attract and retain both undergraduate and graduate students from a wide range of diverse backgrounds.

WSD seeks Deans who can play a leadership role. They are expected to have a proven record of achievement in their respective fields, a strong academic administrative experience and proven academic leadership success in a context of shared governance and collaborative decision-making. The ideal candidate will be a visionary, transformative, inclusive, with a deep respect for the value of design and the ability to act as a catalyst for school creativity, innovation, and progress.

NOMINATIONS, APPLICATIONS, & INQUIRIES

Nominations, expressions of interest, and applications (including cover letter and curriculum vita or resume) should be sent to this email id. All candidate information will be held in strict confidence.

5.Job Opening

A leading Big 4 Consulting Firm is seeking UX designers for its digital practice. The position is based out of Mumbai.

The following are the expectations from the role:-

- **UX/UI designer needs to be competent in all of facets of the user interaction and user interface design process with a background in mobility and website design.**

- **Create UX/UI architecture, design and product release deliverables consistent with established SDLC standards, methodologies, and best practices.**

- **Evolve and propagate UX/UI vision and strategy across verticals typically Retail, Pharma & Hospitality.**

- **Experienced at creating and revising information architecture documents and diagram including but not limited to: content diagrams, content maps, wire frame diagrams, comprehensive diagrams and static prototypes.**

- **Passionate about understanding current and emerging UX/UI trends.**

- **Understand high-level business requirements and develop information architecture and UX/UI design specifications for the platform releases.**

- **Communicate, specify and describe designs to researchers, developers, testers, PMs, senior leadership and other designers without ambiguity and within deadlines.**

- **Working with leadership, creative, developers, merchandisers, planners to help shape the visual and functional aspects of multiple interactive consumer facing interface needs.**

- **Work with product managers, and engineering to craft new application designs that better enable product discovery Lead test design and usability studies**

- **To optimize UX Using UI technologies or some other rapid prototyping software, create mockups, process flows, and user stories that communicate detailed interaction behaviors**

- **Experience with all stages of user experience design from customer research, to design, to validation and user testing.**

- **Produce high-quality visual designs—from concept to execution, including those for print and digital.**

- **The ideal candidate should have an eye for clean, minimal design, possess superior UI skills and be able to translate high-level requirements into work flows/interactions, and transform them into beautiful, intuitive, and functional user interfaces.**

- **Design solutions that govern user experience of mobile/ smartphone platforms & related channels (web/ mobile-web/ mobile/ SMS/ etc.)**

- **Participate in Agile working practices such as daily scrum meetings, sprint planning meetings, reviews and retrospectives.**

Qualifications & Skills Requirements:-

- **Bachelor's degree in Human Factors, Human Computer Interaction, Graphic Design, Cognitive Psychology, or equivalent practical experience.**
- **Design School experience from IITs or NIDs will be appreciated**
- **Experienced in the range of 3-6 years relevant experience**
- **Proven experience leading the design and implementation of UX/UI for consumer and enterprise applications across a variety of platforms.**
- **Core design skills; ability to establish visual hierarchy, layout, typography, and color effectively**
- **Fluency with Adobe, an understanding of HTML/CSS,CMS**
- **Exceptional ability to create wireframes, mockups, user flow diagrams, and prototypes (Tools: Photoshop, InDesign, Sketch, Balsamiq, Axure, OmniGraffle).**
- **Fluency in UXD best practices**
- **Excellent communication, presentation, negotiation, collaboration and teamwork skills.**
- **Experience in working with multiple vertical domain of Fashion and Lifestyle, Hospitality, Pharma & Retail will be an added advantage.**

Please send your resume along with portfolio to: adhirajb@gmail.com

6.Job Opening

Oracle India, Applications User Experience team is looking for UX Designers/ Usability Analysts.

Please send your resume along with portfolio link to pranavdatta[dot]natekar[at]oracle[dot]com

Location: Mumbai and Bangalore
Experience: 2 to 7 years
Positions: Multiple

About Oracle Applications User Experience

The Applications User Experience group at Oracle is a centralized team that provides comprehensive interaction design, usability engineering, visual design and HCI research for Oracle's enterprise applications. Team members have experience in a wide variety of disciplines, including cognitive psychology, graphic design, interaction design, usability engineering, Human Computer Interaction (HCI). The group is spread across US, UK, India and Mexico.

We follow a user-centered design methodology that includes activities such as user research, heuristic evaluations, design iterations, prototyping and usability

testing. We work primarily on enterprise applications including next generation of applications for tablets and mobile devices.

Visit http://usableapps.oracle.com to know more about the global Oracle Applications User Experience Group.

Job Description

As a member of the user experience team, you are responsible for planning and executing design and usability engineering activities throughout the UCD process. You produce storyboards, scenarios, wireframes, prototypes, and UI specifications and work closely with the larger UX team to define front-end research and contribute towards design patterns and guidelines. You take a leadership role and collaborate with other Interaction Designers, Usability Engineers, Product Strategists/Managers, and Developers to continuously improve the user experience of Oracle's enterprise products.

Job Responsibilities

- **Collaborate with product teams to produce scenarios, task flows, storyboards, wireframes, and interactive prototypes**
- **Work independently with members of product management, strategy and development on the design of products**
- **Participate in design reviews of products for compliance with corporate UI standards and provide feedback and recommendations**
- **Contribute to design patterns and guidelines, white papers, and product UI specifications**
- **Collaborate with usability engineers to conduct user research and support usability efforts throughout the development cycle**
- **Conduct high level task and workflow analyses, usability evaluations, prototype reviews, comparative product analyses, cognitive walkthroughs, and user research**
- **Prepare data collection and research materials for site visits, interviews, surveys, focus groups, and other contextual inquiry techniques, analyze and deliver recommendations**
- **Contribute towards user requirements gathering for new product releases through scenarios and storyboards, user profiles and personas, use cases and other methods**
- **Develop test plans and materials for formative (early stage) and summative (pre-release) usability testing. Recruit and coordinate with test participants, set-up usability lab, and plan testing logistics for one or more application product domains**
- **Manage overall usability engineering efforts, log usability issues and usability metrics, audio/video recordings, analyze, interpret and report on test findings**
- **Educate individual developers, product managers and strategists about UCD process and deliverables**

Eligibility

- **Master's degree in Interaction design, Industrial Design, Visual Design, Human-Computer Interaction, or related discipline**
- **2 to 7 years of industry experience designing and prototyping UIs for products**

- **Strong conceptual and analytical skills and demonstrated ability to prototype and design elegant UI solutions to user problems**
- **Must have knowledge of UI design principles across platforms (Web, Mobile, Tablets)**
- **Proven track record in applying user-centered design processes and methods to product development**
- **Good communication and people skills in working in a multi-disciplinary, collaborative environment**
- **Experience in maintaining and using usability lab set-ups for data collection with test participants. Skilled in designing and implementing reliable and repeatable experiments**
- **Experience in applying the User Centered Design process for end to end product development cycles**
- **Familiarity with current usability and HCI research and methods, especially for web and enterprise software products**
- **Foundational coursework or relevant experience in different fieldwork methods, including ethnography, usability studies, focus groups, telephonic interviews, user surveys and related approaches, and in statistics and fundamental research techniques**
- **Should have knowledge of Dreamweaver, Photoshop, Visio, OmniGraffle, Axure and other prototyping tools.**
- **Must have portfolio available for review**
- **Experience in the business applications will be preferred**

Please send your resume along with portfolio to pranavdatta[dot]natekar[at]oracle[dot]com

7.Job Opening

We have open position for Front End Engineer (5+ years or 8+ years exp)

Interested candidate please send your resume to ajadhav@opentext.com, mentions subject as "Front-end Developers Open positions in OpenText - Hyderabad -2016"

Job Description (JD): Front End Engineer (5+ years or 8+ years exp)
As a Front End engineer, you create fantastic experiences for end users accessing OpenText products. You will take static UX designs and create interactive prototypes and full product implementations using HTML5, CSS3, JQuery, and/or other JavaScript frameworks such as Bootstrap or AngularJS. You should also have experience with the agile methodology.

What You Will Do:

*** Create HTML5 prototypes of visual designs produced by UX team**
*** Write high-performance, reusable code for UI components, elements and frameworks for use by development teams**

*** Work with Back End engineering to integrate into the full product stack**
*** Strong knowledge in HTML5, CSS3, JavaScript & JQuery**
*** Strong knowledge of responsive design, W3C standards, CSS-based design, cross-browser compatibility and best practices**
*** Moderate to expert knowledge in AJAX, JSON and XML**
*** Experience developing rich user interfaces for web applications**
*** Aware of but not reliant on Object Oriented JavaScript Frameworks (Prototype JS, MooTools, Dojo, etc.)**
*** Knowledge of user centered design interface design principles and best practices with proven scenario development skills**
*** Collaboration and presentation skills with an ability to collaborate well with a multi-disciplinary design team**
*** Simultaneously work with multiple teams to create HTML5 layouts/templates**
*** Knowledge of iOS Xcode Interface Builder preferred**

What You Should Bring:

*** 3+ years of Professional Web Front End design/development experience**
*** 2+ years of HTML5 and Mobile Web UI design/development experience**
*** BS in Computer Science or related field, or equivalent industry experience, Master's Degree preferred**
*** Working knowledge in current web technologies (CSS3, JavaScript & JQuery, AJAX, JSON and XML)**
*** Comfortable working within an existing code base and writing code from scratch**
*** Good communication skills within your team, across teams, with management, and other organizations**
*** Ninja in CSS (CSS pre-processors LESS, SASS)**
*** Excellent understanding of the browser DOM**
*** Firm grasp of lexical scoping, closures, and OO JavaScript. You're a JavaScript expert!**
*** Proficient with native JavaScript as well as one or more frameworks such as Ext JS, Backbone.js, Requirejs, AngularJS, jQuery, etc.**
*** Experience with front-end packaging and automation tool (Grunt, Gulp, Yeoman etc.)**

8.Job Opening

Product Design: - 6 positions

Sr. Faculty / Jr. Faculty (Product): Graduate or PG in Industrial Design/ B.Tech. / M.Tech. / M. Des. / Ph. D. from a reputed design institute. with experience of 5 - 20 years in Academics/Industry. Should be well versed in Design process / Methodology, Exposure to and hand-on experience with CAD software, Exposure to design research / ethnography / social sciences /Creative skills, workshop and materials.

Transportation Design: - 2 positions

Sr. Faculty / Jr. Faculty: Graduate or PG in Design from a reputed design institute, skilled in automotive sketching, Marker & Photoshop renderings & ALIAS with 5-10 years exp. in Academics/ Industry.

Fashion Design: - 2 positions

Sr. Faculty / Jr. Faculty: Graduate or PG in Fashion Design from a reputed design institute with 4-5 years exp. in Pattern making, Garment construction, illustration & digital tools.

Graduate or PG in Fashion Design from a reputed design institute with 4-5 years exp. in digital technology (design software) – Adobe software, VFX, motion graphics etc. Good in drawing human form, nature & perspective etc.

Retail & Exhibition Design: - 1 position

Sr. Faculty / Jr. Faculty: Graduate or PG in Design from a reputed design institute with 5-10 years exp. in Academics/ Industry. Architecture with retail design / Exhibition experience. Flexibility to work on spatial experiences as well as details of retail furniture, modular exhibition systems.

Film & Video Design: - 1 position

Sr. Faculty : Graduate or PG in Film from a reputed design institute with 20-25 years exp. in Direction & Production. Good in teaching.

Graphic Design: - 3 positions

Sr. Faculty / Jr. Faculty: Masters in communication design with specialization in Visualization, digital skills in Graphic software, course content development with 10-15 yrs. of teaching.

Interior Space and Furniture Design - 3 positions

Sr. Faculty / Jr. Faculty: Graduate or PG in Architecture/ Furniture/ Interior Design from a reputed design institute with 8-10 years exp. in Drawing & Sketching skills, 3D MAX, Sketchup, AutoCAD.

Foundation (Pre Design): - 3 positions

Sr. Faculty / Jr. Faculty: Graduate or PG in Design from a reputed design institute with 4-5 years exp. in Visualization skills, good clarity on fundamentals of design, very good at drawing, knowledge of materials, communication skills, 3D visualization skills, overall good understanding of design.

Please send your resumes on the following address or e-mail to: Rajbaug, Next to Hadapsar, Loni-Kalbhor, Pune – 412201 T: 020-30693607/600 e-mail: hr@mitid.edu.in website: www.mitid.edu.in

Contact *Design for All Institute of India*

Advertising:

To advertise in digital Newsletter

advertisement@designforall.in

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

News and Views:

Regarding new products or events or seminars/conferences/ workshops.

News@designforall.in

Feedback:

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

Feedback@designforall.in

Forthcoming Events and Programs:

Editor@designforall.in

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