A publication of Design for All Institute India 2009 Vol. 4, No. 6

Design for All

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Chairman's Desk:

Majority of the people refer about 'survival of the fittest' in their arguments as the last shot believing that would definitely hit the target. While speaking this phrase their chests inflate as they have spoken a very wise words and opponent can not challenge , argue anymore and the discussion will conclude .I think it is most usable, dependable and such a powerful phrase after 'I love you' and 'Divide and Rule' phrase. 'Is it really significant to be fit for survival? If someone is kind enough, will they not survive?'

My answer is in affirmation. "Survival of the kindest" is only natural option left with living beings. Those who are caring for others, about their surroundings and express their love , not only love but really they mean it and work hard for it to make others feel the warmth of it are using their natural traits to live longer. Are they not surviving? Those who are kind enough I think their survival instinct is better and survive longer compared to those who are violent in nature. Violence makes life shorter, ends life abruptly and makes heart fearful and all the materials, small or big existing around seems as all are looking for opportunity to harm and that will be reason of their death. Our human body is

so delicate and any small things can be reason of our death but we are intelligent enough and keep everyone in good humor that helps in keeping away from current as well as future potential danger around us and allow us to live peacefully with longevity. As a designers we should be extra cautious while designing the products and make aware about lateral potential of killing anyone and try to minimize their effects as minimum as possible. Good designers never over look these points and design their product as safe even a child can operate without harming himself. The secret of 'universal design 'is being kindest in your design and it should reflect in their products.

I personally consider three modern theories of three individuals who have changed the thought process of mankind. First is Darwin's theory of evolution. In this he has established the relationship of man with nature. Second is Sigmund Freud's where he has described man is not only related with nature but individual's mind & body is nothing but under the influence of the nature and third theory is anthropology of man with the nature i.e Karl Marx's theory. In modern world we live under threats and left with limited options because we have large numbers of varieties of mass destruction materials which these eminent persons could not imagine while inventing their respective theories. We have lethal weapons of biological warfare -anthrax that has potential to wipe out all civilizations from earth .We have climate change, environments are endangering our survival, catastrophes are knocking at our doorsteps and it is our collective responsibilities to make our survival or face the consequences of extinction in near future. Earlier society was influenced, progressed and working for betterment of the society with

individual's efforts of innovations, creativities and zeal to do something for the society. Gone are those days. Our time is with group innovations, creativities and institutes or groups have taken those responsibilities. As taught clearly by history, varieties of things happen in the past. But many innovations and creativities have helped us went out of many dark tunnels and some time pushed into. When people have developed atomic bombs in modern time political institutes have justified by saying 'we wish to control the disturbing elements those are endangering our survival and it will work as a deterrent for them and peace will prevail.' When asked the president of USA John F Kennedy 'Why have you developed two nuclear bombs?' His answer was 'Look at American woman, are they safe in our hands we need two to protect our women'. I said to my friends a new era has begun and Darwin's theory is no more relevant with these developments. He was relevant as long as society was operating at individual level and his theory is not fit for group mechanisms and the way technological developments are changing. At primary levels his theory seems well but in collective efforts the theory of Kindest will justify. We have left with no other option but to follow 'Survival of the Kindest' and our future is secure in this statement. We have experiences of holocausts; atomic bombs havocs in Japan, fear of climate change, rapid exploitation of nature by industrializations and diminishing role of individual are forcing us to be kind and concern for our environments. Our ancestors were aware about the role of environments but it was not that clear what is in our time. In ancient India environments was religiously protected. Rivers, oceans, mountains, trees etc were worshiped.

When we say survival of the fittest we assume our surroundings are extremely cruel and it creates picture in our mind as our surroundings are in search for our weakest point and as they notice, will make them to pounce on our weakest point for killing and that will insure their existence. Is this true? My question is how our living beings are surviving for million years and will continue to do so in future? In reality it is not that horrifying situation. Our surroundings are very kind and take care for us so that we can survive effortless and for longer. Birds are chirping, trees are growing and all the living beings are silently singing and enjoying. Only difference is that we should have that knack to listen their music of love. They are singing and when they feel like to sing and never wait or look for audience. Similarly our designers should work with utmost sincerity without seeking for praise or award or monetary gains. Work with own passion and enjoy the design.

I was living in small town and milkman used to deliver milk by using his bicycle as a carrier for two big containers of approximately 50 liters each and sometime he uses his handle bar of cycle to carry additional few more containers of same or smaller size. Distance from his home to ours was quite long approximately 7-8 miles and it was very difficult journey with bicycle for that long distance carrying huge load of containers and reach without any spillage and deliver to the various customers at different locations before they need it for morning tea or without raw milk splits . I never found him tired and never seen him in disgusted mood but always cheerful. He used to get out of his house in dawn in a group with other milkmen and while cycling they used to sing their local songs at top of his voice and their

friends sometime sang in chorus and followed the leading singer or praise the singer . That singing was their strength and that makes them happy and their surroundings happier. Sometime I noticed individual milkman carrying his work in usual way and keep singing without any audiences. Sometime they received praise from unknown passer by and he sang loudly as that person was his audience. Both were strangers but both were enjoying, praising and had gone to their respective way. No exchange of money but strangers expressed their kindness for one another in their shortest time of interaction as they crossed one another. Is this not kindness that kindles a mystical energy in them and that made their existence worth. Our designers should learn the lesson from it that never feels work is liability and not only works for money rather make the process more enjoyable and spread the happiness around them. Working under the compulsion for designers make them half heartedly and they wish to create heaven but they unknowingly design hell. We should simply make the environments happy with our design but not stressful for those are living in it. Let us live happily and fearlessly and other should feel the same. In demoralized society it is difficult for them to digest the idea of 'survival of the kindest' they believe the cruel are surviving and there is no place for kindest. Kindest are thrashed by cruelty and their survival is always in danger and society never give them their due respects. Survival with fittest matches their mindset and refuse to admit this theory co exists. Our minds are set with prey-predator concepts and it appears to us that everyone is destroying one another for their survival and with blocked mind we fail to see the other side.

God has created man and woman in His own image but love is creation of man. It is the biggest gift designed by mankind and it has changed the orientation of thought of mankind since Adam & Eve. The world is now with two kinds of people those who love and others who do not love. All religions of the world are based on controlling these conflicts and still we have not understood properly that love is an asset and helps on longevity. Religion is echoing the survival of kindest. Love is within the man but realization of love is out of the man's body, mind and its existence are felt when other reciprocates. When two souls meet and promise to live for ever together it shows their respect and kindness for one and other and wishfully surrender to the level of sacrificing their lives to honor their commitments. When they mate out of love it is the process when both surrenders and that lead them for reproduction of life. Woman even puts her life at stakes and knowingly it may kill her while delivering the child inspite of that she shows her commitments. Is it not her kindness that leads us to live in family, community and ultimately in society? We so often assume both in the scientific community and in our culture at large, that Darwin thought humans were violent and competitive and self-interested in their natural state. That is a misrepresentation of what Darwin actually believed, and where the evolutionary study of human goodness is going.

"One of the reasons behind the success of evolution is that we've been kind to one another. A friendly person is not a strange mutant in a violent world. He invests a great deal, which has proven its worth in the course of evolution. Kindness is the most economical energy there is. We don't waste it on mistrust, worry, dislike and manipulation." It is my personal experience that

whenever I go sick and my mother used to sit beside bed hold my hand for hours. That touch had the inspirational energy that makes me healthy quickly. Touch, sympathy and others means where mankind can express their love, affections can create tremendous amount of positive energy in man that takes away all the negative energy of sickness, greed, jealousy etc from the suffering man and transform him to a new level. Philosopher Friedrich Nietzche argued that kindness and love are the "most curative herbs and agents in human intercourse". Similarly designers should give special attention of touch of the user in their products. This touch creates a special emotional bonding with users. When person buys a automobile of his choice and feels it associtions, sense of pride of ownership simply by touching body of the vehcle. One person visits the showroom he simply feels the ownership by simply moving his soft hands over the body of the vehcle and that is the point when emotional bonding is generated. Look at his behviour when accidently his vehcle gets its first scratch. He feels as that scratch is on his heart He has a sense of suffering or loss.

“People who are suffering don’t need advice, diagnoses, interpretations and interventions. They need sincere and complete empathy—attention. Once they have the feeling that the other person is putting themselves in their shoes, they are able to let go of their suffering and head down the path of healing. Attention—being completely available—may well be the most coveted gift. We silently hope that someone will want to do that for us. Pure attention is given without judgment and without advice. Attention is a type of friendliness and the lack thereof is the worst kind of rudeness. Attention is the means that allows us to let friendliness

flow. Anyone who can't give others attention, will never be friendly. Attention gives energy, while the lack of attention takes it away." Designing is no more a isolated work rather it is a team work and different experts of various areas working together to meet the objective in best manner. Every designer should give proper attention to others and should know how to associate that knowledge with their respective areas for betterment of design of the products. It is continuous process and need continuous attention.

"It is saving humanity. Have you ever wondered why the world still hasn't fallen apart, despite all its complex structures? Mail carriers, train conductors, newspaper vendors, cleaners, etc... of course they earn their livelihood with what they do, but it all happens largely thanks to their good will, to their kindness." In a survey scientists have found most desired traits in a mate. For both sexes, the first preference was kindness ,the second was intelligence. If our designer do not give priorty to the kindness and keep on emphasizung on fuctionlity in intellengent way I think it will be very diffult for them to create a emotional bonding with their products if kidness is not at the top priority and reflecting in their products.The most sensible way to look after our own self-interest, to find freedom and be happy, is not to directly pursue these things but to give priority to the interests of others. Help others to become free of their fear and pain. Contribute to their happiness. It's all really very simple. You don't have to choose between being kind to yourself and others. It's one and the same."

Research by Darlene Francis and Michael Meaney reveals that sympathetic environments -- those filled with warm touch -- create individuals better suited to survival and reproduction, as Darwin long ago surmised Were he alive today, Darwin would likely have found modest delight in seeing two of his hypotheses confirmed: sympathy is indeed wired into our brains and bodies; and it spreads from one person to another through touch. Darwin, a great fact amasser that he was, would no doubt have compiled these new findings on sympathy and touch in one of his many notebooks (now a folder on a laptop). He may have titled that folder "Survival of the kindest."

"Born to Be Good" **In his book, Keltner argues that "human beings have survived as a species, and have gained dominion over the planet, because we have managed to control our most destructive and hostile impulses and instead have been rewarded for protecting one another, helping one another, being kind to one another." Taking this argument to its logical conclusion would mean that evolution has, in a sense, "wired" us to do good. This is, needless to say, a novel take on genetic determinism, turning "survival of the fittest" into a "survival of the kindest**

Why do people do good things? Is kindness hard-wired into the brain, or does this tendency arises via experience? Or is goodness some combination of nature and nurture?
"Born to be good" for caring, for play, for reverence and modesty are built into our brains, bodies, genes and social practices. I hope they come to look at human nature in a new light, one that is more hopeful and sanguine. I hope they may see the profoundly cooperative nature of much of our daily social living. Designers are not from other planets and they are the same human beings as

what we are. They have identical emotions and others feelings as we all do have. Only difference is sometime their mind overshadows with selfishness and feel without this they can not survive. Here they loose the pulse and touch of usual person and this act makes them out of this world. 'Be realistic and move along with your emotion but don't lose your ground' is real mantra of successes designers.

"For firstly, the social instincts lead an animal to take pleasure in the society of his fellows, to feel a certain amount of sympathy with them, and to perform various services for them. … Such actions as the above appear to be the simple result of the greater strength of the social or maternal instincts than that of any other instinct or motive; for they are performed too instantaneously for reflection, or for pleasure or even misery might be felt. In a timid man, on the other hand, the instinct of self-preservation might be so strong, that he would be unable to force himself to run any such risk, perhaps not even for his own child." Designer should carry the character of timid person while designing the products and never design that prove even risky for any child. How can he risk others child if his own child is not safe with that products? Animal instinct of survival should be suppressed. Temptation may appear in every occasion of life 'Keep your animal instincts within control'. Never allow to grow out of the proportions.

We are very grateful to Prof Sharon Joines for accepting our invitation to be the guest editor of this special issue of paying befitting tribute on anniversary of Prof Ron Mace. She wrote to us that our student of Universal Design Center of North Carolina state university (founded by Prof Ron Mace) should contribute their work on topic entitle 'Universal Design' because he was the man

who has not only coined the word Universal Design but devoted his entire life to make understand academicians, industries and others allied areas its importance and commercial viability. We accepted her suggestions and what you see our current newsletter is her sincere dedicated efforts. She is perfectionist and that reflects in this issue of newsletter.

In all the many elegant tributes to Prof Ronald L Mace that appeared in few days after his death in the month of June 1998. While reading those tributes people has written untimely death, great loss to design community, was a great visionary etc. The most disturbing part was no one has expressed their willingness to carry his unfinished task. Soon after publishing our inaugural issue in that we have published three articles one was Prof Ron Mace another two were Mr. Pete Kercher (EIDD president and Prof Lalit Das of IIT, India) I uttered to myself we have lost a minor god who kept careful watch over all the design community and attracted the attention of traditional and modern, young and old and abled and disabled that there is word UNIVERSAL Design where your future lies and there is secret of commercial viability also. That feeling of lost of good human was deepening within us and that strange feelings suggested us to pay a befitting tribute to him in the month of June 2009. He was the best example of the 'Survival of the Kindest' and he continues to rule our heart after his death decade back and he will continue to do so in future. His contribution has played a great role in influencing the culture of mankind and he was just not a designer

who was alert to the ways and meanings of our time. Such minds are rarely born and their contributions are rare. We are in history and we should not lose sight of such people.

He had promised an oceanic view and he had delivered. We are carrying his mammoth task of what he had dreamt in our weak shoulder. We need your cooperation for fulfilling his dream. The concept of Universal Design (a topic that dear to his heart and the focus of his life's work for 28 years) tied to dip for a decade after his death. Let the noble thought of him should benefits ALL. That will be best tribute to noble soul.

I never had an opportunity to meet him personally but through his literature, works and lectures I can say we shall all remember Ron Mace as a caring friend, a devoted advocate, an ingenious designer, a mentor, and a man of truth, integrity, and perseverance. Let we should imbibe his characters in our personality and work for DESIGN FOR ALL.

Evolution, however, is more a story of the limitation of competition and the triumph of overall cooperation than of survival of the fittest. Life keeps on designing. Designing keeps on evolving.

"Art is long, life is short"

With regards

Dr Sunil Bhatia
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Newsletter of Design For All Institute of India June 2009 Vol-4, No-6

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Guest Editor's Desk:

Sharon Joines received her B.S, M.S., and Ph.D. in Industrial Engineering from NC State University. She is an Assistant Professor of Industrial Design, Researcher for the Center for Universal Design, a PhD faculty member for the College of Design and Director of the Research in Ergonomics and Design Laboratory (redLab).

Sharon Joines is a researcher and ergonomist, teaching courses in human centered design and ergonomics. Her interests reside in universal design, applied product and process research, and the effect of aging on fatigue development and work. Her research focuses on quantifying the interaction between individuals, products, and their environment. Sharon works with engineers and designers in all phases of the design cycle. The challenges they have addressed traversed consumer markets, warehousing and distribution, medical applications, and manufacturing environments ranging from forging to clean rooms.

Before joining the faculty in Industrial Design and the Center for Universal Design, Sharon was the director of research and education at the Ergonomics Center of North Carolina. She was a John T. Caldwell Scholar, Merit Scholar, University Scholar, and NC Fellow. She is a member of the Order of Thirty and Three, Alpha Pi Mu, and the Human Factors and Ergonomics Society.

EDITORIAL FORWARD

I was given the honor by Dr. Sunil Bhatia, Design For All Institute of India, to pay tribute to Ron Mace in this issue of Design for All. As a recipient of this newsletter you are familiar with and motivated by 'Design for All '. As a designer, problem solver, advocate or individual, you may have many years under belt or may be new to this field. Therefore, the contents of this newsletter may be nostalgic, informative or motivational for you. Whichever they are, I hope you will be touched, reenergized, and feel supported and linked to history.

This edition of the 'Design for All' newsletter has been created in a time of economic challenges for many countries accustomed to affluence. The experience of repeated budget cuts and layoffs has been humbling for many – resulting in carefully made choices. These choices expose core values when the extras are stripped away. My university has had to make similar choices, cutting deep, reflecting its priorities. One priority that has not fallen away is the support of research, development and education in Universal Design. The mechanism through which the work is supported shifts and grows –it is supported by our Dean, researchers, students, faculty, and constituents. Like Ron's definition of Universal Design, the Center for Universal Design, at NC State University, is "unobtrusively" and sometimes "invisibly" supported, growing to the extent possible benefiting people of all ages and abilities. I believe that Ron Mace would be pleased to see the support of Universal Design within the College of Design at North Carolina State University.

We therefore pay tribute to Ron Mace by reflecting on his life, his professional contributions, the promulgation of universal design, and his legacy extended through the continued work at the Center for Universal Design and NC State University. Though I joined the Center for Universal Design after Ron passed away, I –like so many– am grateful for and indebted to his work and vision.

Kind regards,

Sharon Joines, PhD
Center for Universal Design
Research in Ergonomics and Design Laboratory, Director
Assistant Professor of Industrial Design
North Carolina State University, USA

IMPORTANT ANNOUNCMENT:

We are releasing a video film of approximately 45 minutes on concept of Universal/ Design For All/ Inclusive Design Month of May 2009(probable date) and speakers are

Prof Peter Zec of Red Dot, Germany,

Prof Jim Sandhu, Uk

Mr Mike Brucks , ICDRI

Prof Lalit Das, India

Mr John Salmen of Univesal Design Consultant Inc, USA

Mr Pete Kercher, Ambassdor EIDD (2nd Volume)

Prof Ricard Duncan, USA,(2nd Volume)

Ms Onny Eiklong, Norweign Design Council(2nd Volume)

Those who are interseted in free DVD kindly write to us along with their postal address or you can download from our website www.designforall.in or download from below links for single clipping .

If you wish to download the film kindly click the below link of your choice

Prof Peter Zec of Red Dot Min -8

http://www.youtube.com/watch?v=3JML2EbzxDM

Mr. Mike Brucks of ICDRI Min 1.5

http://www.youtube.com/watch?v=4_7CbkLOkWc

Prof Jim Sandhu, UK Min-8

http://www.youtube.com/watch?v=Std4PuK4CmM

Index of the film Min-1.2

http://www.youtube.com/watch?v=kFyCLPuQgxk

John Salmen of UD Min-3

consultant Inc, USA

http://www.youtube.com/watch?v=bU770Vqu19o

Indian Example of Sari (female dress)

and Dhoti(Male dress) Min-4

http://www.youtube.com/watch?v=_vmAmRUFptE

Mr. Francesc Aragall Min- 5

http://www.youtube.com/watch?v=d-D3JH_ JGpA

Welcome note of Design For All

Institute of India Min-1.3

http://www.youtube.com/watch?v=yqW2vR- 3kRg

We solicit your cooperation and looking for feedback at

Dr_subha@yahoo. com

Forthcoming issues of Newsletter of Design For All Institute of India

1.

IDZ
International Design Center Berlin
Internationales Design Zentrum Berlin

For 40 years, the International Design Centre Berlin as an incorporated society has been a companion to designers and entrepreneurs. It offers great advantages to companies, design-experts and all persons, who are interested in design. The structure of its members constitutes a manifold design-oriented platform in favour of the exchange of ideas and professional networking. The IDZ is a competence centre, a consulting office and an intermediary for design in Berlin This is great occasion that we have invited this esteem organization for publish a special issue with us and they have agreed to contribute the July 2009 Vol-4, No-7 issue and the Guest Editor will be International Design Center Berlin Deputy Chairman of the Board, Professor Birgit Weller.

2.

Our December 2009 Vol-4, No-12 newsletter has the theme "INNOVATION IS HOPE" This theme is suggested to us by our guest editor of that special issue who has accepted our invitation to be Guest Editor of this special issue and agreed to invite the different contributors from his organization and will write editorial for that issue. He is yet to announce the month of 2009 for this special issue on special theme.

Prof. George Teodorescu, Head of tesign design consultancy, director of IIID (International Institute of Integral design), ICSID (International Council of Societies of Industrial Design) board member.

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3

When it comes to design, Africa is not far behind. Different countries in Africa are taking a lead in promoting design in all its aspects and applications.

A glimpse of "Design scenario in Africa" is long overdue and it is expected to inspire global designers in order to collaborate and conduct joint programmes with African countries. A forthcoming issue will focus on 'Design Scenario in Africa'. Professor K L Kumar, who has pioneered the postgraduate programmes in the

faculty of Engineering and Technology as also in Product Design and Architecture at the University of Botswana has agreed to edit the special issue of February 2010 Vol-5, No-2.

For further information and submission of articles,

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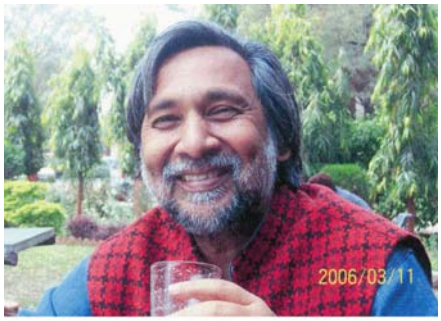
4.



Our August 2009 Vol-4, No-8 is dedicated to celebration of "Indian Independence" and Prof Lalit Das will be Editor as usual and will select few contributions from students of M.Des of IIT-Delhi, India who have submitted their projects and about to qualify for master degree.

TRIBUTE TO RONALD L. MACE

RONALD L. MACE, 1941-1998

Andrew Cherry[1], Nikhil Shah[2] and Sharon Joines[3], PhD

1
Research Associate for the Center for Universal Design, Architecture Graduate Student, College of Design, NC State University

2
Research Associate for the Center for Universal Design, Graduate of School of Architecture, College of Design, NC State University

3
Assistant Professor of Industrial Design, College of Design, NC State University

Andrew Cherry is both an alumnus and current student of NC State University's College of Design. After receiving his bachelor's degree in Industrial Design, he worked for a designer and manufacturer of eco-sensitive concrete products. Always intrigued by the interactions of people and spaces, he returned to the College of Design to pursue a Master's degree in Architecture.

Nikhil Shah is a recent graduate of the Bachelors of Environmental Design from the College of Design. He will be working with firm Estudio Teddy Cruz this year, and will return to NC State University to receive his Bachelors of Architecture the following year.

Sharon Joines, PhD

Assistant Professor of Industrial Design

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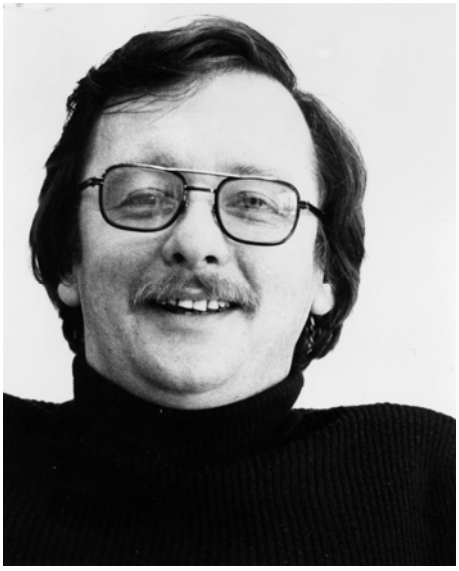

Ronald Mace passed away in his home in Raleigh, NC, on June 29, 1998. The cause was heart arrhythmia resulting from polio, he was 58. Mr. Mace's wife, Lockhart Follin- Mace, preceded him in death in 1991. He was survived by his companion, Joy Weeber of Raleigh.

Ron has been described as a visionary, an advocate, a consummate champion for accessible and universal design, and an educator who worked tirelessly and was confident in his convictions. But to those who worked closest to him and knew Ron best, they reflect on his humor, smile, humanity, and humility.

The Ron Mace Memorial Fund was been established to help support design students carry out Mace's life work. Renewed efforts are being made to make the last push of the Memorial Fund in order to reach the endowment level which will afford the support of a student studying Universal Design each year. Tax

deductible contributions may be made to the Ron Mace Memorial Fund in care of the NC State University College of Design.

Formative Years

Ronald Lawrence Mace was born in Jersey City, New Jersey in 1941 and spent his first five years like many little boys playing in the northeastern portion of the United States. In 1946, his father moved the family south. Ron grew up in a mid-sized southern town of Winston-Salem, North Carolina. Life in southern towns in the late 1940's was generally slow paced and marked by planning for growth. For example, in 1946 the alderman of Winston-Salem adopted a resolution supporting the proposal to move Wake Forest College to Winston Salem from its home in Wake Forest North Carolina outside Raleigh. To support the areas growth water supplies were enlarged, aerial maps were made of the city, an east-west expressway was approved, and roads were paved. Ron built soapbox derby carts with his dad and entered model airplane competitions with his older brother. "He had an innate ability to make things. He was always an inventor and builder," recalls Joy Weeber, a disability advocate and the life partner with whom Ron shared his last four years[1]. But amid the progress in the States and the wars abroad, the poliovirus swept across country. In 1948, a severe polio epidemic hit North Carolina. Though North Carolina was one of the first states in the US to require polio vaccinations for children -- many had already contracted the disease and lives were altered forever.

1

From Access to Design Professsionals http://adaptiveenvironments.org/adp/profiles/1_mace.php

At the age of nine, in 1950, Ron contracted polio. After spending a year in the hospital, Ron left the hospital using a wheelchair. Rather than institutionalizing their son, Ron's parents brought him back home, back to his community and back to school.

His parents brought him home to a life with limited modification and no external support. The schools and community of Winston-Salem were not well prepared to meet the needs of individuals surviving polio, partially paralyzed, and using a wheelchair for mobility. For Ron and his family this meant, Ron was carried up and down the stairs of the schools he would attend – elementary school, high school and eventually college. Ron's wheelchair could not fit through bathroom doors. His solution was to confront his barriers and built what he needed to accomplish tasks we take for granted. In addition to building a custom bed, Ron designed and welded a narrow, rolling stool to afford him access to the narrow doors to the bathroom.

Though admission to the College of Design is at best tough, Ron was discouraged from applying to the architecture program at NC State University. The Dean of the school at that time was reported as having said that the rigors of the program would be too demanding. Ron wrote about that experience in a paper presented at the National Forum on Careers in the Arts in June 1998. "When I applied to architecture school, I was told by the dean not to try. He felt that a person with a disability could not make it through the program, and did not have any business trying. He reasoned that I could never do the work successfully nor find and maintain a job. I have

no idea what experience he had with anyone else with or without a disability upon which to base such strong opinions. I completed school as a result of the tenacity of my family. They devoted a large portion of their lives for the six years I was in school to ensure that I was carried whenever necessary through an inaccessible, and even hostile, environment. There was neither assistance nor accommodation made. It was difficult, but not impossible to successfully complete the program. I entered my field before physical and programmatic access were required and discrimination prohibited, before any assistance or advanced technology could be of help. This situation has radically improved." In 1966, Mace graduated with a B.A. in Architecture from North Carolina State University's School of Design.

Effort & Impact

After four years of practicing conventional architecture, Ron became involved in an effort to produce the first national building code for accessibility.

In 1973 Ron assisted in the passage of an amendment to the North Carolina Building Code for handicap access. The introduction of the handicap section was essential in establishing people with disabilities as a community deserving of recognition in civil rights legislation. The same year, the Federal Rehabilitation Act was implemented, prohibiting discrimination against people with disabilities in regards to employment by federal departments and organizations receiving federal funds.

For the next two decades Ron provided design consulting

services as president of Barrier Free Environments, Inc (BFE). While at BFE, Ron also produced a number of publications on accessible design including *The Planner's Guide to Barrier Free Meetings* (1980), *The Accessible Housing Design File* (1991), *The Americans with Disabilities Act Accessibility Guidelines Tech Sheet Series* (1994-95), and *Highlights of the Americans with Disabilities Act Standards for Accessible Design Slide Show* (1993).

In 1988 Ron assisted in the development of the Fair Housing Amendment Act, barring discrimination in the sales or rental of housing on the basis of disability, and requiring new multi-family housing to meet new adaptability & accessibility requirements.

After working as an architect, designer, advocate, author and visionary, Ronald L. Mace returned to NC State University and the College of Design in the late 1980's. When he left the college in 1966 he was an eager intern supported by an amazing family. When he returned, he was a nationally and internationally recognized architect, product designer, and educator.He had made his mark on the nation by championing the disability rights movement. Accessibility was now etched in history with the strength of the law behind the Americans with Disabilities Act (ADA). But for Ron access was not enough. He coined the term "universal design" to describe the concept of designing products and the built environment to serve the needs of people regardless of their age, ability, or status in life.

In 1989 Ron established the federally-funded Center for Accessible Housing, currently known as The Center for Universal Design (CUD), at the School of Design at North

Carolina State University in Raleigh. The focus of the center was to engage designers in conversation through Universal Design as both policy and philosophy. Mace and the staff remained involved in legislation after joining the school, helping shape the Americans with Disabilities Act (1990), a milestone in legislation aimed at preventing discrimination in employment practices and spaces of public accommodation.

During the early 1990s Ron focused on addressing architectural barriers in regards to the ADA, ANSI and ISO Standards through a series of presentations and lectures. While this provided designers with an understanding of code in regards to usability, it failed to convey the idea of Universal Design, as code provides designers with minimum requirements, not ideal conditions. From 1994 and 1997 the CUD took on the task of developing a set of guidelines that could provide designers with a conceptual understanding of Universal Design, and in 1995 organized a collaborative brainstorm with designers from around the nation. Over the course of two days the group developed what was to be the Principles of Universal Design.

On June 19, 1998, Ron Mace delivered what would be his final speech at “Designing for the 21st Century: An International Conference on Universal Design,” hosted by Hofstra University. The conference was the first international conference on universal design, a topic that was dear to his heart and the focus of his life’s work for 28 years. More than 450 people from 19 countries were in attendance and were testament to his inspiration of a growing international movement. Ron explained, "Universal design seeks to encourage attractive,

marketable products that are more usable by everyone. It is design for the built environment and consumer products for a very broad definition of user."

Last Speech

In his final speech, Ron addressed what is perhaps the most confusing issue surrounding universal design. Specifically, he helped illuminate the distinctions between universal design and the associated concepts of barrier-free design and assistive technology. It is important, indeed, to clearly define these concepts as they are so closely linked to each other, and now, over a decade later, to a lexicon that has broadened itself even further.

Let's look, as Ron did, at barrier-free design. Barrier-free design, embodied in ADA and other legal measures, are mandates that dictate the tectonics of accessibility. They dictate how far from the floor a switch can be, how much space is needed around a toilet, where the handles should be for a shower, and a myriad of other building dimensions. These guidelines, however, are just that—guidelines. They are not a design philosophy, they are not a mode of thought, and they are not a goal in and of themselves. They are, however, driven by the goal of providing access for people requiring wheelchairs for mobility, and it is this goal behind the mandates that links them to universal design.

Mandates like the ADA are considered by many to be a step in the right direction, and they play an important role: they provide the "what" and "where" for a designer. Where they fall short is the more important issue of "why". Why should a countertop

be at a given height? Why should a light switch be placed in a certain way? Why can't we design for the average person? The answer lies in the very term "average person". The term itself suggests a mathematical mean of data, not a real, walking, breathing human being, and in fact, a great number of able-bodied people do not resemble the "average person". Instead, universal design as a philosophy suggests that products and spaces should be designed in such a way that they are usable by the greatest number of people possible, with little or no difference in the manner in which they are experienced.

This is a lofty goal, and Ron fully acknowledges this in his speech saying "I'm not sure it's possible to create anything that's universally usable. It's not that there's a weakness in the term. We use that term because it's the most descriptive of what the goal is, something people can live with and afford." Today, this idea is embodied in a family of terms including "universal design", "inclusive design", and "design for all", all of which share the same goal: design for the broadest possible user group.

The term "universal design" itself has major implications. Design--as an act, a thought process, and a profession--requires the conceptualization of a solution for a given situation. The fact that UD is a design approach inherently makes it a proactive measure. Adaptive technologies, on the other hand, are reactive measures that, whether intentionally or not, tend to reinforce the notion of an "average" ability. Ron's eyeglass example is perhaps the best to illustrate this notion. Eyeglasses are designed and used to correct disabilities of visual acuity, the overall goal of which is typically 20/20

vision. This goal, though, is itself reinforcing the notion of an average ability, given that we measure vision by what the "average person" can see at a distance of twenty feet.

According to Ron's perspective, assistive devices were not and are not consumer products. They are instead personal-use, or more accurately, patient-use devices designed and built without any consideration of "whether… the product looks nice, is easy to live with, or is available at a marketable price…" Thankfully, this is one area where there is evidence of change. Take, for example, the blood glucose meter, a device used multiple times daily by diabetics and others with blood sugar disorders. While it was once a bulky piece of equipment that was hard to use and even harder to understand, there are now a variety of portable, handheld designs that are easy to carry, easy to use, and easy to understand. Thanks to advances in technology and a greater focus on the user-product interaction, the meter has begun the shift from being simply an assistive technology to a true consumer product. In his final speech, Ron also recognizes that these shifts can occur in both directions. That is, consumer products can shift their target audience and become more universally designed products.

As Ron noted, "sometimes we find universal design just seems to happen." More often, though, we find that universal design just doesn't seem to happen. As the need for universal design continues to grow, it is important to continue expanding our understanding of its potential. To that end, it is as important now as it was a decade ago "for all of us—designers, educators, researchers, advocates—to really understand this relationship between barrier-free, universal, and assistive technology in order

to develop and implement truly universally usable designs."

"As one of the team fortunate to work with Ron Mace in developing the 7 Principles of Universal Design, I appreciate your tribute to him in Design for All. I consider it a mark of his greatness that, as much as his leadership and skill, I remember his humor and humanity. His memory would be the less without these."

- Jim Mueller

STUDENT WORK

A collection of student explorations, including studio projects and independent studies, focusing on issues of usability in product design. Each project focuses heavily on ergonomics and human factors as outlined in the Principles for Universal Design, as both a tool for product evaluation and design development. In each report students examine contemporary product markets, identify criteria for evaluation and accordingly develop prototypes. All work was carried out at the by students (Undergraduate & Graduate level) of the Department of Industrial Design, College of Design, North Carolina State University, Raleigh.

Andrew Peeler received his Bachelors of Industrial Design from Appalachian State University and is currently a Masters student in Industrial Design at North Carolina State University. Drew has worked as a design intern at Saucony and Enventys. He has worked as a teaching assistant for an advanced Human Centered Design course and is a research assistant in the Research in Ergonomics and Design Laboratory (redLab).

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WAIT STAFF TRAY

PRODUCT REDESIGN OF WAIT STAFF TRAY: CONSIDERING MUSCULAR EFFORT, POSTURE, AND UNIVERSAL DESIGN

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Problem Statement

The problem identified was strain and injury incurred by restaurant wait staff that was attributed to serving food. Several studies have already been conducted addressing the issue of postures and injuries in wait staff. No study goes on to create methods or products that would help alleviate awkward postures and injuries. Several sources list the restaurant industry as one of the largest and fastest growing industries in the nation. In addition to that, the aging population of the workforce creates a real need for a solution to this problem (see Figure 1).

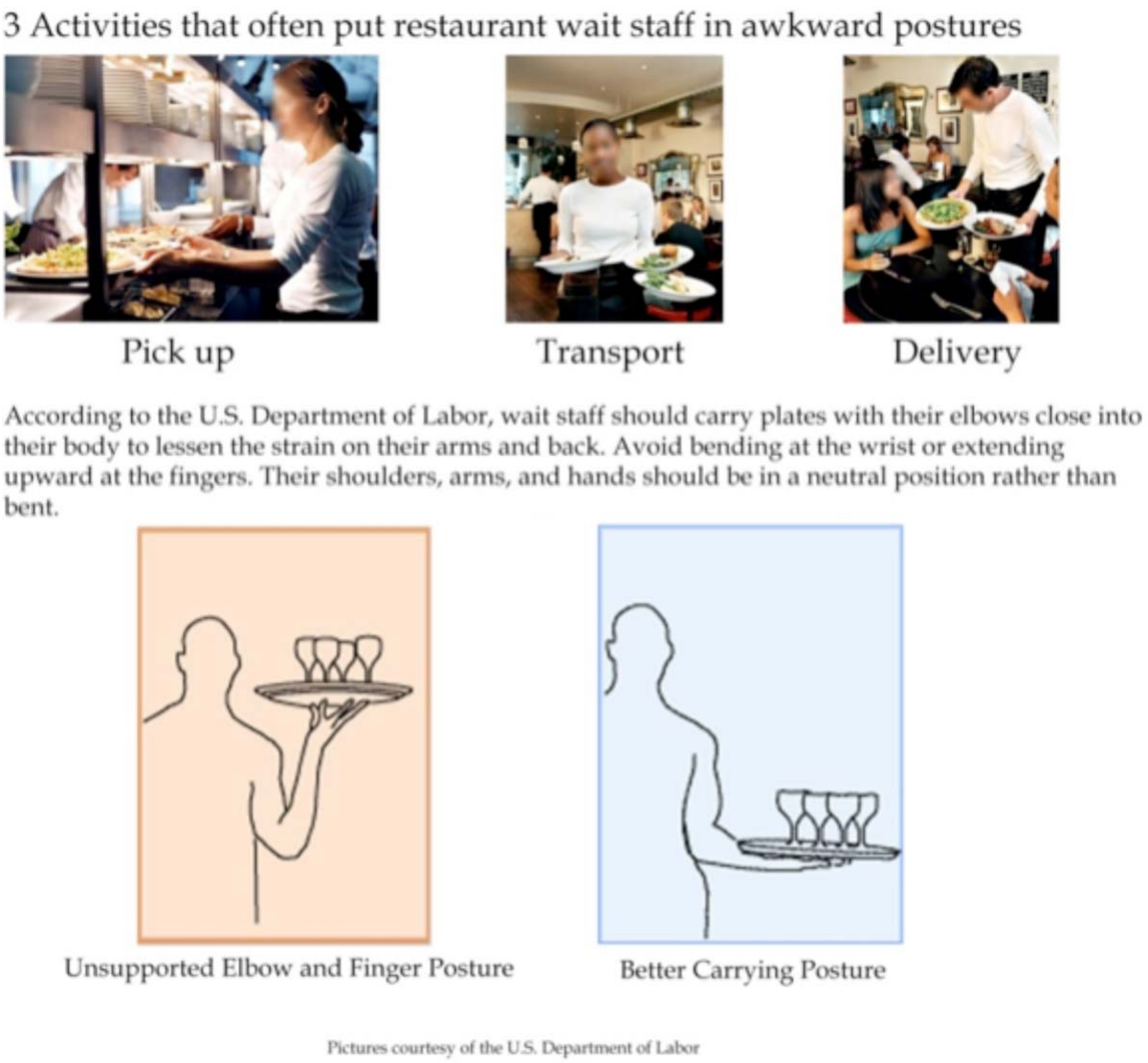

Figure 1: Restaurant Wait Staff

Goal

The design goal is to create a device that will aid in the delivery of food to customers and encourage wait staff to be in neutral body positions while carrying out their duties. Specific goals include eliminating, as much as possible, fatigue and discomfort in the backs, shoulders, and wrists of wait staff.

Background

Over 2 million people are listed as working in the 'Waiter and Waitress' category of the Bureau of Labor and Statistics. The Liberty Mutual Research Institute for Safety funded a study conducted by Patrick Dempsey which reported 42 percent of these people reported musculoskeletal injuries. Of these, 11 percent reported injuries to the shoulder and listed lifting heavier trays as a cause for concern.

Research

There are very few studies that concentrate on the physical tasks associated with food serving. Filiaggi and Courtney's "Restaurant Hazards" analyzes the types of injuries that typically occur in the restaurant industry. The major studies found that discuss wait staff injuries related to serving food are Dempsey's "Cross-sectional investigation of task demands and musculoskeletal discomfort among restaurant wait staff" and Jones, Strickfaden, and Kumar's Physical demands analysis of occupation tasks in neighborhood pubs." These studies document ergonomic problems in common wait staff practices. Dempsey's identification of specific musculoskeletal discomfort and the average weights was thorough. Currently, there is little information on the relative merits of different approaches to serving food, such as using trays vs. carrying individual plates, the weights of plates and trays handled and other parameters of the materials handling demands that that would help inform sound ergonomic recommendations" (Dempsey 95). Jones, Strickfaden and Kumar's study enumerated specific torques and strains on muscles and ligaments, demonstrating

further evidence of the problem.

In addition to statistics provided by government agencies, information regarding the economic expenses of workplace injury were found in Jeffery N. Katz's "Lumbar disc disorders and low-back pain: socioeconomic factors and consequences". According to this study low-back pain cost in the United States exceed 100 billion dollars per year and two-thirds of those costs are due to lost wages and reduced productivity. The US Department of Labor recommends carrying a tray with elbows close to the body to lessen strain on arms and back. The Department of Labor states that injuries can occur when assuming awkward postures while serving food, particularly while lifting heavy trays with too many plates on them, or balancing or lifting heavy trays above shoulder level (see Figure 2).

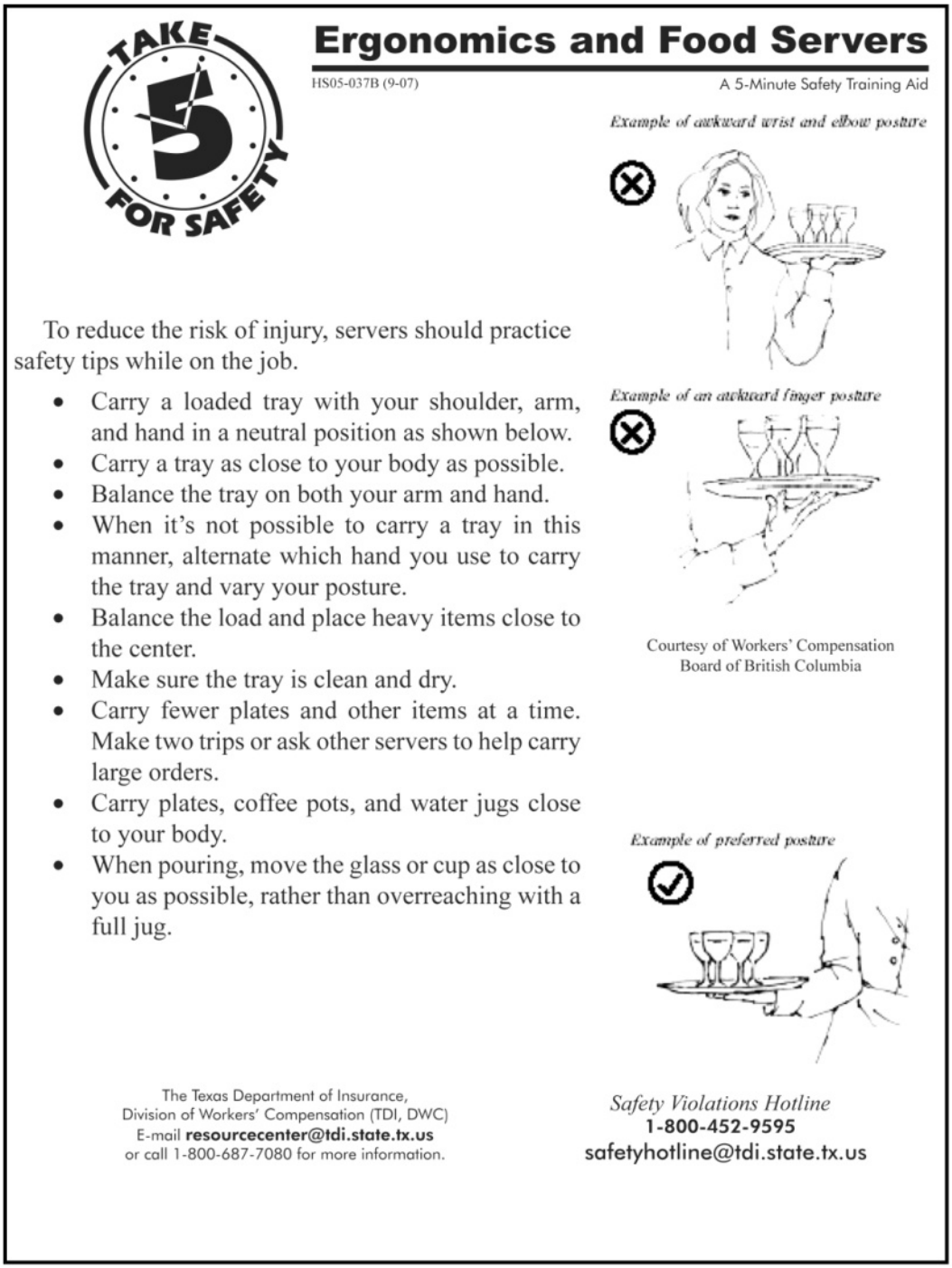

Figure 2: Recommended Postures While Serving Food

Market Research

A market survey and patent review using internet search engines and the varying combinations of these keywords: ergonomic, serving tray, stackable, one-handed, restaurant,

compact, comfortable, and serving device. We found nine patents dealing with serving trays and food service. Most of the trays found are designed for carrying only drinks or light loads of hors 'douvres (see Figure 3). Although some of the trays incorporate one or two 'ergonomic' features, the team found no trays that were designed with a comprehensive ergonomic approach in mind.

Figure 3: Market Review

Design Development

In order to contribute productive solutions to the fatigue and injury problems, the team first needed to thoroughly understand the environments in which the servers work and the correlations between certain work behaviors and the corresponding reports of physical pain and fatigue. Observations were conducted in five local restaurants. All the restaurants were mid-range ($8-$15 per meal), full-service restaurants. These host sites included sites where wait staff members handled food using trays and sites in which wait

staff members directly handled food plates without trays.

The design team collected the following data for each participating server: the number of years experience serving, height, weight range, age, the number of people served per night, the average lengths of shifts, if he or she was instructed how to deliver food, how he or she chose to deliver food and why, how many plates of food he or she was comfortable carrying at one time, whether he or she had any difficulty transporting food and drink, whether he or she had physical discomfort attributed to restaurant work or made worse by restaurant work, how long discomfort is felt after work ends, whether any brace or assistive device is used to aid in food service, and what suggestions he or she could offer for improving the tasks Additionally, each server was asked to fill out a diagram of the body using a modified Borg pain scale.

At all sites, each selected wait staff member was observed while performing the tasks of pick up, transport, and delivery of food. The goal was to capture the full cycle of pick- up, transport, and delivery at least three times for each participant.

After analyzing data from field study, the recommendations for the design was to develop a new tray to relieve loading on the back (see Figure 4). Reductions in load will be sought by keeping the load close to the wait staff's center of gravity. The tray should be designed to carry the load at the waist for two reasons: 1) to avoid unnecessary lifting of the load to the shoulder when the load is picked up and delivered at waist level and 2) most wait staff carries the load on their arms at waist level which may improve the likelihood of adoption of the new

tray.

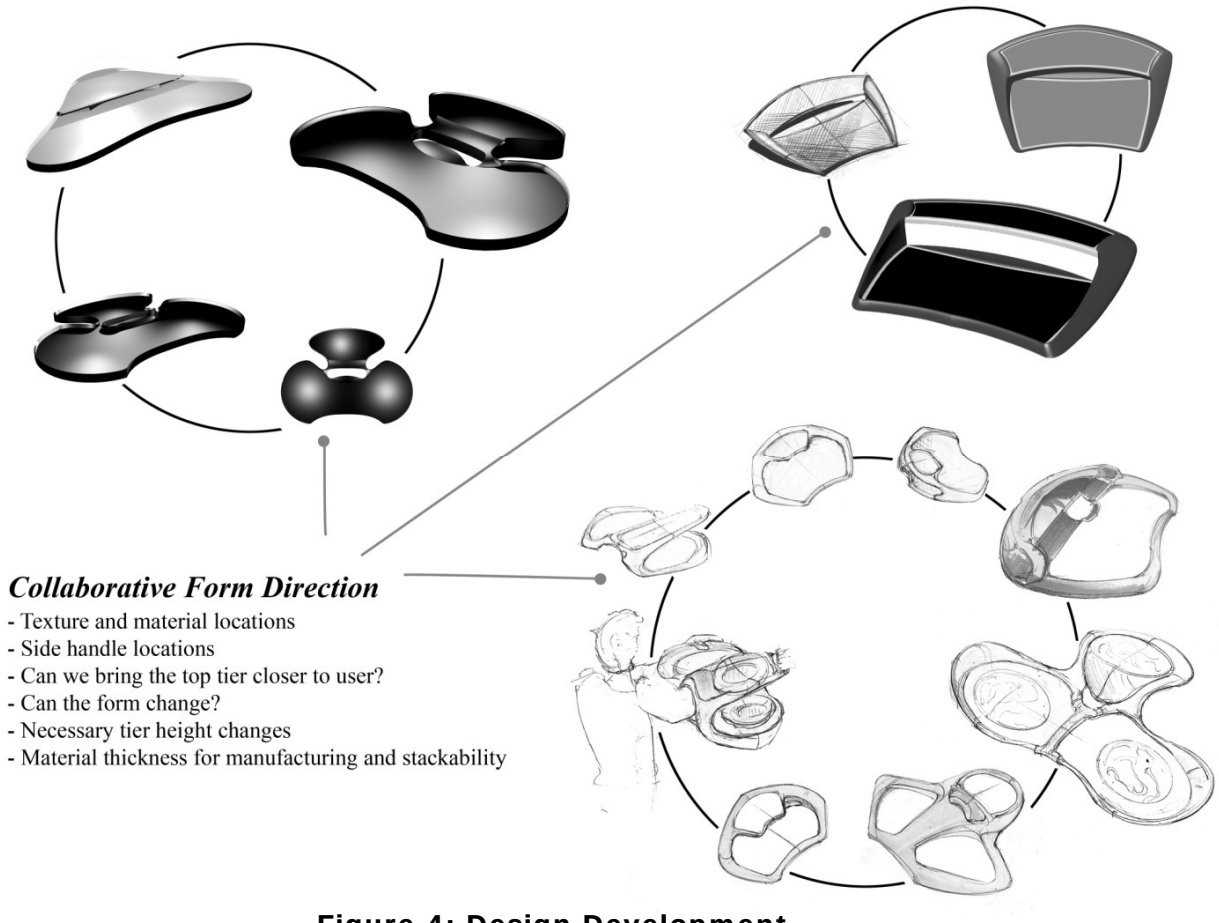

Figure 4: Design Development

The designs generated through ideation were evaluated based on the following criteria:

1) appeal to restaurants with a high customer turnover leading to a fast paced serving environment;

2) promote neutral posture of wait staff during use;

3) use of tray should be easy and efficient (requiring no additional time to deliver meals);

4) promote meal carrying at waist level;

5) encourage the server to keep the load as close to their body as possible;

6) afford load delivery of 3-4 plates; and

7) remain stackable and washable

The new tray design is simple and sleek making it ideal for use in many restaurants (see Figure 5). It will fit in with almost any décor without sticking out. The simplicity of the design will allow restaurants to use the tray for many years without the look becoming dated.

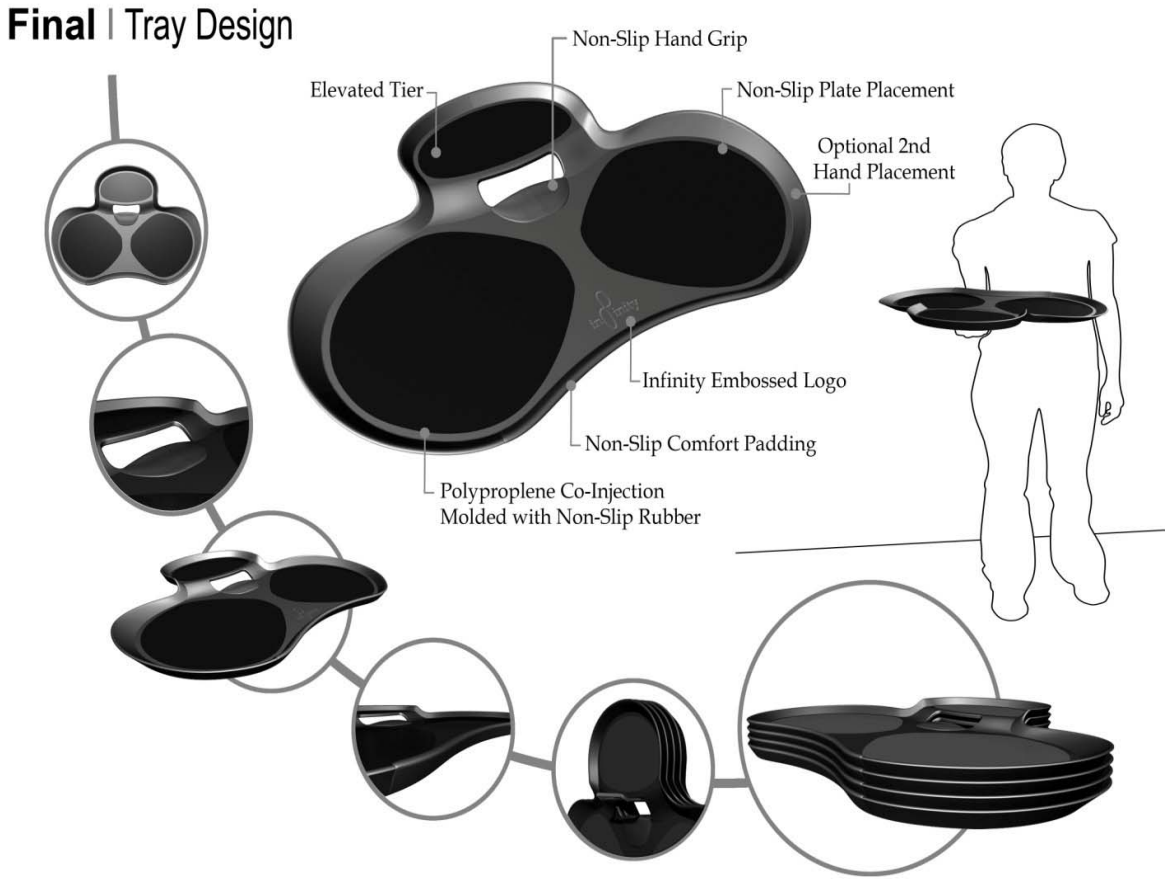

Figure 5: Infinity – New Tray Specs

UD Assessment

"Universal design seeks to encourage attractive, marketable products that are more usable by everyone. It is design for the built environment and consumer products for a very broad definition of user."

Ron Mace

Criteria in developing a new tray for restaurant use, the principles of universal design were taken into consideration when designing this product. The design lent itself to guidance from four of the principles (see Table 1): equitable use, flexibility in use, simple and intuitive to use, and low physical effort. The remaining three principals were considered in the design phase but play a lesser role in the design development owing to the type of product. Future designs will explore alternatives which will push the principle of Universal Design further in meal delivery (which is beyond the scope of this student design project). Meeting the needs and expectations of the owners while delivering meals from existing kitchens and through the existing layouts of operating restaurant dining room facilities was a definitive challenge.

Table 1: Applications of Universal Design Principles

Method	Equitable Use	Flexibility in Use	Simple & Intuitive	Low Physical effort
Old Tray at Shoulder	Low	Low	Moderate	Low
Old Tray at Waist	Low	Moderate	Moderate	Low
Arm Carry	Low	Low	Low	Low
New Tray	Moderate	Moderate	Moderate	High

Performance of Design for a principle:

NA- not applicable to this assessment,

Low – poor performance,

Moderate – moderate performance,

High – Strong performance

Discussion of application of Universal Design

The new tray design was benchmarked against the three current methods for meal delivery. Each method's performance was rated as low, moderate, or high for each of the principle of universal design (see Table 1 above). The arm carrying method was rated low against each of the principles. The old tray situated at the shoulder level was also rated low against the principles except for a moderate rating for simple and intuitive. The old tray situated at the waist level was rated low for equitable use and physical effort and moderate flexibility in

use and simple and intuitive categories. The new tray design was rated moderate against the principles with a high rating for low physical effort. Though the new tray was an improvement when considering the principles of Universal Design, the task of meal delivery has great room for improvement so that meal delivery is more usable by everyone. This design is more attractive and broadens the user group for the meal delivery tray.

Equitable Use

The restaurant is a large industry and employees many people to operate and manage daily restaurant task. Wait staff in these restaurant have employees with diverse abilities. The new tray was designed to be an attractive, easy to use tray to help reduce injuries and make waiting table task easier. One consideration was the load stability and potential for accidents if the employee were to tip the load due to personal instability, tremors or unexpected changes in directions (e.g. patrons moving about in the dining area).

Flexibility in Use

The design team created a tray design that could be effectively used by a wide variety of body sizes and types. The width of the new tray's grip hole is 19.69mm (5.0 inches). According to People Size Anthropometry software, this grip width of 19.69 inches accommodates the 99th percentile US male. The depth of the new tray's handle opening is 3.8mm (1.5 inches), which also accommodates the hand depth at middle finger knuckle for the 99th percentile US male. In addition, the design accommodates right or left handed access and use

At the narrowest point of the tray, the distance from the elbow crease contact surface and the beginning edge of the grip opening is 262.1mm (10.32 inches). Because the 1st percentile female has an elbow-wrist length of 229mm (9.01 inches) the distance between the proximal tray edge and the grip will accommodate practically all adults.

The positioning of the tray in a bent elbow posture reduces muscular loading and minimizes awkward postures in the elbow, shoulder and wrist. This allows individuals with less strength and range of motion to successfully use the new tray.

Simple and Intuitive Use

In a restaurant setting, efficient is an important value to ensure quick and fast service. The new tray was design for wait staff to load, carry, and deliver without crowding of plates on tray, to distribute weight efficient, and give user adequate placement of hands to support load. The shape and placement of materials on new tray was designed to give indicators of placement on the contours of the body and hand placement to eliminate unnecessary complexity.

Low Physical Effort

Our main goal in this design was to accommodate users with a design that could be used efficiently and comfortably with a minimum of fatigue and accidents. Providing design requiring low physical effort was a crucial universal design principle that was needed in order to change existing restaurant methods. The final tray design features a large area that will hold two

large plates and a tier farther from the body that will support one large plate. The advantage of the tier is that a plate can be cantilevered partially over plates on the lower tier. It also allows clearance for the hand to come through the hand grip near the middle of the tray. The flared edges at the side of the lower tier adds versatility to the tray by allowing the user to use two hands and hold the tray close to the body. The new tray puts the user in the ergonomically recommended position and decreases muscle activity by encouraging the user to keep the load close to the body.

Figure 6: Infinity – New Restaurant Tray

Acknowledgements

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The authors acknowledge Bong-il Jin for his styling instruction, reviews, critiques and recommendations. Without his knowledge and guidance, the final models would lack the style and refinement that designers leverage to turn an idea into an object worthy of mass production.

Special thanks are extended to the restaurants and participating staff members which allowed us to collect our initial data and to test our working prototypes.

The studio during which this project was conducted made use of the RED Lab in the College of Design. The RED Lab is partially supported by the Center for Universal Design, the Ergonomics Center of North Carolina and UserView Inc.

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GROCERY BASKET

PRODUCT REDESIGN OF GROCERY BASKET: CO NSIDERING MUSCULAR EFFORT, PRESSURE DISTRIBUTION, AND USER ACCEPTANCE

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OVERVIEW

At the beginning of the project, it was noted that there are a number of ergonomic issues with existing hand-held shopping baskets. The basket handles are uncomfortable, awkward, and difficult to pick up with one hand. The baskets do not distribute the load effectively, and the shell of the basket is uncomfortable against the body. The hand-held shopping basket (henceforth referred to as "basket") is an interesting object of study because there are few basket designs that address ergonomics.

There were a couple of specific areas of focus during the redesign of the basket. First, there was a need to address the load distribution. Current baskets are box-shaped. This shape did not appear to lend itself to carrying loads efficiently. It was thought that altering the shape of the shell of the basket could improve the load distribution. Second, the handles on existing

baskets are uncomfortable for both gripping and draping the basket over one's forearm. The handles are made of a thinly molded plastic or metal which, when used in their upright positions, frequently pinch the skin. The handle is an important feature of the basket because it is the body-to-basket contact area that bears the load of the entire basket. Lastly, the current baskets' appearances are unappealing. Many of these baskets have a square and boxy shape. The sides and base are perforated in a grid-like pattern of squares.

A market and patent review revealed few patents on hand-held shopping baskets. Some of these address the basket's shape and some address the connection orientation of the handle.

For this study we addressed several problems associated with the hand-held shopping basket. To study the basket in a shopping setting where baskets were used more frequently than shopping carts, we picked small to mid-range grocery stores that sold specialty products such as organic and natural foods. These stores also had a friendly community setting, which provided greater dialogue when collecting our observation data. Our goal was to observe how customers interacted with their baskets, including how they carried them, what they used them for, why they used them, and what kinds of problems they experienced while using the basket.

PHASE I: MARKET AND LITERATURE REVIEW

During the literature review, the following indices were searched: Google Scholar , Design Applied Arts Index, and Engineering Ergonomic Abstracts. The following keywords

were used during these searches: shopping basket, grocery basket, supermarket basket, ergonomic basket, load-carrying, hand basket, ergonomic carrying handle, child carrier, infant seat, hand-held shopping basket, asymmetric loading. The literature review resulted in a limited amount of literature related to the hand-held shopping basket. "Hip joint forces during load carrying" by Bergmann, Graichen, Rolmann, and Linke , provided some insight as to how various load-carrying affects the hip. An article by Desai and Talukdar, "Relationship between Product Groups' Price Perceptions, Shopper's Basket Size, and Grocery Store's Overall Store Price Image", provided information on baskets' capacities. Two articles relating to infant carriers were helpful in considering how to make a heavy load easier to carry. These articles were "Ergonomic Contribution to the Development of a Baby Carrier", by Bonapace, Borghi, Mancuso, and Menarini; and "This Infant Carrier Is Too Heavy; An Ergonomic Redesign of Infant Carriers", by Roca.

For the patent research, the following patent websites were searched: United States Patent and Trademark Office, and Free Patents Online. The same keywords were used to search these websites (shopping basket, grocery basket, supermarket basket, ergonomic basket, load-carrying, hand basket, ergonomic carrying handle, child carrier, infant seat, hand-held shopping basket, asymmetric loading). The results showed that ergonomic baskets were currently on the market. A total of three baskets were found with ergonomic contour exteriors. The Target brand has a patent on a basket in the form of a peanut shape. This shape is designed to contour the natural shape of the hip. This same basket has a handle that runs from end to end across the length of the basket. Results also showed patents of different

handle connection orientations.

This included handle orientations that are seen most commonly in grocery stores (two handles that fold up to join as one) (Figure 1). Results also showed basket accessories such as basket holders (Figure 2).

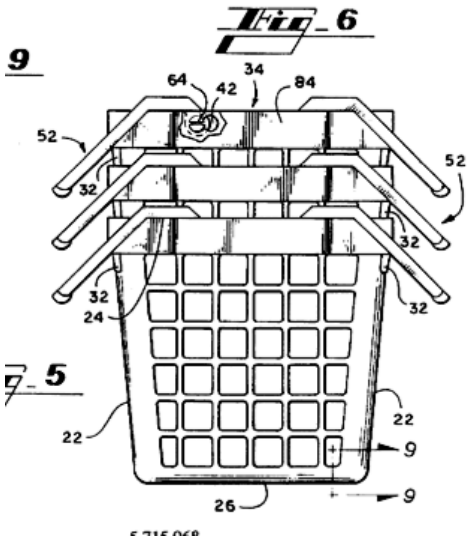

Figure 2

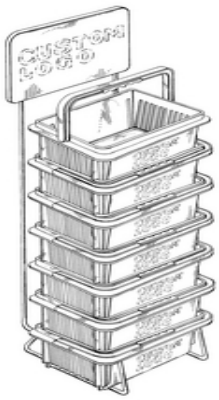

Figure 3

PHASE II: SOLUTION DEVELOPMENT

Considerations. Initial concepts the team explored included the addition of wheels, a belt to secure groceries and similarly a shoulder strap. Weight distribution and comfort were essential design factors. Limiting factors included consideration of use in spaces and materials for design.

Accordingly, the use of flexible materials became topic of discussion. Although a flexible mesh would provide ease of use and reduced weight, the stress applied to basket contents becomes a point of concern. Making part of the basket flexible and other parts structured was considered. Ultimately, how the

basket meets the user was determined to be the most effective means of improving weight distribution and comfort.

Handle exploration. **The first concept was an idea of creating two half-handles that would meet together in the middle of the basket and form one (Figures 3 & 4). Each handle would have a magnet attached, enabling the handles to become one when pulled together. The two handles would be set on soft mesh material. This concept would eliminate any pinching that is commonly associated with handles currently on the market. The problem with this concept is that adding more material pieces to the basket would make them susceptible to breaking or needing to be replaced.**

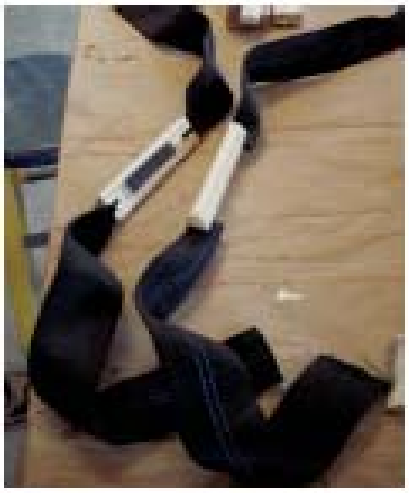

Figure3

Figure4

The use of flexible or rigid materials for the handle became a point of debate, bringing up issues of form-fitting and positioning, but issues of manufacturing (the entire basket out of one material) and overall durability became of greater concern and consequently the flexible handle concept was discarded.

Another point of concern was connection between handle and basket. Current baskets have four connections, two per handle. Using one handle, only two connection points are needed. This solves the issue of the two-handle pinch, but as result load balance becomes an issue.

Final handle concept. The handle's final design reflected its simple and intuitive use. The handle was positioned slightly further down the exterior of the basket, which results in a shorter distance between the handle and the top rim of the basket. Because the basket has only two connection points, a locking mechanism was designed for when the basket is activated and in use. This occurs when the customer pulls up on the handle. Small dimples along the side of the basket lock the handle in place while the pivot wheel locks in the same way. To account for the inner curve of the basket, the handle is somewhat flexible; otherwise the handle would have provided difficulty when pivoting to either end. The center pivot area has approximately a quarter-inch give. The rotation revolves on a plane that is parallel with the bottom of the basket. To accommodate for forearm holding, the handle has a slight curve on the inside edge of the basket. The center of the handle becomes slightly thicker to allow for a more comfortable handgrip.

PHASE IV: SOLUTION STYLING AND FINAL DESIGN

LAB ASSESSMENT: TEKSCAN

Variables. Using a Tekscan, the new basket prototype was also tested against an existing basket to compare pressure distribution. Data was collected on four participants, three

male and one female .Four conditions were tested to determine product contact area, including: old basket/hand hold; new basket/hand hole; old basket/forearm hold; new basket/forearm hold. The peak contact pressure was also recorded for each of these four conditions. Baskets were tested with a symmetrical load of ten pounds.

Findings. **The contact area for the hand-to-handle posture was 15% greater on the new basket. The contact area for the forearm-to-handle posture was also 15% greater on the new basket. The new basket better distributes the contact area across the points of interface (Figure 5).**

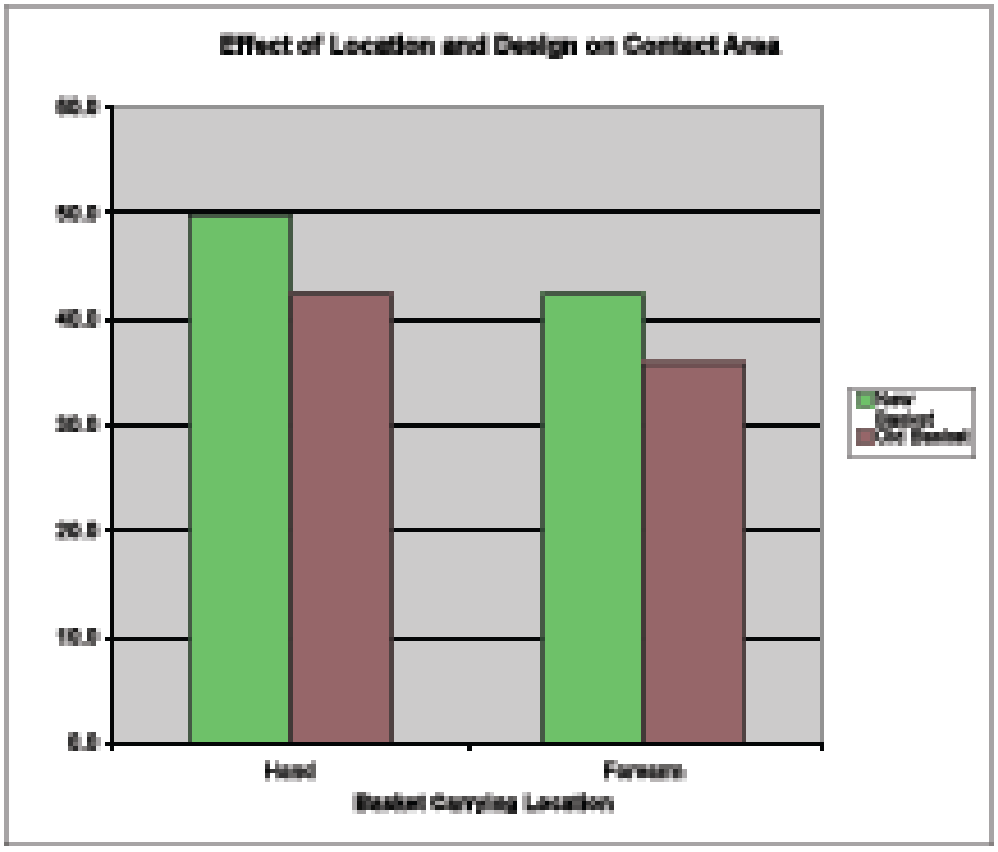

Figure 5: Effect of Location and Design on Contact Area

The new basket's peak contact pressure for the hand-to-handle interface was greatly reduced. Its peak pressure was 26% lower than the old basket. The new basket's peak contact pressure for the forearm-to-handle interface was also greatly reduced. Its peak pressure was 43% lower than the old basket. These findings indicate that the new basket is much gentler on both the hand carry and the forearm carry (Figure6)

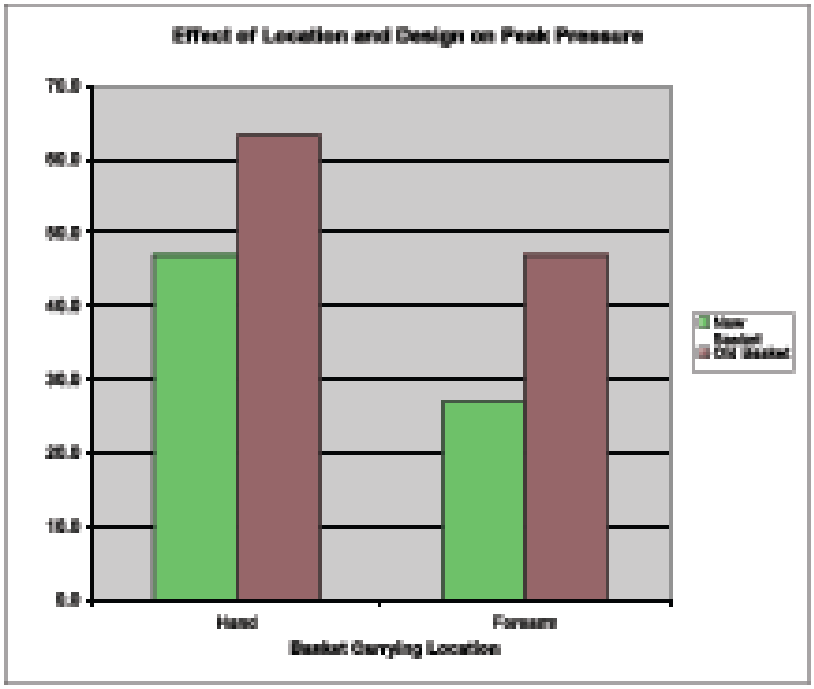

Figure 6: Effect of Location and Design on Peak Pressure

FIELD TESTING

Variables. **Of these participants, four were female and one was male. Participants were asked to shop for a prescribed list of groceries, which included a loaf of bread, box of cereal, can of beans, and peanut butter. Participants were instructed to shop for the items, first with the old basket, then with the new prototyped basket. After completing their two shopping trips, they were asked to rate on a scale of 1 (strongly disagree) to 5 (strongly agree) the following questions:**

1) The old basket handle is comfortable;

2) The old basket handle distributes the weight well;

3) The new basket handle is comfortable;

4) The new basket handle distributes the weight well;

5) The curve in the new basket was helpful/comfortable.

Participants were also asked the following:

6) If you were holding it in your hand, which handle would you prefer overall?;

7) If you were holding it draped over your arm, which handle would you prefer? Additional comments were also recorded

Findings. **The average score for question 1 was 2.2, question 2 was 1.8. 3 was 3.4 and question 4 had an average score of 3.6. The average score for question 5 was 3.8 (Figure 10). These scores show that, overall, the new basket was preferred to the old basket**

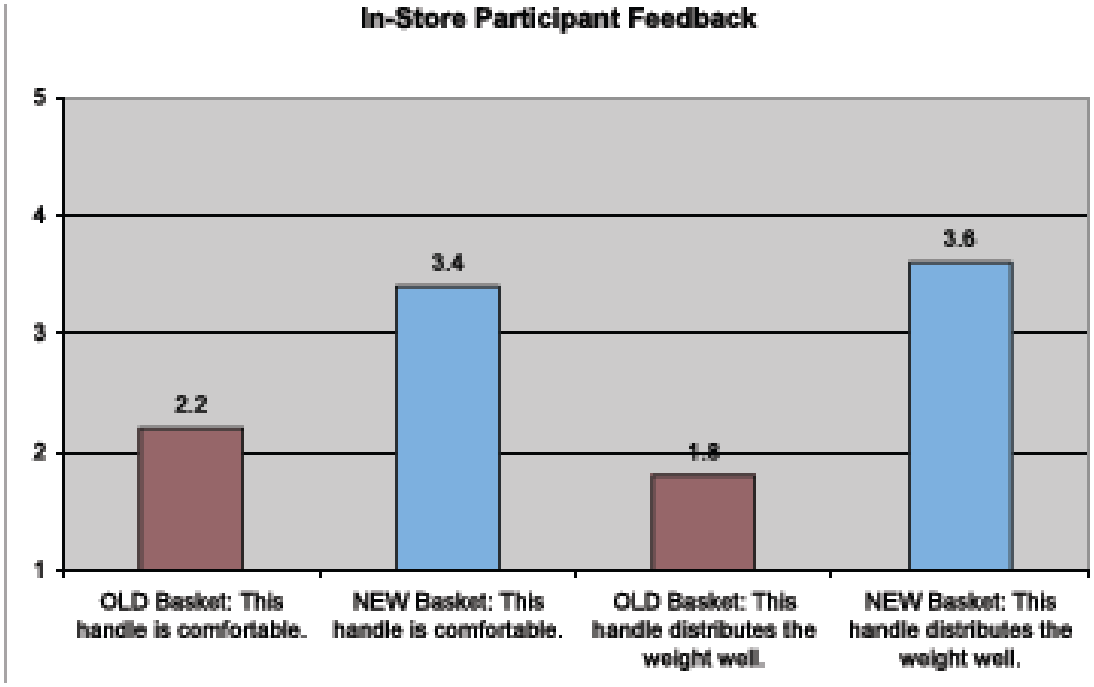

Figure 10: In-Store Participant Feedback

UD ASSESSMENT

In evaluating baskets on the market and of student design, the Principles of Universal Design provide an effective means of determining the overall usability of a product (Figure 8). In regards to design decisions, the primary focus was equitable use – is this product usable to people of varying abilities? In regards to flexibility of use, a single handle, comfortable enough to drape over the forearm throughout the shopping experience affords an individual with one hand to easily use the basket. Increasing contact area between the arm and basket provides greater load distribution, reducing physical effort. In addition, having one handle, as opposed to two, reduces chances of pinching, and accordingly user error

Principle	Current on Market	Student design
Equitable Use	Low	High
Flexibility of Use	Low	Moderate
Simple & Intuitive Use	High	High
Perceptible Information	NA	NA
Tolerance for Error	Low	High
Low Physical Effort	Low	Moderate
Size and Space for Approach & Use	NA	NA

Figure 11 UD Assessment of Existing vs Student Basket Design

CONCLUSIONS AND RECOMMENDATIONS

Lab testing found that the new basket design did not move the load closer to the body. However, the new design will hopefully change the way people behave with the basket. Interface testing showed that the new basket handle is gentler than existing designs on both the hand and the forearm. Although the lab testing showed that the new basket did not bring the load closer to the body, it was perceived as being effective in this area during field-testing. Issues of stacking were also evident.

Overall, the feedback on the new basket design was positive. In field-testing, it exceeded in performance in all areas when compared to the old basket. The team did, however, receive additional general comments from users that were helpful. Some of the feedback provided was that it would be nice if the forearm section of the handle was wider. This width could be explored further if we were to continue to develop the project

Other feedback was that when the new basket was held at one's side, it rolled the wrist out a bit. This could also be a factor of the working model being slightly different than the final rendering (Figure 9). Moving forward, it would be helpful to have a model that more closely resembled the final design.

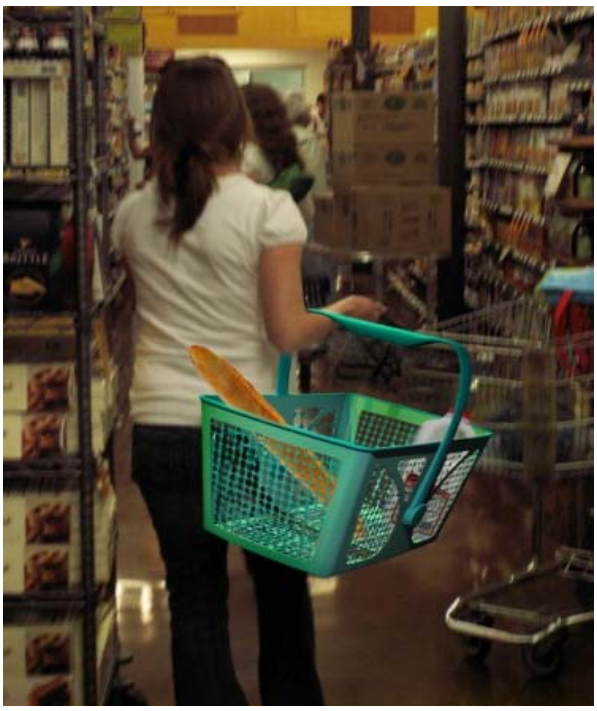

Figure 9: Final rendered design

PROJECT CONTEXT

The studio course, Industrial Design 500: Ergonomics and Human Factors in Design was the forum in which this project took place. It was a unique studio setting for a number of reasons. Foremost, it was about considering the human interface when designing a new product or environment. Throughout the semester the team was constantly challenged to design a basket that met human factor requirements. The team was also exposed to gathering field data. This required studying how designed products are used in an environment and recording data on how humans interact with these products. This varied from other industrial design studio courses because human factors and ergonomics are often considered post-design, or as a secondary

part of the design process. The team was also exposed to lab testing, which involved the use of computers and software that used electrodes to test muscle activity. Being able to test a working prototype and be able to test the effects it has on posture and muscle activity are what made this studio a unique experience.

Being on a team also had advantages and disadvantages. Some of the disadvantages of being on a team are that ideas are inevitably compromised. An individual's idea is often made stronger by a group idea. By processing our observations and background research, the team was able to settle upon a final decision. The advantages of working with a group were that it mimicked how design teams operate in the real world, stressing that ideas are often compromised. Another advantage to working on a team was the fact that each member contributed different strengths and skills to the group. Combining the strengths of all team members resulted in a project that was thoroughly studied, researched, and designed.

ACKNOWLEDGEMENTS

The authors also acknowledge professors Bryan Laffitte and Bong il Jin for their styling and sketching instruction, which included reviews, critiques, and recommendations. The final models would lack the style and refinement that designers leverage to turn an idea into a product that could be competitive on the market.

Special thanks are also extended to the grocery stores and participating customers who allowed us to collect our initial

data and test our working prototypes. These grocery stores include: Whole Foods, the Fresh Market, and other stores whom may have assisted with our data collection.

The project required the use of the RED Lab in the College of Design. The RED Lab is partially supported by the Center for Universal Design, the Ergonomics Center of North Carolina, and UserView Inc.

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INCUBATOR

INCORPORATION OF UNIVERSAL DESIGN PRINCIPLES IN THE DEVELOPMENT OF AKANGAROO CARE SIMULATOR FOR USE IN NEONATAL INCUBATOR

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College of Design
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Problem Statement

Neonatal intensive care unit incubators are sterile, isolated environments. There are no soothing qualities for an infant in an incubator. See Figure 1.

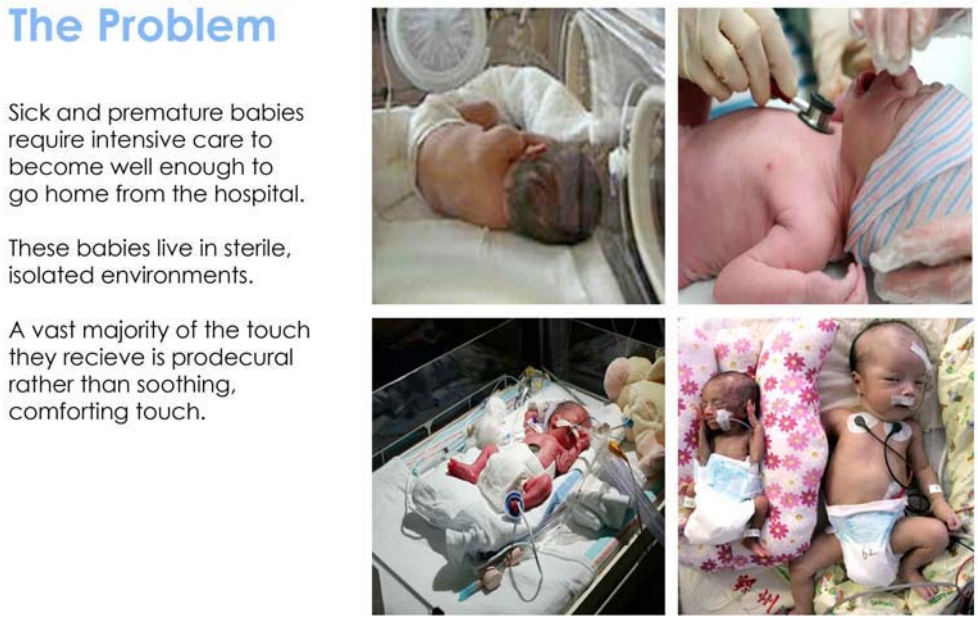

Figure 1: Premies in incubators

Goal

Incubators provide monitoring and vital life support equipment for premature and ill infants. Skin-to-skin contact of mother and infant (also known as kangaroo care) provides soothing aspects for premature and ill infants as well as providing health benefits as well. My goal is to bridge the gap between the lifesaving technologies of incubators and the natural benefits of kangaroo care and provide this type of care when parents are absent.

Background

In the womb, a baby rests in a warm, dark, and quiet environment. There is constant communication between baby and mother and familiar rhythms and sounds that engulf the baby.

Premature babies, however, are exposed to un-familiar and over stimulating lights, sounds, and smell much earlier than they are physically and neurologically ready to endure. Because of this, this vital time of growth and development is compromised.

In a neonatal intensive care unit, premature babies receive touch, but it is procedural rather than soothing. The auditory stimulus that is comforting in the womb is replaced with unfamiliar and distracting noises constantly bombarding them.

While incubators provide lifesaving means to premature and sick infants, there are limitations to how modern medicine can help these babies. Infants who have enough muscle development can scoot their body to the side or corner of the incubator to have some contact and sense of boundary within the isolated environment. This contact gives them a sense of security. Not the ideal contact by any means, this boundary at least gives them some comfort in the incubator. (See Figure 1)

Research

Kangaroo Care involves placing a diapered baby in an upright position on a parent's bare chest. The baby's ear is placed above the parent's heart. This care was established in 1983 in Bagota, Colunbia by Edgar Rey and Hector Martiniz[2]. It was found to be a natural inexpensive alternative to modern medical practices. There were outstanding numbers of benefits associated with kangaroo care. See Figure 2.

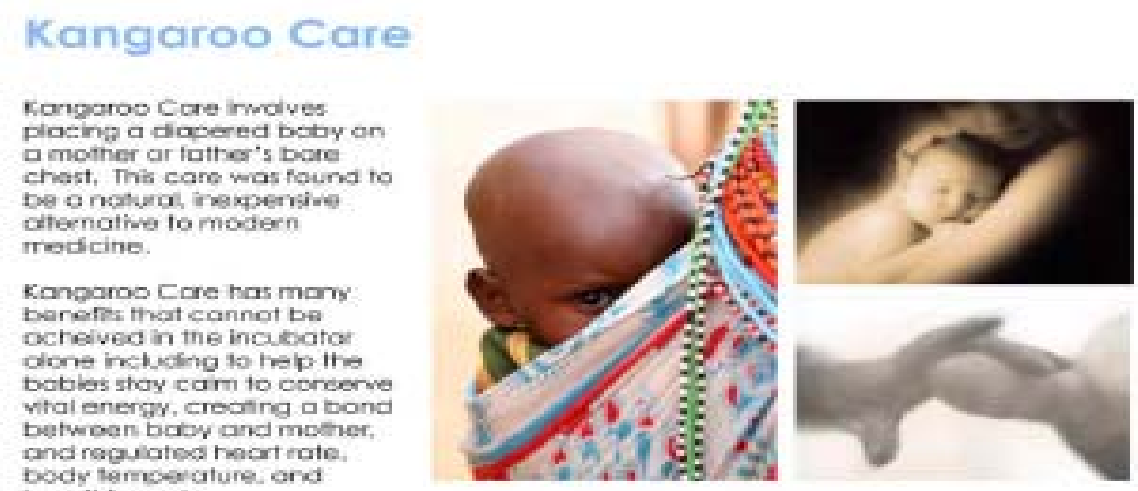

Figure 2: Kangaroo Care

[2] **"Kangaroo Care Benefits", Krisanne Larimer. http://www.prematurity.org/baby/kangaroo.html**

care helps babies to fall into a deep sleep which helps to conserve vital energy. Kangaroo care helps the babies to relax and be calm which leads to less crying. Lastly, infants who receive kangaroo care have up to 50% shorter hospital stay. While most studies have proven that kangaroo care has major, positive impacts on babies and parents, some studies have proven there are no changes: but no study has [3] proven that it had any side effects either for infants or parents. The benefits associated with Kangaroo Care may include decreased costs, increased bonding with family, reduced burden on the hospital, and decreased chance for infection (by being in the incubator).

"Recent research has shown that separation [in incubator] causes adverse effects. Maternal-infant skin-to-skin contact (SSC) provides an alternative habitat to the incubator, with proven benefits for stable premature; this has not been established for unstable or newborn low-birth weight infants[4]. This was a randomized controlled trial of skin-to-skin contact from birth versus conventional incubator for physiological stabilization in 1200- to 2199-gram newborns.

The simulation of kangaroo care within the incubator can potentially reach those preterm infants who are unstable or low-birth weight.

Harry Harlow conducted a study in the 1950s that

[3] Larimer, Krisanne, "Kangaroo Care Benefits". http://www.prematurity.org/baby/kangaroo.html

[4] NJ Bergman, LL Linley, SR Fawcus (2004) Randomized controlled trial of skin-to-skin contact from birth versus conventional incubator for physiological stabilization in 1200- to 2199-gram newborns. Acta Paediatrica 93 (6), 779–785.

involved removing infant monkeys from their mothers, and offered them a choice between two surrogate "mothers", one made of terrycloth, and the other of wire. In the first part of the study, one group was given the terrycloth mother who provided no food, while the wire mother did. In the second group, the terrycloth mother provided food and the wire mother did not. It was found that the infant monkeys held on to the terrycloth mother whether it provided food or not, and the monkeys would only chose the wire "mother" when it provided food[5]. While a contradictory study, these findings are hard to ignore. The need for comforting touch is vital to the development of infants. Harlow himself stated in his book," It takes more than a baby and a box to make a normal monkey." While not the intention of the incubator, isolation and infrequent comforting touch is a common occurrence in the incubator environment. "Critics of Harlow's claims have observed that clinging is a matter of survival in young rhesus monkeys, but not in humans, and have suggested that his conclusions, when applied to humans, overestimated the importance of contact comfort and underestimated the importance of nursing[6]." Conclusions from Harlow's study may seem extreme to apply to human infants, yet it is impossible to ignore the findings of this controversial study. See Figure 3.

[5] Harlow, Harry F., "The Nature of Love". Washington: American Psychological Association, 1958.

[6] Mason, W.A. Early social deprivation in the nonhuman primates: Implications for human behavior. 70101; in Glass, D.C. (ed.) Environmental Influences. New York: Rockefeller University and Russell Sage Foundation, 1968. Excerpt in Stevens, M.L. Maternal Deprivation Experiments in Psychology: A Critique of Animal Models. 11; The American Anti-Vivisection Society. 1986. Via http://en.wikipedia.org/wiki/Harry_Harlow

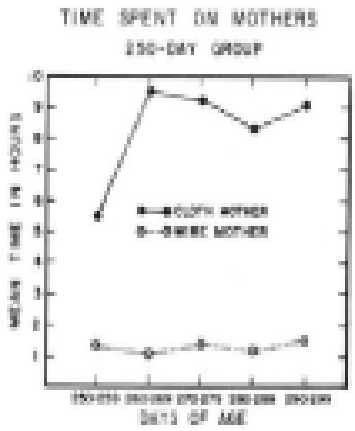

Figure 3: Harlow's Nature of Love

Market Research

Many products are currently on the market for positioning and soothing infants while in the NICU (see Figure 4). Children's Medical Ventures is a leading provider of products for infants, who are hospitalized, healthy, and premature. These products can be used in hospital settings, the home environment, or both. Zakeez, Inc has a product on the market called "The Zaky". It is an ergonomically designed, award- winning bonding, therapeutic, and positioning product for infants. "The Zaky" is intended for hospital settings.

Product Description

A beanbag positioning aid designed for developmentally supportive positioning. The product can be positioned around the hips, head, neck or extremities.

Snoedel"

A flannel doll designed to absorb the parent's scent and provide babies with a sense of comfort.

Snuggle Up"

A "nest" that helps proper positioning and stability for infants. Once nested in the SnuggleUp, examining, transporting and moving can be preformed with minimal stress and disruption.

Bendy Bumper"

A bendable positioning aid that holds its shape once positioned. Products promote containment, correct musculoskeletal development and positioning, and flexion.

Zaky""

An ergonomic infant pillow designed to mimic the size, weight, touch, and feel of a parent's hand.

* Children's Medical Ventures: http://chmv.respironics.com ** The Zaky": http://www.thezaky.com/en/home/index.php

Figure 4: Market Research

Design Development

The table below contrasts the shortcomings of the incubator with the strengths of kangaroo care to identify opportunities for the KC simulator. See Table 1

Table 1: Benefits associated with care environment or approach
Kangaroo Care Benefit Kangaroo Care Incubator Simulation

Benefit	Kangaroo Care	Incubator	Kangaroo Care Simulation
Recognition of parent	*		*
Respond to infant's thermal needs	*	*	*
Normal Temperature[6]	*	*	*
Normal heart rate[6]	*	*	*
Normal respiratory rate[6]	*	*	*
Strengthens Infant's Immune system, through breast milk[7]	*		
Contact causes calming effect[8]	*		*
Increased weight gain[9]	*		*
Enhanced mother-Infant bonding	*		Unknown
Restful sleep[11]	*		*
Earlier discharge[12]	*		*
Positive impact on motor development	Possibly		*
Less crying[14]	*		*
Increased confidence of parents[15]	*		
Oxygen		*	*
Monitor Vitals		*	*
Phototherapy		*	*

Note: This KC simulator is being designed with features to take advantage of attributes associated with other care approaches and environments but have not been tested.

[6] Ludington-Hoe et al., 2005 [7] http://en.wikipedia.org/wiki/Kangaroo_care#Benefits_of_kangaroo_care [8] McCain, Ludington-Hoe, Swinth, & Hadeed, 2005; [9] Charpak et al., 2005 [10] Charpak, Ruiz-Pelaez, & Figueroa, 2005 [11] Dodd, 2005 [12] Ludington, Hosseini, & Torowicz, 2005 [13] London et al., 2005 [14] Peralva & Schwartzman, 2005 [15] NJ Bergman, LL Linley, SR Fawcus (2004) [16] Tessier et al., 1998; Conde-Agudelo, Diaz-Rossello, & Belizan, 2003; Kirstan, Bergman, & Hann, 2001

KC Simulation Characteristics

Scent

Scent is one of the first senses to develop and is the first way that babies recognize their parents. Having the familiar scent of a mother calms and relaxes premature infants. This leads to deeper sleep and therefore more energy for vital development. Since the babies are calmer, they are not struggling to get comfortable within the incubator, thus further conserving vital energy. Incorporating the sense of smell involves the parents to hold the fabric covering of the kangaroo care simulator to absorb their scent into the fabric. There are conflicting opinions about the ability to provide a fabric with a parents scent on a fabric without introducing bacteria. The solution may be to provide the fabric for scent collection once the parent has scrubbed into the neonatal area.

Movement

Movement helps premature babies with motor maturation, auditory, and visual response, and reduces apnea. The slight movement encourages preterm infants to tense their muscles to counter the movement going on around them. A lot of premature infants lie in an incubator "spread-eagle" with straight arms and legs. This is due to the lack of muscle development to change their position. This slight movement will encourage flexion of their underdeveloped muscles ultimately stimulating muscle development. Movement is introduced in the product in the form of a slim, flat plane housed within the memory foam core. Movement is produced by a simple involute gear system turning a rod with elliptical form on the end to create the rise and fall of the flat plane.

Sound

Providing recognizable rhythmic sounds for preterm infants can also encourage a restful state and help regulate the baby's vitals. Having the sound of the mother's heartbeat helps regulate the baby's heartbeat and breathing rates. Keeping sound to a minimum is important to preventing over stimulation of preterm infants. "Loud, sharp sounds can raise noise levels to 100-200 db, which may damage cells in the ear. ...Loud or sharp sounds can cause physiological changes like tachycardia, tachypnoea, apnea, oxygen desaturation and sudden increase in mean arterial blood pressure, disturb sleep, startle the baby and may even produce intracranial hemorrhage in a micropremice[7]. The maximum noice level appropriate for NICU should be 55 decibels[8] To capture recording of the mother's heart beats electronic stethoscope will be used to record the heartbeat directly to an electronic device similar to an MP3 player which could be downloaded to a computer. The recorded heartbeat would then be played back in the incubator through the speakers within the simulator. A separate recording of each mother's heartbeat would be recorded for their baby.

Touch

The element of touch is one of the main focuses in current

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[7] **Editorial:"NICU Environment: Can we be Ignorant?" Col MNG Nair*, Surg Cdr Girish Gupta+, Lt Col SK Jatana, MJAFI 2003; 59 : 93-95**

[8] **Altimier, L. "Healing environments: for patients and providers.", Newborn and Infant Nursing Reviews, Volume 4, Issue 2,
Pages 89-92**

products addressing premature infants today. Touch can be used to create proper positioning and physiological stability. The sense of touch also has an emotional connection. As discussed previously, babies will scoot to the edge of the incubator to have contact with something: to create a boundary to give the sense of security and stability. This sense of enclosure is comforting and in some ways mimics the womb. The bumper on the kangaroo care simulator aids in this important sense of touch. It provides a boundary, support at the feet for a sense of security, and promotion of flexion and correct positioning. The fabric used as the covering is a soft fabric that would either be similar to a high-quality fleece or suede finish. An important aspect of this is that the fabric does not release fibers that the baby could potentially breathe in while in the incubator.

Each characteristic can be turned on and off with the control interface that is stored on the outside of the incubator. Each aspect of kangaroo care that is being simulated can be turned on and off whenever needed. Every baby has cues that they respond to best while others may be too stimulating and increase stress. Therefore, it is an important feature to be able to create the appropriate aspects for each individual infant.

Interface

The user interface is an important consideration in the design. Having a low tolerance for error is important for any design, especially equipment designed for hospitals. A simple and intuitive interface is achieved through universal/ recognizable icons for interactions. A display panel is located along the side

of the product with a diagram showing to orient the baby in the kangaroo care simulator. This is to insure that the baby is safely and comfortably interacting with the product. Having recognizable icons reduces error from interpretation of operations. Since the interface is primarily pictorial, users do not have to read the button labels to operate. Assistive access is achieved through the LCD screen on the top of the control panel. If users need further instruction on operation of machine, information can be accessed through the screen. This screen also doubles to display patient information such as info on recording uploaded to the device to insure the correct heartbeat is played for each infant. Buttons are placed far enough apart from one another so that buttons are not accidentally pressed. At the same time, the buttons are oriented together for grouping of activities within the product. A slight rise in the center of the button insures that users have tactile feedback when they press a button. Icons have a glow from under the buttons to illuminate in low lighting as well as to indicate which state is currently selected within the kangaroo care simulator. See Figure 5.

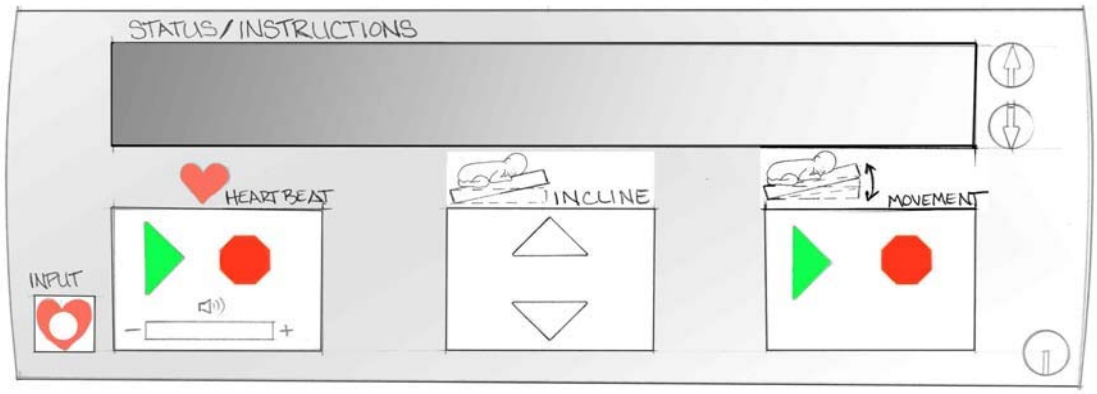

Figure 5: KC Simulator Interface

Process Drawings

The form of the kangaroo care simulator has just as much of a function as the sound and movement that are a part of the design. Form therefore follows function for this product. The form must support correct posture, give a boundary and sense of security, and contain the infant safely, securely, and comfortably. Overall form, angle, and combination of shapes are explored to come up with the final form. See Figure 6.

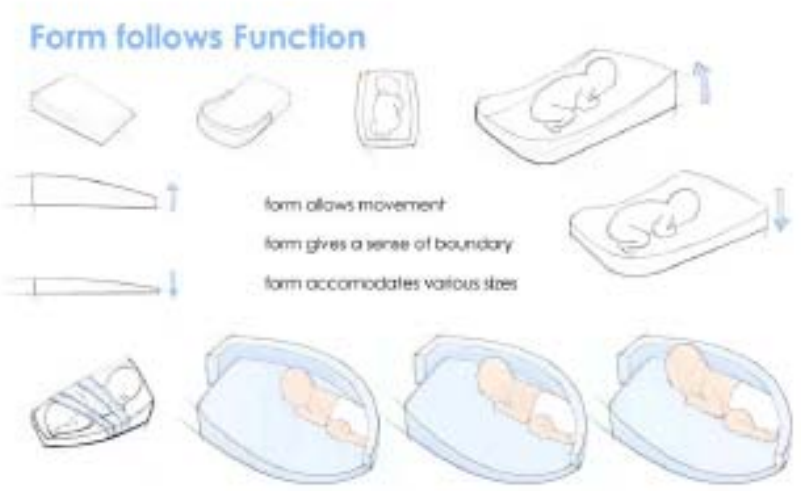

Figure 6: Ideation and developmental process

Materials

Various materials are explored through the design process. The materials chosen below are suggestions and reflex the research of which materials are appropriate for a hospital setting, meet the needs of the user and patient, and are comfortable for the end user.

Antimicrobial Viscoelastic (Memory Foam) core supports baby, create stable laying area, mutes potential sound if internal mechanism to move product as well as the speakers.

Polyester Fiberbill fills bumper for a soft cushion border for baby.

Bacterial, stain, and water resistant fabric (ex. Crypton ultrasuede fabrics) cover for product. Removable, washable, absorbs scent, soft to touch (soothing)

Rubberized layer in area where bumper meets mat. Provides support for bumper to stay in place without noise (as compared to a material like Velcro)

Polypropylene/rubber blend for mechanics to provide movement of product.

Universal Design

One of the overarching sets of principles used while designing this simulator were principles of universal design. The design lent itself to guidance from four of the principles (see Table 2): equitable use, simple and intuitive to use, perceptible information, and tolerance for error. The remaining three principle were consider in the design phase but play a lesser role in the design development owing to the placement of the simulator within existing incubators. These three principles will play a strong role in future incubator redesigns (which is beyond the scope of this student design project).

Table 2: Application of Universal Design Principles

Principles primarily influencing design	Kangaroo Universal Design Care Bendy Zachy Infant Principles Similation Bumper Pillow
Equitable Use	Yes Yes Yes
Simple and Intuitive to Use	Yes Yes Yes
Perceptible Information	Yes No No
Tolerance for Error	Yes Yes No
Low Physical Effort Size and Space for Approach and Use Flexibility in Use	

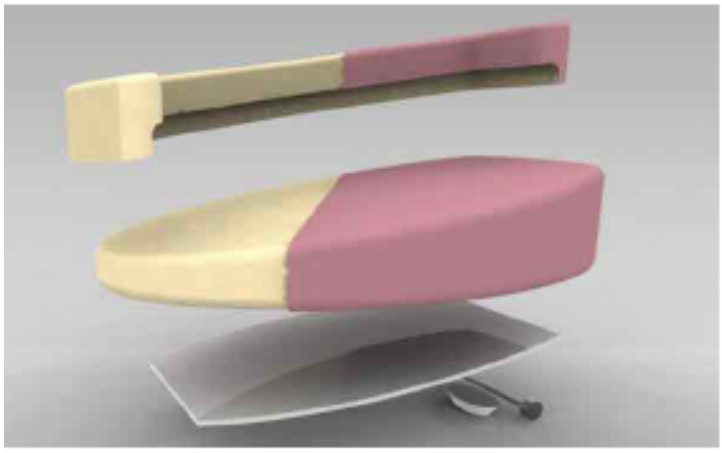

Figure 7: Exploded View of parts and materials

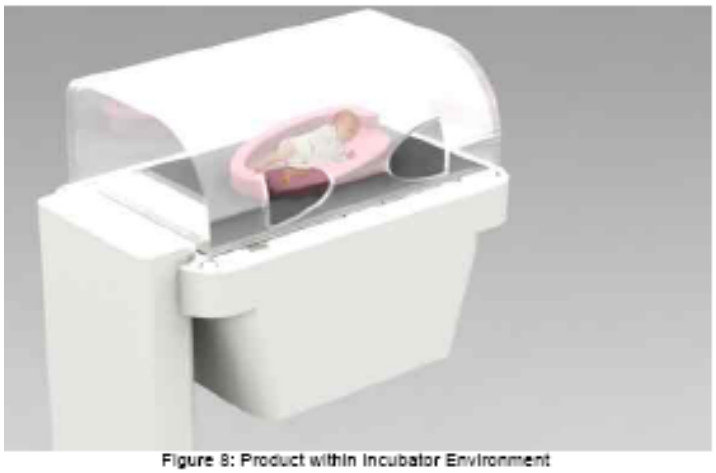

Figure 8: Product within Incubator Environment

Figure9 Final Design

Discussion and Future Design Direction

Universal design is an important part of this design and it ensures as many users as possible have their needs met through the design. Many times, design choices are made to meet the needs of the majority, and neglect the needs of the minority. The kangaroo care simulator has a very specific end user in mind that falls into the category of the minority of the population. Special accommodations must be made in order to ensure their best survival and recovery. End users of this product are not only the infant, but also the hospital staff. Universal design principles were applied to both of these users to develop the end product. Infants will receive the maximal amount of benefits with this product by combining the sterile environment, state of the art technology of the incubator with the soothing, comforting affects of kangaroo care. Hospitals benefit from this product as well by having a NICU of calm, relaxed infants who have a shorter hospital stay.

Timeline

ID 200 Studio JPMA contest project (not submitted)

ID 300 Studio Project revisited for revision

ID 445 Human Center Design Research into versal design

Note

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BABY BATH STATION

UNIVERSALLY DESIGINED BABY BATH STATIO N

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Problem Statement

Bathing an infant is a physically demanding task as it requires bending, lifting, and squatting. These known ergonomic risks create an unsafe environment for both the caregiver and the infant. With the prevalence of injury and disabilities[11]in the caregiver population, a universally designed baby bath tub is needed.

Introduction

Caring for a child can be both physically and mentally stressful. Few resources have been dedicated to developing universally designed products for routine child-care tasks despite the high incidence of musculoskeletal pain, disability and injury among parents and care givers. Assistive and adaptive equipment provide a means for parents to independently care for their children, ultimately enabling them to provide better care. There are limited solutions created on a small-scale design and marketed to a small segment of the caregiver population.

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[11] ***This includes parents with physical, visual, and intellectual disabilities; deaf parents; and parents with diverse medical conditions.***

There are approximately nine million parents with disabilities in the United States, 15% of United States parent population. Parents frequently are unable to bath their own children. (Vensand, 2000) Many of these parents use professional assistance to manage daily child-care tasks, which can be emotionally disconnecting. Parents with disabilities struggle the most with transitional tasks, i.e. carrying and moving belongings. Consequently, simple tasks are time consuming, and increase the risks of stress, fatigue and injury.

Beyond the physical, new mothers face many challenges that compromise their ability to operate optimally. Recovery from delivery can take several weeks. Postpartum stress has also been found to increase the likelihood of developing physical health problems. (Brown, 2000) These stress and fatigues of raising a new child are amplified as women are increasingly faced with the challenge of managing both a career and a family. Stress and fatigue are known to exacerbate symptoms of pain, pain reporting, and risk for injury.

Back pain is a common ailment in mothers of infants, and to address this issue, products need to be developed that reduce the strain on the lower back. Studies have found that 44% of mothers experience back pain in the two months following pregnancy (Breen, 1994), and 30% of new mothers report back pain that persists for more than six months. (Russell, 1993) Similarly, in a study of mothers with at least one child under the age of four years, 66% of the mothers report musculoskeletal pain; the location with the highest incidence, 48%, is reported in the lower back, followed by the neck

(17%), the upper back (16%), the shoulder (11.5%), and the knees (10%). The ten most physically stressful tasks involved awkward postures as well as bending, lifting, and prolonged squatting. (Sanders, 2002) Childcare workers have also reported that lifting is the most physically stressful part of their jobs, followed by bending. (Owen, 1994)

Adaptive childcare equipment reduces the physical demands and stresses of common tasks and can be a preventative measure against ergonomic injuries. Such equipment is imperative for parents with disabilities, parents or caregivers with temporary disabilities, and grandparents that are actively involved in childcare.

Background Research

Market Research

The most common product available for bathing infants is a small plastic tub (see Figure 1). These bath tubs can be used within a larger bathtub or over a kitchen sink. When used in the tub, caregivers must lean over (extreme flexion of the torso and flexion of the shoulders) and into the tub to bath the child. A similar but less extreme posture is assumed while the caregiver stands when bathing a baby at the kitchen sink. Caregivers also transfer the tub to other surfaces, like the floor, for easier access. These tubs range in price from $18 - $40 in the United States.

Little assistive technology is commercially available for bathing infants. Other devices that assist in bathing include thermometers and anti-slip surfaces. External and

integrated thermometers help gauge water temperature. To aid in handling babies that are wet and slippery, gloves have been designed to provide a better grip on the child. For parents and caregivers who do not have the mobility or dexterity needed to use these tub basins, the tubs are altered and adapted for use. While searching for assistive bathing devices several retro-fitted tub designs were found. Most commonly, the tub is mounted to a table or cart like the one in Figure 2.

Figure 1. Typical baby bath tub by Primo Baby Eurobath

Figure2.Commercial tub attached to computer table. Drain is connected to dishwasher hose.

This solution provides increased flexibility in use and is intended to create a safer environment for bathing an infant. However, it does not adequately address many of the obstacles faced during the task of bathing a child.

Further, this tub set-up requires the caregiver to raise their arms above the lip of the tub, statically abducting the shoulders. Awkward postures combined with protracted static loading are known ergonomic hazards and should be avoided.

Task Definition

Caregivers use a variety of methods to bathe babies. In addition to the standard plastic tubs (see Figure 1), babies are also bathed directly in sinks and are given sponge baths. With each metho*d*, there are 10 requirements to complete the task.

1. Preparation of items needed: Since a child should never be left unattended in the bath, all needed items should be prepared prior to the bath and be within reach during and following the bath. Items needed include soap, a sponge or washcloth, a towel, lotion, and a clean diaper and clothes.
2. Lifting and carrying: Both the bath tub and infant need to be lifted and transported to the desired location.
3. Filling tub: In cases where the tub is not beneath a water spigot, the tub needs to be filled in advance, or the water needs to be carried to the tub. Correct water temperature is very important, so that the baby remains warm but is not scalded.
4. Washing: Soap and a sponge or washcloth is needed to gently clean a baby. Fresh water is required to rinse

the infant.

5. Safety of child in water: Infants have minimal muscle control and cannot hold themselves up in a tub; therefore, they must be attended at all times. It is recommended to always support the child with one hand.

6. Lifting slippery child: The smooth skin of an infant makes it dangerous to move the child during the bathing process.

7. Drying baby: Some caregivers prefer to dry the child in the tub due to the fact that infants are slippery when wet. Others remove the child from the tub to dry them.

8. Dressing baby: Infants should be dressed immediately following the bath to maintain their body temperature.

9. Emptying tub: The bath water must be drained from the tub. If the tub is not used above a drain, it must be carried to a second location.

10. Cleaning and drying tub: Finally, the tub must be cleaned and dried before being putting away.

The list of requirements and considerations for bathing an infant is extensive, and many steps pose potential ergonomic risks to the caregiver. These requirements become greater obstacles for caregivers with disabilities and/or limited strength and mobility.

Design Solution

The goal of this project was to design a safe and efficient

bathing station for caregivers with a range of abilities. This station (see Figure 3) was designed to reduce the amount of required lifting and bending associated with bathing child, ultimately reducing musculoskeletal strain. The design does not require any dwelling modification.

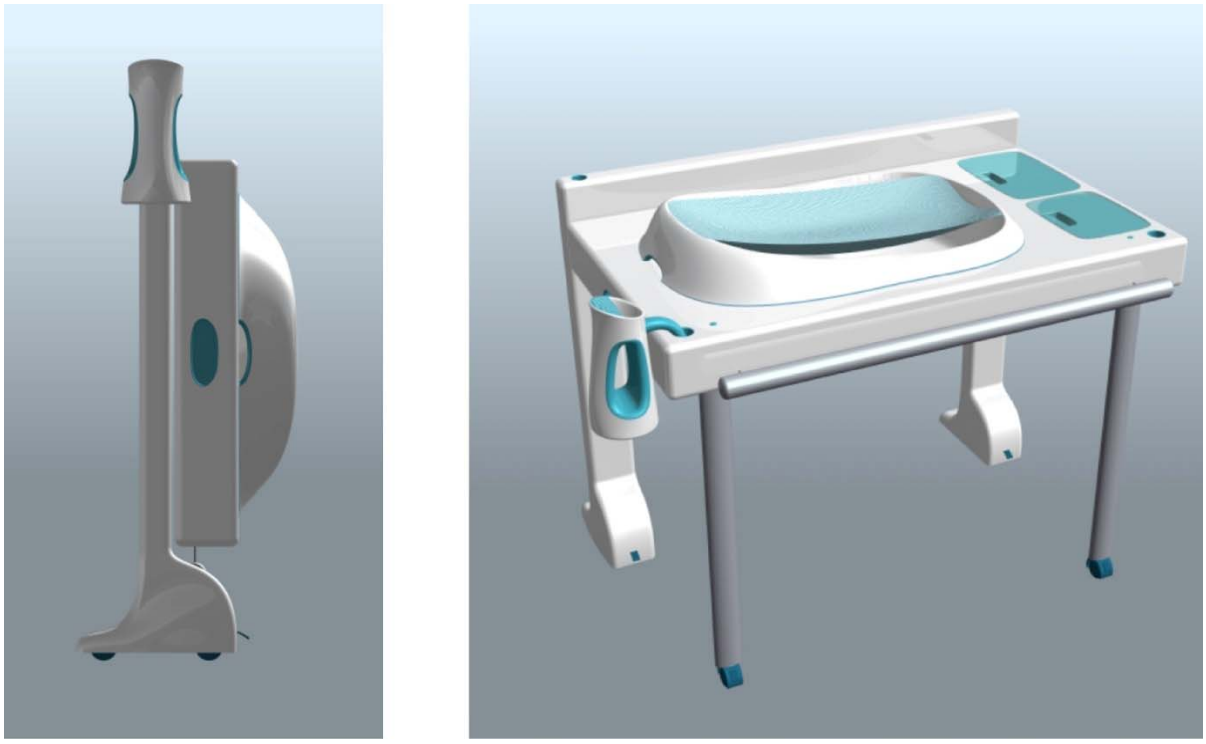

Figure 3. Universally designed baby bath tub.

The bath station is a collapsible table with a recessed bath tub and built-in storage. Designed to be used in any room of the house, the station has an open width of 32.5 inches (82.5 cm). It can fit through most doorways sideways without closing.

The tub basin is gently sloped to accommodate babies up to one-year in age. For newborns and smaller infants, a mesh sling is provided to better support the infant during the bath. The tub can be inserted into the

bath station in either direction for left or right-handed users. Like a typical tub, it can be used over the kitchen sink or in a larger bathtub. The built-in color-sensitive thermometer ensures the water is the correct temperature for the baby.

An insulated water pitcher (see Figure 4) hangs from the station in any of three convenient locations, depending on storage and usage. The pitcher has temperature sensitive liquid crystals to inform the caregiver that the water is the correct temperature during use. With multiple ways to grip the pitcher, the caregiver can slide their hand through the central hole, or use a power grip. An spill guard is included to control the water flow.

The water is drained from the tub into a water reservoir; a retractable hose can be used to empty the vessel when convenient or when located near a drain. The reservoir can also be disconnected for cleaning.

Figure 4. Insulated color-sensitive pitcher.

Two transparent storage containers provide a dry place for clean clothes, soap, and sponge. The storage container tops are flush with the table top providing more working surface area for the caregiver (seeFigure5).These containers are still accessible when the table is collapsed.

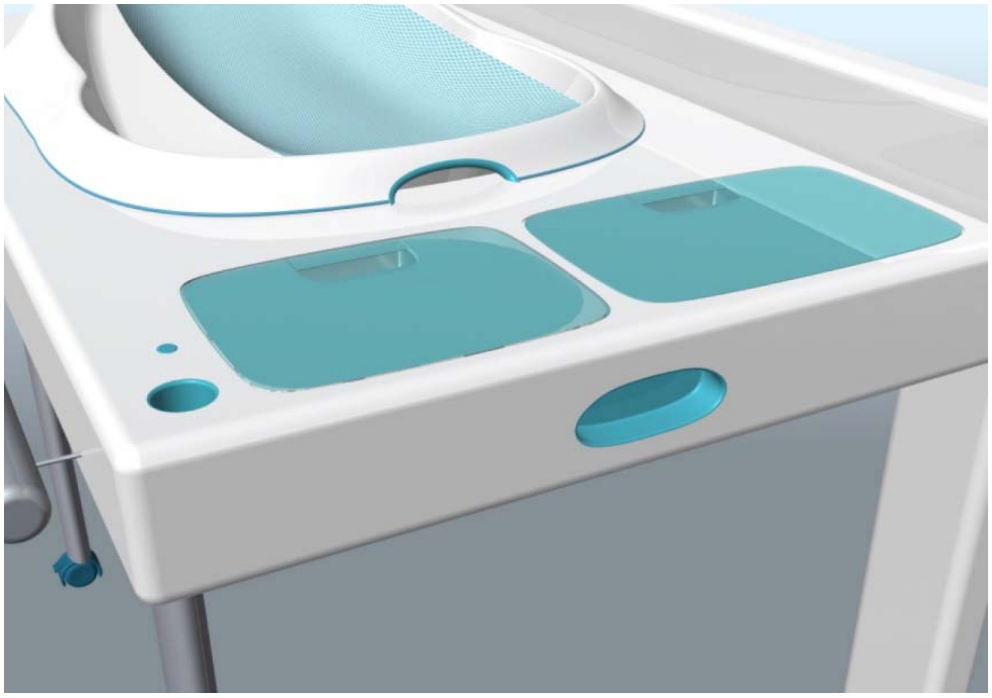

Figure 5. Close up of side handle and storage

To open the unit, the table top is raised up until parallel with the floor and pushed into a locked position. The table can be lifted with the front towel bar or with the side handles for users with limited flexibility. After the table top has been lifted, the front legs are released with a button; tension springs lower the legs slowly. To close the unit, the front legs are pushed up manually, and the top surface is raised slightly and pulled out (to disengage the

lock) before lowering.

The unit is designed to be used while seated. A recessed shallow tub reduces the stress on the shoulders (compared to the moderate to extreme flexion of the shoulders while using traditional infant tubs). The height of the surface is 31 inches (79 cm), and is ideal for a caregiver seated in a wheelchair, a chair, or on a standard modern toilet.

UD Assessment

This project was undertaken in response to the need to safely support the infant during bathing and to afford caregiver and infant bonding. The comfort and stress of the caregiver may influence the infant's bathing experience. The Principles of Universal Design were used as a guiding tool through the design process.

Equitable Use

The bath station was designed for caregivers with a wide array of abilities and mobility. The station can be used one handed, while seated without straining the back, neck, or knees. The locking mechanisms avoid static loading and minimized strength requirements.

Flexibility in Use

Caregivers can use the station in many ways. To avoid a right hand bias, the bath tub can be oriented in either

direction and the water pitcher can be hung on either side. In addition, the station can be left open, or be collapsed for storage in smaller spaces. A caregiver can sit on the side of the station with the baby facing them, or sit with the baby horizontally in front of them.

Simple and Intuitive to Use

The design's mechanisms are common and easy to use. Little concentration is required to open and close the unit leaving the caregiver's attention to focused on the infant.

Perceptible Information

Contrast was employed to help accentuate the forms and identify areas that a caregiver will touch. For example, the pitcher is colored on the areas to hold, and the rubber drain plug is colored to distinguish it from the bottom of the tub.

Tolerance for Error

Color-sensitive temperature displays on the pitcher and tub highlight to the caregiver the water temperature. Temperature extremes may either scald or draw body heat from the infant.

Low Physical Effort

The unit can easily be opened, closed, or moved with one-hand. Since it is lightweight and on wheels little effort is required to move and store the unit. The load on

the back and neck are greatly reduced because of postures assumed while using commercially available infant tubs.

Size and Space for Approach and Use

Size and dimensions were of particular interest in this design (see Figure 6). Table height was calculated based on hand and elbow locations while caregivers were seated in a wheelchair, chair or on a toilet bowl. The unit was also designed to fit though a doorway without being collapsed. At the same time the unit needed to be deep enough to accommodate a seated person bathing an infant from the side of the unit. Finally, it was imperative that a user could open and close the unit with one hand and without bending.

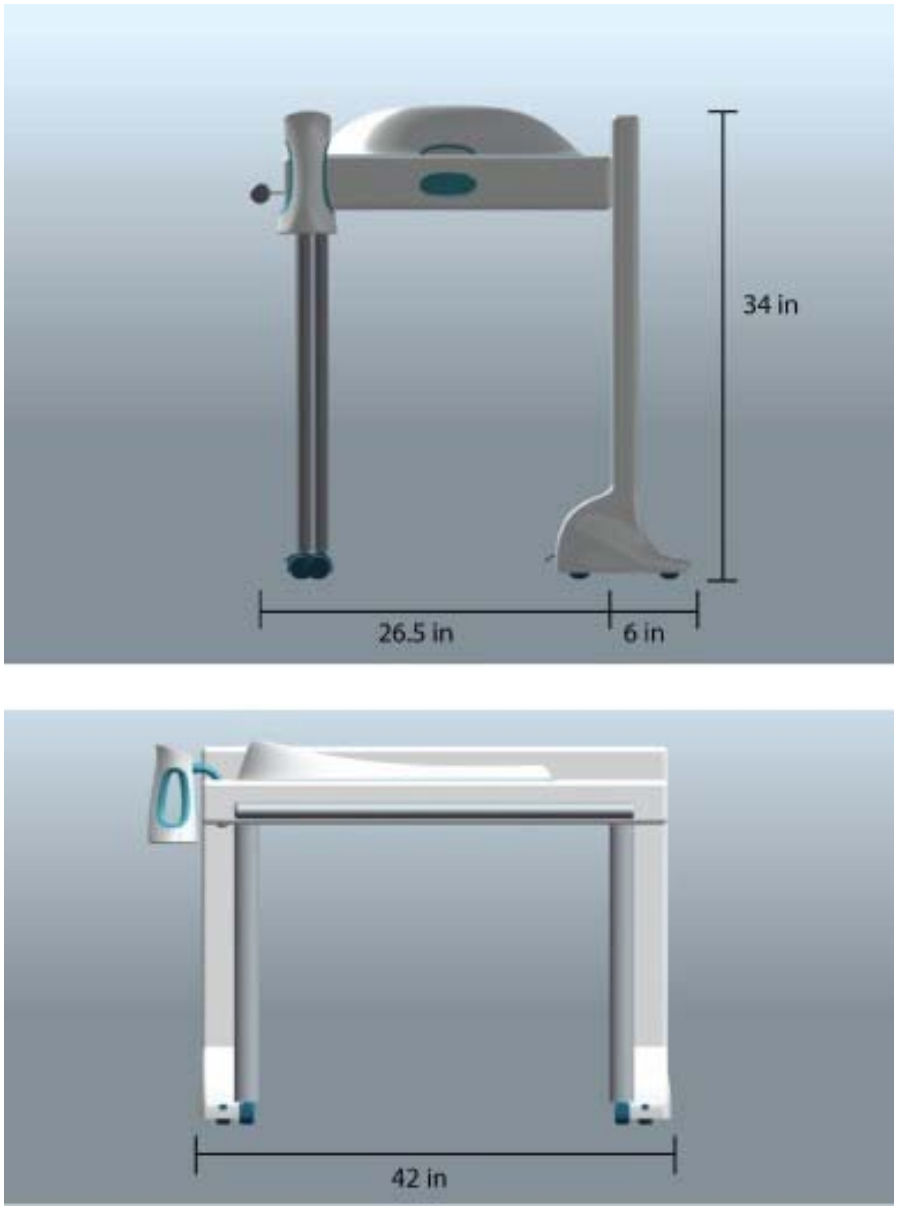

Figure 6. Measurements of bath station.

Conclusion

The design successfully included the Principles of Universal Design in an infant bathing tub. Investigations into the feasibility and cost of adding adjustable height legs in order to comfortably accommodate users of different heights. To minimize shoulder abduction while

maintaining a safe and dry environment, further exploration is needed to identify the ideal height of the tub lip. Operational icons are being considered to increase the tolerance for error.

The infant bath tub was designed to provide a product for bathing a child that will benefit all users. It will afford caregivers with musculoskeletal injuries, limited mobility and strength, as well as temporary and long-term disabilities increased comfort and security while bathing infants.

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UNIVERSAL DESIGN EXHIBTION

The Center for Universal Design at North Carolina State University is currently developing an exhibit to showcase the seven Principles of Universal Design. The principles, published in their current form in 1997, serve as the theoretical guidelines for universal design, providing a set of goals for designers in all fields to achieve in their works. Unfortunately, though, the principles often do not make their way into the conversation of the client or consumer. By developing a traveling exhibit, the team at the Center for Universal Design hopes to continue their efforts to increase awareness of issues surrounding and integral to Universal Design, especially issues encountered in the home environment.

Overview

In beginning to develop the exhibit, the design team, led by Sean Vance, AIA, were confronted with a major question regarding the approach designers take to universal design: "Should it be a set of guidelines, or should it be a series of questions to ask yourself or your clients?" In choosing the latter option, the widely publicized Principles of Universal Design provides a starting framework for the exhibit's content. Accompanying the principles are displays explaining the history and development of universal design as a philosophy, a map of the concepts, entities, and

relationships across the field of universal design, and a display of work examples from researchers, students, and professionals involved in universal design based initiatives.

Figure 7 - Students and young architects Evaluate potential case study house under construction.

An exhibit with a purpose

Focusing their efforts, the design team chose a familiar target for their research: the home environment. The exhibit focuses primarily on the use of the principles in shaping both single- and multi-family properties. In

developing the exhibit, the design team continually questioned the assumptions of occupancy common to the design of contemporary housing by hosting a series of discussions to investigate the shortcomings of current housing typologies with students, educators, and professionals to provide feedback.

The exhibit is, of course, intended to inform the general public, but targets designers specifically, asking them to evaluate their own design processes. “The goal of the exhibit” says Vance, ”isn’t necessarily to provide the answers. Instead, what we would like to do is provide an appropriate set of questions to get designers thinking about Universal Design.” This approach is designed to spark new innovations among designers that will then lead to more accessible, inclusive spaces and products, just as the publishing of the Seven Principles did more than a decade ago.

The Seven Principles

The Seven Principles are widely acknowledged as the theoretical guidelines for designers wanting to create more inclusive products and spaces. Through these products and spaces, consumers more often feel their influence, rather than understand the principles themselves. The exhibit team hopes to change that by creating a display that showcases each of the seven principles both individually and as a collective approach to design. Each principle is allotted a board

that defines the principle and begins to demonstrate its application at a variety of scales. This range is illustrated through a series of small case studies and examples from the relatively small-scale design of handheld products to large-scale urban planning projects. The primary focus of the examples, though, keeps with the immediate focus of the exhibit: the home environment. Exhibit guests are introduced to the definitions of the principles as well as their potential applications in the home through improved control systems, spatial plans, and products.

Concept Mapping

The portion of the exhibit that is perhaps most intended to be the cornerstone of the exhibit's message is a map of concepts and entities associated with universal design. As Vance states, "We want it to be understood that choice is about connecting in a bigger world…a that is connected to Universal Design." To that end, entities are grouped by function or type, and then linked to organizations or entities with similar goals or recognizable links. In this way, observers are able to distinguish both direct and indirect connections between individuals and organizations. Viewers may, for example, examine the links between funding sources, research organizations, organizations that disseminate the knowledge generated from that research, designers, and the household products and environments they encounter every day.

Figure 2 - Nikhil Shah arranges map elements to reinforce connections.

More than a conversational piece, the map also provides a unique resource for both designer and consumer. As Art Rice, professor of Landscape Architecture at NC State's College of Design notes, the map can be used "to help people understand the whole community of universal design, and where to go and get resources." These resources are not solely funding sources for researchers, but various organizations whose primary goal is to distribute information about the concept and implementation of universal design in fields ranging from web design to industrial design to architecture and landscape architecture. "The other thing that's nice about seeing this," notes Rice, "is to truly get a sense of the complexity and the number of organizations involved in this. ... And also, that there's all these other kinds of things like psychology that

[designers and clients] don't think about directly."

Chronology

The exhibit not only highlights the current applications of universal design, but also its past with the inclusion of a timeline displaying the history of various individuals and organizations that influence universal design. The timeline begins as early as the fifteenth century with the works of Leonardo DaVinci, but focuses primarily on the near- exponential growth of universal design as a field of study over the past half century. The chronology notes key milestones in design and building practices with the passage of legislative measures that encourage accessibility, including the Americans with Disabilities Act and the Fair Housing Amendment. The design team is attempting to include as much information in the chronology as possible. Says Vance, "It's a timeline not only of universal design, but also a timeline of [human factors]. …We're going to place all the things that are on the map on the timeline."

Interacting with Universal Design

The exhibit includes an overview of a large body of information relative to universal design, but the design team's goal is also to make the concepts behind this information tangible to the public. To help accomplish this, the exhibit includes a display of work from students, educators, and professionals that the team

hopes will help visitors relate to the wide range of approaches to universal design. Student work from the College of Design is displayed alongside that of professionals, showcasing a wide exploration of materials and approaches to usability. To further enhance the display, RED Lab, an ergonomics lab created as a partnership between the Center and the College of Design's Industrial Design Department, will provide a series of interactive displays for visitors to experience firsthand involvement in the process of design and ergonomics research.

Next steps

While the finished exhibit is designed to reach across the perceived boundaries of a traditional museum exhibit and involve its visitors, the process of developing the exhibit is also designed to reach across disciplines. Sean Vance, as project head, is working with NC State's nationally recognized Graphic Design Department to involve students in the design of the final graphic layout for much of the exhibit. Students will take the design team's exhibit prototype and develop it into a more refined, travel-ready exhibit over the course of just a few months.

The exhibit is tentatively scheduled for display at both North Carolina State University and the University of Virginia in early- or mid-2010.

Sean Vance received his Bachelor of Architecture from Tuskegee University and Master of Architecture from North Carolina State University. He is the Director of the Center for Universal Design, Extension Assistant Professor of Architecture and Landscape Architecture in the College of Design at North Carolina State University.

Sean is a registered architect, teaching courses focused on a human centric understanding and the experience of a collaborative design philosophy. His interests are in universal design, architectural design, urban spatial form, conceptual product design, and research in the effects of form on human interaction and function of daily life.

Sean has taught a series of courses and studios in architecture and most recently a cross disciplinary course in the College of Design. This interdisciplinary course analyzes the interaction between people and their use of the environment in which they live. This is a philosophy that he embraces both academically and professionally, sharing with students and colleagues the

pursuit of solutions respondent to the way people live within the constraints of their abilities. Most recently Sean has taught architectural studios on Urban Design that reflect upon Universal Design by having students analyze their solutions through the Center's Principles of Universal Design and the AIA's Principles for Livable Communities. Sean also works with students compiling an understanding of materials and material applications responsive to human senses to create a materials library. This exposes young designers to a language of experience for applications in universal design. Sean brings to the Center 15 years of architectural design experience, and his work has always been from perspective of the user, instinctively deploying the fundamentals of Universal Design.

Before joining the Center for Universal Design and School of Architecture faculty, Sean had been practicing architecture in a variety of communities throughout the East Coast and in 2004 began his own practice. Sean is a graduate of NC State's Master of Architecture program where he studied architecture and industrial design and was a member of Tau Sigma Delta. Sean also serves the architectural community through his participation at the state and national levels of the American Institute of Architects.

THE DIRECTOR'S MESSAGE: OUR 2030 INITIATIVE

U. Sean Vance, AIA

The concepts of universal design are increasingly discussed as a part of the collective of issues facing the next generation of designers. Of these considerations, the first would be how design education is preparing them for advancing the quality of life through the design of products and environments. Over the years North Carolina State University's College of Design has been a core contributor to the increasing body of knowledge with regard to the applications of this philosophy in various design communities. With the presence of so many working in design related disciplines across a global construct, and the cogency associated with the development of design understanding and application, the College of Design's Center for Universal Design is working toward further definition of the core principles that established its presence in the design community.

With individual healthcare spending expected to rise in the coming year, and a growing trend of populations living beyond current life expectancies, alternative solutions will need to be found that increase the quality of life and better environmental health conditions while decreasing the impacts of daily life. A

connection of the necessity of design as contributing to the betterment of the current state of physiological and psychological approaches on health, and working solutions to overcome the barriers of our varied abilities in the greater built environment due to a variety of health factors. Design solutions to these prevalent problems cannot remain reactive, only preventing a worsening of the current state, and evaluating symptoms as they occur. The majority of the research regarding universal design is generally associated with bad practices on an individual basis or associated with the current response to design standards and codification of processes. The lack of studies of the design processes have greatly limited the awareness of the how to create both artistically and socially conscious solutions while increasing design equality. Along with the efforts in general design awareness there is a need for public understanding of the economic return from universally designed products and environments for private and public financial institutions as well as corporate and commercial interest. In order to establish this proactive approach it is important to increase the involvement of design as a leader in the role of planning these efforts.

Design, as a process, looks at the entirety of considerations necessary for the successful implementation of change, a change that globally impacts all things built or manipulated by human intervention. Design, as leadership, is the realization that all

processes of creation begin somewhere, is a connection the idea and its fabrication, and that the creative process must constantly involve the understanding and consideration of human factors both individually and globally. The Center for Universal Design is constantly reflecting upon these considerations, and is working towards bettering the quality of human experience and health related issues; it is a step toward the creation of a Healthy Built Environment.

Why it is important to our professions and students?

The challenges from one generation to the next in the understanding of human physiology introduce new design dilemmas and constraints that designers must respond to. The continued assessment of accessibility guidelines responds to the variations of limited human ability, but the accomplishment of better solutions will be the result of the design community's passion for change and a shared vision towards a better built environment. Universal design can now broaden its association with the arts and design, moving beyond addressing only the limits human ability into a holistic human centered design approach.

The history of Universal Design at NC State University's College of Design began as a collaborative effort for change as early as the mid-seventies. Research into how architects, graphic designers, and industrial designers

provided an understanding of usability that engaged emerging accessibility issues even at that time. These were the beginnings of a design understanding that brought about the removal of barriers and the leadership of many individuals who shared a common vision across varying professional perspectives, acting as one.

The importance of design education that continues to explore the principles, strategies, and application of universal design as an ideology for designing products and environments, responds to the need in the College of Design and all universities for information and skills relative to human centered design thinking. It is a process that includes a broadening of the student's awareness of evolving human and environmental characteristics, and how to contribute to advances in universal design concepts for design, manufacturing, communications and construction.

As a result of the College of Design's continued work in universal design, our students continually demonstrate the knowledge and application of design ideologies that benefit a universal design approach. This heightened sense of design compassion creates artistic inquiry that is aware of the impact of the environment on human function and will understand the design implications when developing solutions; developing creative explorations that equally meet the needs of people with varying physical and psychological abilities along the

natural range of human performance that can include variances in sight, hearing, movement, and cognitive processes.

Working towards the Future together

NC State University recognizes the importance of design to enhancing health and well- being and as a major university and research focus area, the College of Design identifies the area of Universal Design as a priority for the future. This presents a significant opportunity to integrate and expand public awareness of academic, research, and extension design efforts to serve the most pressing needs of a global citizenship. In working toward the tangible efforts needed to provide education and research that enhances the understanding of design on health and well being, the Center for Universal Design has consistently been a resource providing a variety of research and engagement activities. Some of our recent community outreach events have included:

• **Sight, Sound, and Motion.** For close to 33 years this annual event at the College of Design has provided an awareness of the difficulties associated with physical barriers on people with limited physical abilities. The Center for Universal Design has expanded the influence of this workshop offering it outside of the College to professional organizations and other community oriented organizations.

• **Design Education.** The College of Design continues to engage the importance of Universal Design in design education and the creation of healthier environments with the inclusion of the Principles of Universal Design into the expanded first year curriculum for the College, and addressing the design of healthier products and environments. The Center is also working on a three part educational program titled 'Universal by Design'. This program will begin in the classroom with a seminar program and future studio course that will be open to the greater college and university. The program will also include a professional and community oriented certificate process, and a globally marketed online course.

• **Public Awareness.** The Center's staff continues to participate in public and professional symposiums and workshops around the state, nation, and global community promoting the importance of universal design awareness. Sharing with communities the goals and application of the principles, and building collaborative relationships that will help to extend the outreach we offer through our efforts at the College of Design.

• **Informative Outreach.** The publications and technical sheets produced by the Center of Universal Design have been particularly helpful in providing practical solutions to the everyday design dilemmas facing our communities.

The presence of the Center, available through the website and publications, has been helpful in providing continuous availability of information and resources to a greater audience; raising an awareness of the need for primary accessible environments in places around the world with limited resources and capabilities.

• Ergonomic Understanding. The Center also provides space for research and collaboration with the Industrial design program studying the ergonomic impacts upon obese and aging populations. The research and development of the obesity suit and the aging restraints help to raise awareness to the design needs associated with these growing design considerations.

• Next Generation Universal Design Home. The Center will continue to provide design solutions through the continued research of the Universally Designed Home. Addressing contemporary issues of gender, age, and population changes facing future North Carolina residents.

An empathetic designer is one who understands of the social and psychological reality that the human condition is continually in a state of change, and that it is critical for the practice of universal design to become a reality in the development of social equality. This relies on the academic offering of research to advance the public well-being tackling the broad impact of how the built

environment shapes human behavior, impacts feelings of success and competence, and fosters community connection. The establishment of a stronger research engine for this endeavor within a college of design will serve as a mechanism to expanding the influence of design on the state of global human and environmental health, establish a greater discourse internally and externally in the academic world, and communicate directly with the public and professional surroundings where this information is needed the most. The first of these requires a strong internal connection between academic and professional contributors in universal design. A library of information, processes, and research with a true foundation in the Design Arts is needed connecting all to a process of simulation, theoretical pursuit, and outcomes that will constantly engage the design, implementation, and evaluation of components in the built environment.

By fostering interdisciplinary and inter-institutional relationships to study solutions for human factors through design, the research is strengthened, and the solutions made viable for greater implementation in a global economy needing proof of application prior to consideration. This collection of resources from the Center for Universal Design will continue to grow stronger through the holding of a series of outreach symposiums, primarily serving as a working environment for developing competent communication. The Initiative

will engage academics and professionals together in discourse of how best to begin, and equally what do they need to better their own efforts towards betterment in the design arena.

We pay tribute to Ron Mace and thank him for his vision.

Contributors

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Danielle Lake is a recent graduate from the 4 year Bachelor of Environmental Design in Architecture program

at NC State. She will be returning to the College of Design in the Fall for the 5th year Bachelor of Architecture program.

Ryan Wallace is a Track 3 Master's of Architecture student. Prior to moving to Raleigh, Ryan lived in Salt Lake City where he received a Bachelor's degree from the University of Utah in Urban Planning. A virgo, he enjoys long walks on the beach, curling up with a good book, and hot chocolate by the fire. One random fact about Ryan is that he lived in Sweden for two years where he became fluent in Swedish.

OBITUARY & RETROSPECT

Nathan May 28, 1928 – May 16, 2009

Memorial Service for Nathan H. Shapira
Sunday, May 24th, 2009
3:00-4:00 pm

Hillside Memorial Park and Mortuary
6001 W. Centinela Avenue
Los Angeles, CA 90045
(310) 641-0707

Professor Dr. Nathan H. Shapira, **was a member of the faculty of the Department of Design at UCLA since 1963 in charge of Industrial Design and Interior Design. He was Professor Emeritus in the Design and Media Arts program at the University of California, Los Angeles since 1993. Prof. Shapira died May 16th at his home in Santa Monica, he was 80 years old and a survivor of the Holocaust in Romania.**

A former Commonwealth Fellow at the Massachusetts Institute of Technology (MIT) and Harvard University (1955-56), he held a *Dottore in Architettura* degree from the Politecnico of Milan (1954). Before settling in California, he had taught at the Rhode Island School of Design (Providence, R.I.), Vassar College (Poughkeepsie, N.Y.), and Wesleyan University (Middletown, Conn.), where he was a Fellow of the Center for Advanced Studies (1959-60). Between 1969 and 1972 he had served as Head of the Department of Design at the University of Nairobi and Director of the University of California's Education Abroad Program in Kenya. In 1992 he was Visiting Professor at the University of Trento (Italy), in 1996 at the School of Architecture of the University of Palermo, in 2004 at the School of Architecture of the Politecnico of Milan, and in 2005 he was invited to be Senior Fellow at the Institute of Advanced Study of the University of Bologna. Professor Shapira was also affiliated with the University of Trento and Bologna in Italy. Under the bilateral exchange program between the University of California and the University of

Trento, he served as a research fellow in Italy, studying advanced technology and the use of natural materials in the contemporary architecture of northeastern Italy. He was also a research fellow at the Center for Advanced Studies at the University of Bologna.

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For his contributions to cultural exchanges between Italy and the United States, he was awarded the title of Cavaliere della Repubblica Italiana *by* the President of *Italy* in 1994

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Professor Shapira, brought together many people from all over the world through his love for design and humanity. He was the quintessential "Goodwill Ambassador of Design" with his affable eccentric and tenacious manner. Truly, "he lived to design and designed to live".

His many former students, faculty, professional colleagues, associates and friends worldwide and the UCLA community of friends and associates will be forever indebted to the years of scholarly teaching service, collegiality and professionalism of Professor Emeritus, Dr. Nathan H. Shapira.

Professor Shapira is survived by his two sons, Dan-Antoine Blanc-Shapira and Jeremie Blanc-Shapira of Paris, France, his ex-wife, Irene Blanc-Shapira of Paris, France and three grandchildren, Marie, Alixia and Capucine.

A Memorial Service for Nathan H. Shapira was held on Sunday, May 24th, 2009 at the Hillside Memorial Park and Mortuary in Los Angeles, CA.

A memorial will be held at a later date. Remembrances can be made to a fund to support the Nathan H. Shapira Design and Culture Archives. Condolences may be sent to www.nathanshapira.com.

OBITUARY

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Our Shared Condolences, Memories and Souvenirs of Nathan

Yes, it is sad occasion and transition in Life, but with no regrets.
Nathan gave more in his life to so many, that he deserves to rest
and allow us to forever reflect upon the greatness of his
Humbleness and genuine Love for the world.

Nathan brought together so many people from ALL over the world
through his love for design and humanity.
He was the quintessential "Goodwill Ambassador of Design,"
in his affable eccentric and tenacious manner.
Truly he lived to design and designed to live.

"We do not design for society or for that matter design in order to design society.
We design because society and ourselves are in fact design.
We do not design for living. We design to live"

(1963, the late Selby Mvusi, a prolific Black South African industrial designer and colleague of Prof. Nathan Shapira)

– Now Nathan, You May Rest in Peace
with no more deadlines to meet or people you must greet –
Your Legacy and Memory will carry on
in ALL the Hearts and Minds that You have Touched

Much Love and Appreciation from your "FONies"
("Friends of Nathan")

References to the Works of Prof. Nathan Shapira:

- http://www.nathanshapira.com/

- **Consulate General of Romania, Los Angeles, Romanian Program to remember the Holocaust:** The Los Angeles Museum of the Holocaust hosted on October 28, 2004 the first Romanian Program to Remember the Holocaust. The event organized at the initiative of the Consulate General of Romania in Los Angeles has been agreed upon in partnership with the American Jewish Committee together with the Los Angeles Museum of the Holocaust.

  The program of the evening included as well the lecture of selections from a book written by Lupu Gutman, Romanian survivor, writer and filmmaker who presently lives in the US. **The lecture was performed by Dr. Nathan Shapira**, Romanian survivor, Professor Emeritus at UCLA.

- **ARTS & ARCHITECTURE MAGAZINE APRIL 1966 ISSUE RUMMELEIN** *April issue of* Arts & Architecture *magazine, noted Los Angeles-published magazine on California* art **...** *Furniture Systems of Fulvio Raboni by* Nathan Shapira **...** cgi.ebay.com/**ARTS-&-ARCHITECTURE**-MAGAZINE-APRIL-1966-ISSUE-RUMMELEIN

- **Arts & Architecture MAGAZINE DECEMBER 1966 NATHAN SHAPIRA COVER** UCLA Social Sciences Building by Maynard Lyndon; The Continuous City by Mario Galvangi; ... **Cover is by Nathan Shapira. This is a highly desirable issue. ...** cgi.ebay.com/A-&-A-MAGAZINE-DECEMBER-1966-NATHAN-SHAPIRA

- **ARTS & ARCHITECTURE MAGAZINE DEC 1965 NATHAN SHAPIRA** - *eBay: Find* ARTS & ARCHITECTURE *MAGAZINE DEC 1965* NATHAN SHAPIRA *in the Books , Magazine Back Issues category on eBay.* cgi.ebay.com/**ARTS-&-ARCHITECTURE**-MAGAZINE-DEC-1965-**NATHAN-SHAPIRA**

- **The American design adventure, 1940-1975** - by Arthur J. Pulos - 1988 - Architecture - 446 pages
  A group of faculty members from the *Art* Center School in California was invited **...** Arthur Pulos, and ***Nathan Shapira***) agreed that an international seminar **...**

- Gio Ponti to Esther McCoy, ca. Oct. 1966 - Correspondence ...
  ... of the exhibition The Expression of Gio Ponti **organized by Nathan Shapira** and Frederick S. Wright at the *UCLA* Art Galleries (now the Wright Gallery). **...**
  http://www.aaa.si.edu/collections/searchimages/images/item_3392.htm

16. Seminario ICSID sull'insegnamento del design, Ulm 1965. Si riconoscono (dall'alto e da sinistra):
ICSID seminar on the teaching of design, Ulm, 1965. Recognizable from the upper left:
N. Shapira, T. Maldonado, A. Wollner, M. Yoshioka, M. Vasquez, J. des Cressionières, M. Black, Z. Radic, G. Valle, A. Pulos, A. de Poerck, B. Uribe.

Most widely held works by Nathan H Shapira:

- Shapira, Nathan H., **Design or Decline: America Facing the 21st Century**
  Descriptors: Cultural Influences; Curriculum Development; Design Crafts; Design Requirements; Educational Philosophy; Environmental Education; Higher Education; Industrial Arts; Industry; Quality of Life; Social Change; Social Values; Technological Advancement; Technology
  Source: Art Education, v44 n5 p20-21 Sep 1991
  Publication Date: 1991-00-00
  Abstract: Discusses the role of industrial design in the twenty-first century. Explains that technology has widened the gap between rich and poor societies. Argues that future designers must concern themselves with the quality of life. Includes a description of the University of California Los Angeles (UCLA) Industrial Design Program.

- **The Quest for continuity : forms from Italy's Friuli,** March 24-April 12, 1987, Craft & Folk Art Museum(Book)
  1 edition published in 1987 in English and held by 16 libraries worldwide

- **Los Angeles : 1932-1984, between two Olympics** by Nathan H Shapira(Book)
  1 edition published in 1983 in English and held by 9 libraries worldwide
  Chronological summary of important works of residential, public, and commercial architecture.
- **Big prints from Rome** (Book)
  2 editions published in 1980 in English and held by 12 libraries worldwide

- **Design process : Olivetti, 1908-1978,** Frederick S. Wight Art Gallery, University of California, Los Angeles, California, March 27 to May 6, 1979 by Frederick S. Wight Art Gallery(Book) 1 edition published in 1979 in English and held by 96 libraries worldwide

- **The expression of Gio Ponti** by Nathan H Shapira(Book) 1 edition published in 1967 in English and held by 18 libraries worldwide

- **From flat to form : an exhibition at the Craft & Folk Art Museum**, Los Angeles, California, November 16, 1977-January 1, 1978(Book)
  1 edition published in 1977 in English and held by 6 libraries worldwide

Nathan Shapira

May 28, 1928 – May 16, 2009
Galatz, Romania – Santa Monica, CA

Compiled by Prof Ricardo Gomes of SESU

2. Obitury of Professor Rajeev Motwani

Professor Rajeev Motwani, the computer scientist who has died aged 47, advised the founders of Google, the world's biggest search engine, and became one of their earliest backers.

Motwani was best known for mentoring Sergey Brin and Larry Page in their student days at Stanford University in California, where he was professor of computer science. As their search engine took shape, Motwani became their technical adviser and guided several other computer-based companies including PayPal, in which he was an early investor. A shrewd businessman as well as an acclaimed computer scientist, he also owned an undisclosed amount of stock in Google.

"Today, whenever you use a piece of technology," blogged Brin, "there is a good chance a little bit of Rajeev Motwani is behind it."

At Stanford University, where Motwani was one of the youngest professors, he started the Mining Data at Stanford project (MIDAS), a group that helped develop data-management concepts. The author of several papers in esoteric subjects like randomised algorithms and data streaming, his research spanned many areas in computer science, including databases and data privacy, web search and information retrieval, robotics, computational drug design, and theoretical computer science.

Of Google's creators, Brin and Page, Motwani recalled: "These 21-year-olds would come in and make demands on me – we need more disk space because we are crawling the Web and it's

getting bigger... I'd give them more money and they'd go buy more disks.

"At some point these guys said, we want to go do a company. Everybody said you must be out of your minds. There are like 37 search engines out there and what are you guys going to do? And how are you going to raise money, how will you build a company, and these two guys said, we'll just do it and they went off and did it. And then they took over the world. And right now, you know, other search engines do not even compare. It is just amazing. Just feels like a part of a little bit of history and I contributed a little bit to that history."

Asked to explain how Google's technology works, Motwani offered a typical illustration. "Let us say that you wanted information on 'bread yeast' and put those two words in Google. Then it not only sees which documents have these as words mentioned but also whether these documents are linked to other documents. An important page for 'bread yeast' must be having all other pages on the Web dealing in any way with 'bread yeast' also linking to it.

"In our example there may be a Bakers' Association of America, which is hyperlinked by most documents containing 'bread yeast', then it implies that most people involved with 'bread' and 'yeast' think that the Bakers Association's web site is an important source of information. So Google will rate that web site very high and put it on top of its list. Irrelevant documents which just mention 'bread' and 'yeast' will not be given any priority in the results.

In spite of his achievements, Motwani cheerfully conceded that the Google search engine did no more than a humble librarian – and was less intelligent. But he also pointed out that automatic software trumped the old technology in coping with the exponential rise in information.

Rajeev Motwani was born in New Delhi, India, on March 26 1962. His father was in the Indian Army and he spent a nomadic childhood following his father's postings to various parts of India. Young Rajeev wanted to be a mathematician, like his hero Carl Friedrich Gauss. "This was partly shaped by the books I had at home. My parents for some reason had a lot

of these books – 10 great scientists or five famous mathematicians – their life story and so on. As a child, whatever heroes you read about you want to become."

He left St Columba's school in Delhi still hoping to be a mathematician, but his parents were sceptical about his prospects of making a living. Instead he joined Indian Institute of Technology Kanpur, which had just started an undergraduate programme in computer science. He obtained his bachelor's degree in computer science there in 1983 and his doctorate from the University of California, Berkeley, in 1988.

He wrote two books, *Randomized Algorithms,* published by Cambridge University Press in 1995, and an undergraduate textbook published in 2001. A kind, approachable man, Motwani was still active as a professor and was teaching a couple of classes as recently as last year, despite his financial success with his internet start-ups.

His awards include the Godel Prize, one of the most prestigious awards in theoretical computer science, the Okawa Foundation Research Award and the Arthur Sloan Research Fellowship, the National Young Investigator Award from the National Science Foundation, the Distinguished Alumnus Award from IIT Kanpur, the Bergmann Memorial Award from the US-Israel Binational Science Foundation, and an IBM Faculty Award.

Rajeev Motwani, who was found dead in his swimming pool on June 5, was a non-swimmer and had been considering taking lessons. He had apparently drowned after a party to celebrate the end of the academic year.

His wife, Asha Jadeja, and their two daughters survive him

Appeal:

1.

Friends

Allow me to inform you of a pleasant development. A young artisan named "Shivadasan" has qualified for admission in Indian Institute of Crafts & Design- Jaipur for the UG programme. This golden opportunity provides the younger generation of the potters to explore Design, modern Techniques & equipment, crafts of other region & culture, marketing and many other vital aspects of crafts & design. Shivadasan hails from Nilambur-and has been part of the Sensing Nature workshop from age 9. His family has been part of the Kumbham experiment at Aruvacode, Nilambur. This experiment has been on for almost 16 years, till date. Inspite of over coming many challenges to get this far, the immediate need for this young artisan is a fee amount of Rs.80,000 for the first semester to join this prestigious institution. However, the institute has decided to extend some support by getting funds from the second semester onwards for needy students. Understanding the purpose of this pursuit and the existing challenges, I invite your personal support to help see this through. You can send in your contribution toKB Jinan, Account at HDFC bank at Trichur 6701000005539 with a specific mention for this purpose.

We appreciate your continuing concern and support.

Warm Regards,

Jinan

http://www.enableartisan.org ,
www.re-cognition.org
www.kumbham.in
http://my.opera.com/jinankb/albums/
http://www.flickr.com/photos/ terracotta_murals/sets/ 72157594503980465/
09447121544
0487 2386723

News:
1.

Design for all FOUNDATION

Good for everybody, easy for you

Newsletter

After a period of communicative absence, thought full of activity, we **start again with the NEWSLETTER, with the renewed will of offering the latest updates from the Design for All Foundation and the 'Design for All' environment.**

In order to get up-to-date, in the first number of this new stage we will focus on the situation of the 'Flag of Towns and Cities for All' project, and we would like to grasp this opportunity to introduce you the latest incorporation to the team of the Foundation. We will devote the next number to the collaborative companies and organisations.

We do hope you will find it both interesting and informative. As always, we are at your disposal for any proposal or criticism you may have. Our warmest greetings on behalf of the team at the Design for All Foundation.

Askersund, first Swedish municipality to receive the "Flag of Towns and Cities for All"

Askersund, a municipality with 11.470 inhabitants, situated north of the lake Vättern in the Örebro region, became on November 6th, 2008 the first Swedish municipality to receive the... read more

Palma de Mallorca, first european city to renew its 'Flag of Towns and Cities for All'

On February 6th, Palma de Mallorca hosted the ceremony of renewal of the 'Flag of Towns and Cities for All' 2008. Palma had already been the first autonomic capital of Spain to get the Flag, and now it reaffirms its commitment... read more

BERLIN, JUNE 22-23rd: Meeting of Promoters and Delegates of the 'Flag of Towns and Cities for All'

On June the 22nd and 23rd the city of Berlin will host the annual meeting of promoters and delegates of the 'Flag of Towns and Cities for All'. There we will analyse the current state of the project and study the next actions ... read more

Design for All Foundation introduces Paul Mussach as new assistant to the director

On May the 14th Paul Mussach joined the Design for All Foundation as assistant to the director. He will be responsible for supporting and coordinating the different projects the Foundation is currently carrying out.
Paul comes from private enterprise, where he has developed different ... read more

send your opinions and proposals pmussach@designforall.org

2.

The Centre for Internationalisation and Usability at Thames Valley University (TVU) is pleased to announce The Vice-Chancellor's full-time research Studentships.

TVU is among just three London universities to climb 17 places or more in the Research Assessment Exercise (RAE) 2008. To celebrate TVU's performance in the RAE2008 and

strengthen our research student base, the Vice-Chancellor Professor Peter John is pleased to announce up to fifteen full-time research scholarships throughout the university. A proportion of these will be in the field of usability and internationalization.

Rooted in the discipline of human-computer interaction (HCI) the Centre for Internationalization and Usability supports software developers in building systems that meet all the needs of end users. There are two challenges underpinning our work. Computer science and interdisciplinary challenges that need to be solved to provide tools, techniques and methods that can be used by software developers internationally to build usable systems. Two separate strands have been identified in HCI for global commercial software development and HCI for international economic and social development.
http://www.tvu.ac.uk/computing/research/comp_ciu.jsp

Possible topic areas for the studentships include:

- Cross-cultural HCI
- Internationalisation of products and systems
- Interaction Design for Social/International Development
- Sociotechnical Interaction- Design
- Usability and healthcare
- Empirical Studies of Software Development
- Agile Methods and User Centered Design

Informal enquiries about our research can be directed to Dr. José Abdelnour Nocera,
jose.abdelnour-nocera@tvu. ac.uk

Applications are invited from suitably qualified students to commence study in September 2009. You should hold or expect to be awarded a 2 (i) Hons degree or above. A Master's degree in an appropriate subject area is desirable. Those candidates whose first language is not English must demonstrate evidence of appropriate English language proficiency, normally defined as a minimum IELTS score of 7. In addition to their PhD studies, duties will include up to 6 hours per week (during term time) assisting with teaching on appropriate modules.

Informal academic enquiries may be directed to Professor Sibel Roller, Head of Graduate School, sibel.roller@tvu.ac.uk .

To apply, send your full Curriculum Vitae and a covering letter indicating your area of interest and including a supporting statement of no more than 500 words describing your reasons for wishing to undertake a research degree to Maria Pennells, Graduate School, Thames Valley University, St Mary's Road, London W5 5RF (researchdegrees@tvu.ac.uk). If applicable, evidence of English language proficiency should also be included.
Closing date for receipt of applications: Friday 12 June 2009.
3.

GM Unveils Upright Two-Wheel Two-Seat Networked Vehicle

"We asked younger people about texting while driving; they told us the driving distracted them from texting."

Larry Burns, head of R&D for General Motors, is explaining to a roomful of intrigued but perplexed reporters why GM—until recently the world's largest automaker—has partnered with Segway on the odd vehicle unveiled here in New York today.

The result of their 18-month research project is so new it doesn't even have body panels. It's a two-wheel, two-seat electric vehicle that uses gyroscopic stabilization to hold itself upright, both when stopped and in motion. Marked with checkerboard tape and "EXPERIMENTAL" logos, it wowed reporters by whirring silently into the auditorium and rotating in place.

Burns's anecdote alludes to views among some urban youth that driving is tedious and—especially in Japan—cars are antisocial. Their need for mobility remains, of course; humans are wired to congregate and interact. It's just that future urban dwellers may have neither the space to own motor vehicles nor the patience to deal with them.

City Mobility

With up to 80 percent of the world's humans projected to live in cities within a few decades, their mobility needs will rank high for automakers. Academics and theorists have long predicted that new modes of urban transport would emerge to meet those needs. Every other year, the Tokyo Motor Show has a handful of oddball one- and two-person "transport modules"; indeed, Toyota showed its three-wheeled i-Real personal mobility vehicle at the 2007 Tokyo show.

GM was never interested in a one-person, stand-up vehicle like the Segway PT device, said Burns. But when then-CEO Rick Wagoner brought Burns and his team together with Segway, a joint group began to brainstorm about vehicles that could draw on both companies' expertise.

The GM-Segway vehicle—officially called Project PUMA, for Personal Urban Mobility and Accessibility—is the first in the world to combine electric drive with both vehicle-to-vehicle (V2V) communications and autonomous driving and parking.

If short-listed for one of these awards, you should be prepared to attend an interview at TVU in London in June/July 2009.

4.

Booking now open!
Online booking is now open for Techshare 2009. We are offering an Early Bird booking rate for everyone who books before 10 July 2009, so book your place early to take advantage of this discounted rate.

We have had an excellent response from the call for papers, with 90 abstracts submitted from around the world, so you can expect a range of high quality presentations on some of the most innovative digital access technology available.

++Develop your skills at the Techshare workshops

On Thursday 16 September we are hosting expert-led, focussed and interactive pre-conference workshops aimed at providing a professional development opportunity for attendees, to gain an in depth knowledge of some of the topics covered in the main conference.

Details of the workshop topics and workshop leaders are on the

Pre-conference Workshops page of the Techshare website.

++The Techshare 2009 exhibition

The exhibition is an important part of Techshare, aiming to showcase innovative products and services from leading technology organisations.

Specific browsing time is built into the conference programme to ensure delegates have plenty of time to network and visit all the stands.

Further information, including the Exhibition Booking Form, is available on the exhibition page of the website.

Exciting developments are now happening regularly, and we will keep you updated via Techshare News.

Regards

Techshare 2009 Conference Team
techshare@rnib.org.uk
+44 (0)121 665 4240
58 - 72 John Bright Street
Birmingham, B1 1BN, UK
www.rnib.org.uk/techshare

5.

Indian scientists bridge audio divide

By Raja Murthy

MUMBAI - An Indian American duo at the Massachusetts Institute of Technology (MIT) has created new technology based on the greatest engineering feat of nature - the human mind-body structure. Their invention, the Radio Frequency Cochlea, will not only enable a new generation of wireless Internet and communication technologies, but

will also serve as a reminder of just how much civilization owes to the inner ear and ancient Asian powers of memory.

Indian American scientists Rahul Sarpeshkar and Soumyajit Mandal have merged human evolution with 21st century technology in their new invention - a high-speed, ultra-broadband, low-power radio chip that works on the same principles as the human inner ear, or cochlea.

Their invention, which they filed for patent as the Radio Frequency Cochlea (RF Cochlea), will usher in the next generation of wireless Internet, cell phone, radio and TV devices, and inevitably impact a US$2 trillion global media and entertainment industry with more advanced sound gizmos.

More immediately, the RF Cochlea will vastly improve radio frequency spectrum in the newly dawning technology of cognitive and smart radios - vital devices that automatically make better use of unused frequencies in our increasingly bandwidth-crowded world.

Sarpeshkar, a well-known professor of electrical engineering at the MIT and his graduate student Mondal, designed the 1mm by 3 mm RF Cochlea chip that is faster and more energy efficient than any currently working in radio-frequency (RF) spectrum analyzers.

More significantly, the RF Cochlea opens a fascinating new frontier of technology: living aid devices popping out of science blending with millions of years of human evolution. We could be entering an era of humanology, or more holistic technology uniting two or more disciplines of humanity-related knowledge.

Sarpeshkar told Asia Times Online that his invention has been "enthusiastically" received. "For the first time, we have technology that bridges the working of the human ear with the working of radio," he said.

That professionals involved with hearing having earlier had no working connection with those involved in radio technology sounds incredible. But it demonstrates how

obviously related disciplines have been developing on parallel but separate tracks, until Sarpeshkar and his MIT team appeared. More disciplines could similarly and beneficially converge.
Sarpeshkar acknowledged that engineers could learn much from the greatest engineering device known yet to humans: the human mind-body structure.

While Mother Nature's technology is still leagues ahead of the variety created by humans, Sarpeshkar was inspired by nature's design concepts that have evolved over eons.

"Humans have a long way to go before their architectures will successfully compete with those in nature, especially in situations where ultra-energy-efficient or ultra-low-power operations are paramount," he said in a MIT media release dated June 3. "Nevertheless, we can mine the intellectual resources of nature to create devices useful to humans, just as we have mined her physical resources in the past."

Sarpeshkar and Mondal used the same design principles in the human ear to create the RF Cochlea. The device captures radio frequencies a million times higher than the 100 Hz (100 wave cycles per second) to 100,000 Hz that the human ear captures. It includes radio signals for most commercial wireless applications.

In Sarpeshkar's RF Cochlea, human-made inductors imitate the work of fluid mass in the ear, capacitors replicate ear membranes and active radio frequency amplifiers do the work of the outer hair cells in the ear that carry audio as electrical signals to the brain.
"The outer human ear acts as the radio antenna," Sarpeshkar explained to Asia Times Online, "the middle ear sifts through the substance from unwanted noise and the inner ear, or cochlea, is the amplifier and separates frequencies before sending signals to the brain."

As Sarpeshkar pointed out, RF Cochlea represents not merely a more holistic blending of human technology with nature's engineering, of merging biology with advanced electronics, but it also gives insights about the sense of hearing, a faculty fundamental to the development of

civilizations.

That the inner ear and the evolving human mind are inter-dependent is obvious with the ancient world's richest treasures of wisdom first preserved and passed on across millennia through the inner cochlea hearing the spoken word, not eyes reading written script, and storing those words accurately in powerful memory.

The sensory impact the inner ear has on the mind becomes evident in how great oratory mesmerizes more than a great essay, or the way great music captivates and changes moods more than great prose. In his famous dialogues of Phaedrus (360 BC), ancient Greek teacher Plato too argues of the superiority of the spoken over the written word.

Sarpeshkar's South Asian origin fits with the ancient regional tradition of the heard and memorized word, via the inner cochlea, protecting old world knowledge and wisdom from invading culture destroyers burning libraries, books and manuscripts. The connection between the inner ear and memory can make fascinating scientific study.

"While the textual riches of Alexandria, China and Rome were being put to the flame, a wholly different tradition of scientific expression was brought to a peak in India, in a manner that would prove enormously more resilient to the vicissitudes of time and adversity," observed Alok Kumar, Department of Physics, State University of New York. "This was the oral, poetic tradition of Indian thought, whose greatest purveyor in astronomy and mathematics was Aryabhata."

Mathematician astronomer Aryabhata (born 476 AD), after whom India named its first satellite launched in April 19, 1975, composed the Aryabhatiya, a remarkable astronomy and mathematical work in poetic form. "There are no numbers anywhere in Aryabhata's composition in Sanskrit language, nor are there figures, drawings, or equations," wrote Kumar in his project note for the New Jersey, Princeton-based Educational Council on Indic Traditions organization that commissioned him to study ancient Indian contributions to science. "The Aryabhatiya

expresses the highly sophisticated mathematics of sine functions, volumetric determinations, calculation of celestial latitudes and motions, and much more, in the form of a poetic code."

Inputs through the inner cochlea and advanced powers of memory preserved a more priceless treasure, the Buddha's teaching of Dhamma, or universal laws of nature, that detailed a non-sectarian path for freedom from all suffering - by objectively observing the constantly changing mind-matter phenomena within, manifesting at the bio-chemical level as bodily sensations arising and passing away, instead of blindly reacting to whatever we experience in the outside world.

The entire 82,000 discourses of the Buddha and related commentaries in Pali, one of the oldest known languages, were memorized and their authenticity confirmed in historic congregations of monks such as the Chatta Sanghayana or Sixth Council held in Yangon, Burma, between 1954 and 1956.

The First Council was convened in 544 BC, in the Sattapaaai Cave located outside Rajagaha, northern India, three months after the Buddha passed away. It was only during the Fourth Council held in Tambapanni, Sri Lanka, in 29 BC under King Vattagamani's patronage, that the voluminous Tipitaka [2] texts containing the Buddha's teachings and related commentaries were committed to written script on palm leaves.

In the Chatta Sanghayana or Sixth Council in Burma, 2,500 learned monks from Myanmar, Cambodia, India, Laos, Nepal, Sri Lanka, Thailand and Vietnam recited the entire 82,000 discourses and related commentaries that they had heard and committed to memory, as did generations of monks across two millennia.

"An European spectator would have marveled at this preternatural feat, but it [extraordinary powers of memory of the heard word] is a commonplace occurrence in this area of the world," wrote a leading Sri Lankan scholar Harischandra Kaviratna in his 1971 essay "Unbroken Chain of Oral Tradition".

Sarpeshkar's RF Cochlea marks the latest milestone in the evolutionary journey of human hearing and civilization, a path that transcends a distance from 544 BC when the

Buddha's personal attendant Ananda narrated to the First Council the entire discourses he heard from the Buddha, word for word. Ananda started every repeated discourse with the words in Pali *"evam me suttam"*, meaning "Thus, have I heard [from the Enlightened One]".

"As in all interdisciplinary fields, it is important to synergistically combine the creativity and excitement generated by new non-traditional thinking with the discipline and knowledge of older ideas," said Sarpeshkar who calls the biological inner ear an "amazing custom analog computer".
"The cochlea quickly gets the big picture of what's going on in the sound spectrum," said Sarpeshkar. "The more I started to look at the ear, the more I realized it's like a super-radio with 3,500 parallel channels."

Forty-year-old Sarpeshkar was born and brought up in Bangalore before he left for the US as an under-graduate student. He holds over 20 patents, has authored more than 70 publications and ranks among the world's most brilliant young scientists from South Asia. His several awards include the Packard Fellow award, given to outstanding young faculty, and the Indus Technovator Award, which MIT instituted in 2003, for distinguished young innovators of South Asian origin working at the confluence of technology research and entrepreneurship.

After obtaining his degree in Electrical Engineering and Physics at MIT and his PhD at Caltech, Sarpeshkar joined the technical staff at Bell Labs, Biological Computation department within its physics division. Since 1999, he has served in MIT's Electrical Engineering and Computer Science Faculty, leading a research group on analog VLSI and biological systems that works on developing what it calls "low-power brain-machine interfaces".

The cosmopolitan Analog VLSI MIT team reflects the kind of international talent that MIT hopes to nurture in country specific programs it has operated since 1994 in China, Japan, Israel, India, France, Germany, Italy, Mexico and Spain.

Sarpeshkar's MIT team, for instance, includes Scott Arfin, Benjamin Rapoport, Lorenzo Turicchia, Micah O'Halloran from the US; Serhii M. Zhak from the Moscow Institute of Physics and Technology, Russia; Soumyajit Mandal from the Indian Institute of Technology, Kharagpur, Keng-Hoong Wee from Tohoku University, Japan; and Woradorn Wattanapanitch from Thailand.

So far, their brain-machine interfaces work to combine the human physical structure and 21st century technology has produced:

A new generation of high performance, low-power devices that mimic the communicating relationship of the mind, brain and human limbs, to help paralysis patients, the blind, and victims of Parkinson's disease and epilepsy. These ultra-low power brain-machine devices can run for 10 years or more, compared to current bulky devices that are 100-10,000 times more power and often lack wireless capabilities.

The Bionic Ear project to design advanced ultra-low-power cochlear-implant systems that also enable the deaf to hear music and tonal languages such as Chinese and other East Asian languages. Tonal languages use variations in tone, or pitch, to express different meanings of words. For example, the Mandarin word "*ba*" can be used with four different intonations to mean "eight", "to uproot", "to hold" and "a harrow". In contrast, English is a stress or accent-oriented language.

"Biological systems have developed over hundreds of millions of years of evolution to perform sensory, motor and chemical tasks extremely efficiently and robustly while using very little power, in very little volumes, and in real time," said Sarpeshkar, who sees his research as just the beginning of a journey for many more efficient, adaptable and cost-effective technologies to be developed from biology.

The RF Cochlea device demonstrates what can happen when researchers take inspiration from fields outside their own, said Sarpeshkar. "Healthcare is a natural area for applying biologically inspired technologies since we are trying to engineer systems that perform the normal

functions of biological ones, so mimicking the biology can be helpful in fixing it."

Sarpeshkar's work also reflects the rewards that come by way of those daring to walk the rarely trodden path. "I have followed my heart in my work, and in my love for science," he said.

Program & Events:

1.

Industrial Design Centre
Indian Institute of Technology Bombay
Powai, Mumbai – 400 076
Tel: +91 22 2576 7801
Fax: +91 22 2576 7803

2.

Invitation to participate in 'Design Experience Seminar, Design Workshops and Design Degree Show 2009'

Seminar:
'Design Experience 2009'
8th and 9th June 2009 from 9.30am - 5.30 pm at IDC, IIT

Bombay
www.idc.iitb.ac.in/~seminar

The 'Design Experience Seminar 2009' is a two-day national seminar on 8th and 9th of June 2009 from 9.30am to 5.30 pm at IDC, IIT Bombay. The seminar is jointly organized by IDC, IIT Bombay and InDeAs (India Design Association) .
The seminar aims to showcase the work done by designers and other professionals related to the field, and provides an opportunity to get an insight into their different experiences while designing.

The seminar has presentations of case studies by leading design professionals, followed by discussions by leaders and thinkers related to the design.

To register, send mail to seminar@idc.iitb.ac.in

(Registration Fees: Rs 500/- for students and Rs 1250/- for InDeAs members and Rs 2500 for Professionals – includes Seminar Kit and Food)

Speakers and Chairpersons :
The Seminar will host some of the leading personalities working in the field of Design in India.

Abhishek Singh
Animation Film designer and comic book artist

Dr. Ajanta Sen
International Director of Solar Project,
Visiting faculty Industrial Design Centre (IDC) IITB.

Chandrashekhar Wyawahare
Director, Futuring Design
(Product design- appliences to transportation design)

Ed Cutrell
Microsoft Research India
(Human-computer interaction)

G. G. Ray
Professor and Head, IDC IIT Bombay
(Ergonomics, Automobile and Product Ergonomics)

Jean Philippe Salar
Chief of Renault's Mumbai studio in India
(Transportation design)

Neelam Chibber
Founder Director, Industreecrafts Pvt Ltd
(Industrial Design, Craft, Design education)

Prahlad Khakkar
Director, Genesis Film Production
(Advertising and Film Art, Restaurant design)

Prakash Moorthy
Head of Animation, Miditech
(Animation design)
Ravi Poovaiah
Professor, IDC IIT Bombay
(Interaction Design, Environment Design,Communicatio n Design)

Sandeep Datar
Director, User Experience Design at Yahoo! India R&D
(User centric design and innovation to hardware and software products, Ethnography, process driven product innovation, designing for the emerging markets etc.)

Satish Gokhale
Director, Design Directions
(Product design, medical equipments, electronic and industrial products)

Satyajit Vetoskar
Head of Design - VIP Industries
(Travel products)
Sreejit Unnikrishnan
Head of User Experience Design - Google
(Interaction and Interface Design)

Sudarshan Dheer
CEO, Graphic Communication Concepts, Mumbai
(Corporate Identity, Signage Design, Packaging Design, Publication design etc.)

Sudhakar Nadkarni
Dean – Business Design, Welingkar Institute of Management Development & Research
(Product Design, Environmental Design, Exhibition Design, Design Education)

Vikas Satwalekar
Former Director and Professor, NID Ahmedabad
(Graphic Design, Publication Design, Exhibition Design, Identity Systems)

Workshops:
'Design Workshops 2009'
10th June 2009, 9 30 – 12.30 and 2.30 to 5.30 at IDC, IIT Bombay
Fees: None
The Design workshops are being held for high school students on different areas of design such as Game Design and Story book Design. The workshops will be held on Wednesday 10th of June at IDC, IIT Bombay.
To register send mail to seminar@idc.iitb.ac.in
Design Experience Seminar and Workshop Co-ordinators:

Sarang Kusale
sarang.k[at]iitb.ac.in
+91 99757 71759
Megha Agarawal
megha.idc[at]iitb.ac.in
+91 99309 97547

3

The Aalto Theatre, Essen

red dot award awards ceremony 29 June
The winners of the red dot award: product design for 2009 will be honoured at a festive ceremony in the Essen Aalto Theatre in Germany by representatives from design, business, and politics. To book your seat go to www.red-dot.de

4.

Application Form
QIP Short-Term Course on
Learnings on Sustainability
for Engineering Education
(July 09-15, 2009)

Name: ----------

Designation: ----------

Organization: ----------

Address for Correspondence: ----------

---------- Pin ----------

Telephone:

Mobile: ----------Landline: ----------

E-mail: ----------

Details of DD

Amount: ----------

No. ---------- Drawn on: ----------

Signature of the sponsoring authority

Name: ----------

Designation: ----------

Date: ---------- Place ----------

Seal of sponsoring authority

Short term course on Learnings on Sustainability for Engineering Education July 09th- July 15th, 2009

A week long course on Learnings on Sustainability for Engineering Education will be conducted from 09th- 15th July 2009 at IDD Centre in the Indian Institute of Technology, New Delhi.

Engineering Education and issues of Sustainability

The current patterns of consumption and production are becoming highly wasteful and unsustainable. This issue will be of concern to engineers of tomorrow. The future of engineering education and industry lies in taking up the challenges of development and sustainable best practices in design of engineering products, services and systems of the future.

Learning Objectives

- Understanding sustainability
- Teaching sustainability
- Developing solutions for sustainability

Contents of the Course

- Challenge of development and sustainability
- Sustainable Product, Services and Systems
- Designing for Sustainability
- Designing for Human needs and Sustainable Consumption
- Social Entrepreneurship
- Methods for Sustainability assessment

Course Venue

IDD Centre
IIT Delhi
Hauz Khaz
New Delhi 110016

Course Coordinators

Amitoj Singh
Assistant Professor
Industrial Design Programme
IDD Centre
IIT Delhi
New Delhi 110016
Phone: 011-26596723, 26596770
Mobile: 09868101027
Email: amitoj_design@yahoo.com, amitoj@iddc.iitd.ac.in

Lalit Kumar Das
Senior Faculty
Industrial Design Programme
IDD Centre
IIT Delhi
New Delhi 110016
Mobile: 09891941433
Email: lalitdas@gmail.com

Guest Faculty (expected)

Prof. Amrit Srinivasan
Dept. of Humanities and Social Sciences
IIT Delhi

Prof. Carlo Vezzoli
Faculty of Design
Politecnico di Milano University
Italy

and others.....

Participation

QIP course is open to full time regular/permanent teachers of AICTE recognized degree level engineering colleges and technical universities/deemed universities. The candidates are required to attach a demand draft (refundable) of Rs 500/- in favour **"Registrar IIT Delhi"** of along with application form and should sent to course coordinator at the earliest but not later than 10th June 2009.This demand draft will not be refunded in case a selected participant does not attend the programme. The selected candidate will be paid return rail fair (maximum by AC-3 tier) by the shortest route as per the rules and accommodation at IIT hostels will be made available to them. But they are required to bring their beddings, etc.

Who should attend

Faculty members of the Engineering Institutes who are interested in curriculum changes to meet the needs of the future.

5.

Submit your recent design projects to 'Design in India .net' with images and a write-up. Selected projects will be featured in the webpages of 'design in india' webspace.
Students are especially encouraged to submit their recent project work.
http://www.designin india.net/ contact/submit_ project.html
Design, Peace and Cheers,
Designinindia team

6.

USID2009

Design for All: Usability, Accessibility & Creativity

Call for Papers

New technologies of the Information Age making products and services evolve very quickly but the human diversity in age, culture and abilities making it difficult for all the consumers to take advantage of new possibilities of technologies. The human diversity in age, culture and abilities poses challenges for all planners, designers, technologist and entrepreneurs, to focus their attention to the design for human diversity, social inclusion and equality.

As part of the USID2009 pre-conference event, USID India invites students, researchers and professionals to submit their research papers on the following key areas under the main theme of the USID2009 conference *"Design for All: Usability, Accessibility & Creativity"*

- **On line Services e.g. (Financial, Travel & Ticketing, Online search/enquiry services etc.)**

- **Mobile Applications (e.g. Mobile Communication, GPS, etc.)**
- **Enterprise Software products and applications**
- **Consumer products and applications (e.g. appliances, gadgets etc.)**
- **Medical & Health care products/applicatio ns (Diagnostics and Patient Info. Systems etc.)**
- **Physical spaces (Architecture, Public places etc.)**

GUILDELINES FOR SUBMISSION

· **All submissions must be in English and must include title and author information, including author affiliations.**

· **Faxed submissions are not acceptable.**

· **Late submissions will not be reviewed.**

· **The written paper should include a short abstract, keywords, body, and references (for more detail, please see the USID2009 Conference Publication Format.**

· **Submissions must not contain proprietary or confidential material and should not cite proprietary or confidential publications.**

· **All submissions must be in the camera-ready format (PDF). Due to tight publication schedules, revisions will not be possible. The submitted PDF version will be considered the final version of the paper.**

· **We recommend that you register using an e-mail address for communication between the review panel and the individuals. Important information will be distributed via e-mail for individuals invited to attend the conference, which must be acted on in a timely fashion.**

ELIGIBILITY

This is open to the professionals, academicians and students.

REGISTRATION

For registration send email to callforpapers@ usidfoundation. org with your name, institution/ organization, and the theme.

Last date for registration: June 28th, 2009

SUBMISSION

Final Submission: July 31st, 2009

REVIEW CRITERIA & PROCESS

Each paper submission will be distributed to and reviewed by experts. Care will be taken to avoid conflicts of interest/affiliatio n when matching reviewers and participants.

Submissions are reviewed based on:

- **Originality of the content**
- **Quality of the content**
- **Relevance to the theme**
- **Clarity of the written presentation**

The papers short listed by the review panel will be presented during the USID 2009 and all accepted papers will be published in the USID 2009 Conference Proceedings. Teams will be notified of acceptance or rejection by August 14th, 2009. Authors of selected papers will be expected to attend the conference in order to present their submissions to other conference attendees. USID India will also notify the authors through email or phone and also through post.

7.

An opportunity to share your thoughts and creativity! ABILITY FOUNDATION invites you to participate in ***"60 Seconds to Fame!"*** All-India One-minute Film Competition on disability focussing on the need for equal opportunities for persons with disabilities.

The three best entries will receive cash prize of Rs. One Lakh, Rs. Seventy Five Thousand and Rs. Fifty Thousand respectively. A national jury comprising eminent celebrity

filmmakers/actors from across the country, as well as distinguished persons from the disability sector, will select the prize winning entries.

"60 Seconds to Fame!" is part of **ABILITYFEST 2009** - India International Disability Film Festival, which is scheduled to be held at Chennai from October 1 to 5, 2009. First held in 2005 at Chennai, **ABILITYFEST 2009** has since then, evolved as a major bi-annual event. International film festivals on disability are extremely significant platforms that showcase sensitively made films by, with and about disability and provide significant platforms for discussion on a whole range of major disability issues. Thus, **ABILITYFEST 2009** is an important vehicle in India to communicate powerful messages, one such being the importance of access.

As a national cross disability organization, ABILITY FOUNDATION is an organization that has made several strides towards empowerment and inclusion of persons with disabilities in India. The organization works towards an inclusive society, equal opportunities and a level playing field for all persons with disabilities stressing on the availability of the right opportunities at the right time. We firmly believe all it takes is an open mind. **Click here for *"60 Seconds to Fame!"* Theme. Click here for *"60 Seconds to Fame!"* rules and entry form.**

8.


Design for Asia Award 2009
DESIGN FOR ASIA AWARD
Recognising the Most Influential Good Designs in Asia
CALL FOR ENTRY
online submission before 15 July 2009
Organiser:
hkdc
Hong Kong Design Centre
Major Sponsor:
Supported By:
Ambassadors of Design
www.dfaaward.com
8 CATEGORIES OF AWARD
18 DESIGN CATEGORIES

Call For Entries NOW!

Design for Asia (DFA) Award 2009, Asia's renowned annual **design competition, opens global doors to recognize companies and designers who have achieved business success through good design that reflects or impacts on the Asian lifestyle.**

Enter in 18 categories in 4 design areas. 8 classes of award winners will be invited to attend the Award Ceremony in Hong Kong and be featured in a wide range of international media. Winning designs will be showcased in an Exhibition coincides with the Business of Design Week 2009 (BODW).

9.

designing for children

1st - 5th of February 2010 at IDC, IIT Bombay

The international conference 'Designing for Children' with focus on 'Play + Learn' is scheduled to be held at Mumbai, India in Feb 2010 and is being hosted by the Industrial Design Centre (IDC), at the Indian Institute of Technology (IIT) Bombay, Mumbai.

This international event is aimed at deliberations and discussions concerning design issues related to children. The event is expected to throw light on the role of

designing for children as related to design of objects, media and environment with focus on 'play and learn'.

The events are centered around the interests of students, educationists, practicing designers and children related interest groups. The event has been designed to be lively, interactive and thought provoking and will provide great opportunity to interact with thought leaders and listen to visions by researchers.

The major events during the week are:
1. Design Education Meet (2-3, February 2010)
2. International Design Conference (call for papers is open) (4-6, February 2010)
3. Exhibition of projects on 'Design for Children' (2-6, February 2010)

The registration as well as the call for papers for the 'International Conference on Designing for Children' is now on.

This is an invitation to be a part of events concerned with designing for children with focus on 'play' and 'learn': Further details:

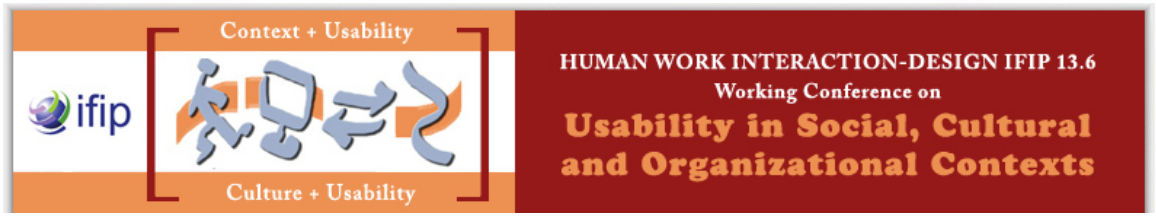
http://www.designingforchildren.net
Helpdesk - 'designing for children'
IDC, IIT Bombay
Powai, Mumbai
400076
India
Phone:
091-22-25767801/ 7820
email:
seminar@idc.iitb.ac.in

10.

Call for Papers & Demos

- **Full Papers Due (extended): June 30, 2009**
- Notification of Review Results: August 1, 2009
- **Demo Proposals Due: August 31, 2009**
- Notification of Accepted Demo Proposals: September 10, 2009

11.



Dates & Venue:
Conference Dates: **Wednesday and Thursday, 7-8th October 2009**
Deadline for submissions: **August 3rd 2009**
Acceptence Notification: **August 21st 2009**
Venue:
Pune University, India

12.

Welcome

The Mozilla Labs Design Challenge is a series of events to encourage innovation, and experimentation in user interface design for the Web. Our aim is to provoke thought, facilitate discussion, and inspire future design directions for Firefox, the Mozilla project, and the Web as a whole.

In collaboration with IxDA, a network dedicated to the professional practice of Interaction Design and Johnny Holland, an open collective talking, sharing and finding answers about all aspects of interaction design, we once again invite designers, students and design-focused people from all around the world to develop new ideas & mockups for the future of the Web.

Important Dates

- May 14th, 2009 – Launch of Design Challenge: Summer 09
- June 21st, 2009 – Submission deadline for mockups & videos
- July 8th, 2009 – Announcement of "Best in Class" and "People's Choice" selection

Job openings:

1.

Position: UX Designer
Location: Pune
The User Interface Designer is a web design professional who can translate high level design ideas and requirements into effective and elegant web-based software interfaces. This includes designing compelling, rich and scalable user interfaces for our web 2.0 product including user experience design, graphic design, and HTML implementation.

The User Interface Designer is primarily responsible for creating User Interface Designs for new products within an iterative product lifecycle.

User Interface Design activities include creating and iterating static and interactive design models (e.g., Storyboards and wireframes), authoring user interface specifications, and turning the specifications into reality.

Essential Job Functions

- **Design interactive user interfaces for our web sites and web-based applications including visual look & feel, graphics, styles, navigation, and layout.**
- **Create graphical elements and implement HTML web pages.**
- **Work with product management and marketing to design, implement, and maintain the information architecture for our web sites and web-based applications.**
- **Collaborate with product managers and other stakeholders throughout the company to proactively gather and understand customer, partner, and stakeholder needs in order to create the best user interfaces possible.**
- **Plan and conduct user tests and then document and communicate the results.**
- **Formulate ideas on how we can improve customer adaptation by enhancing our user interface designs.**
- **Work with developers, system engineers, and QA engineers throughout the product development – definition, designing and testing phases to ensure user interface integrity.**
- **Provide estimates for how much time it will take to complete UI tasks.**
- **Work on maintenance tickets that require user interface design.**
- **Proactively search for opportunities to increase efficiencies to our websites and web-based applications (i.e. style sheets, director structure).**
- **Conduct industry research and stay current on best practices, competitor user interface designs, and emerging technologies.**
- **Handle multiple project deliverables and balance multiple priorities and deadlines**

Qualifications

- **3+ years experience in designing consumer-oriented web applications (Portfolio is required)**

- **Must have strong aesthetic skills, creative problem solving and be able to create good site navigation**
- **Knowledge and experience in iterative prototyping skills (in Flash, HTML)**
- **Proficient in Microsoft Office Suite, Adobe Photoshop, Adobe Illustrator, Microsoft Visio**
- **Must have a successful track record in the implementation of web designs/layouts, graphics, HTML, DHTML, Flash,CSS and Javascript**
- **Solid understanding of cross-platform browser compatibility issues and image-optimization for the web**
- **Knowledge of human factors and innovative user interface methodologies a plus**
- **Experience in designing user interfaces for consumer websites and web-based applications a plus**
- **Excellent verbal and written communication skills**
- **Technical aptitude and problem-solving skills, cooperative approach**
- **Ability to innovate, prioritize and multi-task**

2.

Position: Web UI Developer
Location: Pune
Web UI Developer
PubMatic needs programmers, designers, testers and escalation engineers with the enthusiasm and zeal to solve problems and work in a startup environment, and are fun loving.
Position: Web UI Developer
We are doing cutting edge UI development using technologies such as AJAX, DHTML and Javascript. The UI front end is using AJAX and is integrated with the backend using Java servlets. AJAX and DHTML are used for rendering of active reports etc.
Location: Pune
Job Description:
You are expected to develop UI using the latest Web 2.0 techniques such as AJAX, DHTML, CSS/XML and Javascript. The GUI should have a Web 2.0 look and feel, and should look cool.

- **You will be responsible for overall look and feel and workflow of the UI for a web-based AJAX application**
- **You will be developing, programming, testing, and maintaining UI based on requirements**

You will be creating new layouts as needed, you will be coding pages and incorporating text, graphics, multimedia, and other features.
Required skills are:

- **Working knowledge of Javascript, DHTML, CSS/XHTML, XML, and Web 2.0 techniques are required**
- **Knowledge of DOM methods and properties are required**
- **You should be aware of the performance and scalability considerations for web pages**

Desired skills are:

- **Knowledge of AJAX frameworks such as DOJO will be an added advantage.**

Qualifications:

- **BS/MS/BCS/MCS/BCS/MCA in Computer Science or equivalent.**

- **2-4 years of work experience in relevant field**
- **Excellent interpersonal, written, and verbal communication skills**

3.

My client is developing the most customers centric online education solution using cutting edge, fresh, new technologies on a world-class platform built by the best and the brightest and is looking for candidates with experience in visual and interaction design, as well as expertise in converting design into standards-based HTML and CSS

• 5+ years professional experience as an Interaction Designer for web applications
• Solid understanding of the capabilities and constraints of browsers, CSS, HTML, and Ajax, JavaScript, and XML
• Strong sense of page layout, composition
• Strong skills in design tools such as Photoshop, Illustrator, Flash, and Fireworks
• Knowledge of Visio or other tool for generating wireframes and behavior specifications
• Experience in designing online marketing materials like landing pages and call to action pages
• Experience in professional/ consumer Web 2.0 UI/UX design
• Proven, hands-on ability to apply the methodologies of interaction design to software development, and to generate designs that deliver power and pleasure to customers
• Familiarity with usability heuristics

Interested candidates can get in touch with haritha@zyoin.com

4.

"Immediate Opening for Industrial Design." @ TATA Elxsi at multiple locations
Job Description:
Product designer from NID/Srishti/NIFT.
3 to 7 years of experience in Product design..
Knowledge of CAD tools like Rhino, solid works..
Good sketching.
Experience in either FMCG or appliances or electronics companies, or design
houses ...
Job Location : Bangalore/Pune/Delhi.
Please send your portfolio and updated CV to -
akshatha@tataelxsi.co.in

5.

Burrp is looking for User Experience and Visual designers.

About Burrp: Burrp (Acquired by network18) is India's leading lifestyle social local info web2.0 portal where you can find and share your views on local stuff suchas restaurants, bars, nightlife, street food, juice centers, desserts, bakeries, etc. Started in Mumbai, it currently serves Mumbai, Bangalore, Chennai, Delhi , Hyderabad, Kolkata. burrp is financially backed by a leading media house(TV 18). Burrp is founded by Deap Ubhialong with his friend Anand Jain. Deap is a mergers &

acquisitions man with private equity experience. He most recently was a senior associate at Alpine Investors in San Francisco before the entrepreneurial bug bit him and brought him over to Mumbai.
The burrp! team is a highly talented yet fun-loving gang that likes to work hard and play harder. We"re headquartered in heart of our beautiful nation - amchi Mumbai! We're always on the lookout for people that are smarter than we are, so if you think you're Albert Freakin Einstein, feel free to get in touch with us.(www.burrp.com)

2. Business 2.0 Top 30 – we were selected as oneof the top 30 startups in the world by arguably one of the reputable technology publications in the world
3. Best of Breed Technologists – we work on cutting edge technologies, and because of this, our products are recognized by our peers (we've been approached to be acquired by one of the big 3 – butturned the deal down)

From The CEO/ Founder of BURRP: There's not much else I can say,– someone's just got to see the light and be passionate about start ups. We don't have the bells and whistles here – but we work hard, we have a lot of fun, and everyone does very well in that sense. We also probably pay the most as opposed to other startups…

User Experience Designer
- 5+ years experience designing web-based interfaces.
- Academic background in human-computer interaction or related field.
- Defining the user experience and interface for new burrp! Products and features.
- Recommending usability enhancements for new and existing products, and making recommendations for change.
- Conceptualizing and presenting design ideas & concepts through mock-ups/ wireframes/ or product walk-through to run by the internal team or users for feedback / approvals.
- Be actively involved in understanding user patterns through web analytics, user surveys and interviews.
- Hands on experience with tools such as Flash, Photoshop, Illustrator, Corel Draw, Dreamweaver, Go Live etc.
- Understanding of HTML, XHTML, CSS a huge plus

Senior Web/ Visual Designer
- 3+ years of design experience in a product company/ portal / interactive agency.
- We are looking for individuals with strong creative skills and a keen interest to design for the new web paradigm.
- On the product side, you will work collaboratively with the Engineering Team to evolve the design of the site to support new features and enhancements.
- On the business side, you will work collaboratively with the Marketing / Communication Team to develop compelling visuals & layouts for campaigns & product related communication or e-marketing collateral
- Design for and troubleshoot cross browser compatibility issues
- Create clean mark-up that is scalable, accessible and search engine

friendly
- Bonus points for passionate hand-coders who hate the WSIWYG editor and enjoy writing lean, lightweight, standards-based markup
- Strong hands on experience with tools such as Flash, Photoshop, Illustrator, Corel Draw, Dreamweaver, Go Live etc.
- Thorough understanding of HTML, XHTML, CSS.

Interested candidates may reach (with requisite details): jobs@sutrahr.com
6.

CA (formerly Computer Associates) is looking for Senior UI Designers

and Pincipal UI Designer for User- Experience Group, Hyderabad, India. Interested candidates may send CV to gajendra.agrawal@ca.com with subject line "Application for "*Senior UI Designer*" or "*Application for Principal UI Designer*"

Senior UI Designer

Specifications

- **5-6 years of experience in UI Design field**
- **Good understanding and exposure of User Centered Design (UCD) process**
- **Experience in User research techniques e.g customer interview, focus groups, card sorting, cognitive walkthrough etc**
- **Good working knowledge of Photoshop, Visio, Illustratrator**
- **Knowledge and experience in UI design & Prototyping Tools, Flash, Dreamweaver and HTML**
- **Independently produce detailed user interface specifications**
- **Ensure all product designs meet usability objectives and user requirements**
- **Plan and perform usability research. Includes project planning, user recruitment, logistics, conducting evaluations analyzing results, documenting issues, and proposing and prioritizing recommendations.**
- **Coordinate with product teams to gather requirements and to ensure standards are understood and followed**
- **Generalize design techniques to apply and contribute to corporate UI standards and consistency with other products**
- **Should be able to mentor junior staff**

Education & Experience

- **The candidate should have at least 5 to 6 years of work experience in UI design field.**
- **Masters Degree or global equivalent in Human Computer Interaction, Information Design, Industrial Design, Human Factors, Cognitive Psychology, or related HCI discipline.**

- **Candidates having Arts background (BFA, MFA) will be considered for this position if they have relevant experience in Enterprise Software UI Design**

Principal UI Designer

Specifications

- **This position is responsible for leading and independently planning UCD research, including UI design and usability deliverables for assigned projects that span large products or product families.**
- **8+ years of experience in Enterprise Software UI Design**
- **Good understanding and exposure of User Centered Design (UCD) process**
- **Experience in User research techniques e.g customer interview, focus groups, card sorting & cognitive walkthrough**
- **Good working knowledge of Photoshop, Visio, illustratrator**
- **Knowledge and experience in UI design & Prototyping Tools, Flash, Dreamweaver and HTML**
- **Manage and independently plan, perform, and oversee UCD research, including UI design and usability deliverables for assigned projects that span large products or product families**
- **Help plan the creation, coordination and implementation of the large-scale corporate UCD programs including standards, compliance testing methodologies and maintaining parity with UI or assistive technologies and governmental and industry regulations**
- **Create innovative, achievable, strategic and tactical UCD programs around assigned product families with measurable results**
- **Educate developers, development managers and executives to explain UCD value and process**
- **Author UI Standards**
- **Produce all UCD deliverables as an individual contributor**
- **Mentor and educate junior UCD members**

Education & Experience

- **Masters Degree / PhD or global equivalent in Human Computer Interaction, Information Design, Industrial Design, Human Factors, Cognitive Psychology, or related HCI discipline is preferred.**
- **Typically possesses a portfolio demonstrating 8+ Years or more years of experience designing and testing excellent enterprise software user. Repeatedly demonstrated the ability to successfully lead a small group in the planning, performance, and communication of UCD projects. Recognized status in the HCI industry, by having refereed publications or conference papers, or sits on HCI industry-wide committees or organizations.**

7.
Information Architects

- **4 -6 years in-depth experience with information architecture and user-centered design process and tools**

- **Experience working on large and complex projects**
- **Experience observing user research and translating user research into design decisions**
- **Customer focused with strong communication skills (written and verbal), and interpersonal skills**
- **Ability to architect and visually present information via a clean, easy to understand user interface**

Software Skills
MS Visio, MS Office, Photoshop, Illustrator
Activities involved

- **Work with customers to understand their business and goals and help define strategy, content, and features for design of their web sites / applications**
- **Analyze audiences and their information and functional needs**
- **Define architecture and navigation that serves as a blueprint of the site / application upon which all other aspects are built**
- **Create wire frames, site maps, process maps, mockups, visual specification, to describe the intended user experience**

Location: Pune/Mumbai
Satendra | HR- Staffing | M P H A S I S *an EDS Company* | No. 65/2, Bagmane Parin, Block-A, Level 6, 7 & 8 , Bagmane Technology Park, Byrasandra, CV Raman Nagar, Bangalore 560093 | Tel Direct - 080 40047188 | Mobile-9980943461 | Email-satendra.k@mphasis. com
For HR Help write to hrhelpdesk@mphasis. com, call toll free 1800 102 8822 (from Airtel)Charge number 080 4027 5858
Find your passion at www.mphasis. com/careers
8.
Microsoft India Development Center, Hyderabad, is looking for an experienced UX Designer who will be responsible for UX Design of BizTalk Server.
Microsoft India Development Center (MSIDC)
MSIDC is a key part of Microsoft's future strategic direction. Located in a sprawling 50-acre state-of-the- art campus at Gachibowli, Hyderabad, its designed to mirror Redmond quality standards, our 1400-plus employees get to work in a lively and fun-filled environment which combines the best of technology with great recreational amenities and helps them achieve the desired work-life balance.
At MSIDC the designers and user researchers are part of a Central Design Team, where they work on diverse range of products from incubation projects, to simple or complex consumer and enterprise applications on web, mobile, desktop environment. The design team has their own usability lab fitted with latest equipments.
Designers work as a integral part of the team that have end-to-end responsibility for every product, feature or technology they develop. Designers own the UX strategy, are responsible for gathering customer requirements, conceptualizing, designing the UX, testing it and seeing it through implementation and release of the product to the market.
The designers at India Development Center are integral part of more than 800 designers that Microsoft globally has, which enables them to constantly learn from and leverage the internal knowledge and design inspiration sources.

BizTalk Server

BizTalk server is used to connect systems both inside and across organizations, including exchanging data and orchestrating business process. With over 7,000 customers, including 90 percent of the Fortune Global 100, BizTalk server is a trusted mission critical enterprise server. BizTalk Server provides a powerful enterprise development and execution environment that integrates loosely coupled, long-running business processes, both within and between businesses and unites enterprise application integration (EAI) and business-to- business (B2B) integration.

The product development team of BizTalk server is located fully in MSIDC. The product will be built entirely here with full autonomy on processes and people.

As the BizTalk UX Designer you will be responsible for researching, planning, designing, driving UX strategy and implementation.

Responsibilities:

- **Understand the Application Life Cycle Management (ALM) of BizTalk Server.**
- **Be responsible for driving the process around gathering user data. Whether its collaborating with UX Researchers to drive usability testing or leading cross disciplinary team to do contextual enquiries at customer premises.**
- **Use data gathered to identify, create or extend existing BizTalk persona.**
- **Be very strong in ideating and brainstorming to come out with multiple ideas around complex workflows.**
- **Be very creative in synthesizing the user data into simple, exciting and very compelling designs.**
- **Collaborate very closely with Program Management, Development and Test teams in seeing the designs through right from planning to implementation stage.**
- **Coordinate and build relationship with peer design teams in Microsoft for knowledge transfers, cross group collaborations.**

Qualifications:

- **Passion for design.**
- **Have a educational background in Interaction Design or related field. Optional for highly experienced candidate who can demonstrate great and evolved sense of design.**
- **Have 5+ years of design experience in a product development environment for enterprise software.**
- **Need to demonstrate a portfolio of work that showcases creative problem solving, innovative and exciting user interaction solutions that are rooted to real world needs.**

Contact:

Mallika T

Email: i-malt@microsoft. com

Phone: +91 (040) 66941725

9.

We need urgently 1- 3yrs exp, web designers good in graphics and html (tableless, divs) on contract/freelance or full time at pune. Interested people can contact me directly for details.

sameerhere@yahoo.com

www.sameerchavan.com
+91.9096811937 (pune)
10.
We required a Flex developer with 3 plus years of experience.

Job description is:

1. Hands-on experience on Adobe Flex 2.0 or Adobe Flex 3.0 – Mandatory
2. Knowledge of Action Script 2.0 or Action Script 3.0 – Mandatory
3. Self starter with ability to work independently – Crucial
4. Good Communication Skills - Required
5. Ability to train others on Flex technology - Required
6. Exposure to interface Flex with other Server side applications – Major Plus
7. Experience – AJAX, XSLT, Javascript – Major Plus
8. Experience: 3-6 years
This is the contractual position.
Location: Gurgaon (Delhi/ NCR)
Please email your resume to Samiksha Bhattacharya (s.bhattacharya@ mpstechnologies. com).
11.
HP IPG(R&D) team , Bangalore is looking for Sr. Architect for "Human Factor and Experience" team.
Total Experience:15 years
At least 4+ years as Technical Architect with overall experience of 15+ years
Has provided informed technology inputs or proposals to management that consistently improve value to the business
Major contributions to Research and/or Development resulting in industry leading innovation
Contributed patents and technical papers to company's intellectual property portfolio
Early adopter and champion of new/emerging technology to solve real customer needs
Provided opportunities for cross-connections between technologists in different organizations
Established relationships of trust, judgment and maturity with management and colleagues
Identified opportunities spanning multiple technical disciplines
Role:
Providing technical leadership for significant project/program work
Routinely inventing, developing and introducing new methods and techniques
Demonstrating sustained results and a continued level of performance
Capturing, distilling and disseminating information pertaining to ongoing and previous projects
Proactively assisting in the development of the technical community, sharing knowledge and technical expertise through presentations, technical papers, books, whitepapers, courses and

other approaches, teaching and/or mentoring
Regularly creating insightful ways to use new technology, extending existing technology, and improving the way technology is implemented
Identifying important emerging technologies, leading in analysis of their impact.
Conceiving and is instrumental in creating new projects or programs
priyanka.sonal@ hp.com
12.
Looking for Content Editor from Mumbai or Pune :
from Culture Unplugged:
about us :
http://www.cultureu nplugged. com/landing. php
http://studio. cultureunplugged.com

We are looking for a Content Editor with fresh eye, aesthetical sensitivity & substantial experience in editing on Final Cut Pro suit, to not only edit but take the conceptual direction forward and tell stories with his/her work for informative/ graphically creative and/or narrative video production. We value flexibility, humility, openness, freshness & speed for this opportunity. If this description fit you, we are looking to discover you to build long-term relationship.
Responsibilities include :
Organize the project(s)
Understand Culture Unplugged voice + the direction presented and apply to work
Assess the footage and visualize the edit based on the concept direction Edit, finalize & cut with speed to meet the deadline
Offer alternate edits or perform modifications if need, per direction
These opportunity is in PUNE at Culture Unplugged Studio, and the start-date is immediate. It is a part-time freelance opportunity to begin with. Compensation is based on expertise/experience and mutual expectations. This opportunity requires the sample of work to be sent first. If you are interested, please send us samples of your editing work at the following address:
Culture Unplugged Studios
Clover Centrum
2nd floor,
245 Boat Club Road,
Pune 411001
13.
Company: Titan Design Studio, Titan Industries Ltd - Watches Div
Location: Bangalore
Job Level: Industrial Designer
Field: Product Design
Job Functions: Industrial Design, Product Development, Design Research, Styling, Project Management
Description
This is a world class opportunity for Product Designer to join Titan

Design Studio team. TDS is a dynamic studio made up of an energetic group of innovative designers. This is an opportunity which is best suited to a designer with essentially a broad background across a number of different product categories. As a Designer, you will be tasked to help create innovative solutions with strong sense of manufacturability and cost and communicate simple and intuitive solutions through cross functional team .
The ideal candidate will be able to combine traditional brainstorming/ ideation abilities with the latest computer tools(corel draw is must) to create fresh, innovative, ground breaking proposals.
We are ideally searching for candidates who have passion for creativity, innovation and the power to influence innovative products through their projects
Candidates will need to be with a degree in industrial design or equivalent. we are looking for candidated prefreably with max 2-3 yrs of experience and will work for SONATA , our brand for mass market.
We are particularly interested in seeing how you arrive at previous solutions & would like to see any evidence of your design process skills.
Pl mail your latest portfolio and resume to me at
Rajesh.Sangewar@ gmail.com Rajesh.Sangewar@ gmail.com>
Design Manger
Titan Design Studio
ph - 080- 66609803
14.
Assure Consulting is a focused search firm based in Mountain View, California and Bangalore India. Having seen your profile, we would like you consider the following opportunities with our client HP
Human Factors and Experience Design:Exp(8- 14 years)
Job Location: HP Banagalore
Should have worked in the Human Factors and Experience Design Field..
Experience in User Centered Design and Development, Human Computer Interaction Analysis, Human Factors Engineering and User Interface Design.
Demonstrated expertise in HF and worked on both Product Development and Enterprise Solution Development. Provided informed technology inputs or proposals to management that consistently improve value to the business
Major contributions to Research and/or Development resulting in industry leading innovation Contributed patents and technical papers to company's intellectual property portfolio
Early adopter and champion of new/emerging technology to solve real customer needs
Provided opportunities for cross-connections between technologists in different organizations
Established relationships of trust, judgment and maturity with management and colleagues Education and Experience Required:

Typically a Bachelor's degree or equivalent experience and a minimum of 10 plus year's related experience or Master's degree and a minimum of 6 plus years experience.

Critical Competencies to Drive Business Results:
Master Technical Leadership
Contributions have major technical impact on an HP business, strategic direction, improved time-to-market, dramatic cost reduction, quality or address unmet customer needs

Management Partnership
Establishes relationships of trust, respect, judgment and maturity with management and colleagues

Knowledge Sharing
Shares knowledge and technical expertise through publishing, teaching and/or mentoring

Technical Breadth/Depth (Master)
Is sought out as an expert in technical field within the business unit

Customer-Centric Focus
Ensures that a positive customer experience informs both the approach to work, the quality demonstrated, and the endpoint for measuring success

Thought Leadership (Master)
Understands how businesses operate and uses this context to drive innovation and ethical decision-making

Change Management
Develops methods for supporting innovation and change across the organization

Problem Solving
Approaches problems in a rational manner using sound strategies that ensure
comprehensive understanding and effective resolution

Pls send your updated resume with the following details:
Openings for Human Factors and Experience Design
Current CTC:
Expected CTC:
Notice period:
Relocate to Hyderabad:

Please contact: Manoj Kumar
Resourcing Specialist manojk@assureconsulting.com

Assure Consulting Services (P) Ltd.
211, Raheja Arcade

Koramangala, Bangalore -560095

Ph: 91-80-41104078
91-80-41104079
Mobile- 97399 86933
http://www.assureco nsulting. com

15.

SAS R&D India. Pvt. Ltd seeks a usability analyst for its R&D Usability team.

As a member of the R&D Usability team, this person will design, prototype, and document SAS solution user interfaces. The duties of this position will include conducting usability studies, prototyping and producing detailed UI design specifications; ensuring user interface consistency within a multi-application suite; creating and maintaining usability standards; evaluating new technology, and other duties as assigned.

Expectations
• Works on a single product or product suite.
• Focuses on user goals and needs and the flow of tasks to achieve those goals.
• Designs and conducts usability field studies & contextual design projects.
• Influences the product development team to support UCD.
• Demonstrates awareness of market/ competitors and knowledge of users in problem solving.
• Independently develops long term strategy for usability work on product.
• Communication and presentation skills necessary to present, explain, negotiate, and monitor design solutions.

Primary responsibilities
• Performs research focused on understanding work practice and user behavior as individuals and as part of a work group.
• Interacts with customers, user groups, and marketing to identify functional requirements.
• Works in cross functional teams to translate functional requirements into system design.
• Designs, develops, and documents high level and detailed prototypes to effectively communicate designs.
• Runs design reviews and usability tests with key stakeholders and representative users to validate designs.
• Produces specifications describing the appearance and behavior of the user interface for a product in development.

Technical Skills
• Creates screen designs using image processing tools like Photoshop, Fireworks and MS Visio.

• Develops functional prototypes using Flex.
• Familiar with UI guidelines for relevant development platforms like Windows, Swing and Eclipse.

Educational Background
• Bachelor's degree in Computer Science, Design, Human-Computer Interaction, Computer Graphics, Cognitive Psychology, or related field.
• User interface design experience.

Work Experience
• Minimum years of experience: 5 years
• Maximum years of experience: 8 years

To apply,
send your resumes on the following email
yogesh.bhide@sas.com
or
submit your resumes online using the following link:
http://sas.taleo.net/careersection/10080/jobdetail.ftl?lang=en&job=09001385
(Please click `Apply Online' button seen on the above webpage)

Note
The candidate may be given a design task if necessary.

16.

RMG Connect (www.rmgconnect.com) is the global customer relationship marketing arm of JWT offering integrated marketing communication services. The Digital Marketing Solutions Group which builds and sustains our client's brand presence on the internet through brand promotion, engagement, experience delivery and sustained contact, is looking for Information Architects with 3-4 years of experience to join their fast growing team.
ROLE:
Help the marketing team with project pitches, Understand client and user requirements, Conduct client and user workshops, Usability testing and allied activities, Estimate usability time and effort for projects, Create site and application information architecture, Create and communicate wireframes and prototypes, and Coordinate with creative and technology teams.
SKILLS AND EXPERIENCE:
A strong team player with excellent communication skills, Preferably design degree from a reputed institute, with 3-4 years experience in user experience consulting industry. Should have a good grasp of web technologies.
SOFTWARE SKILLS:
Wireframing tools like Illustrator, Visio, HTML/Dreamweaver for prototyping.
Please send your resumes to ashish.ganu@rmgconnect.com.
17.

A product engineering solutions company in Pune is looking for user interface designers.
Graduate/ Postgraduate in Design (Usability Engineering / Industrial Design / Visual Communication) from a premier institute.
2 to 3 years of hands on experience in user centered design.
Proven knowledge of usability design principles and user-centered design.
Experience in developing UI standards
Excellent visual communication and graphic design skills.
Strong communication and presentation skills
Send profiles nish@softdel.com
17.
Uppsala University invites applications for the position as

Professor in Human-Computer Interaction
at the Department of Informatics and Media

Nature of duties: General responsibility for research and research education (PhD level) within the field of Human-Computer Interaction and responsibility for developing this field. Teaching and tutoring at all levels. Own research. Supplying information about research and development in the research field. Planning and leading (including applying for research grants) research projects.

Active participation in the institution' s efforts to integrate research within human-computer interaction, computer- and systems sciences and media and communication with focus on the challenges within the society of digital networks. Administrative assignments and management functions may be relevant.

Qualifications required: The eligibility criteria for employment as professor are scientific as well as pedagogic skills. According to the employment policy of Uppsala University, it is also a general requirement that teachers have any other skills which are necessary to carry out their duties proficiently. According to the employment policy, the scientific skills should be demonstrated through independent research that significantly exceeds the qualifications required for the Swedish "docent" title. Planning and managing research projects are of importance.

The applicant must have the teaching skills required for the position and in addition, unless there are special reasons, must have formal pedagogical training relevant for the tasks associated with this position. The assessment of teaching skills will consider planning, carrying out and evaluation of teaching as well as supervising activities and examination.

The ability to teach in Swedish and English is a requirement. A holder that is only sufficiently proficient in one of these languages at the time of appointment is expected to be able to teach in the

other within two years.
Assessment: Assessment for the appointment of the professor shall be based on the degree of the skill required for the appointment.

For this position, the ranking will be based primarily on the scientific and teaching competence of the applicants, with special emphasis on scientific proficiency. This order of priorities in the application of the different ranking criteria is not absolute. A combined consideration of all grounds of assessment could result, for instance, in an applicant vastly superior regarding pedagogical proficiency being ranked higher than a candidate with superior scientific qualifications who is considered less qualified pedagogically.

Equal importance is given to the assessment of teaching skills and scientific skills.
When assessing the pedagogical proficiency, skills and experience in the planning, execution and evaluation of teaching, as well as supervising activities and examination will be considered.

Administrative skills are important in filling this position and will be given a large weight, the same goes for other merits of importance to the position. Attention will also be given to applicants' ability to: co-operate, develop and supervise activities and staff, interact with the surrounding community and to inform the public about research and developmental work.

Uppsala University will in this recruitment firstly consider the applicant that in the overall assessment of competence and skill is judged to have the best qualifications to carry out and develop the tasks within the position and contribute to a positive development of the department.

Uppsala University is striving to attain a more balanced gender distribution among its teachers. Since most full professors in the Faculty are men, women are especially invited to apply for this position.

Personal circumstances (such as parental leave) that may benefit the applicants in the assessment of qualifications should be included in the list of qualifications and experience (Curriculum Vitae). How to apply: A complete application written in English shall be submitted in three copies on paper and include:
- A list of scientific and educational qualifications (Curriculum Vitae) verified with witnessed copies of certificates and other documents referred to. The documentation of the teaching experience should include certificates, course evaluations and qualitative opinions by the director of studies e.g.
- A brief summary of scientific, teaching and administrative activities. By the summary it should be evident which research activities and results and which other activities that, according to

the applicant would firstly be considered in the appointment. As a basis for the statement over teaching experience "Uppsala University's general employment regulations" and "Guidelines of employment of teachers" should be used (see links below).

A short "policy statement" of what the applicant intend to do to develop the research within the discipline at the Department of Informatics and Media.

A list of scientific and teaching-related works referred to. The applicant should state which ten publications are firstly to be considered.

The scientific publications (maximum ten) which are firstly to be considered numbered in accordance to above list (may not be sent by e-mail).

The Recruitment Committee may in this recruitment come to use interviews, trial-lectures and referees. The applicant should therefore turn in a list of referees with insight into the applicant's professional skill as well as personal qualities that may be of relevance for the position, e.g. ability to cooperate, ability to lead and working methods.

Additional information

For additional information about the position, please consult the Head of Department, Bo Wallentin (tel. +46 18 471 11 44 or e-mail Bo.Wallentin@ dis.uu.se). The trade union representatives are Anders Grundström, SACO (the Swedish Confederation of Professional Associations) , phone +46 18 471 5380, Carin Söderhäll, TCO/ST (the Swedish Confederation of Professional Employees), phone +46 18 4711996 and Stefan Djurström, SEKO (the Union of Service and Communication Employees), phone +46 18 471 3315.

Applications should be made to the Vice-Chancellor of Uppsala University (ref. no. UFV-PA 2009/448), Registrar's office, Box 256, 751 05 Uppsala, fax. no. +46 18-471 20 00, and should be received not later than the 15th of September 2009. Applications sent with email or fax must be confirmed by original documents within a week of the deadline.

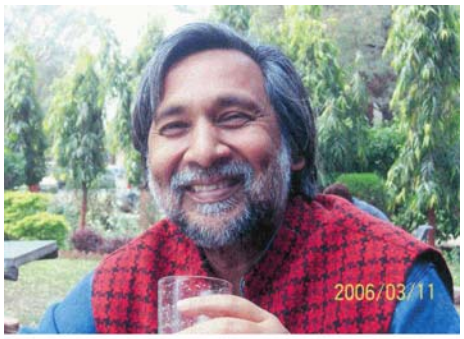
"Uppsala University's general employment regulations" and "Guidelines of employment of teachers" (in Swedish): http://info. uu.se/internt. nsf/regelsamling and http://www.personal avd.uu.se/ anstordning

Jan Gulliksen, professor
mailto:Jan.Gulliksen@ it.uu.se
--> August 2009
Dept. for Information Technology/HCI Tel: +46-18.471 2849
Uppsala University, Fax: +46-18.471 7811
Box 337 Cellular: +46-70.425 0086
SE-751 05 Uppsala, Sweden http://www.it. uu.se/katalog/ gulan
From February 2009
professor in Human Computer Interaction

School of Computer Science and Communication
KTH - Royal Institute of Technology
Stockholm, Sweden
INTERACT 2009 in Uppsala, Sweden August 24-28, 2009 --
www.interact2009.org

(More jobs are available in www.designforall.in)

Advertisement:



Invites far-sighted philanthropists
to collaborate on new concept education institutes

Innovation, Design & Entrepreneurship Academy

An institute here students learn to use their knowledge for the advancement of the society and their own as well.
An education system where gurus are owners and enjoy the autonomy to build tomorrow's India

70% share of gurus & 30% share of philanthropist visionaries

Write in confidence or meet

Lalit Kumar Das
B. Tech (IITK), M. Tech (IITD) M.A. (Industrial Design), RCA London

IDD Centre
IIT Delhi, New Delhi 110016
Phone: 09891941433
E. Mail: lalitdas@gmail.com

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subscribe@designforall.in

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Advertising:

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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.
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