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Design for All

Woman Design year

Guest Editor: Dr. Dolly Daou, France

Content April2020 Vol-15 No-4

Other regular features

GUEST EDITOR:

Transition-driven, design pedagogy and practice

Dr Dolly Daou is the guest Editor of the Design for All, special edition, titled: "Bridging the gap between education and practice". She has over 20 years international leadership experience in pluri-disciplinary design pedagogy, research, and higher education quality assurance. An expert in international relations and strategies, working between Australia, Hong Kong, China, Dubai and France, developing international alliances using a bespoke marketing strategy and professional workshops that link design with real-life industry experience.

Currently, the Director of Food Design Lab, l'École de Design Nantes Atlantique, France, the founder of New Eating Habits working group, Cumulus Association and Congress Ambassador for Dubai Tourism. Combining these expertise with my research in: interior architecture, architecture and urban design I established projects and

workshops in food business, design, engineering and urbanism from ananthropological perspective. Also, author of co-edited book:Unbounded on the Interior and Interiority.

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I am delighted to be the guest editor for the special edition ofDesign For All. While writing this editorial the world is going through a health security issue: COVID-19 pandemic. As the world is transitioning into a new phase we continue to work and live while evolving our professional and personal habits to accommodate a new lifestyle and a new everyday. This is a history in making, a transitional period that is already leading to a new way of teaching and working, at a distance with minimum real human interaction. For design education and practice, there is a need now more than ever, for design educators and practitioners to collaborate together while working with other disciplines. This is a new era, so what is the role of design in designing an ever evolving meaningful world and how do we harvest this evolution in order to bridge the gap between design education and practice?

As the director of the Food Design Lab at l'École de design, Nantes Atlantique in addition to my international education and practice experience, these two questions have always been the ethos of my design education: Are we training professionals who are future ready? And what is the role of design in growing economies? Throughout my design career I have specialized in industry and student-driven projects. In my current role, at l'École de design Nantes Atlantique the industry is the platform of the design education and curriculum. The structure of L'École de design Nantes Atlantique, and its inter and pluri-disciplinary and student-driven design approach, allows the School and its collaborators to create a strong research and education practice-based projects. Working in between scientific research, industry and a design approach, the School is able to create a strong platform of researchers, practitioners and experts in design management. The industry

initiates educational design projects on relevant issues and the students learn how to work with real clients and real issues. This approach inspires students to become entrepreneurs. Education in this case, follows the same methodology and process as a design practice. By involving industry, the gap between education and practice is minimized and design students transition during their studies into design professionals. By bridging this gap between design education and practice we are designing a new global identity and a new path in this age of uncertainty and transition.

The planet is transitioning. Overnight we have gone from: how to feed the billions to how to save the billions. The mass production introduced by the industrial revolution in the nineteenth century created a new way of living.Similar to industrial revolution, currently the digital revolution is transforming people's lifestyle and their everyday. New professions are appearing, old professions are disappearing or evolving and design practice and education is at the heart of this evolution. In the last few days, accessibility of natural resources, people's health and well-being and climatic conditions are influencing how and where we work and mostly how do we prepare students to the workforce? Co-operations and institutes are forced to change and evolve their strategies and their work conditions. These changes depend on the cultural experience of each city, and vary from one region to the next, from one city, even from one family or individual and one discipline to the next. As a universal language, design has the power to bridge the cultural and multi-disciplinary gaps through the simultaneous relationship between the economic systems, people's lifestyles, and theirliving environments.

Art and Technology-

A new unity

Anita Gigi Budai is a creative director, a senior exhibition/environmental designer and a former educator whose practice is based in Melbourne, Australia. She loves design for its ability to combine different stories into a tangible space - bringing together the work of artists, objects, and a curatorial vision to excite and encourage engagement.

Her experience of designing spaces for museums, galleries, biennales, libraries, commercial ventures and a specialization in the use of moving image and digital technologies has given Anita an in depth understanding in the importance of the arts as an exchange platform for learning and experience.

Currently Anita is working on a commercial insertion using digital technologies to engender a greater workplace UX and as the lead exhibition designer for the artist Yuki Kihara, the New Zealand representative at the upcoming Venice Art Biennale in 2021.

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"The 'curatorial' goes further, implying a methodology that takes art as its starting point, but then situates it in relation to specific contexts, times and questions in order to challenge the status quo."

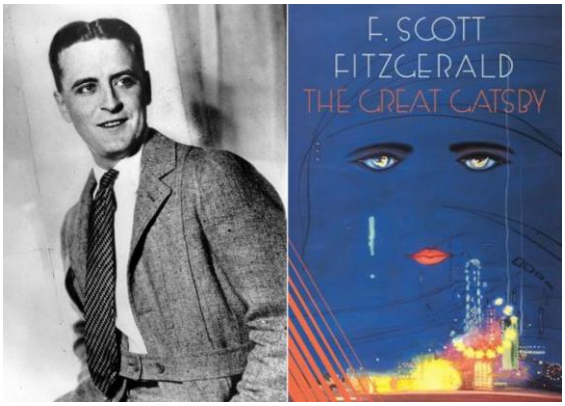
Maria Lind, Director, TenstaKinstall[1]

I currently sit at my desk, connecting to an outside world, both familiar and distant, via the internet during a time of isolation during the Covid-19 pandemic. I cannot help but think of the past and how out of devastating times; WW1 and the Spanish Flu, new ways of practice and thinking emerged in the 1920s,also described as the Roaring Twenties. I look at the design world and built environment of that period and see an amazing legacy such as, New York's Chrysler Building- a sign of Modernity, F. Scott Fitzgerald's *The Great Gatsby*- reporting on a modern world that is set within the jazz age. In Europe, the Bauhaus Dessau designed by architect and educator Walter Gropius (now a UNESCO World Heritage site) encouraged experimentation and new methodologies. In 1923, the Bauhaus exhibited its lecturers and students' works, here George Adams who was a student at the time wrote: "When it came to the opening, artists and critics came from all over the world. Gropius's motto for the exhibition was 'Art and Technology, a new unity'. We trembled in

[1] ***Maria Lind, "The Curatorial",Artforum 68, No2 (October 2009), 103***

our shoes – would it be the success we all hoped for! Yes, it was an undeniable success... The Bauhaus had put itself on the map."[2]

The 1920s was also a period that saw pioneering women such as Eileen Gray and Charlotte Perriand embrace new technologies and avant-garde modernism. Gray completed E-1027 in 1929, a Modernist villa with its built-in utilitarian furniture that reflected the ideas of the time.[3] The image below is of Charlotte Perriand who is wearing a ball-bearing necklace reclining in her design of the Chaise longue basculantein 1929.The chaise longue was designed in collaboration with Le Corbusier and Pierre Jeanneret using standardised elements that could be fabricated in different ways.[4]Perriand wrote: "What do we want to be? How do we want to live? It is not new technologies that are important, but rather how people use them."[5]



[2] ***George Adams, "Memories of a Bauhaus Student",The Architectural Review, September 27, 1968, https://www.architectural-review.com/essays/memories-of-a-bauhaus-student/10016848.article***
[3] Tom Ravenscroft, Eileen Gray's modernist E-1027 villa revealed in photographs by Manuel Bougot, Dezeen, September 11, 2018, https://www.dezeen.com/2018/09/11/eileen-gray-modernist-e-1027-villa-le-corbusier-manuel-bougot-architecture-photography/
[4] Sébastien Cherruet and Jacques Barsac, Charlotte Perriand: Inventing a New World, (Paris, France: Foundation Louis Vuitton and Éditions Gallimard, 2019),53
[5]Cherruet and Barsac, Charlotte Perriand: Inventing a New World, 22

Top left: Matthew Barney, Still of the Chrysler Building from Cremaster 3, 2002 from the Cremaster Cycle, (1994-2002)Top right F. Scott Fitzgerald and the cover of The Great Gatsby, firtst edition, 1925.Bottomleft:Oskar Schlemmer costume designs from The Collection exhibition, Bauhaus Museum Dessau, 2020photo by Thomas Meyer.Bottom right Charlotte Perriand on the Chaise longue basculante B306 (1928-1929) by Le Corbusier, Charlotte Perriand and Pierre Jeanneret, circa 1928.F.L.C./ ADAGP, Paris 2019 © AChP. Courtesy Fondation Louis Vuitton.

The 1920s brought about new ideas, new ways of teaching and experimentation in new technologies and systems of manufacturing. This gives me hope in a time of fear, sadness and also amazing acts of selflessness as communities connect through webinars, Zoom and Google Hangouts meetings for work and WhatsApp and FaceTime to connect with family and friends. Fashion houses such as: Louis Vuitton, Prada, Chanel and Burberry have switched their manufacturing tomake much needed surgical face masks and protective clothing formedical professionals.[6] Dyson who are known

[6]ParijaKavilanz, "Louis Vuitton, Burberry and Chanel put their fashion muscle behind face masks", CNN, April 14, 2020,

for their vacuum cleaners and fans are designing a new type of medical ventilator in collaboration with Cambridge-based medical company: The Technology Partnership (TTP) for UK hospitals.[7]Brooklyn design agency Standard Issue has created an open-source design for face masks that can be produced at a large scale using CNC-cutting techniques.[8]Whilst across the States architects such as: Höweler + Yoon, BIG, Grimshaw and Handel Architects have teamed up to create open-source designed visors than can be 3D printed and laser cut, which is being coordinated by the Architecture, Art and Planning, and Engineering faculties at Cornell University in New York State.[9]As Perriand had said almost a decade ago, technologies are important but it is how we use them that makes it, in this instance, lifesaving opportunities.

Left: The One Mask open-source design by Standard Issue. Right: Architect Eric Höweler models a face shield created at his studio using 3DVerkstan's files.

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https://edition.cnn.com/2020/04/14/business/louis-vuitton-face-masks/index.html

[7]BrankoMiletic, "Dyson to build 15,000 ventilators for UK hospitals",Architecture and Design, March 31, 2020, https://www.architectureanddesign.com.au/news/dyson-to-build-15-000-ventilators-for-covid-19#

[8]BrodgetCogley, "Standard Issue creates open-source design for CNC-cut face mask",Dezeen, April 14, 2020, https://www.dezeen.com/2020/04/14/open-source-face-mask-standard-issue/?utm_medium

[9]https://www.dezeen.com/2020/03/29/american-architects-coronavirus-face-shields-hospital-workers/

In 2020, the Covid-19 pandemic has caused the closure of galleries, museums, cinemas, theatres, music venues and every cultural get together imaginable. So how can we use technology, research and education not only to stay connected, but to reach out to the general population and to stay engaged? As a designer whose practice is interior architecture and industrial design, I have seen a shift towards experience design within the cultural industry, as an evolving process responding to the end-user, as our demands shift through the evolution of time and cultural trends. Only recently have museums become more open, adopting inclusive and sensitive approaches to interpretation and representation, as well as more participatory visitor experiences.

For the State Library Victoria in Melbourne, the recent exhibition *Velvet Iron Ashes*(2019) curated by Carolyn Fraser, brought together contrasting objects form the library's and international collections including Ned Kelly's armour (1870), cricket's famed Ashes urn (1882) and Janet Clarke's pageant dress from the Centenary of Victoria (1935).[10] The library has an unusual collection as it was once amalgamated with the State's museum and gallery, which was founded in 1853.[11] As the designer of this exhibition it was a challenge to bring together a wide variety of objects. It was a densely layered exhibition that reflected how we use the library as a resource for research and education. There aims of displayed books, people flicking through the latest journals, to the research aspects of

[10] "Velvet, Iron, Ashes", State Library Victoria, last modified April 17, 2020, https://www.slv.vic.gov.au/whats-on/velvet-iron-ashes
[11] "History and vision", State Library Victoria, last modified April 17, 2020, https://www.slv.vic.gov.au/about-us/history-and-vision

the once often used catalogue cards – these formed the basis for the physical design.[12]

Left: Exhibition view of Velvet, Iron Ashes, State Library Victoria 2019, photo by Patrick Rodriguez. Right: Documentation for Velvet, Iron, Ashes and Map-O-Matic.

The exhibition required another layer of understanding to connect the stories and the objects, and this is how the interactive *Map-O-Matic* was conceived. *Map-O-Matic* is a digital device that allows the viewer to scroll through a series of objects, once you choose two objects and press the bright yellow button, a personalized thermo-map is printed of the gallery space, identifying the path for you to explore and the connections between the chosen objects. The *Map-O-Matic* won the 2020 Glami Award for the Best Exhibition Media or Experience: Gallery Interactive[13]: Carolyn Fraser - curatorial content, Sandpit - interactive design and Anita Gigi Budai – industrial design.

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[12] "Velvet, Iron, Ashes", Anita Gigi Budai, last modified April 17, 2020, http://anitagigi.com/velvetironashes

[13] "Congratulations to the 2020 GLAMi Award Winners!",MuseWeb MW Conference 2020, last modified April 17, 2020, https://mailchi.mp/museweb/mw20papers

In this case study, technology used to enhance an experience and as an educational device, helps the audience explore the collection further and, in this way, can only add to the stories we are telling.

Whilst museum and gallery doors are closed across the globe due to the pandemic, how do institutions remain connected and engaged with the public? How do those interested, including teachers and students, experience art and cultural history from their homes? The implications we are realizing are for the need for greater participation, as we move the focus away from individuals to a focus on crowdsourcing, in which the public feels more connected to the museum and its collection.[14]A wonderful example of this has come out on social media platforms via the Getty Museum, broadcasting a challenge "to recreate a work of art with objects (and people) in your home".[15]People across the world have posted images of famous artworks alongside their own recreations, using household props, themselves and even their pets as the main protagonists. The challenge to the community to engage during a time of isolation has been accepted with gusto.

[14] Arnold Vermeeren et al, "Museum Experience Design - Crowds, Ecosystems and Novel Technologies", (Springer International Publishing, 2018), 4
[15] Getty (@GettyMuseum), "We challenge you to recreate a work of art with objects (and people) in your home", Twitter,March 26, 2020, https://twitter.com/GettyMuseum/status/1242845952974544896


Bottom left: courtesy of theGetty Museum (on Twitter).Bottom right: The Unicorn in Captivity (from the Unicorn Tapestries), 1495-1505. Gift of John D. Rockefeller Jr., 1937courtesy of the Metropolitan Museum of Art andMorganEllisLeah of Cambridge University (on Twitter)

Immersive and VR technologieshave also been increasingly incorporated into exhibition experiences, as seen in Musée de Louvre's exhibition *Mona Lisa: Beyond the Glass*(2020). A downloadable App gives the visitor access to multi-sensory experiences by viewing the work in a virtual environment, being able to see vivid details of the painting and a narrative overlay that explains the background of the work.[16]The experience was created by Emissive, a European based VR company; this is their view on experiences: "In museums like everywhere else, people are seeking emotions, they want to be entertained, to be immersed, to enjoy a

[16] "Mona Lisa: Beyond the Glass", VIVE Arts, last modified April 17, 2020, 3:09AM, https://arts.vive.com/us/articles/projects/art-photography/mona_lisa_beyond_the_glass/

customized visit that they can share."[17] The App was created as an additional experience for visitors to the Musée de Louvre, but since closing its doors the App is now available to anyone to download onto their smartphone and to experience Leonardo DaVinci's *Mona Lisa,* in a meaningful and insightful way. The Musée de Louvre and other institutions and galleries such as the Musée d'Orsay, British Museum, Solomon R. Guggenheim Museum and The Broad, Los Angeles, to name just a few, have opted for virtual tours of their galleries and exhibitions, to give access to the broader community: the world.

Left: Screenshot from the 'VR – Mona Lisa' App for Mona Lisa, Beyond the Glass,App courtesy Musée de Louvre. Right: Cooper Hewitt Design Case Study, BabyLegs as part of the Smithsonian Learning Lab (on Instagram)

Digital access remains important as museums such as, The Smithsonian whose Centre for Learning and Digital Access, has

[17] "Mona Lisa: Beyond the Glass", Emissive, last modified April 17, 2020, http://www.emissive.fr/en/project/monalisa/

created the Smithsonian Learning Lab; that runs across its 19 museums, 9 major research centres and the National Zoo, as a resource for learning and digital access to "the treasures of the world's largest museum, education and research complex."[18] It is a free platform for discovering the collection, creating content through online tools and to access and deliver knowledge. One such case study through the Cooper Hewitt is *BabyLegs* (2017-2019) devised by Dr Max Liboiron, an environmental scientist and Assistant Professor at the Memorial University of New found land.The research project offers access to an open-source, affordable monitoring tool to study marine microplastic pollution.[19]As part of the Learning Lab, teachers and students can access #stem resources that are aligned with the Next Generation Science Standards, the connection between exhibition culture, promoting research and accessibility to educational tools via online services, is a direction that that will increase as institutions need to be relevant to the community and integral to growth through information. *BabyLegs* was exhibited as part of the *Nature–Cooper Hewitt Design Triennial* in 2019.[20]

I refer back to the opening quote by Maria Lind and how currently the status quo is challenged in an extreme way. The context is that we are required to look at design, accessibility, education and connectivity differently – so where to from here? Dezeen, an online architectural and design magazine has created the Virtual Design Festival that hosts a cultural program of talks, interviews, movies and collaborations online to support the design community, as many

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[18] "About the Smithsonian Learning Lab", Smithsonian, Learning Lab, last modified April 17, 2020, https://learninglab.si.edu/about
[19] "BabyLegs," 2017-2019, Cooper Hewitt, Collection, last modified April 17, 2020, https://collection.cooperhewitt.org/objects/2318798839/with-image-351202
[20] "Dr. Max Liboiron'sBabyLegs", Cooper Hewitt, Nature–Cooper Hewitt Design Triennial, last modified April 17, 2020, https://www.cooperhewitt.org/2019/07/03/dr-max-liboirons-babylegs/

fairs and festivals have been cancelled.[21] Will this be a part of a new and ongoing method to connect and collaborate with our peers, to educate and inform? It makes sense in this time of isolation to break down the barriers in communication and bring our ideas and creations to a wider audience through the voices of makers and educators. Whilst VR tours, live streams and festivals are helping us connect, as Bruno David, the president of the National Museum of Natural History in Paris on the topic of VR in museums said: "People are coming to a museum to see real objects because real objects are emotional."[22] Digital, immersive and VR technologies cannot replace the real world, but they can help enhance our experience; they can help us stay connected and enable greater collaboration, also as a platform for education. Through this pandemic we have seen the rise in the importance of communities rather than that of the individual.It reminds me of the social thinking behind the Modernist and Avant-Garde movements, that dazzled with their art and design in the Roaring Twenties.

[21] Marcus Fairs, "Virtual Design Festival cultural programme includes collaborations with partners around the world",Dezeen,April 14, 2020, https://www.dezeen.com/2020/04/14/virtual-design-festival-cultural-programme-schedule/

[22] Charlotte Coates, "Virtual Reality is a big trend in museums, but what are the best examples of museums using VR?",MuseumNext, January17, 2020, https://www.museumnext.com/article/how-museums-are-using-virtual-reality/

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face-shields-hospital-workers/

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Design, Ethics and Humanism

Christian Guellerin is the Executive Director of L'École de design Nantes Atlantique since 1997, which includes six campuses around the world. Currently, he is the President of France Design Education and Honorary President of the International Association Cumulus. Christian is also the Honorary Consul of Estonia in France, Who's Who France since 2009.

From 1994 – 1997 he was the Director of Development and Organization: Chamber of Commerce and Industry of Nantes and From 1993 – 1994 he was the Executive Vice President of the network « Ecoles de Gestion et deCommerce ». He worked from 1987 – 1994 : Director of the Institute of Commercial Practice – Chamber of Commerceand Industry of Nantesand from 1985 – 1987 he was the Assistant to the Senior Vice President – FGS Group – New York City.

This special edition invited five guest authors from different disciplines and cultural backgrounds who challenge traditional ideas, working across design education and practice. Each article, offers a different multi-disciplinary and a multi-cultural perspective on: how to create a link between designers, education and the industry? This special edition also explores how do we bridge this gap between what students learn in higher education and what they practice in design education. Teaching and practicing beyond these professional boundaries, can also mean reaching out to different disciplines and to the general community in order to build a new ecosystem of education and practice.

How Design offers companies a tremendous opportunity to work on their corporate social responsibility

Design is in vogue, in vogue for companies who believe that creation and innovation are drivers of their future development. Managers talk about innovation strategies, foresight, concepts, possible futures, design thinking. They organize their teams transversely in project groups, which are united around an idea of what tomorrow will be like, determined that it will be more "enlightened", more beautiful, better designed than today, and of course, more profitable. Design has become a management strategy and a discipline. But what is left of Design, the humanist discipline born of the Applied Arts? What is left of the "unique human dimension and the esthetic values of traditional small-scaleproduction?"[23]

[23] Jocelyne Le Bœuf, "Design/Histoire(s)", l'École de design Nantes Atlantique (blog), 20 mars 2020,http://blogs.lecolededesign.com/designethistoires/. What is left of the "unique human dimension and the esthetic values of traditional small-

If you ask a passerby what design is?They will not fail to talk to you of beautiful tables, stylish chairs and magnificent lamps. Paint your living room white, put a posh white leather chair in the middle and everyone will tell you how 'designful' your house is. Tell them you're a designer and you will immediately be treated with respect.I recall a conference by Philippe Stark, the great French designer, talking about transparency as the sublime embodiment of design, as if to say that anything that wasn't transparent could not be considered "design". It was the time of Kartell chairs. Obviously, that is ridiculous despite of the talent of the entertainer who seeks to tell the gullible what is beautiful or ugly, esthetic or meaningless, what can be considered as art and creation and therefore divine, or what is common. A white leather or transparent chair hasno more design characteristic than a pouffe bought in the Istanbul bazaar: design is only in the meaning that wegive things.

Casimir Malevitch clearly understood that "White on White" is only a thing of beauty for those who take the trouble to make sense of it. Design is whatever we decide it is; when it comes to beauty, there are no absolutes, only humans determine the rules to give it meaning. The row of low-rise council flats is hideous, but it becomes a treasure when we discover that it was built by Le Corbusier and that nothing is due to chance. Design is a representation of the world and of things, the vision for which mankind is responsible, the one we want to live with, better and happier. Design is a humanism, in the sense that it makes individuals responsible for the world in which they want to live. The designer's work is based on the humanist visions of the Renaissance artists and

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scale production"? This sentence is borrowed from Jocelyne LeBoeuf – Art and Design Historian.

philosophers. Similarly, artistic creation, from which design differentiates itself completely, implies a result which provokes, at least for its author: Emotion, pleasure and values. The designer goes further and introduces the notion of progress for mankind.

Design is a humanism

Humanism is a world view in which everything gravitates around man like everything used to gravitate aroundGod in the earlier vision of the West. The full importance of this philosophy became clear during the Renaissance era, particularly thanks to ThomasMore, an English Catholic philosopher, theologian and politician who died a martyr in 1535. By going against classical theologians who believed the world gravitated around God, he cited and reflected on the words of Protagoras (Plato – Protagoras – Dialogue with Socrates): "Man is the measure of all things and the source of all light." More's most famous work, Utopia[24], is the revelation of an imaginary world created and ruled by man, a sort of projection of a perfect world, an allegory, which is both idealistic and impossible but also sufficiently accurate for us to be able to imagine it. This notion that man can conceive of, or even create, the absolute, good and evil, perfection and Love, stands out from Christian theories of the time, which claimed that happiness could only come from God.Humanism eventually left behind its theological and Christian references, and with Kant became a general outlook on life (political, economic,

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[24]Wikipedia.com, accessed July 2018, https://en.wikipedia.org/wiki/Utopia.Thomas More – Utopia or Of a republic's best state and of the new island Utopia – 1516. The word "utopia" is formed from the Greek* ou-topos*, which means* in no place *or* place ofhappiness *(from the Greek* eu*: "good, happily" and* topos*: "place".

ethical), based on the belief in salvation through human forces alone."Philosophers have hitherto only *interpreted* the world; the point is to *change* it" wrote Karl Marx later in "Theses on Feuerbach"[25]. That is the real challenge. Humanism became political doctrine in the 19th century, when the industrial revolution was defining other horizons for the notion of progress. The idea is for responsible humans who are not alienated by machines to change the world and make it a better place.

Design and ethics

Whether you consider the work of designers on purely philosophical and spiritual grounds or, on the contrary, on technical grounds, it is clear that it is a specifically human activity based on a moral, intuitive or reasoned approach to progress.Designers project themselves into the future, they create, relatively speaking, their "Island of Utopia". This activity fosters reflection, debate, an awareness of what *is* and the prediction of what *will be*. It fosters desire, consciousness of what will be better, and intuition of the resulting pleasure. This is precisely how Spinoza defines mankind in "Ethics", the work he wrote between 1661 and 1675. Extending the Cartesian doctrines of "Cogito ergo sum", he defines it according to two specific approaches: consciousness and desire. The consciousness of yesterday, of today, of tomorrow and desire, the ability to distinguish what is good, from what is better, the pleasure, but also, from that moment on, the awareness of good and evil. The designer's act of creating, corresponds perfectly to this definition: a

[25]Karl Marx, "Theses on Feuerbach" in Karl Marx: in* Œuvres *(Maximilien Rubel, ed. Gallimard, coll.: Bibliothèque de la Pléiade, 1982, vol. III).

conscious act of imagining the future to satisfy the desire for something better.

Today's designers continue to use tools and thus, revive the age-old tradition of craftsmanship: this characteristic is essential because it is not enough to be a "thinking man or a project man" in order *to be*. If we take Darwin's theories of evolution, particularly the ones that deal with adapting to one's environment, we distinguish humans from animals by the former's ability to manipulate tools, to perfect them, and to use them as an extension of their head and arm. It is partly through using tools that man has managed to adapt, develop, raise himself from his original condition, but also and above all, to change the world in which he was living. Without their tools, designers are nothing but project managers. With them, they become committed architects and builders of future progress – and happiness. "The hand is the mind", teach the companions. The aim is to reconcile the head, ideas, the mind, doing and acting. Because ultimately, if we want to change the world, we will have to take the lead.

Finally, designers create. In a subconscious state, the pencil sometimes escapes from the hand, which is holding it to draw, invented and involuntary shapes. As such, designers, although human, approach the sublime, something which goes beyond them, a transcendental objectivity... They touch God with the end of their pencil. In a sense, they invent him, they create him. In a world where sacred and moral values are in decline, where robots and artificial intelligence make us question what humanity is, designers, with their ability to create beyond themselves, call on us to find a new definition of humanism, one that consists of thinking that there

is something above us, the ability to be able to conceive of God. It's highly unlikely that robots, however intelligent, will ever have this faculty.

If God has a purpose, whatever the religion, it is to teach us about morality. Free from theological references, ethics, a philosophy concerned with the moral judgement of our actions in society, offers a rational justification for what is good and evil. It goes even further than morals. Emmanuel Lévinas writes "Morality makes us pity those who are hungry, ethics makes us take responsibility to help feed them. Faced with the hunger of men, responsibility can only be measured objectively." Ethics replaces the religious values of morality and forms part of reasoned action.

Design is humanist because it puts the individual at the center and makes it the measure of all things, and ethical because it aims to represent and to build "with its hands" tomorrow's world.This is the world in which, we hope to have a better quality of life despite the fact that our moral reference points, those of God, but also of Marx and Proudhon, the reference points of every form of idealism, are disappearing in favor of the law.

What of humanism and ethics when it comes to working for companies whose sole purpose is to generate added value?

Design as it was derived from the Applied Arts became industrial as a result of the tremendous technological and economic boom that took place in the mid-19th century. The idea was to "rediscover the unique human dimension and the esthetic values of traditional

small-scale production in industrial-scale production". The notion of progress was changing: owning a car, taking the train, buying your clothes at Parisian department store Le Bon Marché became the symbols of happiness to be attained. It was, however, important to find a sense of meaning to this deep social and economic change in the industrial products, being churned off assembly lines which alienated workers to the point of swallowing them[26]. A touch of beauty in a rapidly-changing world dominated by machines.

Design accompanied the industrial then commercial boom of western societies, always with the same responsibility: to produce better, more functional goods and to achieve progress. It is starting to overtake technology and business and to take center stage thanks to the major changes taking place in the world. Elsebeth Gerner Nielsen, former rector of the Design School Kolding (Denmark), in her "A Manifesto for Global Design and Leadership" explains: "The 19th and 20th centuries forced companies to ask two questions: What is profitable and what is technologically possible? In the 21st century, the question is: What makes sense?" The importance of design becomes fully apparent for companies, which are considering their future and the role they should play from now on. This depends on the companies' capacity to innovate; they must adapt constantly to radical changes of context, which make their future uncertain if they don't have this capacity to change extremely quickly.

These are troubled times: changes in ecological awareness (which require us to save the planet), geopolitical changes with the arrival

[26]I am referring to "Modern Times" in which Charlie Chaplin's character is swallowed by the machine, and to the hero of Roger Vailland's "325000 francs". The workman Busard's arm is crushed by the press when he attempts to improve the way it operates

of major new powers, cultural change accompanied by the decline in morality in favor of law, uncertainty about the relevance of democracy and the role of politics, globalization of trade, digital transition, the ageing population, protein transition, etc. All these things are disrupting the world, forcing us to rethink it, to transform its nature, to redesign it. If experience is vital for all things, experimentation, or the ability to project yourself into the future in order to better anticipate it, is becoming primordial.

Design raises questions about the uses of the future; it draws them, represents them, gives them shape, purpose and value. It makes them objective, comprehensible, acceptable. As well as making them meaningful, it also seeks to make them virtuous. Design as an economic discipline is a powerful strategic tool which enables us to speculate about the future, influence development choices, propel companies into the future since they have no choice but to anticipate and adapt to rapidly changing environments. Competitive advantage is no longer about the ability to produce better products than your competitors, but about being ahead of the game in terms of understanding how the societies in which, we live are changing.

The definition of a company's meaning and values seems to me to be essential, although we must use the concepts of morals and economy with caution if we want to associate them. In the capitalist system, which, like it or not, has historically generated the most freedom and empowerment for people, the purpose of a company is still to produce added value and profit. It is up to businesses and society in general to share out this profit as fairly as possible. A task which is neither simple nor objective, and as such highly questionable. Producing wealth is virtuous and let us praise

companies who strive to do so. Let us encourage them, our progress depends on it. However, it is unreasonable to think that a company could sell products as a moral duty rather than out of self-interest. Morality and capitalism do not go well together. Without being immoral, it is certainly amoral. But once we have accepted this primacy, it is clear that companies must consider their ethical responsibility, the role they play in society, their values and their identity. Their ability to understand new market trends is at stake. It is not only a moral requirement but a strategic requirement. And it is entirely consistent with the goal of generating added value. This necessity is all the more urgent due to the troubled climate in which the values of the sacred are disappearing, and morals are being worn down by friction between cultures in a globalized world. It is a need as much as a requirement.

This need is perfectly embodied by the new managerial experimentation. People talk about corporate social responsibility, liberated companies, etc. The "Made in France" concept is also part of this desire to show off our virtues. These concepts should obviously be treated with caution. What about the corporate social responsibility of an automobile company, which limits its vehicles' polluting emissionsout of duty, but continues to sell SUVs; making us think that work can be seen as a liberating occupation... Or what about underwear that is "Made in France" from cotton sourced in India?

Considering meaning is somethingentirely different; it is a strategic and a managerial requirement. The importance of being able to change quickly, to go from one line of work to another, has become vital in a world turned upside down by changing economic and social

contexts. Change is no longer organized around the capacity to produce or sell such and such a product or service better than the others, but around meaning: a mission, a role played in building the future. Apple doesn't manufacture iPhones, Apple is Promethean, it claims to connect humans to God; La Poste no longer sorts the mail, or sells stamps: La Poste consolidates social ties between the entire population of a region; Nestlé doesn't sell yogurts anymore, Nestlé feeds the world... When the activity becomes an ethical and sacred mission, companies improve their intelligence with regard to change; their potential to go from one sector to another, without necessarily changing their line of work but by defining it differently from traditional industrial and marketing references.

Once again, design has this virtue of representing change and of making it meaningful. Imagining, representing and therefore explaining tomorrow, applying it to products, packaging, spatial planning, multimedia tools – allthis helps us take ownership of the future and accept it. This gives meaning to the future and makes it less uncertain, therefore less threatening. When companies question themselves about their future, it is a powerful strategic and a managerial tool.

In a troubled world, designers alleviate uncertainty

Tomorrow is uncertain by definition. What world will we live in tomorrow? What world will we leave to our children? In other words, what world are our children preparing for us while the experience of the elders – which has formed the base of our societies – is replaced by a digital culture that we feel is systematically and irrevocably ahead of its time, and therefore

eludes us irremediably? Today we hear a lot about artificial intelligence, robots, the end of the work era, and even eternity in order to better substitute ourselves for God, the hereafter, the one constructed by humans to deal with finitude and the afterlife. In short, we are being told about the end of our humanity, replaced by something else with an alternative intelligence.

Tomorrow may be bright or it may be terrifying, depending on the meaning we choose to give it. For designers, tomorrow is an opportunity: they draw, represent and shape the future. They give meaning and expression to imaginary concepts to make them objective and acceptable. They experiment, apply, make things true and real. They look ahead with the aim of achieving progress. They examine alternatives – because our changing world needs something different – in a quest for continual improvement. Designers, in their ethical dimension, provide a solution to the problem pointed out by Marx about the world: "The point is to change it"*. It is up to designers to give it shape and depth.

At a company level, leading change is a challenge, since it means throwing employees into a certain form of uncertainty which is potentially stressful. What will become of us? Will we be competent tomorrow in the new organization? Will we be able to adapt? Can I produce something different tomorrow from what I've always produced? Can I sell something different on new markets and with other clients than the ones I know well who recognize my expertise - encouraged every year by a system of bonuses on revenue?

The role of the designer is to render future changes objective, and to apply that to all areas of the company. Its products of course, but also its environment, its strategy, its organization, etc. The aim is to

get all the company's internal players but also the external ones sitting round a table and to get them thinking about tomorrow, to help them imagine, apprehend, understand and accept the changes. Design is a management tool. We talk about Design Thinking, but it is a malapropism. It's just design, pure and simple. In other words, designers alleviate the uncertainty of the future that we all, out of awareness and responsibility, apprehend in some way. Indeed, the meaning of the word "apprehend" is an indicator of the fear we feel about the future. "Apprehend" means both to understand and comprehend and, at the same time, tofear and consider as dangerous; it is speculation about what we don't know, which makes us suspicious.

Designers have become project managers. In addition to their technical skills, they are also able to communicate, share, persuade, spark ideas in others and improve on them, whilerespecting the original idea. Similarly, they understand the company as a whole: they are no longer confined to using their technical skills, even though these skills are vital to their managerial practice. They are the managers of tomorrow, in companies whose strategic intelligence should far surpass the reproduction of what has always been done.

Designers: from design thinking to design doing

Some people believe that creatives shouldn't get involved in economics and that designers shouldn't work for companies that are too capitalistic or not virtuous enough. That clearly makes no sense whatsoever. Art history teaches us that there would be no great artists without great art dealers, like it or not. For designers, they

should be free to work with whoever they want: for who are we to judge for another what is virtuous and what is not? No-one would dream of denouncing all car designers on the grounds that they have contributed to the pollution we are now facing. We would also have to denounce all the designers who work in the world of marketing based on contract renewal, all the architects who have built airports, those that take the train or, even worse, their car to get to work. It is simply not realistic. The notion that "the most beautiful curve for a product is the sales curve," is self-evident and producing added value is virtuous. It is the wealth which must be distributed to all, as fairly as possible. And it is not the companies we must blame, but the politicians who no longer effectively control this sharing. As for designers, they have a role to play in all lines of business and all companies, because they need to change their methods of working, producing, selling and adapting to this tremendous rise in ecological awareness, which will radically change our lives. And that is when the whole ethical and humanist dimension of the profession makes full sense. The company's corporate social responsibility, if there is one, is ensured through design.

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Mind the Gap - Is Practice Not Embracing our Students?

Mark's passion, (His Why!), is to inspire people to be better than they believe they can be. Through true leadership, questioning the status quo and as a committed mentor, Mark strives to bring positive change and the best possible results in whatever he does.

Mark has 30 years' experience in the property and construction industry. He has worked in the UK, USA and Australia and understands the nuances of each market. Mark has key skills in executive coaching, leadership, team development, change management and cultural transformation.

Mark's experience as a consultant and leader has exposed him to a wide range of challenges and situations common to all organizations. This experience has taught him the value of space, linked to cultural values and interpersonal connections to get the best outcomes for people wellbeing and business results.

If I sat down to write this article in late 2019 rather than April 2020, I could argue that it would be a different type of article, but thinking about it deeply, I don't actually think it would be. What's changed? It might be more opportunity to embrace change. We can only hope that in this crazy world right now, we are living through a real life Black Mirror episode. One good thing that will come from this, is that people will recognise a lot of how we do things is broken, or at least we are stuck in our ways and measurements. Hopefully this time it will make us think about new ideas, new ways of doing things and hopefully all for the better, but we'll come to that.

As I sit here in self isolation for the start of my 5th week working from home, the world in which we understand, trust and have faith in is shifting below our feet at an unprecedented rate. In my 34 years as a builder, consultant and leader I have seen many changes and lived through numerous uncertain times. The introduction of the internet, the recession of the late 80's, mobile communication and the GFC, to name just a few. But never has the whole world been so affected by one crisis at once, since the 2nd world war, and never has there been so much uncertainty both personally and professionally.

In this moment, we are seeing the best of humankind, but also sadly the worst. We are hearing reports that domestic violence is up, some people are just angry and fighting over toilet paper, probably driven by fear. Suicides are predicted to rise and metal health on the increase. We are still waiting to learn the actual statistics of the COVID-19 impact, but there will most definitely be an impact. On the positive side, people are coming together, mainly virtually, to support one another in these times of isolation. Money is being

raised by celebrities like Lady Gaga's Together at Home Concert or Leonardo Di Caprio's All in Challenge, and 99-year Captain Tom Moore has raised £12m and counting for the NHS, as he walks around his garden over 100 times. Then there are the heroes of the hour. Health workers, risking their lives, essential service industries like truckers, garbage workers, chemists, vets and scientists all doing their bit to keep the world spinning in one shape or another. In Australia our Prime Minister has said all workers are essential. This brought ridicule from some, but in times of uncertainty,where we are in the middle of two crisis, Pandemic and financial, I believe he's right. And maybe design thinking is a great place to look at innovative solutions and these crises are the catalyst that will allow it to happen. Furthermore, students with everything ahead of them and potentially stars in their eyes to change the world are the people we need to help make it happen.

But before we get to that, let's look at the gap between design, education and practice, or maybe more importantly the hurdles that seem to get into the way all too often, pre-Pandemic. To understand the context of my thinking, I guess my career is a little different to most in "professional" consultancy roles, in that I didn't go to University. I left school at 16 and was very fortunate to be employed by two gentleman who saw something in me, took me under their wing and taught me my professional trade of quantity surveying. Therefore, my relationship with universities and higher education were almost non-existent until I moved into leadership roles and started to employ graduates. Then I got further involved asa guest lecturer at Melbourne University (Procurement for Construction Management Masters Students) and INSEAD in Singapore

(Leadership to MBA Students). My view then of the 'gap' comes predominantly from practice and industry.

My relationship with design has also been very left field and a little obscure, but my passion for design, its impact on the world and the people that truly practice it, is very strong. Ever since leaving school, I've always been in the property and construction industry, never as a designer but involved with many design decisions in my consultancy roles with architects like Foster and Partners and Richard Rogers in London and Woods Bagot and Grimshaw in Australia. I've also held a global role with Hassell in Australia as their Global Head of Knowledge and Strategy. Over the years, what I've come to understand is the total passion and immersion designers possess in their craft. I've never come across this in any other profession in our industry. It's not a vocation, it's a lifestyle. The best designers I've met don't switch off. When they walk the streets, into restaurants, bars, offices, museums, anywhere really, they're always on. Observing, understanding, learning or critiquing the built environment, it's impact on the aesthetic, the touch, the people and even the emotion it evokes. No other profession carries that passion so deeply throughout it.

So when we look at the gap between education and practice for design, we need to not only look at the vocational side. We need to look broader at what design brings to industry and how businesses can thrive from design thinking.

About six years ago, I was lucky enough to be invited to be part of the Design Factory at Swinburne University in Melbourne Australia. I got involved with their crossover and relationship between industry and university. As a professional practitioner, I had input to some of the course work and gave feedback to students plus was fortunate to mentor some further. These students were taught to think outside the box, use their passion to solve problems, question the status quo, and as corny as it may sound, use their skills to make the world a better place, leave an impression. This passion, linked to the technical side of their studying, was fascinating to witness and work with. These technical skills, linked with visionary design and design thinking are very powerful tools. Students are quite rightly taught how to solve problems, tackle challenges and given the technical skills and tools to do so. I've seen students walk out of university feeling invincible and ready to tackle the world, ready to literally change it. They are full of energy and excitement for their first steps into the professional world.

The issue with industry and professional practice and the way it functions, in many cases stops these graduates in their tracks and totally knocks the wind out of their sails! I've seen the affect that poorly run businesses can have on great talent and the potential burn out it brings. The issue comes down to risk. Industry is generally risk averse. From the businesses delivering services, to the clients employing them. Very rarely does innovation flourish, because true innovation in unproven, and unproven solutions are risky. We'll come to the problem of leader driving innovation in a moment. The other issue is that new grads are cheap, relatively, compared to the rest of the business, and there has always been a

pecking order of the tradition of hierarchy and time with the company rather than true talent. Therefore, recently graduated designers are given work that is generally tedious and even menial, especially in larger businesses. Now, we have all 'started at the bottom" so to say. I photocopied for my first 18 months I reckon, but I was a snotty nosed 16-year-old with no study. Some students come out of university with amazing drive and talent. I'm staggered as to why businesses don't want to listen to a bright new perspective from someone who has not been beaten down by traditional methods and business practices that can stifle ideas. This attitude of practice can lead to demoralising work and unengaged designers. But then I come back to my observation that most designers have an unprecedented passion for their craft, and will do anything to progress, and businesses know that and unfortunately exploit it.

A lot of issues in industry come down to poor leadership and management of risk, and when I say risk, I mean business risk, which to be honest still basically equates to money. In my experience great teams who are engaged to solve complex problems, thrive on strong leadership. Leadership that enables people to think different, fail fast and develop the next iteration until the solution is achieved.

To give an example of how industry thinks about innovation and new thinking, especially in the property and construction industry, last year I was lucky to be invited to present overseas to a respected large business that wanted to talk to us about an exciting new idea we had. The brief was "to present something innovative that ideally

had never been done before!" Tough challenge, but one we knew we could tackle as we had been working on an exciting idea that would fit the brief. We presented for two hours on an idea where we had identified an opportunity in the market based on insightful in-depth research, which could lead to a solution that had not been done before. Obviously, it needed funding and an environment (i.e. a building) for it to be implemented as a prototype so that we could co-create the idea and test it. Fail fast if need and iterate. At the end of the presentation, our potential client was engaged, excited and very supportive of the idea. But after several great exploratory questions about moving forward, one of the leaders asked, "Can you prove that this works?" That hurt. We reminded them that their brief was "to present something innovative that ideally had never been done before!" If it's not been done before, how can we prove that it works until we test it? Turns out they had investors who wanted new thinking but not at the risk of investing money into something that was not proven of a return. To me this, in a nutshell, is the problem with delivering innovation. People think they want innovation and new ideas, but really, they want 'something plus'. They want the next iteration of an existing idea, a better version, on an idea or solution where the risk can be managed within the structure of traditional business. In my view this is the attitude of most companies in the world, and that is not necessarily how we sell industry to our students.

Right now, 'innovation' and 'design thinking' are banded around by industry as cool buzz words, even to those companies that don't design! But again, the actions aren't matching the words. Companies and leaders love to talk innovation, and are continually encouraging

their teams to think innovatively. But thinking compared to applying and doing are very different and most companies don't have the systems or even thinking in place to allow innovation and design thinking to thrive.

Again, most of it comes down to risk. In the world we live in, people say one thing but so many times their actions are contrary to their words. Allowing innovation to thrive is not difficult but it takes guts. In a world of top line growth and bottom line performance, short term returns for shareholders, and in large businesses an obsession with time sheets and utilisation, innovation gets stifled because to innovate, namely prototype, test, fail and repeat, takes time and costs money. Some businesses now talk about failing fast to learn, which is a great step, but these are usually small subset teams that won't affect the bigger financial picture and have their own small budgets. But we still need to encourage all our teams to innovate. So how do leaders do this?

Well for starters leaders need to be open to listen to anyone, and in my view especially new graduates who have the freshest thinking and ideas. This would encourage a culture of growth mindset, something lacking in many businesses. For innovation to succeed, leaders need to get out of the way! Innovation only succeeds when leaders clear the way for their team, rather than set up roadblocks and checkpoints. In a world where we seem to crave the management of risk with business plans, sign offs, checkpoints, gates etc, process like this can only strangle and suffocate innovation. How can you write a business plan on an idea that no one else has thought of? It's insane. I can make a business plan say

anything and put some substance and evidence behind it, doesn't mean that's what will happen!

The word 'No' is another great blocker of innovation from leaders. The word 'No' has no consequence, apart from disheartening the person asking, as it kills the idea and the spirit. What would be a great driver of innovation is the process turned on its head. Instead of the person with the idea having to do a business case on why the idea would work, the leader should be asked to complete a form explaining why they want to say 'No' and why the idea 'wouldn't' work. That might change some behaviours and drive accountability of saying the word 'No'! Hopefully it would encourage more, "let's explore" conversations.

Therefore, one of the major 'gaps' right now is industry opening up their mindset, and listening to graduates coming into practice. Obviously, businesses have huge amounts of experience and graduates can, and will learn loads from it, but enthusiasm and attitude go a long way to solving problems, so harnessing it is key for success. My limited experience working with Universities proves that the way they are collaborating with industry builds strong relationships with programmes, like the Design Factory that encourage better collaboration and understanding through partnerships. This will only get stronger in closing the gap of understanding, but industry need to get better at embracing the energy of grads and opening the way of new thinking. As I said in the outset of this article, a lot of how we do things is broken or measured by outdated thinking. Very few things change overnight,

but this pandemic is speeding up change by necessity faster than anything in the past 3 generations. I'm hoping that the crisis of COVID-19 will be the catalyst to enable us to explore thinking differently.

Designers have always brought innovation to our built environment, so maybe practices can learn from this and question, maybe even change the metrics of how businesses measure success. Maybe this pandemic is showing us that financial measures alone are not the right way. Measures like purpose, dignity and happiness, to name a few, need to be considered. This time is showing us more than ever the importance to human connection, family and meaning in our lives. What better way to question this, than encourage our youth, with their enthusiasm of design thinking, ideas and change the world bravado, to the lead. We just need to encourage our leaders to get out of the way and embrace them, only then will we truly close the gap between education and practice!

Strategy, Entrepreneurship and Innovation in Design Education for Future Practice

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As a professional designer he has worked in numerous companies designing furniture, lamps, ceramics, electric appliances and others. Carlos has a BAID from Javeriana University in Colombia (1997). In 2003 he was awarded a scholarship from the Japanese Government, graduating cum laude, and obtaining a MAID (2006) and a PhD (2009) from Kobe Design University.

Camilo Potocnjak-Oxman is an Industrial Designer with a Master of Management. He began his career in Santiago, Chile, where he was exposed to the importance of design promotion during his undergraduate studies. After launching a social network for design students, he became the first designer to teach at the Universidad de Chile's Department of Industrial Engineering. He later moved to Canberra, Australia to pursue postgraduate studies, eventually being recruited to teach innovation and entrepreneurship-related subjects at the Australian National University's Research School of Management.

Camilo is currently an Associate Lecturer and Program Convenor for the Master of Entrepreneurship & Innovation. He has spent the past ten years focusing on how to draw upon design practices to teach entrepreneurship and is currently working on a PhD connecting both fields. In his free time, he likes to read science fiction, build model kits and make electronic music.

Dr. Renata Lemos Morais is an Associate Professor of Multimedia Design in the Dubai Institute of Design and Innovation, Dubai's first specialized design university, founded in collaboration with MIT and Parsons the New School of Design. Renata's career spans across diverse areas related to design and innovation, consistently creating new bridges between creative industries and higher education. In her capacity as both a scholar and entrepreneur, she has helped universities from around the world to re-design their approach to multimedia education in ways that include innovation.

Currently, she is pursuing her second PhD at the University of Melbourne exploring the relationship of Artificial Intelligence to the data semiotics of the self, under the supervision of Dr. Simon Cropper. Her research is part of the Complex Human DataHub research centre, investigating the psychological implications of current innovations in data gathering devices and wearables.

Abstract:

In many countries, innovation is usually linked to STEM (Science, Technology, Engineering, and Maths), while design is still perceived as having cosmetic or maker roles, rather than tactic and strategic ones. However, design disciplines have dematerialized, evolving from merely the conception of things (be it a print magazine, a piece of furniture, or a building) to broader creative problem solving, management and strategic approaches to achieve predetermined goals.

How can design education better prepare students to play value-creating roles in future practices? This paper discusses strategy, entrepreneurship and innovation in design education, using examples of educational projects initiated by the authors. These projects range from: strategic design of systems, services and user-experiences to projects that enhance entrepreneurial skills and the intervention of designers - educating management students. The paper offers ideas for design educators and exemplifies increasing values in design education.

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Introduction: Innovation and STEM

Von Stamm (2008,1) proposes that creativity, or the generation of new ideas is only a starting point in the design process, and innovation is precisely the application or 'implementation' of these new ideas to products or services. Innovation is a shared topic in national policies in many countries around the world, including the United Arab Emirates (UAE) and Australia. The UAE's fast development has been driven by the government, with innovation as a high priority in the agenda with initiatives such as: the UAE National Strategy for advanced Innovation (NSAI),which was launched in 2014 and UAE innovates to promote innovation ecosystems as pillars in a knowledge-based economy (Government of the UAE, 2014).2015 was the year of Innovation in the UAE, and the year when Australia also launched its National Innovation and Science Agenda (Department of Industry, 2015),which stated that 'in the next decade an estimated 75 per cent of jobs in the fastest-growing industries will need skills in science, technology, engineering and mathematics (STEM).'

This poses the question: where does 'design' appear in these national innovation agendas? Interestingly, the UAE's National Strategy for Advanced Innovation has one of its three main pillars 'human-centric purposes', which, while not explicit, can be related to design in its human-centredness. However, anecdotally, a quick search for the word 'design' in the NISA website when it was launched in 2015 only retrieved results related to: *policy design, programme design, medical drug design, email design*, and others, none of which were related to any of the creative disciplines

of design. In 2020, this has changed to include: *human-centred design*, and *concept design.*

Even though design is not explicitly part of the global discourse on innovation practices, the discipline is implicitly present in what are emerging as the most desirable skills for 21st Century professionals: creativity, problem-solving, and the ability to act in uncertainty (Petrone, 2019; World Economic Forum, 2016). Additionally, changes in the nature of the workforce suggest that an entrepreneurial mindset will be a requirement for the next generation of graduates. The skills and competencies described as comprising this entrepreneurial mindset bear a close relation to those required for the design process: creativity, future orientation, comfort with risk, flexibility, adaptability, and collaboration (Ernst & Young, 2018).

As design educators, we are well suited to do something about this! We can, through our work with students, demonstrate to governments, industry and other stakeholders that design is important, and that the creative disciplines are also an integral part of innovation. The rest of this paper will discuss how we can take an active role in achieving this.

On one hand, internationally there is a strong movement for changing the notion of STEM into 'steAm', where the added 'A' stands for 'Arts and Design'. However, another option is to explore new strategic and entrepreneurial approaches, integrating many of the business and entrepreneurship topics into arts and design curricula.

Evolving roles of design: from stylistic to tactic and strategic

Design disciplines are evolving with society and technology, and a 'dematerialization' of design is manifesting in service design, user experience design, digital design, strategic design, and others. An interesting example of this evolution is the recently changed orientation of the former International Council of Societies of Industrial Design (ICSID), which was rebranded as the World Design Organization (WDO). WDO (2017) proposed that '*(Industrial) Design is a strategic problem-solving process that drives innovation, builds business success, and leads to a better quality of life through innovative products, systems, services, and experiences'*. This demonstrates a change in roles within design, from stylistic, cosmetic or decorative, to more tactic roles such as making products and services more functional and desirable, through interaction design, experience design and brand-driven innovation. The broader role of contemporary design acquires new value as a strategic resource, capable of fostering innovation, sustainability, as well as the creation of new business models and national policies which are shaping today's society.

The role of 'Design thinking'

While today the term 'design thinking' has lost specificity as it has been used and abused, thus often being rejected by design practitioners who see it as just a buzzword that is already expiring. Design researchers have argued that the value of 'design thinking' was to popularize the importance of 'design' as a core in creative problem-solving, strategic and innovation methods.

A review of the literature shows that an interesting development in the field of design education is the emergence of schools providing design-related programs for non-design professionals (Glen, Suciu, Baughn& Anson, 2015,182;HassoPlatnerInstitut, 2020;Melles, Howard & Thompson-Whiteside, 2012,163-164; Stanford d.school, 2020). These attempts to position the value of design in the worlds of business, industry and technology are reminiscent of post-war developments of the discipline at the HfG Ulm (Bonsiepe & Cullars, 1995,15; Fernandez, 2006,4). Although 'design thinking' was first described almost fifty years ago (Simon, 1969), it gained prominence as an innovation process during the 2000s (Johansson & Sköldberg, Woodilla, & Çetinkaya, 2013,123). The understanding of Design thinking has evolved through many loose definitions, ranging from 'what designers do' (Carr, Halliday, King, Liedtka and Lockwood, 2010, 62); to "approaching management problems as designers approach design problems" (Dunne and Martin, 2006,512); and "design practice [...] used beyond the design context, for and with people without a scholarly background in design, particularly in management" (Johansson & Sköldberg et al, 2013,123).

Although design thinking has no standard definition, researchers have attempted to categorise its characteristics in several different ways. One such categorisation, stemming from the management discourse, states that design thinking includes: 1) Practices closely related to concrete activities and ways of working - human-centred approach, thinking by doing, visualising, combination of divergent and convergent approaches, and a collaborative work style; 2) Thinking styles and methods of processing information - abductive

reasoning, reflective framing, holistic view and integrative thinking; and 3) Mentality, or mindsets, both in individuals and as part of an organisational culture - experimental and exploratory, ambiguity tolerant, optimistic and future-oriented (Hassi & Laakso, 2011, 5-10).

This combination of practices, cognitive processes and mindsets, commonly present in design thinking, although not as explicitly prevalent in design education, has already been recognised as a strategic tool in the field of management (Dunne & Martin, 2006,512; Johansson & Sköldberg et al, 2013,123; Kotler &Rath, 1984,17; Prandelli, Pasquini& Verona, 2016, 297). Dorst (2011,522-524) argues, however, that the core of design thinking lays in the cognitive process known as 'abductive reasoning', defined as "[…] the process of forming an explanatory hypothesis. It is the only logical operation which introduces any new idea […]"(Peirce, 1960). People trained in design use a complex form of abduction that Dorst (2011, 524) refers to as 'abduction-2'. In this form of abduction, the starting point is an 'aspired value' or intended outcome, particularly useful when tackling open-ended or 'wicked' problems (Dorst, 2011,523-524), defined as "a class of social system problems which are ill-formulated, where the information is confusing, where there are many clients and decision makers with conflicting values, and where the ramifications in the whole system are thoroughly confusing" (Rittel, cited in Buchanan, 1992,15). To address these open-ended problems, designers are trained to use 'framing', or "the creation of a novel standpoint from which a problematic situation can be tackled" (Dorst, 2011,525). This use of abduction-2 and framing can be said to provide a link between the practices of the

design disciplines and the process of forming entrepreneurial opportunities. This, and other links, have been further explored in the work of one of the authors (Potocnjak-Oxman, Kriz& Nailer, 2019), finding a close relationship between the traits of design thinking, and what are referred to as entrepreneurial competencies.

Although entrepreneurship is a complex process requiring the integration of a range of diverse disciplines, and areas of expertise (Bhave, 1994), such as: the recognition of an opportunity, the development of a business concept, the understanding of technological factors, and the engagement with potential customers and other stakeholders; designers, through their collaborative work styles would be well-suited to facilitate this process within an interdisciplinary team. This relates closely to the increasingly relevant role of 'designer as a facilitator' stemming from the co-design or participatory design sub-domains of the design discipline (Sanders &Stappers, 2008). In this sense, designers do not need to become fluent in every aspect of the entrepreneurial process. They can instead draw upon their practices, cognitive processes and mindsets to coordinate the efforts of a range of experts in specific aspects of the process in order to arrive at an entrepreneurial outcome. Design can serve as a pathway to methods and tools to guide the entrepreneurial process (Klein, 2008).

Examples of Strategy, Entrepreneurship and Innovation in Design Education

As part of a 2012 curriculum renewal in the design disciplines in the University of Canberra (UC), a course called 'Design Strategies' was developed by one of the authors, as a core component of the Industrial Design (ID) program. This was proposed after a review of

design education trends at the time, and in consultation with a professional advisory board. A key aspect was the increasing number of UC industrial design graduates who were working with the government in Canberra, in divisions like the Australian Tax Office (ATO) doing design-related jobs such as, 'user-experience design'. The 'Design Strategies' course was first taught in 2013. The main project of the course aimed to expose students to real-life problems: Opening their eyes to opportunities for design to collaborate with diverse institutions, putting them in touch with their very own 'local community', and simulating a 'professional-client' relationship. This course was a major shift from the ID program's traditional industrial design for manufacture (DFM) approach.

This third-year course was open as an elective to different courses, so it was conducted in a multidisciplinary way, with students mostly from industrial design, architecture, interior architecture and graphic design. The course was also available as an elective to students from education, history, Bachelor of Arts, and other disciplines. This version of the course mostly integrated methods from design thinking and service design, while slightly introducing entrepreneurship. Well known design thinking frameworks, such as, the ones developed by IDEO and Stanford were combined with service design tools, including: systems maps, customer journey maps and experience prototyping, among others. During the first three years, the course had a strong focus on strategic design for Health, through two subsequent collaborations with the Calvary Hospital and one with Ochre Health Clinic. Main outcomes were the designs of systems, services and user-experiences applied to problems in the healthcare industry, such as, aggressiveness in

Emergency Room (ER) waiting areas, education and training of medical doctors through simulation, and others.

However, after three years and in view of student feedback, and new external collaboration opportunities, the focus of the course shifted towards entrepreneurship. The 2016 course, encouraged the creation of simulated small companies, through collaboration with the Mobile Makers Australia project, and the 2017 course established the collaboration with Stir, a co-designed grants programme funded by the Canberra Innovation Network and led by another one of the authors. The programme focused on engaging youth in entrepreneurship, in particular those from creative industry backgrounds (Potocnjak-Oxman & Ward, 2019). In the 2017 version of the course, the 'user-centred' design approach was adapted to a 'customer-centred' approach, in line with business and entrepreneurship practices. New tools such as: customer validation, and the business model canvas, which are often used in entrepreneurship education, start-ups and business accelerators were introduced in the course.

Within this Australian, Industrial Design education context, the course received a broad range of feedback from students. In general, design students seemed to struggle with the idea of designing a complex system or an integrated experience, and in many cases students insisted in designing a physical 'product', according to their discipline, (for example, an electronic device if students were industrial designers, a brochure or website if students were graphic designers, or a space if students were architects). As such, some of the feedback was critical, with comments such as; 'why do I have to study this? It has nothing to do with my design course. I joined design because I like to make things, not writing

reports'. On the other hand, many students appreciated the new skills learnt through the course, which they applied in different ways. A former student commented: 'this was the most important course of my studies, and it gave me a job in the public service!'. Furthermore, informal comments by some of the 2017 students suggested the value they saw in this course, while some collectively asked 'why didn't we see this course since the beginning of our program, as it completely changes the way we understand design'?

In 2018, the main author moved overseas, as the first faculty and founding associate professor in the Dubai Institute of Design and Innovation (DIDI), Dubai's first specialized design university, founded in collaboration with MIT and Parsons the New School of Design. In 2020, DIDI is currently in its second year of a 4-year Bachelor of Design (BDes), with a transdisciplinary focus, and with emphasis in merging design with technology, strategy and innovation to prepare students for future jobs which still don't exist. After a one-year foundation program, students choose two cross-concentrations (or specializations) from four options which include: 1) Product Design, 2) Fashion Design, 3) Multimedia Design and 4) Strategic Design Management. These four options offer six combinations, where transdisciplinary design occurs. For example, a student interested in the design of interactive and smart wearables can take studios and workshops in Product and Fashion design, or in Fashion and Multimedia design, for this purpose.

As part of the curriculum development, in view of local needs and priorities and building on prior experiences and feedback from former students, one of the authors proposed and implemented a Design Strategies and Entrepreneurship course to be embedded in the first year, second semester of the bachelor's degree. The course

introduced students earlier on to strategy and entrepreneurship, in order to embed in students an entrepreneurial mindset early in their studies.

The first iteration of this course, conducted in Spring 2019, took a Design for Health approach, and was developed in collaboration with faculty from the Mohammed Bin Rashid University of Medical Sciences, MBRU. Main outcomes were the designs of systems, services and user-experiences, with a clear business model, and finalizing with a 3-minute pitch which simulated a pitch for funds to investors. Most of the ideas had strong local or international relevance, with projects ranging from ideas to use blockchain for e-health, to apps to motivate local youth to be more active.

The second and latest iteration of the course in Spring 2020 is being co-taught by two of the authorsand has taken into consideration the psychological elements of entrepreneurship such as, the right combination of personal motivation, purpose and goals. Initially, students were asked to use AyseBirsel's deconstruction-reconstruction methodology and apply it to their own professional aspirations. Based upon the resulting individual vision board, their next task was to correlate this with the United Nations 17 Sustainable Development goals, mapping the intersection between their personal goals and our collective goals as a planetary species. The insights obtained from this exercise have then served as a springboard for the ideation of a value proposition and business model for a start-up.

Individually, students then created a 3-minute video pitch to showcase their ideas in an engaging way that expressed their leadership skills and charisma in order to get other students to be

excited about their ideas. Each student could vote for only one other project, and the most voted projects could then form their own working teams to develop their first prototype of the service or product being created. We have started with individual insights, developed their interests in relation to real world needs, and then simulated some of the conditions entrepreneurs will face when trying to launch a business idea.

Entrepreneurship Education in Design or Design of Entrepreneurship Education?

Another perspective on the relationship between design and entrepreneurship education is to recognise that design, through its user-experience centred skill set, is capable of developing learning experiences within and beyond the context of the design school. By thinking of a 'course as a service', with the 'curriculum as a design brief', the designer's skill sets become valuable to a wide range of disciplines, in particular those of management and entrepreneurship education. Research into entrepreneurship education highlights the importance of action-based, or 'learning by doing' approaches (Laukkanen, 2000,36-37; Rasmussen & Sørheim, 2006), with emphasis on stakeholder engagement, use of game mechanics, and the development of an entrepreneurial identity. More importantly, management scholars talk of the importance of including design practices in entrepreneurship and management education (Dunne & Martin, 2006,513; Neck & Greene, 2011,62). This provides an opportunity for designers to take an active role in the development of entrepreneurship curricula. Examples of this already exist in Canberra, with one of the authors of this paper, who trained as an industrial designer, having designed and delivered innovation and

entrepreneurship courses at the Australian National University's Research School of Management since 2013. This author has been the convenor for the undergraduate 'Entrepreneurship and Innovation' and the postgraduate 'Entrepreneurship and New Venture Creation' courses, both focused on practical approaches to conceiving and developing entrepreneurial opportunities through use of the business model framework (Australian National University, 2020a; 2020b). In addition, along with a team led by designers, between 2014 and 2017 they developed and delivered the curriculum and activities for Innovation ACT, Canberra's largest entrepreneurship program (Innovation ACT, 2017).

Through the use of practices common in design education, the Innovation ACT program has moved from a commerce student-oriented business planning competition, to a multidisciplinary innovation process that addresses many of the design thinking practices (Hassi&Laakso, 2011,6) and entrepreneurial competencies (Morris, Webb, Fu & Singhal, 2013,352;358). During their first intervention in 2014, the program received close to 30 teams. This number doubled since then, to over 60 in 2017. The learnings gathered from the design of these entrepreneurship education programs is the driving force behind the Stir platform, aimed at engaging people from creative industry backgrounds, particularly design, to engage with the entrepreneurship ecosystem. This is important, as emergent designers should not be left out of the increase in the number of designers playing strategic decision-making roles in the global move towards innovation-based economies. This phenomenon is of interest, considering how large multinational corporations and venture capital funds are increasingly attempting to embed design capabilities (Maeda, 2016).

A more recent example of the benefits that a design perspective can provide to management education is the 'Design Thinking: Entrepreneurial Innovation' course at the Australian National University. This course uses a live project model (Watt & Cottrell, 2006) structured around the Double Diamond framework (Design Council, 2019). It aims to guide design and non-design students through the process of addressing an innovation challenge presented by a client organisation. By encouraging engagement with external environments, defining specific aspects of a wicked problem to tackle, developing low fidelity prototypes, and proposing a solution that can be embedded in the organisational context, the course involves many of the components of an entrepreneurial process. During its first iteration, it collaborated with the Centre for Entrepreneurial Agri-Technology(CEAT, 2019). Although the students with non-design backgrounds struggled to start working on the project, their final concepts were of higher quality than expected by the teaching team and the client. Of the six projects developed during the course, one was selected by the client for implementation, with the students being recruited as part-time consultants by the institution. This provided the students both with a great sense of accomplishment, and a clear sense that design thinking could enable them to overcome uncertainty and devise solutions to complex organisational problems. The course and its outcomes were presented as part of the Australian National University's technology-enhanced learning conference, TELFest (Potocnjak-Oxman, Hickey & Burns, 2019).

Conclusions

It is regrettable that many National Innovation programs do not consider design, and other creative disciplines, as drivers for innovation. As design educators, we must do something about this! We must demonstrate to industry, the government and other stakeholders that design is important for all, and that the creative disciplines are an integral part of innovation, cultural exchange and economic exchange. An option to do this is to explore new strategic and entrepreneurial roles for design practice, integratingstrategy and innovation methods with business and entrepreneurship topics into future-oriented design education and curricula.

No two individual students are alike, and a one-size-fits-all approach is impossible to achieve when designing a course or curriculum. Flexibility and the ability for personal customisation are becoming increasingly important in today's education. As such, it is understandable that most students who join design courses are mainly interested in the physicality, materiality and specialties of a course they have chosen, most possibly influenced by traditional and popular perceptions of design as styling and making. It is also well known that many students will join design courses because they like to 'make' and 'draw', but also precisely because they don't like to 'write'. While 'drawing', 'making' and 'doing' are still integral in design education and practice, it is important to provide our students with avenues to explore more contemporary, strategic, and future-oriented approaches to design.

Weare convinced of the value of this transdisciplinary and strategic design education approach, and argue that while it is predictable that many students from design and creative industries

understandably dislike such theoretical or business-oriented courses, these studies are fundamental for a well-rounded preparation of any future professional. At any point in their career, designers, and even artists, will have to deal with aspectsof businesses and markets, having to 'sell' a design, a work of art, or just even 'selling an idea' in any other type of job. Furthermore, many of the design professions as we know them are changing and many jobs are disappearing. A specific case is traditional industrial design jobs with a focus on design for manufacture in a country like Australia, where local manufacture has moved overseas and radically decreased in the last decades. Pedagogical experiences as the ones here described aim to prepare students for these 'open and broad challenges' of the future, hopefully not only making them more employable in a wider range of future-jobs, but most importantly, equipping design students with the mindset and tools to start their own businesses.

The initial experiments with these courses, which focus on strategy, entrepreneurship and innovation(by merging strategic design and entrepreneurship) raise many questions for further research, which we intend to explore .Do designers engage with entrepreneurship? Why, or why not? Does engagement of designers in entrepreneurship depend on personality traits?

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Design as a human need

Indu Varanasi is an award winning architect and designer. Born and brought up in India, Indu discovered her ability to melt aesthetic design with function. She has a degree in Architecture from JNTU in Hyderabad and a Masters Degree in Design and Architecture from SPA, New Delhi in 1993.

Starting her career in architectural practices in India and in Dubai for a few years, she discovered her love for detail design and the finer aspects of design while working on the prestigious Emirates Towers. In 2004, she set up her own design practice and has since been considered among one of Middle East's top 50 designers.

Design is universal, similar to the human needs of: food, clothing and shelter (which includes security/protection).When our basic needs were met, our next task was how to work on acquiring these needs easily, quickly, efficiently and perhaps beautifully. How best can we get our needs such as, food in order to understand, which food causes diseases and discomfort, which food leaves a sweet taste, and which causes a sense of exhilaration and other pleasant and unpleasant experiences. Throughout history we have 'designed' our food habits leading to our universal food cultures today. Hence, design is a way of life, how well or how better can we live? Most people do design their own lives, they design their own routines. Design specialization comes when we master the techniques of a particular need. For example, specializing in the food industry is to design the systems of growing new crops, health impacts of fertilizers/chemicals, food storage, conservation of species, genetics, cooking styles, recipes and historical practices. On the other hand, specializing in the fashion industry is about how the yarn is made, the fabric is woven, how it is stitched. Similarly, the shelter/buildings have evolved from just being for protection, from wild animals to mega buildings which require various technical skills to put together.This is all when we are still not thinking of the Art & Music, which form the soul of the human existence.

The complexity of design lies in the fact that it is an amalgamation of several unrelated aspects or disciplines, which come together more like a food recipe. All ingredients being the same, the dish produced lies in the hands of the chef who creates it. Does the credit lie with the farmer who grew the ingredients, the trader who got them to the shop, the buyer, or the company who made the cooking stove or the

utensils? Suddenly, it no longer appears that the chef should take all the credit. They simply put everything together - 'well', and of course the glamour quotient of being, above all. Design, works in tandem with many other specializations. Therefore, instead of glamourizing the job, design should be an acknowledgment of the other, who knowingly or unknowingly are part of the process. The earlier we convey this message the easier it gets.

At a student level, a student should be taught the fundamentals of other collaborative subjects. In every project, they should be asked to collaborate with fellow students of other disciplines; this should bring out fresh ideas, some as impractical as they seem, helps them to think with other viewpoints. A cross disciplinary interaction helps students to understand the need of co-working with people of different mind-sets. It also fosters a sense of responsibility beyond just aesthetics and becoming star architects/designers whose projects look great as 3d visualizations but fail to function or are energy inefficient or have security issues. Architecture and Design are NOT about 3d Visuals or training for photoshop skills. In an architectural design studio, for the success of any project, we need to have architects who are imaginative, who can generate ideas, create something out of nothing, and others who can bring out practical solutions. These real-life solutions are possible through the collaboration with other disciplines, experts, suppliers and stake-holders. All this can come together ,on the actual site with different people, workers, engineers and other appropriate disciplines.

In order to make design education fruitful, we need to understand that we do not create alone. We are not the 'creators' of beautiful things; we should be solution providers. Some solutions look good, others may not but serve the purpose.To have the ability to think

together in an understanding process, should be the basis of education. In my practice of over 25 years, I often see young students or fresh graduates coming out of institutes where they think their design solutions are the best and nothing should be changed. Developing a position of thinking from various directions (viewpoints) and a flexibility, adaptability to other collaborative processes, should be an integral part of design study. For example, bringing together architects and engineers, with technology, and institutions (government and education) should encourage this collaboration. The collaboration should extend to psychologists, behavioral scientists and other disciplines before the design process commences. In order for this to be implemented, we have to think of solutions for today in order to design for today's challenges while anticipating tomorrows' problems. Today's solutions should be the vision that designers should develop. Design is the bringing together of all the senses- 'sensefulness'[27]in order to create immersive experiences for the creator and the perceiver.

[27]AnnaBarbara, Sensefulness – New paradigms for Spatial Design (Postmedia Srl: Milano, 2018), pg 81

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Letter from the Chairman's Desk

By Sunil Bhatia PhD

'BIOLOGICAL DISTANCING' IS NEW TREND OF 2020 FOR CHALLENGES OF 'COVID 19'

One day I was going for school and failed to notice uneven surface of the road and about to fall but somehow I managed and saved from hurting because of my inbuilt reflex action. My friend informed my mother about morning incidence of tripping and I answered casually "I have taken millions of steps so far and never fell and if by chance a small wrong step made me unstable you should not worry." She advised me with her wisdom "A single wrong step can make entire effort of stability in life unstable, always be firm and stable on ground." That time I was not mature enough to understand what she was meaning but at present realized the significance of role of stability in life.

I was observing the traditional potter of designing earthen pitcher on his potter's wheel and noticed he was busy in designing by hand without using wheel a shape of half inch width strip but long enough for turning into ring with prepared mud and attached vertically at the bottom of pitcher so that it should rest on. I inquired with surprise "Why did attach strip at the outer of bottom of pitcher?" His answer was "for stability, it needs support for stand firm because as we filled the liquid a slightest movement in liquid will make the

pitcher tilt and water in it help in move where it is tilting." I understood what he was conveying that water in it shifts the center of gravity and round bottom will not able to stand and pitcher will no more hold stand firmly vertically and content will flow out of the mouth of the pitcher inspite of it is designed at the top of the pitcher. It needs some kind of support for controlling any movement of pitcher from falling. It struck to me that earthen pitcher has strong base for providing stability by ring at the bottom but has design flaw as someone wishes for taking out water by tilting there is no smooth operation and water weight suddenly comes to where the belly of pitcher touching the ground and a slight but uncontrolled unstable movement create a minor jerk and may responsible for a crack . 'Stability means control and predictable movement.' Through their experience realized that water filled up to rim was more stable than less filled water while carrying for taking from one place to another on head and it might be because of Brownian motion that makes unstable. Earlier potters were advising the users in absence of bottom support of attached ring for resting of pitcher by saying 'place round bottom pitch after placing small heap of sands or fix in mud or design ring shape with long cloth or surround by pebbles for blocking the possible movement as we do in packaging material for proper fixing by placing folded paper or piece of wood or some other materials or ask the carpenter for designing the wooden triangle or square frame as stand for resting or top of the table with little curvature for resting the pitcher, otherwise unstable pitcher has high chance of breaking'.

Concept of stability was known to human from the beginning and never exerted any hard thinking for detail but learnt it by experience whenever encountered unstable condition , it is natural instinct in us

and absence of it does not allow for step in direction of progress. 'Evolution never compromise stability.' It is also visible in animals as well in plants. Newly born child is unable to survive unless until learn the art of stability in walking. 'Stability is the foundation of progress.' Once plants stand firm in the ground and stable then only its progress is visible. Some time farmers provide external support by tying the dry firm wood after fixing in ground for plants stand in its own and gain stability. I have noticed there is no other ways where humans can sit with stability other than these centuries old technique of sitting with cross leg on ground or comfortable sitting demands legs should be in L shaped or with dangling legs while on branch of the tree or raised platform. We sit with many ways but most popular among is cross leg or stretch the leg where body makes L shape and I think it is most stable posture of sitting and designers always use this posture while designing sitting products for humans. Child walks with most unstable manner and gradually learns the art of stable in walking by not using legs but other body parts that support for stability. There is support products of walker that helps in learning walking .As we grow old we need support and prefer to hold the walking stick that support not to be unstable. If patient is serious then walker is designed for stability. My doctor advised wherever feel giddiness never fight to stand, immediately sit on ground because that giddiness will make you unstable and consequences of falling may invite fracture or hurt severely.

Concept of stable has major role in idea of hunting and it is visible in every living beings where by breaking the neck of prey makes the running animals for halt and inactive by turning into unstable for killing. Idea of instant killing has come to the existence because of defense tactics not to be killed by wild prey. 'Who so ever will win in

fight has techniques of making others unstable and has power of remain stable after receiving severe blows.' Longer stability for retaining the taste of food what it supposes to be gave us idea of preservation by roasting, boiling and frying as well by adding preservatives. Some curd in the market has arresting culture for stability for longer shelf life and active culture has limited shelf life that makes taste unstable by growing of active bacteria. Why do we need instability of mind by artificial means? Idea of introduction of alcohol or any form of intoxication that turn mind into instable stage from stable.

Ancient people were aware after the discovery of fire that management of fire will help in optimizing the progress and designed bonfire by assembling dry woods to fire clay stove for cooking. Dry logs are arranged vertically in such a way it should not turned unstable after burning but turned to ashes without turning sudden unstable fall of burning wood for avoiding fire accidents . Later designed fire stove with pods for resting the cooking vessel for heating over fire for creating stability and avoid any eventualities. It was serving many purposes and helped in keeping fire alive by maintaining the proper ventilation as well helps in even cooking for spreading flame for all round at the bottom of the vessel. They were smart enough and not added tripod at the cooking vessel but on the earthen fire kiln where it vessel was resting that provides sensible stability.

Anything that is resting and that too needs stability requires design support and best is at the bottom or that area resting or touching ground by providing tripod or four legs. As we witness in table or chair resting on four legs for stability. Wherever firm ground is missing like in air or water that time support for stability is possible

by other means by using property of air as we witness in airplane and in ship we create stability by using water property. The design of weighing scale balance for measuring weight is based on concept of stability by holding the pan by lifting in air for instability and confirmed by stability.

Stability has allowed the people to make the thick wall for bearing the load of the roof. As concept of stability forced use the stones with joining material for erecting walls and might have used the mud for joining by allowing to dry for holding the stones but later on used powder of lime stone along with river sands as joining and now cement with iron bar for RCC. Plantation was completed when soft soils are pressed to hold the plant properly and help in stability. I am admirer of bird's nest design where birds are not formally trained or mother designed before the birth of chickens but genetically transformed information passes to the next generation for making the nest for their future offspring. Every bird prime most idea of selection of space for nest is to be safe and stable for meeting adverse weather conditions and chickens should be comfortable in nest.

Stability has given us many ideas for turning unstable to stable for desired use. Design of ladder was unstable with the weight of climbing person weight as well it is resting slants that may allow to slip from resting on ground so designer has taken special care not to slip . Design of knot has come to the existence because of concept of stability. Nut bolt, rivet and nails are designed to make the joining stable. Washer or other packaging materials are designed for controlling instability. The tripping is easily possible when the height of the product is more than its width and depth and can be fix this problem by fixing mechanism with firm place for making stable.

Furniture designer faces such problems and realized it invites accidents and some time user trapped under because of unstable design of heavy items and may prove reason of death . Drawer fails to stand firm in stable state or turns to unstable because of designing defects that allows of falls as users opens the chest by holding the knob for pulling by force that helps in shifting of the centre of gravity or open the chest with sudden force or over hanging chest shifts the centre of gravity and possible solution for stability is to fix with firm place by tying by nut or rope or design the chest in such a way it does not help in shifting the centre of gravity.

Indian freedom movement has taken a new turned when transport sea ships were carrying finished goods for sale in India from Britain and lighter emptied ships were carrying sea salt while retuning for stability were agitated and 'Salt March' by Indians has changed the face of freedom struggle. Even political parties around the world propagate the theory that unstable government is harmful for progress and stable government is foundation for progress. Even in personal relation socialist profess stable marriage for stable family life for prosperity.

Stability and instability are simply a state of mind and both have equal importance for humans. It is the beauty of mind that uses both for achieving their objectives. Anything that is obstructing in achieving desire objective should be prevented and we noticed some time stability is vital but unstable state also serve our purpose in many occasions. We designed products for generating instability by artificial means as we do in winnowing fan for segregation of food and designed vibrator for massage for opening of block nerves for relieving from pain or industrial vibrator are used for eliminating air packets as we witness in RCC process for giving optimum strength.

Impact of earthquake can damage by making building unstable, so modern buildings are designed for stability for meeting such challenges. Dusting is ancient practice where we make the unstable by sudden jerk by hitting clothes for allowing dust remain in stable inertia for segregation. Blinker of light is unstable state but use for attracting attention of others for proper management as we do in computer for highlighting or in traffic lights signals. Design of hand cart needs unstable but firm structure for movement by wheel but also required stability for stationary for loading and unloading for that design legs for resting on ground. Evolution of bicycle design was possible because every earlier design was unstable compared to modern existing one. Sea ship experiences instability in bad weather and to make it stable they use heavy anchor and sometime it fails against worst condition then used heavy rotating flywheel attach on three axis for providing stability against forces creating instability . A juggler demonstrates stability by throwing number of balls for creating instability for entertainment. Design of football is for unstable design for player and all efforts and skill are developed for achieving stability and precision of hitting for perfect score. Motion of bicycle design is mystery for understanding stability. Most of robotics engineer are struggling in designing legged robot for dynamical stable gait. Patient is responding to medicine and there is no further detritions doctor called stable condition.

Animal and other living beings wishes to be stable in life and best example I witness in nest making by the bird and admire genius in her for considering various significant factors while selecting the location. She gives preference to security but never forget about stability for meeting any adverse environmental challenges for keeping chickens safe till acquire stability in their life and learn the

art of survival. I am surprise to see the design of bee hive that has proper stability and safe enough from enemies. Some plants are weak and look for support and sometime grows by support of nearby strong plants or humans tied the dry log along with stem of weak plant to stand till grow to stand on its own. Support helps in acquiring stability as I noticed the aged person is walking with walking stick for countering any unstable situation where he feels cannot stand firm. Cotton filled quilt needs stable spread of cotton intact for that quilting is required and does not allow accumulating at one place in cover. Fractured leg needs support for immobility for naturally join the bone and turned unstable to stable part for performance.

In medical science use of instability is trigger by giving such harmful foreign elements for triggering defense mechanism for combating in future for such condition and concept of vaccination for infants for protection from various diseases was designed .

I admire the person who fulfill his commitment inspite of any odd comes. Our Guest Editor Dr Dolly Daou comes under this category and made this special a reality when entire world is facing the challenge of COVID-19. France is also facing the severe effects of COVID but she managed to submit her publishing material in stipulated time. Salute to her.

Lambert Academic publication for celebration of 150th special issue by publishing a book by compiling editorials "Design For All, Drivers of Design" translated in eight different languages from ENGLISH into French, German, Italian, Russian, Dutch and Portuguese. Kindly click the following link for book. "Morebooks", one of the largest online bookstores. Here's the link to it:

https://www.morebooks.de/store/gb/book/design-for-all/isbn/978-613-9-83306-1

With Regards

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Forthcoming Issues

WOMEN DESIGNER YEAR 2020

May 2020 Vol-15 No-5

Having been a wheelchair model from an early age, Samanta has always felt frustrated by the lack of luxurious clothing available for disabled people. Working as an advocate for inclusion within the fashion industry, Samanta has decided to join forces with some of the most innovative emerging designers to develop her brand, 'SB' – a unique line of clothing based on the principle that "its not about being disabled, but about feeling beautiful and comfortable whilst in the siting position".

Born in Brazil, Samanta moved to London 10 years ago and has since dedicated her life to improving the lives of people living with disabilities. She hopes that her collection will open people's minds and hearts. Samanta is a former Brazilian no. 1 wheelchair tennis player winning a doubles silver medal at the ParaPanAm Games in Rio de Janeiro in 2007 & representing Brazil in three World Team Cups.

"We must be seen to exist" – Samanta Bullock

Debra Ruh is a Global Disability Inclusion Strategist, Market Influencer, internationally recognized keynote speaker, published author, branding expert, successful entrepreneur, and an exceptional mother. Debra is host of popular program: Human Potential at Work (Audience in 84 countries).

Debra Ruh received her call to action when she was told by so-called "experts" that her daughter, Sara, who was born with Down Syndrome (Trisomy 21), would never walk or talk. She refused to accept the prognosis and perception of this condition. Driven by her unshakeable faith in the power of human potential and the love for her daughter, Debra was determined to dedicate her life to create a path to empowerment and the success for all those with disabilities.

Debra had built a multi-million-dollar firm focused on ICT accessibility. Debra was convinced that "the real disability is being unable to see human potential" formed Ruh Global Communications. This new firm focuses on Global Disability Inclusion Strategies, Digital Marketing, and Branding among many other services.

Debra consults with Multi-National and National Corporations and the United Nations. Debra is now internationally renowned global keynote speakers and travel the world inspiring and advocating for governments and corporations to include people with disabilities.

Debra Ruh is an active public figure she was invited to address the United Nations General Assembly at the Conference of State Parties 9th session (COSP9) by the President's office of the UN on May 13,

2016. More recently Debra was selected as the North American representative for the United Nations (UN), International Labor Organization´s (ILO), Global Business and Disability Network (GBDN). Additionally, in 2018 the U.S. State Department selected Debra Ruh as a global speaker and ambassador for the United States when visiting foreign nations and speaking on inclusion and disability. Selected as a Global Goodwill Ambassador in 2018.

Debra is a recognized global influencer, frequently interviewed by various media outlets and she has gathered a significant presence on many social media platforms, with over 300,000+ followers across all mediums. Co-founder of the award winning #AXSChat the second biggest tweet chat in the world with a reach in the billions. Debra was also named in the "Top 5% of Social Media Influencers" and "Top 0.1% of people talking about Disability Inclusion and Accessibility" by KLOUT. Named #15 in Digital Scouts Top #100 Global Digital Influencers in Sept 2018.

July 2020 Vol-15 No-7

Jani Nayar , Executive director of the SATH (Society for Accessible Travel & Hospitality), a tireless advocate and effective educator on travel & disability.

Dr. Anjana Bhagyanathan is a landscape architect and academic with an interest in the intersection of nature, culture and design. Her research offers strategies for basing ecological planning on cultural insight and science. Bio centric interventions that have positive impact on the environment for posterity forms the bulk of the research and practice that she engages with and remains the perspective she imparts to students.

Her research focuses on GIS applications for ecological planning, society and environmental protection, and landscape ecology. The process of arriving at landscape patterns that are robust ecologically, socially and culturally especially in human-dominated landscapes forms the crux of her work. Ecosystem based approaches that are rooted in traditional ecological knowledge informs the research approach. Her teaching and research apply this approach to metropolitan and agricultural landscapes – ranging from continental scale implications of agricultural practices to neighbourhood scale implications of green storm water infrastructure. The efficacy of polycentric and tacit knowledge systems of communities that organically give rise to resilient land use systems fascinate her.

August 2020 Vol-15 No-8

Maria Luisa Rossi, Chair and Professor, MFA Integrated Design Maria Luisa's work at the College for Creative Studies Graduate Studies brings her entrepreneurial, globally-focused, and empathetic cultural approaches to the next generation of designers. She focuses on the seamless capacity to deal with the tangible and intangible aspects of people's experiences. At CCS she is preparing & quot; facilitators & quot; capable of addressing global-local grand challenges, focusing on social innovation. Her projects are concentrated on research, co-creation and people-centered processes.

Maria Luisa's professional career has been independent and international. She attended the premiere master's program in industrial design at the Domus Academy in Milano, thanks to a European Scholarship she won from designing the first wearable computer. The project was featured in the prestigious Domus magazine and gave her a lot of visibility around Europe and the design world. The wearable computer project "The Walking Office" can be found in the Henry Ford Museum Permanent Design Collection.

Following her studies, she founded the design consultancy Iavicoli & Rossi, working on various models varying from interior architecture to tableware.

Maria Luisa's interdisciplinary attitude, design strategy knowledge, and business acumen brought her to be hired in the team that

launched the new Graduate Program at CCS in Detroit, where she set standards of excellence for MFA Integrated Design.

Her effort to provide meaningful teaching experiences is validated by a successful alumni job placement in corporations and design consultancies. Throughout her career, Maria Luisa has conducted workshops and lectures in Singapore, Los Angeles, Mexico City,

Istanbul, Ankara, São Paulo, Shanghai, Gratz, Brasilia, and Taiwan. Her specialties are Design Strategy, Experience Design, Scenario Design, Service Design, Interdisciplinary approach, with an in-depth knowledge of American, Asian and European culture and markets.

September 2020 Vol-15 No-9

Surabhi 'Sur' Naik is an artist and designer who currently lives and works in New York City. Her artistic and design practice is rooted in storytelling traditions, processes and mechanisms and their evolving relationships to technology. Her works are largely informed by her lived experience in continuous flux with their contexts through female/gnc, brown and indian identities. They take forms of digital design, illustration, documentary, augmented reality, built environments, research and data/documentation.

Surabhi has formal degrees in Architecture from Gogte Institute of Technology, Belagavi and in Media Studies (Digital Storytelling) from The New School, New York, and has presented her work at esteemed forums such as National Awards for Excellence in Architecture and Charles Correa Gold Medal.

New Books

it is available on **www.morebooks.de** one of the largest online bookstores. Here's the link to it:

https://www.morebooks.de/store/gb/book/design-for-all/isbn/978-613-9-83306-1

The Ultimate Resource for Aging in Place With Dignity and Grace!

Are you looking for housing options that are safer and more accommodating for independently aging in place? Do you want to enjoy comfort, accessibility, safety and peace of mind – despite your disabilities, limitations and health challenges? The help you need is available in the Universal Design Toolkit: Time-saving ideas, resources, solutions, and guidance for making homes accessible.

This is the ultimate resource for individuals and professionals who want to save time, money and energy when designing, building, remodeling or downsizing a home. The Universal Design Toolkit will help you take the steps to design homes for your clients or yourself while eliminating the costly trial and error challenges you'd inevitably encounter if faced with this learning curve on your own.

Rosemarie Rossetti, Ph.D., teamed with her husband Mark Leder in creating this unique Toolkit. They bring ten years of research, design and building expertise by serving as the general contractors for their home, the Universal Design Living Laboratory– which is the highest rated universal design home in North America.

Within the Toolkit's 200 richly illustrated pages, you'll find: Insights that distinguish *essential* products, services and resources from the *unnecessary*.

Proven, realistic tips for finding the right home.

Home features you need to look for. Nothing is assumed or left out.

Handy home checklists and assessments.

Interview questions to help you hire industry professionals with knowledge and experience.

Photographs that provide a frame of reference to inspire, clarify and illuminate features andbenefits.

Valuable resources to save you time, money and energy.

Helpful sources of funding.

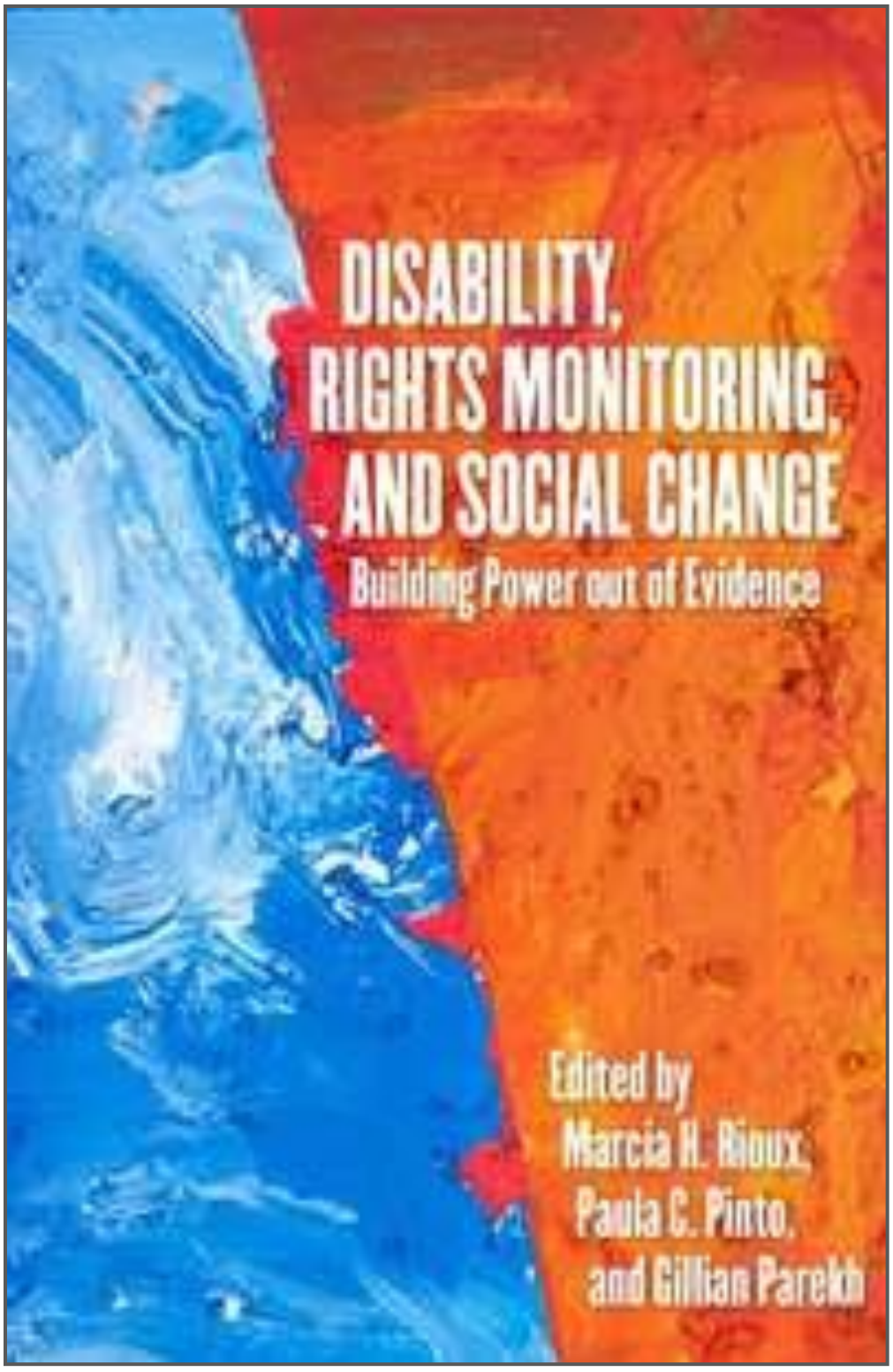
Space planning dimensions for access using assistive devices such as wheelchairs andwalkers.

And so much more!

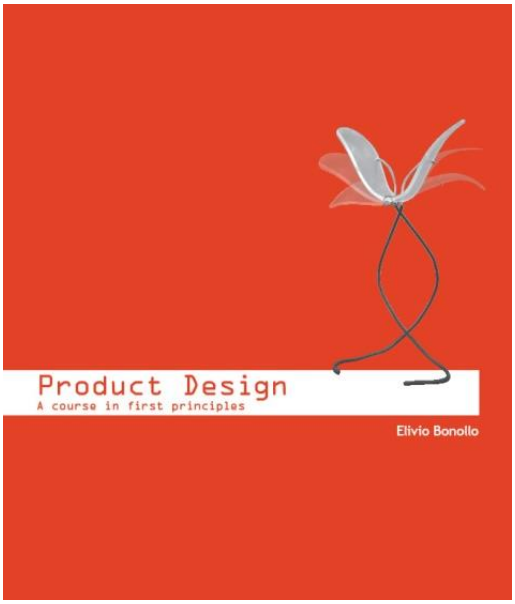
If you want useful, dependable advice and easy to implement ideas from respected experts who know the ropes, you'll love Rossetti and Leder's perspective. As a speaker, author and consultant who uses a wheelchair, Rossetti has helped hundreds of people design their ideal homes. Now her comprehensive Toolkit is available to help and support you!

Get the Universal Design Toolkit now to start your project!

Disability, Rights Monitoring and Social Change:



New Update: ELIVIO BONOLLO (2015/16) PRODUCT DESIGN: A COURSE IN FIRST PRINCIPLES



Available as a paperback (320 pages), in black and white and full colour versions (book reviewed in Design and Technology Education: An International Journal 17.3, and on amazon.com).

The 2018, eBook edition is available in mobi (Kindle) and ePub (iBook) file versions on the amazonand other worldwide networks; includingon the following websites:

ePub version:www.booktopia.com.au

https://www.booktopia.com.au/ebooks/product-design-elivio-bonollo/prod9781784562946.html

mobi (Kindle versions):www.amazon.in

https://www.amazon.in/Product-Design-Course-First-Principles-ebook/dp/B07FNV2F4L/ref=sr_1_1?ie=UTF8&qid=1532999395&sr=8-1&keywords=Product+Design%3A+A+course+in+first+principles

www.amazon.com

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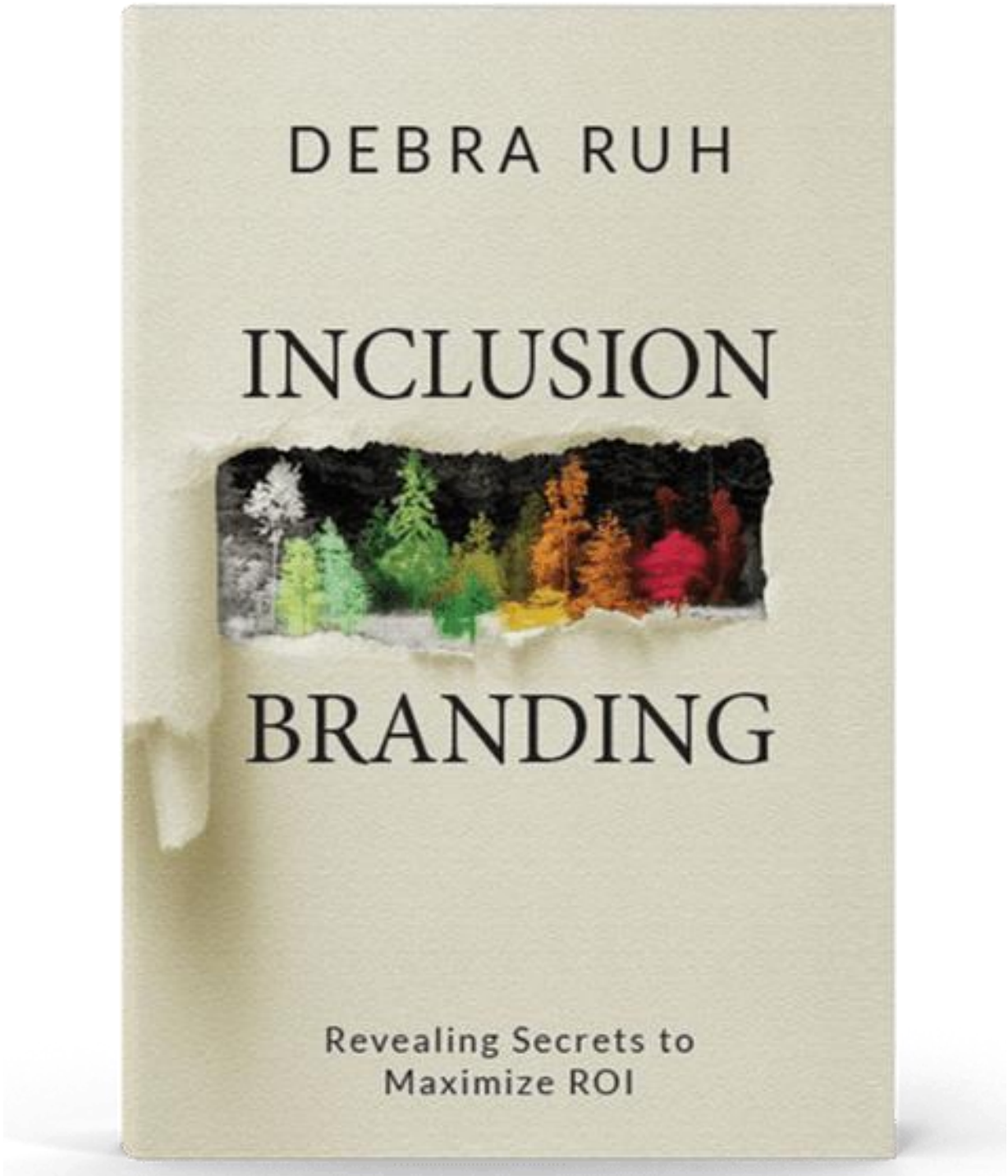
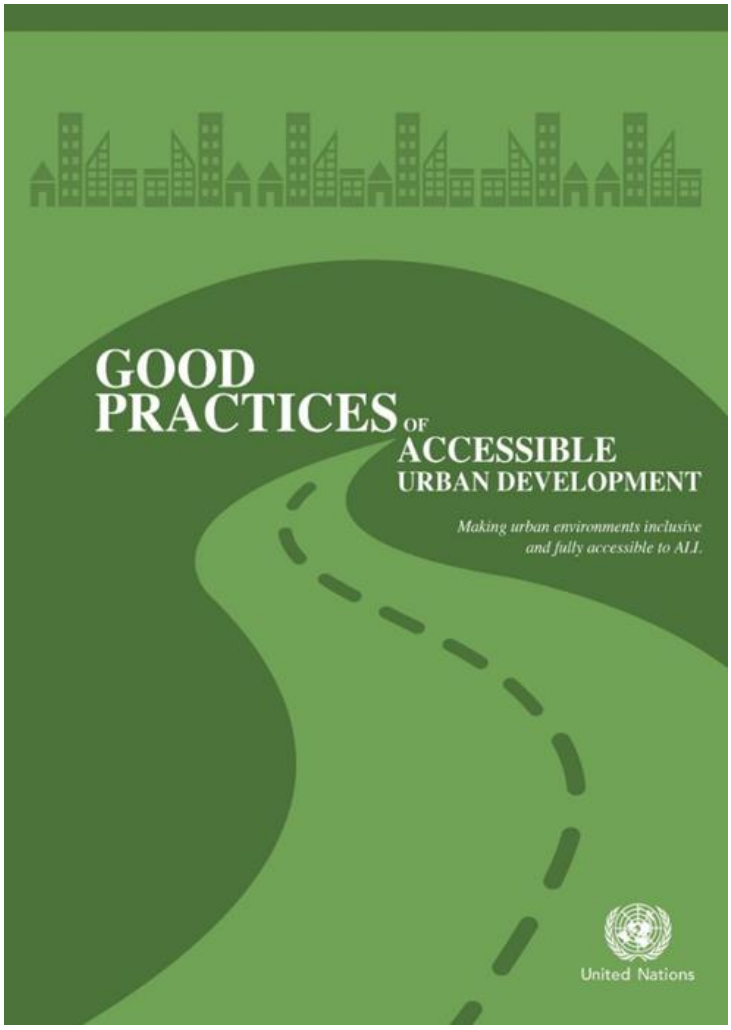
www.amazon.com.au

https://www.amazon.com.au/Product-Design-Course-First-Principles-ebook/dp/B07FNV2F4L/ref=sr_1_fkmr0_1?ie=UTF8&qid=1532497383&sr=8-1-fkmr0&keywords=Product+Design+a+course+in+first+principles

READING HINTS: ePub files can be read with the iBook app on Apple MacBook/iPad devices; ePub files can also be read on Desktops PCs, Laptops and Surface devices using readers such as the Microsoft *freda*ePub reader. The Kindle (mobi file) reader isflexible and suitable for reading the eBook on PCs; Kobo readers can also be used to read ePub files on MacBook and iPad. All formats are very interactive with very good navigation.


DEBRA RUH
INCLUSION
BRANDING
Revealing Secrets to
Maximize ROI

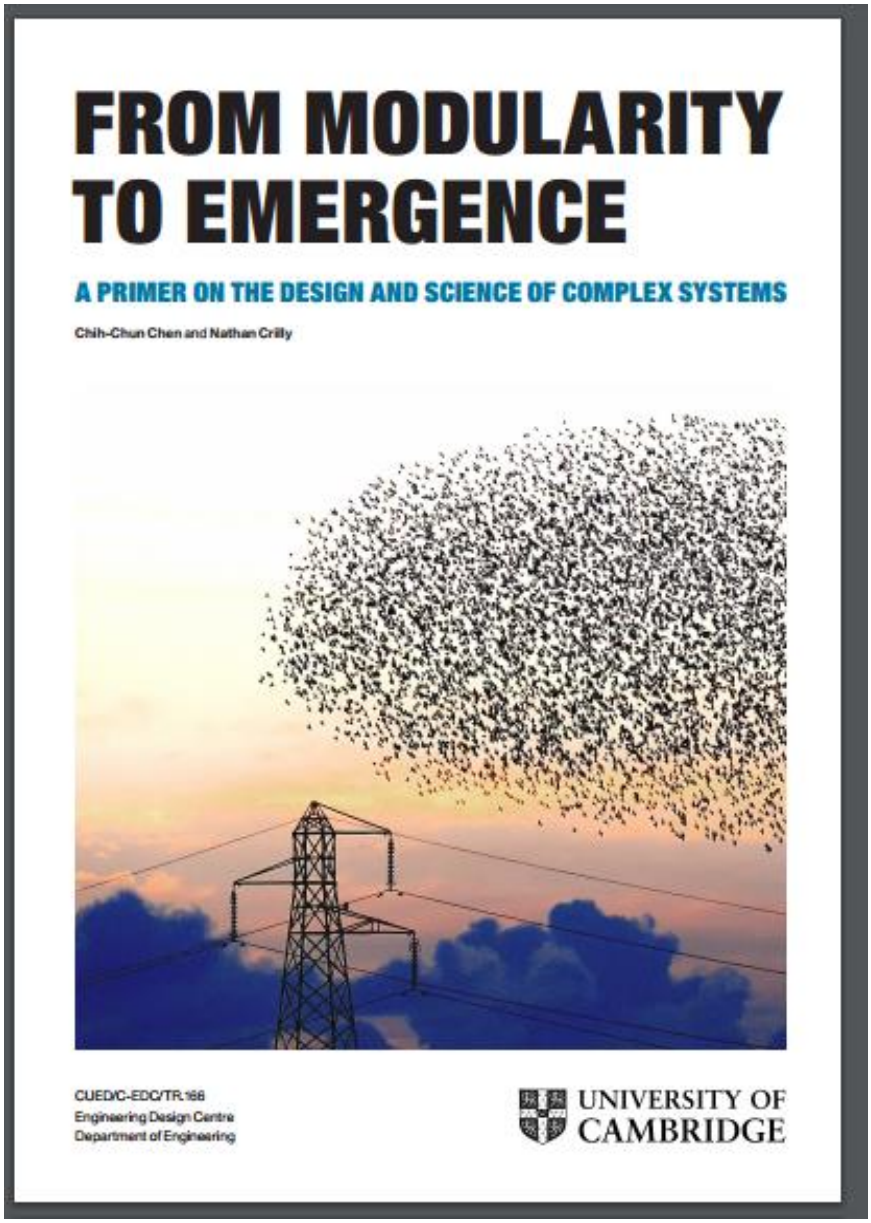


In light of the forthcoming United Nations Conference on Housing and Sustainable Urban Development (HABITAT III) and the imminent launch of the New Urban Agenda, DESA in collaboration with the Essl Foundation (Zero Project) and others have prepared a new publication entitled: "Good practices of accessible urban development".

The publication provides case studies of innovative practices and policies in housing and built environments, as well as transportation, public spaces and public services, including information and communication technology (ICT) based services.

The publication concludes with strategies and innovations for promoting accessible urban development.

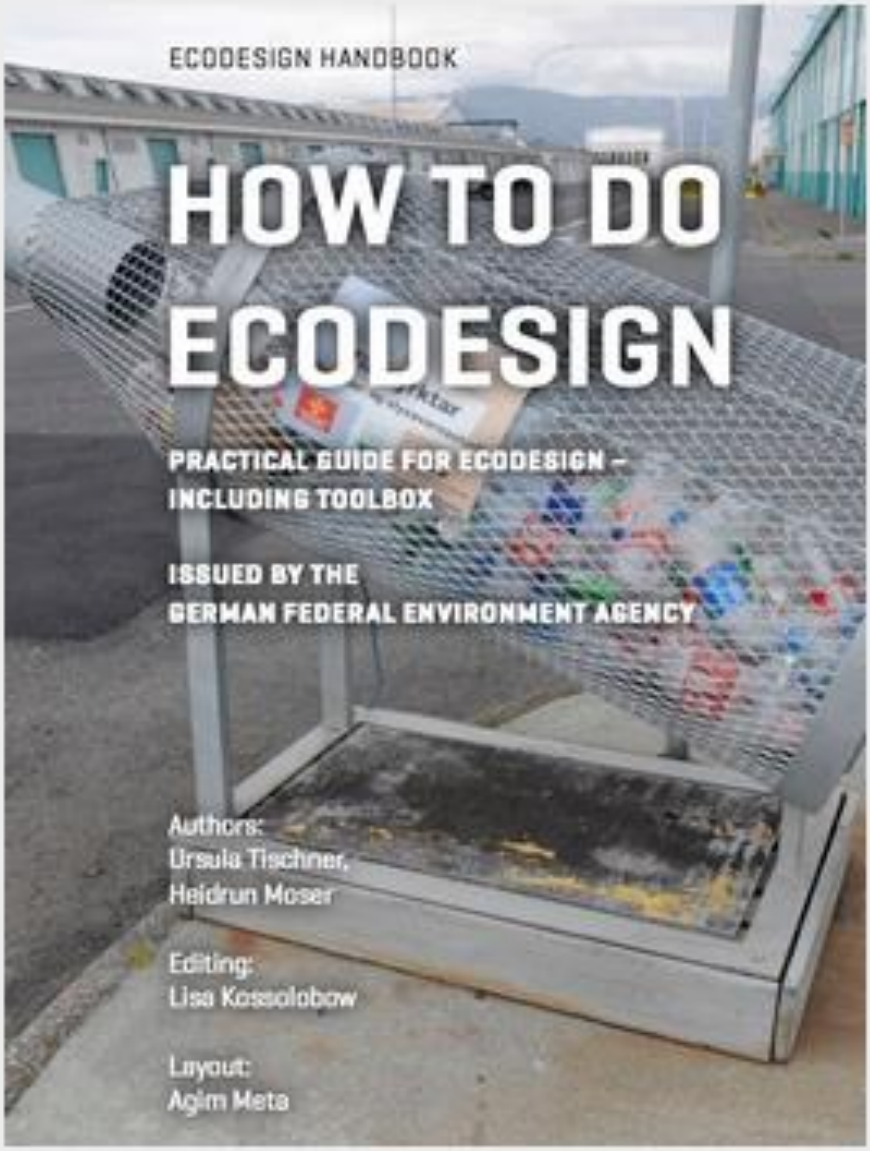
The advance unedited text is available at:http://www.un.org/disabilities/documents/desa/good_practices_urban_dev.pdf



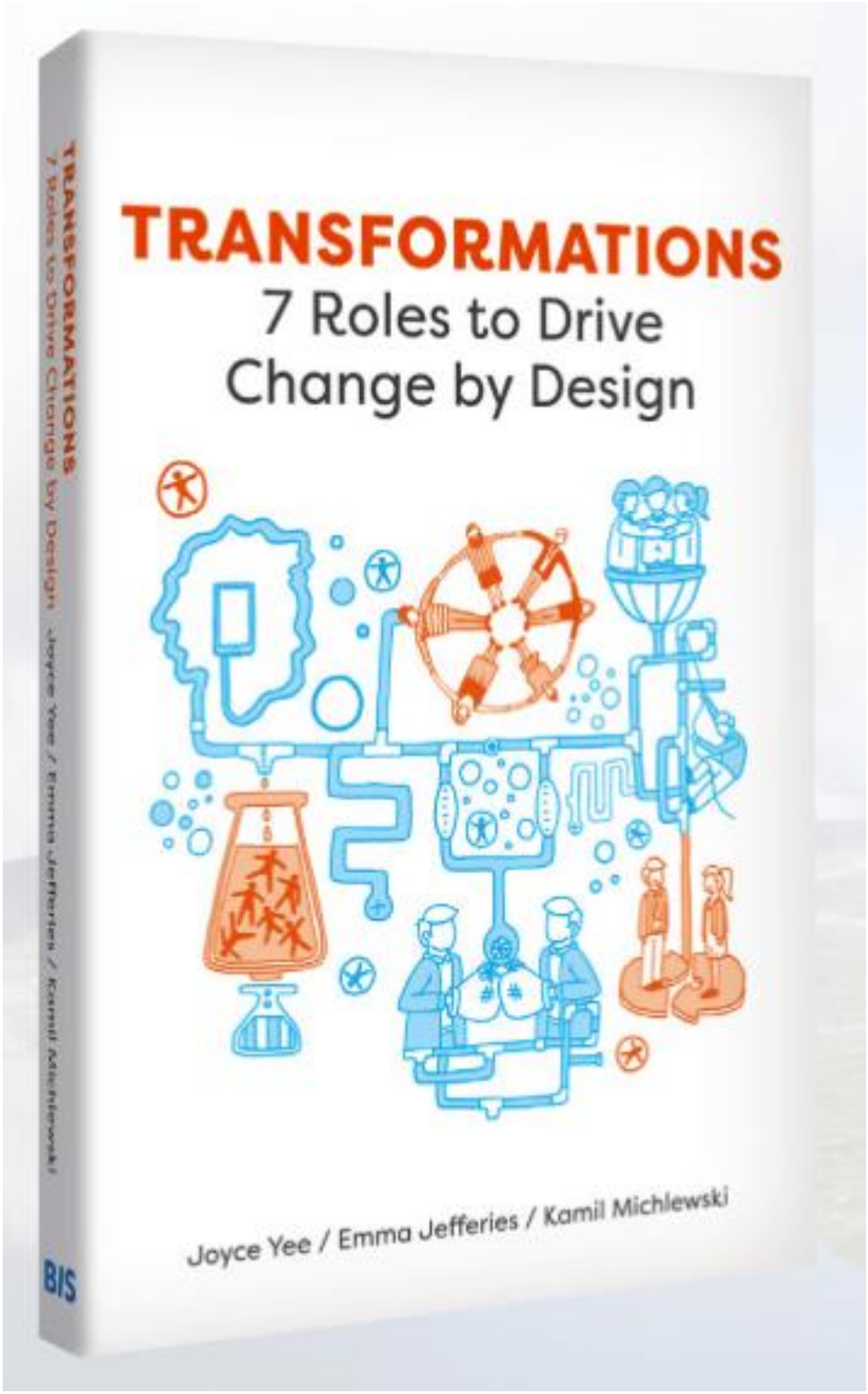
Dr Chih-Chun Chen and Dr Nathan Crilly of the Cambridge University Engineering Design Centre Design Practice Group have released a free, downloadable book, _A Primer on the Design and Science of Complex Systems_.
This project is funded by the UK Engineering and Physical Sciences Research Council (EP/K008196/1).
The book is available at URL: http://complexityprimer.eng.cam.ac.uk

Changing Paradigms: Designing for a Sustainable Future

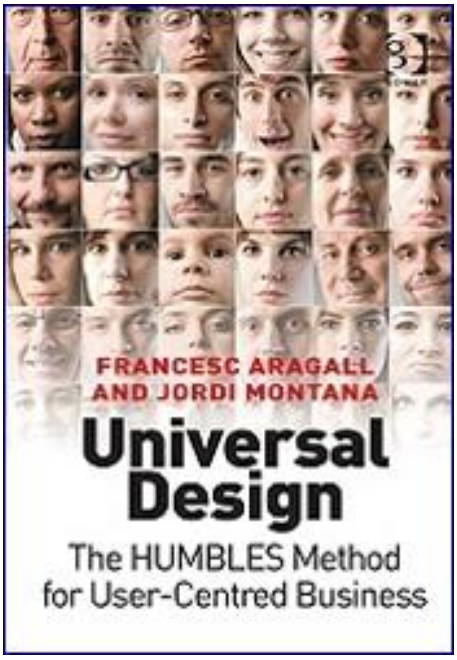
New iBook / ebook:
HOW TO DO ECODESIGN



Practical Guide for Ecodesign – Including a Toolbox
Author: Ursula Tischner


TRANSFORMATIONS
7 Roles to Drive Change by Design
Joyce Yee / Emma Jefferies / Kamil Michlewski
BIS

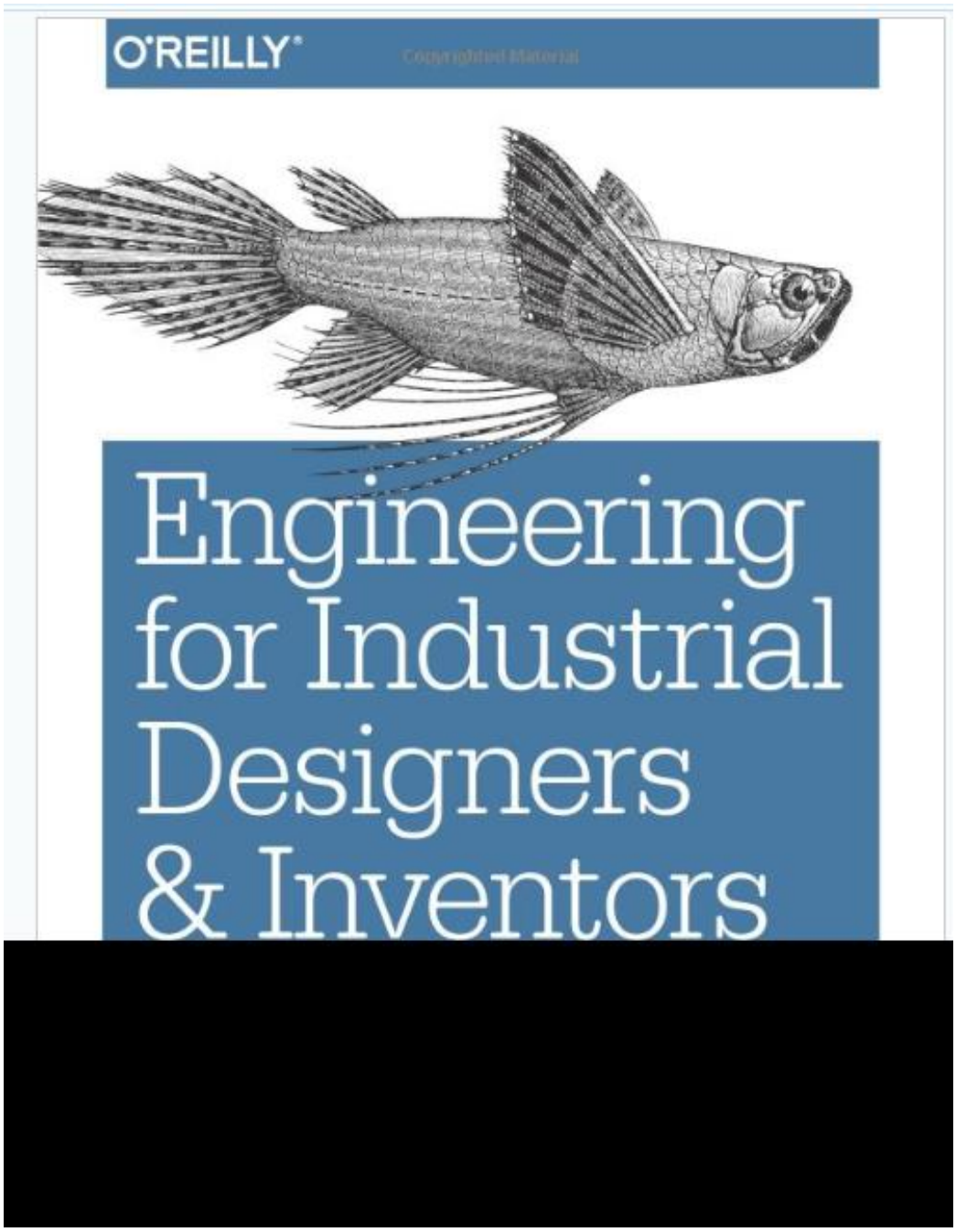
Universal Design: The HUMBLES Method for User-Centred Business



"Universal Design: The HUMBLES Method for User-Centred Business", writtenbyFrancescAragall and JordiMontañaandpublishedbyGower, providesaninnovativemethod to supportbusinesseswishing to increase the number of satisfiedusersand clients andenhancetheirreputationbyadaptingtheirproductsandservices to the diversity of their actual andpotentialcustomers, takingintoaccounttheirneeds, wishesandexpectations.

The HUMBLES method (© Aragall) consists of a progressive, seven-phaseapproach for implementing Design for All within a business. Byincorporating the user'spoint of view, itenablescompanies to evaluatetheirbusinessstrategies in order to improveprovideanimproved, morecustomer-orientedexperience, andtherebygain a competitiveadvantage in the marketplace. As well as a comprehensiveguide to the method, the bookprovidescasestudies of multinationalbusinesswhichhavesuccessfullyincorporated Design for All intotheirworkingpractices.

According to SandroRossell, President of FC Barcelona, who in company withotherleadingbusiness professionals endorsed the publication, it is "requiredreading for thosewhowish to understandhow universal design is the onlyway to connect a brand to the widest possible public, increasing client loyaltyandenhancing company prestige". To purchase the book, visiteither the **Design for All Foundation website**



I have a new book that presents fundamental engineering concepts to industrial designers that might be of interest to you. This is the
link:
https://www.amazon.com/Engineering-Industrial-Designers-Inventors-Fundamentals/dp/1491932619/ref=sr_1_1?ie=UTF8&qid=1506958137&sr=8-1&keywords=engineering+for+industrial+designers+and+inventrs

Appeal

IAUD Proposal-How to make a mask in 10 seconds

Our partner IAUD (international Association for Universal Design) would like to introduce this easy way to make a mask with your handkerchief or hand towel as one of our contribution to prevent from the spread of the infectious disease with COVID-19 new coronavirus.

Prime Minister Shinzo Abe recommends wearing cloth masks, as it is reusable. They can be washed and use them many times, in other words, it is sustainable.

It has also been recognized that it has an effect on slowing the spread of COVID-19, although it does not have COVID-19-preventing effects, according to CDC (Centers for Disease Control and Prevention). It helps people who may have the virus and do not know it from transmitting it to others.

Link to tutorial: https://www.iaud.net/global/activity/10032/

Hoping that all together we can stop the spread of COVID-19 as soon as possible, warmest regards.

IMMA BONET
Executive Patron

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News

1.

Joint council, planning commission meeting focuses on downtown plan

Anne Ternus-Bellamy

Members of both the Davis City Council and the Davis Planning Commission will gather for a Zoom public meeting on Tuesday to receive an update on the draft Downtown Davis Specific Plan.

The meeting will give council members and planning commissioners a chance to comment on the draft plan and identify items to be studied on the upcoming environmental impact review process. Members of the public will have an opportunity to weigh in as well.

In the works for several years now, the draft plan arose from the council goal of building and promoting a vibrant downtown.

Ultimately the plan is intended to provide a framework for what downtown Davis will look like well into the future. It envisions taller buildings in the core, more residential housing, accessibility through universal design, sustainability as a core attribute and thoughtful transitions to those neighborhoods bordering the downtown area.

The plan also comes with a new form-based zoning code outlining what types of buildings can be built downtown, including their mass and scale, giving property owners more certainty about what they can and cannot do in the future.

Read the full draft plan at https://www.cityofdavis.org/city-hall/community-development-and-sustainability/planning-and-zoning/downtown-davis-plan.

Tuesday's discussion about the downtown plan is the main item on the agenda of a regularly scheduled City Council meeting.

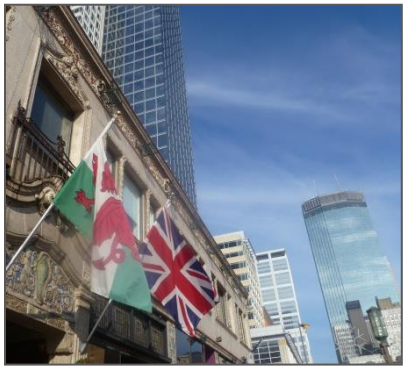
The meeting, which begins at 6:30 p.m., will be televised live on City of Davis Government Channel 16 (available to those who subscribe to cable television) and livestreamed at https://cityofdavis.org/city-hall/city-council/city-council-meetings/meeting-videos.

To join the meeting via Zoom, visit https://zoom.us/j/672765667.

Public comment may be submitted via email or voicemail.

Submit written public comments to CityCouncilMembers@cityofdavis.org. Submit comments by voicemail prior to and/or during the meeting via the city's dedicated phone line 530-757-5693. Staff will play comments during the appropriate agenda item and speakers will be limited to no more than two minutes.

(Courtesy: ENTERPRISE)



Programme and Events

International conference on ‘Designing for children' with focus on 'Play and Learn'

Monday, March 2, 2020, 5 p.m. PDT – Mentoring request deadline

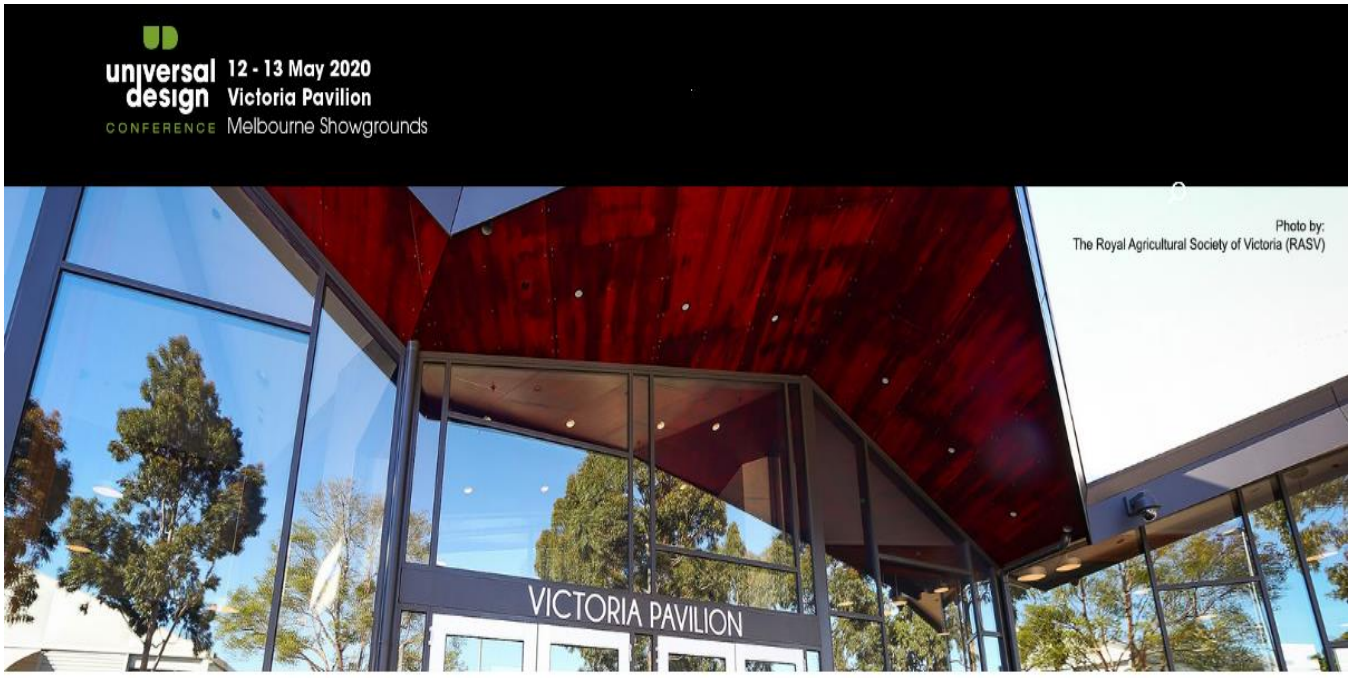
Friday, July 24, 2020 - Acceptance decisions for:

UD 2020

A! Aalto University

FIFTH INTERNATIONAL CONFERENCE ON UNIVERSAL DESIGN

June 15 - 17 2020 at Dipoli, Aalto University, Espoo



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ROMA2020

JUNE 16.17.18.19
CUMULUS CONFERENCE

16.06 - 19.06.2020

Rome, Italy

CALL FOR PAPERS

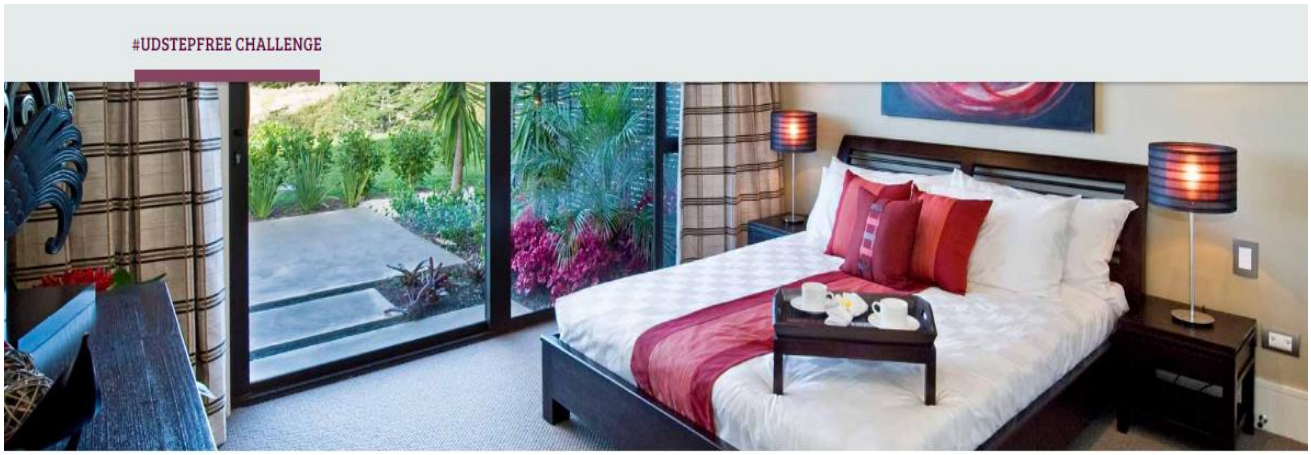
The ASSETS conference is the premier forum for presenting research on the design, evaluation, use, and education related to computing for people with disabilities and older adults. We invite high-quality original submissions on topics relevant to computing and accessibility.

Submissions should present significant contributions to design, systems, tools, scientific understanding, methodology, or social issues. Relevant topics include (but are not limited to) new enabling technologies, studies of how technologies are used by people with disabilities, explorations of barriers to access, and evaluations of accessibility education methods. It is expected that, in most cases, a paper's research contributions will be validated through research activities conducted within the target user groups. Papers that include a technical contribution without being validated through research activities with representative users are unlikely to be accepted.

XXVII Compasso d'Oro: the visual project

The selection for the

ADI graphic project invites to present a graphic project proposal for the cycle of publications related to the XXIII Compasso d'Oro ADI: ADI Design Index 2020, ADI Design Index 2021, XXVII Compasso d'Oro.



#UDSTEPFREE CHALLENGE

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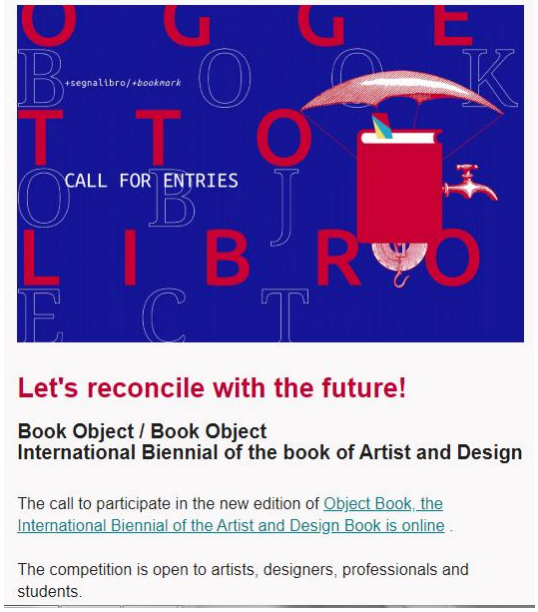
2020 GOOD DESIGN AWARDS OPEN FOR ENTRY

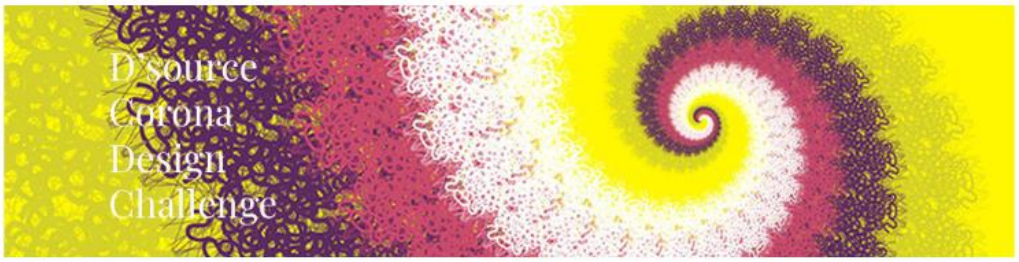
Good Design Australia is calling for Australian and international entries to the 2020 Good Design Awards. Through the annual Good Design Awards program, we recognise and celebrate excellence in cutting edge design and breakthrough innovation.

Call for entry for 2020 Human city award.



International Call: D'source Corona Design Challenge

D'source Corona Design Challenge <dsourcechallenge@gmail.com
>



D'source Corona Design Challenge:

www.dsource.in/dportal/dcdc2020/

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1.Job Opening

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