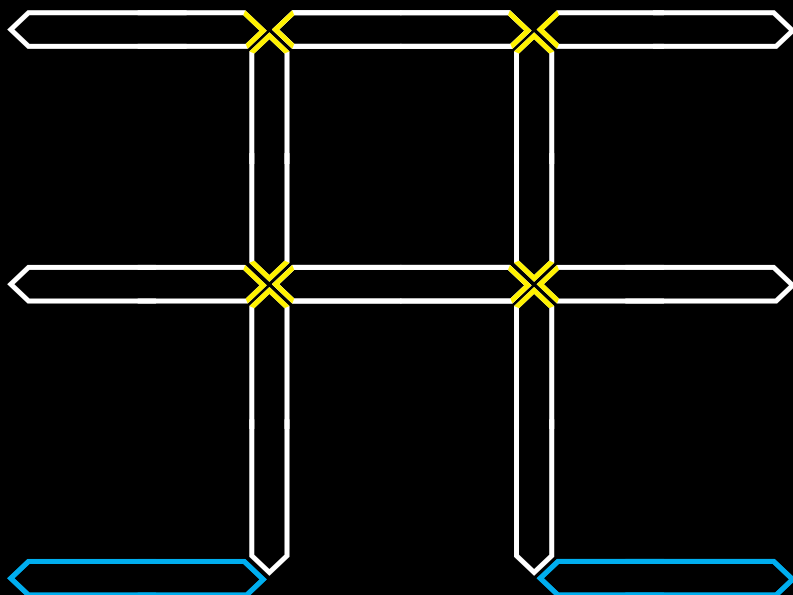


Open Design for  
**E-very-thing**



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Association of Universities and Colleges of Art, Design and Media

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### **Editors**

Cecile Kung, Elita Lam and Yanki Lee/Hong Kong Design Institute

### **Hong Kong Design Institute**

3 King Ling Road  
Tseung Kwan O  
New Territories  
Hong Kong  
[www.hkdi.edu.hk](http://www.hkdi.edu.hk)

### **Cumulus International Association of Universities and Colleges of Art, Design and Media**

Aalto University School of Arts  
Design and Architecture  
PO BOX 31000, 00076 Aalto  
Finland  
[www.cumulusassociation.org](http://www.cumulusassociation.org)

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# Conference Credits

## Cumulus Hong Kong 2016 Organising Committee

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Chair: Lorraine Gamman, Professor/Central Saint Martins  
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Chair: Mathilda Tham, Professor/Linnaeus University  
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### Ethnography Track

Chair: Francis Müller/Zurich University of the Arts  
Co-chairs:  
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## Design

Lau KaKiu (Alumni)/Hong Kong Design Institute

## About Cumulus Association

International Association of Universities and Colleges of Art, Design and Media (Cumulus) is a non-profit organisation and network for institutions of art, design and media. It is the only global forum for partnership, friendship and sharing knowledge aimed at enhancing the education and research of art, design and media. The members are prominent institutions numbering 257 from over 54 countries around the world providing degree studies for 300 000 students.

[www.cumulusassociation.org](http://www.cumulusassociation.org)

## About Hong Kong Design Institute

As a leading design education provider in the region, HKDI is committed to offering excellent learning opportunities to keep pace with the growing demand of the creative industries.

The state-of-the-art HKDI campus at Tseung Kwan O is an international award-winning architecture, designed to encourage a dynamic flow of people and ideas, and equipped with the latest learning facilities and exhibition spaces, to enhance the creative learning experience at HKDI. Our comprehensive design programmes encourage active participation and nurture our students' creative thinking, cultural sensitivity and global perspective. Active collaborations with industry provide our students with first-hand knowledge of the latest industry trends.

[www.hkdi.edu.hk](http://www.hkdi.edu.hk)

## International Academic Partners



## Welcome Message

### On the Needs of Openness in the Design of Everything

In the past decade, the nature, practice and production of design(s) have undergone fundamental shifts in response to the challenges posed by the speed of big-data-esque convergences with technology, politics, sustainability, poverty, terrorism and emerging revolutionary cultures – questioning the tradition, methodology, pedagogy, thoughts and concepts of life, humanity and design, racing towards the creation of new and never before imagined aesthetics, while questioning the necessities of beauty itself.

In a dense and intense society like Hong Kong, we intimately encounter these social, economic and cultural upheavals arising from the legacy of our colonial culture, the lingering psychosis of survival in a transient society with no identity, idealism or reason – just meaningless obsession.

The theme of ‘Open Design for E-very-thing’ came about as a contextualised response to a global question, a question that resonates with the story of Hong Kong as the merging lane of cultures and peoples. But more importantly, it alludes to the new universal possibilities of design at a time when clashes and exchanges between cultures, peoples and societies have reached a new level of din and savagery, demanding new poetics of creativity to piece together ethical and sustainable solutions, and new expectations of design of open processes, engagement and participation.

Cumulus Hong Kong attempts to examine these questions in six thematic tracks – Education, Empathy, Engagement, Environment, Ethnography and Experiment – through myriad activities both new and traditional – in the hope that this exploration would help us re-ignite the purpose and place of design in this isolated yet interdependent world.

Leslie Lu  
Principal and Academic Director  
Hong Kong Design Institute

## Six Open Design Tracks

### Open Design for Education

Design thinking is increasingly applied to different contexts and business models beyond its traditional arena. As a result, designers are expected to identify solutions for complex problems, which extend beyond the artefact or service and require new knowledge, skills sets, and understanding.

Creating innovative solutions not only for today's society but also future generations is a global challenge. Designers are faced with more opportunities than ever before. This conference track examines the impact on future design education and asks the following questions:

- What is the nature and scope of design education in order to prepare students for the ethical, political, socio-economic decisions they will be confronted with?
- How do we educate designers to engage citizens in co-creation and participatory design initiatives?
- What is the role of the academia in meeting societal expectations and global challenges?

### Open Design for Empathy

The "Empathy Deficit" (Obama 2006) refers to a social divide derived caused by the failure to recognise and celebrate empathy as an essential mental habit that should inform human action. Over the years, designers have significantly benefited from introducing empathy into their research processes. Design "WITH" empathy has helped define real but unexpressed and unmet needs. Yet the role of designers can be separated from the so-called mysterious-to-them users. As open design encourages more citizens and non-designers to embrace innovation, design "FOR" empathy may have new value beyond consumerism and individualism to promote empathetic understanding among diverse sectors of society. Can empathetic "things" (the socio-material interactions surrounding the processes and products of design) help find new ways to bring diverse or conflicted parties to better understand the perspectives of the "other"? This track will explore empathy and how design FOR empathy might contribute to social change.

### Open Design for Engagement

The novelty, diversity and complexity of current social challenges and the contexts in which they are situated demands similar diversity of interventions to address them. Multiple and diverse proposals are most readily generated via the involvement of many different people, with many different perspectives and resources, contributing to the process of innovation. These are the tenets of "open innovation" – that by "opening up" the innovation process – the process of coming up with, implementing and exploiting new ideas – we can increase the diversity of, and capacity for, innovation within a (eco) system. To "open up" the innovation process to a diversity of actors – to democratise design innovation – a diversity of people must encounter the design process such that they can engage with and contribute to it. This track aims to explore these early stages within the collaborative innovation journey. Enquiring into the strategies that are applied to support the assembly and formation of publics, from which design coalitions may precipitate. We ask "What are the methods, tools and approaches that favour encounter and foster engagement – and ultimately participation - in 'open' processes of collaborative enquiry, visioning and production?" From living labs to design performances - we are interested in the platforms and practices that "stage" these encounters and engagements. We also welcome the sharing of examples, as well as reflections and theories as to what works in what contexts - how, why and for whom.



## Six Open Design Tracks

### Open Design for Environment

The alarming environmental predicament provokes gigantic challenges for design, and also presents opportunities for new design practices.

To date the sustainability discourse has been focused on solutions in the technological or at least material remit. Yet, it is clear that the magnitude and complexity of challenges also require attention to both resistance to change and resources for change that may sit within the individual and communal emotional remit.

Realising future of sustainability poses challenges that are increasingly more complex, therefore requiring trans-disciplinary work and holistic and systemic design approaches. The designer is tasked to re-consider design practices, and think about the integration of new approaches. How can designers plan for and assess their success in meeting these goals? What frameworks, methods and tools can design adopt and evolve? How can designers engage in and host trans-disciplinary collaborations and participatory design? What skills must designers develop to embrace and harness design towards sustainability?

We are hoping for a diverse range of research endeavours that also engage keenly with previous efforts, future challenges, and show empathy to a wide range of stakeholders. Projects may be local and small, but should discuss how they relate to a bigger world.

### Open Design for Ethnography

The role of ethnography in design has shifted from designers being informed of the “users” in real-life settings by ethnographers to designers now being the ethnographers themselves, mixing the real and here with future intervention. Ethnographic methodology also changed from merely informing design to providing critical elements to the practices, especially the process. This encounter is also mutual, because ethnography gains new forms and possibilities as it is employed designerly. The freedom and experimental propensity in design research do reciprocate to the methodology itself. What does it mean by now for ethnographic design research? What will be the impact for this if design and production are further opened?

### Open Design for Experiment

Practices of experimentation are of particular importance to contemporary design research, be it orientated towards social, cultural, and organisational contexts of meaning, towards manufacturing and the industry, or towards form and artistic practice. As a tentative play with contingent fields of forces, experimentation also presents important speculative and differentiating potentials. In this framework of experimentation, errors tend to pop up in the concrete design process, understood as something uncontrolled that happens to the material in the process of forming it in some intended way. This being the case also in other disciplines, the interest here focuses on the effect of errors when working concretely with form, materiality and space. Sometimes errors have unproductive effects, but it might also lead to productive results. Actualising both potentials and risks, the track will address whether errors can be embraced via experimentation within design practice and design research. This call for abstracts is about practices of experimentation in design processes, and how to deal with errors in this practice. We especially encourage critical explorations of the concepts of error and experimentation, and of the role these elements play in design processes as obstructions as well as openings toward new knowledge and objects.

## Keynote speakers



### Hideshi Hamaguchi

Executive Fellow at Ziba Design,  
a world-renowned design and innovative  
consulting firm, U.S.A.  
CEO at monogoto, a business design firm,  
U.S.A.

Topic: Exploration in Design

We all explore innovative ideas. We all search for innovative solutions.

What is true innovation? What kind of thinking brings it about? How can we help ourselves become more creative without surrendering to chaos when we exploring ideas?

Concept creator, business designer and strategist Hideshi Hamaguchi addressed these questions at his keynote speech at Cumulus Hong Kong 2016.

In his presentation in “Exploration in Design” Hideshi proposed an approach for what he called “breakthrough thinking”, including the top “secrets” he has been sharing throughout his experience and career.



### Steve Leung

Founder and Chairman,  
Steve Leung Designers Limited, Hong Kong

Topic: Experience the Eastern Aesthetics

Steve was born and raised in Hong Kong and has a deep sentiment towards his home city. Having lived in a place where East meets West for more than 50 years, Steve was educated and heavily influenced by both the Chinese and Western cultures and lifestyles, and these experiences do shape his ideology and philosophy. His designs reflect a strong international sense, yet with an Oriental vibe.

In his keynote speech, Steve will use his signature projects to demonstrate how Eastern aesthetics such as harmony, moderation, nature and peace could be reflected in interior design, served a function or improved people's quality of life.

## Keynote speakers



### Tim Yip

Award winning multi-disciplinary artist in costume design, art direction for films and theatrical performances, Hong Kong

Topic: Energy Reform

Thanks to the internet boom, access to the aesthetics of ancient cultures has never been so easy and massive in volume. Extensive exposure to cultures of the past may develop in the designer a creative consciousness that resonates with those cultural sources and complex currents buried in history. This is where the future connects with the past, imagination with tradition, both in conciliatory and confrontational terms. This is also where China now stands, as it propels through transformation.

In his keynote speech, Mr Yip will elaborate on the challenges and opportunities of the Chinese transformation, his theory of 'New Orientalism' that the future is reversed to the past for energy and inspiration for rebirth.



### Clemens Thornquist

Professor in Fashion Design at The Swedish School of Textiles, University of Borås, Sweden

Topic: Embracing Open Design Education and Research

Design in higher education is mainly conducted as an applied academic discipline. The acts and artefacts resulting from such activities in research endeavours are also predominantly understood from an archaeological perspective.

Against this background, Dr Thornquist would like to open up the agenda for design education and research beyond its foremost phenomenological passion. He proposes that design education and research should be driven by the diversity of fundamental challenges that lay ahead of design, such as opening up ontological, methodological and epistemological issues in design. By doing so, it is hoped that more diverse activities and results would be achieved in design education and research, thus bringing about more possibilities for the design of our future.

## Keynote speakers



### Patricia Moore

Industrial designer, gerontologist, author, and President of MooreDesign Associates, U.S.A.

Topic: Expectations By Design

Every person enters life with the promise of potential and what will be in the years they inhabit this planet. Each of us has hopes and dreams that balance with needs and requirements. The delivery on all of these Expectations is a matter of Design. The exemplars in our lives will be the result of understanding and meeting unique desires with earnest and elaborate empathy, Expectations, By Design.



### Wang Min

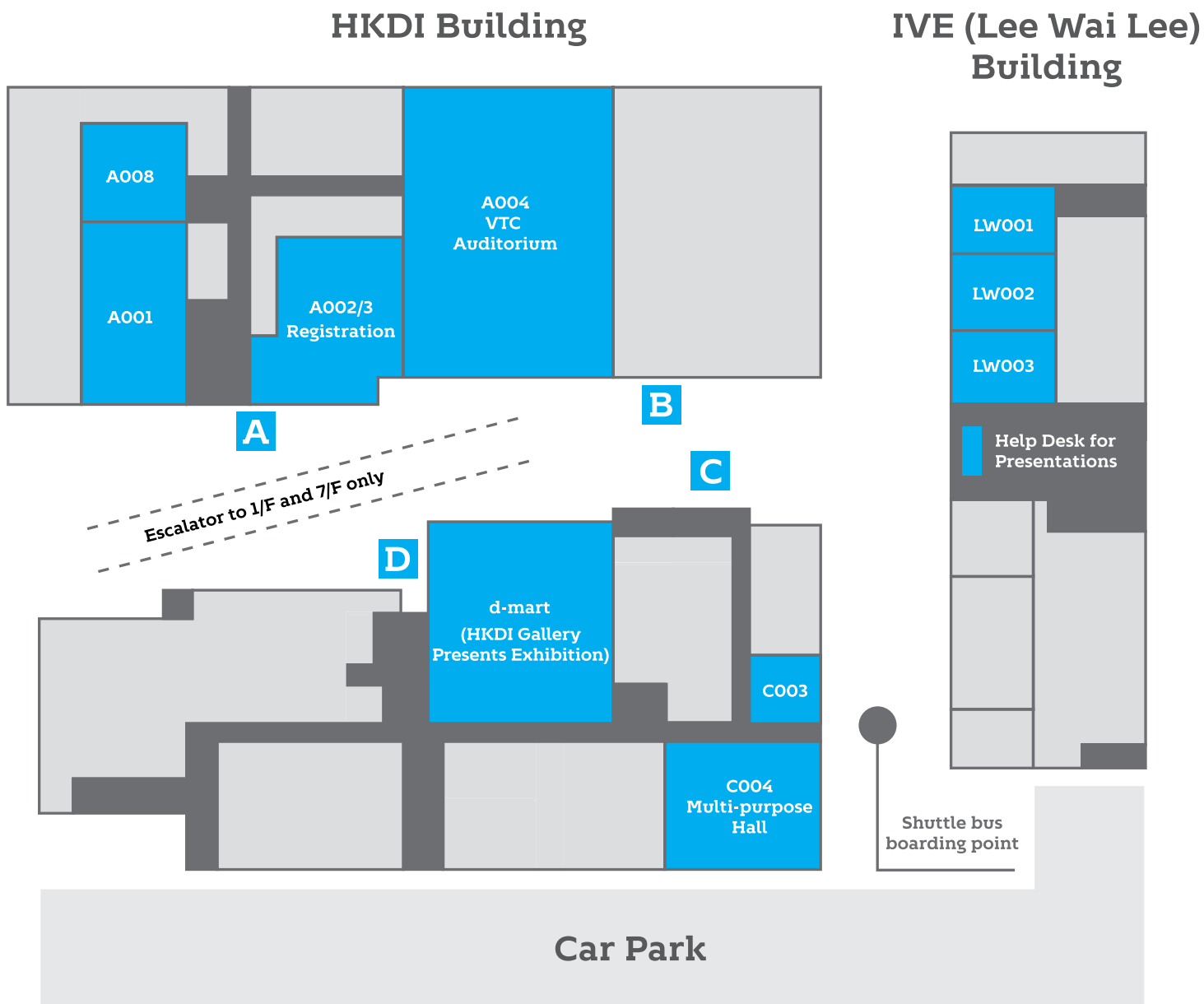
Professor, School of Design, Central Academy of Fine Arts, China

Topic: Empower, Envision, Enhance: Art and Design Education starting from Zero

As art and design education has been well incorporated and talked about as an important part of k-12 and higher education nowadays, this speech will explore and discuss the importance of empowering, envisioning and enhancing human creativity, design thinking, and overall aesthetic appreciation and expression through curriculum design in art and design education.

As we know art education should not just learn how to draw and paint, and design education should not just learn how to make beautiful things, the question is how to set up our curriculum for discovering, cultivating, and enhancing students' creative thinking, imagination, skill of discovering, define, and solving problems in life and workplaces. The speech will emphasise how this educational process should start from K-12 schools and the general public at large.

Zoning Map



## Programme - Day 1

Monday, 21 November 2016

### 09:00 - 13:00

Cumulus Executive Board Meeting Room D1039, Tower D

### 13:00 - 14:00

Registration starts until 6 pm Room A002/3, Tower A  
Cumulus Working Group Room C714c, Tower C  
– Sustainability

### 14:00 - 17:30 (Parallel)

Global DESIS Forum Room A001, Tower A  
HKDI Gallery Presents Exhibition Tours d-mart, Tower D  
Cumulus Working Groups  
– ReVeDa (Research) Room C714b, Tower C  
– Industry & Innovation Room C714d, Tower C  
– Fashion & Textiles Room C623a, Tower C  
– Leadership & Strategy Room C623b, Tower C  
– Cumulus Digital Culture Room LW001, LWL building

### 17:30 - 18:30

Welcome drinks Room A002/3, Tower A  
Open Design Exhibition

### 18:30 - 19:00

Opening Ceremony Room A001, Tower A

### 19:00 - 19:30

Networking Cocktail Room A002/3, Tower A

## Programme - Day 2

Tuesday, 22 November 2016

### 08:30

Registration Opens Room A002/3, Tower A

### 09:00 - 11:00

Opening Remarks VTC Auditorium, A004,  
Open Design Keynote Speeches Tower A  
– Experience the Eastern Aesthetics  
by Steve Leung  
– Exploration in Design  
by Hideshi Hamaguchi

### 11:00 - 11:30

Coffee Break & Open Design Exhibition Room A002/3, Tower A

### 11:30 - 13:00

Open Design Paper Presentations (Full Paper)  
– Education Room A001, Tower A  
– Empathy Room LW003, LWL building  
– Engagement Room LW002, LWL building  
– Environment Room C003, Tower C  
– Ethnography Room C004, Tower C  
– Experiment Room LW001, LWL building

### 13:00 - 14:00

Lunch & Open Design Exhibition Room A002/3, Tower A

### 14:00 - 15:00

Open Design Paper Presentations (Short Paper)  
– Education Room A001, Tower A  
– Empathy Room LW003, LWL building  
– Engagement Room LW002, LWL building  
– Ethnography Room C004, Tower C  
– Experiment Room LW001, LWL building

## Programme - Day 2

Tuesday, 22 November 2016

### 15:00 - 15:30

Coffee Break & Open Design Exhibition Room A002/3, Tower A

### 15:30 - 18:30 (Parallel)

Open Design Academic Workshops

- Engagement 1 Room A001, Tower A
- Engagement 2 Room LW003, LWL building
- Environment 1 Room LW002, LWL building
- Ethnography 1 Room C003, Tower C
- Education 1 Room C004, Tower C
- Education 2 Room LW001, LWL building

Open Design Activities

- Physique as Artefact Workshop Room A804, Tower C
- Designing Dim Sum Workshop CCI, Pokfulam  
Shuttle bus departs  
at 2:30pm

### 15:30 - 18:30 (Parallel)

Open Design Screening Room A008, Tower A

### 17:30 - 18:30

Open Design Activities

- Chinese Drumming Fun Room A217, Tower A

## Programme - Day 2

22 November 2016 (Tuesday) - 11:30-13:00 Full Papers

### Open Design for Education 1 – Interdisciplinary – Full Papers

**Chair:** Professor Rachel Troye, AHO, Norway

**Venue:** Lecture Theatre A001, Tower A

Title	Presenters & Authors
I've Become a Cross-disciplinary Interpreter: Experiences of Open Learning within a Multidisciplinary Collaborative Design Context <a href="#">P419</a>	Leigh-Anne Hepburn
A Study of the Multi-generational Relationship with Making through Mediated Designing in Collaborative, Digital Environments: Implications for Learning and Open Access Fabrication <a href="#">P118</a>	Denise Allan, Samantha Foster, Paul Thompson
MixMedia Narratives Workshop: Multimedia Design Production in a Multidisciplinary Team <a href="#">P294</a>	Luis Frias, Sonia Liliana da Silva Vieira
Wealth from Waste: A Transdisciplinary Approach to Design Education <a href="#">P186</a>	Alexandra Crosby, Dena Fam
The States of Openness: An Educational Perspective on Design Practices <a href="#">P337</a>	Cansu Curgen, Avsar Gurpinar

### Open Design for Empathy 1 – Contextualising Empathy – Full Papers

**Chair:** Professor Lorraine Gamman, CSM, UK

**Venue:** Lecture Theatre LW003, LWL Building

Title	Presenters & Authors
Participatory Design Fieldwork: Dealing with Emotions <a href="#">P150</a>	Esa Pursiainen, Michail Galanakis, Mariana Salgado
Inside the Aotearoa House; Kia whakatomuri te haere ki mua <a href="#">P377</a>	Cristiaan de Groot, Johnson Witehira
A Context-focused Framework of Empathic Design for Service <a href="#">P325</a>	Yumei Dong, Miaosen Gong

## Programme - Day 2

22 November 2016 (Tuesday) - 11:30-13:00 Full Papers

### Open Design for **Engagement 1 - Places - Full Papers**

**Chair:** Professor Adam Thrope, CSM, UK

**Venue:** Lecture Theatre LW002, LWL Building

Title	Presenters & Authors
Living Labs and Co-design for Social Innovation: Mapping the European Model to Asian Societies? <a href="#">P451</a>	<a href="#">Kaho Kagohashi</a> , <a href="#">Celine Mougenot</a> , <a href="#">Yuki Taoka</a>
From Participation to Collaboration - Open Innovation as Place-making <a href="#">P340</a>	<a href="#">Sissel Olander</a>
Design Charrette: Co-creating Design Possibilities for the Future <a href="#">P314</a>	<a href="#">Chamithri Greru</a> , <a href="#">Britta Kalkreuter</a>
The Lure of the City, the Possibilities of the Village: Crowdsourcing Graphic Designers in Indonesia <a href="#">P182</a>	<a href="#">Alexandra Crosby</a> , <a href="#">Ratna Cahaya</a>

### Open Design for **Environment 1 - Places - Full Papers**

**Chair:** Professor Mathilda Tham, Linnaeus University, Sweden

**Venue:** Room C003, Tower C

Title	Presenters & Authors
Learning by Planning: Collaboration across the Environment <a href="#">P111</a>	<a href="#">Annabel Pretty</a> , <a href="#">Sara Hyllén-Cavallius</a>
Schools as Agents of Change <a href="#">P298</a>	<a href="#">Cristina Handal</a> , <a href="#">Alison Mears</a>
Designing Transdisciplinary Dialogue to Innovate towards Sustainability <a href="#">P307</a>	<a href="#">Anne Peirson-Smith</a> , <a href="#">Susan Evans</a>

### Open Design for **Ethnography 1 – Full Papers**

**Chair:** Dr Francis Müller, Zurich University of the Arts, Switzerland

**Venue:** Room C004, Tower C

Title	Presenters & Authors
Dialogues through Design: Ethnographic Explorations of the Creative Process <a href="#">P466</a>	<a href="#">Naomi Braithwaite</a>
What is Open Design for Ethnography? An Open Discussion <a href="#">P306</a>	<a href="#">Vanessa Thomas</a> , <a href="#">Ding Wang</a>
‘Sketch and Talk’ - An Ethnographic Design Method Opening Closed Institutions <a href="#">P388</a>	<a href="#">Franz James</a>

### Open Design for **Experiment 1 – Full Papers**

**Chair:** Professor Maria Hellström Reimer, K3, Malmö University, Sweden

**Venue:** Lecture Theatre LW001, LWL Building

Title	Presenters & Authors
Hybrid Experiment: Art and Science Symbiosis in Designing a Childbirth Experiences <a href="#">P181</a>	<a href="#">Leong Yap</a>
Serendipity and the Urban Transect Walk: Reflections on Design and Cultural Mapping in Arctic Cities <a href="#">P422</a>	<a href="#">Peter Hemmersam</a> , <a href="#">Andrew Morrison</a>
It's Not an Experiment if You Know It Will Work <a href="#">P258</a>	<a href="#">Petter Bergerud</a>
Lunch & Open Design Exhibition (13:00-14:00) <a href="#">A002/3</a>	

## Programme - Day 2

22 November 2016 (Tuesday) - 14:00-15:00 Short Papers

### Open Design for Education 2 – Curriculum – Short Papers

**Chair:** Bente Irminger, Bergen Academy of Art & Design, Norway

**Venue:** Lecture Theatre A001, Tower A

Title	Presenters & Authors
Challenges to Team Ethnography and PAR: A Reflection of the Journey of Fashionethnography <a href="#">P265</a>	Elita Yee-nee Lam, Magnum Lam, Eric Lee, Wing-sun Liu
Synchronic Design & Design Education in Lebanon <a href="#">P271</a>	Vrouyr Joubanian
Curriculum 3.0: E-nabling Democracy in Tertiary Design Education at a University of Technology in South Africa <a href="#">P423</a>	Johannes Cronjé, Monica Di Ruvo
Between Artistic Frictions and Users' Adaptations: Educating Open Design <a href="#">P242</a>	Deanna Herst

### Open Design for Empathy 2 - Inclusion in Empathy – Short Papers

**Chair:** Dr Yanki Lee, HKDI

**Venue:** Lecture Theatre LW003, LWL Building

Title	Presenters & Authors
Big Picture and Small Picture: Learning to Design for the User-in-context <a href="#">P131</a>	Katherine Bissett-Johnson
Design Approach: A Project for Inclusion of Visually Impaired People <a href="#">P436</a>	Giovanna Giugliano, Rosanna Veneziano
Therapeutic Habitat for Alzheimer's Disease Patients <a href="#">P163</a>	Silvia Maria Gramegna, Alessandro Biamonti
Preparing for Loss <a href="#">P360</a>	Marie Sterte

### Open Design for Engagement 2 – Short Papers

**Chair:** Dr Francesca Valsecchi, Tongji University, China

**Venue:** Lecture Theatre LW002, LWL Building

Title	Presenters & Authors
Design for Healthy Eating: Engaging Children to Understand Food Practices <a href="#">P445</a>	Tang Tang, Seahwa Won
Under the Skin: Designing Contemporary Experiences in Fashion Display <a href="#">P347</a>	Bianca Bulley, Kiara Bulley, Madeline Taylor, Sarah Winter
To Type or Drag and Drop: Engaging the Creative Arts, through Visual Programming Languages <a href="#">P233</a>	Paul Bardini
Democratising Design in Scientific Innovation: Application of an Open Value Network to Open Source Hardware Design <a href="#">P335</a>	Maria Frangos, Joshua Pearce, Tiberius Brastaviceanu, Ahmed Akl Mahmoud, Abran Khalid
Written World: Collective Research and Creation of Signs for Public Places <a href="#">P324</a>	Belen Gonzalez Riaza



## Programme - Day 2

22 November 2016 (Tuesday) - 14:00-15:00 Short Papers

### Open Design for [Ethnography 2 - Short Papers](#)

**Chair:** Dr Zhao Chao, Tsinghua University, China

**Venue:** Room C004, Tower C

Title	Presenters & Authors
Chinese International Students at University of the Arts London: Changing Perceptions on Creativity <a href="#">P223</a>	<a href="#">Mo-Ling Chui</a>
Being There: Impersonating the Designer-researcher-participant <a href="#">P368</a>	<a href="#">Åsa Harvard Maare</a>
Transformation of Traditional Rice Cooking Container In West Java Indonesia into Modern Design <a href="#">P122</a>	<a href="#">Jamaludin Jamaludin</a>

### Open Design for [Experiment 2 - Theory - Short Papers](#)

**Chair:** Ann Merete Ohrt, KADK, Denmark

**Venue:** Lecture Theatre LW001, LWL Building

Title	Presenters & Authors
Design Fiction - Experiments in Error <a href="#">P209</a>	<a href="#">E. Scott Denison</a>
How Much Can You See? Improving Students' Observational Skills in Design Foundations <a href="#">P217</a>	<a href="#">Eleanor Thornton,</a> <a href="#">Wujun Wang,</a> <a href="#">Thomas Zummer</a>
Coping with Contingency <a href="#">P318</a>	<a href="#">Clint Heyer</a>

Coffee Break & Open Design Exhibition (15:00–15:30)

[A002/3](#)

## Programme - Day 2

22 November 2016 (Tuesday) - 15:30-18:30

### Open Design Screening

**Chair:** Ka Man Hui

**Venue:** Room A008, Tower A

Title	Presenters & Authors
The Gain Line <a href="#">P396</a> (Ethnography)	<a href="#">Ravi Deepres</a>
Five Go To Mozambique <a href="#">P126</a> (Education)	<a href="#">Iain Macdonald,</a> <a href="#">Myrna MacLeod</a>
Down Memory Lane – Engaging Postgraduate Design Students in Socially Active Design Practices <a href="#">P145</a> (Education)	<a href="#">Claire Craig,</a> <a href="#">Roger Bateman</a>
Shakespeare Mobile Digital Theatre: An Experimental Theatrical Performance <a href="#">P158</a> (Experiment)	<a href="#">Wai mun Selina Chan,</a> <a href="#">Pauline Kottina Hall</a>
Critical Mass - A Creative Catalyst for Participatory Social Design <a href="#">P336</a> (Engagement)	<a href="#">Tara Hanrahan,</a> <a href="#">Sarah Temple</a>
Woolf Works <a href="#">P397</a> (Engagement)	<a href="#">Ravi Deepres</a>

## Programme - Day 2

22 November 2016 (Tuesday) - 15:30-18:30

### Open Design Academic Workshops x 6

Title	Presenters & Authors
Open Design for Development And The Youth <a href="#">P302 (Engagement 1)</a> Room LW001	Satu Miettinen, Valentina Vezzani, Shilumbe Shivuno-Kuria, Fabrizio Pierandrei, Hanna-Riina Vuontisjärvi, Michelle van Wyk
Affordable Housing?! <a href="#">P394 (Engagement 2)</a> Room LW002	Christina Schraml, Bo Mu, Markus Gebhardt
What Role Can Designers Play in the Vision Towards Sustainability and How as Educators Do We Prepare Them for Success? <a href="#">P319 (Environment 1)</a> Room LW003	Susan Evans, Mathilda Tham, Sara Hyltén-Cavallius
Design Ethnography: Opening the Black Box. How to Draw Design Decisions From Ethnographic Observations <a href="#">P313 (Ethnography 1)</a> Room A001	Lysianne Léchoit Hirt, Nicolas Nova
The Education Flaneur – A Global Studio, 2 Cities, 5 Years, 200 Students And Communities Of Practice <a href="#">P349 (Education 1)</a> Room C003	Nur Hidayah Abu Bakar, Michael Chen
Creating an 'Open' and 'Responsive' Design Curriculum <a href="#">P172 (Education 2)</a> Room C004	Job Rutgers, Paul Epp

## Programme - Day 3

23 November 2016 (Wednesday)

<b>08:30</b>	Registration Opens	Room A002/3, Tower A
<b>09:00 - 11:00</b>	Open Design Keynote Speeches - Energy Reform by Tim Yip - Embracing Open Design Education and Research by Clemens Thornquist	VTC Auditorium, A004, Tower A
<b>11:00 - 11:30</b>	Coffee Break & Open Design Exhibition	Room A002/3, Tower A
<b>11:30 - 13:00</b>	Open Design Paper Presentations (Full Paper) - Education 3 - Collaboration - Education 4 - Practice - Empathy - Engagement - Environment - Ethnography	Room A001, Tower A Room LW001, LWL building Room LW003, LWL building Room LW002, LWL building Room C003, Tower C Room C004, Tower C
<b>13:00 - 14:00</b>	Lunch & Open Design Exhibition	Room A002/3, Tower A
<b>14:00 - 15:00</b>	Open Design Paper Presentations (Short Paper) - Education - Empathy - Environment - Experiment	Room A001, Tower A Room LW003, LWL building Room C003, Tower C Room LW001, LWL building
<b>15:00 - 15:30</b>	Coffee Break & Open Design Exhibition	Room A002/3, Tower A

## Programme - Day 3

23 November 2016 (Wednesday)

### 15:00 - 18:00 (Parallel)

Open Design Academic Workshops

- Education 3 Room C003, Tower C
- Education 4 Room C004, Tower C
- Engagement 3 Room LW001, LWL building
- Engagement 4 Room LW002, LWL building
- Environment 2 Room Lw003, LWL building
- Ethnography Room A001, Tower A

Open Design Activities

- Jade Jewellery Workshop Room LW781, LWL building
  - Miao Embroidery Workshop Room D827, Tower D
  - Light and Sound Installation Workshop Room A535, Tower C
  - Designing Dim Sum Workshop CCI, Pokfulam
- Shuttle bus departs at 2:30pm

### 18:00 - 19:30

Free Time /

Shuttle bus departs at 18:00 / 18:15 / 18:30 to Gala Dinner

### 19:30 onwards

Gala dinner at Serenade Garden Restaurant Hong Kong Cultural Centre, Tsim Sha Tsui

## Programme - Day 3

23 November 2016 (Wednesday) - 11:30-13:00 Full Papers

### Open Design for Education 3 – Collaboration – Full Papers

**Chair:** Professor Sally Wade, Sheffield Hallam University, UK

**Venue:** Lecture Theatre A001, Tower A

Title	Presenters & Authors
Evolving New Approaches Of Design Studios To Sensitize Students Towards Socially Responsive Design Outcome P355	Aditi Deshpande
Hit and Miss — Innovation and Collaboration in an Academic Setting P147	Matthias Hillner
The Case For Greening The Fashion Education Classroom Across The Curriculum P309	Susan Evans, Anne Peirson-Smith
Participation and Collaboration in Open Design Education P156	Mark McGuire

### Open Design for Education 4 – Practice – Full Papers

**Chair:** Linda Lien, Bergen Academy of Art & Design, Norway

**Venue:** Lecture Theatre LW001, LWL Building

Title	Presenters & Authors
CoLAB – Collaborative Exhibition as a Form of Open Interior Design P207	Sally Billau, Eve Stirling
The Role of Design Thinking in the Transformation of China's Banking Sector P148	Jianzhong Cao, Xiangyang Xin
Does the Pecha Kucha Presentation Style Increase Fashion Design Students' Ability to Present, Articulate and Communicate Fashion Concepts Effectively P229	Lionel Roudaut
Creativity and ICT to Drive New Entrepreneurship Education P427	Anastasia Konstantelou, Thera Jonker, Kostas Kutsikos, Karen Sikkema, Arinna Vignati, Francesco Zurlo
Design Fiction in Design Education: Urbanism, Para-pedagogy and Futures Literacies P442	Andrew Morrison

## Programme - Day 3

23 November 2016 (Wednesday) - 11:30-13:00 Full Papers

### Open Design for **Empathy 3 – Practicing Empathy – Full Papers**

**Chair:** Roger Bateman, Sheffield Hallam University, UK

**Venue:** Lecture Theatre LW003, LWL Building

Title	Presenters & Authors
Intimacy and Integrity in Designing for Social Innovation <a href="#">P365</a>	Yoko Akama, Joyce Yee
Intimacy In Accessories <a href="#">P457</a>	Trine Møller, Anne Louise Bang
Demented City And Objects – Empathic Tools Between Magic And Everyday Life <a href="#">P469</a>	Yanki Lee, Albert Tsang, Niels Hendriks

### Open Design for **Engagement 3 – Processes – Full Papers**

**Chair:** Virginia Tassinari, LUCA School of Arts, Belgium

**Venue:** Lecture Theatre LW002, LWL Building

Title	Presenters & Authors
Engaging Design Pitches: Storytelling Approaches and Their Impacts <a href="#">P206</a>	David Parkinson
Progressing a University-industry Collaboration (UIC) Model for Open and Sustainable Innovation <a href="#">P295</a>	Roderick Walden
Fostering Engagement through Creative Collaboration <a href="#">P415</a>	Tara French, Gemma Teal, Leigh-Anne Hepburn, Sneha Raman
Design as Process: Artistic Interventions & Civic-minded Improvements as Artefacts <a href="#">P447</a>	Catherine Normoyle

### Open Design for **Environment 3 – Public – Full Papers**

**Chair:** Susan Evans, Tongji University, China

**Venue:** Room C003, Tower C

Title	Presenters & Authors
A Serious Game Prototype Design for Social Advocacy – Using the Air Pollution of the Six Naphtha in Yunlin as an Example <a href="#">P202</a>	Wen-Huei Chou, Yi-Hung Tung
Remark: An Open and Co-Design Process for Sustainability through Making <a href="#">P369</a>	Helen Millicer, Vincent Moug, Rowan Page, Mark Richardson

### Open Design for **Ethnography 3 – Full Papers**

**Chair:** Albert Tsang, HKDI

**Venue:** Room C004, Tower C

Title	Presenters & Authors
Finding Ourselves in Artefacts and Other People <a href="#">P373</a>	Lily Díaz-Kommonen
‘Open Narratives’: Narrative as Collaborative Co-creation through Collective Cultural Memory <a href="#">P311</a>	Lily Diaz-Kommonen, Neha Sayed
Crafting Ethnographic Experiences - Ways of Knowing Facebook – Influences of a Practice-based Approach on Research on Everyday Digital life <a href="#">P146</a>	Eve Stirling
Self-constructed Representations: Design Research in Participatory Situations <a href="#">P210</a>	John Fass
“Build Together!” – Observational Study on Outdoor Activities Engaging Children in Design <a href="#">P283</a>	Bang Jeon Lee

## Programme - Day 3

23 November 2016 (Wednesday) - 14:00-15:00 Short Papers

### Design for Education 5 – For the Future – Short Papers

**Chair:** Dr Troels Degn Johansson, KADK, Denmark

**Venue:** Lecture Theatre A001, Tower A

Title	Presenters & Authors
Design in the Real World <a href="#">P143</a>	Claire Craig, Roger Bateman
Smart Pedagogy for the Future of Design <a href="#">P218</a>	Emmy Rice, Eric Winter
Futures Thinking through Transition <a href="#">P383</a>	Kwame Opoku-Asare, Alettia Chisin, Andrew Morrison, Corbin Raymond
2025: Forecasting Education Futures <a href="#">P167</a>	Nicky Ryan

### Open Design for Empathy 4 – Collaboration and Empathy – Short Papers

**Chair:** Professor Cai Jun, Tsinghua University, China

**Venue:** Lecture Theatre LW003, LWL Building

Title	Presenters & Authors
Sensory Storytelling: A Method for Deep Design Insights <a href="#">P293</a>	Natalia Gomes Franca, Louise St-Pierre
Designing for Empathy within Participatory Design Approaches <a href="#">P418</a>	Tara French, Gemma Teal
Participatory Social Design with Empathy for the Poverty Alleviation in Rural Communities <a href="#">P467</a>	Baosheng Wang
Co-designing Newcomers Archives: Acknowledging Ethical Challenges When Establishing Collaboration with Vulnerable User Groups <a href="#">P161</a>	Jody Barton, Elisabet M. Nilsson

### Open Design for Environment 4 – Green Designs – Short Papers

**Chair:** Dr Henry Mainsah, AHO, Norway

**Venue:** Room C003, Tower C

Title	Presenters & Authors
Boundary Objects: Transitioning Beyond Borders <a href="#">P381</a>	Corbin Raymond, Henry Mainsah, Alettia Chisin
Designerly Ways Of Exploring Climate Change: Participatory Design Methods And The Storied Artefact <a href="#">P384</a>	Alettia Vorster Chisin, Ralitsa Debra Diana
Is Fashion in Need of a Paradigm shift? <a href="#">P413</a>	Malene Harsaae, Mette Nørgaard Terkildsen
Designed Resilience For A Changing World <a href="#">P286</a>	Tonya Sweet, Catherine Caudwell

### Open Design for Experiment 3 – Practice – Short Papers

**Chair:** Professor Andrew Morrison, AHO, Norway

**Venue:** Lecture Theatre LW001, LWL Building

Title	Presenters & Authors
A Study of Konglish: Open for Subjectivity as a Comprehensive Framework to Approach Error and Mistake in the Practice of Design Experimentation <a href="#">P332</a>	So-dam Lee
Making the Creation of Fashion Visible <a href="#">P359</a>	Donna Sgro
Game Design for Psychology Experimentation: Early Lessons from Swedish Olfactory Research <a href="#">P390</a>	Simon Niedenthal

## Programme - Day 3

23 November 2016 (Wednesday) - 15:30-18:00

### Open Design Installations x 2

Title	Presenters & Authors
In a Place Like This P170 (Experiment) A008	Duncan Higgins Johan Sandborg
Between Languages d-Mart, M Floor, Tower D	Charles Michalsen

### Open Design Academic Workshops x 6

Title	Presenters & Authors
Design for E-very-one: Exploring the Possibilities of Open-ended Innovation Focused on Individual Diversity P411(Engagement 3) Room LW001	Viktor Malakuczi
Design in Times of Transition P414 (Engagement 4) Room LW002	Anna Bernagozzi
The Future of Urban Food P321 (Environment 2) Room LW003	Susan Evans, Davide Fassi, Anna Meroni
Rituals of Care P313 (Experiment 1) Room A001	Ola Ståhl, Sara Hyltén-Cavallius
Mapping Graphic Design Practice, Research and Pedagogy P393 (Education 3) Room C003	James Corazzo
Inspiring Open Designers of the Future P406 (Education 4) Room C004	Tara French, Gemma Teal, Jeroen Blom, Angela Tulloch, Mafalda Moreira

## Programme - Day 4

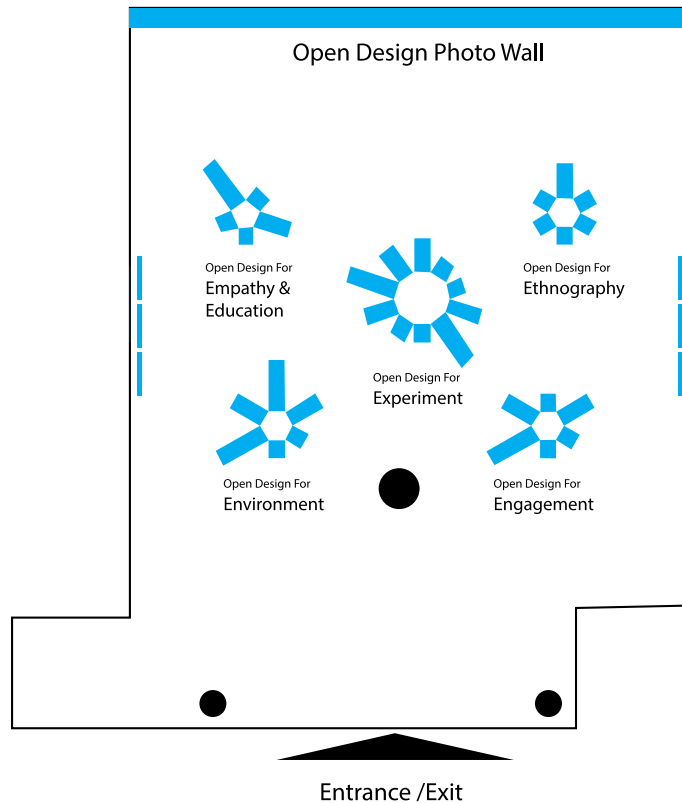
24 November 2016 (Thursday)

09:00 - 11:00	
Open Design Keynote Speeches – Expectations By Design by Patricia Moore – Empower, Envision, Enhance: Art and Design Education starting from Zero by Wang Min	VTC Auditorium, A004, Tower A
11:00 - 11:30	
Coffee Break & Open Design Exhibition	Room A002/3, Tower A
11:30 - 13:00	
Closing Dialogue - From Equality to Equity by Patricia Moore Closing Remarks	Room A001, Tower A
13:00 - 14:00	
Lunch & Open Design Exhibition	Room A002/3, Tower A
14:00 - 15:00	
HKDI Gallery Presents Exhibition tour Art, Culture and Design Tour of Hong Kong – Hong Kong Island Cultural Mix Tour – Kowloon Cultural Mix Tour	d-mart, Tower D Gather Point outside C004
15:00 onwards	
Free Time	

# Open Design Exhibition

21 - 27 November, 2016

Function Room A002/3



## Open Design for Education

Sockhorn P174

## Open Design for Empathy

Neck Support for Motor Neurone Disease P138

Embodiment of Empathy P221

Safe Niños P269

## Open Design for Engagment

Live Scientific Images P116

Discover Hong Kong P264

12-12 & IndiFootwear P345

Designed for Delight P357

SoLoMo P463

## Open Design for Environment

Deep Metaphors P177

Engaged design. Descending from Bird's-Eye to Man's-Eye view P205

Zero Wastage Footwear P348

Open Bio-hacking Fashion towards Sustainable Production Lines P352

Five Classical Elements P470

## Open Design for Ethnography

Design for Cultural Preservation P225

Reviving Hong Kong Old Public Housing Estates P280

Memories and Dreams P305

The Revolving Door between Design and Ethnography P330

Design Ethnography and Inheritance: The Revitalisation of the Hakka Tradition in Fashion Collections P364

## Open Design for Experiment

Wheelchair with Structural Design in Tensegrity Bamboo P115

Experiment on the making (T32 work in progress) P140

In A Place Like This P170

Design Receipes P183

Rethinking Postcards P220

Temptouch P234

Auditory Breakfast P263

Speaking of Design Experiences P303

Reprojecting Autoprogettazione? Experimenting with the Experiment P339

## Open Screening Posters

Five Go to Mozambique P126

Down Memory Lane P145

Woolf Works P397

The Gain Line P396

Shakespeare Mobile Digital Theatre P158

Critical Mass P336

## A001 Foyer

36" 24" 36" P144

o2: U E | Unexpected Encounters P268

## d-Mart

Open Design Installation

Between Languages



## Open Design for Education

### A Study of the Multi-generational Relationship with Making through Mediated Designing in Collaborative, Digital Environments: Implications for Learning and Open-access Fabrication (P118)

Samantha Forster, Reader, Edinburgh Napier University, United Kingdom

Paul Thompson, Lecturer, Edinburgh Napier University, United Kingdom

In this paper, the researchers investigate the various ways in which school-aged, 'Net Generation' children learn in non-linear, mediated, collaborative 'making' environments enabled by online communities of citizen practitioners and maker groups. In addition, the study investigates these learning methods in relation to children's future attitudes to formal education and their engagement with open access digital fabrication facilities.

The research draws on primary data obtained from the observation and analysis of children who attend three-dimensional (3D) printing clubs hosted by one of the authors. These clubs target at children who have just begun formal school education, from the age of six. The clubs are informal and relaxed, allowing a great deal of creative freedom. Thus, the children can be observed in as natural a state as possible. They have access to 3D printers, computer-aided design software and 3D printing pens to explore various technological and design processes. They can choose to work together or alone, and participate in group discussion in an unforced way. The clubs are regular, weekly events, ensuring that the excitement elicited by access to these novel tools does not alter the children's natural behaviour and obscure the implications of such behaviour for learning and open-access fabrication.

The research concludes with an analysis of the educational benefits of shared design practices and digital fabrication and their unique potential as tools for progressive education in the learning spaces of the future.

#### KEYWORDS

digital fabrication communities learning and engagement

#### CATEGORY

Full Paper



## Five Go to Mozambique: A Film of How Design Students Develop Intercultural Competencies for Professional Practice and Global Citizenship (P126)

Iain Macdonald, Associate Professor, Edinburgh Napier University, United Kingdom  
Myrna MacLeod, Senior Lecturer, Edinburgh Napier University, United Kingdom

Graphic design training in higher education (HE) may be considered vocational and focuses on teaching a highly technical and particularly digital skills-based curriculum. In a highly competitive HE environment where many courses offer an industry focus and attractive employability prospects, graphic design pedagogy must look for something different to deliver to students that will make them stand out from the crowd. The aim of this project is to develop students' intercultural competencies using critical approaches to global consumerism through a cultural learning experience in Africa, where the inequalities of global capitalism are most acute. Using student interviews, this film shows the student perspective and analyses how graphic design students participated in and negotiated the implementation of live local projects.

A class of third-year BDes graphic design students from Edinburgh Napier University were invited to work on two briefs for NGO projects in Mozambique. The projects were intended to socially, economically and culturally invigorate the community around Mossuril, a poor coastal town. In June 2014, five students were chosen by portfolio selection to work alongside local students in rural Mozambique. In the process, they established shared working practices to create branding and publicity materials.

In a post-colonial context, cultural naiveties can be challenged and an appreciation of the historical and economic effect of global consumerism engendered. Global citizenship can be fostered through live projects offering highly motivated learning and the sharing of ideas and practices with people from different cultures.

### KEYWORDS

intercultural competencies, graphic design, student mobility

### CATEGORY

Movie/video

## Design in the Real World (P143)

Roger Bateman, Principal Lecturer, Sheffield Hallam University, United Kingdom  
Claire Craig, Reader, Sheffield Hallam University, United Kingdom

Social design highlights design-based practices towards collective and social ends rather than predominately commercial or consumer-oriented objectives. In this paper, we share experiences of an interdisciplinary approach to social design and describe the key learning that arose from the implementation of a pioneering approach to the teaching of social design practice in the MA/MFA Design Programme at Sheffield Hallam University.

Taking the conference theme of design process, planning and strategy for sustainable best practices holistically, along with the sub-theme of design curriculum and sustainability, this paper highlights the value of situating learning beyond the classroom in real-world contexts.

The authors believe that social design has a place in design education because threats, including precarious economies, social and financial inequities, global warming, war and mass migration are real-world issues. Opening up the right forums for discussion and experimentation, including the right mix of skills and knowledge to enrich discussion requires careful consideration and facilitation. Our initial work focused on placing social design within a module and implementing cross-disciplinary and interdisciplinary working and learning. Our current project widens the learning experience, taking place over the period of a year with dual entry and multiple points. This work includes the local city council, city residents and our DESIS Lab.

The researchers are interested in finding out whether, through the development of values based enquiry, staff and students will approach the challenge of social design naturally rather than seeing social design as an option or 'add-on' competency in an already overflowing design curriculum.

### KEYWORDS

holism, social design, student engagement

### CATEGORY

Short Paper

## Down Memory Lane - Engaging Postgraduate Design Students in Socially Active Design Practices (P145)

Roger Bateman, Principal Lecturer, Sheffield Hallam University, United Kingdom  
Claire Craig, Reader, Sheffield Hallam University, United Kingdom

Research-informed teaching is very much at the core of the MA Design Programme at Sheffield Hallam University. Students are in the first instance able to learn about research findings specific to their subject area (research-led teaching). Then they learn about research methodologies and processes (research orientated). Finally students are offered the opportunity to engage in real-world research projects. This is illustrated in a first semester module themed on socially responsible design. The overall SRD project strategy focuses on enabling students to participate in socially responsible design practice with a particular emphasis on developing collaborative interdisciplinary student-generated responses to working in partnership with people with dementia and the UK open knowledge sharing platform, Fixpert.com.

The inter disciplinary make-up of the teaching team, drawing on expertise from health and research (engaging with staff from the interdisciplinary research cluster Lab4Living) in addition to design means those students can be signposted to key resources. Initial sessions offer students the opportunity to hear from specialists in dementia care and on-going contacts are made with a large third-sector organisation, the Alzheimer's Society. In this way, students are supported in understanding the ways of accessing communities and how to develop projects, avoiding Katie Swenson's (2012) concern regarding some curricula, which fail to 'teach students about how projects actually happen'. It also means that support can be offered in relation to navigating and coping with the emotional complexities that working with people living with long-term conditions such as dementia can evoke.

### KEYWORDS

dementia, postgraduate design, health

### CATEGORY

Movie/video

## Hit and Miss – Innovation and Collaboration in an Academic Setting (P147)

Matthias Hillner, LASALLE College of the Arts, Singapore

'The [collaboration] process itself can be unstable and troublesome, and disputes can arise over the ownership of its outputs' (Dodgson et al., 2015, p.462). How do design courses approach multidisciplinary collaborations effectively?

This paper extracts a few key insights from Mark Dodgson's article on 'Collaboration and Innovation Management' (*The Oxford Handbook of Innovation*, 2015), which focuses mainly on collaboration in a commercial setting. This paper identifies empirically the similarities and differences between academic and industrial collaboration through juxtaposing results-driven and process-oriented approaches. This is followed by a comparative study of two multidisciplinary student collaborations in design management. The first example is a so-called 'entrepreneurs challenge' which was staged for several consecutive years at a university in the UK. This will be compared with the teaching of 'design business and innovation', a curriculum component that has been recently introduced at LASALLE College of the Arts. By comparing two undergraduate teaching and learning initiatives the paper will assess the effectiveness of multidisciplinary collaboration in relation to the teaching of design-business-related skills. The comparative analysis will concentrate on the following key questions:

1. Is it easier for smaller institutions, faculties, and teams to collaborate than large entities?
2. How do academic design institutions measure success? How do they manage and counteract failure?
3. How can the competitive spirit be married to collaborative interests so that both ambitions, the competitive and the collaborative, do not cancel each other out?

### KEYWORDS

interdisciplinary collaboration, design management, innovation

### CATEGORY

Full Paper

## The Role of Design Thinking in the Transformation of China's Banking Sector (P148)

Jianzhong Cao, PhD candidate, Jiangnan University, China

Xiangyang Xin, Professor, Jiangnan University, China

China's banking sector continues to undergo a significant transformation that began with the global financial crisis of 2008. Facing a range of ever-growing challenges in its transformation, Chinese banks should change their traditional ways and opinions on innovation, and take more creative, proactive and radical approaches to develop more useful, usable and desirable banking services and more distinct, valuable products for customers. To do this, it is proposed to apply design thinking in the transformation of China's banking sector and to expand its role in banks. Specifically, more designers should cooperate with or be employed by banks to achieve ground-breaking innovations. Thus, design schools in China should educate design students with new knowledge, skills sets and understanding of design in financial services.

After the introduction, the paper first presents a brief literature review on design thinking in the banking sector. Secondly, it analyses the main transformation challenges for Chinese banks. Thirdly, it explains the principles and skills of how to use design thinking for Chinese banks through case studies. Finally, it suggests directions for future academic research on design thinking in the Chinese banking sector. This study aims at inspiring bankers, bank managers, policy-makers, financial academics and relevant participants to explore banking with design methods and theories. It also aims at extending the scope of design education in China and encourage more design professionals to focus their attention on the banking sector.

### KEYWORDS

design thinking, China's banking sector, transformation

### CATEGORY

Full Paper

## Participation and Collaboration in Open Design Education (P156)

Mark McGuire, Senior Lecturer, University of Otago, New Zealand

Over the last 15 years, the roles of the designer, client and end 'user' have changed. Participatory design involves the people who will be affected by design outcomes in the design process from start to finish. Co-design, or co-creation, describes a process by which collective creativity is leveraged to arrive at design solutions. Recently, a more ecological, networked approach has begun to emerge. Designers no longer see themselves as at the top or centre of the creative process, but at the edge of complex, adaptive systems in which diverse participants interact with constantly changing ideas, events and forces (Slavin, 2016).

In this paper, I explore the changes in design education in response to this on-going shift in design practice. I begin by reviewing open, online design courses that leverage networks to enable global collaboration (iversity's 'Design 101', +Acumen's 'Design Kit' and IDEO.org's 'Designing a Path out of Poverty'). I then discuss the #LibraryFutures project, in which I used social media to crowd-source open resources for a Design for Innovation course. Connecting Classes (#CClasses) extends this practice by coordinating collaboration between teachers, students and the broader public (Worth, 2016). My focus is on strategic approaches that are transferable to any area of design. I acknowledge critiques of predominantly Western, technologydriven design and education activities based on established power relationships (decolonisingdesign.com, Maori cultural practices). I conclude by suggesting ways in which design education could be further opened up and connected to suit a world that is more integrated, co-dependent and respectful of cultural differences.

### KEYWORDS

open design, open education, MOOCs

### CATEGORY

Full Paper

## 2025: Forecasting Futures (P167)

Nicky Ryan, Acting Dean of Design, London College of Communication, United Kingdom

Design is changing radically. Re-shaped by disruptive economic, technological, market and supply factors, design has become more open, collaborative, agile and socially engaged. Against the backdrop of a government policy that undervalues art and design education, increasing accountability measures and a design industry that lacks a unified voice to articulate its needs, universities face significant challenges in their ambition to develop and inspire the design talent of the future. Using the example of a particular unit of study called 'Global Design Futures' and an associated co-design project called '2025: Forecasting Futures' ([www.forecastingfutures.co.uk](http://www.forecastingfutures.co.uk)), this paper considers the significance of engaging students in techniques to envision the future not only as a study, but also as a powerful tool of critical transformation in its own right.

The live and co-design project that formed part of 2025: Forecasting Futures involved the organisation of an exhibition, a conference and a series of events. The aim was to empower students as coresponsible learners with co-learning being fluid, adaptive and developed through practice, sharing and reflection. It is argued that by using future forecasting tools and strategies to examine the major forces disrupting our world and the landscape of design, students are encouraged to think about design as a core capability and strategic asset in managing an organisation's business aims and objectives. This paper explores how the 2025: Forecasting Futures project helped raise students' awareness of working strategically with design as an agent of sustainable and ethically responsible change and social innovation.

### KEYWORDS

futures, forecasting, co-design

### CATEGORY

Short Paper

## Creating an 'Open' and 'Responsive' Design Curriculum (P172)

Job Rutgers, Professor, OCAD University, Canada  
Paul Epp, Professor, OCAD University, Canada

The Open Design for Education track reflects a volatile societal context in which designers apply thinking skills to ever more complex areas, producing strategic outcomes far beyond the product-design competencies in which they were trained. As design educators, how do we create an 'open' curriculum that is responsive to change and able to adapt to these new applications of design?

The goal of creating an open curriculum is a 'wicked' problem. It is a difficult task because curricula are contested and emergent, with complex interdependencies influenced both radically and subtly by numerous actors. There are, however, some insights to be gained from design thinking and current practices in curriculum development. In this workshop, we aim to overcome some of the constraints of the academic institutional fabric that impede rapid adaptation to a changing society and the corresponding evolution of the designer, using an integrated, outcome-focused curriculum co-design approach.

We will guide the participants through a series of visual-thinking experiences that will help faculty members to define a dynamic, open curriculum in a playful, energising way. We will provide the participants with a design thinking toolkit to enable them to collaboratively visualise a dynamic learning outcomes-driven curriculum map.

We expect the participants to become familiar with open curriculum design thinking tools by the end of the workshop. In the long term, we hope to establish a community of learners capable of identifying, negotiating and integrating rapidly emerging design futures in an organic, responsive curriculum.

### KEYWORDS

curriculum design, design competencies, co-creation

### CATEGORY

Workshop

## 'Sockhorn' - An Open Design Project (P174)

Beam P.Y. Leung, Senior Lecturer, Hong Kong Design Institute, Hong Kong SAR  
Kelvin M.C. Kam, Lecturer, Hong Kong Design Institute, Hong Kong SAR

'Sockhorn' is a simple device that helps the elderly put on their socks independently. It is a simple solution and has gone through a detailed open design process with the participation of older users.

Open Design is a method of collaborating with different participants during the design process. Since 2013, the Design for Social Innovation and Sustainability (DESIS) Lab of Hong Kong Design Institute (HKDI) has organised different workshops and forums on open design and has encouraged students to work with this new methodology. The Sockhorn is a result of these activities. It was designed by Cyril Lee, a Higher Diploma student in Product Design of the Department of Product and Interior Design at HKDI. Cyril created the concept with a group of design students and older individuals.

With the belief that 'design capability is a human capability', these design workshops had users and designers collaboratively work together to create better products.

During these design workshops, Cyril discussed with various older teammates to identify daily problems they face, many of which, through trivial, a young design student is not aware of. Problem after problem was explored and ideas were generated. The older teammates were involved in every detail, from research and development to prototype testing. As the workshop mentor, Dr Patricia Moore stated that 'Current designers design "for" people and not "with" people'. Inclusivity should not only describe design, but should also have a major role in the design process. The design 'with' people approach led to the birth of the 'sockhorn'.

### KEYWORDS

open design, ageing, sustainability

### CATEGORY

Artefact - products or artworks

## Wealth from Waste: A Transdisciplinary Approach to Design Education (P186)

Alexandra Crosby, Lecturer, University of Technology Sydney, Australia  
Dena Fam, Senior Lecturer, University of Technology Sydney, Australia

Design academics, students and industry experts collaboratively participated in designing an on-site system of organic waste management (food waste) at the University of Technology Sydney (UTS). With feedback from stakeholders in government, industry and facilities management, the principles of systems thinking and methods of service design were applied to a live transdisciplinary project with students across disciplines of visual communication, industrial design, fashion and textiles. The proposed model of design education required students to engage in three phases of transdisciplinary practice: 1. Problem formation, 2. Co-creation of knowledge and 3. Implementation and evaluation of the end product in an intensive two-week teaching period with students primed to understand the approach as problem-focused. This consisted of an evolving, emergent methodology, which was highly collaborative in nature. By presenting the complexities and evaluation of this model, we argue for the development of educational structures, methods and practices to support students in:

- Identifying their values and perceptions of the situation by positioning themselves within the bounded system of organics waste management at UTS through reflective self-auditing tasks;
- Reflecting on the intertwined nature of social and technical systems through stakeholder mapping and collaboratively defined systems of service provision; and
- Articulating how knowledge across disciplinary perspectives might be integrated into team processes through group charters and final design outputs.

The model presented here is a first iteration of an ideal educational scenario, charting the overall developmental phases of the programme to illuminate challenges and opportunities for formulating and negotiating design problems in transdisciplinary teams co-producing design interventions.

### KEYWORDS

transdisciplinary, sustainability, organic waste

### CATEGORY

Full Paper

## CoLAB - Collaborative Exhibition as a Form of Open Interior Design (P207)

Sally Billau, Senior Lecturer, Sheffield Hallam University, United Kingdom  
Eve Stirling, Senior Lecturer, Sheffield Hallam University, United Kingdom

This paper provides an analysis of three iterations of a collaborative exhibition module at a post-1992 UK university. The module was designed to give students the opportunity to work and engage with their discipline beyond the studio environment. Using data from a digital questionnaire, interviews and module evaluation, the paper investigates students' experiences of the module as a form of independent learning, the challenges they encountered and the relevance of the module to the wider student-employability agenda. We present findings in three areas: 1. ways of knowing through making 2. transformational learning and 3. the importance of reflection.

### KEYWORDS

beyond the studio, collaboration, peer learning

### CATEGORY

Full Paper

## Smart Pedagogy for the Future of Design (P218)

Eric Winter, Associate Professor, Avila University, United States  
Emmy Rice, Assistant Professor, Kansas City Art Institute, United States

Innovation leads to unexpected solutions, and students' future relevance lies in their ability to think abstractly and embrace emerging technologies. Based on this premise, the Internet of Things Project was conceived as a cross-university inquiry of speculative thinking as a pedagogical tool. Faculty from two universities tasked their students with the design of a new 'smart' technology to solve an everyday problem. The speculative nature of the project broke from typical artefact-based student learning, focusing instead on the origination of a purely theoretical concept. Removing the demands of a fully realised final deliverable freed the students to invest significant time in abstract ideation. Any discomfort with the challenge of limited restrictions and atypical expectations was tempered by a series of activities to mitigate fear and champion risk.

This paper examines the benefits of speculative thinking in the design classroom. It outlines practical strategies for implementing an experimental 'smart' project requiring students to think in the abstract. The faculty will share their observations of the students, continuing to utilise speculative problem-solving beyond the singular Internet of Things Project. The writers argue that the curriculum must foster a culture of the designer as influencer and innovator, challenging students to push beyond the limits of their technical knowledge to embrace an open and speculative outlook towards user experience.

### KEYWORDS

speculative thinking, interactive, pedagogy

### CATEGORY

Short Paper



## Does the Pecha Kucha Presentation Style Increase Fashion-design Students' ability to Present, Articulate and Communicate Fashion Concepts Effectively? (P229)

Lionel Roudaut, Course Leader, LASALLE College of the Arts, Singapore

Every year, all students from the BA (Hons) Fashion Design and Textiles degree programme at LASALLE College of the Arts are invited to develop, articulate and formulate a fashion concept that will form the basis of their graduation collection. A graduation collection represents the culmination of a student's studies and reflects their integration of theoretical knowledge with practical and technical skills.

Presentation skills and oral delivery practice are often neglected in the degree programme, as they are not the main objective of the curriculum (Shaw, 1999). Grubaugh (1990) stated that many students find it difficult to prepare and deliver oral classroom presentations. This has been reflected in the inability of LASALLE's fashion design students to confidently present and articulate creative outcomes (LASALLE Division of Students Administration, 2013).

Our students do not lack creativity, but experience difficulties in expressing the rationale for their creations systematically and articulately. To liberate their creative potential, it is essential for students to be able to construct arguments rather than simply to present previously composed written arguments.

The purpose of this study was to examine the use of the Pecha Kucha presentation style in a fashion design studio environment to improve students' ability to present, articulate and communicate fashion concepts. The participating students were introduced to the Pecha Kucha presentation format, which lasts for 6 minutes and 40 seconds and comprises 20 slides. The students presented their collection concepts four times over four weeks. Their final-semester marks were compared with those of the previous cohort, and the results showed a significant improvement following the implementation of the Pecha Kucha presentation format.

### KEYWORDS

Pecha Kucha, fashion concept, fashion design

### CATEGORY

Full Paper

## Between Artistic Frictions and Users' Adaptations: Educating Open Design (P242)

Deanna Herst, Senior Lecturer, University of Applied Sciences Rotterdam, Netherlands

This paper investigates the interdisciplinary Open Design programme (in place since 2011) at Willem de Kooning Academy, University of Applied Sciences, Rotterdam, Netherlands. Open design is embedded in both the undergraduate version of the programme (social-practice profile) and the Master's version of the programme (new practices). Open design is commonly defined as the design of open-ended objects, open processes or systems, involving the dissemination of online design knowledge and the creation of personal relevance (Abel, van, and Klaassen 2011, Avital 2011). Two main traditions of open design exist: engineering (open-source technology) and participatory design (social relevance). Additionally, we have recently witnessed the emergence of 'author-driven' approaches, exploring open-design aesthetics and 'open authorship'. These question the author's exclusivity, creating a paradigm shift in traditional notions of authorship. This paradigm – the conflict between artistic expression and user adaptation – provides a relevant context for art and design education. How can open design leave room for both the designer's and the participant's identity?

The Open Design programme elaborates on the underexposed aesthetic tradition of open design, investigating 'open authorship' in spaces in which designers and participants meet. It explores the idea of 'open form', an (art-)historical view of openness from the author's perspective (Wölfflin 1929, Eco 1962, Hansen 1959, Raaijmakers 1988), through courses such as 'Cadavre Exquis', 'Design Autopsy', 'Collaborative Collection', 'Confrontation Piece' and 'Non-Expert Experts'.

Additionally, this paper maps the interpretations of both students and the people involved in open design (from author-driven to user-driven scenarios) and provide suggestions for future approaches to open design, such as the connection between open form and cultural probes and open-design objects as a tool for unexpected user research.

### KEYWORDS

open design, open design education, open-ended design

### CATEGORY

Short Paper

## Challenges to Team Ethnography and PAR: A Reflection of the Journey of Fashionthnography (P265)

Eric Lee, Assistant Professor, University of British Columbia, Canada

Wing-sun Liu, Lecturer, The Hong Kong Polytechnic University, Hong Kong SAR

Elita Yee-nee Lam, Head of Department of Fashion and Image Design, Hong Kong Design Institute, Hong Kong SAR  
Magnum Lam, Teaching Fellow, Hong Kong Design Institute, Hong Kong SAR

This article provides a summary of reflections on the journey of 'fashionthnography', an experiential-learning programme in fashion and design education. The development of fashionthnography is a response to the increasing need to extend traditional coursebased education to a more innovative, engaging and interactive approach of learning. The research team believes that fashionthnography offers a new platform for vocational and professional training and research collaboration. In this paper, we present four sets of challenges: 1. the implementation of new research designs and methodological approaches in communitybased research programmes; 2. the execution of multi disciplinary and multi-sectorial research and experiential-learning programmes; 3. the development of international research networks that enable collaboration between researchers, educators and practitioners from universities, research institutions and public and private organisations in various countries and education systems; and 4. the administration of diverse knowledge translation and mobilisation activities. We also show that the sustainability of any community-based experiential learning research programme requires collective support and long-term commitment: intellectual, administrative and financial. The ultimate contribution of this reflexive paper is to unpack the challenges and opportunities experienced by the founding members of fashionthnography during the implementation of community-based experiential learning and academic-practitioner collaboration.

### KEYWORDS

experiential Learning, knowledge translation, team ethnography and participatory action research

### CATEGORY

Short Paper

## Synchronic Design and Design Education in Lebanon (P271)

Vrouyr Joubanian, Assistant Professor, Graduate Programme Coordinator, Académie Libanaise des, Lebanon

A garbage crisis in Lebanon recently offered a visual and olfactory correlation for the country's underlying social and political problems; that is, it stinks. The failure of Lebanon's public services, coupled with an influx of 2 million refugees, has made the country a prime candidate for human-centred design efforts, and thus a popular site for humanitarian work. With millions of dollars in international funding at stake, social projects in Lebanon have the potential to be both profitable and effectual. Bruce Nussbaum's question 'Is humanitarian design the new imperialism?' has initiated an important conversation about the power hierarchies implicit in design processes. His critique invites designers to imagine new methodologies for social design, especially for initiatives in contexts unfamiliar to design teams.

In this paper, which draws on research conducted by the author on design education in Lebanon, synchronic design is proposed as a means of resisting the imperialist trend in humanitarian design identified by scholars. Synchronic design involves the remote mirroring of a design process laid out by a local designer on site. Through synchronic design, a facilitator supports a designer by conducting the same research in a different context. This fosters a co-design culture in which the designer and facilitator compare data, exchange ideas and troubleshoot tools and methodologies. Synchronic design safeguards against the top-down movement of imperialism by collapsing the distinction between the 'expert' facilitator and the inexperienced designer; by creating a sense of ownership and project sustainability; and by challenging the idea that design is a universal phenomenon.

### KEYWORDS

design education, design imperialism, co-creation

### CATEGORY

Short Paper



## MixMedia Narratives Workshop: Multimedia Design Production in a Multidisciplinary Team (P294)

Sonia Liliana da Silva Vieira, Post-Doctoral Research Fellow, INEGI UPorto, Portugal  
Luis Frias, Lecturer, University of Beira Interior, Portugal

There is increasing interest in incorporating multidisciplinary collaboration into higher education as part of the design curricula of, particularly those based on digital media and new technologies for multimedia projects or interactive applications. This paper provides an account of a workshop entitled MixMedia Narratives, which was designed to simulate the reality of media production and the recent paradigm shift towards digitally integrated newsrooms. Its objective was to enable evaluation of the challenges encountered in obtaining the multidisciplinary and transdisciplinary background knowledge required for the production of digital media content.

Engaging students from design, journalism and cinema in real-life team-based editorial development, with professional feedback provided by the collaborating editorial team of Expresso.pt, the workshop provided an opportunity to analyse the challenges of multidisciplinary collaboration in teams of future professionals and ways of producing digital mixed media content for actual publication. The workshop was held in several sessions, from initial briefing and concept development to the final presentation of functional prototypes. A member of the editorial team of Expresso.pt supervised the sessions with the support of teachers from the several courses involved. The data gathered from observation notes, photographs and video footage during the various sessions of the workshop were combined with the results of a survey, feedback from the teachers and observations made by an external professional from the editorial team of Expresso.pt. The findings of this mixed analysis allowed the team to draw conclusions regarding the efficacy of these working environments in developing a multidisciplinary culture and design practice in the area of digital mixed media production.

### KEYWORDS

mixmedia narrative, multidisciplinary design, prototyping

### CATEGORY

Full Paper

## The Case for Greening the Fashion Education Classroom across the Curriculum (P309)

Anne Peirson-Smith, Assistant Professor, City University, Hong Kong SAR  
Susan Evans, Visiting Professor, Tongji University, China

This paper contributes to the current debate on whether sustainability should be taught as a stand-alone course or be integrated across the design curriculum as a means of enhancing the overall learning experience. Fashion and design teaching is increasingly moving towards a multidisciplinary approach on the understanding that these sustainable practices affect local and global economies and the environment. Yet, the redesign of the fashion curriculum has seen mixed success and questionable effects on imparting relevant knowledge by randomly inserting sustainability topics into the curriculum. Using a case study approach, this paper reports on the holistic integration of sustainability into a fashion course focused on marketing fashion concepts using a sustainability workshop containing a series of student-led exercises. This was premised on acquainting students with the key issues underlying sustainable fashion, their implications, the need for change and the knowledge and skills to effect that change – in this case professional communication skills. This learning was also sustained by ensuring that the students reflected on, and shared their takeaways from, the workshop and the outcomes of in-class exercises on an educational social media site. In addition, sustainability issues covered in the workshop were threaded through each subsequent lecture within a 14-week, semester-long undergraduate fashion communication class in a Hong Kong higher education institution.

### KEYWORDS

sustainability literacy, fashion education, transformative pedagogy

### CATEGORY

Full Paper

## The States of Openness: An Educational Perspective on Design Practices (P337)

Cansu Curgen, Research Assistant, Istanbul Bilgi  
University, Turkey

Avsar Gurpinar, Assistant Professor, Istanbul Bilgi  
University, Turkey

We are living in an era of open source; a concept that was borrowed from software development and has gradually become associated with design and architectural practices. It broadly responds to the need change, from the organisational structures of design groups and institutions to the authorship of designers and the rights to their products. We argue that the principles of open design could – and even should – be embraced and harnessed not only in professional practice but also in the field of design education. This requires an acquaintance with the fundamentals of open design and the ethical, political and socioeconomic circumstances surrounding it. In addition, convenient environments should be created for students to be involved in and to deal with the various parameters of open design, such as authorship, derivation and design ethics. Along with the design (collaborative, co-creative, participatory, trans disciplinary) and production (digital manufacturing) possibilities, further questions arise: How can the education of designers be formed? How can the uniqueness of a designed object be evaluated? Pursuing a critical evaluation of openness and its applications, this study aims at paving the way to examine such future research questions and conducting projects and workshops. We reflect on our own experiences conducting projects and workshops in the realm of academia, where we position the concept of open design as the main factor to be facilitated in the design process.

### KEYWORDS

open design, co-creation, design education

### CATEGORY

Full Paper

## The Education Flâneur - A Global Studio, 2 cities, 5 years, 200 Students and Communities of Practice (P349)

Nur Hidayah Abu Bakar, Dean of Faculty, LASALLE  
College of the Arts, Singapore

Michael Chen, Lecturer, LASALLE College of the  
Arts, Singapore

What does it mean to be a global designer of tomorrow? The framework of design education has to respond to changes in the landscape. The characteristics are layered by sequential, experiential and iterative learning. Pedagogical knowledge and understanding are not acquired passively but actively through personal experiences and experiential activities. Such learning is based on problem-solving and/or an exploration of a particular line of enquiry and active engagement with ideas.

As part of studying the development of design education, the 'Linking Cities, Designing Experiences' project makes a critical inquiry into the issues of urbanism and urbanity. The city encapsulates engaging multifaceted insights and intriguing phenomena. Students from Singapore and Seoul share their insights on urban themes and subjects, such as the urban typology, urban environment and social settings of cities and their physical infrastructures. Information sharing and collaborative ethnographic research underpin the critical discourse, as the students are inhabitants of two different cities. The project puts forward an 'open design' concept in learning and teaching design through a cross-cultural urban design experience in the city. Ideas addressing iterative participatory design, cross-disciplinary design practice, experimental place making and 'reflection-in-action' (Schön, 1983) form the important pillars of the project. Designers meet to deliberate, collaborate and forge new relationships and exchange ideas with cross-cultural references and insights. This project also proposes methods and approaches that may facilitate the promotion of future pedagogical discourse.

### KEYWORDS

converging, cross-disciplinary, experiential learning

### CATEGORY

Workshop

## Evolving New Approaches to Design Studios to Sensitise Students toward Socially Responsive Design Outcome (P355)

Aditi Deshpande, Associate Professor, S.P. Pune University, India

In line with today's rapidly changing global environment, India is currently experiencing a dramatic shift in its citizens' social lives. An equivalently drastic design response is required. Are the designers of tomorrow aware of changes in society? Do they engage with users to understand their requirements, and do they deliver appropriate design solutions? As citizens of a developing country, we need to adopt new design education approaches to equip the future generation of designers to respond to the changing needs of Indian society.

This paper investigates the role of design educators and new approaches to design studios. Student responses to the 'participatory process', as opposed to the conventional process, are examined to determine whether new approaches to design studios lead students to produce socially responsive design outcomes. Action research and analysis are combined as a methodology for the research. The focus of the study is a project on housing for senior citizens. The students involved in the research participate with clients/users in real time and real-life settings to explore the project's activities and community goals. This paper investigates the design process through studio progression. This process begins with a programming phase, which has three stages: site visits, discussion with users and the identification of design objectives. The task of designing begins by conceptualising strategies to meet the identified objectives, and the process culminates with design solutions that respond to the needs of the elderly.

### KEYWORDS

socially responsive design, participatory model, design process

### CATEGORY

Full Paper

## Futures Thinking through Transition (P383)

Corbin Raymond, Junior Lecturer, The Cape Peninsula University of Technology, South Africa  
Kwame Opoku-Asare, Master's student, The Cape Peninsula University of Technology, South Africa  
Andrew Morrison, Professor, Oslo School of Architecture and Design, Norway  
Aletia Chisin, Senior Lecturer, The Cape Peninsula University of Technology, South Africa

Issues of climate change and sustainability are relevant. In recent years, attention has shifted from forecasting and the promotion of defined future-oriented design thinking to the notion of foresight and a vision of potential approaches and expectations. In this paper, we reflect on the ProtoHype course, which was conducted in rural Kenya, through the key happenings of students within situated learning spaces. The prerogative of this paper is to argue that these happenings facilitated the ability to design for contextually relevant design solutions in potential future societies by exploring alternate sustainable product solutions. One solution that was proposed from the ProtoHype project was the design of a sustainable sandal. The case we reflect on explores sustainable manufacturing techniques through a collaborative design process undertaken by a master's design student. We reflect on this design solution by exploring contextual photography, post-project reflections and the researcher's observational techniques. We observed that the student identified commonalities and differences between the contexts in the techniques, sourced materials, ideologies and styles, and proceeded to find the common ground between them. This design process follows the concept of transposition and is focused towards futures thinking to design sustainable solutions within the context of Africa.

### KEYWORDS

future studies, transposition, futures thinking

### CATEGORY

Short Paper

## Mapping Graphic Design Practice, Research and Pedagogy (P393)

James Corazzo, Principal Lecturer, Sheffield Hallam University, United Kingdom

Mapping design practice, research and pedagogy explores the expanding fields of graphic design through the process of visual mapping. Graphic design is no longer defined simply as a profession that creates desire but as a discipline with social intent, self-initiated forms of practice, a nonneutral status in socioeconomic and cultural arenas and the potential for practices 'to question the codes that constitute and enforce its limits' (Cibaiancea, 2012). For design educators charged with preparing the next set of designers, these developments represent new challenges.

This experimental, collaborative workshop enables participants to conceive and develop useful frameworks for navigating these expanding fields. The workshop utilises mapping as a process that makes sense of the complexity by visualising graphic design practices as multiple overlapping fields of activities. Informed by a theoretical framework devised by Tharp and Tharp (2009), Four Fields of Industrial Design, participants are asked to map graphic design projects, briefs and course descriptors to unearth and discover new potential and relationships. Through a process of sorting and categorising the supplied artefacts, the participants uncover latent meanings, intentions and connections.

The workshop aims to offer participants concrete examples of how to enable design students to understand graphic design as multiple overlapping fields of intentions rather than a single entity (governed by commerciality); develop a broader and integrated understanding of what design can do; and situate their practice within these fields of possibility.

### KEYWORDS

mapping design practice, research and pedagogy

### CATEGORY

workshop

## Collaborative Curricula (P404)

Danah Abdulla, Lecturer, London College of Communication, United Kingdom

The diverse population makeup of Jordan and the reputation of its capital, Amman, as a refuge city is a reflection of the Arab region's turbulent history, making it an interesting setting in which to study design. More specifically, Amman's contested identities provide a unique site for exploring a more participatory approach to design pedagogy. However, current design curricula are out dated and centred on extremely specialised, technical skills training to produce 'industry-ready' graduates, leaving students with little room to develop critical skills, engage in critical practice or venture beyond their specialisation. Furthermore, it is disconnected from its context and milieu (places, people, environments and institutions that individuals encounter that shape daily life and inform their worldview). How can design education engage students with social, political and economic issues relevant to their daily challenges and encourage them to become active citizens in such an environment? In this paper, I describe the methodology and preliminary findings of on going PhD research investigating how design education in Amman can be more locally centred. This research considers three questions: 1. What philosophies, theories, practices, models of curriculum and pedagogy are appropriate references for design education curricula in Jordan to be more locally centred? 2. What shifts in design perception does this require and create? 3. Could the development of a more locally centred design education curriculum help advance the status of design as a discipline in Jordan, engage the public and help Jordanian designers contribute to the larger international discourse?

### KEYWORDS

Jordan, design education, design

### CATEGORY

Short Paper

## Inspiring Open Designers of the Future (P406)

Tara French, Research Fellow, Glasgow School of Art, United Kingdom

Gemma Teal, Research Fellow, Glasgow School of Art, United Kingdom  
Jeroen Blom, Research Fellow, Glasgow School of Art, United Kingdom

Angela Tulloch, Research Associate, Glasgow School of Art, United Kingdom

Mafalda Moreira, PhD student, Glasgow School of Art, United Kingdom

Designers are increasingly involved in tackling problems that arise from complex societal challenges. Such involvement results in rapid change in design practices as it enters and expands into new territories, highlighting the importance of rethinking design education to better prepare future designers.

This workshop aims at considering ways in which we can equip designers with the necessary skills to engage members of the public in cocreation and participatory design, drawing upon the international and multidisciplinary perspectives afforded through the conference. Using the Experience Labs' approach, this session engages delegates to share their practice, experiences and insights from their respective disciplines towards preparing future designers.

Experience Labs use a design-led participatory approach to innovation within the health and care context. To date, the Labs have developed and evolved as a way to provide a space for creative collaboration. However, the Labs' approach has been recently applied within the context of design education to foster interdisciplinary collaboration within the art and design disciplines.

Delegates attending the workshop will be asked to form groups around four design education challenges: 1. engagement, 2. sustainability and effect, 3. empathy through design and 4. ethics by design. The workshop will produce insights for the themes addressed and will provide the opportunity to gain international perspectives on these challenges within design education. It is anticipated that the workshop will also generate a network/community of interest for design education specifically related to the workshop's themes.

### KEYWORDS

design education, creative collaboration, participatory design

### CATEGORY

Workshop

## I've Become a Cross-disciplinary Interpreter: Experiences of Open Learning within a Multidisciplinary Collaborative Design Context (P419)

Leigh-Anne Hepburn, Research Fellow, Glasgow School of Art, United Kingdom

Open working practices are increasingly encouraged across the domains of design, business and academia, with concerted efforts being made to enable contextual learning and facilitate knowledge exchange between multidisciplinary partners. Despite the understanding and wide acceptance of this way of working, challenges to collaborative practice widely exist.

This paper aims at exploring the experience of learning within a multidisciplinary collaborative design context. In the same way that Chesbrough (2006) considers open innovation as 'the use of purposive inflows and outflows of knowledge to accelerate internal innovation', this paper asks how 'open learning' within a multidisciplinary collaborative design context can make use of those same flows of knowledge to create value for those participants engaged.

Considering Lefebvre's works on the production of space (1991), this study applies 'representations of space' in order to explore the current understanding of learning within a multidisciplinary collaborative design space. Contextualised within a series of multidisciplinary design-led events in Scotland, emerging themes of learning are identified from across business, academia and the design participants.

Deconstructing the emerging pedagogical themes, this paper questions how design can enable wider participatory education practices with the aim of informing the knowledge and understanding of a learning space within a produced multidisciplinary design space.

### KEYWORDS

design, collaboration, multi-disciplinary

### CATEGORY

Full Paper

## Curriculum 3.0: E-nabling Democracy in Tertiary Design Education at a University of Technology in South Africa (P423)

Monica Di Ruvo, Lecturer, The Cape Peninsula University of Technology, South Africa  
Johannes Cronjé, Dean of Faculty of Informatics and Design, The Cape Peninsula University of Technology, South Africa

It is expected that by 2035, more than 1 billion people will be living and working as digital nomads. Moser (2014) considers 'Architecture 3.0' to be a new disruptive economic model for architectural professions made possible by digital technologies. Today's architects and interior designers need to be entrepreneurial, resourceful, innovative and resilient, with the ability to simultaneously access various mobile technologies and use multiple media in non-linear ways. We thus ask how our students should be prepared for careers in hyper-connected globalised economies.

In a Web 3.0 environment, machines are part of the meaning-making process. 'Learning 3.0' is characterised by an increasing rate of learning undertaken collaboratively by people and their hyperconnected devices in a 'limitless symbiotic relationship between human and machine' (Wheeler 2012). Our mobile devices are able to connect data, applications and people through cloud computing; therefore, as we learn from our devices, our devices learn from us.

The findings of a literature review and a comparison of learner attributes are discussed and presented as catalysts for the development of alternative approaches to design curricula. In keeping with the principles of rhizomatic learning, flexible responses are sought to the challenges of student protests regarding the cost of education and the (ir)relevance of Westernised curricula. Using flexible models of information exchange, students are taught how to learn and curate their own digital learning environments with the lecturer as facilitator and mentor.

### KEYWORDS

Learning 3.0, rhizomatic, 21<sup>st</sup> Century skills

### CATEGORY

Short Paper

## Creativity and ICT to Drive New Entrepreneurship Education (P427)

Arianna Vignati, Researcher, Politecnico di Milano, Italy

Karen Sikkema, Reseracher, HKU, Netherlands

Thera Jonker, Professor, HKU, Netherlands

Anastasia Konstantelou, Associate Professor, University of the Aegean, Greece

Kostas Kutsikos, Assistant Professor, University of the Aegean, Greece

Francesco Zurlo, Full Professor, Politecnico di Milano, Italy

The aim of this paper is to present the conceptual framework that has driven the establishment of the educational model developed under the CREA European Project. The CREA Educational Model and Didactic Framework represents best practice in teaching entrepreneurship, using creativity and information and communications technology (ICT) as leverage for innovation.

The methodology used to construct the above didactic framework and teaching method was based on the following four strategies:

- A review of the literature on the framing of entrepreneurship education;
- In-depth analysis of data collected from surveys administered to a European panel of students;
- Collection and evaluation of 50 best-practice cases; and
- A pilot trial of the network of European summer academies developed under the CREA project.

Starting a company requires considerable entrepreneurial skills. The aim of CREA is to equip students with these soft skills by incorporating creativity and ICT into their entrepreneurial educational development. In addition to creativity, the educational model has the following drivers:

- International exchange of teachers;
- positioning for (very) early stage start-ups;
- physical contact with students to create a stable community;
- intercultural cooperation, team-building and networking as pillars of the two training weeks (focusing on idea generation and business modelling, respectively).



In 2015, a pilot test of six CREA summer academies in six European cities was conducted. The aim of CREA is to bridge the gap between idea generation and business modelling to support students in the first stage of their journey into the world of start-ups.

#### KEYWORDS

entrepreneurship, design thinking, business modeling

#### CATEGORY

Full Paper

## Design Fiction in Design Education: Urbanism, Para-pedagogy and Futures Literacies (P442)

Andrew Morrison, Professor, Oslo School of Architecture and Design, Norway

This paper extends the tradition of speculative design linked to products and gallery settings to an exploratory narrative design fiction within the domains of landscape and urbanism to address matters of future literacies, context and climate change. Theoretically based in narrative, communication design and sociocultural learning, this paper presents a design education experiment conducted in two master's level studio courses in urbanism and landscape, from the autumn of 2015 on the Arctic island Svalbard. Moving away from depleting practices and policies of mineral, oil and fishing extraction, these courses investigated alternate ways in which urban, physical and cultural landscapes might be investigated – creatively, civically, and critically – for more open, productive 'design futures' within the community of the island. This paper embodies and discusses students' productive, putative and projective design fictions as a mode of speculative learning. It unpacks its articulation in emergent and informal work over a semester with 12 student contributors and a design educator-researcher. Analytically, the paper develops a para-pedagogy of design fiction within the notion of expanded and multiplied voiced learning spaces: design fiction may be understood as participative and anticipatory, yet situated and realised within a wider pedagogy of speculative design literacies. Methodologically, this paper reflects on how such a process may be enacted within an overall anticipatory and collaborative pedagogy of critical design and futures literacies. The paper works outwards from multimodal design fiction work to analysis and reflection on production based inquiry and problem finding as research strategies for shaping learning in the future.

#### KEYWORDS

design fiction, para-pedagogy, futures literacies

#### CATEGORY

Full Paper



## Open Design for Empathy

### Big Picture and Small Picture: Learning to Design for the User in Context (P131)

Katherine Bissett-Johnson, Lecturer, Swinburne University, Australia

There is increasing demand for product designers to address the complicated issue of social and environmental sustainability, particularly when designing products for underserved communities in developing countries. Designing products with a positive social influence in these settings requires not only empathy for the user but significant contextual understanding. A socially responsible design strategy was developed to address these issues by applying design-methods tools derived from human-centred design, design for the environment and social-impact approaches. The project outcomes of several iterations of socially responsible design studio curricula were reviewed to ascertain the influence of a suite of specific design-method tools on product design. The projects were rated using categorical variables derived from the principles of appropriate technology, providing an indicator of the relationship between user, product and context. The findings indicated that a modified version of Stanford University's Ideate and Prototype Design Methods Tool was effective in generating empathy for the user (and maker) in context. The original, adapted and future versions of this tool are discussed in this paper, including speculation regarding the challenges to and opportunities for customisation and application. Significantly, this study offers designers, educators and students a way of understanding 'how to' design for users very different from themselves, further highlighting the need for holistic design solutions that go beyond the physical product. There is no question that empathy for the user in context is essential to the design of successful products for developing countries, and indeed in any design situation.

#### KEYWORDS

socially responsible design, empathic design, ideate and prototype tool

#### CATEGORY

Short Paper



## Empathetic Design Research and Development in Practice; Co-development of an Innovative Head and Neck Support for People with Motor Neuron Disease (P138)

Heath Reed, Senior Research Associate, Sheffield Hallam University, United Kingdom  
Andrew Stanton, Sheffield Hallam University, United Kingdom  
Joe Langley, Sheffield Hallam University, United Kingdom

People with motor neuron disease (MND) experience muscle weakness. The human head can weigh up to 5 kg, so when MND affects the muscles around the neck it can become very difficult to hold one's head up, which results in the head falling forward.

The situation can lead to extreme pain, restricted movement and problems with eating, drinking, swallowing and breathing. It can also adversely affect face-to-face communication. Ideally, a neck collar would help alleviate these important quality of life (QoL) issues, yet current neck collars are of limited use to people with MND. They tend to be rejected by users as they are often designed to immobilise the head and neck and can be socially stigmatising.

A fundamental reappraisal of the way these physical products are designed and used was undertaken. This project explores the use of open and empathic approaches to the co-design of solutions. It also examines product designs from the perspective of developers and researchers of complex multidisciplinary, social and QoL issues. It demonstrates experts working openly together using a range of 'live' research methods to arrive at optimum holistic outcomes.

The project was funded by the NIHR i4i Programme. The team consisted of clinicians, engineers and designers working with people experiencing MND and their carers. The methodology included a range of research through design approaches at the heart of which was a series of 10 iterative, co-design workshops. The development of mutual empathy between the team and the participants played a key role in the motivation to reach appropriate solutions.

### KEYWORDS

empathetic design, orthotics, products

### CATEGORY

Artefact - products or artworks

## Participatory Design Fieldwork: Dealing with Emotions (P150)

Mariana Salgado, Senior Design Researcher, M4ID Innovative Communication and Service Design for Development and Health, Finland  
Michail Galanakis, Senior Researcher, Helsinki University, Finland  
Esa Pursiainen, Psychologist private practice, independent practitioner, Finland

Immigration gives rise to global and local changes that challenge social norms and affect our lives. By involving immigrants in design processes, we emphasise designers' responsibility for social inclusion. In this context, our main question is how to engage with immigrants in participatory design research. To answer this question, we present a review of a research approach that we recently applied in Helsinki (Finland) while collaborating with immigrants on a design project. We learned from this study that design researchers working with immigrants must take into account the question of emotional involvement. In this article, assisted by a mental-health specialist, we analyse our findings and provide insights into ways for designers to create better interactions with vulnerable populations while conducting fieldwork. When planning a participatory activity with potentially vulnerable people in the expectation of an intense atmosphere with accounts of traumatic events, we always 1. encourage participants to spend time on debriefing immediately after the workshop; 2. reserve time for debriefing by colleagues soon after the session, enabling them to process the participants' stories and emotions; 3. emphasise participants' emotional expression but calm them when necessary by gently steering them away from painful memories and back to our research questions and the aims of the activity; and 4. mediate our participants' efforts to obtain help from, for instance, community workers and trauma specialists to deal with distressing events in their past or present lives.

### KEYWORDS

participatory activities, immigrants, women

### CATEGORY

Full Paper

## Co-designing Newcomers Archives: Discussing Ethical Challenges when Establishing Collaboration with Vulnerable User Groups (P161)

Elisabet M. Nilsson, Senior Lecturer, Malmö University, Sweden

Jody Barton, Master's student, Malmö University, Sweden

Living Archives is a research project that explores the roles of archives in a digitised society. Together with the Malmö City Archives, we initiated a project aimed at prototyping co-archiving practices for young newcomers, to contribute to a newcomers archive. The project emerged in response to the situation in 2015, when 162 877 people sought asylum in Sweden and the Malmö City Archives organised activities to welcome and help integrate newcomers. This paper, however, does not focus on the design proposals prototyped as part of the project, but on the ethical challenges faced when collaborating with vulnerable user groups. Before starting the research process we attended a seminar to discuss our ethical stand. We also revisited the ethical standards in research and papers on ethical considerations in design research. Nevertheless, when interacting with the young newcomers we realised that we were not adequately prepared. To think about ethical standpoints in theory is one thing, but what happens in reality is something else. In this paper we highlight our personal experiences in our first meetings with the user group. We discuss the complexities of establishing collaborations with vulnerable groups to avoid a naïve view of what such projects and collaborations require in terms of time and resources. Given the current refugee situation and the potential for design actions to tackle major societal problems, it is likely that many design researchers will encounter these issues and thus such discussions are required.

### KEYWORDS

co-archiving practices, newcomers, ethical challenges

### CATEGORY

Short Paper

## Therapeutic Habitat for Alzheimer's Disease Patients (P163)

Silvia Maria Gramegna, PhD candidate, Design, Politecnico di Milano, Italy

Alessandro Biamonti, Associate Professor, Design, Politecnico di Milano, Italy

Alzheimer's Disease (AD), the most common form of dementia, causes behavioural, cognitive and physical impairments that affect sufferers' ability to function in daily life. To date, researchers have found no cure for AD. There is thus a need for a new paradigm directed towards minimising the symptoms of AD, enhancing the well-being of AD patients and listening empathetically to the experiences and concerns of carers, rather than focusing solely on the search for a cure.

We adopt the term 'habitat' from biology; it is defined as the certain set of conditions that guarantees a species the opportunity to take root, spread and reproduce in a given environment. We propose a model entitled Therapeutic Habitat, a set of environmental conditions specifically designed to meet the needs of people with dementia in all fields of human life – physical, cultural, social and anthropological – and to enhance their well-being and quality of life.

**Methodology** – After a preliminary literature review, the authors conducted interviews with therapists and caregivers to define specific characteristics of the Therapeutic Habitat model.

**Process** – Our focus on meeting the needs of people with dementia is consistent with the literature on dementia care, which suggests that developing a therapeutic milieu for people with dementia requires a shift in emphasis from managing behaviour to empathically understanding and meeting sufferers' needs (Taft, Delaney, Seman, & Stansell, 1993). An empathic design approach offers a means of identifying the needs and problems of the user. It is important for designers to foster a meaningful collaboration between caregivers, who have first-hand experience of the condition, and therapists, who are able to delineate sufferers' therapeutic needs.

### KEYWORDS

Alzheimer's Disease, design, non-pharmacological therapies

### CATEGORY

Short Paper

## Embodiment of Empathy: Experiencing Disease Through Design (P221)

Noha Fouad, Virginia Commonwealth University, Qatar

This project aims to raise awareness about the struggles of living with diabetes through the redesign of elements found on the dining room table, a place that most diabetics are acutely aware of. A cup, a set of utensils and a chair have been redesigned to become the tools of empathy, through which non-sufferers can step into the shoes of diabetics and experience some of the symptoms of the disease for themselves.

The cup explores a diabetic's daily struggle with control. Diabetics are often confronted with situations where they must curb their urges when it comes to food. Alternatively, they are occasionally forced to eat when they don't want to. Whereas the cup aesthetically looks 'normal', it is 3D-printed, with multiple compartments inside that control when and how much water the user can drink.

The utensils aim to recreate a scenario that diabetics often experience: a situation in which everything may seem normal, but something unpredictably goes wrong. The utensils are designed to look as normal as possible, but they are actually made of sugar. Upon use, they suddenly start to deteriorate and fall apart.

The chair is designed to force its user into a state of alertness – a state that diabetics are constantly living in. The chair is equipped with pressure sensors, and is connected to a lamp stand. The design of the chair prompts the user to fidget; however, he or she must be conscious not to trigger the sensors, which would consequently turn off the light.

### KEYWORDS

diabetes, empathy, awareness

### CATEGORY

Artefact - products or artworks

## Safe Niños: Designing Empathic Environments for Child Burn Survivors (P269)

Amatullo, Vice President, ArtCenter College of Design, United States

Stella Hernandez, Faculty, ArtCenter College of Design, United States

Penny Herscovitch, Associate Professor, ArtCenter College of Design, United States

Dan Gottlieb, Associate Professor, ArtCenter College of Design, United States

Over 7 million children a year suffer from burn injuries across Latin America, and a child's healing process can take over 20 years, due to multiple surgeries as children grow. In partnership with COANIQUEM, a nonprofit pediatric treatment facility in Santiago, Chile that cares for young burn survivors free of charge, the Designmatters Safe Niños multidisciplinary studio hosted by the Environmental Design Department at ArtCenter College of Design, Pasadena, California, challenged students to co-create with stakeholders to reinvigorate the 6-acre campus with innovative, human-centred and engaging environments aimed at optimal healing for children, and support the holistic medical approach of the centre.

Field research at COANIQUEM afforded the design team the experience of living alongside pediatric patients and their families, and connecting with them across language, culture, art, play and music. Students and faculty used various design ethnography tools to uncover issues and opportunities informed by stakeholders' daily behaviors and activities across campus, from day-in-the-life patient journeys to brainstorming sessions with medical staff. Two follow-up field testing trips allowed a smaller group from the studio to further test ideas and push co-creation and empathic methodology to arrive at novel and useful solutions that are integrated together under an umbrella concept of an Ecosystem of Healing.

The Safe Niños book presents a narrative overview of the studio, beginning with its inception and concluding with a look toward impact at the project implementation level. The mini-exhibition features prominent illustration and graphics incorporated throughout the Ecosystem of Healing.

### KEYWORD

social innovation, empathy, human-centred design

### CATEGORY

Artefact - products or artworks

## Sensory Storytelling: A Method for Deep Design Insights (P293)

Natalia Gomes Franca, Master of Design Candidate,  
Emily Carr University of Art + Design, Canada  
Louise St-Pierre, Associate Professor, Emily Carr  
University of Art + Design, Canada

This short paper details the results of and knowledge acquired during a creative research project during which psychologists collaborated to gain new insights into the development of empathy and the strengthening of relationships through design. A series of co-creation workshops based on sensory-storytelling techniques were conducted with psychologists at the Centro de Pesquisa em Psicanálise e Linguagem, a psychology centre in Recife, Brazil. In this participatory research, the psychologists were guided to develop narratives stimulated by the five senses: sight, hearing, touch, smell and taste. The workshops were divided into three phases: Creating Personas (visualising personas using craft materials to represent personality attributes); Imagining Relationships (scenario-building to imagine these personas on a group journey); and Envisioning Empathy (manipulating objects to imagine tools for the development of empathy). The ludic aspect of this research facilitated communication, enhanced engagement and fostered the development of collective narratives. This provided rich inspiration for designers. The project offered insights into the various ways in which we can appreciate and share the complexities of the others and begin to imagine tools to facilitate empathy.

### KEYWORDS

sensory storytelling, empathy, co-creation

### CATEGORY

Short Paper

## Pain Talking: Exploring the Experiences, Expressions and Descriptions of Chronic Pain through Creative Processes and Visualisation Strategies (P316)

Ian Gwilt, Professor in Design and Visual Communication,  
Sheffield Hallam University, United Kingdom  
Rebecca Partridge, Researcher, Sheffield Hallam  
University, United Kingdom  
Joe Langley, Design Research Fellow, Sheffield Hallam  
University, United Kingdom  
Suzanne Davis, Principal Physiotherapist, Sheffield  
Children's Hospital, United Kingdom

Explaining and quantifying the feelings and experiences of living with chronic pain presents a particularly challenging task for children and young people. This project describes a pilot study using workshop-based creative activities to assist young people (adolescents) describe and communicate what it is like to have chronic pain. Young people who suffer from chronic or persistent long-term pain and their families or close support networks regularly describe difficulties in effectively explaining the experience of pain to others. This can lead to young people feeling different and misunderstood, and can create difficulties in getting the appropriate help and support.

This research contributes to the field by using a number of modified digital and analogue creative processes and visualisation strategies to explore whether it is possible to enhance the individual experience of coping with chronic pain by offering more accessible ways of explaining pain to others. Current pain management programmes work with young people to educate them on what chronic pain is and why it occurs, identify how pain is personally affecting them, explore what they can do about it through pain management strategies and facilitate how they explain it to others. These programmes generally use a multidisciplinary approach drawing upon verbal discussions, paper-based information and visual and physical activities to collaboratively address the problem of managing chronic pain. Feedback shows that these approaches are generally helpful, with young people often feeling better understood during sessions and within their schools and broader communities. During the workshop, young people used various creative techniques to describe their pain experiences and collectively reflect on the methods of current pain management programmes.

### KEYWORD

creative pain management

### CATEGORY

Short Paper

## A Context-focused Framework of Empathic Design for Service (P325)

Miaosen Gong, Associate Professor, Jiangnan University, China

Yumei Dong, Lecturer, Zhejiang Normal University, China

The aim of this study is to investigate a framework for empathic design for service innovation with a specific focus on context. Previous researchers have shown that context is crucial to both service design and empathic design, particularly, we argue, when an empathic approach is taken to service design. In our case study, Pregnant Care, we use empathic techniques in the service-design process and concentrate on contextual factors. Through the case study, we identify two important clues to the process of service design with empathic understanding, namely sensitisation dynamics and context transfer between actors and then construct a context-focused framework. Based on the theory of context transfer, our framework has five steps: eliciting context, modelling context, communicating context, prototyping context and delivering context. Multiple actors are engaged and motivated in these activities using context-based empathic techniques as sensitisers. The article presents the structure, process, methods and tools required for empathic design for service with a focus on context.

### KEYWORDS

service design, empathic design, context

### CATEGORY

Full Paper

## Preparing for Loss (P360)

Marie Sterte, Senior Lecturer, Linnaeus University, Sweden

We live in a global and digital world in which many people are on the move, travelling far away from their homes, friends and loved ones. Family and friends have always gathered to mourn and support each other, and graves have been tended for generations. But it is difficult to take care of a grave far away, and for many in today's world, death has become remote. As a graphic designer, I am particularly interested in the roles of typography and graphic design in mourning; a typical manifestation is the traditional inscriptions on gravestones in cemeteries. I started to explore the potential of typography and graphic design to support preparation for loss and mourning in our current and future lives, which are carried out across several places. I also asked whether typography and graphic design can promote the ability to talk about death and loss in everyday life. This on going project is based in Småland, Sweden, with a small study also conducted in Hong Kong. The project has the following two aims: 1. to explore the ways in which design can help humans to prepare for loss; and 2. to explore ways in which designers and mourners can make the funerals of the future dignified and respectful. It is vital to prepare for loss; not only the loss of loved ones, but perhaps even the loss of life as we know it, given the unprecedented challenges to humanity created by climate change and migration.

### KEYWORDS

design, death, futures

### CATEGORY

Short Paper



## Intimacy and Integrity in Designing for Social Innovation(P365)

Yoko Akama, Associate Professor, RMIT University, Australia

Joyce Yee, Senior Lecturer, Northumbria University, United Kingdom

Today, the West is generally perceived as the world's leader, moving rapidly into the future while the rest of the world lags behind. This perspective on power and politics is reflected in design, for which Western theories are central and originary. The field of design and social innovation is one such example, largely populated by case studies and discourses in Europe and the US that reinforce dominant paradigms of design, global hierarchies and the neo-liberal agenda to change the world for the 'better'. We speak to this dominance from the periphery and share early insights gained from two international symposia on design and social innovation in the Asia-Pacific that gathered together academics and practitioners undertaking community-led change in diverse contexts. Practitioners from this region described important qualities of their design practice – reciprocity, humility, respect and empathy – that enhance the intimacy between its participants, who are already inter-related entities. The experiences shared were inherently tied to place, time, culture, relationships, materiality, indigenous knowledge, practices and traditions in a way that could not be abstracted by a model or a method of scaling or replication, as is emphasised in the dominant paradigms of design. We discuss this diverse and inter related view of designing, which cannot be disentangled from the ecological, relational, intimate world in which it is performed. Erasing difference and diversity results in the absence of a cultural dialogue and philosophical empathy. Incorporating theories from science and technology studies, feminist studies, post-colonial studies and Asian philosophy, we call for the gap created by difference to be bridged by understanding of and respect for distinct characteristics, celebrating the vibrancy of design and social innovation.

### KEYWORDS

heterogeneity, culture, inter-relatedness

### CATEGORY

Full Paper

## Inside the Aotearoa House; Kia whakatomuri te haere ki mua (P377)

Cristiaan de Groot, Senior Lecturer, Unitec, Institute of Technology, New Zealand

Johnson Witehira, Lecturer, Auckland University of Technology, New Zealand

'Inside the Aotearoa House' is an interdisciplinary and inter-cultural design project through which we explore how the New Zealand home could be re-imagined through a bi-cultural lens. At the centre of this is the whakatauki (proverb), 'Kia whakatomuri te haere ki mua', or, 'To walk into the future, our eyes must be fixed on the past'. Although it is connected to the non-linear Māori view of time and gaze towards the past and ancestors, this whakatauki is also a powerful metaphor about the importance of research and how the past can be used to reshape the future.

Working with staff and students from Unitec, along with industry professionals, we ask how the things in our homes would look, feel and function if the design process had been shaped simultaneously by mātauranga Māori (Māori knowledge) and Pākehā ('non-Māori' or 'European Coloniser' in Māori) design principles? By challenging our conceptions of the things in our homes and where they come from (America, Europe or Asia), the project is also an expression of tinorangatiratanga (self-determination) and kaupapa Māori principles and approaches to research.

The research outcomes indicate an interesting set of principles for increasing empathy by engaging in collaborative and cross-culturally located design practices. Furthermore, the design outcomes indicate the emergence of an exciting category of culturally informed artefacts that engage viewers and users with other identities, and promote the development of deeper understanding without commodification or misappropriation.

### KEYWORDS

bicultural design, speculative design, Māori design

### CATEGORY

Full Paper

## Body of Design - Process as Communion in Building Empathy and Participation for Cultural and Environmental Change (P405)

Matt Hawthorn, Deputy Head of School, University of Lincoln, United Kingdom

This paper considers the centrality of the body and bodies in the design process, and how this can be articulated as a theology of design, where empathic design is understood as an intuitive process within a communion of bodies, artefacts and narratives situated in a deep understanding of context. Empathic design in this formulation requires acts of belief to achieve a deep authenticity of practice.

Intuitive, empathic design requires a feeling of interpretative body. Gendlin's therapeutic practice of focusing, and its philosophical extension thinking at the edge, uses an intuitive 'felt sense' to achieve authenticity analogous to Polanyi's conception of tacit knowing and Pallasma's architectural phenomenology. There are important intuitive responses by both the designer and experiencer, which are beneath immediate comprehension. Empathy, however, is a relationship with others. In this context, Latour's actor network theory situates the felt sense of the designer/experiencer as an actor in a network of other actors, which we might also understand as ecology of practice or context.

Contextual relationships are therefore central to intuitive empathic design, which requires a critical construction of context (social, historical, economic and cultural) to form a mutually understood belief system aligning designers, users, materials and narratives. This method of context construction through rituals and habits draws on approaches from performance, theology and games theory. This will be illustrated using a case study of an environmental design consultancy undertaken by the author in an industrial valley in the British East Midlands.

### KEYWORDS

belief, body, environment

### CATEGORY

Full Paper

## Designing for Empathy within Participatory Design Approaches (P418)

Tara French, Research Fellow, Glasgow School of Art, United Kingdom

Gemma Teal, Research Fellow, Glasgow School of Art, United Kingdom

The role of the designer is changing: the 'top-down' approach of the creative is giving way to a greater humility in design (Slavin, 2016). Designers today collaborate with a range of stakeholders and partners from other disciplines, as design is an 'integrative discipline' (Teal and French, 2016). Therefore, a new consideration of empathy is required to creatively engage people in co-creation using participatory design approaches.

In this paper, empathy in relation to participatory design is discussed, sharing methods of and reflections on designing 'with' and 'for' empathy. The paper also investigates the role of the designer in engendering empathy in collaborative creativity, and illustrates approaches from applied projects in the health and care context.

Experience Labs is a participatory design approach providing a space in which a diverse range of participants (academics, businesses, civic institutions, end users, etc.) can collaborate in the creative process of exploring and iterating new concepts of health and care. The methods, tools and artefacts of Experience Labs are designed to move participants through a series of designed spaces to provide them with the experience, skills and language required to critically reflect on and evaluate emerging ideas. Collaborations are carefully curated to bring together the 'right' mix of expertise for each project. The challenge is to ensure that relationships move quickly from 'them and us' to a collective 'we' as we explore ideas and build trust. The methods and approaches used to foster empathy are shared in this paper, alongside previous literature on user-centred approaches to empathic design, highlighting the need to consider the ways in which we design 'for' empathy in participatory design.

### KEYWORDS

empathy, participatory design, collaborative creativity

### CATEGORY

Short Paper

## Design Approach: A Project for Inclusion of Visually Impaired People (P436)

Giovanna Giugliano, Designer, Second University of Naples, Italy

Rosanna Veneziano, Assistant Professor, Second University of Naples, Italy

This paper describes a colour-experience approach that transforms visual images into geometric, tactile and emotional input. The aim of the project is to create a colour code that enables partially sighted and visually impaired persons to perceive the sense of colour through aptic exploration, giving colour a symbolic and tactile representation in a language that goes beyond idiom and culture. The code establishes an empathic relationship with objects that allows colour but also shapes, textures and emotions to be perceived and imagined.

The proposed colour code is based on the principles established by Munsell – hue, value and chroma – and was developed from the Braille code, which comprises a series of squares that each enclose six dots, corresponding to specific geometric shapes that are assigned certain values and characteristics. The proposed colour code can be reproduced on different media and in various settings: on furnishings, allowing us to identify the objects that surround us in our daily lives; on clothing, with a labelling system that enables visually impaired persons to autonomously choose garments; in education, as three-dimensional illustrations that help children learn to match colours to objects; and in illustration, reproducing works whose chromatic composition could not otherwise be perceived.

This approach, based on dialogue, listening and sharing between third-sector associations, blind people and experts, aids understanding of the ‘other’, conveys values and leads towards social change and social integration.

### KEYWORDS

social design, social inclusion, empathic product

### CATEGORY

Short Paper

## Intimacy in Accessories (P457)

Trine Møller, PhD Student, Design School Kolding, Denmark

Anne Louise Bang, Associate Professor, Design School Kolding, Denmark

This paper presents a study of three older women and their needs-defining accessories. The study was designed to gain insight into the relationships between the women and their favourite objects, and to clarify their reasons for wearing these objects. As the women were asked to showcase their accessories in their own homes, the objects facilitated conversation about significant personal life experiences, which complemented the objective of the study. This experiment generated important information about why women wear what they do. The home setting also permitted free anecdotal conversation affording intimate details and rich stories. The findings showed that the women’s accessories are objects with unique personal qualities that meet their users’ needs and desires, far beyond their functional and material existence. These findings are of interest to the wearable health technology community, as they suggest possible factors to consider when designing wearable health accessories for members of an older age group, which are traditionally designed with a biomedical emphasis.

### KEYWORDS

accessories, older age group, wearable health technology

### CATEGORY

Full Paper



## Participatory Social Design with Empathy for Poverty Alleviation in Rural Communities (P467)

Baosheng Wang, Assistant Professor, School of Design, Hunan University, China

The aim of this paper is to explore design-led participatory approaches to producing design solutions that promote local industries using indigenous resources. A case study is drawn from an ongoing poverty-alleviation project in a typical Chinese rural village, Saiyang. The research focused not on the design output but on how this output is realised through participatory and empathetic approaches, as follows. 1. Local residents were encouraged to involve themselves in the project according to their interests and skills; for example, those skilled and/or interested in bamboo- or grass-weaving were engaged in co-designing packages for local food; those skilled in agriculture and making local specialties were encouraged to produce agricultural products; and the owners of bed and breakfast businesses worked with designers to redesign their facilities, products and services. Those reluctant to participate were encouraged to take part in the project and trained in useful skills and knowledge. 2. Governmental resources were used as effectively as possible during the social design process; for example, government records of local poverty were analysed and used to gain an empathetic understanding of local conditions, and government funds and subsidies for poverty alleviation were used to subsidise local residents to redesign their buildings and landscapes with local materials and to join local cooperatives as shareholders. In conclusion, during social design for the alleviation of rural poverty, key stakeholders should be categorised by their differences in knowledge and skills and united rationally through design-led participatory approaches.

### KEYWORDS

participatory social design, design empathy, rural poverty alleviation

### CATEGORY

Short Paper

## Demented City and Objects: Empathic Tools between Magic and Everyday Life (P469)

Niels Hendriks, LUCA School of Arts, Belgium  
Yanki Lee, Hong Kong Design Institute, Hong Kong SAR  
Albert Tsang, Hong Kong Design Institute, Hong Kong SAR

In Chinese society, as in many cultures, patients with dementia experience some level of stigma and are often associated with having a mental illness. A dementia research/care centre in Hong Kong therefore initiated the development of the 'dementia experience tool', with the goal of increasing public understanding by inviting citizens to experience dementia.

We are the social design research lab team that was commissioned to create the tool. We first referred to the methodology behind designing empathic tools. We found that it is very difficult to empathise complicated situations, such as dementia, as traditional empathic tools focus on the stimulation of specific physical and mental impairments. We also explored the possibility of using the concept of magic from New Oxford Dictionary of English (1998, 2001), 'mysterious tracks: a quality that makes something seem removed from everyday life, especially in a way that gives delight'.

What if everyday objects became demented? This was the speculative design question around which we created a specific set of empathic tools for dementia. Part I is the 'Demented City', which is an infographic outlining 11 common symptoms of dementia that were set in a context that we, as neuro-typical viewers, could experience. We transformed these symptoms into 11 sets of games with 'demented objects' and instructions. These games mimic everyday situations such as taking an elevator or taking pills, and were created for participants to 'experience' dementia by performing given tasks.

### KEYWORDS

empathic tools, design, dementia

### CATEGORY

Full Paper



## Open Design for Engagement

### Art Made from Live Scientific Images (P116)

Jo Berry, Lecturer, Birmingham City University, United Kingdom

I gained first-hand experience of working with research scientists at the University of Nottingham Life Sciences (Cell Signalling and Pharmacology Group); the Natural History Museums Core Research Laboratories Imaging and Analysis Centre; and the Centre for Cellular Imaging, Sahlgrenska Academy, University of Gothenburg. I observed the work done at these laboratories to obtain first-hand insights into the use of advanced imaging as a major tool for scientific research. The scientists at the laboratories designed practical scientific activities to help me, an image-maker, to understand the reasons for and methods of their research in action. These techniques and technologies are rarely accessible to non-scientific specialists, yet constitute a rich area for artistic exploration, offering new knowledge of scientific processes, modes of observation, methodologies and software.

Based on the observations I made and the materials I gathered in the abovementioned laboratories, such as mathematical and scientific data (still and static), a series of real-life films and recorded photographic images, I have produced a series of innovative visual responses to or translations of scientific images. Scientific computer software and the Adobe Digital Publishing Suite were used to re-shape and re-process the materials collected.

A reflexive methodology of creativity in action was used to cross-reference all aspects of this research activity to establish connections and define the new knowledge gained. The findings help frame this critical theoretical review.

#### KEYWORDS

translation, art, science

#### CATEGORY

Artefact - products or artworks

## The Lure of the City, the Possibilities of the Village: Crowdsourcing Graphic Designers in Indonesia (P182)

Alexandra Crosby, Lecturer, University of Technology Sydney, Australia

Ratna Cahaya, Lecturer, Universitas Multimedia Nusantara, Indonesia

Indonesia provides an enormous number of the world's designers, many of whom are subscribers to the world's major design-task marketplace, 99designs.com. Somewhat surprisingly, many of these designers are not located in cities and have no formal training in design. They are linked to the global design profession through crowdsourcing platforms. These kinds of platforms offer advantages both to clients and designers, saving energy resources and costs. In addition, they potentially lessen the pressures of urbanisation, an increasingly 'wicked' problem because as Indonesia's economy develops the population increases and natural resources are depleted. But this kind of employment is also provoking strong reactions from professional designers and design organisations in Indonesia. This paper traces those reactions and argues for more sensitivity in the global design discourse to discern how the profession plays out in local contexts. In this paper we present research on emerging design practices in Indonesia and their links to crowdsourcing platforms. In doing so, we open up the process of innovation to a diversity of actors who encounter and engage design processes in a variety of ways. We look at open modes of design production that do not favour the big city and that provide new platforms for public participation in the challenges of our time.

### KEYWORDS

crowdsourcing, urbanisation, Indonesia

### CATEGORY

Full Paper

## Engaging Design Pitches: Storytelling Approaches and Their Impacts (P206)

David Parkinson, Lecturer, Northumbria University, United Kingdom

This paper discusses the findings of a doctoral research study that builds an understanding of the relationship between storytelling approaches and their effect on the design pitch. Through a review of the literature, the following desirable effects were found: 'delivering understanding', 'demonstrating value', 'stimulating critique' and 'encouraging more holistic thinking'. These were then used to focus conversation during a series of semi-structured interviews conducted with employees from Unilever and Accenture. In discussions of over 50 design pitches, interview participants identified many storytelling approaches used by designers pitching product and service concepts, and their perceived relationships to the aforementioned effects. Emergent themes were deciphered through thematic analysis of the interview transcriptions. The four effects, when apparent, were seen to have significant relationships with the following storytelling approaches: 'acknowledging cultural perspectives and beliefs', 'diversity/difference', 'detailing concept development' and 'imagery, in particular analogy'. A summary of the relationships is presented in a framework, entitled 'design pitch storytelling: The effect-approach framework'. Of particular significance for engaging audiences are illustrations of the following relationships: 1. detailing concept development that can bring both transparency and familiarity to the design process, allowing the audience attending the design pitch to have a critical discussion and develop more holistic thinking around the project's territories; and 2. incorporating imagery that can awaken a curiosity leading to abstract and novel thinking, again encouraging more holistic viewpoints to develop around project territories.

### KEYWORDS

storytelling, design pitch

### CATEGORY

Full Paper

## To Type or Drag and Drop: Engaging the Creative Arts, through Visual Programming Languages (P233)

Paul Bardini, PhD candidate, Griffith University, Australia

This paper explores computer-coding paradigms by comparing textbased and visual-based programming languages for making Internet enabled devices. For creative arts disciplines, such as product design and sculpture, the challenge is to be engaged in this rapidly progressing field and not be left solely dependent on those who can write computer code.

This research forms part of an on going investigation that explores open source design and innovation. The foundation of this investigation is the development of an Internet of Things artefact, which exists within the physical computing arena. The development of this artefact includes experimentation with two programming methods: first, within the text based programming language of Arduino; and second, through the visual language of Node-Red, a programme commonly used with the Raspberry Pi 2. Both coding platforms are open source and freely accessible online with support from considerable code repositories and a user community of online forums.

This paper questions how visual or text-based programming can be used as a creative support tool to allow a wide cohort of disciplines to create and innovate in a world of ubiquitous computing. The findings reveal that visual-based programmes, such as Node-Red, permit a certain level of engagement, however this engagement is limited within specific coding complexities. These findings are provisional given the limited nature of the study to date and further research and development is required for more conclusive outcomes.

### KEYWORDS

visual language, open technology, creative support tool

### CATEGORY

Short Paper

## Heritage as an Experience: Creative Approaches to Heritage in Contemporary Art and Design (P254)

Eugenia Lopez Reus, Assistant Professor, Abu Dhabi University, United Arab Emirates  
Miguel Jaime, Assistant Professor, ALHOSN University, United Arab Emirates

The aim of this paper is to enhance the links between art, design and cultural heritage to build identity and social engagement. The questions that lead the investigation are as follows: How can art and design today contribute to the revival, re-use and re-interpretation of cultural heritage? How can tradition be introduced to the creative process without compromising novelty? Why should cultural heritage be involved in innovation at all? Finally, how would such an enterprise benefit society as a whole?

Three main approaches are used. First, we investigate the evolution of the concepts of design, cultural heritage and 'heritage as experience' with the above questions in mind. The theoretical foundations comprise the philosophical work of John Dewey, the theories of Donald Schön and Bruce Archer and recent research projects in which open-source computational tools are applied to collective initiatives. Second, the design-heritage partnership is investigated through analysis of proposals submitted by designers and craftsmen as part of a United Nations Educational, Scientific and Cultural Organisation programme entitled Designers meet Artisans. Third, the symbiosis of art and heritage is explored using a single case study: the 2013 Sharjah Biennial, Re: emerge, Towards a New Cultural Cartography. The 100 artists participating in the Sharjah Biennial were invited to re-interpret Sharjah's courtyards as an 'experiential and experimental space'.

This investigation is relevant today for two reasons. First, globalisation has made the cultivation of any sense of identity and belonging problematic. Second, the recent evolution of experiential art and design has strengthened their contribution to and connection with society, and such an intervention should be encouraged and promoted.

### KEYWORDS

reflective heritage, art-design-heritage, UAE

### CATEGORY

Full Paper

## Auditory Breakfast (P263)

Mona Makhlouf, Designer, Virginia Commonwealth University, Qatar

We hear, but we don't listen. This project explores the audio produced by individuals on a routine basis and often taken for granted in everyday life. Each individual creates ordinary mundane audio during their habitual processes, such as the sound of a toothbrush while brushing one's teeth, high heels clacking on a hard floor or the clinking sounds of a metal spoon against a porcelain cereal bowl. 'Auditory Breakfast' examines mundane auditory experiences during breakfast. From a cultural perspective, breakfast is more than a platform for eating; it is a time during which family members gather together to begin their day, share a meal or interact through conversation. This project considers these daily interactions through a 3D-printed series of bowls designed to explore a variety of individual eating habits and various foods consumed during breakfast. The design of the tableware creates an auditory-based interactive breakfast experience based on sensory stimulation.

### KEYWORDS

auditory, behaviour, tableware

### CATEGORY

Artefact - products or artworks

## 揭揭香港 (Discover Hong Kong) (P264)

Long Wai Cheung, Hong Kong Design Institute, Hong Kong SAR

The purpose of this project is to design a promotion featuring special attractive locations in Hong Kong, by introducing Hong Kong through a travelling game book aimed at soothing people's stress and providing an enjoyable experience in which people attempt to discover things about the city. The result of this research reveals that people might do something without having a reason, but they need an attractive incentive.

To enhance the attraction and incentive for participation, the design was primarily based on user experience. In furtherance of this, gamification was the core element of the design. This refers to the application of game-design elements and game principles to non-game contexts. Based on observation and analysis, positive effects have been found in a majority of the studies of gamification.

Inspired by the packaging, it was found that tearing off something can provide a gaming experience and create expectations. As a result, tear-offs were used with the product and the promotional items.

The intention of providing minimalist information is to create a mood that makes people look forward to something and increase their sense of adventure. For example, the information cards only show a basic map and information with an associated description to encourage users to discover the surrounding area of attractive venues.

In particular, people will find some interesting things in the city, if they have not noticed them in the past.

### KEYWORDS

gamification, discover Hong Kong, release students' pressure

### CATEGORY

Artefact - products or artworks

## Progressing a University-industry Collaboration (UIC) Model for Open and Sustainable Innovation (P295)

Roderick Walden, Academic Lecturer, University of Technology Sydney, Australia

This paper describes the implementation and progress of a university-industry collaboration (UIC) model, developed by the Integrated Product Design Research (ipd-r) research group at the University of Technology Sydney to advance the competitive strength of small to medium manufacturing enterprises (SMEs). The ipd-r UIC model opens up the innovation process and fosters engagement between industry partners, design academics and, in a unique way, a large cohort of undergraduate design students. Incorporating a diverse range of perspectives via methods of practice, the model explores short- to medium-term outcomes for the industry partner over a series of iterative engagement cycles within a two to three year term. The research reported here focuses on the first iteration of a model that incorporates a strategically planned exercise through two industry projects that generate a diverse range of innovative concepts. These concepts are collectively analysed both by the academic team independently and in collaboration with an industry partner for R&D planning to inform the second iteration of the model. The research indicates that the ipd-r UIC model does successfully overcome some of the barriers previously identified with other forms of UIC, and that the strategic management of a UG design's conceptual development, subject to academic design practitioners, offers constructive open engagement for a participating in manufacturing SME that would otherwise be inaccessible to it. Significantly, the results provide both short-term and medium-term strategic innovation directives for the SME and represent a way for the manufacturing industry to learn how to develop innovation strategies and engage in research to achieve a competitive advantage.

### KEYWORDS

university-industry collaboration, design-driven innovation, small-medium manufacturing industry

### CATEGORY

Full Paper

## Open Design for Development and Youth (P302)

Satu Miettinen, Professor, University of Lapland, Finland  
Valentina Vezzani, Assistant Professor, University of Madeira, Portugal  
Shilumbe Shivuno-Kuria, Lecturer, Namibia University of Science and Technology, Namibia  
Fabrizio Pierandrei, Director, Paco Design Collaborative, Italy  
Michelle van Wyk, The Cape Peninsula University of Technology, South Africa

The workshop calls for research projects that are working with open design for development and youth. We are interested in sharing experiences, tools and methods for including young people in development. The workshop will showcase and utilise workshop methods developed and tested in participatory development with the youth (PARTY) workshops in South African and Namibian San. The goal of the workshop is to share a vision about the methodologies used for including the youth in accountable democracy, designing their own services and calling for methods that use an inclusive and participatory processes to include the youth in the discussions and development. These methods can utilise both low-and high-tech solutions. In the workshop we are asking what appropriate technologies we can utilise when including the youth in development. The workshop will embrace playfulness and visualisation of information.

The workshop aims to openly share perspectives and experiences about how to design more effective methods and tools to foster development. The workshop's goal is to share perspectives and experiences on how to co-design with marginalised youth by empowering them to become actively involved in the development process. The workshop participants map the methods and tools for co-designing with youth. This generates opportunities for future research dialogues with participants who are interested in the PARTY project and provide tools for involving youth in the development process. The workshop is organised by a PARTY research project funded by the Horizon 2020 research programme.

### KEYWORDS

san youth, service design, marginalisation

### CATEGORY

Workshop



## Design Charrette: Co-creating Design Possibilities for the Future (P314)

Chamithri Greru, PhD student, Heriot-Watt University, United Kingdom  
Britta Kalkreuter, Senior Lecturer, Heriot-Watt University, United Kingdom

To the extent that co-creation events promote democratic participation, they may also give rise to tension and complex power play. This paper contributes to the existing literature on the process of co-creation by investigating the ways in which multidisciplinary groups realise cocreational design potential by moving from individual to collaborative design practices (Sanders and Stappers, 2014). The paper draws on observations from a recent design charrette on Scottish basket-making, during which various groups – makers, designers, architects, engineers, heritage specialists, curators, academics and design students – were challenged to co-create heritage craft practices within a contemporary design context. Analysis of real-time observations, video recordings and responses to an online survey and interviews conducted after the charrette offers insights into the strategies used by multidisciplinary groups to contribute and negotiate various design ideas and practices, and how their resolution of conflict ‘opens up’ design possibilities. Scrutiny of the complex relationships people build with each other and with material and object cultures in the fuzzy front-end of the design process (Sanders, 2008) casts light on the emergence of new communities of practice from the collaboration of actors with different knowledge bases and approaches. In addition, a key feature of the collaborative experience is identified: empathy with stakeholders and co-creators helps uncover entirely new possible design contexts as desirable outcomes. Finally, the paper shows how the idea of shared design ownership empowers individual actors to make choices and follow new directions during mutual learning, and offers some pragmatic recommendations for further exploration of the convergence of heritage and design.

### KEYWORDS

design-craft-charrette, co-creation, heritage

### CATEGORY

Full Paper

## Written World: Collective Research and Creation of Signs for Public Places (P324)

Belen Gonzalez Riaza, Head of the International Department, Escuela Superior de Diseño de Madrid, Spain

Place-specific signs are valuable cultural heritage, an essential element in the definition and expression of the identity of a place and a key factor in its legibility, liveability and enjoyment.

An Internet platform is proposed with the aim of better protecting this endangered heritage, and to celebrate, promote and maintain its diversity. This platform is a very useful tool for the collective cataloguing and valorisation of the best signs in public spaces. The platform not only includes an open database of signs from everywhere but also a shared space for experimentation and research on new meanings, forms and materials for new signs.

The Cumulus conference, Open Design for E-very-thing, in Hong Kong, is a great venue for sharing past experiences and fresh ideas with other Cumulus members that might be interested in joining such a project in different cities worldwide. It is also possible to meet people and groups from Hong Kong and elsewhere that are already working on similar projects. The objective is to create, during the conference, a small group to work on the prototype for the platform and then to apply and test it in a few locations.

The platform Written World is a laboratory for debate and reflection that opens interesting new perspectives on the protection and enjoyment of graphic heritage, and also through the process of research and education, creates alternative ways of communicating in public spaces.

### KEYWORDS

signs, heritage, vernacular

### CATEGORY

Short Paper

## Democratising Design in Scientific Innovation: Application of an Open-Value Network to Open-Source Hardware Design (P335)

Maria Frangos, User Experience Designer, Master's student, Carleton University, Canada

Joshua Pearce, Associate Professor, Michigan Tiberius Brastaviceanu, co-founder of ACES-CAKE and Sensorica, Canada

Ahmed AKL Mahmoud, Assistant Professor, Arab Academy for Science, Technology and Maritime Transport, Egypt  
Technological University, United States

Abran Khalid, Sensorica, Pakistan

Open-source hardware (OSH) has been gaining momentum in recent years with several communities attempting to formalise its various aspects. One particularly promising area is the design of open-source scientific hardware. Previous work has shown that the use of digital fabrication techniques have allowed scientists to make high-quality scientific tools for 1-10% of the cost of commercial proprietary equipment. Open-source scientific hardware, and the open science movement in which it is situated, are part of a larger social shift characterised by open production methodologies in addition to decentralised and distributed models of collaboration. Design is also increasingly involved in supporting open production, both in terms of designing and developing technical infrastructures and encouraging and sustaining the processes that promotes collaboration and openness.

This paper builds on the work of open-source scientific hardware and emerging concepts in participatory design with a focus on commonsbased peer production. How do open production environments foster engagement and innovation? Can distributed modes of production support the design of open-source scientific hardware? To answer these questions, a design research case study was undertaken to investigate the design and social impact of a collaboratively designed open-source hardware instrument developed by Sensorica, an open-value network and an academic laboratory.

The project was designed to engage with makers and communities around the world to encourage its wider adoption, future evolution and continued development.

The challenges of this approach and the lessons learned will also be discussed.

### KEYWORDS

open source hardware, commons-based peer production, participatory design

### CATEGORY

Short Paper



## Critical Mass - A Creative Catalyst for Participatory Social Change (P336)

Tara Hanrahan, Senior Lecturer, London College of Communication, University of Arts London, United Kingdom

Sarah Temple, Course Director, London College of Communication, University of Arts London, United Kingdom

Design students were challenged to champion ethical and socially motivated issues, with the objective of engaging a 'critical mass'. The ambition was to innovate creative public interactions and to explore the effect of design activism on stakeholders. The problem-based learning project model prioritised genuine student critical engagement, which resulted in external/internal co-design and open practice informed by contemporary research. The project was evaluated through documentation and engagement of the 'mass' mobilised by each campaign.

The project, written by Hanrahan and Temple, commenced with workshops, lectures and research led by academics and practitioners, inspired and challenged by activists and ethical innovators. Over the following three months, students sustained connections with diverse cultures, generations, spaces and disciplines. The subjects addressed included the provenance of clothing, intergenerational disconnection, youth depression, fracking, gender identity, 3D printing, food waste, digital security and urban gentrification. The outcomes were pervasive, reaching out locally, nationally and globally via guerrilla projections, participatory performance, subversive publications, response encounter kits, creative petitioning, conflict mediation and social media subversion. The project evolved beyond the course requirements leading to national press coverage, an exhibition and a documentary film. Acting as a further catalyst, this instigated and inspired the publication of a newspaper exploring eco-social themes. The breadth of the project expanded with the momentum of engagement, reaching its own critical mass of 350+ student participants. The evaluation revealed the use of real-world design activism to a positive effect, challenged student empathy with current affairs and provided living resistance to some of the challenging issues of our time.

### KEYWORDS

activist, empathetic, engagement

### CATEGORY

Movie/video

## From Participation to Collaboration - Open Innovation as Place-making (P340)

Sissel Olander, Post-doctoral researcher, The Royal Danish Academy of Fine Arts, Denmark

This paper reflects on strategies for staging encounters and engagements among diverse actors in the processes of innovation that are open in the sense that the objective of the process, although formed within an overall programme and project frame, grows out of the situated and concrete process work itself. By drawing on a current design research project that deals with mobilising citizens around activities in a new library and cultural house under construction, this paper proposes collaboration rather than participation and place making rather than strategies for handling the open-endedness and complexity of the innovation process in a few selected workshops and events.

This paper describes how a space below an existing library becomes something other than the designer's playground or lab where diverse actors are invited to participate in a scripted process of innovation held together and planned by a design team. Rather, the openness of the place offers a dynamic living exchange; a collaborative in situ rehearsal of what could be, where different kinds of engagements that are not necessarily related to the question of the new library's future in direct terms, inform the process of innovation.

### KEYWORDS

open innovation, collaboration, place-making

### CATEGORY

Full Paper

## 12-12 & IndiFootwear: An Exergame System Facilitating Strength for Task Training for Older Adults Recovering from Stroke (P345)

Scott Brebner, Master's student, Victoria University of Wellington, New Zealand

William Duncan, Master's student, Victoria University of Wellington, New Zealand

Edgar Rodriguez-Ramirez, Programme Director of Industrial Design & Associate Professor, Victoria University of Wellington, New Zealand

Kah Chan, Thesis Supervisor, Victoria University of Wellington, New Zealand

Peter Freer, Senior Lecturer in Media Design, Victoria University of Wellington, New Zealand

Suffering a stroke can severely affect an individual's quality of life. With effective rehabilitation it is possible to recover the mental and motor functionality that was damaged by the stroke. However, rehabilitation can be very taxing on the individual, both physically and mentally, and many struggle with maintaining the motivation to continue.

In an effort to make rehabilitation more engaging, we explored the incorporation of a digital game system into the recovery process. This system converted prescribed exercises into gameplay using a special shoe controller designed to facilitate strength for task training (STT). STT is a novel physiotherapeutic process that revolves around performing brief but intensive strength training (priming) prior to task-specific training to promote neural plasticity and maximise gains in locomotor ability (Signal, 2014, p. 46).

The complexity of developing a rehabilitative aid for an older audience required the design process to be open to both clinicians and users. Regular consultation with health professionals helped maintain the integrity of the system as a physiotherapeutic aid. The inclusion of older adults in user tests helped refine the accessibility of the system and address the diversity within its target demographic.

The final output included a digitised dominoes game called 12-12, and a shoe controller that enabled STT through a modular weighted sole attachment.

This prototype was the amalgamation of knowledge acquired through an iterative, user centred design approach. The system provided a novel and adaptable means for older adults to rehabilitate and showed promise for becoming a positive addition to the recovery process.

### KEYWORDS

engagement, rehabilitation, stroke

### CATEGORY

Artefact - products or artworks

## Under the Skin: Designing Contemporary Experiences of Fashion Display (P347)

Kiara Bulley, Associate Lecturer, Queensland University of Technology, Australia

Sarah Winter, Program Coordinator, Queensland University of Technology, Australia

Madeline Taylor, Research Assistant, Sessional Academic, Queensland University of Technology, Australia

Bianca Bulley, Co-Designer, The Stitchery Collective, Australia

This paper positions the practice of the Stitchery Collective within current fashion debate through examination of two recent installations created by the group: Collective Collection (2014) and From Home, With Love (2015). The works of the Stitchery Collective are predicated on an immersive, sensory and interactive mode of experiencing fashion and clothing, similar to that achieved within the domestic space of the wardrobe. German fashion theorist Ingrid Loschek's (2009) theory of clothing and architecture as second and third skins is used as a conceptual framework for discussion of the modes of display used in the two installation works. Of particular interest is the relationship between clothing, memory and emotion and its ability to create a corporeal, 'live' experience for the participant. Examination of two key concepts, clothing as dead and clothing as lived, reveals that space and presentation can be specifically designed to generate an intimate engagement between viewer-participants and bodiless clothes. Central to the paper is the notion of reclaiming the space between the viewer and the garment. The dominant modes of engagement – the fashion show and the costume museum – create insurmountable boundaries between the garment and the body. The forms of the two installation pieces discussed offer an alternative mode of display that enables the participant to move among, touch and even step into garments.

### KEYWORDS

fashion, installation, participation

### CATEGORY

Short Paper

## Designed for Delight: Exploring Surprising Applications of 3D Printing in Lighting Design (P357)

Sebastien Voerman, Postgraduate student, Victoria University of Wellington, New Zealand

Edgar Rodriguez Ramirez, Associate Professor, Victoria University of Wellington, New Zealand

Surprising designs challenge our expectations and shape the ways in which we experience and perceive our surroundings. Surprise is a useful tool for designers, as it can elevate a product from mundane to memorable, drawing attention and inviting engagement. Previous researchers have explored the role of surprise in product design through analysis of sensory incongruities, most notably visual-tactile incongruities (Ludden, 2008). Sensory incongruity and surprise in product design [Doctoral dissertation]. Delft: Technical University of Delft, Faculty of Industrial Design Engineering). Three-dimensional (3D) printing is an evolving technology with affordances beyond those of traditional manufacturing, such as the ability to construct internal and complex structures, to build using multiple materials simultaneously and to create material gradients. The use of 3D printing in lighting design has yielded previously unachievable patterns, moving structures and light-permeation control. Lighting designers have also investigated surprise in relation to sensory incongruities. However, no research has yet been conducted on the use of visually-tactually incongruous 3D printing to elicit surprise in lighting design.

This research addresses the above gap by investigating the application to 3D printing of Ludden's (2008) strategies for creating incongruity. A series of experimental objects and lights were developed with visual-tactile incongruities designed to elicit surprise. These experiments aided the development of new approaches to design that benefited from the unique opportunities afforded by 3D printing. The potential of these new approaches is clear from the final designs created for interactive lamps: objects designed to inspire delight through their unique interactions and surprising qualities.

### KEYWORDS

interaction design, 3D printing, surprise

### CATEGORY

Artefact - products or artworks

## Affordable Housing?! (P394)

Christina Schraml, University of Applied Arts  
Vienna, Austria

Bo Mu, University of Applied Arts Vienna, Austria

Markus Gebhardt, University of Applied Arts  
Vienna, Austria

In less than 25 years, two-thirds of the world's population will be living in cities. However, the growing demand for residential space in cities cannot be met, due to an ever decreasing supply. As a result, the pressure on the international housing market has dramatically increased in recent years and the need for social housing has never been greater. According to a study published by Demographia in early 2016, for instance, housing in Hong Kong is less affordable than in nine other major markets worldwide, followed by Sydney, Vancouver, San Jose and London. Affordable housing is an enormous social challenge in other regions too. In search of alternative solutions to the housing dilemma, more and more citizens are taking matters into their own hands by claiming a right to housing.

The 'Affordable Housing?!' workshop will explore alternative approaches to housing development from the bottom up, emphasising self-empowerment, affordability and solidarity. After all, housing is a necessity of life. A living-room installation will be set up in a public space, showcasing international case studies and pilot projects on the social-housing debate. The pop-up living room will provide a space for the exchange and documentation of experiences, ideas and visions related to the housing question. The workshop will offer a low-threshold approach to the issues explored, encouraging the active engagement of conference participants as well as local people from Hong Kong, as everyone is an expert in housing.

### KEYWORDS

affordable housing, bottom-up, co-existence

### CATEGORY

Movie/video

## Woolf Works - A Three-act Ballet (P397)

Ravi Deepres, Professor, Birmingham City  
University, United Kingdom

How have individual and collaborative methodologies evolved in pushing the boundaries of choreographically driven artistic language and endeavour? The film design work for The Royal Ballet's 'Woolf Works' acts as an integral component of multidisciplinary design thinking. It considers the qualities of different genres, technologies and awareness within a projected spatial performance design context. Combining design and choreographic methodologies, solutions are found to harmonise and enable the co-existence of dance, texts, film projection, light, sound, space and set, creating an original language of expression through instinctive, organic and reactive approaches. This relies on reflexivity where preserving individual research and practice identities are embedded into the fabric of the process. By designing a structure where collaboration holds these individual voices together as one entity, it becomes possible to create hybridised design solutions for an original sensory experience within the theatrical arena. It also acts as an exemplar for potentially developing design practice through multi-disciplinary approaches.

Act 3, The Waves, acts as a good example because it represents a deep primal reconnection through which the choreographic design is critical in its effect upon the audience. Here, the emphasis highlights the building of components, gradually highlighting individual and then the total collaborative execution.

Sections will be screened after the presentation to contextualise aspects from the whole ballet.

### KEYWORD

Collaboration

### CATEGORY

Movie/video

## Design for E-very-one: Exploring the Possibilities of Open-ended Innovation Focused on Individual Diversity (P411)

Viktor Malakuczi, PhD student, Sapienza University of Rome, Italy

Deep user and stakeholder involvement is becoming the norm for designing systems, whereas the design process for durable goods remains relatively secretive, aiming a single, well-balanced design solution to a well-defined problem for a generalised user group. Nonetheless, ever since industrial design became a widely recognised, formalised profession in the modernist era, its attention has gradually turned from mass products for the general public towards niche products for sub-cultures, and specific solutions (either products or systems) for communities. Could the next step be turning to individuals? Practices such as mass customisation have already started to expand single solutions into wider solution spaces to better accommodate the diversity of potential users, even though the possibilities remain limited. Conversely, designing ad hoc for individuals is prohibitively expensive for widespread diffusion. One emerging opportunity for opening the design process to users is through digital fabrication with parametric/generative design (computer algorithms), which makes it possible to define an unforeseeable multiplicity of products in collaboration with the end users, according to their needs, desires, and identities.

The proposed workshop aims at mapping user diversities that are deep enough to benefit from the engagement of every single user in a collaborative design process, thus identifying possible points of intervention and raising new opportunities for developing authentically personal artefacts in the contemporary creative and productive environment. This activity builds on (and contributes to) an on-going research project that aims to elaborate design strategies and workflows for design practitioners searching to better serve 'e-very-one'.

### KEYWORDS

personalisation, digital fabrication, parametric design

### CATEGORY

Workshop

## Design in Times of Transition (P414)

Anna Bernagozzi, Head of Object Design Master/  
Design Theory Professor, École Nationale  
Supérieure des Arts Décoratifs (ENSAD), France

The element of time plays a fundamental role in the processes of ecological, economical and social transitions. The 'process of transition', within a broader reflection on the role of temporality within sustainable creative practices, offers in my eyes today's most powerful and disruptive ideas that will support the design of tomorrow's culture. I will focus on three fundamental components of this delicate transitional moment in time: the main ideas, theories and methodologies capable of enlarging and setting the discourse around transition. Some are inspiring and highly human creative forms of action undertaken by artists and designers in the past years and others are more concrete but sensitive stories crossing various fields and disciplines showing grassroots efforts that I would like to share.

### KEYWORDS

definition of transition (time/time-space/frontier...), art and design role and responsibilities, citizen and people transition practices

### CATEGORY

Workshop

## Fostering Engagement through Creative Collaboration (P415)

Tara French, Research Fellow, Glasgow School of Art, United Kingdom

Gemma Teal, Research Fellow, Glasgow School of Art, United Kingdom

Leigh-Anne Hepburn, Research Fellow, Glasgow School of Art, United Kingdom

Sneha Raman, Research Associate, Glasgow School of Art, United Kingdom

The aim of design innovation is to tackle complex societal challenges through new design practices and bespoke methods of engagement (McAra-McWilliam, 2012). Creative collaboration is a core aspect of design-innovation practice, and the design process involves diverse stakeholders such as academic, business and civic partners and, most importantly, end users. In the healthcare context, innovation requires collaboration between a variety of actors to design transformative products and service solutions (Bradwell and Marr, 2008). Consequently, the focus of design has shifted from artefacts/outcomes to the design of an open and participatory process that relies on participants' direct contextual insight, creativity and lived experience and accommodates multiple perspectives.

The participatory approach to design taken by Experience Labs opens up the design-innovation process to multiple stakeholders. Experience Labs provides a space for collaboration and co-creation by a range of stakeholders and end users (French, Teal and Raman, 2016). Within this space, participants are required to engage actively with both the concepts explored and each other's points of view.

We discuss here our approach to designing spaces for collaboration that enable multiple stakeholders to participate in the creative process. We use examples to illustrate the tools, artefacts and activities designed to help participants to meaningfully engage with others' ideas, and our strategies for curating groups and managing collaboration. We share our findings regarding engagement in design and its effects on people, processes and outcomes, and consider possible applications of this approach to foster engagement in other contexts.

### KEYWORDS

engagement, collaboration, creativity

### CATEGORY

Full Paper

## Design for Healthy Eating: Engaging Children to Understand Food Practices (P445)

Tang Tang, Lecturer, University of Leeds, United Kingdom

Seahwa Won, University of Leeds, United Kingdom

The food children eat in their early years can influence their dietary habits later in life. It is important to understand the factors influencing children's food choices and consumption to support the development of appropriate interventions that facilitate healthy eating. Design has recently been recognised as a potential approach to fostering healthier behaviour (HE). Designers shape the development of products and services that encourage people to change their behaviour and adopt healthier lifestyles. The discipline of user-centred design (UCD) offers numerous methods for acquiring insights into the factors and contexts affecting people's behaviour. However, little is known about how to gather such insights from children. Children as users have their own preferences, interests and developmental needs that are different from those of adults. The purpose of this paper is to review the relevant literature that engages children in the design process to identify suitable methods for investigating their eating behaviour. It begins with an investigation of the determinants of children's HE from a range of disciplines including economics, psychology and sociology. UCD methods for sustainable behaviour, which could potentially be used to understand children's eating attitudes, preferences and behaviour are evaluated. Conclusions are drawn with regard to their suitability for data collection from children for the design of HE. The findings from this review will inform the development of design interventions to promote healthy eating based on children's age and stage of development as part of the Downsizing project funded by the BBSRC DRINC UK.

### KEYWORDS

design for healthy behaviour, social practice theory, food diary

### CATEGORY

Short Paper



## Design as Process: Artistic Interventions & Civic-minded Improvements as Artefacts (P447)

Catherine Normoyle, Assistant Professor, Memphis College of Art, United States

In recent years, we have seen a significant shift in the field of design, from design as an artefact to design as a process. This shift challenges the designer to think strategically about the entire process, examining the design artefact as a single component within a much larger, more complex system of parts. This paper introduces the designer as strategist and systems thinker in the context of social design projects, while the community takes on the role of participant and maker. This central idea, inspired by the DIY (do-it-yourself) and open-source mentality of residents, is to create a workforce of critical makers who are especially useful in local endeavours with limited budgets. An open model for community engagement empowers citizens as they find ownership and authorship in the process. However, inherent challenges face the designer, the most obvious being the ability to relinquish control of aesthetics.

This paper reviews four community renewal projects in four distinct neighbourhoods of Memphis, TN, US: the Make Memphis campaign (2012), Knowledge Quest Garden (2013), Revival Wall project (2014) and Crosswalk Safety Project (2015). The design process, outlined in detail, includes the roles, responsibilities and tools for all phases of work including research, strategising, creating, prototyping, engaging, implementing, and managing both designers and community members. Designers serve as strategists, systems thinkers, and activists for social change. The conclusions expand on ways to implement this model in different types of communities, investigating the future effects of the model and key insights for global contexts.

### KEYWORDS

social design, strategic design, community involvement and participation

### CATEGORY

Full Paper

## Living Labs and Co-design for Social Innovation: Mapping the European Model to Asian Societies (P451)

Yuki Taoka, Tokyo Institute of Technology, Japan  
Kaho Kagohashi, Tokyo Institute of Technology, Japan

Celine Mougenot, Associate Professor, Tokyo Institute of Technology, Japan

Social innovations, as new ideas for simultaneously meeting social needs and creating social relationship or collaborations, are promising ways to solve socially wicked problems, as they can blur traditional boundaries by creating new social relationships and collaborations. Designers are at the centre of social innovation, by contributing to 'co-design' aimed at social change, where designers empathise with people or 'users' to facilitate the co-creation of ideas. Although social innovation and co-design initiatives are numerous in Europe (DESI, 2013), they are not very common in Japan yet. We review the type and number of places dedicated to co-design for social innovation, such as Living Labs and FabLabs, in the world and in Japan. Second, we explore the assumption that some characteristics of Japanese culture, such as high power distance, high uncertainty avoidance and low individualism (Hofstede, 2010), may prevent the development of the European co-design model in Asia, and more specifically in Japan. We hope to conceive of new ways to conduct social innovation in Japanese society and to create new tools for that purpose.

### KEYWORDS

co-design, living labs, cultural dimensions

### CATEGORY

Full Paper

## Re-negotiating Politics of Fear in Public Spaces (P454)

Ruth Mateus Berr, Professor, University of Applied Arts Vienna, Austria

Martin Faerber, Brigitte Felderer, Michel Goelz, Peter Oroszlany, La Schandre Coetzee, Christina Schraml, Enrico Tomassini, Herwig Turk, Julia Wohlfahrt, University of Applied Arts Vienna, Austria

In the realm of public space, the rational and the emotional are closely intertwined. The so-called refugee crisis in Europe has been exacerbated by fear entrepreneurs (politicians, media, etc.) who benefit from the creation of irrational fear among people. The project 'Re-Negotiating the Politics of Fear in Public Spaces' aims at inviting people from the city to discuss their personal notions of fear and hope for the future in general, with an additional focus on the constructions of fear in the context of the rise of right-wing parties in Europe.

Listening is understood as a political action (Lacey, 2013), and can be applied in artistic research as a participatory praxis. Draper (2013) describes the artistic research process by using the metaphor of an elephant described from the different perspectives of blind men. The summary of the descriptions in turn creates an image of the potential object. In the same way, collated descriptions of fear from different perspectives may indeed design the image of itself.

In this paper, we discuss participatory design strategies that investigate fear in its rational and irrational forms, and its relativity to the current refugee situation. Fears left unspoken cannot be negotiated or contested. Fears that are outspoken and recorded immediately become contributions to a continuous debate that can generate a wider discourse on the matters of concern.

Fear should again become a sincere emotion and not a manipulated fiction, one that interfaces with reality and one that calls into question, 'What kind of (urban) future do we want'?

### KEYWORDS

fear, arts as urban innovation, practice as research

### CATEGORY

Full Paper

## SoLoMo Revitalising Nature Renewal (P463)

Jing Cao, Vice Director, College of Design and Innovation, Tongji University, China

Xinyue Qian, Design Assistant, College of Design and Innovation, Tongji University, China  
Jacqueline Laura, Design Assistant, College of Design and Innovation, Tongji University, China

The SoLoMo Revitalising Nature Renewal project is aimed at exploring how the design-driven SoLoMo (John Doerr, 2011) service can contribute to enriching human-nature interaction. Inspired by human nature philosophies from the Huaren culture and society, for this project, man is considered to be an integral part of nature.

The rapid progress of urbanisation in China is sharpening the contradiction between humans and nature. Long-term alienation of nature has resulted in a widespread nature-deficit disorder in metropolitan areas. We can see a huge imbalance between the supply and demand of nature education, especially in the younger generation. Ubiquitous network and crowdsourcing (Jeff Howe, 2006) technologies show us the possibilities for enabling education that transforms individuals from passive recipients into ground up proactive creators.

Crowdsourcing can play an irreplaceable role in supporting the social development of nature education in which the natural elements share the characteristics of being dynamic, diverse and uncertain. Organisations and designers in charge of the nature education project must be prepared for the increasingly vibrant trend of participatory social innovation, which requires new frontiers of design and educational practices.

This project presents the design practices, including both traditional and new media products. Small-scale interactive design experiments were conducted to enrich nature-human interaction intended to revitalise nature renewal in the Siping Community, including the Tongji University campus.



The result illustrates how the bottom-up gear-wheel production mechanism of crowdsourcing can be applied to our open design practice, and how design-driven SoLoMo nature learning can bring enjoyment to learning and visualising nature, acting as a means for public engagement and learning to empower eco-friendly communities and accelerate the growth of self-media.

#### KEYWORDS

open design, SoLoMo learning, nature renewal

#### CATEGORY

Artefact - products or artworks



Open Design for  
Environment

## Learning by Planning: Collaboration across the Environment (P111)

Annabel Pretty, Senior Lecturer, Unitec Institute of Technology, New Zealand

Sara Hyltén-Cavallius, Head of Design School, Linnaeus University, Sweden

Learning by Planning: Collaboration Across the Environment, is a partnership and collaboration between two schools separated by some 17,000 kilometres: the Design School, Linnaeus University, Växjö, Sweden, and the Architecture Department at Unitec Institute of Technology, Auckland New Zealand. Notwithstanding this vast literal spatial distance, the commonalities of design pedagogy are readily apparent within both programmes, even though one is a core design field, and the other sits within the architectural end of the design continuum or spectrum. This paper aims to investigate this mutuality by learning from one another by way of disseminating frameworks, tools, design methodologies, teaching praxis and the core pragmatic similarity embedded in sustainable design. This proposition will parallel the context of case studies in both courses and programmes chosen from each institute, and will conclude with a summary where foreseen outcomes will be addressed: Learning by Planning: Collaboration Across the Environment.

### KEYWORDS

knowledge transfer, speculative design, sustainable design

### CATEGORY

Full Paper

## Charting 'Deep Metaphors' that Reveal Millennials' Mindsets of 'Fast' and 'Slow' Fashions (P177)

Abel Hernandez, MFA graduate student, The Ohio State University, United States

Peter Kwok Chan, Associate Professor, The Ohio State University, United States

The term 'slow fashion' was coined by Kate Fletcher to counter the growing trend of the 'fast fashion' industry. In recent years, the clothing industry has been dominated by fast-fashion that has spurred overconsumption in which users buy more than they need. This has created a throwaway mentality.

The aim of this study is to develop a critical-creative thinking framework based on the understanding of and insights into how the Millennials view apparel consumption. To construct this framework, the authors leverage the 'deep metaphors' identified by Gerald and Lindsay Zaltman to create viewing lenses that reveal the users' rational and emotional state of mind concerning sustainable fashion. This study examines the seven deep metaphors (balance, transformation, journey, container, connection, resource and control) that the Zaltmans described as being lasting methods for perceiving information and progressive collaborations involving the brain, body and society.

Data were collected from over 100 millennial college students through surveys and focus groups. Visual thinking and user journey mapping activities were conducted to gain a deeper understanding of what the Millennials do, think and feel about responsible consumption. The authors summarise various aspects of 'fast' and 'slow' fashion mind-sets through the basic viewing lens of selected deep metaphors using collages of photographs and illustrations, narratives and visual stories, information graphics, process diagrams, quotes, statements and facts. The results of this study can be applied to identify new mindsets for educating and inspiring responsible approaches to the apparel industry by encouraging users to embrace 'slow' and sustainable fashion.

### KEYWORDS

slow and fast fashion, sustainability, millennial generation

### CATEGORY

Artefact - products or artworks

## A Serious Game Prototype Design for Social Advocacy - Using the Air Pollution of the Six Naphtha in Yunlin as an Example (P202)

Yi-Hung Tung, student, National Yunlin University of Science & Technology, Taiwan

Wen-Huei Chou, Professor, National Yunlin University of Science & Technology, Taiwan

To solve the lack of petrochemical raw materials in Taiwan, Yunlin County decided to build the sixth naphtha cracking plant, known as Six Naphtha, which now produces the greatest amount of petrochemicals in Taiwan. Since the Six Naphtha began operating, the overall air quality has worsened, along with a significant rise in cancer rates. This research aims to promote awareness of the air pollution caused by Yunlin's petrochemical industry by designing a prototype of a serious game for mobile devices. This application integrates with the geographic information system (GIS), provides user air pollution related digitalised information and enables users to obtain a better understanding of air pollution issues.

First, we collect Yunlin air pollution related survey data and data analysis documents that become the game's primary data. Then, we invest in a GIS for air pollution to support this study. Finally, we analyse digital game cases and associated documents. Thereafter, a prototype is designed based on the above principles and an application results as explained below. The application's strategy includes the type of games where players gain a deeper impression of the game through reflection and problem solving. With the use of the GIS for air pollution, real and immediate information makes the game more convincing. The game mechanism can reflect real life in such ways as sharing air pollution advocacy messages to receive more bonus points in the game. Through interaction between the virtual and real world, the game will be able to influence everyday life.

### KEYWORDS

serious game, geographic information system (GIS), industrial air pollution

### CATEGORY

Full Paper

## Engaged design. Descending from Bird's-Eye to Man's-Eye view (P205)

Ief Spincemaille, Werktank, Belgium

'Order your sunlight online!' Three motorised mirrors on the Sint-Maartensdal site gave the occupants of apartments facing north the opportunity to enjoy direct sunlight. All they had to do was visit a website, give their apartment number and at the requested time one of the mirrors would turn to reflect the sunlight through their window. In the 60's, one of the largest social housing complexes in Leuven, Sint-Maartensdal, was built to create a modern social community. Renaat Braem, a modernist with a social mission, was its architect. He saw architecture as an instrument for building a better society. To create this better environment he did not only use stones, but included light, water and green surroundings, which he saw as essential elements. Braem wanted, 'with the deliberate organisation of space, to create a bright island filled with the joy of life amid the city's depressing chaos.' The front of block 1B, one of the six blocks in Sint-Maartensdal, is always dark. Only in the morning do the residents of Block 1B catch a ray of sun if they lean their head out the window. Strange. Built on a utopia of light, a sense of community and green areas. Then this is the result: a dark block with hundreds of residents who barely know or talk to each other.

How could this occur? Did Braem encounter a conflict during his design process, which made it impossible to create good architecture and at the same time a social relevant design? And did this conflict occur from his specific bird's eye design perspective?

### KEYWORDS

interactive, utopia, city

### CATEGORY

Artefact - products or artworks

## Design with Public: A Research of Participatory Approach in Built Environment (P228)

Limei Nong, PhD candidate, Tsinghua University, China

The focus of this paper is open design in the built environment, with an emphasis on participatory architecture oriented towards users rather than designers and towards the principle of 'designing with people' rather than that of 'designing for people'. This approach is expected to empower public users and shareholders to participate in the design process.

Two cases are analysed as examples of direct and indirect participation, respectively, in the design of the built environment. The Collegi University of Urbino in Italy, designed by Giancarlo De Carlo', affords an example of participants' indirect role in 'reading' the historical context and identifying the needs of potential users (students). An example of direct participation is offered by an after-earthquake primary school in Chengdu, designed by Shigeru Ban Architects. Here, simple structures made from locally sourced cardboard tubes, which can be collaboratively assembled by non-professional volunteers, provide a quick solution appropriate to the school's hazardous location, as well as representing the Chinese tradition of public collective building. Constant public participation is essential to ensure that both architecture and communities remain socially responsible and sustainable throughout their life cycles. The proposed participatory approach combines a fundamentally thoughtful approach to design and construction with a meaningful political standpoint, as well as providing an implicit education in the evolutionary diversity of community interests.

### KEYWORDS

participatory architecture, user-orientation, open design for built environment

### CATEGORY

Full Paper

## Designing Resilience for a Changing World (P286)

Tonya Sweet, Senior Lecturer, Victoria University of Wellington, New Zealand

Catherine Caudwell, Lecturer, Victoria University of Wellington, New Zealand

Due to our increasingly unstable natural environment and increasing awareness of a new breed of natural disasters on the horizon, anxiety about our vulnerability within the changing world is growing. In adapting design to today's ecological challenges, it is vital to consider alternative approaches that not only conform to the principles of sustainability but meet our psychological and social needs. The effective promotion of psychological well being through design requires an expanded application of the principles of emotionally durable design. This paper investigates these ideas through a case study of the development of experimental furniture designed to mitigate the adverse psychological effects of natural disasters, with a specific focus on earthquakes. The direct experience of an earthquake can be traumatic and enduring, extending far beyond the duration of the tremor. For those residing in a seismically active region, the threat of disaster is a constant source of anxiety. In this research, a proposal is made for a shift in emphasis from physiological to psychological needs and an expansion of our current understanding of the role of design in response to natural disasters. Physically and digitally interactive, multi-material furniture forms are designed and produced as part of the research project, illustrating the use of empathy, humour, creativity and play to foster psychological resilience to seismic events. Ultimately, this project offers timely support for sustainable design practices through the development of meaningful and durable design relationships.

### KEYWORDS

speculative, design psychology, furniture design

### CATEGORY

Short Paper

## Schools as Agents of Change (P298)

Alison Mears, Director, Parsons School of Design, United States  
Cristina Handal, Parsons School of Design, United States

St George's School is a new rural K-through-12 schools in Gondar, Ethiopia, founded by a UK-based organisation and intentionally reliant on local Ethiopian talent, resources and expertise. Education is vital to move Ethiopia from poverty to stability and increase access to jobs. Education also provides a means to resist the unrest and instability that plagues many African countries suffering from the effects of neocolonialism. The school is designed to be broadly self-sustaining and will eventually become financially and organisationally independent.

From the project's inception, the educational philosophy for the school evolved as a result of many factors. The close ties to the local community, the school site by the river, the architectural design and construction processes and planning for the future uses of the school all had an effect on the development of the school's philosophy. The Ethiopian environment and a number of related sustainability issues were important drivers of the design. The project team was transdisciplinary and included educators, designers, financial experts, a local nonprofit and community leaders with regional experience. The team was committed to creating a school that would not only provide education but also serve as a new community hub and promote local economic development.

The school provides a completely free co-educational experience for the community's most vulnerable children and demonstrates the power of design to provide a healthy environment and an important physical locale that fosters learning and growth. At St George's, children become the future agents for change in Ethiopia.

### KEYWORDS

gender and education, sustainable school ecosystem, design strategies

### CATEGORY

Full Paper

## Designing Transdisciplinary Dialogue to Innovate towards Sustainability (P307)

Susan Evans, Visiting Professor, Tongji University, China  
Anne Peirson-Smith, Assistant Professor, City University, Hong Kong SAR

The purpose of this paper is to contribute to the project of designing for the complexities of sustainability based on collaborative stakeholder efforts to produce innovation that significantly changes the way designers operate and ensures greater sustainability. In this paper we explore both the benefits of reframing techno-socio-environmental problems within a circular system and the value of transdisciplinary dialogue among system stakeholders to implement this project in a given community.

We aim to outline an approach that from a theoretical perspective can be applied to an extensive range of complex problems, unlimited by discipline, that leads to a broader discussion on what implications such an approach has for design research.

In this paper we use a qualitative case study reporting on feedback from two workshops in Hong Kong and Shanghai where outcomes initialise co-creation towards sustainable fashion.

A human-centric systems and design thinking approach is used to achieve an integrative developmental process and transdisciplinary design dialogue within a workshop environment. Among the unique convergence of fashion supply chain system stakeholders, the collaborators range from bridging start-ups, global retailers and academics to experienced fabric manufacturers and government policy makers.

As a result of this approach, the participants achieved a deeper and broader understanding of how to create a more sustainable fashion supply chain system, demonstrated consensus for viable change, discussed opportunities to remove development barriers and explored potential new roles and collaborative opportunities for taking the next steps towards visionary sustainability in the fashion industry.

### KEYWORDS

transdisciplinary-dialogue, reframe, sustainability

### CATEGORY

Full Paper

## What Role Can Designers Play in the Vision Towards Sustainability and How as Educators Do We Prepare Them for Success? (P319)

Susan Evans, Visiting Lecturer, Tongji University, China

Mathilda Tham, Professor in Design, Linnaeus University, Sweden

Sara Hyltén-Cavallius, Head of Design School, Linnaeus University, Sweden

The objective of this workshop is to create a space for synthesis and to build on the paper sessions on sustainability, with a focus on design education. What roles can designers play in the vision towards sustainability? What is required of design curricula, pedagogies, educators, academic institutions and wider partnerships to support students adopting these new or modified roles? The workshop aims to set an agenda for years to come and to create an ongoing 'think and do-tank'. This interactive and action orientated workshop is led by an interdisciplinary group from the Cumulus network and the Cumulus working group for sustainability, representing European and Asian perspectives, and both theory and practice.

This will be a three hour-long workshop with practical outcomes. Max: 30 participants.

The workshop is structured in three consecutive sessions.

1. The synthesis of insights from paper sessions & shared examples of best practices.
2. The new designer roles at the intersection of curriculum, tradition and emerging socio-cultural, economic and ecological systems.
3. Designing: prototypes for integrating relevant and applicable sustainability learning into the design curriculum and academic institutions.

Outcome:

Exhibits: 1. prototypes for sustainability learning in academic institutions and in our wider partnerships; and 2. an agenda proposal for a 'think and do-tank' for ongoing Cumulus conferences.

### KEYWORDS

sustainability, curriculum, design

### CATEGORY

Workshop

## The Future of Urban Food (P321)

Davide Fassi, Associate Professor, Politecnico di Milano, Italy

Susan Evans, Visiting Professor, Tongji University, China

Anna Menoni, Associate Professor, Politecnico di Milano, Italy

The purpose of this workshop is to build on the discussion of the 'future of urban food' with the aim of sharing, both globally and locally at the Cumulus host city, action-orientated reflections to aid decision-making and the development of better food systems. A further purpose is to collaboratively build on the current knowledge of the global participants, enabling greater understanding, critiques and reflections on design research in the field of food within specific cultures and environments. How can designers, design research and education contribute to the future of sustainably feeding our urban environments?

The workshop will be created and conducted by an East-West mix of design researchers and instructors from the Cumulus and DESIS network (design for social innovation and sustainability), who are active in this field in both in theory and practice.

The intent is to reframe the techno-socio-environmental challenges and to design a trans-disciplinary dialogue among global interdisciplinary Cumulus members and the DESIS 'food cluster' (<http://desis-foodcluster.org/>) participants, along with input from Hong Kong's food system stakeholders.

In doing so, the intention is to build on a source of knowledge that can globally aid the Cumulus schools in their development of 'urban food sustainability' within the design discipline, its systems, artefacts, spaces and people relationships.

This will be a three-hour workshop. Maximum 30 participants.

Outcome: Scalable workshop for on going Cumulus conferences; exhibit prototypes and narratives to aid in urban food decision-making towards improved and sustainable food systems.

### KEYWORDS

sustainability, food, urban

### CATEGORY

Workshop



## Zero-Wastage Footwear (P348)

Ho Tak Ho, Hong Kong Design Institute, Hong Kong SAR  
Wang Hei Li, Teaching Fellow, Technological and  
Higher Education Institute of Hong Kong, Hong  
Kong SAR

Hoi Tung Lai, Technician, Technological and Higher  
Education Institute of Hong Kong, Hong Kong SAR

Sustainable design is gaining increasing attention from both practitioners and academics, yet very limited research has been conducted on sustainable footwear design and pattern development. Given the seriousness of wastage during the processes of footwear design and manufacturing, this research investigates several sustainable fashion-design and pattern-cutting methods, and ultimately provides a zero-wastage approach to footwear design that optimises material usage and reduces the production costs of cutting and stitching. To facilitate an open-design approach to sustainable footwear design, we collaborated with a group of shoe-design practitioners, academics and consumers in several studio-based workshops to assess the effectiveness and efficiency of existing shoe-design methods in minimising material wastage while achieving comfort-related and aesthetic goals. Based on these findings, we propose a mixed method whereby several large quadrilateral shapes are cut and joined together like a jigsaw puzzle to achieve zero wastage. The resulting shoes and other specimens are visually exhibited as artefacts to showcase the experimental design and development processes. This research project contributes to sustainable design literature and practice by introducing a zero-wastage approach to refine the processes of footwear design and production.

### KEYWORDS

design solution, sustainable design, zero wastage

### CATEGORY

Artefacts – products or artworks

## Open Bio-hacking Fashion towards Sustainable Production Lines: Studying Bio-material Development and 3D Forming (P352)

Kazuya Kawasaki, Keio University, Japan

Daijiro Mizuno, Associate Professor, Keio University,  
Japan

Tomoya Ohta, Keio University, Japan

Through the application of biological materials to the process of dressmaking, this practice-led research analyses the production line of the fashion industry and tries to propose sustainable solutions. It also aims to combine emerging biotechnology and sustainable fashion to establish sustainable design as an alternative design process in a polluting industry.

There is a need for sustainable fashion. Since 2010, artists and designers have started to investigate material innovations driven by the technological potential of synthetic biology and DIY bio-hacking (Myers, 2010). The creative fusion of emerging biotechnologies and design has opened up the renewability of the conventional design domain. Recent practice-led research in fashion design has looked at the relationship between ecological sustainability and biotechnology as a means of coping with limited global resources (Fletcher, 2008).

The authors adopted a methodology using two processes to make a bio-garment. First, a DIY bio experiment was conducted to culture the ecological bio-material SCOBY (a symbiotic colony of bacteria and yeast) that produces bacterial cellulose. This material has similar properties to leather. Second, designing the garment through 3D modeling was tackled because we aimed to make the bio-materials grow onto a 3D printed mold as a 'zero waste method' (Rissanen; Mcquillan, 2016), eliminating textile waste at the design stage.

The ultimate goal of the research was to speculate on an alternative production line for future sustainable fashion.

### KEYWORDS

fashion design, bio design, sustainable design

### CATEGORY

Artefact - products or artworks

## Remark: An Open and Co-design Process for Sustainability through Making (P369)

Mark Richardson, Lecturer, Monash University, Australia

Rowan Page, PhD candidate, Monash University, Australia

Vincent Moug, PhD candidate, Monash University, Australia

Helen Millicer, Project Manager, Vinyl Council of Australia, Australia

Issues relating to sustainable design often manifest as complex problems at the intersections of diverse groups of stakeholders and actors. The collaborative approaches of both open design and codesign are well positioned to tackle these wicked and interconnected design problems by engaging and empowering stakeholder groups. This paper investigates the establishment of a design platform that combines the grassroots horizontal collaboration of the maker movement with the potential of generative co-design practices to function within hierarchical expert knowledge structures. Together, the two methodologies led to the creation of an open space that concurrently accommodates making activities and co-design workshops with expert stakeholders, centred on a project addressing material reuse.

The creation of the above participatory maker space was part of a yearlong project investigating strategies for reducing vinyl-coated fabric waste and promoting a circular economy. Every year in Australia alone, more than 5,000 tonnes of vinyl-coated fabric waste goes to landfill, of which 500 tonnes can be attributed to advertising banners: the focus of this project. Led by the Vinyl Council of Australia and Monash University, a group of expert stakeholders across both the supply chain and the value chain collaborated with the strategic aim of innovating sustainable practices through a rich combination of making and co-design. The outcomes were a range of opendesign possibilities to be developed further for possible introduction to the market and the simultaneous establishment of a diverse and collaborative community of practice focusing on material reuse.

### KEYWORDS

open design, making, vinyl reuse

### CATEGORY

Full Paper

## The Environmental Terrorist: Exploring Individual Responsibility and Emotional Engagement through Design Research to Understand Issues around Climate Change (P378)

Alettia Vorster Chisin, Senior Lecturer, The Cape Peninsula University of Technology, South Africa  
Henry Mainsah, PhD Co-ordinator, The Oslo School of Architecture and Design, Norway

Climate change has made its mark on the world – how an individual in his community responds to this phenomenon is under the spotlight here. This short paper explores creative and design approaches to gain an embodied and situated understanding of climate change in a localised context. In taking as a point of departure the local interventions and design practices of a specific farmer in a South African context, a narrative dialogue with the farmer, who embraces radical environmentalism for change, is discussed. As a practising artist and social designer, this environmental terrorist has devoted his life to the local project of combatting ecological degradation on a sea front farm on the South African west coast. Both ethnographic and design approaches were adopted where visual and sensory methods were used by the researchers in their encounter with the farmer and in self-reflection about and perceptions of the study's site. The dialogue was recorded and life writing supported by poetry and sketches was used, including timeline photography of the farm. The methodology embraced the concept of emergence – heeding creative, intuitive and unfolding meaning moments in dialogue and encounters. The paper is written in the form of mixing vignettes and analytical reflections where we drew on interdisciplinary theoretical literature to frame the discussion. We argue that to play a meaningful role in addressing issues of climate change, designers need to understand the way culture frames people's understanding and experience of their environment and acts as a commanding change agent.

### KEYWORDS

design research, embodied experience, environmental activism

### CATEGORY

Full Paper



## Boundary Objects: Transitioning beyond Borders (P381)

Corbin Raymond, Junior Lecturer, The Cape Peninsula University of Technology, South Africa  
Henry Mainsah, PhD Coordinator, The Oslo School of Architecture and Design, Norway  
Alettia Chisin, Senior Lecturer, The Cape Peninsula University of Technology, South Africa

The classification of a boundary object is brought under question through this paper as it attempts to define it within a multidisciplinary design project. We analyse a project that explores climate awareness through qualitative methods of inquiry. This consists of researcher's observations and reflections and contextual photography. We illustrate the process of how this boundary object is created and then 'destroyed', and we argue that this process is the transition from the ontological to the epistemic realm of design. This paper further describes how a boundary object within a transposed learning environment can incubate deeper levels of learning about wicked problems such as climate change and climate awareness. The initial purpose of Fiscilla, the boundary object that is discussed throughout this paper, embodies the natural elements of fire, water, earth and air within 'her' quest to generate climate awareness. Remarkably, Fiscilla does more than just embody the embedded metaphors associated with boundary objects, she becomes what we coin, a 'personified artefact'. This paper identifies and describes the transposition of geographical, physical and psychological boundaries through a boundary object. The 'transpositioning' illuminated interdisciplinary cohesion between student groups fosters both participatory design between a university, students and local communities and the flexibility needed for a boundary object to move from a tangible to an epistemic realm of climate futures.

### KEYWORDS

boundary object, climate change, climate awareness

### CATEGORY

Short Paper

## Up\_Citying. Four Ecologies for an Open Design Environment Approach (P382)

Massimo Bruto Randone, Contract Professor, IED - Istituto Europeo di Design, Italy  
Timothy Jachna, Associate Dean (Research), The Hong Kong Polytechnic University, Hong Kong SAR  
Alvin Yip, Adjunct Professor, Central Academy of Fine Arts, China  
Paolo Inghilleri, Professor of Social Psychology, Università degli Studi di Milano, Italy  
Irina Suteu, Contract Professor, Nuova Accademia di Belle Arte, Italy

The last 15 years have witnessed the emergence of an important participatory approach to the bottom-up generation of multidisciplinary content in the urban environment. This is due to the increasingly connected nature of communication, which increases awareness of the relationship between demographic and structural density and offers insights into resource scarcity.

We thus introduce a four-part framework to capture the changing openness of the urban environment, proposing the concept of Up\_Citying. We address the following two main questions.

- How should designers (both expert and 'anybody' designers) be engaged in the long term with the city and its active-citizenship movements?
- How should all of the phases of the design process (from analysis to implementation, followed by the evolution of implementation outcomes) be situated in the cultural and digital context of the city?

In this paper, the preliminary findings of two pedagogical studies conducted at design schools – The Hong Kong Polytechnic University and the Domus Academy of Milano – are reported.

The proposed framework for analysis has the following four components.

- Space Ecology: comparing built cities with temporary, not yet legal, rethought and/or desired cities that generate physical places, structures and voids.
- Identity Ecology: referring to the building behaviour of individuals, groups and communities and the roles of their cultures, habits, fears and challenges in shaping cities.

- Policy Ecology: planning stakeholder networks and partnerships to optimise strategic relations and interactions and ensure meaningful dialogue.
- Programme Ecology: planning interventions and events based on the Up\_Citying concept; combining bottom-up and top-down strategies that involve and attract active citizenship.

## KEYWORDS

urban-generated-content, active-design, meta-environment

## CATEGORY

Short Paper

## Is Fashion in Need of a Paradigm Shift? (P413)

Malene Harsaae, Lecturer and PhD student, VIA University College and Aarhus University, Denmark  
Mette Nørgaard Terkildsen, Lecturer and PhD student, VIA University College and Aarhus University, Denmark

If the answer to this question is yes, then our next question is how might that affect the creation of fashion and thus fashion design education? The research objective of this study is to explore the potential benefits of integrating the interdisciplinary perspectives and research areas of engineering, aesthetics and users in making fashion apparel. In this way a more holistic approach to the working processes adopted by stakeholders in their allied effort to produce fashion products that counter the preferences of users can be achieved. The intention of a holistic approach is to create more sustainable products in addition to a more sustainable workflow to reduce the number of wasted samples. In this paper, we understand sustainability to be a process focusing on consideration. In the process, stakeholders reconcile their approaches to work and concomitantly consider their approach to the users at an early stage.

One research area addresses the complexity of fit and sizing and its effect on women's buying behaviour and self/self-esteem. The study looks into the aesthetic fit, technical fit and commercial fit through empirical research and 3D scanning. The other research area addresses trend mechanisms and the correlation between fashion trends and customer preferences with a focus on older age groups. The research is work in progress and the paper elaborates on the process of combining the empirical research from the two research areas and the rationale for selecting the binary position.

## KEYWORDS

sustainability, alignment, design education

## CATEGORY

Short Paper

## Five Classical Elements (P470)

évY Dutheil, Designer in Residence, Birmingham  
City University, United Kingdom

A series of artefacts exploring the classical elements of the universe, earth, sun, air, wood, and quintessence, challenge the emotional connection, awareness, sustainable design and material research approaches. The elements are historical, sociological, philosophical and essential matters. How can designing for the environment help to reconsider the value of these factors in our urban lives?

This research stimulates scientific approaches, user experience and an object's meaning. The artefacts are engaging, caring, poetic and playful. The process of development and production play an important part in harmonising the final aesthetic signature and challenging the virtuous craftsmanship process. Together with local scale and light industrial production with horizontal evolution, they are put into practice through the cradle-to-cradle principle, bio-mimicry and eco-friendly material experimentation. The results are multiple and critical, leading to a series of bio-diverse conceptual objects, organic and singular with their own character.

The outcome invites audiences to re-consider their connection with nature, the lifecycle and alternative ecosystem scenarios for the future.

### KEYWORDS

sustainable drivers, material, design experimentation

### CATEGORY

Artefact - products or artworks



Open Design for  
Ethnography

## Transformation of Traditional Rice-Cooking Utensils in West Java Indonesia into Modern Design (P122)

Jamaludin Jamaludin, Lecturer, National Institute of Technology (Itenas), Indonesia

Modern electrical home appliances have almost completely replaced traditional rice-cooking utensils in West Java, Indonesia, due to the simplicity and versatility of their use. Indeed, this is part of a global trend in both urban and rural areas. Traditional cooking utensils, which are usually produced by local craftspeople, have been marginalised, and some are at risk of being lost altogether. As part of an initiative to sustain the production and use of traditional cooking utensils, the idea of transforming them into components of modern interior products emerged.

The aim of this paper is to demonstrate the process of the above transformation, with a focus on the traditional rice-cooking utensils of West Java. Rice steamers made from woven bamboo are selected as a case study. First, an ethnographic method is used to assess the craftsmanship required to create traditional rice-cooking utensils made from woven bamboo in West Java. Second, experimental methods are used to examine the possibility of transforming traditional rice steamers into modern design components. Specifically, sketches and a computer-based montage are used to creatively transform a rice steamer into a cone-shaped design component, namely a lampshade. The findings indicate that West Javanese rice steamers offer considerable potential for transformation into lampshades, due to the similar shape of the two objects.

### KEYWORDS

transformation, traditional craft, lighting design

### CATEGORY

Short Paper

## Crafting Ethnographic Experiences - Ways of Knowing Facebook - Influences of a Practice-based Approach on Research on Everyday Digital life (P146)

Eve Stirling, Senior Lecturer in Design, Sheffield Hallam University, United Kingdom

This paper presents reflections on ethnographic research undertaken in 2010, exploring the link between Facebook and the use of it by undergraduate students at a UK university. The focus of this paper is to interrogate the use of practice-based methods within an ethnographic methodology. I present reflections on using design thinking, craft skills and card modelling to support the analyses of participants' social interactions on the social media site, Facebook, in coming to know the digital space. Jungnickel and Hjorth (2014) propose that ethnography and practice-based art research have a long 'tacit history' and that 'the process of making and thinking through art is an integral part of doing research'. Using data collected during ethnographic research from my time spent in the field, I present field notes, scratch notes, critical incidence screen shots, interview transcripts, photographs and videos. I draw upon the two terms, translation and transmission, to support my reflections of the process I went through as a way of knowing Facebook and to craft and visualise the ethnographic data supporting my analysis and presentation.

### KEYWORDS

digital, process, materiality

### CATEGORY

Full Paper

## Self-constructed Representations: Design Research in Participatory Situations (P210)

John Fass, Course Leader, Information and Interface Design, London College of Communication, United Kingdom

This paper proposes that the blurred line between the designer and the researcher can have a positive effect on the design process. The aims of this paper are, first, to show how design ethnography is an emerging field of the design practice in its own right; second, to give some examples of how open ethnographic methods have been used in public-facing field research; and finally, to propose some recommendations related to the design of open instruments and activities.

Design ethnography integrates two distinct understandings of ethnography. The first is observational: designers present people with designed objects and observe how they interact with them (Houde and Hill, 1997). The second is shaping: designers give research participants unfinished prototypes or sketches and invite them to modify them (Baskinger, 2010). Designerly ethnography involves methods that are more familiar to designers than to ethnographers, and may be directed towards more general categories of inquiry than to product development. This idea draws on Ingold's (2013) concept of correspondence with materials as a way of awakening the senses to an experience.

This paper presents findings from three case studies related to the externalisation of digital experiences. The case studies are positioned as participatory design research involving the creation of self-constructed formative representations. The instruments and methods described include drawing, diagrammatic modelling and physical making. These are seen as mediating 'above the head' (Dorrestijn, 2012) technological relations, where externalising instruments replace technologies. The findings show that materials have a profound effect on externalising instruments, and that balance between complexity and accessibility is important.

### KEYWORDS

design research, design ethnography, research instruments

### CATEGORY

Full Paper

## Chinese International Students at the University of the Arts London: Changing Perceptions on Creativity (P223)

Mo-Ling Chui, Course Leader, University of the Arts London, United Kingdom

This research paper reports on an illuminative study of how Chinese students at the London College of Communication (LCC), University of the Arts London (UAL), perceive and experience creativity within themselves. It adopts an ethnographic, insider, narrative and reflexive approach, where insider contextuality forms an important methodological layer of interpretation and analysis.

UAL is currently the 8th top recruiter of international students in the UK and the only specialist art and design university within the top 20. Chinese students are now the largest group of international students at UAL, with 4,000 graduates working and living in China, the university's largest alumni community outside Britain.

Through an initial series of conversational and relational interviews with a small sample of Chinese undergraduate students, fresh and diverse subjectivities and connections are discussed. Creativity becomes the lens that opens up a wider examination of students' motivations and experiences. Interviewees talk about their self-reflections, identities and personal creativity in both a discipline-based and a more holistic contextual way. They relate their personal experiences of coming to the UK, often citing the struggle and adjustment being away from family, but with a new critical distance from Chinese socio-cultural realities. The sense of self that arises from negotiating the challenges of independence perhaps compels international students to become more resourceful, flexible, and creative. In this way, creativity can be learned, taught and developed through life experience (Csikszentmihalyi, 1996).

This examination of creativity and agency among Chinese students identifies themes and insights for an expanded longitudinal ethnographic study over the course of their three-year arts and design bachelor's degree. The research has also developed into a staff/student collaborative co-design project with an aim to explore and support Chinese creativity at UAL and beyond.

### KEYWORDS

Chinese creativity, insider research, human-centred design thinking

### CATEGORY

Short Paper

## Design for Cultural Preservation (P225)

Nanci Takeyama, Assistant Professor, Nanyang Technological University, Singapore

The aim of this exhibition is to present the activities of our research/design non-profit organisation named design for, sponsored by Nanyang Technological University and the Ministry of Education, Singapore.

The exhibition takes the viewer through design for's journey working with textile motifs in Laos by exploring the meanings of the cosmic serpent symbol and its connections to the lives of the Laotians. This exploration was accomplished through fieldwork, research, community collaborations, education and collaborative design. In the process, it aimed to co-create products with the community that were culturally respectful yet still relevant in the modern world.

The cosmic serpent, depending on the context, is called Naak or Ngueak in the Laotian language, and Naga in Pali. It is an animistic figure that predates Buddhism. The most important themes surrounding the cosmic serpent are narrowed down meanings of duality, fertility and transcendence. These keywords became the starting point and the overarching themes for deeper exploration through visual maps and metaphors. This critical stage helped the team translate abstract ideas, meanings and concepts into images and forms. The exercise also led the designers to want to share their findings with the weavers and to conduct a collaborative design workshop with them.

With this conceptual framework established, the team decided to work with the Laotian weavers to design three separate collections.

The exhibition takes the audience through a new design process so that the role of the designer becomes one of facilitator rather than one where the designer devises his or her own inspirations, because the main goal of this project was preservation of cultural integrity.

### KEYWORDS

meaning of symbols, social design, cultural preservation

### CATEGORY

Artefact - products or artworks

## Design Ethnography: Opening the Black Box: How to Draw Design Decisions from Ethnographic Observations (P250)

Lysianne Lécho Hirt, Professor, Geneva School of Art and Design, Switzerland  
Nicolas Nova, Professor, Geneva School of Art and Design, Switzerland

Designers' concrete use of field observations has received little attention from design-ethnography practitioners and scholars. How do designers make use of the data, images and impressions produced through field observation? How does the knowledge generated inspire or shape subsequent design decisions? How do designers translate field data into concepts, forms, materials and colours?

The findings of a research project conducted at the Geneva School of Art and Design (Nova et al., 2014) indicated that designers use four main 'tactics' to translate field observations into design: inversion, translation, multiplication and complexification. For instance, designers may observe the fear of an observed user and create an interface that prevents this fear from arising. Alternatively, an observed phenomenon can be repeated and enlarged or made less important. The use of these tactics at various intensities can generate new briefs, new processes and new prototypes, or trigger generative scenarios that shed new light on the whole process of design.

Workshop participants will explore the above tactics by carrying out field observations (in the conference venue or surrounding streets) and using design tools to present their results in the form of posters. The posters will be discussed to refine the participants' understanding of strategies for enriching design projects through ethnography-inspired practices. The participants will compare their real-life experiences with their preconceptions to determine whether and how the 'designerly way' is compatible with rigorous scientific field observation, and whether more 'relaxed' observation is satisfactory.

### KEYWORDS

ethnography, epistemology, research

### CATEGORY

Workshop

## Reviving Hong Kong Old Public Housing Estates (P280)

Ching Wa Leung, student, Hong Kong Design Institute, Hong Kong SAR

'Reviving Hong Kong Old Public Housing Estates' is a series of four books divided by four chapters: Estate, Housing, Things and People. These are presented in the local Cantonese language in a joyful and narrative tone, in a 210 x 287 cm format. The books mainly contain photographs taken on warm sunny days together with some information graphics, collages and drawings.

In addition to the books, sub-design items such as postcards with moody photos will be placed in the exhibit to attract readers. These will be accompanied by name cards for online promotion and the collection of feedback. Some decorative items, like a pair of plastic slippers and a bamboo fan, can also be placed in the exhibit to represent the iconic estates' relaxing feeling. Further, I suggest that some little folding wooden chairs be made available for leisure reading and discussion.

### KEYWORDS

diversity, humanity, localism

### CATEGORY

Artefact - products or artworks

## "Build Together!" - Observational Study on Outdoor Activities Engaging Children in Design (P283)

Bang Jeon Lee, Doctoral student, Aalto University, Finland

Over the past several decades, ethnography has been used to study marginalised groups such as elderly persons, people with disabilities and particularly children, whose needs have been acknowledged and given special consideration in design. Design ethnography has been broadly applied in human computer interaction research. However, it has remained challenging within other design domains. From these notions of implementing design, what if a designer conducted an ethnographic study?

This study is a short-term observational study on children's outdoor activities organised by the School of Architecture for Children and Youth in Finland during the summer of 2012. It comprises different possibilities that demonstrate the effectiveness of design ethnography for understanding children's innate sense of play and culture in naturalistic settings. The research findings provide evidence to support the investigation of some interesting phenomena, such as: 1. the meanings of children's play; 2. children's interests and disinterests; 3. the different roles of children and adults; 4. the respective activities initiated by children and adults; and 5. children's distinctive notion of results and processes. This research provides opportunities for adults to access the children's world, to pay increased attention to children's voices and rights and to enhance their participation and collaboration in the design process. The observation indicates that children's collaborative work potentially reveals the views and needs pertaining to their social lives and capabilities. This study thus provides practical guidance for adult designers or researchers who work with children.

### KEYWORDS

design ethnography, engagement, children's outdoor activity

### CATEGORY

Full Paper



## Memories and Dreams: An Ethnographic Approach as a Way to Understand a Different Culture (P305)

Tommaso Maggio, Senior Lecturer, Assumption University of Thailand, Thailand

We might assume that our culture leads us to a specific way of viewing reality. In fact, due to the self and external references, as Wolfgang highlighted in 2001, there is a 'real world which we cannot perceive as it really is'. For Archer, design was defined as 'the collected experience of the material culture and the collected body of experience, skill and understanding embodied in the arts of planning, inventing, making and doing' (1979). Margolin, Victor and Sylvia (2002) suggested that the foremost intent of social design is the satisfaction of human needs. Moving from West to East, the author was initiated to reframe his primary needs as a designer and human being. Collecting became an automatism; in addition, the host society brought new ways to perceive and experience the body, and it perhaps 'influenced the manner in which emotions are felt and communicated' (Frevert, 2014). This paper describes how a designerly way embedded with an ethnographic approach aimed to grasp the cultural gap via the senses as a tool to cultivate consciousness. The fashion project, which started almost unconsciously as a way to collect personal memories and the visual richness of the unique local crafts of Southeast Asia, became something unexpected. Once shown in Italy and the US, the physical outcome almost vanished in a sort of collective imaginarium, a platform in which to initiate debates. The aim of this experiment was to bring about a new consciousness of the self and traditional cultures that have often been forgotten.

### KEYWORDS

South-east Asia, emotions, body consciousness

### CATEGORY

Artefact - products or artworks

## What is Open Design for Ethnography? An Open Discussion (P306)

Ding Wang , PhD candidate, Lancaster University, United Kingdom

Vanessa Thomas, PhD candidate, Lancaster University, United Kingdom

Ethnography has been adopted in other fields for years, but the integration process has been a significant learning curve for both the ethnographers and practitioners from these other fields. This wide adoption has created various subfields such as design ethnography, urban ethnography and anticipatory ethnography. Such ethno-fusions represent different interpretations of ethnography under the influence of other disciplinary nuances. Ethnography has shown us its potential flexibility and fluidity and the discussion continues: how and where will ethnography make its next big leap? In this research paper, we open a discussion with the Cumulus community by exploring the following three questions. 1. What could open design mean to Ethnography? 2. What are some of the challenges when applying ethnography in a multi/inter disciplinary context? 3. What is the future of openly designed ethnography?

### KEYWORDS

open design, ethnography, interdisciplinarity

### CATEGORY

Full Paper

## 'Open Narratives': Narrative as Collaborative Co-creation through Collective Cultural Memory (P311)

Neha Sayed, Doctoral student, School of Arts, Design and Architecture, Aalto University, Finland  
Lily Diaz-Kommonen, Professor of New Media, Head of Research, Aalto University, Finland

Narrative ethnography is a testimonial of accumulated knowledge, narrated as a subjective personal experience for an interpretative audience, and built on the format of storytelling. Recently, the digital paradigm has enabled the narrative to extend as a collaborative exercise in creating an engaging community dynamic. This article investigates the narrative structure as it has evolved through dialogues of collective cultural memory as opposed to the traditional notion of narrative being constructed by a teller for a reader. Building on Jan Assman's (1995) theory of cultural and communicative memory, the narrative is created within a community as a collaborative co-creation. We begin by generating an auto ethnographic first person narrative content through a digital medium, e.g. video, which acts as a mnemonic device, triggering an interactive narrative dialogue among the participants who are also the subjects of the research. The narrative is generated as a dialogue accessing the collective memory of the community and referencing the architectural buildings documented in the video. The memory is thus a derivative of a 'contemporised past' and is also culture specific. This collaborative co-created narrative approach aims to inform design research about generating the culture specific information of a locale. These narratives were generated in our recent study of the rapidly changing urban space within India.

### KEYWORDS

narrative ethnography, collaborative co-creation, collective cultural memory

### CATEGORY

Full Paper

## Design Ethnography and Inheritance: The Revitalisation of the Hakka Tradition in Fashion Collections (P364)

Eunice Lee, Teaching Fellow, Technological and Higher Education Institute of Hong Kong, Hong Kong SAR  
Magnum Lam, Teaching Fellow, Hong Kong Design Institute, Hong Kong SAR  
Iman Fok, Chief Curator, Hulu Culture, Hong Kong SAR  
Eric Ping Hung Li, University of British Columbia, Canada

This fashion collection is part of a larger ethnographic design study exploring the possibilities of extending design ethnography from 'informing design' to 'engaging design' through a series of community-based activities. Our paper argues that learning and inheriting cultural traditions can move beyond the 'in-group only' boundary under an ethnographic design setting. Through collaborations with a local social enterprise and the Hakka community in Hong Kong, this participatory research presents an innovative way to preserve traditional Chinese folk culture together with its techniques and knowledge of design practices. The three-day intensive workshop primarily focused on Hakka band-weaving techniques. A number of Hakka mentors showed a group of design students the technique. In the sharing session, students had the opportunity to learn about the emergence of Hakka culture, traditions and lifestyles in Hong Kong since the 1950s. In the final module of the workshop, students were asked to re-interpret the traditional Hakka clothing and apply the band-weaving techniques to develop a new fashion collection. Our research team observed and interviewed the participants during and after the workshop. Our findings identified three aesthetic themes in the fashion collection, namely 'new authentic', 'urban contemporary' and 'refined elegance'. In summary, this Hakka design ethnography demonstrates that cultural inheritance can occur through community-based design practices. This new participatory research approach also offers an empowerment agenda for both individuals (i.e. design students) and the Hakka community in the context of cultural appreciation and preservation of the Hakka tradition.

### KEYWORDS

design ethnography, cultural inheritance, Hakka tradition

### CATEGORY

Artefact - products or artworks

## Being There: Impersonating the Designer-Researcher-Participant (P368)

Åsa Harvard Maare, Senior Lecturer, School of Arts and Communication, Sweden

In small-scale ethnographic design research projects, researchers often take on many different roles: designers of artefacts or activities, co-present participants, and finally, analysts of video documentation. There are some obvious risks with one person filling many different roles: A designer may be biased towards his or her own design proposals, and have difficulty distinguishing between designerly intentions and what is actually 'there' in the prototype. As a video analyst and protagonist, the researcher has more background information for interpreting her own videotaped utterances and actions compared with those of other participants.

Building on the experiences of a study on mathematics and learning in a leisure-time centre, I propose a model describing the overlapping spheres of agency among different participants in ethnographic design research: the institution, co-present participants (researchers, children and teachers), and designers – the latter understood as working mainly 'off-line', producing artefacts but not participating themselves in the settings where these artefacts are used. I argue for the importance of the designer/observer spending time getting to know the institutional framing of the activity being designed for: what the physical frames are and the institutional protocols regulating the activity, and what the ecology of similar artefacts in the institutions is. Another point for discussion is the trade-off between addressing informants as participants in the activity designed for, or as participants in the design process of these activities.

### KEYWORDS

design-based research, participatory design, educational institutions

### CATEGORY

Short Paper

## Finding Ourselves in Artefacts and Other People (P373)

Lily Díaz-Kommonen, Professor, Aalto University, Finland

I explore the possible role of art and design in the development of ethnography as an instrument for research and visualisation. This is done using a two-stage collaborative autoethnography method that we have been developing at Aalto University, in which personal histories in the form of 'reconstructions of life' are used by young researchers as points of origin from which to launch a process of inquiry. Initially, the method was developed as part of a course in which participants learned about the processes involved in collecting and organising data for information visualisation. However, I aim to demonstrate that the processes that students undergo as part of the work in the course and the data resulting from these artistic and design visualisations have yielded much more.

Based on anecdotal testimony, participation has affected those who partake in the course. Several invitations to offer the workshop in different locations, such as at Universidad de Barcelona (UB), Spain, in 2006, Pontificia Universidad Católica de Chile (PUAC) in Santiago, Chile, in 2009 and the School of Media Arts at Tsinghua University in Beijing, China, in 2009 have followed. It is the works produced by these three groups, in addition to the samples produced in Finland, that I use as source materials for this paper. I contend that among other things, they illustrate diverse cultural zones traversed by an individual throughout the course of a lifetime. This becomes evident in the iconographic elements. Due to the knowledge it offers, contemporary anthropological thinking provides a solid foundation for designers and artists working in areas such as human computer interaction, interaction design and user interface design. Could it work the other way around? That is, aside from being the subject of study, could art and design knowledge also contribute to anthropological debate?

### KEYWORDS

artefact, collaborative autoethnography, personal timelines

### CATEGORY

Full Paper

## 'Sketch and Talk': An Ethnographic Design Method Opening Closed Institutions (P388)

Franz James, Doctoral student, HDK - Academy of Design and Craft, University of Gothenburg, Sweden

The aim of 'Sketch and Talk' is to gain knowledge on the role of furniture and interiors in psychiatric hospitals, prisons and similar closed institutions. Patients and clients in these settings are rarely heard from or cited on the subject. The presented method intends to OPEN these environments for a critical view of the effects of design on power relations, health and habilitation.

'Sketch and Talk' is developed through an iterative process in real time-space-interpersonal situations and is based on semi-structured qualitative interviews with simultaneous hand sketching/visual documentation of the physical environment. Sketching can act as a mediator, and may be perceived as less threatening than other documentation tools such as photos or audio recordings.

Due to situational and spatial circumstances, e.g., interviewing in the respondent's cell, there is considerable risk of privacy violations and exploitation. However, the method's focus on the physical environment's power relations 'in situ' may reduce this risk. Further, respondents' mental health, 'temporary friendship' and off-the-record information bring ethical problems.

Through the method, prominent and seemingly less important features of the physical environment are made visible to reveal their meaning, intention and effect.

Recent applications of the method in Scandinavian prisons and forensic psychiatric hospitals illustrate and articulate the problematic design issues. Further development of 'Sketch and Talk' can contribute to a deeper understanding of ethnographical design methods, and improved design for mental health and prisons.

### KEYWORDS

ethnographic design method, ethnographic drawing, design for mental health

### CATEGORY

Full Paper

## The Gain Line (P396)

Ravi Deepres, Professor in Photography and Moving Image, Birmingham City University, United Kingdom

'The Gain Line' is a moving-image artwork created during the Rugby World Cup, which was shown simultaneously at three UK galleries in the autumn of 2015. The concept behind the work was informed by analysis of ethnographic research concerning the cultural and social groups involved, reflecting the openness and enclosure that technology and data analysis provide on a social and psychological level.

Design thinking is critical to the communication of a variety of experiential and visual solutions. The physical and visual design language of the rugby pitch acts as a catalyst for the way in which the work is presented. Proprioception acts as a fundamental influence on the research, conceptual approach and materialisation of the emotional experience and the final outcome.

Potentially, the work represents an alternative way to document and debate research methodologies. It focuses on the intersection of design, research and artistic practice through a variety of observational methods, negotiated by designing different ways to express aesthetics, physicality and responses to virtual/digital technological advancement. Through the use of spatial, structural, aural and editing design solutions, different perspectives can be suggested around the meaning of ethnographic events and groups, operating within and around the game of rugby, while enabling new audiences to be exposed to the questions these raise historically and within contemporary society.

### KEYWORDS

sport, space, design

### CATEGORY

Movie/video

## Learning in Role Playing: An Ethnographic Study on Chinese Children Towards a Novel Educational Game Model (P409)

Jinping Liu, Aalto University, Finland

Bang Jeon Lee, Doctoral student, Aalto University, Finland

This paper presents an experience-driven educational game model inspired by a relevant ethnographic study on preschool-aged children in China. The model is particularly designed to create an engaging game-based learning experience. Four weeks of ethnographic fieldwork in kindergartens and children's homes in China revealed the affinity between children's cognitive world and fantasy play. More specifically, self-actualisation as an experience goal embedded in role-playing, a subcategory of fantasy play activities, demonstrated a strong potential for bridging serious educational purposes and captivating gaming experiences. Based on the ethnographic findings and the experience goal, a role-playing-based (RPB) educational game model was established. The model distinguishes itself by seamlessly incorporating educational purposes into a child's second-life in the game setting and further by promising the achievement of the child's 'flow-state' in the gaming process. To showcase the implications for the RPB game model, a conceptual game design, which intends to facilitate children's learning of Chinese, is presented in more detail.

### KEYWORDS

ethnography, children-computer interaction, game design

### CATEGORY

Short Paper

## Dialogues through Design: Ethnographic Explorations of the Creative Process (P466)

Naomi Braithwaite, Senior Lecturer, Nottingham Trent University, United Kingdom

Ethnography has traditionally examined fashion in the context of consumption. This aligns with material culture's inclination to examine the meaning of objects through consumption rather than design, which should be considered the actual starting point of their meaningfulness. In spite of the wealth of perspectives interrogating fashion, there is a marked absence of literature exploring how it is actually created. Using an ethnographic study of women's shoe designers, this paper unpacks the real creative process. The research focuses on the practical, material and social processes that bring the creative ideas of designers into the commercial sphere of the fashion system. Ethnography is seen to be an integral method for revealing design from the perspective of its practitioners.

Central to the paper is an ethnographic dialogue between the researcher, designers, ideas, materials and commerciality, bringing a more emotive perspective to design. Lasting 18 months, the study involved observations of the practical stages of design and interviews with studio-based designers, who applied a more handmade approach to their creativity.

Ethnography was used to understand how design happens practically and commercially, and how it is experienced from the perspective of individual practitioners. A phenomenological approach was applied with the researcher learning to design and make shoes, enabling a reflective interpretation of the data.

Design was revealed to be fluid, sensory and reliant on tacit knowledge. The creative process for each designer was both experiential and personal, yet grounded in commerciality. The paper teases out these tensions.

### KEYWORDS

ethnography, designers, creativity

### CATEGORY

Full Paper



## Open Design for Experiment

### Wheelchair with Structural Design in Tensegrity Bamboo (P115)

Carlos Mauricio da Costa Ramos, Product Design Teacher, UFRJ - Federal University of Rio de Janeiro, Brazil

Raquel Barbosa Teixeira, Technical Drawing Teacher, FAETEC RJ - Foundation, Brazil

This research is the author's doctoral project. It aims at developing, in the field of design, tensegrity structure technology (methods and techniques) that is applicable to utilitarian objects and facilitates, as one of the applications of this new technology, the design of wheelchair frames. This structure consists of compound tensegrity module bamboo poles and tensioned cables, and it adopts all anthropometric standards with respect to ergonomic studies and the individual needs of wheelchair users. This unprecedented and innovative structural design allows for new interpretations and developments. This research also introduces a new interpretation of tensegrity through its application to rehabilitative orthoses, which are currently widespread in art, architecture and product design. Users can fill some needs as body adaptation favourable for the ductility of the structure, which absorbs most sudden movements that may cause nuisances, injuries and poor user accommodation to the wheelchair.

The hypothesis was tested using a test chair that included all of the technical issues and integrated the tensegrity structure with ergonomic concepts inherent to the object in question, allowing for safe user testing.

In conclusion, this research is justified and has academic and social implications. This research can be applied to smaller and similar products that have wheels and the same structural and functional aspects.

#### KEYWORDS

wheelchairs projects, tensegrity, bamboo

#### CATEGORY

Artefact - products or artworks



## Experiments on the Making (T32 work in progress) (P140)

Claudia Antonia Morales Carbone, Teaching  
Associate Professor, Aarhus School of Architecture,  
Denmark

As an architect, one is trained to apply a mode of operation - a cyclical chain of events derived from observation (discovery) > possession (initiative notations) > interpretation (readings) > assemblage (composition).

In any part of the chain, a new serial can be introduced as a loop. This mode of operation entails the production of derivative variations accommodating a reading of differences in the material as well as in the space in between, facilitating the possibility of chance encounters and discoveries.

This work is developed as a fragmented assemblage of the representations of T32 (acronym for a road and house number), inferred and derived from a smallholding situated in the outskirts of a village, before, during and after demolition (2014). The landscape in constant change represents the deprivation of the built environment and the cultural heritage, becoming the vessel (conductor, facilitator) of memories for the obliterated places it exposes, erasing the significance of the past and possessing their validity in the present and the future.

The methodological approaches are explored in the contextual, the serial relating to T32 and its heterogeneous representations. The findings, the manipulated drawings and the models are assembled in one installation – a prototype. The prototype explores through its making how it can contain the findings, the manipulated drawings and the models.

The experiment seeks to challenge the perception of a place, a (re) construction that relates to its origins and its providence (history), questioning its contextual expansion. It is a construction of an installation interpreting the relationship and situations explored in the series – before, during and after.

### KEYWORDS

installation, representation, serial

### CATEGORY

Artefact - products or artworks

## 36" 24" 36" (P144)

Faseeh Saleem, Course Coordinator, Pakistan  
Institute of Fashion and Design, Pakistan

Blurring the boundaries between art and fashion, my work enquires into the 'notion of beauty', equating it to an hourglass figure. It questions the human perception of what a perfect body size is. How does a mannequin become a perfect body reference in the construction of an article of clothing? During its making, the work involves both the presence and absence of a real physical human body. Old concepts of beauty need to be re-thought and tweaked, especially when represented in inanimate objects like mannequins.

As a textile design practitioner, the focus was on the interaction of textiles with body, movement and space. Movement is a design material, which was an embodied dialogue in this work.

The final work includes a knitted sculptural form in elastic suspended from the ceiling, a video projection and a photo print. The knitted tubular form is human life size. The form is worn on a female body to show the effort and discomfort involved while trying to put it on. The interaction is captured through photographs. Similarly, there is a video projected diagonally onto the form, which demonstrates the shadow of a human figure struggling hard to get into the knitted form.

The idea is to create an installation that reflects the effort of an individual to be a perfect body shape. The work will be shown through an actual knitted form, together with photo and video documentation of the figure adorning it. These will comprise the installation.

### KEYWORDS

knitted form, movement, interaction

### CATEGORY

Artefact - products or artworks



## Shakespeare Mobile Digital Theatre: An Experimental Theatrical Performance (P158)

Selina Chan, Lecturer, Hong Kong Design Institute, Hong Kong SAR

Pauline Kottina Hall, Lecturer, Hong Kong Design Institute, Hong Kong SAR

To enhance the diversification of Hong Kong theatrical performances, a new experimental theatrical format, mobile digital theatre, has been introduced. First, a masterpiece of Shakespeare, *A Midsummer Night's Dream*, was chosen for adaptation. Shakespeare was a master of literature and his writings have been adapted into films, theatrical drama, musicals and other experimental works, but not mobile digital theatre. The story of *A Midsummer Night's Dream* has a lot of virtual and imaginary content that digital techniques can facilitate. The original story was adapted into a script about 15 minutes long. The main theme, reward of love, was attended to. The location was confirmed, the stage design for the performance and projection was appropriately begun and digital visuals were identified, created and produced. Digital techniques such as Photoshop, projection mapping, Illustrator, Maya, After Effect, Flash, Element 3D and Q-Lab were used to produce the digital images. Technical issues were tested. Based on the script, music was newly composed. The practices of the performers and musicians were followed. Finally, all of these were integrated, rehearsed and performed.

A mobile digital theatre allows more imaginary images to be expressed. In addition, the stage can be portable and the performance is accessible. However, high financial expense is required and more time is needed.

Additionally, 'mobile' digital theatre should ensure that the same visuals and stage settings can fit into the different environments where performances take place.

### KEYWORDS

mobile, theatre, Shakespeare

### CATEGORY

Movie/video

## In a Place Like This (P170)

Johan Sandborg, Pro-Rector, Bergen Academy of Art and Design, Norway

Duncan Higgins, Professor of Visual Art, Nottingham Trent University, United Kingdom

In a Place Like This expands upon the issues and critical discourses within Higgins' and Sandborgs' collaborative artistic research. The central focus of this research is on conflicts in imagery and representation. The research methodology used photography, painting and text. It utilised various forms of art publications (online, hard copy and five unique large-scale hand-bound editions) as a point of critically engaged dissemination and a container of conflict in itself – a place for the tension between conflicting ideas and investigation to be explored through discussion.

Echoes of places, people and historical representations constitute the experience of our presence in the world. Stories and objects should not be accepted as mere constructs of fact or fiction, but rather should be considered as conduits for pluralities. Constructed through the dialogue between fieldwork, creative production, visual memories and fragments of history, this research raises questions such as 'How do we approach facts though the complex relationships of personal immediacy?' and 'How do we operate the ambivalence of testimony itself?'

This research aims to propose visual discussions and critical positions that can function as responsive 'friction points' in an image-saturated culture in which images are produced with unthinkable ease, and may potentially become disposable and forgettable.

This paper will be delivered as a discursive and critical live event with an exhibition. Rather than using a PowerPoint presentation or traditional scripted conference presentation, we wish to present two of the unique hand-bound books as a live event, along with a live stream from the web-based research archive to open up, expand and engage in the research.

### KEYWORDS

image production and the act of image production -  
The book as a container of creative conflict

### CATEGORY

Artefact - products or artworks

## Hybrid Experiment: Art and Science Symbiosis in Designing Childbirth Experiences (P181)

Leong Yap, Professor, Auckland University of Technology, New Zealand

This paper discusses the bridging and symbiosis of the methodological disparity between scientific and heuristic forms of experimentation. Experiments are creative tinkering processes practised by artists and scientists to encourage discoveries and test assumptions. In science, experimentation is often described as a rigorous conjecture-refutation process in controlled discovery. In art, it is a trial-and-error process aimed at artistic production. Science seeks 'truth'; art seeks 'style'. Scientists seek repeatability from a knowledge base; artists create unique solutions from myths and styles. Good science is judged by experiments that arrive at the same findings; good art is judged by explorations that arrive at something entirely different and new. Design epistemology adopts a more integrative role involving the symbiotic logic of science and the emotion of art. For design, an experiment in a complex system truncates, converges and optimises both art and science ontologies to interrogate wicked problems – to capture evidence and deliver creative solutions. In evidence-based design, both empiricism and heuristics are used, not only for their individual strengths, but also for their combined hybrid, symbiotic and synergistic powers – in the Art-Science-Technology System. Based on a five-year case study in design research and practice involving the design of childbirth experiences, this paper describes the ethical considerations, challenges and opportunities a designer encounters in a medical and technical multidisciplinary team in hospital settings. Central to the discussion is the designer's role as a change agent to democratise obstetrics through open design and innovation aimed at humanising and transforming the management of childbirth experiences.

### KEYWORDS

experiment, childbirth, art-science symbiosis

### CATEGORY

Full Paper

## Design Recipes: Creative Pathways for Product Development (P183)

Umber Zahid, Associate Professor, Pakistan Institute of Fashion and Design, Pakistan

Design is a collaborative venture of logic, user, material, culture, observation, intuition, experience and desire. These elements work as ingredients to form varying design approaches that are like recipes. The role of the designer can therefore be equated with that of a chef. His skills are his tools. The chef brings a unique taste to the dish while he adds value through some secret ingredients.

Among these secret ingredients the user and the culture are the external components. During the development of product ideas, the designer, with the help of research measurement tools (such as a measuring spoon), processes the needs of the user. Intuition, experience and desire are the internal initiatives; and the designer is free to use more or less of them. The blend of these ingredients is the creative process in design.

I am curious about how designers find these secret recipes to develop methods for 'expert design chefs' to explore new possibilities for product design. My project aims at observing the processes and outcomes of three 'designers as chefs' who 'cook up' their own recipes with limited materials to come up with a concept for any product – similar to the chefs on the TV programme 'Master Chef'. Three manually skilful individuals from different professions will be selected for this activity, carried out in Pakistan over the next month. Their development processes will be recorded in a video documentary. The design outcomes in the form of artefacts will be displayed beside the documentary during the exhibition.

### KEYWORDS

design methods, creativity, product development

### CATEGORY

Artefact - products or artworks

## Design Fiction - Experiments in Error (P209)

E. Scott Denison, Assistant Professor, The Ohio State University, United States

What could go wrong?

In the last decade, design fiction has emerged as a novel approach in the toolkit of design research and as a means by which to focus on the future for the purposes of discussion and debate. We concentrate on the growing need for design fiction to be less a means of artistic expression and more a practical application of design thinking towards the thornier issues of techno-social change, and as experiments in error.

Material failure in form and substance must ultimately accommodate less tangible, harder to circumscribe objects. Defining error in a 'post-industrial design' world may not always be physical or even comprehensible, manifesting itself less in material failure and more in human behaviour. Indeed, to contemplate these transformations is to make our design more humane.

In this paper, I argue for a case of urgency that stems from how readily humans adapt to change, the rate at which technology accelerates and a lack of future thinking in both design and science. Design fiction is one such method of future thinking. Although there is no prescriptive methodology for building a design fiction, I describe a typical approach, the technique of 'guerrilla futures', and the operative benefits of crafting thought-provoking instantiations of future scenarios.

Design fiction becomes one of many possible methods by which designers, design educators and design researchers can accept their growing responsibility to ask, 'What if?' in the present to avoid asking, 'What now?' in the future.

### KEYWORDS

design fiction, design futures, design research

### CATEGORY

Short Paper

## The Spanish Experiences in Open Design: Case Studies (P212)

Manuel Martínez Torán, Universitat Politècnica de Valencia, Spain

Ricardo Moreno Cuesta, Escuela de Arte y Superior de Diseño de Valencia, Spain

Chele Esteve Sendra, Universitat Politècnica de Valencia, Spain

In Spain we are witnessing a new generation of entrepreneurs that both design and produce from a craftsman's point of view and who use high-end technology as well. Their work ranges from small series and unique pieces to on-order work that is characterised by a high degree of customisation. In this hands-on way, they can oversee and control all phases of the process and have a direct and personal relationship with the end user, something that is clearly out of the question for traditional industries. In this paper we shall look at a few of these entrepreneurs - the conception of the idea, experimentation, testing, producing and selling or leasing their creations, alone or in collaboration, and how in many cases, other modes of action and participation appear and open doors to new collaborative platforms, makerspaces or Open Design resources. We will look at examples which have been supported by these makerspaces and other initiatives that include citizen participation, cooperation for development with clear social involvement or do business in the framework of a collaborative economy.

### KEYWORDS

open design, maker culture, design & digital fabrication

### CATEGORY

Short Paper

## How Much Can You See? Improving Students' Observational Skills in Design Foundations (P217)

Wujun Wang, Associate Professor, Central Connecticut State University, United States

Eleanor Thornton, Professor, Central Connecticut State University, United States

Thomas Zimmer, Associate Professor, Central Connecticut State University, United States

"It is not she [beauty] that is lacking to our eyes, but our eyes which fail to perceive her."

—Auguste Rodin

The development of aesthetic sensibilities in design takes years, and an attention to visual detail constitutes the fine grain of the discipline, accompanied by creative, technical and analytical skills. In design foundations, nurturing detail-oriented observational skills can be a challenge. Most students are accustomed to a 'default' mode of observation – 'looking without seeing'. This habitual type of observation can blind students to the depth and complexity of images, hampering their development of the aesthetic sensibilities necessary for a successful designer.

This paper introduces an experimental project in which students were asked to 'break the frame' of their daily habits of observation to explore details beyond their default range of attention. The students were put in situations in which default perceptions and judgements would not work, and cognitive refinement and focusing were implemented. For example, the students were invited to create a microscopic scene or miniature three-dimensional object in photo-realistic detail. The goal was to develop detail-driven observational skills, which are not only beneficial to design learning but a catalyst for creativity, analysis and technical practices.

In this paper, the notion of 'default perception or cognition' in contemporary graphic/information design is described and defined, and a series of concrete pedagogical exercises appropriate to classroom contexts is proposed to instil and refine a design sensibility commensurate with the complexities of our field.

### KEYWORDS

design observation, experiment, successes and errors

### CATEGORY

Short Paper

## Rethinking Postcards - Speculations about the Future of Picture Postcards (P220)

Doris Binger, University of Applied Sciences  
Ausborg, Germany

Can postcards be redefined in the age of selfie greetings and social network posts? A group of 15 international students from six countries experimented on the reinvention of postcards without limitations. Only the location had to be considered. The design process started with an introduction to communication models, examined the societal and cultural aspects of postcards and then researched the historical and present use of postcards in different societies. A kind of uncontrolled experiment with materials, formats and production techniques followed and the first variety of drafts emerged. At the next step the students began research on possible content. The gathering of information, the search for hidden attractions and the uncommon sites in towns were essential to further developing the traditional design of the postcards. A deep reflection on how to convey the content followed. Scepticism over traditional media productions played a prominent role in finding new ones and the wish to expand the narrative possibilities of picture postcards predominated. A series of trial and errors challenged this process, but then very uncommon solutions materialised. Critical feedback (individual and in groups) fostered the transformative design process.

The final results showed a large variety of reshaped postcards. Postcards that enhanced the dialogue between the sender and receiver strengthened the narrative aspects. The future of postcards is not with picture postcards anymore because they apply to all of the senses. The kind of unlimited approach to the topic, the deep and repeated reflection on the design process, the support and even the strange ideas have led to a number of exciting redesigns.

### KEYWORDS

design process, experiments

### CATEGORY

Artefact - products or artworks

## Temptouch (P234)

Paul Bardini, Griffith University, Queensland College of Arts, Australia

Temptouch is an artefact that makes us question how we can do more with the vast amounts of open data that we interact with daily, and what alternative ways we can represent this information to our senses. Temptouch allows the audience to feel the current temperature of another geographical location. An audience member inputs a location and is prompted to place a hand on top of the device; the user can now know the temperature – not by sight but through touch.

This research forms part of an ongoing investigation that explores open source design and innovation. Temptouch is made within the open source paradigm, with plans and programming code uploaded to the Internet for anyone to create, modify and challenge our interaction, and experiment with open data.

Open data, the exchange of free online information, is often used in business or statistical mapping. Whether this data relates to the stock exchange, weather or the latest seismic event, visualisation habitually occurs through a display unit, be that a monitor on a computer or a smartphone. This artefact is designed to prompt the viewer to question the movement of data from the intangible world back into the physical world. It is intended to provoke a response, and invoke engagement with open data and Internet enabled devices, especially from disciplines outside of engineering and computer science.

### KEYWORDS

open data, temperature, touch

### CATEGORY

Artefact - products or artworks

## It's Not an Experiment If You Know It Will Work (P258)

Petter Bergerud, Professor, Architect, Bergen Academy of Art and Design, Norway

For the last decade we have been challenging and experimenting with wood – constructively, structurally and materially. Under the theme 'It's not an experiment if you know it will work', structures have been planned, built and tested. All of the constructions have gone far beyond what calculations and engineering predicted. Projects falling down, sinking, walking and standing have given us a strong platform from which to get to know this fantastic material.

Our last project, 'Wood You', was a tensegrity construction. This structure had three elements standing on the ground. From the top of and in between these standing elements another three new elements were assembled, hanging from wires, to reach a new level. From these three elements, we repeated the operation, assembling three more hanging elements. In this way, the structure grew.

The project was a big experiment. First making sketches and then testing out principles using scaled models. From there, we went directly to working in 1:1 scale. Engineers with 3D calculation programmes 'tried to follow'. This was a struggle (or more of a battle) between tensional and compressive forces.

With three elements standing and 12 elements hanging, it is difficult to describe what kind of a construction this was. We reached a height of 26 metres and that was far more than the results of the calculations of the material dimensions we used.

### KEYWORDS

experimental, unexpected, learning-by-doing

### CATEGORY

Full Paper

## o2: U E | Unexpected Encounter (P268)

Bihter Almaç, University College of London, United Kingdom

o2: UE | Unexpected Encounter is an architectural board game for two players in which they create diagrammatic models of 'the home' they imagine for use against and with each other. This act of play creates a spatial language that results in unexpected narratives regarding the notion of domesticity. The research element of the game focuses on how 'place' and 'placelessness' are constructed and interpreted through one's innate creativity by manipulating the intricate operations of initial design decisions. This exhibition is a performance of o2: U E, where designers meet with others through their imaginations.

The aim of the game, 'build the home you imagine' tends to be a spatial reflection of an aggregate of joyous moments. Meanwhile, domestic life inevitably bears the very extremes of unbounded happiness and inexhaustible trauma. In o2: U E, these extremities are played with diverse pleasure and dismay.

The game compels two players to meet in a fragile state where their imaginations are recent and slightly formed. This is a phase in which encounters with others are unexpected. Therefore, the game is an unconscious negotiation play. Throughout the game, the uneasiness of the encounter is transformed into an open-ended, imaginary communication. o2: U E does not end with a winner; it is about the uncanny experience of the unexpected and the negotiation it causes with the other.

### KEYWORDS

architectural game, imaginary, conversation

### CATEGORY

Artefact - products or artworks

## Speaking of Design Experiences: A Phenomenological Inquiry into the Everyday Aesthetic Discourse in Design Representation (P303)

Magnum Lam, Teaching Fellow, Hong Kong Design Institute, Hong Kong SAR

Elita Yee-nee Lam, Head of Department of Fashion and Image Design, Hong Kong Design Institute, Hong Kong SAR

Eric Ping Hung Li, Assistant Professor of Marketing, University of British Columbia, Canada

Wing-sun Liu, Lecturer, The Hong Kong Polytechnic University, Hong Kong SAR

This project exhibits an experimental art installation as one of the deliverables of our interpretive study on design creativity. Our study aims to understand how designers assign meanings and inculcate memories and personal stories into their design identity as a 'life project'. The idea of this art installation is inspired by a set of phenomenological interviews with a group of international textile designers and fashion artists and a series of observations in several wool felting workshops with a group of Hong Kong-based fashion design students. The art installation visually documents the flow of experience, ideas and production during the design process. Interactions and dialogues between the designers and the materials, ideas and lived experience are also presented through documentaries as a part of the art installation. Our research findings and interpretations showcase three aesthetic themes, namely 'feeling the material, feeling your design', 'design as an introspective process' and 'design as a co-creation of social experiences'. The key contribution of this research is the illustration of the link between the designers' aesthetic discourse in everyday life and their personal narratives during the design creation process. More importantly, we demonstrate the possibilities for translating interpretative findings to art installation in the field of fashion and textile design.

### KEYWORDS

phenomenology, design experiences, design representation

### CATEGORY

Artefact - products or artworks



## 'Rituals of Care' (P313)

Ola Ståhl, Senior Lecturer, Linnaeus University,  
Sweden

Sara Hyltén-Cavallius, Head of Design School,  
Linnaeus University, Sweden

If we consider the etymology of the word 'ritual', from the early fourteenth century Latin *ritus*, and detach it from its religious context, we gain the sense of 'observance', taking the form either of 'ceremony' or of 'customs' and 'usage'. The process of observing and attending to a principle or decree manifests itself in the ceremonial as well as in the everyday, in funerals and weddings as well as in the daily customs of brushing one's teeth or using cutlery for food consumption.

With this understanding of ritual as its point of departure, Rituals of Care is an attempt to use a workshop format to map out the foundations of an ethico-aesthetic design practice focusing on the rituals of everyday life and the notion of 'care' in relation to sustainability. First, the participants explore the rituals involved in an everyday activity, eating breakfast, by outlining, reflecting upon and contextualising distinct memories of the breakfast they ate on the morning of the workshop, keeping the notion of ritual in mind. Second, the participants work in groups to design possible rituals that may be required as we face an increasingly unsustainable future, keeping the notion of 'care' in mind. What rituals do we need to invent – what kinds of attentiveness, what kinds of care – to construct a universe in which life in some form can be sustained?

### KEYWORDS

rituals, ethico-aesthetics, sustainability

### CATEGORY

Workshop

## Coping with Contingency (P318)

Clint Heyer, Malmö University, Sweden

In Schön's account, contingency is encountered during the essential reflective dialogue with the design situation, during move-making and during reflection and move-making again. Design moves are concrete, yet also speculative in that their outcomes cannot be fully ascertained a priori. Once an act of design has been performed, we are in a better position to judge whether the outcome is aligned with our intentions, or whether something rather different has been produced. Unexpected results can be revealing and inspiring; alternatively, they may close down exploration, shutting off further lines of inquiry.

Designers may operate in a loose, experimental manner, leading to more unexpected outcomes. Importantly, however, the designer does not intend a specific outcome, but rather intends experimentation, guided only by loose framing. Unexpected results cannot be considered mistakes or errors under these conditions, because such results are precisely what is intended.

We seek to diminish the perceived significance of 'mistakes' and 'errors', arguing instead that experimental design practice involves operating with a looser 'grip' on the design situation. We contrast this with non-experimental design practice and develop a phenomenologically informed account of design practice.

### KEYWORDS

contingency

### CATEGORY

Short Paper



## A Study of Konglish: Open for Subjectivity as a Comprehensive Framework to Approach Error and Mistake in the Practice of Design Experimentation (P332)

So-dam Lee, student, The Cape Peninsula University of Technology, South Africa

Errors and mistakes are crucial to design experimentation in the fields of graphic design and typography. However, due to the nature of the errors and mistakes most commonly made by designers, these crucial events become ambiguous and perplexing. It becomes challenging for designers to experiment with errors/mistakes and thus create openings for design opportunities and exploration. Although the ambiguous nature of errors and mistakes is often perplexing, it gives designers immense potential to create something new and experimental, because the term 'ambiguity' itself has no absolute meaning. Through the experimental process, anyone can form their own subjective interpretation.

Therefore, it is essential for designers/typographers to allow themselves to interpret errors/mistakes subjectively. Subjectivity is a key methodological approach to errors/mistakes during experimentation, which may result in productive and innovative results. 'Konglish', an experimental typography in which the Korean alphabet is rearranged for English speakers to read and understand, was developed by a designer who subjectively reinterpreted typographical mistakes ('typos') in social media.

Reflecting on the experimental typography of Konglish, this paper investigates ways in which designers/typographers can link their subjectivity with their mistakes/errors during the experimental design process.

### KEYWORDS

experimental typography, subjectivity, errors and mistakes

### CATEGORY

Short Paper

## Reprojecting Autoprogettazione? Experimenting with the Experiment (P339)

Avsar Gurpinar, Assistant Professor, Istanbul Bilgi University, Turkey

Cansu Curgen, Research Assistant, Istanbul Bilgi University, Turkey

Gorkem Ozdemir, Research Assistant, Istanbul Bilgi University, Turkey

The summer practices of product design students have re-projected Enzo Mari's Autoprogettazione? (1974), which was one of the earliest yet finest examples of detailed and openly documented design and production processes.

What made us select Autoprogettazione? as the subject of design practice is that its method of interaction and open distribution of design and production knowledge makes it a precursor of open design. We contend that Autoprogettazione? emerged as a radical example, with its open documentation and feedback qualities, foretelling today's open source design platforms.

One of the unique outcomes of this project was its holistic and experimental approach to design through modern production possibilities. The main purpose was neither the reproduction of an old product, nor the use of an object's design as a tool for self-expression. We believe in an environment where traditional, industrial and post-industrial modes of design and production are not separated – categorically, physically or mentally – from each other. Only if this environment is enabled can these different modes regain their function. In that way, they serve the designer who is developing his or her own unique design mentality and ideas about the essence of the object and the precision of the form through derivation and experimentation. We are inclined to use all of the possibilities of open design. Our proposal for the exhibition is to ship the recipe (design blueprints) and then manufacture/assemble the products in situ for the exhibition.

### KEYWORDS

open design, co-creation, design education

### CATEGORY

Artefact - products or artworks

## Making the Creation of Fashion Visible (P359)

Donna Sgro, Lecturer, University of Technology Sydney, Australia

This research paper investigates garment-making processes, which are ordinarily tacit, from the perspective of the fashion designer-maker. The paper draws on a PhD project entitled Metamorphic Fashion: A Transformative Practice, which is nearing completion at RMIT University. Critical consideration of the status of the made garment in fashion design reveals the elision of the fashion-making process by the represented garment and its semiotics. Whilst material thinking is at a developed stage in the related disciplines of design, art and craft, fashion design is largely disassociated from material transformation. Fashion-making processes lack visibility, and a revaluation only seems possible if such methods gain transparency and if their proximity to handcraftedness, which in the past was more widely acknowledged, is reaffirmed. If a fashion designer is also a maker, the garment-making process can be a creative and empowering means of coaxing the unknown into existence. Therefore, a critical reappraisal of the process of fashion making is timely.

Reflection on the fashion-making process reveals discontinuity, chance encounters, discovery, the fragmentary and the partially formed. The process involves negotiating ambiguity, which must be embraced by the designer to be transformed into certainty. When valued as generative, newly fashioned outcomes can emerge.

In this research, methods are developed to articulate fashion design making as transformative, using a creative-practice methodology. The subjective positioning of the researcher's experience and tacit knowledge is acknowledged and explored. An intimate perspective on the engagement between self and material is provided using video recordings, conveying the complex interrelationship of concept and material during fashion making.

### KEYWORDS

fashion-design practice, creative practice research, fashion making

### CATEGORY

Short Paper

## Game Design for Psychology Experimentation: Early Lessons from Swedish Olfactory Research (P390)

Simon Niedenthal, Associate Professor, Malmö University, Sweden

In recent decades, design researchers have developed a progressively more autonomous practice. Nowadays, designers largely possess the freedom to conduct and validate experimental research on their own terms. However, there is a parallel and still vital tradition of fostering interdisciplinary inquiry between researchers from the natural and social sciences, arts and humanities. We argue that interdisciplinary experimentation by social scientists and designers is particularly important when studying novel forms of interaction that are likely to be informed by research insights from the natural and social sciences; when there are underlying design challenges embedded in the scientific programme; and when disciplinary knowledge contributions can hope to be complimented by innovative design and new product development. This reflects the research on olfaction and olfactory interaction currently taking place in Sweden.

Our Unique Sense of Smell and Nosewise are two recently funded olfactory research initiatives. Both include a game design component. We propose to explore whether regular training through smell-enabled games can improve memory and expand sensory capacity. The mandate from our funding sponsors is clear: to produce ground-breaking social science research on olfaction. To coordinate our relative knowledge contributions, we argue that an extended application of the research through design paradigm can help to link game design with social sciences research. Besides displaying early concept designs for smell-enabled game prototypes, we address several questions that have emerged from our interdisciplinary work.

### KEYWORDS

research through design, interdisciplinary research, game design

### CATEGORY

Short Paper

## Serendipity and the Urban Transect Walk: Reflections on Design and Cultural Mapping in Arctic Cities (P422)

Peter Hemmersam, Associate Professor, Oslo School of Architecture and Design, Norway  
Andrew Morrison, Professor, Oslo School of Architecture and Design, Norway

This paper queries the use of serendipity in the design and use of experimental smartphone apps for urban mapping as a way of integrating aspects of chance and arbitrariness, and thus error, in the epistemologically structured form of reading represented by architectural urban mapping methodologies.

Serendipity is part of various urban mapping practices and features as a dimension of digital, social and locative mapping apps. Our notion of urban mapping refers to practices that make extensive use of the networked city's digital affordances: mappings are thereby both mediations and representations of everyday urbanism. Maps and digital 'content' are becoming increasingly complex cultural entities that invite interpretation and analysis, reflecting both their urban and techno-cultural constituencies.

This paper reports on how serendipity comes into play through the application of the app to a series of arctic cities through the tactic of the urban transect walk. Combining app affordances and assigned mapping tasks spurs imagination and attention. We found that mapping is as much a product of the activity as of the landscape.

Investigating the interrelation and agency of visual, ephemeral and virtual site properties, our approach helps mappers to discover new urban specifics and processes. Systematically including serendipity (not merely drifting) is productive in terms of adding new dimensions of creativity to practices of mapping, such that it introduces ways of searching, building knowledge and producing meaning. Thus, cities and urban life should not be understood as given and planned, but rather as emergent and infused by chance.

### KEYWORDS

serendipity, app, locative mapping

### CATEGORY

Full Paper

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# Open Design for E-very-thing

## Cumulus Hong Kong 2016

The theme of Cumulus Hong Kong 2016 is 'Open Design for E-very-thing' and will be hosted by Hong Kong Design Institute, a member of Vocational Training Council of Hong Kong. Ever since designers have reflected on their roles and focus on more 'social' aspect of their practices and potential, design suddenly are tackling everything, from climate change to global poverty, from redistributing resources to business strategy. It does not mean that designers are running everything in the society, but it is really wide open now for the roles design can play in the society. Cumulus Hong Kong 2016 seeks to explore this openness of design, namely the opening up of design process and design for openness.

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HONG KONG  
DESIGN  
INSTITUTE  
香港知專  
設計學院

Member of VTC Group  
VTC 機構成員

