

Design with the Living 2020

Thursday 5th & Friday 6th November (13:30 – 17:30)
Online via Zoom (link sent separately)

#designwiththeliving



'You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete.'

Buckminster Fuller.

Can designing with living systems be the change we need in the context of today's current environmental and ecological challenges?

In recent years, bio-design has emerged as an innovative new discipline that uses biological processes to create sustainable approaches to design, building and fabrication. From collaborating with living organisms such as mycelium, to using artificial intelligence to guide the growth of plants, these designers and architects are exploring new ways to shape our material world in ways that are respectful of our planetary boundaries. In this annual symposium, we are interested in exploring how this area of design is developing across global regions, and in critically discussing how it needs to evolve to address today's environmental and ecological challenges.

Design with the Living aims to provide a space for critique and to drive an annual review of the agency of 'design with the living' in a global perspective. It is co-organised by the Design Museum, the Design & Living Systems Lab (Central Saint Martins UAL), The Bio ID Lab (Bartlett School of Architecture, UCL) and the British Council.

Agenda

Day 1

Online, 13:00 – 17:30

13:00 Welcome and Opening Provocation from **Jeremy Till**, Head of Central Saint Martins and Pro Vice Chancellor, University of Arts London.

13:15 – 15:00 Panel 1: Nature as Partner

How can we transition to seeing nature as a partner, rather than a resource?

Chair: **Carole Collet**, Director, Maison/0 & Director Design and Living Systems Lab, Central Saint Martins, UAL.

Sheila Cooke, Co-founder and Hub Leader, 3LM, & Savory Institute.

Lucy Montgomery, Senior Consultant, NNFCC The Bioeconomy Consultants

Irene Agrivina Widyanigrum, Founder of XX Lab and Co-founder of The House of Natural Fiber.

Jen Keane, Designer & Researcher, CEO of Modern Synthesis.

15:00 – 15:15 Break

15:15 – 17:00 Panel 2: Nature as System

What can we learn from plant systems?

Chair: **Brenda Parker**, Co-Director of Bio-ID and Associate Professor, Dept. Biochemical Engineering, UCL.

Naomi Nakayama, Head of Biological Form and Function Lab, Imperial College London.

Claudia Pasquero, Co-founder of ecoLogic Studio and Director, Urban Morphogenesis Lab, Bartlett School of Architecture.

Paolo Bombelli, Postdoctoral Researcher, Dept. Biochemistry, Univ. of Cambridge & Dept. Environmental Science, Univ. of Milan.

Jane Scott, Research Fellow, Hub for Biotechnology & Built Environment, Newcastle University.

17:00 Discussion: What does this mean for design and architecture?

17:30 Close of Day 1

Day 2

Online, 13:00 – 17:30

- 13:00 – 13:15** Welcome and Opening provocation from **Emeka Okafor**, co-founder of Maker Faire Africa.
- 13:15 – 15:00** **Panel 3: Nature as Medium**
- How do you build using nature as a medium?
- Chair: **Nancy Diniz**, Course Leader, MA Biodesign, Central Saint Martins.
- Mitchell Joachim**, Co-founder Terraform ONE & Associate Professor of Practice, NYU.
- Phil Ayres**, Associate Professor, CITA, KADK, Denmark.
- Natalie Alima**, RMIT School of Architecture & Urban Design.
- Yessica Méndez**, Researcher, Architecture and Urban Strategies Department at CEDIM
- 15:00 – 15:15** **Break**
- 15:15 – 17:00** **Panel 4: Design as a host for growth**
- What are the new modes of cultivation for designing with life?
- Chair: **Bernard Hay**, Researcher & Senior Producer, Design Museum.
- Jenny Molloy**, Shuttleworth Fellow, Dept. of Chemical Engineering & Biotechnology, University of Cambridge
- Flora Girard**, Bioprocess Engineering Dept., University of Nantes.
- Nada Tarkhan**, Building Technology PhD student & Researcher, Sustainable Design Lab, MIT.
- Marcos Cruz**, Professor of Innovative Environments, Bartlett School of Architecture, UCL.
- 17:00** **What does this mean for design and architecture?**
- 17:20 – 17:30** **Closing Remarks**

Speaker Biographies

Irene Agrivina Widyanigrum is an open systems advocate, technologist, artist, curator and educator. She is one of the founding members and current directors of HONF, the Yogyakarta based new media and technology laboratory. Irene runs HONF's 'Education Focus Programme', which focuses on the application and practical use in daily life of collaborative, cross-disciplinary and technological actions responding to social, cultural and environmental challenges. In 2013 she established XXLab, a female collective focusing in arts, science and free technology.

Natalie Alima Natalie's PhD research focuses on real-time robotic feedback systems developed between industrial robots, biological materials and computational design. By establishing a direct dialogue between the digital and physical realms, data is extracted from the organism in order to generate algorithmic computational behaviours. This material centric design approach aims to create a new set of highly volatile and strange geometries which are fabricated in real time.

Phil Ayres is an architect, researcher and educator based at CITA, KADK, Denmark. His research focuses on the design and production of bio-hybrid architectural systems that couple technical & living complexes, together with the development of complimentary design environments. Phil has pursued this in the context of two EU funded projects: *flora robotica* and *Fungal Architectures*.

Paolo Bombelli is a joint research scientist in the Department of Biochemistry (University of Cambridge, UK) and Department of Environmental Science (University of Milan, Italy). His work focuses on the fundamental principles of photo-bio-electrochemistry with the aim to combine biology, engineering and design for translating the fundamental principles into practical applications.

Sheila Cooke: Sheila enables farmers to regenerate soils whilst attaining quality of life. As hub leader for 3LM, Land and Livestock Management for Life, and an Accredited Field Professional with the Savory Institute, Sheila is developing a network of Learning Hubs, Accredited Educators, and Ecological Outcome Verified producers of food and fibre.

Marcos Cruz is an Architect and Co-Director of Bio-ID at UCL, a cross-disciplinary research platform between architecture and biochemical engineering. His varied academic activity has led to many publications and awards, including winning the acclaimed RIBA research award. His current research focuses on poikilohydric living walls and bioreceptive materials.

Flora Girard is a Trench PhD student in Bioprocess engineering at the University of Nantes, working at GEPEA, the Génie des Procédés Environnement Agroalimentaire laboratory. Her current research focuses on developing a Microalgae-based facade as a sustainable access to food, energy and water in urban centres.

Mitchell Joachim is Co-Founder of Terreform ONE and Associate Professor at NYU. Formerly, he was an architect at Frank Gehry and I.M. Pei. He has been awarded a

Fulbright Scholarship and fellowships with TED, Moshe Safdie, and Martin Society, MIT. He was chosen by Wired for "The Smart List" and selected by Rolling Stone for "The 100 People Who Are Changing America".

Jen Keane is a designer, researcher and co-founder and CEO of Modern Synthesis, a biomaterial innovation company connecting the dots between design, biology and material science to develop radical and regenerative materials for the fashion industry.

Yessica Méndez is an architect and holds an MA in Advanced Architecture from IAAC. She is a researcher and the Academic Coordinator of the Architecture and Urban Strategies Department at CEDIM. Her research focuses on the integration of microorganisms, biomaterials and environmental performance in architecture through computational design and novel fabrication strategies.

Jenny Molloy is a Shuttleworth Fellow at the University of Cambridge where she builds open source tools for distributed manufacturing of enzymes for biological research. She also co-founded three social enterprises and communities, working with collaborators in Africa, Latin America and beyond to build an open, sustainable and equitable global bioeconomy.

Lucy Montgomery Lucy is a Senior Consultant at NNFFC The Bioeconomy Consultants and has over 10 years' research and consulting experience on industrial biotechnology and anaerobic digestion. She provides business support to innovators in the bioeconomy, de-risking their path to commercialisation with information on markets, feedstocks, technologies and regulations.

Naomi Nakayama Naomi leads the Biological Form and Function Lab in the Department of Bioengineering at Imperial College London. Her group investigates why living organisms have the shape and growth patterns they have and explores potential applications from sustainable agriculture to green technology. Currently, her research group studies the design principles of biological architecture.

Claudia Pasquero is an architect, curator, author and educator. Her work and research operates at the intersection of biology, computation and design. She is founder and co-director of ecoLogicStudio in London, Lecturer and Director of the Urban Morphogenesis Lab at the Bartlett UCL, Professor of Landscape Architecture and founder of the Synthetic Landscape Lab at Innsbruck University.

Jane Scott is the NUAAct Research Fellow at the Hub for Biotechnology in the Built Environment at Newcastle University. As a textile specialist her research challenges the established understanding of smart materials for architecture; applying principles derived from plant biology to the development of environmentally responsive textile systems composed of natural and sustainable materials.

Nada Tarkhan is a Building Technology PhD student at MIT, working as a researcher in the Sustainable Design Lab. She holds a Masters in Design Studies from the Harvard Graduate School of Design, where she studied under the concentration of Energy and Environments. Her current research focuses on developing computational assessment models to test bioclimatic design strategies in the context of extreme climates and heat events.

Design with the Living 2020 is organised by Professor Carole Collet, Professor Marcus Cruz, Dr. Brenda Parker, Hannah Robinson and Bernard Hay.

Please note this programme is subject to change.