

DOWN TO *EARTH*

*explorations in biological- and
low-impact building techniques*

International Architecture Conference
BION, Building Impact Zero Network
Färgfabriken, Stockholm
17th June 2022



CONFERENCE ORGANISERS

Architectural Environmental Strategies, AES
Anna Sundman, Architect and co-founder of AES
Emily Aquilina, Architect and chairperson of AES

BION
Building Impact Zero Network

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PROGRAM

9.00 - 9.15	ARRIVAL
9.15 - 9.30	INTRODUCTION BY EMILY AQUILINA AND HELEN RÜNTING
9.30 - 10.00	BUILDING IMPACT ZERO NETWORK – WHO IS BION?
10.00 - 11.00	BIOCONSTRUCTION - BUILDING WITH NATURAL MATERIALS
11.00 - 12.00	CRAFT AND SOCIETY; MAKERSPACES / COOPERATIVE AND PEOPLE-LED MOVEMENTS
12.00 - 13.30	LUNCH
13.30 - 14.00	EMERGENCY ARCHITECTURE
14.00 - 14.20	PLACEMAKING IN ÖSTERTÄLJE
14.20 - 14.50	CIRCULAR INNOVATIONS IN SWEDEN
14.50 - 15.20	COFFEE BREAK AND MINGLE
15.20 - 15.50	USER DRIVEN & INCLUSIVE DESIGN
15.50 - 16.30	BUILDING WITH CANE & CANYA VIVA – PRESENTATION AND CONVERSATION
16.30 - 17.00	FUTURE PRACTICE OF SUSTAINABLE FUTURES
17.00	CLOSURE AND MINGLE IN OPEN STUDIO

BIØN,

A network of partners active in low impact and ecological building techniques. Our aim is to share knowledge, practice based experiences and participatory processes in order to contribute to the built environment and to our communities.

Created in 2015, BIØN is an European network of partners, who are active in natural, recycled and low environmental impact building techniques with positive social impact. Sustainable building practices and knowledge transfer sits at the core of the network.

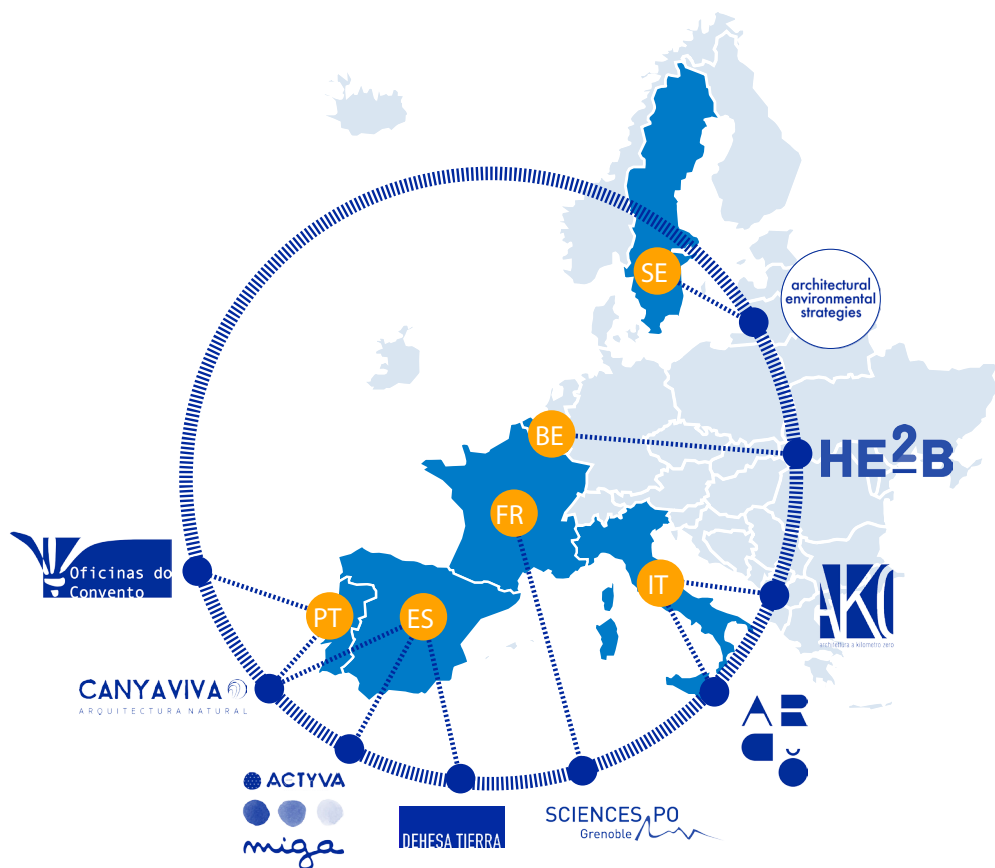
Through the network, various participatory processes and environmentally friendly construction techniques have been investigated and prototyped at a 1:1 built scale. This has resulted in 11 built projects over the duration of a six-year long collaboration (2015-2022), with each project constructed during a four-week long hands-on workshop. A total of (at least) 11 months of our collaboration has been spent on a construction site or in a theoretical session.

Each workshop involved a site specific material response. By identifying on-site or locally accessible resources, including natural/recycled materials, equipment and labour skillsets, the

network aimed to achieve the lowest impact possible for each project. Another aim of building prototypes was to expose the process, increase awareness and to shift the perception of how natural materials (going beyond wood) can be used in the built environment.

Beyond the design and build workshops, another objective of the network is knowledge exchange. By sharing knowledge both within the network and creating open-source technique guides and resources for anyone to practically engage with. We aim to continue to expose our methods, knowledge and resources. If you would like to access this material or learn more visit our website www.biOn.eu and download a guidebook or contact AES at www.aesstudio.org.

BUILDING IMPACT ZERO NETWORK



CONFERENCE REFLECTION

OpenBIØN II Stockholm titled 'Down to Earth' was the final event concluding 6 years of research, experimentation and collaboration in the application of bio-construction materials and testing of different theoretical models which challenge and rethink how architecture impacts the environment.

An important aspect of the conference was to disseminate the results from the BIØN I and II while generating a platform for professionals to discuss the possible application of different models in an urban context through, amongst other themes, useability and scalability. The one-day conference Down to Earth was held at Färgfabriken in Stockholm on the 17th June 2022. Organised by AES Studio the event synthesized the six-year-long collaboration with the European network, BIØN. The purpose of the conference was two-part; First, to share the knowledge gained within the network, to showcase the 11 built prototypes and learnings from this collaborative process. The second focus was to use the BIØN network as a point of departure to engage in a wider discussion of how the architectural and construction industry can reach the 2030 climate goals, what is needed to transform the industry and speculate on new ways of working.

The day began with an introduction by Emily Aquilina, Architect and chairperson of AES Studio and Helen Runting, Urban Planner, Urban Designer, Architectural Theorist and co-founder of the office for Architecture known as Secretary. With over 50 guests attending the event, the audience hosted local, regional and international attendees, with members of the audience from a range of backgrounds including academia, professionals, students, craftsmen, independent climate groups and general enthusiasts/members of the public. After a warm welcome and short overview about the BIØN network the morning session kicked off with a series of short and sharp presentations from each of the 8 organisations that are co-creating in BIØN.

The conference was structured in four blocks, two in the morning and two in the afternoon with a lunch break in-between. Provided by Färgfabriken Café, lunch and two fika breaks were included in the fixed ticket price and allowed the audience to mingle, network and ask questions to any of the speakers. We felt these moments enabled informal exchanges of knowledge and fruitful discussions. The presentation format was not fixed and changed based on the speaker/project. The style ranged from 30 minute individual presentations and Q&A, thematic group presentations, 5-20 minute presentations with group panel discussions and participatory reflections.

The purpose of this event acted as a way for the BIØN network to come together one last time to reflect on BIØN's processes, outcomes and to share learnings and expertise with a wider audience. The final session of the event concluded by discussing the future of the practice as Architects, Engineers, Builders and as a community. Finally, we invited guests to visit the open studio exhibition space for a drink and final mingle.

Some final thoughts and reflections: Returning to a more sustainable and conscious society is one of the central focal points of the network, this is attempted through the exploration of bio-construction materials and building techniques. The other key aspect of BIØN is formed around building relationships and developing placemaking processes. An exchange of knowledge between community, professionals and experts is inherently intertwined with the building process of each project and places value on not only bio-materials and upcycling but building collectively.

Transforming the way Architects work by developing on site and material knowledge, working on a hyper local scale yet at the same time creating a method of working that can be replicated and scalable. Responding to the climatic conditions and finding ways for local, on site or close proximity materials to influence the architecture. Shifting the way we work through the process of embodying local values of community, resources and upcycled materials first, materialising the on-site skills and capabilities in order to realise a project.

Finally, the unique collection of work, of practice, the way that this approach to architecture exists as an organisational form (through NGOs) displays a different way of creating architecture, opposed to mainstream market demand driven process. The process is more like an organism with complete integration of building and design processes.

Open Studio:

The open studio exhibition showcased a body of work from 2015-2021. "AES flyttar in" was a nine-week collaboration between AES and Färgfabriken from 30th April till 19th June 2022. During this period AES built up an exhibition and hosted a series of events including lunch time talks, presentations for municipal and private groups and a material exploration workshop. The exhibition showcased the body of work from the BION network between 2015-2022. The aim of these events was to promote the movement towards a more sustainable architectural and construction industry.











DOWN TO *EARTH*



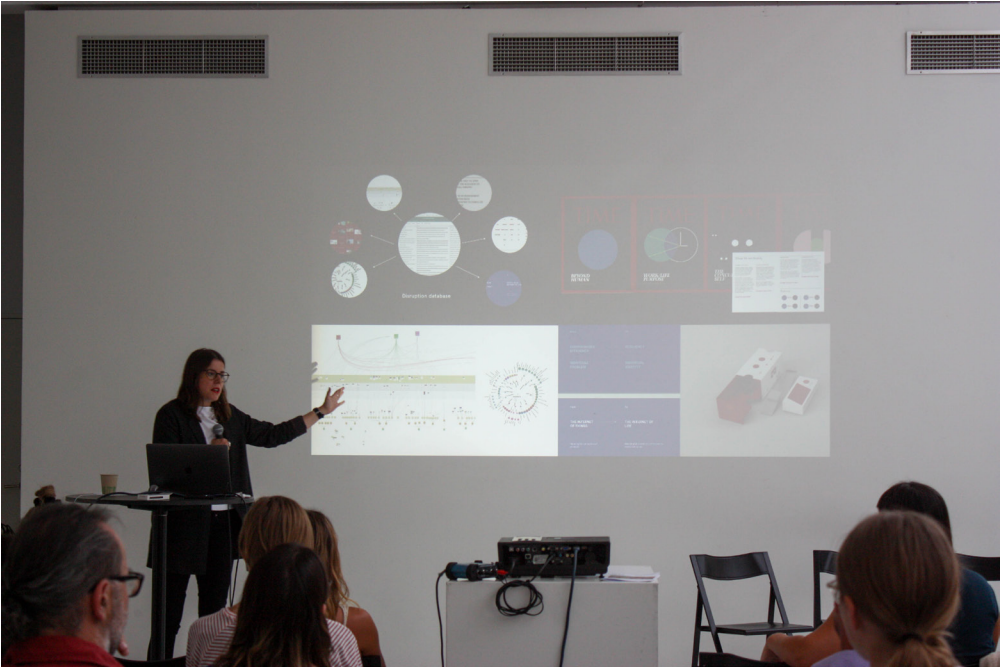








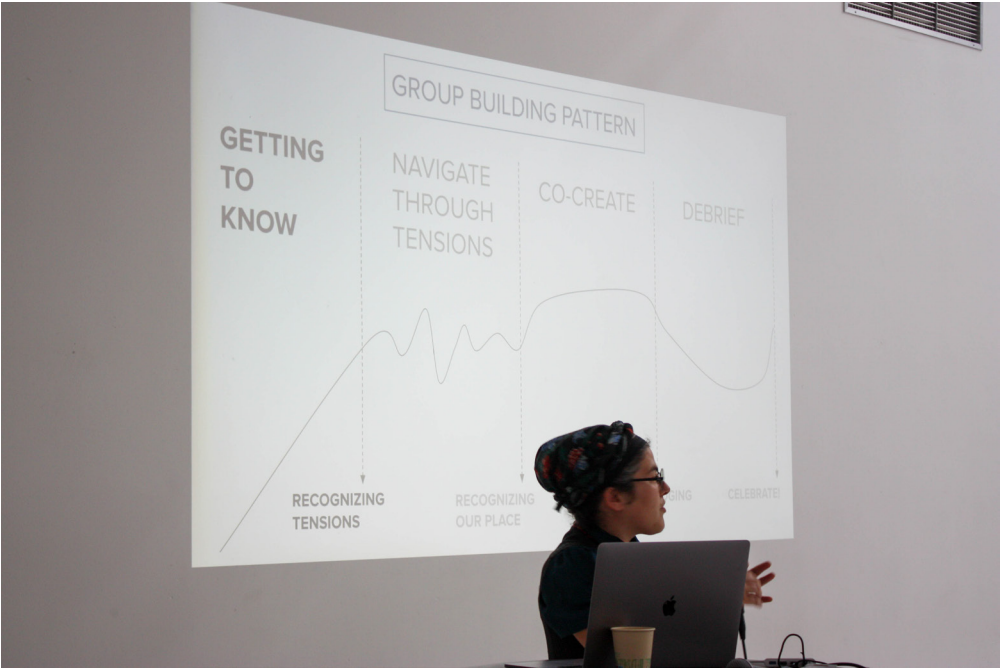
















DOWN TO *FART*



SPEAKERS

LUCILE COUVREUR

Material engineer

Lucile Couvreur is a material engineer graduated in 2012 from the Institut National des Sciences Appliquées (INSA Lyon, France). She completed her studies with a Master's degree in CRATerre, International Earth Building Center of the Ecole d'Architecture de Grenoble (France). She has been working three years in amàco (a french educational center specialized natural materials), getting useful skills in training young people to eco-building techniques with a "learning by doing" approach. She currently works in miga as a coordinator of several projects connected with heritage preservation and promotion of natural building materials. She is also a member of Dehesa Tierra association, partner of BIØN in the 1st edition.

TÂNIA TEIXEIRA

Architect, researcher and builder

Live and working in the lively small town of Montemor-o-Novo, Portugal. Architect, researcher and builder, she is the founder of the office CRU architecture and research, a part of the Integral Cooperative Minga (also a founding cooperant), developing architectural projects mainly from local and vernacular materials and techniques in constant dialog with a more contemporary and sustainable living at the urban or rural context. She collaborates with the cultural NGO Oficinas do Convento since 2014, coordinating the Earth Lab and the LearnBIØN - Learn Building Impact Zero Network project, co-financed by EU among other educational and research projects connected with low impact building materials, with Low embodied energy and a circular lifecycle.

& TOPICS

Lucile Couvreur, Material Engineer / Miga/ACTYVA / Spain

Bioconstruction - Building with Natural Materials

Title: Earth is what we have at hand

Since 2016 Lucile Couvreur has been working with Dehesa Tierra association and miga/ACTYVA to promote the use of earth material for building in Extremadura, a region in Spain with a strong heritage in earth building (mainly rammed earth and adobe). Through the local vernacular Lucile explores how the team constructs using both traditional and innovative techniques. Lucile will showcase some of the more recent experiments, including the B10N poured earth workshop, to exemplify the dynamic capabilities of such a versatile, accessible, low-impact and aesthetic material!

Tânia Teixeira, Architect / CRU Atelier / Portugal

Bioconstruction - Building with Natural Materials

Title: Bio Architecture - Building with natural materials. Is scaling possible?

Architect, Researcher, Builder and advocate for change within the building industry, Tânia Teixeira shares insights into her practice and expert practical knowledge of natural materials developed through her long-term collaboration with the cultural NGO Oficinas do Convento. Tânia is coordinator of projects such as the Earth Lab in Montemor-o-Novo and European low-impact building network LearnB10N. With a focus on the construction industry's carbon footprint, Tânia highlights the contribution of natural materials like fibres and earth as building material and their role in the continued fight for climate change. Through her practice and research Tânia discusses the importance of scientific knowledge, the development of methodologies of testing and the challenges around the implementation for unstandardised

STEFAN POLLAK

Architect

Born in 1973 in Schwäbisch-Gmünd (Germany); M.Sc. in Architecture and PhD in Sustainable Urban Design. Since 1999 he has led the design and site-management for buildings of social utility in Côte d'Ivoire, Niger, Brazil, Guatemala and involved in international development projects in Côte d'Ivoire and Peru. The clients of his free-lance activity in Europe include private persons, retail companies, public bodies. In parallel he has been responsible for teaching assignments at Università degli Studi di Roma Tre, the Catholic University of America, Libera Università Maria Santissima Assunta. Moreover he held seminars and workshops for other universities in Italy, Germany, Greece, Rwanda, Japan, Brazil and Peru. He is a founding member of AK0-Architettura a kilometro zero ETS, an association he has been chairing from its foundation in 2014 until 2020. Today he is a board-member and responsible for the association's oversea projects in Europe, Africa and Latin America. Since 2015 he has been the regional coordinator for Central and Southern Italy within the network BIØN (Building Impact Zero Network). With this network, AK0 runs the training program LearnBIØN, awarded as best practice for adult learning by the European Commission. Stefan's researches focus on collective design methods and construction systems with low environmental impact, including the architectural applications of bamboo and other giant grasses as well as raw earth. On these issues he has published and edited articles, conferences papers and two books.

ALESSANDRA FASOLI

Designer and Researcher

Alessandra Fasoli is a designer and researcher with a strong focus on design anthropology, sustainability practices, and material cultures. She is currently doing a practice-based PhD at Kingston School of Art London in partnership with the Crafts Council UK, studying how craft practices in open makerspaces can be social enablers for sustainability change. Her research is informed by design justice frameworks, social sustainability policies, intersectional feminism, and degrowth economic theories. She also works as a freelance visual and service designer, and she is a co-founder of the Italian non-profit AK0 - architettura a kilometro zero.

ANDRÉ DOS SANTOS PEREIRA

Electrical Engineer

Alessandra Fasoli is a designer and researcher with a strong focus on design anthropology, sustainability practices, and material cultures. She is currently doing a practice-based PhD at Kingston School of Art London in partnership with the Crafts Council UK, studying how craft practices in open makerspaces can be social enablers for sustainability change. Her research is informed by design justice frameworks, social sustainability policies, intersectional feminism, and degrowth economic theories. She also works as a freelance visual and service designer, and she is a co-founder of the Italian non-profit AK0 - architettura a kilometro zero.

Stefan Pollack, Architect / AK0 - architettura a kilometro zero / Italy

Bioconstruction - Building with Natural Materials

Title: Start where you can - Prototyping as a trigger of change

Working across three continents, Stefan Pollack synthesises a series of projects and collaborations by B10N partner AK0 with the ambition of showing how, in certain conditions, building small prototypes can be a trailblazer for later, more structured interventions. How the act of physical building and creating can trigger the needed disruption or input to an otherwise blocked situation. How the act of building physically can generate enthusiasm and a sense of cooperation. Stefan will also address how cooperation on building sites make it possible to connect the three aspects of 'Build | Learn | Explore:' to create useful transformations, exchange knowledge and explore new solutions.

Alessandra Fasoli, Designer and Researcher / AK0 - architettura a kilometro zero / Italy

Title: Crafting a Place and a Place for Craft: from Vernacular Architecture to Makerspaces, Why Social Making Matters in Sustainability Cultures.

Drawing on the relationship between architecture and craft, this talk explores the meaning of making in contemporary society, showing the difference a tech-driven framework of making and a craft-led design approach have in creating a sense of space and strengthening community identities.

André dos Santos Pereira, Electrical Engineer / Active Member of Cooperativa Integral Minga / Portugal

Title: Cooperative and people-led movements

Caterina de Viti and André dos Santos Pereira have chosen to work for cooperative movements, leading an alternative and more sustainable development in Portugal. What are the key components for a more people-led development? What are the key learnings from municipal collaboration? Through the example and case study of Montemor-o-novo, this session delves into the strong arts and crafts movement that leads the way in revitalising and repopulating a rural, interior city of Portugal.

CATERINA DE VITI

Civil Engineer

Civil Engineer (2018) from University of Bologna + Universidade Nova de Lisboa (2015) and Master's thesis at FEUP (2017). After the internship at the Engineering studio Tosti e associati, she became strongly interested in the valorisation, rehabilitation and structural reinforcement of the architectural heritage and traditional masonry. Collaborating as a Civil Engineer at the Lobo studio in Bologna (2018-2020), she worked specifically in the recovery and energy improvement of residential buildings. She fell in love with earthen architecture during her thesis on adobe buildings in the region of Aveiro (Portugal) and is specializing in the mechanical and chemical-physical characterization of earths for constructions. She currently collaborates with CRU Atelier (Minga) in Montemor-o-Novo on restoration and new projects promoting traditional Alentejo construction techniques and materials with a low ecological footprint. Caterina also provides consultancy services for rammed earth buildings and develops research work on the properties of sustainable materials for construction.

ALESSIO BATTISTELLA

Architect PhD

Researcher at Politecnico di Milano (Department of Architecture and Urban Studies). Chairperson of ARCò Architecture and Cooperation, with which he carries out design and applied research in the field of sustainable architecture in humanitarian emergency contexts. Alessio is a member of the Scientific Committee and professor at Master "Circular architecture - Shapes and methodologies of the circular architecture", Scuola di Architettura e Design, Università di Camerino. He also works as a member of the Advisory Board and Professor at Master "Design for Development" at Politecnico di Milano. Member of the Scientific Committee of IN/ARCH (Istituto Nazionale di Architettura). Finally, Alessio is a member of the Scientific Committee and Track leader of S.O.S. - School of Sustainability.

ANNA SUNDMAN

Architect

Anna is the co-founder of AES, a non-profit organisation working within the field of architecture, planning and sustainable development, established 2009 in Stockholm. The projects we engage in range from experimental building, placemaking processes and circular building. In 2015 Anna completed a Post Master course in Urbanism Studies & Migration at the Royal Institute of Art, Stockholm. Since then Anna has co-founded Theory Into Practice (TIP), an innovative architectural firm that works to combine design, innovation, research and prototyping as a driver of change. In collaboration with the urban planners Warm in the Winter, TIP are the co-founders of 'Arkitekturstudiet,' an Institute for practice based research in Sweden.

Caterina de Viti, Civil Engineer / Oficinas do convento / Portugal**Title: Cooperative and people-led movements**

Caterina de Viti and André dos Santos Pereira have chosen to work for cooperative movements, leading an alternative and more sustainable development in Portugal. What are the key components for a more people-led development? What are the key learnings from municipal collaboration? Through the example and case study of Montemor-o-novo, this session delves into the strong arts and crafts movement that leads the way in revitalising and repopulating a rural, interior city of Portugal.

Alessio Battistella , Architect PhD / ARCò / Italy**Title: Emergency architecture** Alessio Battistella presents his work in Emergency

Architecture and disaster relief as part of his work with ARCò, an Italian cooperative founded in 2012 by a group of architects and engineers dedicated to the production of sustainable architecture and landscape design. Their projects are based on the constant pursuit of social, economical and environmental sustainability. For this reason, ARCò explores local and traditional techniques, as a means of enabling the communities involved to independently run construction and building processes. Alessio gives insights in the challenges of working in areas of conflict such as the Gaza Strip and Iraq.

Anna Sundman, Architect / AES - Architectural Environmental Strategies, TIP / Sweden**Title: Placemaking in Östertälje - Building with Cordwood**

Co-founder of the not-for-profit organisation AES Studio, Anna Sundman began her journey with people-led practices in 2009, working and building in the south-pacific with local communities. Experimenting with the role of the architect as a facilitator merging resources and know-how. As we fast forward and zoom in to the local context of Östertälje, Sweden, Anna discusses the outcome of the LearnB10N month-long workshop building with cordwood, a circular building practice that is cost effective and requires no previous experience. Anna evaluates the importance of placemaking through inclusive design practices and illustrates how co-creation and decision making on site can generate a relevant project with great individual growth for participants.

FRANÇOIS GILLET

Social educator

François GILLET is social educator, master in education sciences and associate in psychopedagogy. His career developed in working as social worker in different fields of social education (children in risk, socio-cultural animation and secondary school education). Since 1996, he became lecturer in social educators training in the Haute Ecole de Bruxelles and researcher in Cérises. He took part to several inter-universities research programs concerning interculturality, social ethics, community mediation, jobs in social field, violence prevention, international social work, empowerment, and sustainable social work. In 2007 he was one of the founders of Aifris www.aifris-eu, Abfris www.abfris.be and Educ-Europe www.educ-europe.eu supporting students, professionals and researchers in their experiences of international social work professional practice and collaborative-action research.

SAMANTA SINISTRI

Architect

Samanta Sinistri is an architect trained between Rome and Lisbon, with experience in the use of natural materials and construction with low environmental impact technologies, gained in self-construction sites and international cooperation projects in Ghana and Peru. Since 2020 she is a board member of AK0 – architettura a kilometro zero, and in 2021 she is one of the trainers in the Learn BIØN project. Recently, she specializes in participatory processes, pioneering participation tools for children. In 2017 she is among the founders of the Eterotopia collective, with which she is involved in research and territorial planning in Italy, working on intangible heritage.

JOANA TRINDADE

Architect

Joana Trindade develops her path under the premise that the architectural practice is indissociable from its social and ecological responsibility, so she lives up to the challenge of translating political discourse into spatial practice and materialisation. She dedicates her time in action-research projects focused on the search for the common, an idea that is inherent to the co-creation of the built environment.

François Gillet / HE2B / Belgium
User driven & inclusive design
Title: Building and Group-building

As a social educator and associate in psychopedagogy, François Gillet offers an insight into the social, human, educational and socio-political dimension as a collective experience. Over the last six years François has engaged and followed on with BION's workshops and training, offering tools and methods to support the building of inclusive, participatory and efficient group dynamics. François invites Samanta Sinistri and Joana trindade to present their experiences on 'user driven' processes and their evolving roles within the BION network, showcasing how the trainee to trainer method is exemplified and reflect on how the network has contributed to their personal development and growth.

Samanta Sinistri / AK0 - architettura a kilometro zero / Italy
User driven & inclusive design
Title: Stakeholder Participation

Joana Trindade / Oficinas do convento / Portugal
User driven & inclusive design
Title: Building Participation

When we talk about users and inclusiveness, in the activities carried out by the BION network we are referring to two types of entities: the stakeholders, meaning all the actors involved in the design and construction process, and the builders, meaning the people who participate in the training programme proposed by the partners. François Gillet will introduce the topic and the interventions of Samanta Sinistri, who will illustrate the dynamics that emerged in the relationship with the stakeholders during some of the workshops, and Joana Trindade, who will deepen the strategies experimented in order to provide space for a multilevel engagement.

JONATHAN CORY-WRIGHT

Architect

Directly after finishing his studies at the Bartlett School of Architecture in London in 2004, Jonathan embarked on what was initially meant to be a short trip to the south of Spain in search of some hands-on work experience. Days into the trip he discovered the abundant and very fast growing Mediterranean Cane (*Arundo Donax*) otherwise known as Giant Reed, and, inspired mainly by its shape as it grew in its natural setting, began to bend, twist, weave and tie into bundles that eventually became arches and thus the beginning of the CanyaViva Method which he continues to teach in Spain and Portugal to the present day. Jonathan has been involved in over one hundred projects over 17 years, including festivals such as Boom Festival, Portugal (2008, 2009) and Primavera Sound Festival, Barcelona (2017, 2018). More recently he has been developing natural covering methods in order to give his cane structures more durability, testing materials such as earth, shredded cane, lime, marble, cork, oils and soap. His latest project in Alcantarilha was his first building covered entirely of thatch (European Reed) showing the huge potential of using purely plant fibres as renewable building materials in regenerative organic architecture.

Jonathan Cory-Wright, Architect / Canya Viva / Spain & Portugal
Title: A brief history of Cane Construction

Founder of Canya Viva, Jonathan Cory-Wright dives deep into 17 years of experimentation with cane structures and covering techniques working with materials such as earth, lime, oils and soap, and, more recently, thatch. Jonathan's life-long work, research and innovations around Mediterranean Cane colour our world with arches as the audience is taken on a material journey. By sharing insights into the twists and turns of the material, Jonathan illustrates the potential, beauty and durability of Cane construction.

PANEL GUESTS

EMMA ÖSTLUND

Sustainability Manager, Ettelva

Emma Östlund is the sustainability strategist and environmental planner at Ettelva. Previously she worked as a sustainability strategist and environmental planner for the Täby municipality.

Emma shared insights into the CIX tool - A tool created for more circular buildings. The tool was initiated by Ettelva, is free and accessible from <http://www.hallbarbyggnation.se/>

HELENA WESTERLIND

PhD Candidate, KTH School of Architecture

Helena Westerlind is an architect and postdoctoral researcher at KTH School of Architecture. Her work explores material processes and techniques in architectural production with specific focus on cement-based materials and digital fabrication.

For more details on Helena's work visit <http://innochain.net/helena-westerlind/>

BETTINA SCHWALM

Consultant Experience Design, Strategic Foresight, Research and Insights, Offshore Unlimited International

Bettina Schwalm is an Experience Designer, Strategist and Researcher with a long experience driving value in the service of society, culture and the environment. She is educating and coaching teams in innovation and future thinking, always with a strong focus on behavioural studies. She is Course Director for Future Thinking at the Stockholm School of Entrepreneurship and affiliated with Konstfack (University of Arts, Crafts, and Design) as well as a guest lecturer in various institutions around the world. Her interdisciplinary approach is at the intersection of science and design, developing hands-on tools and visions and long-term strategies for organisations and the public realm.

Check out some of Bettina's projects <http://bettinaschwalm.com/>





Thank you to the team at Färgfabriken for all of the assistance during and leading up to this event.
Thank you to the wonderful moderator, Helen Runting.
Thank you to Erika Henriksson and Sara Monaco for organisational contributions.

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