



Clean Planet, Happy People,  
Shared Prosperity, Emerging Concepts

# SBE19 SUSTAINABLE BUILT ENVIRONMENT

Helsinki, Finland May 22–24, 2019

## WEDNESDAY MAY 22

### 09:00 OPENING SESSION

Venue: Room 4011 Chair: Wim Bakens  
Pekka Huovila, Chair of the Scientific Committee

SBE series presentation  
Wim Bakens, CIB  
Anders Persson, FIDIC

### 09:15 KEYNOTE 1 - SOCIAL LICENCE TO OPERATE

Ilari Aho, Uponor



### 10:00 KEYNOTE 2 - GUIDELINES FOR REALIZING CIRCULAR AMBITIONS IN A BUILDING DEVELOPMENT PROCESS

Wouter Roemaat, Alba Concepts



### 10:45 COFFEE

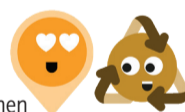
### 11:15 HAPPY PEOPLE

Venue: Room 4011 Chair: Miimu Airaksinen



### MATERIAL, LIFE CYCLES AND CIRCULARITY

Venue: Room 4009 Chair: Tarja Mäkeläinen



### INDUSTRY / HAPPY PEOPLE

Venue: Room 4010 Chair: Ilari Aho



11:15 A methodology to assess sustainability of the built environment in Latin American neighborhoods: five cases in Southern Chile.  
Antonio Zumelzu (Universidad Austral de Chile)

11:30 The role of prosumers in supporting in renewable energies sources  
Sara Torabi Moghadam (Politecnico di Torino)

11:45 Housing: Dense, high-rise buildings with green, low carbon solutions. Case study Santiago, Chile Sustainable High-rise Building in Santiago  
Eric Pollock (Metropolia UAS)

12:00 Interaction of obligatory regulations and voluntary ecolabels for climate change mitigation in the Finnish building sector  
Riikka Holopainen (Ecolabelling Finland)

12:15 Residential movements in connection to renovation of rented multi-family housing: a pilot study  
Paula Femenias (Chalmers University of Technology)

11:15 RTS EPD's – Different Methods of Producing Reliable Environmental Information of Building Products in Finland  
Laura Sariola (The Building Information Foundation RTS sr)

11:30 Equation for zero emissions -achieving carbon-neutrality in building sector  
Markus Mäkinen (Accenture)

11:45 Participatory service design and community involvement in designing future-ready sustainable learning landscapes  
Niclas Sandström (University of Helsinki), Anne Nevgi (University of Helsinki)

12:00 Resource strategies - discussions on remodeling modernistic housing and related social impacts  
Inge Vestergaard (Aarhus School of Architecture)

12:15 PEF method to assess the environmental footprint of buildings – result of PEF4Buildings project  
Carolin Spirinckx (VITO - Flemish Institute for Technological Research)

11:15 Assessing the Applicability of the HUL Approach: The Case of the Junction Neighborhood, Toledo, Ohio  
Salim Elwazani (Bowling Green State University)

11:30 Co-creation of the future sustainable learning environment  
Suvi Nenonen (Tampere University)

11:45 THE USA'S BUY QUIET INITIATIVE  
Bryan Beamer (National Institute for Occupational Safety and Health)

12:00 Towards Citizen Control by Engaging the Political Actors and the Passive Participants  
Ken Dooley (Granlund)

12:15 Circular thinking means new potential and significant cost and CO<sup>2</sup>-emission reductions in infrastructure construction  
Riina Känkänen (Ramboll Finland)

### 12:45 LUNCH



# SBE19 SUSTAINABLE BUILT ENVIRONMENT

Helsinki, Finland May 22–24, 2019

13:45

## POSITIVE STIMULATION AND WELL-BEING



Venue: Room 4011 Chair: Francesco Reda

- 13:45 Developing a transition agenda towards a circular economy: the Dutch case of the province of Overijssel  
Bram Entrop (Saxion University of Applied Sciences)
- 14:00 Health & wellbeing in offices- A study of literature on the Nordic perspective  
Melina Forooraghi (Chalmers University of Technology)
- 14:15 New housing concepts seducing young adults to settle; the case of Deventer and Enschede  
Bram Entrop (Saxion University of Applied Sciences)
- 14:30 Multidimensional evaluation of tenants' temporal relocation during a renovation: A comparison between two case studies from Sweden.  
Antonio Serrano-Jiménez (University of Seville - Department of Architectural Construction I), Paula Femenias (Chalmers University of Technology - Department of Architecture and Civil Engineering)
- 14:45 The role and value of local welfare institutions in multicultural areas  
Kari Moseng (Aarhus School of Architecture)
- 15:00 Infrastructure, innovation and industry as solutions for breaking inequality vicious cycles  
Irene Josa (Universitat Politècnica de Catalunya)

## WORKSHOP

### BIM SKILLS FOR ENERGY KNOWLEDGE MANAGEMENT



Venue: Room 4009 Moderators: Tarja Mäkeläinen & Sunil Suwal

## CLEAN PLANET



Venue: Room 4010 Chair: Suvi Nenonen

- 13:45 Identify Optimal Renovation Packages for Residential Buildings: A State-of-the-Art Computational Model  
Mohamad Kharseh (Chalmers University of Technology)
- 14:00 Thermal comfort analysis of a representative multi-story social housing unit with wood as an alternative construction material in Brazil  
Esaiy Antonio Valdenebro Galaz (Hafencity University)
- 14:15 Primary energy and CO<sup>2</sup> emissions implications of different insulation, cladding and frame materials for residential buildings  
Leif Gustavsson (Linnaeus University)
- 14:30 Off Grid Systems  
Eric Pollock (Metropolia UAS)
- 14:45 Greenhouse gas emissions from built environment development in Iceland  
Jukka Heinonen (University of Iceland)

15:15

## COFFEE

15:45

## EMERGING CONCEPTS



Venue: Room 4011 Chair: Riikka Holopainen

- 15:45 Mainstreaming Affordable Sustainable Housing Practices in Developing Countries  
Harri Hakaste (Ministry of the Environment)
- 16:00 Nature Based Solutions (NBS) for sustainable and resilient cities: experiences from Europe and Brazil  
Carmen Antuña Rozado (VTT Technical Research Centre of Finland Ltd.)
- 16:15 Smart and sustainable urban development in Egypt: the case of Nabta Smart Town  
Francesco Reda (VTT Technical Research Centre of Finland Ltd.)
- 16:30 Circular Economy in the Built Environment: Supporting Emerging Concepts  
Pekka Huovila (Green Building Council Finland)
- 16:45 Passiv Solar design basics, a way for low emission buildings?  
Søren Dietz (Bjerg Arkitektur)
- 17:00 Green Urban Development: A methodology to calculate site and infrastructure related GHG emissions  
Prashant Kapoor (International Finance Corporation, World Bank Group)

## WORKSHOP

### INTERACTIVE AND INTEGRATIVE URBAN PLANNING GAME



– the sustainable dialogue between happy people and clean planet

Venue: Room 4009 Moderators: Elina Kalliala & Sanna Ala-Mantila

## INDUSTRY / MATERIAL LIFE CYCLES AND CIRCULARITY



Venue: Room 4010 Chair: Ken Dooley

- 15:45 How to transform circular economy from a vision to designs in the urban planning process? Case examples from Finland  
Lilli Linkola (Ethica Oy)
- 16:00 Urban development tools for climate change mitigation  
Jyri Nieminen (Sweco Finland Ltd.)
- 16:15 Smart Otaniemi ecosystem - A living lab with real customers  
Ismo Heimonen (VTT)
- 16:30 Virtual sensor use cases from building operation data  
Davor Stjelja (Granlund Oy)
- 16:45 Sustainable BIM in bridge design  
Anna Kogut (Metropolia UAS)
- 17:00 Egypt sustainable development in the next decades  
Ahmed Hussein (Metropolia)

18:00

## CITY RECEPTION

Bus transportation from the venue at 17:30

# THURSDAY MAY 23

**9:00 KEYNOTE 3 - MAKING SUSTAINABILITY RESILIENT: THE ROLE OF GREEN INFRASTRUCTURE AND NATURE BASE SOLUTIONS**

Erik Andersson, Stockholm Resilience Center  
Venue: Room 1010 Chair: Anders Persson



**09:45 KEYNOTE 4 - MAKING THE CITY MORE EXCITING, INCLUSIVE AND RESILIENCE**

Saskia Beer, Transformcity  
Venue: Room 1010 Chair: Anders Persson



**10:30 COFFEE**

**11:00 CLIMATE CHANGE MITIGATION**

Venue: Room 1010 Chair: Ismo Heimonen



- 11:00** Opportunities for financing sustainable development using complementary local currencies  
Ljubomir Jankovic (University of Hertfordshire)
- 11:15** Circular Economy in the Built Environment in Finland - A case example of collaboration  
Jessica Karhu (Green Building Council Finland)
- 11:30** Sustainable Transportation, Case Study: Berlin, Helsinki, New Delhi and Pune  
Eric Pollock (Metropolia UAS)
- 11:45** Optimum tank size for a rainwater harvesting system: Case study for Northern Cyprus  
Mustafa Ruso (Sustainable Environment and Energy Systems Graduate Program, Middle East Technical University Northern Cyprus Campus)
- 12:00** A study on BIM implementation in developing countries for sustainable development  
Sunil Suwal (Metropolia University of Applied Sciences)

**INDUSTRY / SHARED PROSPERITY**

Venue: Room 4009 Chair: Jukka Heimonen



- 11:00** Assessing the sustainability performance of construction products - the Saint-Gobain SCORE approach  
Diane Maffre (Saint-Gobain), Anne Kaiser (Saint-Gobain)
- 11:15** Digital twin in sustainable cargo terminal planning  
Janne Porkka (VTT Technical Research Centre of Finland Ltd.)
- 11:30** The Building Passport as an enabler for market transformation and circular economy within the built environment  
Ursula Hartenberger (Royal Institution of Chartered Surveyors)
- 11:45** Why EPDs matter. A critical approach to Building Life Cycle Assessment and Green materials based on three case studies  
Tytti Bruce-Hyrkäs (Bionova Ltd)
- 12:00** How IPD Projects change Finnish construction industry  
Anders Nordström (Vison oy)

**12:30 LUNCH**

**13:30 SHARED PROSPERITY**

Venue: Room 1010 Chair: Anne Kaiser



- 13:30** Mineral wool waste-based geopolymers  
Juho Yliniemi (University of Oulu)
- 13:45** A Finnish Environmental Classification for Building Projects- RTS GLT: Experiences and New Developments  
Laura Sariola (The Building Information Foundation RTS sr)
- 14:00** Housing and service structure concepts for areas with decreasing and ageing population  
Ira Verma (Aalto University, Sotera Institute)
- 14:15** Processing of use cases for the development of an open platform to support the smart urban development  
Alice Schweigkofler (Fraunhofer Italia)
- 14:30** Promoting the energy refurbishment of social housing: the Klimakit model  
Paola Penna (Fraunhofer Italia)
- 14:45** Advancement of highly Environmentally Sustainable Business Management Concepts with Contexts embedded in Construction Markets  
Pekka Huovinen (Business Management PJH, Light Entrepreneur with SLP Group Oy/UKKO.fi Service)

**ADAPTATION AND RESILIENCE TO CLIMATE CHANGE**

Venue: Room 4009 Chair: Jorma Säteri



- 13:30** Analysis of thermal comfort in residential buildings in the city of Ha Tinh, Viet Nam  
Alexis Versele (KU Leuven)
- 13:45** Climate implication and adaptation measures for energy use in buildings – a scoping review  
Anna Eknes Stagrum (NTNU)
- 14:00** Do Town Planners in England feel a professional responsibility for a climate-resilient built environment?  
Niamh Murtagh (UCL)
- 14:15** BIM and Energy Efficiency training requirement for the construction industry  
Sunil Suwal (Metropolia University of Applied Sciences)
- 14:30** Multi-Criteria Material Selection for Architecture in Challenging Environments  
Leonor Domingos (ISCTE - Instituto Universitário de Lisboa)
- 14:45** A sustainable built environment for healthcare: generative mechanisms for future-proofing  
Ilias Krystallis (UCL)

**15:00 COFFEE**



**15:30 HEALTHY AND COMFORTABLE INDOOR AND OUTDOOR SPACES**

Venue: Room 1010 Chair: Ursula Hartenberger

- 15:30** Classification of Indoor Environment 2018 and updated Criteria of RTS GLT  
Laura Sariola (The Building Information Foundation RTS sr)
- 15:45** Impact of hidden defects on the durability and reliability of gas pipelines in cities  
Aleksandrs Romanovs (Riga Technical University)
- 16:00** Development of a Measuring Tool For Walkability in the Street Scale, the Case Study of Hamburg  
Nasimeh Fallahranjbar (HafenCity University Hamburg)
- 16:15** The Negative Impact of Solar Reflections Caused by Reflective Buildings' Facades: Case Study of the Nasher Museum in Texas  
Rania Labib (Texas A&M University, Prairie View A&M University)
- 16:30** Designing liveable urban open spaces in high density cities  
Ruffina Thilakaratne (Chu Hai College of Higher Education)
- 16:45** Evaluation of hybrid heating systems with a combination of fossil and renewable energy sources  
Aleksejs Prozuments (Riga Technical University)

**WORKSHOP**

**ARCHITECTURAL SPATIAL DESIGN SOLUTIONS FOR SUSTAINABILITY**

Venue: Room 4009 Moderators: Taru Lehtinen & Sofie Pelsmakers



**17 CLOSING SESSION**

Including presentation of **BEYOND2020** JUNE 9-11  
WORLD SUSTAINABLE BUILT ENVIRONMENT CONFERENCE

Best papers awarded by



**18 – 22 DINNER CRUISE**

Bus transportation from the venue at 18.00

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