



**Central Europe towards
Sustainable Building**

July 2–4 2019 | Prague

Final Programme



CESB19 PROGRAMME

Monday		1 July 2019
14:45–17:00	Historical Tour 0: Visit of Historical Halls of the Strahov Library	
17:30–20:00	Registration	
18:30–19:30	Welcome reception	

Tuesday		2 July 2019				
8:00–9:00	Hall A		Hall B	Hall C	Hall D	Hall E
9:00–10:30	Opening, Welcome and Keynote addresses		Registration			
10:30–11:00	Coffee break		Coffee break			
11:00–12:30	Keynote addresses 1		Lunch			
12:30–14:00			MAT1	HER	RET1	IEQ1
14:00–15:30			Coffee break			
15:30–16:00			MAT2	URB2	RET2	IEQ2
16:00–17:30			Poster session Exhibitions			

17:40–20:00	Technical Tour 1: University Centre for Energy Efficient Buildings (UCEEB)	
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20:30–23:00	Dinner with Scientific Committee	
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Wednesday3 July 2019					
	Hall A	Hall B	Hall C	Hall D	Hall E
8:30–9:00			Registration		
9:00–10:30	Keynote addresses 2				
10:30–11:00			Coffee break		
11:00–12:30	Climate change mitigation round table	ENE+HPC-SH	URB2 + SH	ENE1	
12:30–14:00			Lunch		
14:00–15:30		MAT3 + SH	HPC1	TLS1	
15:30–16:00			Coffee break		
16:00–17:30		HPC2	URB3 + SH	TLS2	
					Poster session Exhibitions

4 July 2019					
Thursday	Hall A	Hall B	Hall C	Hall D	Hall E
8:30–9:00			Registration		
9:00–10:30		MAT4	POL	ENE2	TLS-SH
10:30–11:00	Coffee break				
11:00–12:30			AWA	HPC3	TLS3
12:30–13:30	Panel discussion, Conclusions, Closing				
13:30–14:00	Farewell snack				
	Poster session Exhibitions				
	Atelier				

Conference Objectives

The main objective of the CESB19 conference is to present current activities in sustainable building in the Central Europe and to bring ideas and international expertise to the region in order to contribute to further development.

The conference is organized under auspices of international conveners CIB, iiSBE, UNEP-SBCI and FIDIC and belongs to Sustainable Built Environment regional conference series leading towards World Sustainable Built Environment Conference BEYOND 2020 which will take place 9–11 June 2020 in Gothenburg, Sweden.

Conference Topics

Buildings and climate change: Design strategies for energy efficient and climate-friendly buildings, design optimization tools, integrated design approach, best practice case studies

Innovative use of materials and products in sustainable buildings: High-tech advanced and natural-based materials, sustainable production, and use of building materials

Systems for energy efficient and energy positive buildings: Integration of advanced and alternative technologies improving sustainability of buildings

Decision-support tools and assessment methods for sustainable built environment: Building sustainability assessment methods, benchmarking and regional aspects, social, economic and environmental indicators of built environment, life cycle costing

Sustainable retrofitting of existing buildings: Examples of sustainable modernizations and refurbishments of existing buildings and districts, innovative retrofitting solutions, prefabrication in retrofitting of existing buildings

Sustainable urban development: Urban regeneration strategies and spatial planning practices responding to climate change, new technologies and local communities

Industrial heritage regeneration: Economically and environmentally effective adaptive reuse strategies, industrial heritage in context of urban regeneration, temporary reuse and regeneration initializing activities

Policy and public awareness: Dissemination of good practice, life-long education, public awareness, national and regional strategies

Organisers

CESB19 is organized by three institutes of the Czech Technical University in Prague: Faculty of Civil Engineering, Klokner Institute and the University Centre for Energy Efficient Buildings.

International Conveners

Central Europe towards Sustainable Building Prague 2019 (CESB19) event is a part of 2019 international Sustainable Built Environment conference series convened under auspices of the four international organizations: iSBE, CIB, UNEP-SBCI and FIDIC.

Scientific Committee

Petr Hájek	Stephan Jörchel	Tomas Plauska
Jan Tywoniak	Karel Kabele	Ronald Rovers
Daniel Adamovský	Targo Kalamees	Jan Růžička
Manuela Almeida	Ferenc Kalmár	Senot Sangadji
Maria Balouktsi	Miloš Kalousek	Matthew Schwarzkopf
Nina Bartošová	Bohumil Kasal	Seongwon Seo
Vlastimil Bílek	Jiří Kolísko	Harijanto Setiawan
Luc Boehme	Pavel Kopecký	Kateřina Sidiropulu Janků
Rolf André Bohne	Petr Kuklík	Ondřej Šikula
Dalibor Borák	Jerzy Kwiatkowski	Jiri Skopek
Ruben Paul Borg	Nils Larsson	Roman Smutny
Anatolijs Borodinecs	Sébastien Lasvaux	Michal Šourek
Luis Bragança	Richard Lorch	Jerzy Sowa
Steve Burroughs	Antonín Lupíšek	Kamil Staněk
Albert De La Fuente	Thomas Lützkendorf	Zbyněk Svoboda
Jan Desmyter	Karel Maier	Martina Sýkorová
Jakub Diviš	Ricardo Mateus	Zsuzsa Szalay
Pavol Ďurica	Tomáš Matuška	Joel Ann Todd
Lukas Ferkl	Peter Maydl	Alexandra Troi
Ctislav Fiala	Yu Morishita	John Van Oorschot
Axel Föhl	Andrea Moro	Jure Vetršek
Kristina Fořtová	Jan Mukařovský	Martin Volf
Benjamin Fagner	Jiří Nováček	Jakub Vorel
Buntara Sthenly Gan	Jiří Novák	Petr Vorlík
Antonio García Martínez	Magdaléna Novotná	Frantisek Wald
Jacopo Gaspari	Miles Kenneth	Peter Walker
Vanessa Gomes da Silva	Oglethorpe	Lisa Wastiels
John Grunewald	Doris Österreicher	Wei Yang
Guillaume Habert	Milan Ostrý	Noriyoshi Yokoo
Aylie Han	Alexander Passer	Radek Zigler
Dalibor Hlaváček	Tereza Pavlů	Ivana Žabičková
Jana Hořická	Tomas Peltan	Julie Železná
Giuliana Iannaccone	Bruno Peuportier	

Programme of oral presentations

Tuesday 2 July 2019

9:00–10:30

Tuesday 2 July 2019		9:00–10:30	Opening
Hall A	Opening ceremony, welcome speeches		
	Vojtěch Kotecký: Global Climate Change – A Challenge for Central Europe		
	Nils Larsson: SBE Conference Series		
	Other announcements Organizational information		

Tuesday 2 July 2019

11:00–12:30

Tuesday 2 July 2019		11:00–12:30	Keynote addresses 1
Chair: Petr Hájek			
Hall A	Buildings and Climate Change: Accelerating Transformation		
	Richard Lorch		
	A New Generation of Sustainable Structural Concretes – Design Approach and Material Properties		
	Harald Müller		

Tuesday 2 July 2019

14:00–15:30

Hall B	Tuesday 2 July 2019	14:00–15:30	MAT1
	Chairs: Tomas Plauska, Rolf A. Bohne		Materials – circular economy
	Integration of Seismic Risk into Energy Retrofit Optimization Procedures: A Possible Approach Based on Life Cycle Evaluation		
	Costantino Menna, Umberto Vitiello, Gerardo Maria Mauro, Domenico Asprone, Nicola Bianco, Andrea Prota		
	3-D Printing in Building Construction: Opportunities and Challenges of Reducing Life Cycle Energy and Carbon of Buildings		
	Manish Kumar Dixit		
	Circular Housing Retrofit Strategies and Solutions: Towards Modular, Mass-Customised and 'Cyclable' Retrofit Products		
	Anne van Stijn, Vincent H. Gruis		
	Fostering the Integration of Circular Economy Aspects into the Construction and Real Estate Industry		
	Christine Lemaître, Anna Braune, Christine Ruiz Durán, Dietmar Geiselmann		
Hygrothermal Risk Analysis of Recently Constructed Timber Buildings Exposed to Outdoor Climate Changes by the End of the Century in Germany			
Shaghayegh Ameri, Norbert Rüter			

Tuesday 2 July 2019

14:00–15:30

HER

Chairs: Jana Hořícká, Giuliana Iannaccone

Heritage regeneration and sustainability

Hall C

Technical Cultural Heritage on the Elbe-Vltava Waterway

Pavel Fošumpaur, Tomáš Kašpar, Milan Zukal

Potential And Impact of Incorporating Roof Photovoltaic to Enhance Environmental Sustainability of Historic English Churches in the United Kingdom

Smita Khatri, Kenneth Ip, Marco Picco, Arman Hashemi

Sirius: The Ethics and Practicalities of Retrofitting Brutalism in Sydney

Vidhu Gandhi, Maclaren North

Tuesday 2 July 2019

14:00–15:30

RET1

Chairs: Jan Růžička, Jacopo Gaspari

Retrofitting of existing building stock

Hall D

The district energy-efficient retrofitting of Torrelago (Laguna de Duero – Spain)

Ali Vasallo, Estefanía Vallejo, Giulia Massa, Andrés Macia, Laura Pablos, Cristina Criado, Eneko Arrizabalaga, Jon Iturralde, Alfonso Gordaliza, Irene De Castro, Félix Larrinaga

A Bibliometric Analysis on Costs Estimation of Building Retrofit

Fulvio Re Cecconi, Nicola Moretti, Mario Claudio Dejaco

Incremental Integrated Holistic Rehabilitation: A New Concept to Boost a Deep Renovation of the Existing Building Stock

Jacopo Zanni, Simone Labo', Chiara Passoni, Elena Casprini, Alessandra Marini, Andrea Belleri, Costantino Menna

OptEEmAL: Decision-Support Tool for The Design of Energy Retrofitting Projects at District Level

Miguel A. García-Fuentes, Gema Hernández, Victor Serna, Susana Martín, Sonia Álvarez, Georgios N. Lilis, Georgios Giannakis, Kyriakos Katsigarakis, Lara Mabe, Xabat Oregi, Diana Manjarres, Hassan El Ridouane, Luciano De Tommasi

New European Document on Assessment of Existing Structures and Building Stock

Milan Holicky

A sustainable Multi-Step Design Framework Based on Life Cycle Thinking for the Holistic Renovation of the Existing Buildings Stock

Chiara Passoni, Alessandra Marini, Andrea Belleri, Costantino Menna



University Centre for Energy Efficient Buildings, CTU in Prague; Buštěhrad

Tuesday 2 July 2019**14:00–15:30****IEQ1**

Chairs: Miloš Kalousek, Daniel Adamovský

Indoor environmental quality 1

Hall E**A Commercial Building Lighting Demand-Side Management through Passive Solar Design**

Ochuko Kelvin Overen, Edson Leroy Meyer, Golden Makaka

Daylighting Design Process for Visual Comfort and Energy Efficiency for a Signature Building

Nil Kutlar, M. Pinar Menguc

Acoustic Evaluation Of The Air-conditioning Unit In The Room

Jan Králíček, Miroslav Kučera

Sound Insulation of a Wall in a Panel House with Demountable Joints

Jaroslav Vychytil, Martin Vychytil

Influence of Airflow on Thermal Comfort in an Energy-Saving House

Daniel Adamovský, Martin Kny

Tuesday 2 July 2019**16:00–17:30****Tuesday 2 July 2019****16:00–17:30****MAT2**

Chairs: Petr Kuklík, Bohumil Kasal

Natural materials

Hall B**Fire and Mechanical Properties of Hemp and Clay Boards for Timber Structures**

Heikko Kallakas, Johanna Liblik, Percy Festus Alao, Triinu Poltimäe, Alar Just, Jaan Kers

Properties of Hemp-lime Composites Manufactured by Tamping Method for Application in Building Products.

Barbara Pietruszka, Michal Golebiewski, Pawel Lisowski

Biodegradation of Mineral, Acrylic and Silicone Plasters and its Comparison

Pavla Ryparová, Michaela Kostelecká, Jan Tywoniak

Decisive Use of Building Materials Based on Hygrothermal Analysis

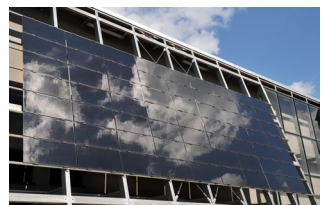
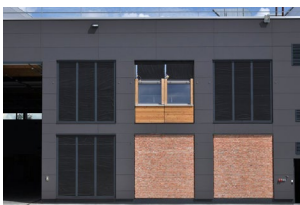
Marcela Brauner, Ali Ghaffarianhoseini, Nicola Naismith, John Tookey

The Biophilic Power and Environmental Urgency of Earthen Construction

Lola Ben-Alon, Vivian Loftness, Kent Harries, Erica Cochran Hameen

Modern Earth Building Today – the Current State of Earth Building from the German Perspective

Stephan Jörchel



University Centre for Energy Efficient Buildings, CTU in Prague; Buštěhrad

Tuesday 2 July 2019

16:00–17:30

URB1

Chairs: Jiri Jaroslav Skopek, Nils Larsson

Urban environment assessment

Hall C

Measuring Liveability at Neighbourhood Scale – Development of Indicators and Methods for the Comparison between Quarters and Best Practice within the Chosen City

Hsiao-Hui Chen, Udo Dietrich

Ecosystem Services Assessment Methods for Integrated Processes of Urban Planning. The Experience of LIFE SAM4CP towards Sustainable and Smart Communities

Carolina Giaimo, Stefano Salata

From Assessment to Implementation: Design Considerations for Scalable Decision-support Solutions in Sustainable Urban Development

Viktor Bukovszki, Diána Apro, Ahmed Khoja, Natalie Essig, András Reith

GIS-3D Platform to Help Decision Making for Energy Rehabilitation in Urban Environments

Jose Luis Izkara, Aitziber Egusquiza, Asel Villanueva

Tuesday 2 July 2019

16:00–17:30

RET2

Chairs: Pavel Kopecký, Anatolijs Borodinecs

Retrofitting of existing buildings

Hall D

Development of a Modular Retrofitting System for Residential Buildings and Experience from Pilot Installation

Petr Hejtmánek, Kateřina Sojková, Martin Volf, Antonín Lupíšek

Retrofitting Hospitals: A Parametric Design Approach to Optimize Energy Efficiency And Indoor Comfort

Jacopo Gaspari, Linda Gabrielli, Kristian Fabbri

Thermal Retrofitting of Dormitory Under Historic Protection – Case Study

Jerzy Kwiatkowski, Jerzy Sowa, Andrzej Wiszniewski

Energy Renovation of Social Housing: Finding A Balance between Increasing Insulation and Improving Heating System Efficiency

Els Van De Moortel, Karen Allacker, Frank De Troyer, Luc Stijnen, Erik Schoofs, Nazanin Eisazadeh Otaghsaraei

Typology of Unclassified Buildings and Specifics of Input Parameters for Energy Audits

Anatolijs Borodinecs, Aleksandrs Geikins, Deniss Zajecs, Raimonds Bogdanovics, Gints Daksa

Carbon Dioxide Emissions from Operation of Czech Building Stock and Potential for Their Reduction

Antonín Lupíšek



Open Gardens, Brno

Tuesday 2 July 2019**16:00–17:30****IEQ2**

Chairs: Daniel Adamovský, Jerzy Sowa

Indoor environmental quality 2

Hall E**Performance Analysis and Energy Saving Potential of Room Integrated PCM Wallboards for Passive Cooling Application**

Bharat Chhugani, Modar Yasin, Felix Klinker, Helmut Weinlaeder, Stephan Weismann, Michaela Reim

Effect of the Personalized Ventilation to a Human Thermal Comfort

Vojtěch Mazanec, Karel Kabele

Potted Plants as Active and Passive Biofilters Improving Indoor Air Quality

Jerzy Sowa, Jacek Hendiger, Mirosław Maziejuk, Tomasz Sikora, Łukasz Osuchowski, Halina Kamińska

Measuring Airtightness in a Tall Multi-Family Passive House when Exposed to Wind and Thermal Lift (Stack Effect)

Stefanie Rolfsmeier, Paul Simons

Virtual Air Temperature Function for Room Thermostats

Ondřej Nehasil, Jana Horváthová, Alžběta Kohoutková, Martin Kny

Wednesday 3 July 2019**9:00–10:30****Wednesday 3 July 2019****9:00–10:30****Keynote addresses 2**

Chair: Jan Tywoniak

Hall A**Large Scale Urban Developments in Austria – Challenges and Opportunities Based on Two Case Study Examples**

Martin Treberspurg & Doris Österreichler

Sustainability in Building Construction – A Multilevel Approach

Thomas Lützkendorf

Wednesday 3 July 2019**11:00–12:30****Wednesday 3 July 2019****11:00–12:30****Climate change mitigation round table**

Chair: Andrea Moro

Hall A**SBE Round Table: Built Environment and Climate Change Mitigation in Central Europe**

Wednesday 3 July 2019

Chairs: Jerzy Sowa, Miloš Kalousek

11:00–12:30

Energy syst. and high-perf. system comp. – Short present.

ENE+HPC-SH

Hall B

Air Handling Unit with Peltier Cells

Martin Kny, Vojtěch Mazanec, Daniel Adamovský, Jan Včelák

Performance of Unglazed Photovoltaic-Thermal Collectors for Cooling Purpose

Tomáš Matuška, Nikola Pokorný, Viacheslav Shemelin

Influence of Heat Gains on The Heating System Design

Jakub Spurný, Michal Kabrhel

Thermal Performance of Window with Vacuum Glazing. Case Study

Ivan Chmurny, Daniel Szabo

The Assessment of Construction Details in Terms of 3D Thermal Fields and the Impact on Building Design

Miloš Kalousek, Michal Novák

Development of Recommendations for Energy Efficient Windows Use

Deniss Zajecs, Tatjana Odineca, Anatolijs Borodinecs, Aleksandrs Korjakins

Renewable Energy Supply for Remote Station Located in Antarctica – Simulation Based on Real Measured Data

Sofiane Kichou, Petr Wolf, Pavel Kapler

Retro-commissioning – Effective Energy Conservation Initiatives in Existing Buildings

Ka Wah Kong, Kin Wai Lam, Paul Sat, Cary Chan

A Revolutionary Study Commons and University Library Extension, The Chinese University of Hong Kong

S M Fung, Thomas Yuen

Wednesday 3 July 2019

Chairs: Doris Österreicher, Jacopo Gaspari

11:00–12:30

Urban development and resource efficiency

URB2 +SH

Hall C

Can Buildings Save and Improve Municipal Infrastructure?

Woytek Kujawski

Material Efficiency of Housing in Times of Demographic Change – Evidence from Case Study Research into two German Municipalities

Andreas Blum, Robin Gutting

A Systemic Approach for the Optimization of Urban Surfaces Usage

Silvia Croce, Rossana Paparella, Daniele Vettorato

Planning and Implementing Low Carbon-Communities

Jiri Jaroslav Skopek, Stephen Pope, Scott Bucking

System Model for Prediction of Energy Consumption in Cities

Dalibor Vytlačil

Building-Integrated Photovoltaics and Urban Environment From the Perspective of Sustainable Architecture

Martin Čeněk, Dalibor Hlaváček

Wednesday 3 July 2019**11:00–12:30****ENE1**

Chairs: Jerzy Kwiatkowski, Richard Lorch

Energy at regional and district level

Hall D**A Territorial Energy Demand Modelling Tool**

Flcury de Oliveira, Stefan Schneider, Pierre Hollmuller

Waste Water Recovery System with Heat Pump for Hot Water Preparation

Radek Červín, Tomáš Matuška

A Heat Demand Load Curve Model of the Swiss National Territory

Stefan Schneider, Pierre Hollmuller, Jonathan Chambers, Martin Patel

A Feasibility Study on the Waste-to-Biogas SOFC-Based Multi-Generation with Energy Storage System for Building Applications in China

Shujia Zhang, Qiancheng Wang, Linyi Hu, Wenyang Shi, Minghang Qu

Identification of Characteristic Thermal Load Profiles of Different Use Areas in Non-residential Buildings

Christoph Matschi, Gernot Vogt, Isabell Nemeth

Energy Mapping a Cities Potential Thermal Capacity of Wastewater Networks for Heating & Air Conditioning Buildings

Nick Meeten

Wednesday 3 July 2019**14:00–15:30****Wednesday 3 July 2019****14:00–15:30****MAT3 + SH**

Chairs: Luc Boehme, Tereza Pavlu

Materials – Recycling 1

Hall B**Material Flows in Buildings Life Cycle and Regions – An Integrated Approach to Support Planning towards Circular Economy**

Georg Schiller, Thomas Lützkendorf, Karin Gruhler, Ines Lehmann, Kai Mörmann, Florian Knappe, Nadine Muchow

Secondary Materials in the Building Sector – Energy and Material Flows

Karin Gruhler, Tamara Bimesmeier, Clemens Deilmann

The Use of Natural Materials for Construction Projects – Social Aspects of Sustainable Building: A Case Study from Australia and Europe

Steve Burroughs, Jan Růžička

Demolition-and-Reconstruction or Renovation? Towards a Protocol for the Assessment of the Residual Life of Existing RC Buildings

Elena Casprini, Chiara Passoni, Andrea Belleri, Alessandra Marini, Gianni Bartoli, Paolo Riva

The Utilization of the Finest Fraction of Recycled Aggregate from CDW for Concrete

Kristina Fortova, Tereza Pavlu

Possibilities of Using Recycled Waste Products in Sustainable Architecture

Agnes Iringová, Dominika Vandlíčková, Michal Diviš

A Catalogue of Construction Products with Recycled Content from Construction and Demolition Waste

Tereza Pavlu, Jan Pesta, Martin Volf, Antonin Lupisek

The Influence of Building Materials on Relative Humidity of Internal Microclimate

Jan Růžička, Jakub Diviš

Wednesday 3 July 2019		14:00–15:30	HPC1
Chairs: Lukas Ferkl, Pavol Ďurica		High-performance building systems and components 1	
Hall C	PCM Integrated in BIPV Ventilated Façade Concepts: Experimental Test Cell Platform and Initial Full-Scale Measurements		
	Jakub Curpek, Miroslav Cekon, Jozef Hraska		
	Potential Benefits of PV-shading System in Office Buildings and Semi-continental Climate Conditions		
	Nikolaos Skandalos, Jan Tywoniak, Kamil Stanek		
	Experimental Assessment of the Façade-integrated Thermoelectric Air-conditioning Unit towards Development of the Autonomous Curtain Walling Module		
	Tomáš Matuška, Vladimír Zmrhal, Vojtěch Zavřel, Petr Slanina		
Hall D	Towards The Façades of the Future: A New Sustainability Assessment Approach		
	Golshid Gilani, Oriol Pons, Albert de la Fuente		
	Two-stage System for Utilization of Renewable Solar Energy in Modern Building Façade Technology		
	Boris Bielek, Michal Krajčík, Peter Buday, Marek Macák		
Hall C	Adoption of Sustainable Construction for Small Contractors: Major Barriers and Best Solutions		
	Bon-Gang Hwang, Wen-Que Liu, Ming Shan, Jun Ming Lye		

Wednesday 3 July 2019		14:00–15:30	TLS1
Chairs: Tomas Plauska, Martin Volf		Life cycle assessment	
Hall D	Development of LCAbyg: A national Life Cycle Assessment tool for buildings in Denmark		
	Harpa Birgisdottir, Freja Rasmussen		
	Life Cycle Assessment of Vertical Building Extensions – Environmental Impacts of Different Material Selection		
	Michael Storck, Annette Hafner		
	Module D at Building Level: Significance based on a Case Study Analysis		
	Laetitia Aline Delem, Lisa Wastiels		
Hall D	The Application of “Element”-Method in Sustainability Assessment		
	Thomas Paul Lützkendorf		
	Multi-Criteria Decision Making in the Social Sustainability Assessment of High-Rise Residential Buildings		
Bahareh Maleki, Maria del Mar Casanovas-Rubio, Albert de la Fuente, S. M. Amin Hosseini			

Wednesday 3 July 2019

16:00–17:30

Wednesday 3 July 2019

16:00–17:30

HPC2

Chairs: Harijanto Setiawan, Kamil Staněk

High-perf. building systems and components 2

Hall B

Window Design Strategies for Environmentally-Friendly and Energy Efficient Patient Rooms: A Case Study in the Belgian Context

Nazanin Eisazadeh, Karen Allacker, Frank De Troyer

Implications of Model Complexity on the Simulated Thermal Behavior of a Casement Window

Shiva Najaf Khosravi, Ondřej Šikula, Ulrich Pont, Ardeshir Mahdavi

Environmental Benefits of Timber-Concrete Prefabricated Construction System for Apartment Buildings – A simplified Comparative LCA Study

Pavla Ryklová, Štěpán Mančík, Antonín Lupíšek

Flat Roofs Defects – Norwegian Building Sector Perspectives

Erland Andenæs, Atle Engebø, Tore Kvande, Jardar Lohne, Rolf A. Bohne

The Environmental Performance of a Remote-Region Health Clinic Building, Australia, Based on Instrumental Monitoring

Steve Burroughs

Building Envelope Thermal Upgrade for School Buildings in Jordan

Hikmat H Ali, Rifqa Al Hashlamun

Wednesday 3 July 2019

16:00–17:30

URB3 + SH

Chairs: Giuliana Iannaccone, Jiri Jaroslav Skopek

Urban regeneration

Hall C

Challenges and Opportunities of Urban Fabrics for Sustainable Planning in Cuenca (Ecuador)

M. Augusta Hermida, Daniela Cobo, Carolina Neira

Communities Shaping Sustainable Cities

Jana Hořícká

Urban decay in Central Hill, Port Elizabeth, South Africa

Fritz Swanepoel, John Julian Smallwood

Periurban Urbanization and Travel Choice Behaviour: Problem or Solution?

M. Augusta Hermida, Daniela Astudillo, Fabiana León

Greening Actions and the Related Potential Impacts on Outdoor Comfort in a Dense Built Environment

Jacopo Gaspari, Kristian Fabbri

Concept of Sustainability – Taking Clues from the Past

Deepika Ghosh Saxena

The integration of Sustainable Cities in the Marshes (Iraq)

Ahmed Abdulaali Rashid Kbah

Sustainable Campus Development in the Context of a Private Higher Education Institution (HEI) in Hong Kong, A Case Study at the Hang Seng University of Hong Kong (HSUHK)

Hon Yin, Hackman Lee

Wednesday 3 July 2019

16:00–17:30

TLS2

Chairs: Nils Larsson, Luís Bragança

Tools for environmental assessment of buildings

Hall D

Implementation of the DGNB Framework for Carbon Neutral Buildings and Sites

Anna Braune, Dietmar Geiselmann, Stefan Oehler, Christine Ruiz Durán

Quality Label in Buildings and Construction – A Green Label Supporting the Sustainability of Buildings in Slovenia

Miha Tomšič, Neva Ježič, Marjana Šijanec Zavrl

Experiences from the implementation of the Assessment System for Sustainable Building (BNB) in Germany

Andreas Rietz, Nicolas Kerz, Merten Welsch

Strategies for Simultaneous Embodied Energy and Operational Energy Reductions in Buildings During the Design Stage

Gihan Anuradha Tennakoon, Anuradha Samarajeewa Waidyasekara, Biyanka Jayangani Ekanayake, Sabrina Fathima Nazeer

A Life-Cycle Approach to Building Energy Retrofitting: Bio-Based Technologies for Sustainable Urban Regeneration

Francesco Pittau, Guillaume Habert, Giuliana Iannaccone

Thursday 4 July 2019

9:00–10:30

Thursday 4 July 2019

9:00–10:30

MAT4

Chairs: Aylie Han, Luc Boehme

Materials – Recycling 2

Hall B

Environmental Impact of Concrete and Concrete-Based Construction Waste Leachates

Klára Anna Mocová, Lyndon Nii Adjiri Sackey, Pavla Renkerová

Laboratory Concrete Specimens Waste, a Case Study on Life Cycle Assessment

Aylie Han, Harijanto Setiawan, Petr Hajek

Non-destructive Testing Of Recycled Aggregate Concrete

Zeger Sierens, Brecht Vandevyvere, Lorenz Kyndt, Glenn Tytens, Jiabin Li

Effect of Glass Fibres on the Mechanical Behaviour of Concrete With Recycled Concrete Aggregates (RCAs)

Brecht Vandevyvere, Zeger Sierens, Jiabin Li

Alternative Sands as a Substitute for Natural Sand for the Construction Sector

Luc Boehme, Arne Depoortere

Life Cycle Assessment of Recycling Processes for Demolition Waste

Jan Pešta, Tereza Pavlů, Vladimír Kočí



Hall C	Thursday 4 July 2019	9:00–10:30	POL
	Chairs: Richard Lorch, Jana Hořická		Policy making processes
	Energis: Decision-Support Tool for the Implementation of Energy Policies at Urban and Regional Level		
	Gema Hernández Moral, Víctor Iván Serna González, Giulia Massa, César Valmaseda Tranque		
Hall D	Energy Saving and Climate Adaption of Buildings: A Paradox?		
	Sebastian Golz, Johannes Nikolowski, Thomas Naumann		
	Assessment of Different Methodologies for the Development of Urban Heat Island Vulnerability Index for Milan, Italy		
	Sagnik Bhattachardjee, Ekaterina Gerasimova, Clement Imbert, Federica Rotondo, Jiri Tencar		
Hall E	Statistics and Governance. Current Issues of Affordable Housing: Case of Prague		
	Tomas Hudecek, Petr Hlavacek, Jaromir Hainc, Martin Cervinka		
	Thursday 4 July 2019	9:00–10:30	ENE2
	Chairs: Anatolijs Borodinecs, Kamil Staněk		Energy at building level
Hall D	Solar Aperture of a Building Enclosure: The Case Study of a Well-Insulated Family House in Semi-Continental Climate		
	Pavel Kopecký, Kateřina Sojková		
	Effect of Traditional Persian Materials and Parametric Design on the Thermal Performance of a generic building in Mediterranean Climate		
	Nayara Rodrigues Marques Sakiyama, Seyedeh Bina Mohammad Hejazi, Jürgen Frick, Harald Garrecht, Camila Cordeiro de Oliveira		
Hall E	Parametric Study: Impact of Selected Factors on the Energy Demand of a Family House		
	Peter Juras, Pavol Durica, Jozef Jandacka		
	A Zero Energy House for and by Frank Gehry		
	Matthias Schuler, Kristyna Dvorakova, Zdenko Malik		
Hall E	Thursday 4 July 2019	9:00–10:30	TLS-SH
	Chairs: Luís Bragança, Karel Struhala		Tools for build. design and optimiz. – Short pres.
	A BIM-based Framework for Circularity and Lifecycle Cost Assessment of Buildings		
	Carla Di Biccari, Jimmy Abualdenien, André Borrmann, Angelo Corallo		
Hall E	Smart BIM-AM Journey to Green Buildings		
	Che Kit Lee, Hor Yin, Steve Chan, Chi Ying, Christy Poon, Kei Man, Grace Yip, Piu Hung, Francis Yuen		
	Significant Facilities Management Practices to Integrate Sustainability in Health Care (HC) Sector		
	Sabrina Fathima Nazeer, Sachie Gunatilake, Thanuja Ramachandra		
Hall E	Hands-On: Sustainable Approach in Architectural Education		
	Dalibor Hlavacek, Martin Cenek		
	Multiscalarly in International Sustainable Assessment Systems: A Qualitative Comparison of LEED, CASBEE, BREEAM, DGNB and ESTIDAMA on Building, Neighbourhood and City Scale		
	Melinda Orova, András Reith		

Thursday 4 July 2019

11:00–12:30

Thursday 4 July 2019

11:00–12:30

AWA

Chairs: Jana Hořícká, Jiří Tencar

Awareness-raising campaigns and tools

Hall C

Young Leaders of the City of the Future

Dariusz Andrzej Śmiechowski

Green Construction Capability Model (GCCM) for Contracting Companies

Harijanto Setiawan, Wulfram Indri Ervianto, Ay Lie Han

Rethinking Public Buildings' Functions: The case of Participatory Design Methodology

Veronika Kandusova, Tomáš Vácha

Thursday 4 July 2019

11:00–12:30

HPC3

Chairs: Rolf A. Bohne, Pavel Kopecký

High-perf. building systems and components 3

Hall D

Influence of User Electricity Load Profile and Calculation Time Step on the Photovoltaic System Balance

Jiří Novotný, Tomáš Matuška

Simple Free Use Simulation Software for Buildings With Photovoltaic System and Battery

Petr Wolf, Sofiane Kichou

HAM Analysis of Selected Wooden-Framed Walls

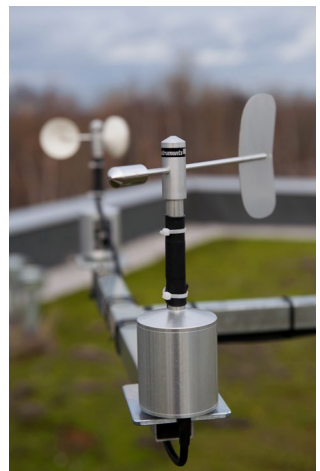
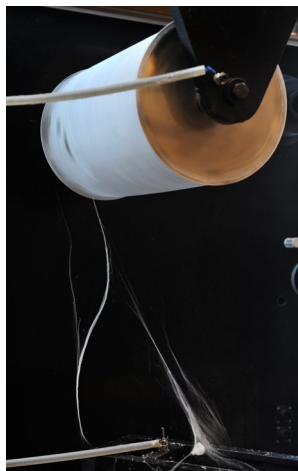
Pavol Durica, Veronika Kabatova, Peter Juras, Jan Rybarik

Effects of Early Structural Changes of Engineered Soils on Green Roof and Bioretention Performance

Michal Snehota, Jitka Hanzlikova, Petra Heckova, Jan Sacha, Vladimira Jelinkova, Anders Kaestner

Determination of Moisture Buffering Capabilities of Common Furniture Materials

Jurgis Zemitis, Anatolijs Borodinecs



University Centre for Energy Efficient Buildings, CTU in Prague; Buštěhrad

Thursday 4 July 2019		11:00–12:30	TLS3
Chairs: Thomas Lützkendorf, Tereza Pavlů		Economic optimization and assessment tools	
Hall E	The Influence of Energy Performance Certification the Market Value of Residential Buildings		
	Lavinia Chiara Tagliabue, Nicola Moretti, Mario Claudio Dejaco, Fulvio Re Cecconi		
	Changes of the Operating Costs during the Life Cycle in Existing Housing Stock		
	Dalibor Vytlačil		
	Financing Renewables while Implementing Energy Efficiency Measures through Consumer Stock Ownership Plans (CSOPs) – The H2020 Project SCORE		
	Jens Christian Lowitzsch		
	Using Public Opinion to Estimate Improvements in Economic and Social Dimensions of Sustainability		
	Miroslav Sůra		
Hall E	The Theory-Practice Gap in Value Management – A Case Study in Sri Lankan Construction Industry		
	Madhavee Pradeepika Mahinkanda, Yasangika Gayani Sandanayake		
Hall E	Linking Together Independent Sustainable Building Development Plans		
	Miroslav Sůra		

Thursday 4 July 2019		12:30–13:30	
Thursday 4 July 2019		12:30–13:30	Closing
Hall A	Panel discussion		
Hall A	Conclusions		
Hall A	Closing		



CESB history

Poster session

Energy systems and high-performance system components (ENE+HPC-SH)	
01 Thermal Performance of Window with Vacuum Glazing. Case Study Ivan Chmurny, Daniel Szabo	
02 A Revolutionary Study Commons and University Library Extension, The Chinese University of Hong Kong S M Fung, Thomas Yuen	
03 The Assessment of Construction Details in Terms of 3D Thermal Fields and the Impact on Building Design Miloš Kalousek, Michal Novák	
04 Renewable Energy Supply for Remote Station Located in Antarctica – Simulation Based on Real Measured Data Sofiane Kichou, Petr Wolf, Pavel Kapler	
05 Air Handling Unit with Peltier Cells Martin Kny, Vojtěch Mazanec, Daniel Adamovský, Jan Včelák	
06 Retro-commissioning – Effective Energy Conservation Initiatives in Existing Buildings Ka Wah Kong, Kin Wai Lam, Paul Sat, Cary Chan	
07 Performance of Unglazed Photovoltaic-Thermal Collectors for Cooling Purpose Tomáš Matuška, Nikola Pokorný, Viacheslav Shemelin	
Materials – Recycling (MAT3 +SH)	
08 The Utilization of the Finest Fraction of Recycled Aggregate from CDW for Concrete Kristina Fortova, Tereza Pavlu	
09 Possibilities of Using Recycled Waste Products in Sustainable Architecture Agnes Iringová, Dominika Vandlíčková, Michal Diviš	
10 A Catalogue of Construction Products with Recycled Content from Construction and Demolition Waste Tereza Pavlu, Jan Pesta, Martin Volf, Antonin Lupisek	
Tools for building design and optimization (TLS-SH)	
11 A BIM-based framework for Circularity and Lifecycle Cost assessment of buildings Carla Di Biccari, Jimmy Abualdenien, André Borrmann, Angelo Corallo	
12 Multiscalarity in International Sustainable Assessment Systems: a Qualitative Comparison of LEED, CASBEE, BREEAM, DGNB and ESTIDAMA on Building, Neighbourhood and City Scale Melinda Orova, András Reith	
Urban regeneration and sustainable urban development (URB3 +SH)	
13 Concept of Sustainability – Taking Clues from the Past Deepika Ghosh Saxena	
14 The integration of Sustainable Cities in the Marshes (Iraq) Ahmed Abdulaali Rashid Kbah	
15 Sustainable Campus Development in the Context of a Private Higher Education Institution (HEI) in Hong Kong, A Case Study at the Hang Seng University of Hong Kong (HSUHK) Hon Yin, Hackman Lee	

Submissions presented as poster only

- 16 Choice of Sustainable and Durable Concrete Structure Using LCA**
Iva Broukalova, Anna Horáková, Alena Kohoutková
- 17 Stability of Wall Panels With One-Sided Board Sheathing for Timber Structures**
Jiří Celler, Jakub Dolejš, Jan Pošta, Robert Jára
- 18 The Influence of Technology Performance Durability in the Cost-Optimal Analysis of a ZEB**
Ludovico Danza, Alice Bellazzi, Giulia Guazzi, Anna Devitofrancesco
- 19 I-ZEB: Design and Development of a ZEB Test-Laboratory for an Integrated Evaluation of Building Technologies**
Ludovico Danza, Lorenzo Belussi, Benedetta Barozzi, Alice Bellazzi, Anna Devitofrancesco, Michele Depalma, Giulia Guazzi, Italo Meroni, Claudio Maffè, Matteo Ghellere, Francesco Salamome, Fabio Scamoni, Chiara Scrosati
- 20 Study on Spatial Evolution of Chinese Green Building**
April Tongping Hao, Tina Jing Wang
- 21 Decrease of Cement Production Environmental Burden – LCA**
Anna Horáková, Iva Broukalova, Hana Schreiberová, Josef Fládr
- 22 Use of Heat from Wastewater**
Kristýna Hrabová, Tomáš Hrdlička, Miroslav Tlašek
- 23 Concrete, Sustainability and Limit States**
Kristýna Hrabová, Břetislav Teplý, Petr Hájek
- 24 Assessment of the Indoor Environment for Education**
Michal Kraus, Petra Nováková
- 25 Using UHPC and TRC as an Environmentally Effective Alternative for Subtle Elements of Railway Furniture**
Lenka Laiblova, Tomas Vlach, Petr Hajek, Karel Hajek, Ales Vanek, Jakub Repka
- 26 Optimization of Distance Rings in Panel Radiators**
Tomáš Legner, Jiří Bašta
- 27 Optimization of the Costs for Renovation and Maintenance of Cultural Heritage Objects**
Daniel Macek, Renáta Schneiderová Heralová, Eduard Hromada, Lucie Brožová, Iveta Střelcová, Stanislav Vitásek, Jan Pojar, Robert Bouška
- 28 Historical Water Management Constructions, their Value, Function and Significance**
Klara Nedvedova, Miriam Dzurakova, Ales Vyskocil, Zbynek Svitak, Radka Kleparnikova, David Honek
- 29 Experimental Verification of Indirect Adiabatic Cooling by Ventilation Air**
Ondrej Nehasil, Daniel Adamovsky
- 30 Eco-Friendly Building Materials**
Aldona Nowotna, Barbara Pietruszka, Pawel Lisowski
- 31 Internal Ventilated Plinth as One of the Possible Solution for Moist Buildings**
Jiří Pazderka, Petr Hájek, Hana Žáková, Michal Nývlt
- 32 Fire Protection of Steel Structures by Low Pressure Water Mist in Full-Scale Fire Test**
Marek Pokorný, Martin Eliáš, František Kregl

Submissions presented as poster only

- 33 Possibilities of Using Modern Technologies and Creation of the Current Project Documentation Leading to the Optimal Management of the Building for Sustainable Development**
Kristýna Prušková, Martin Dědič, Jiří Kaiser
- 34 Life Cycle Costing of Public Construction Projects**
Renata Schneiderova Heralova
- 35 Environmental Assessment of Latent Heat Storage Technology**
Karel Struhala, Milan Ostrý, Sylva Bantová
- 36 External Wooden Constructions – Protection by Titanium Dioxide**
Petr Svora, Petr Kuklík, Michaela Šrámová Slušná, Sylwia Svorová Pawełkowicz, Petra Ecorchard
- 37 Utilization of Fermentation Residues in the Production of a Brick Block**
Jiří Šál, Petra Nováková
- 38 Reducing Energy Consumption for Air-conditioning by Commissioning and Optimized System Operation**
Jakub Šimek, Miloš Lain, Jan L. M. Hensen
- 39 Innovative Thermal Insulation Products for a Circular Economy**
Vasilica Vasile, Cristian Petcu, Vasile Meitã, Marta-Cristina Zaharia
- 40 Cost Estimation in BIM for Transportation Constructions in Czech Republic**
Stanislav Vitasek, Josef Žák
- 41 Life Cycle Assessment of Cooling and Heating System Based on Peltier Module**
Agnieszka Żelazna, Justyna Gołębiowska
- 42 Optimization of RC Structures with Regard to Amount of Embodied CO₂ Emissions**
Michal Ženíšek, Petr Hájek



Open Gardens, Brno

Satellite Events

iiSBE Forum of Young Researchers in Sustainable Building 2019 (YRSB19)

1 July 9:00–17:30

The third round of successful event for young researchers YRSB19 takes place a day prior the CESB19 conference at the same venue. The main YRSB19 topics are: Buildings and climate change, Innovative materials, products and systems for energy efficient and energy positive buildings, Decision-support tools and assessment methods for sustainable built environment, Sustainable retrofitting of existing buildings, and Sustainable urban development.

Exhibitions

The CESB19 will host a special poster exhibition by Federal Building Ministry of Germany: Current results on sustainable building in Germany. You can find it in Atelier together with presentations of conference partners and organizers: RD Rýmařov, a.s. and Czech Technical University in Prague, Faculty of Civil Engineering and University Centre for Energy Efficient Buildings.

Social Programme

Welcome Reception

CESB19 Welcome reception will take place on Monday 1 July 18:30–19:30 at the conference venue – main atrium of the Faculty of Civil Engineering, Czech Technical University in Prague , Thákurova 7, Praha 6.



Dinner for Scientific Committee

Tuesday 2 July, 20:30–23:00, Brewery U Supa, Celetná 563/22, Praha 1

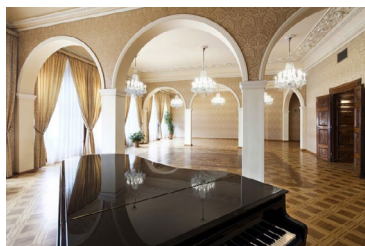


Social Event

Wednesday 3 July, 20:00–23:00, Kaiserštejnský palác, Malostranské náměstí 37/23, Praha 1

The CESB19 Social Event will be hosted in Kaiserštejnský palác at Malostranské náměstí. You can reach it easily by public transport (metro station “Malostranská” and 15 minutes walk, or tram station “Malostranské náměstí” in front of the Kaiserštejnský palác) or walk there via the Prague Castle. It is our pleasure to invite you to an extraordinary performance of young Czech pianist Matyáš Novák, which will be held during the evening. Matyáš began to play the piano at the age of five. He graduated from Pardubice Conservatoire in the class of Jitka Fowler Fraňková in 2019. Currently he is a student in the class of Prof. Boris Petrushansky at the Piano Academy “Incontri col Maestro”, Imola, Italy.

The dress code for the event is “smart casual”.



Technical Tours

Check availability and get more information at the registration desk.

Tour 0: Visit of Historical Halls of the Strahov Library

Monday 1 July, 14:45–17:00 (25 EUR)

Strahov Library is a part of the complex of Strahov Monastery, one of the oldest and largest monasteries in the Czech Republic, established in 11th century by the Premonstratensian Order close to the Prague Castle. The program includes brief introduction to the history of the Monastery, visit of the Romanesque paradise court, monastery gardens with panoramic view of Prague and finally The Historical halls of the Strahov Library, including Theological Hall (17th century) and Philosophical Hall (18th century).



Maximum capacity is 30 visitors.

Meeting point: Participants meet at the conference venue at 14:45. The visit starts at 15:30 in the Strahov Monastery.

Tour 1: UCEEB – University Centre for Energy Efficient Buildings, Czech Technical University in Prague

Tuesday 2 July 17:40–20:00 (free)

A short bus tour to the UCEEB, a unique multidisciplinary research centre dedicated to sustainable building. Presentation of the facilities, research activities and guided tour through laboratories. Refreshments on site included.

Meeting point: Conference venue – main entrance at 17:35, bus departs at 17:40.

Arrival: Dejvická metro station (near Vienna House Diplomat Prague).



Tour 2: Guided cycling tour in Prague

Thursday 4 July, 14:00–18:00 (20 EUR)

Cycling tour along Vltava river will introduce genuine views of historical Prague, as well as interesting industrial heritage sites.

Maximum capacity is 15 visitors.

Meeting point: Conference venue – main entrance at 14:00.

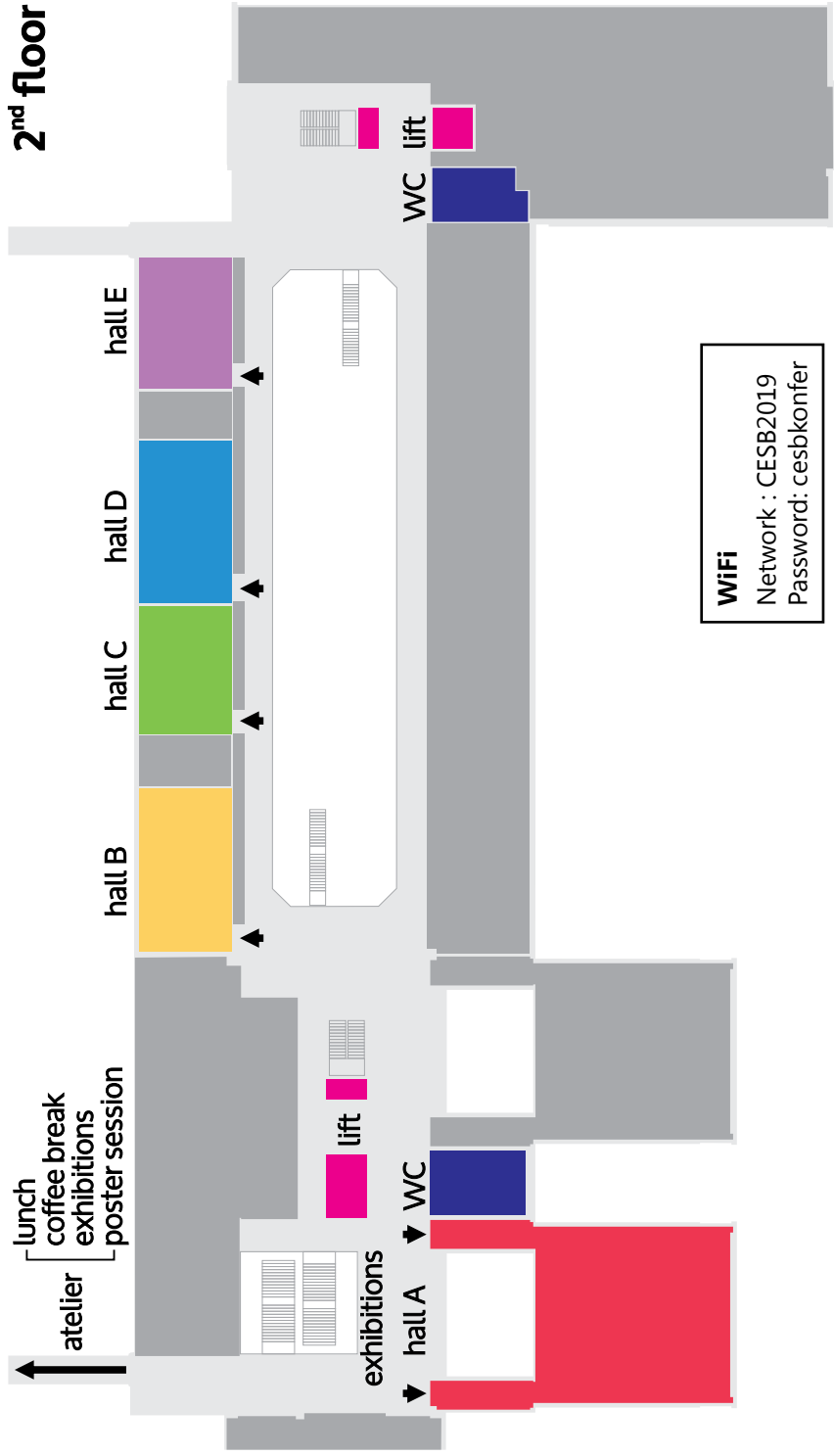


Organizing Committee

Antonín Lupíšek ■ Jakub Diviš ■ Petr Hájek ■ Petr Hejtmánek ■ Jana Hořická ■
Terézia Němcová ■ Magdaléna Novotná ■ Tereza Pavlů ■ Tomáš Prajs ■
Kateřina Sojková ■ Jan Tywoniak ■ Jakub Veselka ■ Martin Volf ■ Julie Železná

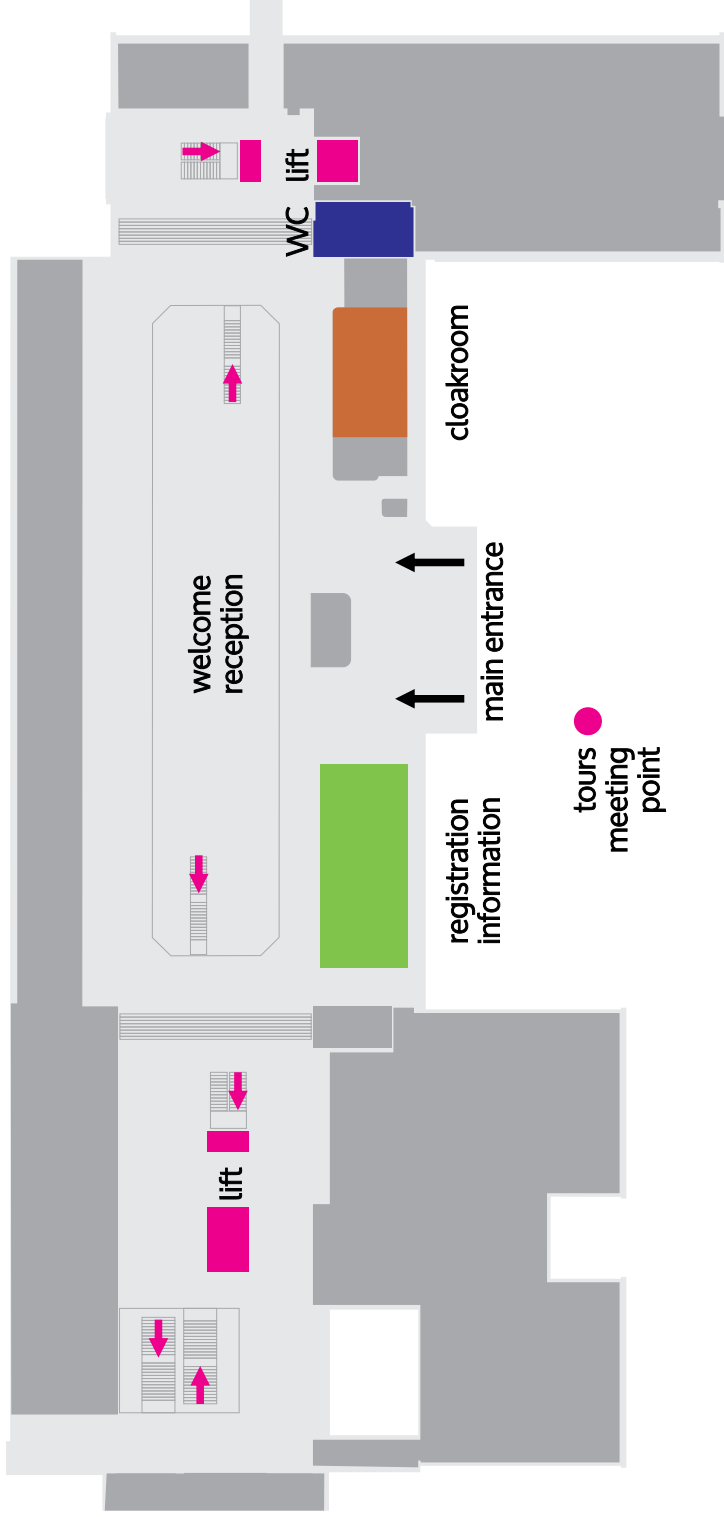
Upcoming SBE Conferences

- August 6–7 2019, Built Environment in an Era of Climate Change, Tokyo, Japan
- September 3–6 2019, Resilient Built Environment for Sustainable Mediterranean Countries, Milano, Italy
- September 11–14 2019, SBE19 Graz, Graz, Austria
- September 24–25 2019, Towards SBE; from Policy to Practice, Cardiff, UK
- October 16–18 2019, SBE: urban planning, global problems, local policies, Temuco, Chile
- October 23–25 2019, Sustainability in the built environment for Climate Change mitigation, Thessaloniki, Greece
- November 14–15 2019, Green Smart Connected Cities – Greater Bay Area, Shenzhen, China
- November 18–20 2019, To come, Sydney, Australia
- November 21–22 2019, Sustainability and Resilience, Valetta, Malta
- December 12–13 2019, Smart Building and Neighborhoods for Sustainability, Seoul, Korea
- June 9–11 2020 World Sustainable Built Environment Conference BEYOND 2020, Gothenburg, Sweden**



2nd floor

1st floor



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