

SBE19 Graz



**SUSTAINABLE
BUILT ENVIRONMENT
D-A-CH CONFERENCE 2019
TRANSITION TOWARDS
A NET ZERO CARBON BUILT
ENVIRONMENT**

11–14 September 2019
TU Graz, Austria
> sbe19.tugraz.at



@ Wienerberger

IN CO-OPERATION WITH



Universität für Bodenkultur Wien
University of Natural Resources
and Applied Life Sciences, Vienna



About

- Part of a major international series of conferences that focus on **sustainable buildings and construction**, launched and supported by **CIB, iiSBE, SBCI and FIDIC**
- **300 expected participants from over 20 nations** at SBE19 Graz
- Scientists as well as representatives of the construction and real estate industry, the building product manufacturing industry and politics
- Thematic umbrella: United Nations SUSTAINABLE DEVELOPMENT GOALS (UN SDGs)

Conference Chairs



Assoc.Prof. Dipl.-Ing. Dr.techn.
 Alexander PASSER, MSc.



Univ.-Prof. Dipl.-Ing. Dr.techn.
 Michael MONSBERGER



Prof. Dr.
 Guillaume HABERT



Em.O.Univ.Prof. Dr.phil.
 Helga KROMP-KOLB



Prof. Dr.-Ing. habil.
 Thomas LÜTZKENDORF

Scientific Committee

- *Around **150 persons***
- *from academia and industry*
- *from more than 30 countries*
- *and three continents*

www.tugraz.at/en/events/sbe19/scientific-program/scientific-committee/

Pre-Conference – 11 September 2019

Pre-Conference Workshops

SDGs & Universities (in German)

Organization: Alliance of Sustainable Universities in Austria



SDG 13 Roundtable

Mitigation and Adaptation - Managing Climate Change in the Built Environment

Organization: ETH Zürich in Cooperation with CCCA



SDG 11 Roundtable

Interpretation and localisation - Strategies, synergies and system boundaries

Organization: Graz University of Technology and
 Karlsruhe Institute of Technology



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Preliminary Program SBE19 Graz

Wednesday 11 September	Thursday 12 September	Friday 13 September	Saturday 14 September
Pre-Conference	Conference	Conference	Side Event
Aula	Aula HSI HSI VI HS XII HSI V ATEG-152 AT01-036 AT01-104 AT01-098	Aula HSI HSI VI HS XII HSI V ATEG-152 AT01-104 AT01-098	
	08.00 Registration Conference Office	08.00 Registration Conference Office	
	09.00 Opening Ceremony Aula	09.00 ADOPTION OF THE "GRAZ 2019 DECLARATION" Aula	
09.30 Welcome Coffee	09.30 Keynotes Aula	09.30 1 4 4 3 4 4 SF SF National Issues Buildings Building Design Cities Processes Products Beton Plastics	09.30
10.30 SDGs & Universities	11.00 Coffee Break	11.00 Coffee Break	
	11.30 SF 1 1 SF 1 1 1 SF Level(s) Buildings Building Design Die 3 Schweizer Alpen Bauplatz D22 Processes Products Education & Economy CONDREF	11.30 2 5 5 4 5 5 National Issues Buildings Building Design Cities Processes Products	12.00 Technical Tour
13.00 Lunch & Registration	13.00 Lunch	13.00 Lunch	
14.00 SDG 13 Roundtable	14.15 SF 2 2 1 2 2 2 SF SF BWR7 Buildings Building Design Cities Processes Products Education & Economy ecoinvent vinylplus	14.15 3 6 6 5 6 SF SF National Issues Buildings Building Design Cities Processes Holzsystembau Smart City Graz	15.00
15.30 Coffee Break	15.45 Coffee Break	15.45 Closing Event including Best Paper Award Aula	15.30
16.00 SDG 11 Roundtable	16.15 3 3 2 3 3 SF Buildings Building Design Cities Processes Products Education & Economy EPD	17.15 Farewell Coffee	
17.45	17.45		
18.30 Welcome Evening Mayor's Reception Town Hall	18.00 Guided City Tour From the conference venue to the Schlossberg		
	19.30 Conference Dinner Schlossberg Restaurant		

Conference Topics

Assessment & Certification

- Life Cycle Sustainability Assessment (LCSA)
- Environmental Product Declaration (EPD) and Product Environmental Footprint (PEF)
- Legal and economic frameworks - Level(s) etc.
- Standardisation and legislation
- Building sustainability certification
- Sustainability performance of buildings / Case Studies

Cities & Infrastructure

- Circular Economy for the Built Environment (emerging business models, bottom up initiatives, etc.)
- Building stock modelling and circular economy hot spots
- District evaluation and optimization
- Cities as temporal carbon and energy storage
- Retrofit European building stock
- Holistic approaches based on SDG11

Design & Decision-Making Process

- Integrated design process / life cycle design
- Designing under future climate risks
- Designing for resilient buildings
- Net Zero Emissions / resource efficient / plus-energy buildings
- Life Cycle perspective in high quality refurbishment
- Building services for sustainable buildings
- Sustainability through building automation
- User integration
- Managing complexity in design and construction
- Building Information Modelling (BIM)

Innovation & Implementation

- Innovative products and systems for sustainable buildings
- Demonstration projects (building, district development, etc.)
- Smart building systems
- Best practice policies and implementation

Special Sessions

- *Next Generation nZEBs*
- *Management of Complexity in Construction*
- *Urban Resource Management*
- *Building Optimization Workflows*
- *Resource efficient buildings - EPD for construction products: End-of-Life information*
- *Urban Green Infrastructure and Re-naturing Cities*
- *Sustainable Use of Resources in Urban Planning*
- *Environmental benchmarks of buildings*



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Graz**
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 Graz, 11–14 September 2019

ETH zürich

SPECIAL SESSION
Management of Complexity in Sustainable Construction

Helmuth Kreiner, Graz University of Technology, Austria
 12 Sept 2019, 11.30am–01.00pm | Rechbauerstraße 12, 8010 Graz

SUSTAINABLE BUILT ENVIRONMENT D-A-CH CONFERENCE 2019

The SUSTAINABLE BUILT ENVIRONMENT D-A-CH CONFERENCE 2019 is part of a major international series of conferences that focus on sustainable buildings and construction. This series, now on a three-year cycle, has become recognized as the world's preeminent conference series in this important field. Graz University of Technology will host the SBE19 in co-operation with University of Natural Resources and Life Sciences, Vienna, Karlsruhe Institute of Technology and ETH Zürich. Within this conference several Special Sessions are organized.

KEYWORDS AND OBJECTIVE OF THIS SPECIAL SESSION

Complexity management, System analysis, Systems engineering, Integrated approach, Building cybernetics, Multi criteria decision making, Systemic approach and Systemic optimization, Multi objective optimization, Risk management, Lean management, Trade off management, Decision support systems, Quality management and maturity assessment

The implementation of sustainable construction led to higher complexity of today's construction processes. On the one hand this is induced by multi criteria requirements (economic, environmental, social) for sustainable buildings and on the other by the current lack of appropriate methods, tools and data resources in order to understand and manage systemic behavior for sustainable construction. As a consequence, stakeholder awareness of systemic effects in decision making processes is strongly limited. Imprecise and/or wrong decisions – especially in early design stages – may result in lower building sustainability. However, the application of systems thinking in sustainable construction is gaining more and more interest in the last years. Therefore, this special session will present the state of research and practical implementation as well as the latest findings in this field, including but not limited to:

- Lessons to be learned from other disciplines
- Systemic approaches and methods for the management of complexity in sustainable construction
- Decision support systems (Tools (based on a systemic approach))
- Case studies (practical implementation examples for complexity management methods in sustainable construction)
- (Big) data management within MCDM
- Approaches and methods for holistic quality and risk management

Special Fora

Workshops with a scientific basis related to the sustainable built environment, no peer-review process and open to the public

- *Level(s) and its place in the tool box for sustainable construction*
- *"Die 3 Schwestern in der Seestadt Aspern Bauplatz D22" Paradebeispiel für nachhaltiges Wohnen*
- *CONDEREFF - European project regarding construction & demolition waste*
- *Implementing BWR 7 "Sustainable Use of Natural Resources" in Europe*
- *The role of background databases in the environmental assessments of buildings: what is the way forward?*

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SPECIAL FORUM

Level(s)¹ and its place in the tool box for sustainable construction

Andreas Rietz, Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR), Germany

12 Sept 2019, 11.30am - 01.00pm | Rechbauerstraße 12, 8010 Graz

SUBJECT

Systems for describing, assessing and certifying the contribution of individual buildings to sustainable development are important tools for motivating building owners and assisting architects in the design process. So far, they are used in Europe for only a limited number of objects. Potential users fear a high financial expenditure for the collection of additional data and detailed documentation combined with additional costs for the certification process itself. Thus, the question arises for an additional entry point into the topic through the scope and type of sustainability assessment. Level(s) is a voluntary reporting framework for describing and documenting relevant building features with respect to their sustainability related characteristics. The Special Forum will discuss the role of Level(s) in the overall system of instruments and tools to promote sustainable design, construction and operation, and how interdependencies with other approaches can be shaped.

As part of the Special Forum, four presentations and a detailed discussion with all participants with interactive elements are planned:

- | | |
|----------------|---|
| Presentation 1 | Overview of the Level(s) framework/Results of test applications
Josefina Lindblom Ph.D., DG Environment, European Commission |
| Presentation 2 | Level(s) in Austria – 2 case studies
Martin Rieck & Alexander Paster, TU Graz |
| Presentation 3 | Results of Level(s) testing process in Denmark
Harpa Birgisdóttir & Kai Kanafani, Danish Building Research Institute |
| Presentation 4 | Demand for building related information to support appraisal and green finance – (how) can Level(s) help?
Ulricha Verlenberger, Head of Sustainability, RICS |
| Presentation 5 | Job sharing between Level(s) and Sustainability Assessment Systems
Andreas Rietz, Head of Division Sustainable Building, BBSR |
| Moderation | Thomas Lützkendorf, KIT |

QUESTIONS AND RESULTS

During the discussion with the participants the following questions will be discussed, among others:

- (1) How can obstacles be overcome in the context of a broad application of design process accompanying sustainability assessment systems?
- (2) What new approaches and indicators does Level(s) offer?
- (3) What are the experiences with Level(s) in practical application?
- (4) How can a division of labor between Level(s) and other instruments and tools designed to support sustainable planning, construction and operation?

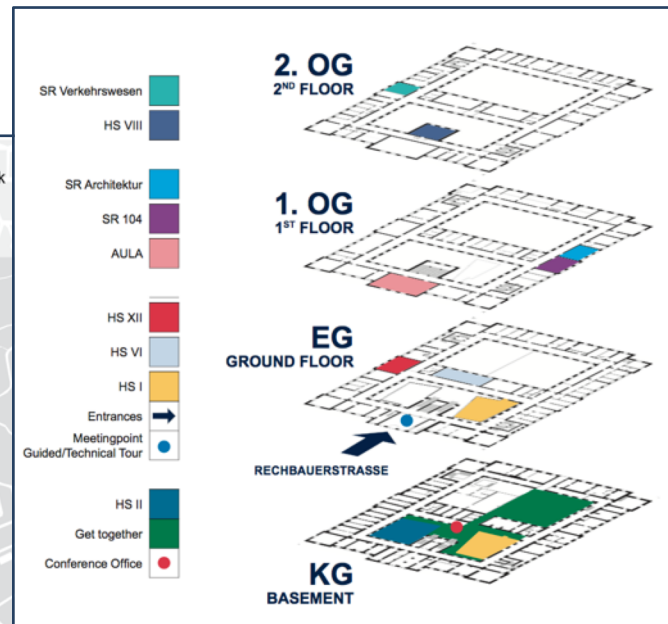
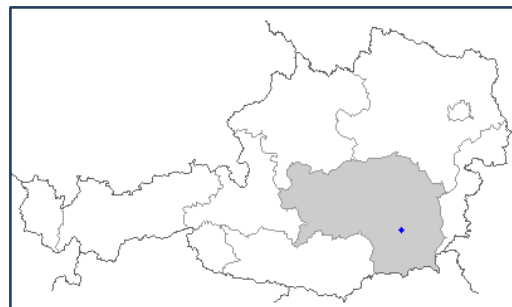
The results of an interactive opinion-forming and the overall discussion are summarized and made available to the participants of the Special Session, the organizers of the SBE19 Graz and the European Commission.

¹ http://ec.europa.eu/environnement/docs/pdf/foebw_2007.pdf

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Conference Location: Graz



Conference Location: Graz

Capital city of Styria

280,000 inhabitants

Cultural capital of Europe 2003

UNESCO City of Design

6 universities

50,000 students



Conference Host: Graz University of Technology

Established 1811

13,700 students



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See you in Graz!

