

International Conference on Sustainability in Energy and Buildings

Invited Sessions

Title of Session:

Building and District Interaction for sustainable energy networks and effective urban climate control

Name of Chair:

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Description:

When applied at urban level, energy planning and design involve two main scales: **Building** and **District**. As a matter of fact, building designers and energy systems experts historically focused only on bioclimatic features and networks layout, respectively. The growing adoption of Holistic design and Building Information Modelling (BIM) calls for Interaction between those backgrounds entailing knowledge exchange and inter-scale two-way communication. Furthermore, overlap of expert skills promoted the development of interconnected fields: from **Building bioclimatic design** and **District energy systems** to cross-synergies with **Building energy systems** and **District microclimate design**. In this way, the two scales could not taken into account separately anymore to answer to the rising demand for Sustainable Cities.

This latter is becoming crucial in the current energy transition and recognized as viable solution towards healthy and green cities by European Union. Indeed, projects funded by Urban Europe are involving knowledge transfer between the different levels of expertise (research centres) and between policy makers (municipality and metropolises) with the aim to test innovative sustainable solutions. Up to date, Urban management is equipped with only sustainable energy planning tool and it is on voluntary base: SEAP – Sustainable Energy Action Plan. Recently, it was enhanced as climate tackling tool too but, its adoption remained no mandatory. No codified inter-scale design is available.

The aim of this Special Session is to collect cutting-edge experiences and to merge research fields on Building and District, mainly still separated towards an effective collaboration for a more sustainable Urban Environment. The term **Interaction** encapsulates the focus of this Special Session.

Topics include, but are not limited to:

- **Building** and **District** Energy Systems
- **Building** and **District** Microclimate Design
- Impact of Bioclimatic measures on **Building** and its surroundings
- Impact of **District** energy networks on Micro-grid and **Building** management
- Smart Urban Energy Systems
- Urban Heat Planning and **Building** Thermal management
- Urban Heat Islands and Innovative **Building** envelope
- Innovative energy concept for Urban Environment
- **District** Heating and Cooling Design and Simulation
- Connection between energy networks and spatial planning
- Multi-scale energy planning tools

Submission of Papers for Review (full papers, not abstracts): 15 April 2017

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