

## International Conference on Sustainability in Energy and Buildings

### Invited Sessions

**Title of Session:**

**Cross-scale adaptive design research for fragile built environment**

**Name of Chair:** Dr. Michele Morganti, Politecnico di Milano, Italy

**Name of Co-Chair:** Prof. Alessandro Rogora, Politecnico di Milano, Italy

**Description:**

Nowadays, built environment is facing new challenges due to significant changes in the global dynamics. The relevance of these dynamics in cities has led researchers to focus almost entirely on these urban systems, neglecting the rest of human settlements and territories, that require appropriate attention **to counteract the ongoing complex and multidimensional process of fragilization.**

In the case of the built environment fragility is *the predisposition to fall into crisis* and is due to internal and external factors: intrinsic natural condition or any form of unbalance produced by phenomena over the course of time. Therefore, fragile territories, because of their complex and dynamic conditions mentioned at the beginning, imply several associated dimensions: physical, social, environmental, demographic, economic, institutional, etc.

Among these dynamics, **climate change issues** are crucial in the international context. In recent years, the awareness of short and long term environmental and socio-economic impacts at global and local scale has led to the convergence of goals and strategies in several key areas - such as research, industry, land use transformation, political and administrative governance, social inclusion - in order to define a common action aimed at addressing two major challenges: mitigating the main anthropogenic factors at the base of climate change and adapting to the inevitable consequences. These challenges become priorities especially for **Europe**, because of the awareness of the special fragility condition of the built environment: several initiatives that focus on climate change mitigation and adaptation strategies within the existing urban areas have been undertaken.

**In a design perspective**, the objectives related to these strategies in the built environment open a great opportunity not just to provide appropriate technical solutions for reducing fragility but, especially, to transform human settlements producing significant side benefits, as well. Including this approach into urban regeneration, actions generate improvements in building stock and neighbourhood, quality of life, urban health, social inclusions, cultural identity, equity, etc. As considerable investment by the EU are concentrating on climate-resilient and adaptation measures of the built environment, to develop adaptive design research to counteract the different natures of fragility is crucial.

The intended session aims to explore the following issues **in fragile built environments**:

1. natures of fragility;
2. climate change impacts;
3. enforcement actions to physical fragilities in the urban regeneration process;
4. adaptive oriented design research for buildings, urban spaces and neighbourhoods;

The session will open a debate inviting submissions that present **original studies and review papers** exploring key topics, issues, approaches, methods, tools and best practice in cross-scale adaptive design research. **We aim to apply the adaptive design into a wider holistic perspective, typical of the urban regeneration:** not limiting to the well-known engineering approach to mitigation and adaptation in vulnerability and resilient design and not limiting only to climate and microclimate dimension of fragility, but **including also other dimensions:** urban form, building typology, constructive systems, urban and building materials.

The main goals are:

- to investigate the ability of this approach to provide side benefits to the built environment.
- to introduce and discuss recent advancements in the field that focuses on the most fragile built environments that compose a pattern of European widespread archetypes: historical towns and villages, social housing districts, suburban sprawl, informal settlements, countryside, mountain areas, coastal settlements, polycentric settlements of the inland.

**Dates and Deadlines**

- **February 7<sup>th</sup> 2020:** submission of papers for review - **complete papers, not abstracts.**
- **February 14<sup>th</sup> 2020:** notification of acceptance.
- **March 13<sup>th</sup> 2020:** upload of final camera-ready publication files & author registration.

**Website URL (if any):**

<http://seb-20.kesinternational.org/cms!Sdisplay.php>

**Email & Contact Details:**

Chair:

**Dr. Michele Morganti**

Politecnico di Milano, Italy

[michele.morganti@polimi.it](mailto:michele.morganti@polimi.it)

Co-Chaired by:

**Prof. Alessandro Rogora**

Politecnico di Milano, Italy

[alessandro.rogora@polimi.it](mailto:alessandro.rogora@polimi.it)