INTERNATIONAL

INVITED SESSION SUMMARY

Title of Session:

Urban and building modelling for climate-resilient cities
Environmental analysis and evidence-based design

Name, Title and Affiliation of Chair:

Michele Morganti, Assistant Professor, Sapienza University of Rome
Nicola Colaninno, Assistant Professor, Polytechnic of Milan
Judit Lopez, Assistant Professor, UPC Barcelona Tech

Details of Session (including aim and scope):

Nowadays, addressing climate change and global warming in urban areas is crucial and increasingly tangible with extreme weather events growing in intensity and frequency worldwide. Therefore, counteracting climate vulnerability becomes a priority for cities. In addition, climate change is leading to increased buildings energy demand and associated emissions, producing negative effects on the outdoor microclimate, thus triggering an unstoppable loop. There is strong evidence that the complex interaction among urban microclimate, environmental quality of neighbourhoods, urban spaces and buildings, requires cross-scale analyses and evidence-based design methods in order to put in place effective solutions.
Cities represent a stimulating field of exploration for introducing innovative adaptive design principles, methods and tools focusing on the above-mentioned interaction stepping beyond disciplinary boundaries among urban policy, urban planning, urban and building design. Indeed, as considerable investments by the EU are concentrating on climate-resilient and adaptation measures of the built environment, this opens a two-fold opportunity for architecture and urban design. On one side, to provide appropriate technical solutions for increasing resilience. On the other side, to adapt urban spaces and buildings to climate change and producing significant side benefits. Through urban regeneration practices, this approach generates improvements in quality of life, urban health, social inclusions, cultural identity, equity, etc.
The session offers a scientific platform for the presentation of studies that pushes the boundaries of urban climate risk and evidence-based planning and design, exploring key topics, issues, approaches, models, methods, tools and best practices. In particular, the session aims to explore the following key issues in climate-vulnerable cities:

1. urban climate spatial analysis, modelling and planning;
2. outdoor and indoor thermal comfort, public health and quality of life;
3. urban design for adaptation and urban heavens for vulnerable neighbourhoods;
4. evidence-based climate design for buildings and urban spaces;
5. building energy modelling and urban building energy modelling (UBEM) in light of climate change;
6. decision support systems for urban climate planning and design.

Dates and Deadlines

- **May 1st 2022:** submission of **full papers (not abstracts)**
- **May 22st 2022:** notification of full papers acceptance and review
- **June 10th 2022:** submission of revised papers
- **June 27th 2022:** upload of final camera-ready publication files & author early registration.

Email & Contact Details

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