

## INVITED SESSION SUMMARY

**Title of Session:**

**From Microclimate to Design:  
Climate-Resilient Buildings and Neighbourhoods**

**Name, Title and Affiliation of Chair:**

Michele Morganti, Associate Professor, Sapienza University of Rome

Nicola Colaninno, Assistant Professor, Polytechnic of Milan

Carlos Alonso Montolio, Associate Professor, UPC Barcelona Tech

**Details of Session (including aim and scope):**

Climate change escalates, leading to rising temperatures and more frequent and intense extreme heat events. This poses a unique challenge for urban areas, particularly regarding outdoor microclimate and the urban heat island intensity. The increased heat elevates building energy demand and emissions, disrupts daily life, and poses health risks in open-air environments and indoors.

The session focuses on climate-adaptive strategies for building and neighbourhoods. We delve into the intricate interplay between urban microclimate, environmental quality, urban spaces, and buildings, emphasising the need for cross-scale analyses and methods for practical solutions. The EU's significant investments in climate-resilient measures offer a unique opportunity for architecture and urban design, yielding substantial benefits, including improved health, well-being, and comfort.

Crossing the building and the neighbourhood levels, we will explore the role of microclimate and energy analysis in understanding the impacts of climate change. Moreover, we will discuss how these analyses and data are used to inform climate-resilient design.

The session will cover:

1. **Microclimate Analysis:** Detailed analysis, modelling, on-site campaign and mapping of urban climates.
2. **Heat-Ready Communities:** Assessment of heat vulnerability and strategies to enhance indoor and outdoor thermal comfort.
3. **Building Energy Analysis:** Techniques for building and urban energy analysis to reduce energy demand, emissions and to mitigate the urban heat island effect.
4. **Adaptive Building and Urban Design:** Design solutions that adapt buildings and urban spaces to climate change and extreme heat, enhancing livability and comfort.
5. **Informed Urban Planning:** Decision support systems in urban planning and design to create climate-resilient neighbourhoods.

By focusing on these areas, we aim to discuss cutting-edge design methods and tools to create adaptive buildings and neighbourhoods as well as promote health, well-being, and accessibility. Join us as we navigate the challenges and opportunities of designing for extreme heat in the era of climate change.

**Dates and Deadlines**

- **May 13<sup>th</sup> 2024:** submission of **full papers (not abstracts)**
- **June 7<sup>th</sup> 2024:** notification of full papers acceptance and review
- **June 28<sup>th</sup> 2024:** submission of revised papers
- **July 15<sup>th</sup> 2024:** upload of final camera-ready publication files & author early registration.

**Email & Contact Details**

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