

## International Conference on Sustainability in Energy and Buildings

### Invited Sessions

**Title of Session:**

Resilient solutions for energy retrofitting of historic buildings and districts in Mediterranean climate

**Name of Chair:**

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**Description:**

Energy retrofitting of historic buildings and districts, from the diagnosis of current performances to the identification of sustainable interventions, calls for targeted methods, tools and solutions, in order to pursue the desirable balance between transformation toward modern needs and requirements, on the one hand, and management and conservation of inherent characteristics and values, on the other. Particularly, the improvement of energy efficiency and self-sufficiency, as well as of both indoor and outdoor comfort, are paramount, not only for the environmental responsibility to decrease the impact of existing buildings globally, but also for the social and cultural requirement to preserve these areas as living entities in a long term perspective. Consistently, eco-renovation strategies, beyond effective and feasible, should be resilient in terms of: (i) adaptation to the rapid evolution of ongoing climate- and energy- related phenomena, including future weather scenarios, supply restrictions, users' behaviours and technological advancement; (ii) exploitation of local construction practices and production chains, eventually enhanced by innovative products and systems; and, (iii) collaborative decision-making among managing authorities, technicians and citizens for harmonized identification of intervention priorities and development programmes, also supported by smart informative technologies for fast management both at building and district scale.

Taking into account the well-established "think globally, act locally" vision for sustainability and resilience, the above-mentioned issues should be related to specific geo-clusters, sharing strong similarities in terms of climate, culture, behaviour, construction typologies, technological solutions and available products, so that a focus is herein envisaged for the Mediterranean basin.

Based on the outlined framework, the session seeks for contributions tracing a current state of the art on such themes, showing results of recent research and outlining future aspects to be faced on the following topics, in relation to energy assessment and retrofitting:

- Vernacular architecture and bioclimatic solutions
- Construction materials and techniques between tradition and innovation
- Diagnostics and monitoring for building performance control
- Adaptive, responsive and innovative technologies and solutions
- Circularity of resources and energy
- Collaborative design
- Building-human-environment interactions
- Comfort and liveability of indoor and outdoor spaces
- Tools and technologies for the management and assessment of energy retrofitting priorities

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