

## **RECENT ADVANCEMENTS ON THE USE OF TIMBER-BASED SYSTEMS FOR RESILIENT CITIES**

*Organizers: A. Sandoli<sup>1</sup>, I. Giongo<sup>2</sup>, G. Fabbrocino<sup>3</sup>, M. Piazza<sup>4</sup>*

<sup>1,3</sup> Department of Biosciences and Territory, University of Molise (Italy)

<sup>2,4</sup> Department of Civil, Environmental and Mechanical Engineering, University of Trento (Italy)

### **Abstract**

The prerogative of combining environmental sustainability and seismic resistance makes timber a highly performant construction material, suitable for increasing the resilience of cities against disasters triggered by natural and/or human-induced events. The development of engineered wood products has given a strong impulse into using timber for seismic and energetic retrofitting of existing masonry and reinforced concrete structures, for promoting vertical additions on existing buildings instead of realizing new constructions and for developing high-rise timber buildings to mitigate the issues of urban densification and use of soil in urbanized seismic areas.

In this perspective, the aim of the Special Session is to provide a global forum for discussing recent advancements, insights and developments related to the use of timber material and systems to reduce the impacts of natural- and/or human-induced disasters in urbanized seismic areas. In this framework contributions are welcome, dealing with the related topics, including:

- (i) Conception, design, analysis and realization of new solutions for combined energetic and seismic retrofit of existing buildings (e.g., endo/exoskeletons, claddings).
- (ii) Vertical timber additions on existing masonry and reinforced concrete buildings in seismic-prone area.
- (iii) Solutions for reducing the urban densifications and the soil resource exploitation: seismic-resistant structural system for medium and high-rise timber buildings.
- (iv) Theoretical, experimental and numerical studies of new connection systems.
- (v) Solutions for enhancing the durability and the sustainability.
- (vi) Codes of practices, guidelines and issues.