

### TS-17

## STRUCTURAL RETROFITTING BY SUSTAINABLE AND COMPATIBLE METHODS

*Keywords: Sustainable and Reversible Repairing; Dry Solutions; Eco-Friendly Materials; Reversible Devices; Life-Cycle-Assessment; HBIM Methodology.*

Recovery and structural retrofitting of the existing building stock as well as that of bridges is a complex issue. In particular, interventions on bridges, masonry buildings, as well as on reinforced concrete buildings, need to ensure basic performance levels concerning the structural safety as well as the resolution of critical issues in terms of energy consumption.

Today, the maintenance of the safety and usability of existing structures is becoming a challenging task for architects and engineers because repairing and/or strengthening interventions need to meet both the seismic safety and the conservation criteria.

The difficulty to implement technological and structural solutions being compatible with the existing structures to be preserved, is prompting scientific community to develop innovative techniques and materials able of improving the mechanical response of structures in case of seismic actions while responding to the increasingly requirements of sustainable interventions. Design challenges require the use of adequate tools and HBIM methodologies allow the process to be managed through interoperability of the design and implementation phases.

A specific focus of this event will be on emerging technologies and novel approaches to further increase the environmental sustainability and economy of structural solutions in steel.

### CHAIRS

**Raffaele Pucinotti** - Mediterranea University of Reggio Calabria, Italy.

Associate Professor in Structural Engineering. His research mainly focuses on seismic vulnerability of reinforced concrete structures and on Seismic performance of composite beam-to-column joints. He has published more than 100 peer-reviewed journal/conference papers within the above-mentioned topics. He is a member of editorial boards of some international journals.

**Marco Tanganelli** - Department of Architecture, University Of Florence, Italy.

His research focuses on the evaluation of seismic performance of civil structures. In detail: 1. Evaluation of seismic performance of irregular structures. 2. Non-linear analysis of reinforced concrete structures. 3. Methods and procedures for mechanical characterization of concrete sample of civil structures. 4. Seismic vulnerability of historic buildings and monuments.