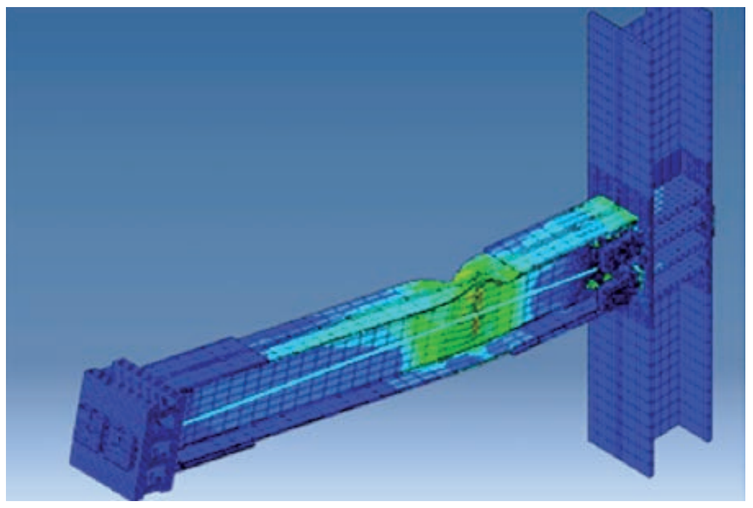
Scuola di Architettura e Design 'Eduardo Vittoria'

HR EXCELLENCE IN RESEARCH



Seminar

Resilient post-tensioned steel buildings with viscous dampers:

experimental evaluation, advanced numerical simulation, and probabilistic economic seismic loss estimation

Prof. Theodore Karavasilis

Associate Professor of Structural Engineering
School of Engineering
University of Warwick, Coventry, UK

Ascoli Piceno giovedì **16 giugno 2016 ore 11.30**

Polo Sant'Angelo Magno - Aula C014

UNICAM Nucleo ideazione e realizzazione grafica, giugno 2016

Prof. Theodore Karavasilis
Associate Professor of Structural Engineering
School of Engineering
University of Warwick, Coventry, CV4 7AL, UK

Abstract
Conventional seismic-resistant steel structures are traditionally designed to sustain significant inelastic deformations in structural members under strong earthquakes. This design philosophy has well known advantages including life safety and economy. However, inelastic deformations result in damage and residual drifts, and so, in large socio-economic losses due to repair costs and long disruption of building use and occupation. Starting from the idea of resilience-based design, which has as major objective the reparability of a structural system, the seminar will show how smart structural detailing, post-tensioning, and use of rate-dependent passive dampers can be integrated to design steel buildings that return to service within an acceptable short, if not immediate, time after very strong earthquakes. The seminar will present the sequence of major research tasks including the design, plan and execution of large-scale experimental programs on beam-column connections and rocking column bases; the development and calibration of advanced nonlinear FEM models at the material, component and structural system level; the development of practical design procedures within the framework of Eurocodes; and the implementation of state-of-the-art probabilistic framework for direct economic seismic loss estimation.

Bio
Theo is Associate Professor in Structural Engineering at the School of Engineering of the University of Warwick (UK) where he leads a research group working on projects on Structural Resilience and Sustainability funded by the EU, EPSRC, Royal Society and Industry. Previously he was Dept. Lecturer in Civil Engineering at the University of Oxford (UK; 2009-2011) and Post-Doctoral Researcher at the ATLSS (Advanced Technology for Large Structural Systems) Research Centre of Lehigh University (USA; 2007-2009). He holds a Phd in Seismic Design of Steel Structures (2007) from the University of Patras (Greece). He conducts integrated experimental and numerical research on resilient seismic-resistant steel structures; on rate-dependent passive dampers for wind and seismic control of tall buildings; and on sustainable design of steel-concrete composite bridges with emphasis on rapid repair processes and deconstruction. He is author or co-author of more than 100 papers in leading international journals, conference proceedings and books. He is a Chartered Civil Engineer in Greece with consulting activities in steel buildings design and commercial software development for nonlinear structural analysis and design of steel structures. He is co-founder of a structural and earthquake engineering consulting partnership in the UK, which operates under the aegis of three UK Universities.

Per maggiori informazioni si prega di contattare il Prof. Alessandro Zona
alessandro.zona@unicam.it
tel. 320 875 1580