WEBINAR:

FEMA P-58-2 DESIGN AID TOOL

Date:
Wednesday, Sept 27, 2017

Time:
12:00pm – 1:00pm

Cost:
Members: $75
Non-Member: $150

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PRESENTATION:

Performance-based seismic design is a formal process for design of new buildings, or seismic upgrade of existing buildings, which includes a specific intent to achieve defined performance objectives in future earthquakes. Performance objectives relate to expectations regarding the amount of damage a building may experience in response to earthquake shaking, and the consequences of that damage (e.g., repair cost, repair time). FEMA P-58-2 project applied performance-based seismic evaluation methodology described in FEMA P-58: Seismic Performance Assessment of Buildings to a group of building archetypes representative of structures that conform to the seismic design requirements of the current building code. One of the outcomes of that project is Design Aid Tool that enables quick estimation of building performance which can be effectively used in the preliminary phase of a building design. The tool includes more than 1700 archetype buildings by considering a total of five different lateral force-resisting systems (i.e., special reinforced concrete shear wall, special reinforced concrete moment-resisting frame, special steel moment-resisting frame, special steel concentric-braced frame, and steel buckling-restrained braced frame), three building heights (i.e., low-, mid-, and high-rise), two occupancy types (i.e., office and healthcare), three levels of seismic hazard (i.e., low, medium, and high Seismic Design Category D shaking), two seismic risk categories (i.e., II and IV), and 13 possible combinations of lateral strength and stiffness of one structural system. Each archetype is subject to an intensity based assessment using five intensities of ground shaking ranging from 20% to 100% of a Maximum Considered Earthquake for a considered hazard. Structural and nonstructural components alongside with the building content are included in the seismic performance assessment of buildings.

PRESENTER

Vesna Terzic, Assistant Professor
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Vesna Terzic is an Assistant Professor at the Department of Civil Engineering at the California State University Long Beach (CSULB). Vesna obtained her Ph.D. degree in Structural Engineering from the University of California, Berkeley, where she continued her professional carrier as a researcher and a lecturer at PEER Center for another 4 years. She is a recipient of a prestigious ACI Chester Paul Siess Award for Excellence in Structural Research. Currently, Vesna's main research focus is on enhancing the seismic resilience of engineered facilities, supported by the awards from NSF, PEER Center, and ATC. To accomplish her research goals, Vesna is developing an integrated system-level framework for calculating performance metrics essential for earthquake-resilient design of buildings (e.g., repair losses, downtime, resiliency). The framework will be facilitated by the development, validation, and integration of novel simulation tools and loss/recovery models that will envelope interaction between soil, foundation, structural, and nonstructural building components. The ultimate goal of the developed framework is to facilitate development of engineering design requirements that will ensure functional resiliency of buildings.