

Session ID: SDM-4

Title

LOW DAMAGE CONSTRUCTION

Convenors

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Description

High economical losses caused by recent earthquakes are accelerating a paradigm shift in the seismic design of structures. The consequences of traditional design approaches are clear - They result in severe damage to the building skeleton and non-skeletal elements (NSE), and permanent residual drifts as a result of a major earthquake. This interrupts building functionality and can lead to demolition. In an effort to overcome these limitations, a variety of low damage structural systems have been proposed.

The convenors of this technical session, and an invited speaker, will raise the following discussions:

- Sarvgard Moghadam will talk developments in low damage construction, He will do this for new construction, and he will draw on his experience in many international retrofit programmes funded by the World Bank to retrofit existing buildings, so they also become low damage.
- Michel Bruneau, the father of the term resilient structures, will summarise international trends toward resilience, and some economical and innovative new ways of providing this resilience for concrete and steel bridges as well as building structures.
- Liang-Jiu Jia will describe how resilient structural forms are not new. She discusses how the work of the ancients who developed resilient pagoda systems hundreds of years ago. Many of these remain standing. Then the ways that these concepts may be considered in modern structures are discussed using the recent research.
- Finally, Gregory MacRae, will present a contrary view. After many years of espousing the benefits of designing for higher resilience, and seeing its lack of adoption around the world, he takes the opposite position. He argues from the viewpoint of legislators who have done nothing to increase structural resilience. The aim of this discussion is to provide balance to, and increase the discussion about, this important topic.

Invited Speakers

M. Bruneau ⁴

Affiliations

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