



Emerging Techniques for Performance-Enhanced Seismic Design of Reinforced Concrete and Masonry Buildings

Guest Editors:

Dr. Yong Li

Department of Civil and Environmental Engineering, University of Alberta, Edmonton, AB T6G 1H9, Canada

Dr. Rodrigo Astroza

Facultad de Ingeniería y Ciencias Aplicadas, Universidad de los Andes, Santiago 7620001, Chile

Dr. Quan Gu

School of Architecture and Civil Engineering, Xiamen University, Xiamen 361005, China

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Message from the Guest Editors

Dear Colleagues,

Reinforced concrete (RC) and masonry buildings have played an important role due to their excellent durability and unparallel strength, by leveraging the two most commonly used construction materials, steel and concrete. However, engineers and researchers have not been satisfied with the current state of practice, particularly after observing potential performance- or resilience-related problems in historical seismic events. Aiming at more advanced seismic design of RC and masonry buildings, significant efforts have been devoted to developing and applying emerging techniques in structural earthquake engineering. These techniques include creative design concepts, innovative seismic response modification devices, reliable numerical simulation tools, automative design methods using machine learning and artificial intelligence, novel performance-based design and resilience assessment framework development, etc. This Special Issue aims to collect papers on the recent development and applications of the various emerging techniques that contribute to performance-enhanced seismic design of RC and masonry buildings.

Dr. Yong Li

Dr. Rodrigo Astroza

Dr. Quan Gu

Guest Editors





Editor-in-Chief

Prof. Dr. David Arditi

Construction Engineering and Management Program,
Department of Civil,
Architectural, and Environmental
Engineering, Illinois Institute of
Technology, 3201 South
Dearborn Street, Chicago, IL
60616, USA

Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

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Buildings Editorial Office
MDPI, Grosspeteranlage 5
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