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Buildings and Infrastructures Performance in Seismic Events: Understanding the Impact of Earthquakes

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Deadline for manuscript submissions:
closed (31 May 2025)

Message from the Guest Editors

Dear Colleagues,

The assessment of seismic performance in buildings and critical infrastructures, as well as the economic and social consequences of earthquakes, is a complex task that requires interdisciplinary knowledge. This includes expertise in geophysics, structural engineering, economics, and social science. As highlighted by the recent seismic event in Turkey (February 2023), this task is particularly important in the case of rare and devastating earthquakes. This Special Issue seeks to bring together original research and state-of-the-art review papers on various techniques and methodologies used to assess seismic hazards, structural response, and fragility, with a focus on rare events. It also aims to present original works or reviews on the evaluation of economic and social consequences at both the building and urban/network levels. Through this publication, we aim to improve our understanding of the complex and interrelated factors involved in the impact of earthquakes on the built environment.

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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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