Special Issue

Reliability and Risk Assessment of Building Structures

Message from the Guest Editors

This Special Issue aims to present state-of-the-art research, methodologies, and applications of the evaluation of the performance and safety of building structures under natural and man-made hazards. Topics include uncertainty modeling and quantification; structural reliability, risk, and probabilistic performance analysis; sensitivity analysis; and risk-informed decision support systems. Contributions emphasizing novel dynamic analysis algorithms, surrogate modeling, dimensionality reduction, Bayesian schemes, and machine learning applications in the aforementioned topics are particularly encouraged. The Special Issue also welcomes studies on the impact of hazards such as earthquakes, windstorms, fires, and floods, as well as approaches to health monitoring and fault detection in the built environment. This platform will serve as a valuable resource for researchers, engineers, and policymakers dedicated to a deeper understanding of structural safety, probabilistic structural performance, and risks to building structures, and who seek to enhance advanced structural analysis, design innovation, and support safer and more sustainable infrastructure.

Guest Editors

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About the Journal

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.

Editor-in-Chief

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