Special Issue

Innovative Applications of Fibre-Reinforced Concrete and Polymers for the Seismic Retrofitting of Substandard RC Structures

Message from the Guest Editors

The seismic performance of existing substandard reinforced concrete (RC) structures is predominantly governed by brittle failure mechanisms, which significantly limit their deformation capacity and overall ductility. This is due to the non-application of the capacity design principles, as well as to numerous structural deficiencies related to the low quality of concrete and steel and poor detailing of the reinforcement. In modern RC structures, a predetermined acceptable level of structural damage is expected, even in the event of the occurrence of the design earthquake, allowing for the effective dissipation of seismic energy. The topics of interest for this Special Issue include the following:

- Experimental and analytical investigation of the seismic behaviour of substandard, modern, and retrofitted RC members.
- Research into the effectiveness of retrofit schemes and application techniques, which includes the use of innovative materials, such as fibre-reinforced concrete of high or ultra-high strength and fibre-reinforced polymers.

For more information, please visit the special issue homepage:
https://www.mdpi.com/journal/buildings/special_issues/G239Q04E4W

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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.

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