buildings

an Open Access Journal by MDPI

IMPACT FACTOR 3.1

CITESCORE 3.4

Performances of Structural Concrete: Data-Driven Analysis Using AI, Numerical and Experimental Investigation

Guest Editors:

Dr. Rwayda Kh S. Al-Hamd
School of Applied Sciences, Abertay University, Dundee DD1 1HG, UK

Dr. Asad S. Albostami
School of Engineering & Construction, Oryx Universal College in Partnership with Liverpool John Moores, Doha P.O. Box 12253, Qatar

Deadline for manuscript submissions:
20 January 2025

Message from the Guest Editors

This Special Issue focuses on integrating data-driven methodologies, numerical simulations, and experimental investigations to enhance the understanding and prediction of structural concrete behaviours.

Numerical methods, including finite element analysis, complement these data-driven approaches by providing detailed insights into concrete's mechanical properties and failure mechanisms. Experimental investigations remain crucial, offering empirical data to validate and refine computational models and AI predictions. By synergising these approaches, this issue aims to address the complexities of concrete performance, such as durability, strength, and resilience under dynamic loads. Contributions to this issue encompass a wide range of topics, including, but not limited to, AI-based predictive modelling, advancements in numerical techniques, innovative experimental methodologies, and case studies demonstrating practical applications. This multidisciplinary approach enhances the predictive capabilities and reliability of structural concrete analyses and paves the way for developing smarter, more resilient infrastructure.

buildings

an Open Access Journal by MDPI

IMPACT FACTOR 3.1

CITESCORE 3.4

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.
High Visibility: indexed within Scopus, SCIE (Web of Science), Inspec, and other databases.
Journal Rank: JCR - Q2 (*Engineering, Civil*) / CiteScore - Q1 (Architecture)

Contact Us

Buildings Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/buildings
buildings@mdpi.com
𝕏@Buildings_MDPI