Special Issue

Structural Health Monitoring and Intelligent Operation Maintenance of Concrete and Steel Structures

Message from the Guest Editors

Civil, mechanical and aeronautical engineering structures or components are often subjected to operational loadings, environmental impacts or earthquake excitations during their service life, which inevitably induce defaults and damages and consequently affect their operational performance. Structural health monitoring and intelligent operation maintenance has increasingly become an essential part of engineering structures with the aim of increasing the safety and reliability of structures through measurements of the operating and loading environment and improving the critical responses of a structure for the tracking and evaluation of incidents, anomalies or damages, along with extending the service life through in-time repairing and strengthening for performance improvement. This Special Issue aims at presenting recent advances in the structural health monitoring and intelligent operation maintenance of concrete and steel structures, particularly the monitoring/maintenance techniques enhanced by machine learning, computational intelligence or data mining.

Guest Editors

Dr. Demi Ai

Prof. Dr. Hongyou Cao

Prof. Dr. Xiaowei Ye

Deadline for manuscript submissions

30 November 2025

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/si/218130

Buildings
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
buildings@mdpi.com

mdpi.com/journal/buildings

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/journal/buildings

MDPI

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

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

Author Benefits

High Visibility:

indexed within SCIE (Web of Science), Scopus, Ei Compendex, Inspec, and other databases.

Journal Rank:

JCR - Q2 (Construction and Building Technology) / CiteScore - Q1 (Architecture)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 14.9 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).