

Special Issue

Digital Modeling and Structural Health Monitoring of Cultural Heritage

Message from the Guest Editors

Advanced digital models, enriched with data from sensors, are essential for safeguarding their cultural and historical significance. Real-time dynamic and static monitoring, integrated with weather data, provides reliable insights into material properties and structural behavior. By implementing accurate sensors for long-term Structural Health Monitoring (SHM), digital models can be continuously updated, enabling the prediction of degradation or structural changes. Ultimately, the synergy of digital modeling and real-world data offers a robust framework for analyzing and preserving these irreplaceable structures.

This Special Issue welcomes contributions that advance the state of the art of the addressed topics focused on cultural heritage, including but not limited to the following fields: Advancement in dynamic identification techniques of historic and monumental construction; Analysis and assessment of masonry built heritage; Structural or architectural digital modeling; Novel sensor technologies and monitoring systems for structural health assessment; SHM in mitigating the impacts of natural hazards, such as earthquakes, hurricanes, and floods.

Guest Editors

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Deadline for manuscript submissions

30 June 2026



Buildings

an Open Access Journal
by MDPI

Impact Factor 3.1
CiteScore 4.4



mdpi.com/si/258863

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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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