Special Issue

Innovation and Challenges in Creating Smart Buildings for Sustainable Construction

Message from the Guest Editors

The built environment plays a vital role in shaping the way people live, work, and interact. Enhancing smart buildings through sustainable construction methods offers innovative solutions to reducing the environmental footprint of the construction industry, improving energy efficiency, enhancing occupant comfort, and promoting long-term economic and environmental benefits. These advances are key components of a broader vision for sustainable urban development, resilient communities, and improved quality of life. This Special Issue aims to collect original research papers, reviews, and case studies reports that explore innovations in smart building technologies, sustainable building practices, and their intersection. We welcome submissions that address the energy performance of buildings, eco-friendly materials and technologies, digital construction methods, automation and control, climate-responsive design, and strategies for enhancing sustainability and resilience in the built environment. Papers focusing on smart infrastructure; building diagnostics; and the application of AI, IoT, and data analytics in sustainable construction are also within the scope of this Special Issue.

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Deadline for manuscript submissions

closed (30 April 2026)

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/si/237811

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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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