Special Issue

Advancements in Net-Zero-Energy Buildings

Message from the Guest Editors

Net-zero-energy buildings are pivotal in reducing carbon emissions and ensuring a healthy, resilient built environment. This SI invites high-quality research and case studies that advance the realisation of net-zero-energy performance, emphasising interdisciplinary methods and occupant-centric solutions. We encourage contributions of the following topics:

- Passive and low-carbon design strategies;
- Innovative construction materials (e.g., self-healing composites, nano-modified concretes);
- AI-driven decision-support systems and digital twin applications;
- Building energy policies and energy management best practices;
- BIM-based approaches and intelligent building services engineering;
- Sustainable construction management and life cycle assessments;
- Indoor air quality, occupant health, and thermal comfort;
- Energy equity and policy for inclusive, low-carbon infrastructure.

This SI aims to bridge knowledge gaps and foster collaboration among professionals in building energy, materials science, engineering, construction management, and policy. We look forward to your insightful contributions and kindly invite you to share this call for papers with interested colleagues.

Guest Editors

Dr. Amirhossein Balali

Dr. Shen Wei

Dr. Antonios Kanellopoulos

Prof. Dr. Shady Attia

Dr. Gloria Pignatta

Dr. Hamidreza Alavi

Deadline for manuscript submissions

20 October 2025

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/si/238268

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

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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

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

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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).