Special Issue

Sustainable Solutions for Energy Demand and Comfort Optimization in Buildings

Message from the Guest Editors

The building sector remains a major contributor to global energy use and greenhouse gas emissions, accounting for 30% of final energy consumption in 2022 (35% including embodied energy). Despite technological advances and policy efforts, current progress is not sufficient to meet net-zero targets by 2050. While heating demands have decreased, energy use for cooling is rising due to climate change and increased reliance on mechanical systems. This Special Issue seeks contributions that address innovative and sustainable strategies for reducing the carbon footprint of buildings. We invite research and review papers focused on:

- Energy retrofitting and upgrading of buildings in developed regions
- Sustainable construction methods in rapidly urbanizing, environmentally sensitive areas of developing regions
- Solutions tailored to climate-vulnerable zones, such as Mediterranean and tropical regions

Relevant topics include (but are not limited to):

- Energy efficiency and passive design strategies
- Integration of renewable energy in architecture
- Circular construction practices and sustainable materials
- Policy and regulatory frameworks
- Socio-environmental dimensions of low-carbon built environments

Guest Editors

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Deadline for manuscript submissions

30 November 2025

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/si/244192

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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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Author Benefits

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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).