Special Issue

Energy Flexibility and Sustainable Building Systems

Message from the Guest Editors

As renewable energy integration grows, flexible building energy systems are emerging as key enablers of low-carbon, resilient energy networks. This Special Issue invites cutting-edge research on the theory, modelling, and demonstration of energy flexibility in buildings. Topics include advanced control strategies (e.g., MPC, reinforcement learning), integration of storage, heat pumps, and renewables, and the quantification of flexibility metrics. We also welcome studies on user behaviour, policy frameworks, and multi-building or district-level flexibility, including innovative approaches to demand response, solar soaking, and smart energy management across residential, commercial, and industrial contexts.

Guest Editors

Dr. Sheikh Khaleduzzaman Shah

Commonwealth Scientific and Industrial Research Organisation, Newcastle, NSW 2304, Australia

Dr. Xueyan Zhang

School of Civil Engineering, Dalian University of Technology, Dalian 116024, China

Deadline for manuscript submissions

31 October 2026

Buildings

an Open Access Journal by MDPI

Impact Factor 3.1
CiteScore 4.4

mdpi.com/si/259408

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

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 15.1 days after submission; acceptance to publication is undertaken in 2.9 days (median values for papers published in this journal in the second half of 2025).