buildings

an Open Access Journal by MDPI

IMPACT FACTOR 3.1

CITESCORE 4.4

Advancing Life Cycle Assessment of Building Energy: Exploring Policy Contexts, Whole-Life Carbon Thinking, and Net-Zero Carbon Strategies

Guest Editors:

Dr. Jingchun Shen
Department of Energy, Forest, and Built Environment, Dalarna University, 781 70 Borlänge, Sweden

Dr. Jonn Are Myhren
Building Technology, Dalarna University, 791 88 Falun, Sweden

Deadline for manuscript submissions:
closed (20 June 2025)

Message from the Guest Editors

Life Cycle Assessment (LCA) is a systematic methodology that enables the evaluation of the environmental impacts associated with the entire life cycle of a building. Understanding and optimizing the energy consumption and associated environmental burdens of buildings is crucial to achieving sustainability goals and minimizing the overall carbon footprint of the built environment. The advancement of LCA has garnered significant attention in the realm of selecting architectural building materials. It is currently in an initial stage for building service system. We want to comprehensively determine the precise proportion of embodied carbon emissions that can be attributed to the building service systems utilized in construction projects.

This Special Issue tries to focus on the multifaceted aspects of LCA in relation to building energy systems. It delves into three crucial dimensions: policy contexts, whole-life carbon thinking, and net-zero embodied and operational carbon strategies. The issue seeks to contribute to the ongoing efforts of the building industry to achieve sustainability and reduce environmental impacts.

buildings

IMPACT FACTOR 3.1

CITESCORE 4.4

an Open Access Journal by MDPI

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

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.
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)

Contact Us

Buildings Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/buildings
buildings@mdpi.com
𝕏@Buildings_MDPI