

Special Issue

Advanced Technologies for Whole-Life Building Energy Efficiency

Message from the Guest Editors

The construction industry is currently facing global challenges, and the United Nations have also designed a few Sustainable Development Goals (SDGs) in an attempt to solve these while tackling climate change and preserving natural resources. Energy consumption as well as carbon footprint over the building life cycle have been important to measure. Thus, advanced technologies are to be considered which can positively impact building performance along with a few other factors. These include reducing the use of carbon-intensive materials, implementing faster, sustainable, energy-efficient, and climate-resilient building techniques, and monitoring building performance related to energy consumption, embodied energy, and embodied carbon over the life cycle of a building. The Special Issue focuses on research studies related to, but not restricted to, the following themes:

- Climate-resilient construction.
- Sustainable construction materials.
- Rapid construction technologies.
- Net zero energy buildings.
- Embodied energy and embodied carbon.
- Energy-efficient buildings.
- Life cycle assessment.
- Life cycle costing.

Guest Editors

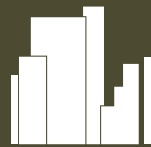
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About the Journal

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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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).