Computational Methods in Building Energy Efficiency Research

Guest Editors:

Dr. Wil Ward
School of Computing and
Mathematical Sciences,
University of Leicester, Leicester
LE1 7RH, UK

Dr. Hadi Arbabi
Civil and Structural Engineering,
University of Sheffield, Sheffield
S10 2TN, UK

Deadline for manuscript
submissions:
closed (20 October 2024)

Message from the Guest Editors

A major challenge to achieving global decarbonisation targets is building retrofitting and increasing energy efficiency. Meeting net-zero targets will require increasingly impractical rates of deployment across a range of energy-efficient retrofit measures, e.g., heat pumps, insulation, glazing, etc. Computational methods that are utilized in research in the built environment is a rapidly emerging field. Large-scale, data-driven solutions are becoming essential for analysis and optimisation of retrofit interventions.

Furthermore, while a body of work is emerging to address retrofitting and other challenges in meeting net-zero decarbonisation targets in the built environment, considerations of future sustainability are largely absent. With large shifts in climate and weather patterns predicted to occur over the next few decades, considering the effects of future climate on the choice and sustainability of energy-efficient retrofitting is becoming increasingly important. Predictive modelling incorporating future climate scenarios is of particular interest for this Special Issue.

mdpi.com/si/175377

Special Issue

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