Special Issue

Advancements in Super-Low-Energy Buildings: Innovations for Extreme Climate Conditions

Message from the Guest Editors

The Super-Low-Energy (SLE) Building program represents the latest advancement in Singapore's green building initiative. SLE buildings are designed with top-tier energy efficiency, incorporating both onsite and offsite renewable energy sources, along with advanced energy management strategies. This Special Issue seeks to bring together cutting-edge research related to the design of SLE buildings for extreme climate conditions. As global temperatures rise and climate change intensifies, the need for innovative low-carbon technologies becomes imminent. This issue aims at emphasizing recent progress in various aspects of building design, materials, and strategies that contribute to improved energy efficiency, sustainability, and occupant comfort in challenging climates. We welcome original research articles, case studies, and review papers on the following topics:

- super-low-energy buildings
- extreme climate
- low carbon technologies
- sustainable building materials
- indoor environmental quality
- climate responsive design
- occupant behavior
- renewable energy

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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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