

Special Issue

Research on the Thermal, Environmental, and Economic Performance of Building Envelopes: Advancing Sustainable Solutions

Message from the Guest Editors

The performance of building envelopes has emerged as a critical area of research in the context of sustainable architecture and construction. Building envelopes—walls, roofs, windows, and floors—are pivotal in regulating indoor temperatures, enhancing energy efficiency, and minimizing environmental impact. We welcome diverse contributions, but are not limited to: - Strategies for optimizing building envelope thermal performance through sustainable and innovative design approaches;

- Assessment models for evaluating the environmental impact of different envelope materials and construction techniques;

- Reflections on policy formulation and decision-making processes that promote the adoption of high-performance building envelopes;

- Multidisciplinary studies addressing integrating building envelopes into renovation projects to enhance energy efficiency and occupant comfort;

- Applications of frameworks for assessing the economic viability of envelope improvements in both new and existing buildings.

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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