



Sustainable Building Thermal and Energy Management: Novel Materials and Advanced Cooling Strategies

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Message from the Guest Editors

By exploring novel materials and advanced cooling strategies, this Special Issue will contribute to the development of energy-efficient buildings that promote thermal comfort, reduce energy consumption, and mitigate environmental impacts. This Special Issue will address a wide range of topics, including, but not limited to, the following:

- Novel materials for building thermal insulation
- Advanced cooling strategies
- Energy-efficient building design
- Building retrofitting for thermal and energy efficiency
- Passive envelope systems
- Renewable energy applications in buildings
- Thermal and electrical energy storage systems
- Indoor thermal comfort and occupant well-being
- HVAC systems
- Intelligent buildings (operation and control)
- Life cycle assessment and environmental impact
- Emerging technologies for sustainable facilities and infrastructure





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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.

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