Special Issue

Research on Energy Performance in Buildings

Message from the Guest Editors

Energy consumption and carbon emissions in the building sector have become the focus of global attention under the goal of curbing global warming. However, many factors, such as building materials, envelope, electromechanical system, etc., have an impact on energy consumption, and the carbon emissions, involving all stages throughout the life cycle of buildings and thus making it complex to reduce the energy utilization and environmental impacts. Through the innovation of energy conservation and carbon emission reduction technology, improving building energy efficiency and low carbon performance has become a crucial research theme. The main aim of this Special Issue is to explore advanced theories, technologies, and tools in the field of building energy efficiency and securing low carbon emissions under the background of carbon neutrality. Potential topics include, but are not limited to: (1) Building energy conservation; (2) Evaluation of building energy efficiency and low carbon performance; (3) Low-carbon technology of green buildings throughout the life cycle; (4) Renewable energy utilization.

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.

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