

Assessment and Optimization of Building Carbon Emissions and Energy Efficiency in China

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Message from the Guest Editors

In recent years, building carbon emissions have become a new growth area because of the accelerated urbanization and the resulting residential demand for energy consumption. This poses a threat to society, the economy, and the environment. Achieving carbon peaks, carbon neutrality, and sustainable development require a system transformation of the building and construction industry. Assessing building carbon emissions and energy efficiency performance would be helpful to the green transformation of the building and construction industry. Path optimization is critical for mitigating the carbon emissions of these industries.

Therefore, this Special Issue will provide a platform for researchers to show and exchange ideas related to **building related energy consumption and carbon emissions**. The topics include, but are not limited to:

- building carbon emission prediction
- carbon peak and carbon neutrality
- building energy system modeling and optimization
- building retrofits
- sustainable construction and management
- energy policy evaluation
- energy efficiency of the building and construction industry



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Special Issue

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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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