Special Issue

Urban Climate, Comfort and Building Energy Performance

Message from the Guest Editors

Electrification and decarbonization are changing the climate, human comfort, and building energy usage at an urban level. Existing power generation infrastructures can be significantly affected by the adoption of distributed energy resources (DERs), which are instrumental facilitators for a more environmentally friendly energy infrastructure. Behind-the-meter DERs enable some electricity end users to be not only consumers, but also generators. These research domains deserve in-depth studies on potential pathways to decarbonization and the associated impacts on climate, human comfort, and energy usage at an urban scale. In this Special Issue, we invite original contributions for state-of-the-art methodologies, case studies, and reviews related to urban climate, comfort, and building energy performance. We welcome papers on the topics including but not limited to:

- Building energy performance at an urban or community scale;
- Decarbonization and electrification;
- Grid-interactive efficient buildings;
- Building-to-grid integration;
- Thermal comfort;
- Urban and building adaptation strategies to climate change;
- Urban microclimate.

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Deadline for manuscript submissions

closed (10 February 2024)

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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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