Special Issue

Research on Urban Heat Island and Heavily Polluted Cities

Message from the Guest Editors

Urban wind environment is providing the main effects on urban heat distribution and urban air pollution diffusion. Therefore, the mechanisms of the environmental effects from urban planning factors, including development intensity, urban building density, urban street typology, urban open space, and urban vegetation, have been well studied over the last few decades, and innovative simulation theory has been developed for microscaled urban wind environmental evaluation. Meanwhile, because of the high population density and the increased urban energy consumption, anthropogenic heat and air pollution emission from building and transportation sections have been evaluated for solution development. Low-carbon building design technology development and transportation-oriented urban planning could be considered for heat and air pollution emission reduction. Related measurements, evaluation, and solutions should be further studied for urban development and redevelopment in the future.

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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