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Advances in Built Environment Engineering: Ventilation, Air Conditioning, and Heating Technology

Guest Editors:

Dr. Lingjie Zeng

Dr. Xin Wang

Dr. Ruiyan Zhang

Dr. Han Zhu

Deadline for manuscript submissions:
31 August 2024

Message from the Guest Editors

Dear Colleagues,

Built environment engineering focuses on the design and development of built environments across various sectors, including architecture, industrial manufacturing, and transportation. Its primary objective is to utilize technology to create comfortable and healthy built environments that cater to the needs of people's daily lives and work. Additionally, it strives to establish precise and suitable built environments to fulfill the requirements of industrial processes.

Presently, the energy consumption associated with constructing built environments constitutes one third of the overall social energy consumption. Consequently, it is crucial to achieve low-carbon, energy-efficient, and resilient built environments. This can be accomplished by leveraging advanced ventilation, air conditioning, and heating technology, which aim to reduce fossil fuel consumption and minimize environmental emissions. This Special Issue emphasizes the importance of these efforts.

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Editor-in-Chief

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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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