Special Issue

Research on Building Performance Simulation for Optimized Indoor Environmental Quality, Comfort, and Energy Efficiency

Message from the Guest Editors

Indoor environmental quality in buildings has gained in the last years greater attention of researchers because of its impact, not only on people comfort but also on people productivity and performance. This Special Issue focuses on exploring innovative approaches in Building Energy and Comfort Simulation to increase the spatial granularity of the model giving a quite reasonable accuracy in the perception prediction and allowing to inspect the influence of contextual factors on local indoor parameters that influence occupants' comfort. Contributions are invited on a wide range of topics, including HVAC control systems, thermal comfort modelling, daylight modelling, application of innovative tools and algorithms. Additionally, studies on building energy, thermal comfort, acoustic, daylighting modelling calibration, validation and optimization are welcome.

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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