



Human Sensing and Artificial Intelligence in Buildings

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Message from the Guest Editors

The influx of human sensing technologies being used in buildings allows for the collection of real-time and reliable data from numerous occupants. Also, artificial intelligence makes it possible to automatically process and analyze huge amounts of human data. Consequently, such advanced technologies allow us to better understand occupants' behaviors, perceptions, and physiological characteristics in buildings. This, in turn, strengthens the human-centric operation of building systems and energy conservation programs to improve energy efficiency in conjunction with occupants' comfort levels. Therefore, this Special Issue aims to share up-to-date knowledge and case studies, focusing on the application of human sensors and artificial intelligence within building system control and energy conservation programs. We welcome research papers contributing to the following topics, including but not limited to:

- Energy efficiency;
- Indoor air quality;
- Visual comfort;
- Thermal comfort;
- Acoustic comfort;
- Mechanical and electrical systems;
- Energy use feedback;
- Prediction of building energy use;
- Occupancy prediction;
- Energy simulation.





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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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