Special Issue

Advances in Optimization and Machine Learning in Indoor Environmental Quality and Energy in Buildings

Message from the Guest Editors

This Special Issue aims at including works applying optimization and machine learning techniques in assessing indoor environmental quality and/or its relationship with building energy systems. The abovementioned techniques, coupled with Internet of Things sensors, can be utilized in real-time monitoring of various aspects related to indoor environment and energy in buildings, thus allowing for intelligent self-learning procedures towards design and operation optimization. Within this context, works investigating the development and application of optimization and machine learning techniques on indoor environmental quality and/or energy systems in buildings are of interest. Techniques of interest include classical mathematical programming methods, AI-based techniques, deep learning models, surrogate models, derivative-free methods, etc. Topics of interest include indoor environmental quality components, indoor environment sensors, ventilation, HVAC systems, building energy systems, energy performance of buildings, etc. You may find more inforamtion below: https://www.mdpi.com/journal/buildings/special_issues/6A4FP638V4

Guest Editors

Dr. Nikolaos Ploskas

Department of Electrical & Computer Engineering, University of Western Macedonia, 50100 Kozani, Greece

Dr. Giorgos Panaras

Department of Mechanical Engineering, University of Western Macedonia, 50132 Kozani, Greece

Deadline for manuscript submissions

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Buildings
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
buildings@mdpi.com

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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

Prof. Dr. David Arditi
Construction Engineering and Management Program, Department of Civil, Architectural, and Environmental Engineering, Illinois Institute of Technology, 3201 South Dearborn Street, Chicago, IL 60616, USA

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