

## 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 information below: [https://www.mdpi.com/journal/buildings/special\\_issues/6A4FP638V4](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

closed (30 June 2024)



## Buildings

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.1  
CiteScore 3.4



[mdpi.com/si/163468](https://www.mdpi.com/si/163468)

*Buildings*

MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[buildings@mdpi.com](mailto:buildings@mdpi.com)

[mdpi.com/journal/  
buildings](https://www.mdpi.com/journal/buildings)





# Buildings

---

an Open Access Journal  
by MDPI

---

Impact Factor 3.1  
CiteScore 3.4



[mdpi.com/journal/  
buildings](https://mdpi.com/journal/buildings)



## 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

---

### Author Benefits

#### High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, and other databases.

#### Journal Rank:

JCR - Q2 (Engineering, Civil) / CiteScore - Q1 (Architecture)

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 17.2 days after submission; acceptance to publication is undertaken in 3.6 days (median values for papers published in this journal in the first half of 2024).