

## Special Issue

# Transforming Built Environment Performance through AI-Driven and Physics-Based Simulations

### Message from the Guest Editors

As the built environment faces increasing demands for energy efficiency, sustainability, and occupant health and well-being, the convergence of artificial intelligence (AI), machine learning (ML), and physics-based methods provides a powerful computational toolkit for advancing performance modeling and assessment. By leveraging the strengths of AI/ML alongside the interpretability and precision of physics-based models, this approach enhances predictive accuracy, improves design processes, and streamlines operations.

This Special Issue explores how these emerging technologies can be applied to optimize design, improve operational efficiency, and contribute to the development of smarter, more sustainable built environments across various scales, from individual buildings to urban environments.

---

### Guest Editors

Dr. Narjes Abbasabadi

Department of Architecture, College of Built Environments, University of Washington, Seattle, WA 98105, USA

Dr. Mehdi Ashayeri

School of Architecture, Southern Illinois University, Carbondale, IL 62901, USA

---

### Deadline for manuscript submissions

15 October 2025



## Architecture

---

an Open Access Journal  
by MDPI

---

Impact Factor 1.4  
CiteScore 2.2



[mdpi.com/si/216688](https://mdpi.com/si/216688)

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

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





# Architecture

---

an Open Access Journal  
by MDPI

---

Impact Factor 1.4  
CiteScore 2.2



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



## About the Journal

### Message from the Editor-in-Chief

The journal Architecture is an outstanding platform for new ideas and for reporting the outcomes of your research. The subjects sought are wide ranging and include design strategies, form, and technology. The need to be innovative in a rapidly changing profession and building environment make this journal the ideal place to publish. We are open to creativity and out-of-the-box thinking.

---

### Editor-in-Chief

Prof. Dr. Avi Friedman

School of Architecture, McGill University, Montreal, QC H3A 2K6,  
Canada

---

### Author Benefits

#### High Visibility:

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

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 34.2 days after submission; acceptance to publication is undertaken in 3.9 days (median values for papers published in this journal in the first half of 2025).

#### Recognition of Reviewers:

APC discount vouchers, optional signed peer review, and reviewer names published annually in the journal.