

# Special Issue

## Advances in 3D-Printed Concrete: Quality Control, Structural Performance, and Sustainable Applications

### Message from the Guest Editors

Amid the global shift toward digitalization, 3D-printed concrete (3DPC) is revolutionizing construction by offering unparalleled design freedom and improved automation. Despite advantages such as reduced labor demand and material consumption, technical challenges remain. To evolve 3DPC from a prototyping technique into a widely adopted construction method, critical issues in quality control, structural integrity, and sustainability must be addressed. This Special Issue, “Advances in 3D-Printed Concrete: Quality Control, Structural Performance, and Sustainable Applications”, is dedicated to exploring these frontiers. We invite the submission of high-quality original research papers on topics including, but not limited to, the following:

- Quality control and assessment methods for 3DPC;
- Comparison between 3DPC and conventional construction processes;
- Structural performance and health monitoring for 3DPC elements;
- Sustainable development for materials, processes and equipment of 3DPC;
- Life cycle assessment for 3DPC materials and structures;
- Engineering case studies and real-world applications of 3DPC structures.

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### Guest Editors

Dr. Hanghua Zhang

Dr. Kaijian Zhang

Dr. Yanke Tan

Dr. Haoran Liu

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### Deadline for manuscript submissions

15 December 2026



## Buildings

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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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### Editor-in-Chief

Prof. Dr. David Arditi

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#### High Visibility:

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

#### Journal Rank:

JCR - Q2 (Construction and Building Technology) /  
CiteScore - Q1 (Architecture)

#### Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 15.1 days after submission; acceptance to publication is undertaken in 2.9 days (median values for papers published in this journal in the second half of 2025).