Special Issue

Key Technologies and Innovative Applications of 3D Concrete Printing

Message from the Guest Editors

3D concrete printing has seen rapid advancements in recent years. This Special Issue aims to address the latest challenges and explore the developments in key technologies and innovative applications of 3D concrete printing. Topics of interest include, but are not limited to, the following:

- Development of printable materials;
- Fresh and hardened properties;
- Structural optimization in 3D concrete printing;
- Mechanical performance of printed structures;
- Shrinkage/durability/sustainability;
- Numerical simulation of 3D concrete printing;
- Reinforcement integration in 3D concrete printing.

We invite researchers working in these and related areas to submit their original research articles, review papers, and case studies for this Special Issue. Your contributions will help advance the state of the art in this rapidly evolving field and promote the wider adoption of 3D concrete printing technology. For further reading, please follow the link to the Special Issue Website at: https://www.mdpi.com/journal/buildings/special_issues/ J466V02PA2

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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

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manuscripts are peer-reviewed and a first decision is provided to authors approximately 14.9 days after submission; acceptance to publication is undertaken in 2.7 days (median values for papers published in this journal in the first half of 2025).