

Special Issue

3D Concrete Printing: Materials, Process, Design and Application

Message from the Guest Editors

As one of the emerging technologies in the architectural and construction sector, 3D concrete printing (3DCP) has received extensive attention from academia and industry..... The goal of this Special Issue is to collect high-quality papers on the latest research in 3DCP and other digital concrete technologies (e.g., layer extrusion, powder-bed, shotcrete, dynamic casting system, etc.). The guest editors welcome papers focusing on, but not limited to, the following topics: Materials: mix design, fresh state behaviors, rheology, mechanical performance, microstructure characterization, sustainability, durability, reinforcement, modeling and numerical simulation. Process: machine and tooling, system integration, CAD/CAM and robotics, process and quality control, alternative shaping techniques and post-processing techniques. Design and application: case study, topology optimization, structural behavior, functional performance (e.g., thermal, acoustic, etc.), construction practice, construction management and LCA. For further reading, please follow the link to the Special Issue Website at:

https://www.mdpi.com/journal/buildings/special_issues/Concrete_Printing

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Deadline for manuscript submissions

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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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