Special Issue

Optimization and Application of Concrete Materials in Constructions

Message from the Guest Editor

New trends in concrete technology, such as optimization and the use of smart concrete materials in construction, allow for the faster and safer shaping of engineering structures compared to concrete with traditional properties and ingredients. When used alongside modern technologies for forming concrete elements, next-generation concretes allow for a wide range of alternative materials to be used as concrete additives—different fiber materials as dispersed reinforcement, modified aggregates, PET waste, etc.—as unconventional components. This Special Issue is concerned with technological problems related to the use of a new generation of mixes and concretes with cement binders modified with new, unconventional additives and technologies.

Guest Editor

Dr. Tomasz Ponikiewski
Faculty of Civil Engineering, Silesian University of Technology, Akademicka 5, 44-100 Gliwice, Poland

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Buildings
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
buildings@mdpi.com

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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

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

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