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Sustainable Architecture and Construction Infrastructure

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Message from the Guest Editors

Dear Colleagues,

In the AEC sector, the 21st century is witnessing an inevitable shift in the way design is taking place due to changes in the implementation of digital tools, multi-variant optimization and minimization of non-renewable resources. Progressive digitalization permeates the processes involved in building construction, exemplified by activities such as BIM and Innovation Platforms for Built Environment, leading to sustainable design regulations. The increased use of digital tools and the simulation of building parameters makes it possible to optimize material, cost, energy, and production time, both in construction and further in building maintenance. Construction productivity becomes one of the main aspects of AEC designing and management processes. This Special Issue focuses on construction optimization in algorithms/generative designing and creating green and agile construction using construction 4.0 platforms.

Keywords:

- lean structures
- industry 4.0
- construction 4.0
- building structure
- construction productivity
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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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