

Construction 4.0 and Industry 4.0: Beyond Building Information Modelling

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Message from the Guest Editors

Our construction industry is currently experiencing another transition; this time it is responding to the developments in other industries known as “Industry 4.0”. The feature includes more information technology, the merging of the cyber, as well as the physical worlds into cyber physical systems. Physical and cyber elements interact with increasingly minimal human involvement. This trend calls for the rethinking of our approach to information management.

Building Information Models, originally designed with the collaboration and communication needs during the design phase are shifting towards Digital Twins, moving beyond form towards function and behaviors monitored and steered with sensors and actuators. The IT infrastructure offers connectivity with cloud computing and 5G networks. The masses of data can only be handled with AI.

The Special Issue aims to study these new trends and related challenges such as organizational and process changes, need for enhanced skills, improved communication and sensor networks, better standardization across the building lifecycle, regulatory revisions, data management and data security, and knowledge management.



Editor-in-Chief

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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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