

Application of Emerging Technologies to Improve Construction Performance

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Message from the Guest Editors

Dear Colleagues,

As Industry 4.0 has increasingly been adapted to the construction sector in recent years, transformations are happening throughout the lifecycle of civil assets. Advances and smart technologies have been proposed to improve efficiency, safety, and sustainability for successful project delivery. High levels of automation and digitalization are pursued, as well. In this Special Issue, we would like to invite and attract contributions on the implementation and adoption of emerging technologies in the construction sector, including but not limited to:

- BIM/CIM
- Digital twin
- Artificial intelligence
- Deep learning
- Internet of Things and wireless sensor networks
- Computer vision
- Knowledge graph
- Robotics in construction
- Mathematical modelling
- Simulation



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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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