



Novel Technologies and Futuristic Trends in Construction Project Management, Planning, Control and Delivery, Operation and Maintenance

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Message from the Guest Editors

Dear Colleagues,

The proliferation of information technology tools has radically affected the way of managing construction projects within their life cycle, from design and construction to operation and maintenance. The evolution of digital and automation tools related to artificial intelligence, virtual and augmented reality, robotics, and digital twin technologies, to name a few, has now dramatically expanded the scope and opportunities of advanced construction and operation management. In a rapidly changing technology landscape, the construction industry needs to adapt to the ongoing technological advancements and redefine its role and goals accordingly to take advantage of new opportunities and challenges. In this context, it is crucial to promptly encompass new technologies and methods and integrate them in project planning, construction, operation, and maintenance to harvest innovative outcomes for pressing contemporary issues (environmental, social, and economic). These can provide the ground to improve the efficiency of the construction process, the quality of the delivered projects, and their smooth and sustainable operation.





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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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