Special Issue

Emerging Technologies and Workflows for BIM and Digital Construction

Message from the Guest Editors

Dear colleagues, The implementation of building information modelling (BIM) processes and technologies over the last 15 years has bought about a signifiacnt enhancement of the digitsation of the industry. The progression of hardware and software tools is happening at an unprecented rate. Autonomous vehicles, drones and advanced robotics are some examples of how construction is finding use cases to support a range of site-based activities. In the domain of software, we are seeing the rise in Digital Twin, the increasing use and exploitation of artificial intelligence and virtual and augmented reality tools that blur the line between the physical and the virtual. All of these emergent technologies engage with digital data in various forms and subsequently feed into the digital based workflows at the heart of the BIM process. The aim of this Special Issue is to provide example use cases and recommended novel workflows for how emerging technologies can be implemented within prevailing BIM workflows to further enhance the digitisation of the construction industry.

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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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