Special Issue

Challenges in Implementing Emerging Technologies in the Building Construction Industry

Message from the Guest Editors

The building construction industry is facing various challenges, including the emergence of new technologies, limited resources, labor shortages, and carbon emission control. Therefore, the proactive adoption of new technologies and concepts is needed in construction and project management. The widespread implementation of new technologies such as robotics, artificial intelligence, BIM, smart monitoring devices, and data integration platforms is driving the transformation and upgradation of the construction industry, with considerable potential to help address these challenges. However, the successful implementation of these new technologies in the building construction industry requires addressing a series of issues such as human-machine collaboration, efficiency, costs, and engineering ethics, particularly the need to establish new concepts and management systems adapted to the industry. Therefore, this Special Issue aims to share the latest knowledge and cases, focusing on how new technologies and concepts can better promote the transformation and upgradation of the building construction industry.

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About the Journal

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.

Editor-in-Chief

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