Special Issue

Sustainable Buildings and Digital Construction

Message from the Guest Editor

The building sector plays a crucial role in the achievement of global sustainability goals, driving innovation in energy efficiency, material optimization, and circular design and construction. At the same time. rapid advancements in digital technologies such as augmented/virtual reality, 3D printing, BIM, digital twins, artificial intelligence, and IoT are transforming how buildings are conceived, constructed, maintained, and managed throughout their life cycle. This Special Issue aims to seek to advance knowledge on how datacentric and sustainable approaches can jointly enhance the resilience, performance, and livability of future buildings and infrastructure developments. We welcome contributions that explore sustainable design strategies, smart construction methods, lifecycle assessment, energy management, and the digital transformation of the built environment. Studies addressing construction automation, prefabrication, and data-driven decisionmaking for reducing carbon footprints, amongst relevant other topics, are particularly encouraged. Theoretical analyses, empirical studies and case-based investigations are also pertinent.

Guest Editor

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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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