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The Integration of Building Information Modeling (BIM) Technology and Artificial Intelligence (AI) in Smart Buildings

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Message from the Guest Editors

This Special Issue delves into the innovative applications of building information modeling (BIM) technology within smart buildings, exploring its synergistic integration with digital twins and cutting-edge artificial intelligence algorithms. We aim to provide in-depth analysis of how these technologies intersect with crucial domain, such as knowledge management, information exchange, human behavior simulation, and advanced digital design methods.

As a groundbreaking integrated methodology, BIM offers a holistic digital portrayal of architectural environments, revolutionizing the efficiency and precision of architectural design, construction, and operational management. These BIM models are capable of simulating and analyzing the real-time performance of buildings, thus offering invaluable insights. The integration of artificial intelligence further elevates this process, streamlining the handling of building data and decision making. This not only boosts managerial efficiency, but also significantly enhances the overall user experience.

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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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