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Data Analytics Applications for Architecture and Construction

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Message from the Guest Editors

Information Technologies in the Architecture, Engineering & Construction (AEC) industry has progressed significantly and now play important roles in all aspects of building. There is a very large amount of data generated throughout the building life cycle process yet this data is underutilized relative to other industries such as the retail, finance, supply chain and healthcare sectors. Recent papers have developed a set of questions that should/could frame more focused research which will improve the effectiveness of building design, building processes and construction project management. How can data analytics support building design? How can building owners or governments use data to facilitate their projects/portfolio management in a more effective way? How can data-driven practice facilitate architects, engineers and builders on time control, within budget and sustainably, with safety for workers and with minimisation of waste?

This Special Issue will provide practice and conceptual examples of how buildings and infrastructure designs, contractual and construction process and building maintenance are designed and/or managed through the use of data analytics.

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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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