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Towards More Practical BIM/GIS Integration

Guest Editors:

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Message from the Guest Editors

Dear Colleagues,

The integration of building information modelling (BIM) and geographic information systems (GIS) contributes to digital twins and, more broadly, the Smart City.

In recent years, more technologies and data standards have become available, such as the labelled property graph (LPG)-based graph database, 3D tiles, Indexed 3D Scene Layer (I3S), and the new CityGML 3.0. These new, emerging technologies, as well as those in relevant areas such as Artificial Intelligence (AI) and Mixed Reality (MR), introduce new opportunities to deal with practical problems. Therefore, the purpose of this Special Issue is to showcase the use of BIM/GIS integration, in conjunction with other technologies, in solving practical problems relating to, but not limited to, the following:

- Digital twin;
- Smart city;
- Emergency response, e.g., indoor/outdoor route planning;
- Natural hazard, e.g., flood, landslide;
- Digital building permit;
- Infrastructure management, e.g., railway, road, and dam;
- Indoor/outdoor navigation;
- Infrastructure operation and maintenance;
- City information modelling.

Guest Editors

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Special Issue

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Editor-in-Chief

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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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