

Digital Twinning the Built Environment to Improve its Efficiency, Reliability and Resilience

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Abstract:

While there is a strong desire to drive the development of a super-intelligent society by connecting individuals and the society through technologies such as artificial intelligence, sensors, computer vision, building information modelling, geographic information system, drones, etc., a systematic framework is still lacking to fully realise the advantages of digitalisation. Digital twin may provide a new platform to capture, present and analyse useful digital data for near real-time decision support. A digital twin platform is not only beneficial to urban planning, architectural design and construction, but it can also help improve the operational efficiency and reliability of the entire city and built facilities. By digital twinning the built environment, the efficiency, reliability and resilience of cities can be further improved to benefit the society. In this seminar, the speaker will share some thoughts on how digital twin can be applied in the built environment. Practical examples will be given to demonstrate the practicality of developing a digital twin oriented built environment.

建築環境數字孿生化以改善其效率、可靠性和韌性

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摘要：

儘管大眾希望透過人工智慧、感測器、電腦視覺、建築資訊模型、地理資訊、無人機系統等技術將個人與社會連接起來，從而推動超智慧社會的發展，但目前仍缺乏一個系統性的框架來充分發揮數位化優勢。數字孿生技術或許能夠提供一個全新的平台，用於收集、呈現和分析有用的數位數據，從而為近實時決策提供支援。數字孿生平台不僅有利於城市規劃、建築設計和施工，還能幫助提升整個城市及建築設施的運作效率和可靠性。透過建築環境數位孿生，可以進一步提升城市的效率、可靠性和韌性，進而造福社會。本次研討會上，演講者將分享一些關於如何在建成環境中應用數字孿生技術的思考，並列舉實際案例來展示建構面向數字孿生的建築環境的可行性。