

Lecture Notes in Civil Engineering

The role of digital technologies in enhancing construction safety: A case study of the George building collapse

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It's no secret that the construction industry faces ongoing safety challenges, with structural failures posing significant risks to lives and property. Digital technologies transform construction safety management by providing dynamic, data-driven alternatives to traditional, static methods. Studies report that 3D and 4D modelling tools enable clear, real-time visualizations that improve hazard identification and safety planning. Digital platforms often integrated with Virtual and Augmented Reality also enhance worker training and safety communication, shifting the process from reactive, paper-based approaches to proactive, continuously updated systems. This paper explores the role of digital technologies in improving construction safety by predicting and mitigating risks. A detailed review of existing literature, an analysis of the George building collapse, and an evaluation of BIM's potential contributions provides insight into how digital tools can revolutionize safety protocols in the construction industry.