

An Integrated Framework for Engaging Stakeholders in the Circular Economy Processes Using Building Information Modeling and Virtual Reality

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Abstract : Global climate change has become increasingly problematic over the past few decades. The construction industry has contributed to greenhouse gas emissions in recent decades. Considering these issues and the high demand for materials in the construction industry, Circular Economy (CE) is considered necessary to keep materials in the loop and extend their useful lives. By providing tangible benefits, Construction 4.0 facilitates the adoption of CE by reducing waste, updating standard work, sharing knowledge, and increasing transparency and stability. This study aims to present a framework for integrating CE and digital tools like Building Information Modeling (BIM) and Virtual Reality (VR) to examine the impact on the construction industry based on stakeholders' perspectives.

Keywords : circular economy, building information modeling, virtual reality, stakeholder engagement

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