

Integration between BIM and Virtual Reality for Enhancing the Building and Occupants during the Operational Phase

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Abstract

The performance level of a building is a measure of its success and failure throughout its life cycle. That leads the study to investigate key performance indicators (KPIs) to be measured, evaluated, and improved, especially during the operational phase. Consequently, the research adopts BIM technology and Immersive Virtual Reality (IVR) to model and represent an actual building in a virtual model for conducting the studies and alternatives to save time, effort, and cost, also to increase confidence in the expected results. Moreover, the example of a building used IVR and examples used BIM were analyzed to demonstrate that KPIs need to integrate BIM platforms with IVR technology. Therefore, increasing the efficiency of dealing with all indicators to measure and evaluate the responses and interactions of occupants with alternatives and solutions of this virtual model to develop and improve KPIs. Eventually, deducing and formulating a framework for dynamic interaction between a building and its occupants by integrating BIM and IVR to deal with KPIs.

Keywords: BIM, Immersive Virtual Reality (IVR), Key Performance Indicators (KPIs), Operational; Integration.