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A Project Framework to Introduce Virtual Reality in Construction Health and Safety

Building construction is considered a complex, dynamic and highly hazardous process with numerous hazards that are potentially dangerous to workers. Many studies prove that the implementation of preventive and proactive measures dynamically included in the building design, planning and construction can reduce accidents as well as increase site productivity.

In this context, new risk management models and information visualization techniques such as Building Information Modelling (BIM) and Virtual Reality (VR) seem to be devoted to strongly contribute to the advancement of the current safety management practices. For these reasons, the presented contribution starts with a short review of the adoption of BIM and VR related digital technologies for risk management together with VR application on Construction Health and Safety which aim to generate immersive environments from which workers can experience safe training into the very heart of construction site works.

The main objective of this contribution is to review existing proposals in this field of construction health and safety as related to ICT technologies, especially BIM and Virtual Reality in order to propose, at the end, a project framework able to guide future researches and applications on the use of BIM enabled Virtual Reality for Safety purposes for site design validation and related workers training.