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Managing Critical Infrastructures with BIM: integrating the Analytical model

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ABSTRACT

Critical Infrastructures requires integrated management approaches, during their whole lifecycle, to achieve optimized strategies for users safety, structural damage prevention and sustainability. Some of the major challenges are disaster management issues, that need to be handled via a multidisciplinary approach, integrating civil and management engineering but also psychology. A numerical simulation model can, in fact, simulate occupants behaviour during an evacuation. BIM is a holistic approach, that has reached a good maturity level in design and construction phases, but its potentialities in lifecycle management are still unexpressed. The integration of numerical analysis is a weakness of the current standards and BIM software tools, due to interoperability issues and to the lack of knowledge sharing. This contribution explores current methodologies, benefits and weaknesses of the integration of numerical simulations into the complex context of critical infrastructures management.