

Using Building Information Modelling to Mitigate Risks Associated with Health and Safety in the Construction and Maintenance of Infrastructure Assets

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Abstract : BIM, an acronym for Building Information Modelling relates to the practice of creating a computer generated model which is capable of displaying the planning, design, construction and operation of a structure. The resulting simulation is a data-rich, object-oriented, intelligent and parametric digital representation of the facility, from which views and data, appropriate to various users needs can be extracted and analysed to generate information that can be used to make decisions and to improve the process of delivering the facility. BIM also refers to a shift in culture that will influence the way the built environment and infrastructure operates and how it is delivered. One of the main issues of concern in the construction industry at present in the UK is its record on Health & Safety (H&S). It is, therefore, important that new technologies such as BIM are developed to help improve the quality of health and safety. Historically the H&S record of the construction industry in the UK is relatively poor as compared to the manufacturing industries. BIM and the digital environment it operates within now allow us to use design and construction data in a more intelligent way. It allows data generated by the design process to be re-purposed and contribute to improving efficiencies in other areas of a project. This evolutionary step in design is not only creating exciting opportunities for the designers themselves but it is also creating opportunity for every stakeholder in any given project. From designers, engineers, contractors through to H&S managers, BIM is accelerating a cultural change. The paper introduces the concept behind a research project that mitigates the H&S risks associated with the construction, operation and maintenance of assets through the adoption of BIM.

Keywords : building information modeling, BIM levels, health, safety, integration

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