Journal Article – Volume 28, Issue 5, Engineering, Construction and Architectural Management 2020, Pages 1468 - 1490

Towards a BIM-based approach for improving maintenance performance in IBS building projects

Abstract

Purpose: The contemporary practice of conventional maintenance for industrialised building system (IBS) constructions suffers from poor service delivery and defect repetition. A key problem impeding the widespread adoption of emerging technologies is the lack of competent contractors to support the effectiveness of the technology implemented in conventional methods and to ensure returns on investment. The shortcomings of conventional methods are assessed from the perspective of IBS buildings. This paper aims to identify the different system approach using Building Information Modelling (BIM) technology that is equipped with decision making processes. Design/methodology/approach: This paper describes the establishment of key problem areas, the elements involved in implementing good practice and the requirements for integrating maintenance management processes and information databases in the maintenance management system. Findings: Conventional methods have little emphasis on defect diagnosis tools. They also enhance inadequate strategic decision-making in the analysis of information when attempting to improve the maintenance project outcomes for IBS construction. The characteristics identified in a case study of IBS buildings are presented and analysed. Originality/value: The conclusions and recommendations drawn from the analysis of the IBS case study are discussed, synthesised and deliberated upon. The approach presented in this paper integrates various aspects of building information modelling technology to facilitate improved execution of IBS maintenance activities.

Keywords

BIM; IBS buildings; Maintenance management process; Malaysia