

Analyzing Barriers and Uniformity of Multi-dimensional BIM Applications

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ABSTRACT

Building Information Modeling (BIM) adoption in Architecture, Engineering, and Construction (AEC) has proven to improve the efficiency and effectiveness of delivering the project from inception to operation. Nevertheless, even with the current advancement in technologies, the AEC industry is still falling behind other industries in digitizing and automating its operations, particularly in using BIM with multi-dimensions (nD) and standardizing which application should be allocated for a particular dimension. Acceptance of information such as time and cost as the fourth dimension (4D) and fifth dimension (5D) is consistent in AEC. However, there is no uniformity of applications for dimensions beyond 5D. In this study, a survey of BIM professionals worldwide has been conducted to get these answers. One finding from the survey is the identification of barriers to not using nD BIM. Another discovering is the software used for BIM nD worldwide. An additional result is uncovering the current applications of BIM beyond 5D. For instance, Energy, Sustainability, Safety, and Facility Management were frequently interchanged between the sixth dimension (6D), seventh dimension (7D), and eighth dimension (8D) of BIM. Since the collected facts were from current professionals in the industry, this study can be considered a reliable foundation for enhancing the nD BIM execution and normalizing the nD BIM applications.