

BIM for maintenance planning of facades in precast concrete buildings

Abstract

Purpose: This paper aims to identify the different system approach using Building Information Modelling (BIM) technology that is equipped with decision making processes. Maintenance planning and management are integral components of the construction sector, serving the broader purpose of post-construction activities and processes. However, as Precast Concrete (PC) construction projects increase in scale and complexity, the interconnections among these activities and processes become apparent, leading to planning and performance management challenges. These challenges specifically affect the monitoring of façade components for corrective and preventive maintenance actions.

Design/methodology/approach: The concept of maintenance planning for façades, along with the main features of information and communication technology tools and techniques using building information modeling technology, is grounded in the analysis of numerous literature reviews in PC building scenarios. **Findings:** This research focuses on an integrated system designed to analyze information and support decision-making in maintenance planning for PC buildings. It is based on robust data collection regarding concrete façades' failures and causes. The system aims to provide appropriate planning decisions and minimize the risk of façade failures throughout the building's lifetime. **Originality/value:** The study concludes that implementing a research framework to develop such a system can significantly enhance the effectiveness of maintenance planning for façade design, construction and maintenance operations.

Keywords

BIM; Façades; Improvement; Maintenance planning; Precast concrete building