

Integrated collaborative tools for precast supply chain management

Abstract

Precast construction projects are associated with many activities, numerous parties, enormous effort and different processes. For effective communication, this requires delivering appropriate and up-to-date information to enhance collaboration and improve integration. The purpose of this paper is to develop the system architecture and prototype of Context-Aware Cloud Computing Building Information Modeling (CACCBIM) for precast supply chain management. The findings of this research are grounded through the literature of cloud computing, context-awareness, building information modeling and, ultimately, the analysis of interviews with stakeholders in precast construction. Findings determine that lack of integration, improper planning and scheduling, poor production timing, poor coordination, lack of good communication among parties, wrong deliveries, poor control and supervision are the major issues within the precast supply chain. These issues could result in adverse consequences for the objectives and success of the precast project. Eventually, to reduce and eliminate these issues, the proposed prototype will support appropriate deliveries, efficient monitoring, the facilitation of coordination and collaboration with improved communication. It is anticipated that this research will establish a unique perception of the precast construction industry which will finally enhance its productivity, improve its efficiency and maximise its effectiveness.