Title: A BIM-based Approach for Communicating and Implementing a Construction Site Safety Plan
Authors: Salman Azhar, Auburn University
Additional Authors: Alex Behringer, The Whiting-Turner Contracting Company
Orlando, Florida
College: College of Architecture, Design and Construction

Abstract: There has not been a significant decline in fatalities, injuries and illnesses in the construction industry despite rigorous efforts of safety professionals and strong governmental enforcement of safety laws. Inappropriate work planning; insufficient communication between workers and supervisors; and lack of safety training are some of the key contributing factors. The utilization of BIM technologies can result in improved occupational safety by allowing designers and constructors to visually assess jobsite conditions and recognize hazards. By using digital models and simulations, the project team can more effectively communicate and implement a safety plan. This paper presents findings of a research study which investigated the effectiveness of BIM technologies in developing, communicating and implementing a construction site safety plan. The Recreation & Wellness Center project at the campus of the Auburn University (AU) was selected as a case study. Four-dimensional (4D) phasing simulations, 3D walk-throughs and 3D renderings were utilized for identifying hazards and communicating safety management plan to the workers. The results indicated that 3D/4D dynamic tools are more effective in safety planning and management as compared to the 2D static drawings because they closely simulate actual jobsite conditions.