

ENGINEERING SEMINAR

Mode-centric Design for Bridges

Abstract

3D bridge models have been underutilized as an engineering and construction tool for years. Historically, the transportation industry viewed 3D bridge models only as an expensive tool for visualization/public outreach or finite element method (FEM) analysis.

This presentation offers an alternative view in which the model is developed as the fundamental basis for multiple design activities including plans production, structural analysis, and quantity/schedule generation. Multiple software and technology advancements will be illustrated with several real-world project examples, and the implications of these models beyond the design phase will be discussed.

Joe Brenner, PE

Lead Structural Engineer

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Joe has worked as a bridge engineer and designer for over 10 years on a wide-range of projects in multiple states, and has helped develop and teach several training classes on bridge element design and analysis. Joe has also worked extensively with 3D bridge models the past several years and has made numerous presentations on this topic at events including PennDOT's 3D Model for Structures Workshop, FHWA Every Day Counts 2 Webinar Series, and Florida DOT's Design Training Expo. His specialized skills and experience led to his selection as lead engineer for a team that developed an innovative 3D model-centric process for several bridge replacement projects in which an accurate to-scale bridge model was used for multiple purposes including development of the contract drawings, visual inspection of all bridge components in 3D, and other value-added quality enhancements. Joe is also a Revit Structure Certified Professional and ATC Instructor and always looking for ways to move the bridge industry forward in this important topic.

Date: Monday, November 20, 2017 Time: 5:00 – 6:30 p.m.

Location: Baldy 200G, North Campus, University at Buffalo