Integrated Structural Process Model

Duration: 1/1/2011-5/10/2013 (Completed)
Investigators: Ryan Solnosky
Outcomes: 3 Journal Papers, 2 Conference Papers, a dissertation, 3 Presentations

Background
Within the modern era, building industry has been known to be highly fragmented amongst the different disciplines. In recent years, the industry has seen vast technological developments and is moving towards a digital environment where computer modeling is becoming the industry standard. Furthermore, the builds are becoming more and more complex and require cutting edge practices, technologies and delivery methods to successfully execute these projects. Less integration can lead to more time invested in less efficient designs.

Solution Approach
The Integrated Structural Process Model (ISPM) consists of process maps that show necessary information exchanges for structural systems when utilizing BIM and integrated practices throughout a project. The ISPM looks at the structure system in a project from the planning stage through design and into construction. It is meant to help researchers/developers/designers define what needs to be considered in software so that no variables are left out while also guiding firms on how to utilize these new methodologies into a new planning, design, and construction process.

Integrated Practice for Professionals Approach
From practitioner standpoint, the ISPM is intended to help any player, team, or discipline better comprehend the interactions between the systems. Companies not familiar with integrated means can use this document as a guide to help them work through projects that they are required to participate using this process. To understand its intent and show correlation, a detailed hierarchy of processes and exchanges were developed.

BIM Interoperability Approach
The purpose behind developing the ISPM is that current models and manuals created to address structural software interoperability limitations and a narrow scope presently. Having determined extra information by highlighting new exchanges between players will show software programmers areas where they may not have considered software compatible exchanges before.