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Are the Days of MEP Engineering Firms Numbered?

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As contractors become more involved in the design process, it becomes increasingly possible that mechanical, electrical, and plumbing (MEP) engineering firms and construction companies could join forces. Would this actually help the architecture, engineering, and construction (AEC) industry? More and more construction projects are using Revit models, increasing the need for Design Assist and integrated project delivery (IPD) projects. These methods seem to produce more accurate Revit models; however, there are always issues of responsibility and money. In this session we will discuss the future of the AEC industry as it relates to MEP engineering firms. Come prepared to discuss the future and how this could help or hurt our industry.

Discussion Topics

During this roundtable, we will discuss:

- how MEP Engineers and contractors are currently working together.
- how Revit models are currently being used by contractors today.
- the possibility of construction companies and MEP Engineering Firms joining together.
- whether this could benefit or hurt the industry.

About the Speaker

Jason Boehning is the Revit Content Manager at CADLearning, and he authors Revit courses for architectural design, MEP engineering, structural engineering, and construction. After graduating from Texas A&M University in 2009, Jason helped implement Revit into the design process at an engineering firm in Houston, Texas. The firm later promoted him to BIM Technology Manager, and he increased productivity for sustainable design and energy modeling using Revit. He also served as the 2011 president of the Houston Chapter of the U.S. International Building Performance Simulation Association. In 2012 Jason decided to make a career of teaching building professionals how to use Revit and he joined 4D Technologies in development of the company's CADLearning products, helping to create affordable training for Autodesk, Inc., software. A contributing author to several CADLearning eBooks, Jason has also spoken at Revit Technology Conference (RTC) North America and Autodesk University, and he is an Autodesk Revit Architecture Certified Professional.

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Introduction

When I first started at a small MEP consulting firm out of college, one of the first things I was taught was to only show design intent. Our goal was to provide a design that would work best for the owner, architect and ultimately the people occupying the space. I was also told that the way I modelled everything was not the way it was going to be built.

However, as we began using Revit more and got into larger projects, the contractors had another thing in mind. They wanted every detail in the model, AND they wanted it modelled exactly how they would install it. I knew the thermodynamics and could size ductwork and piping with the best of them. But I had never installed any of it on a job before. So there was always a few issues that the contractor had with my routings.

As I started to dig into this issue, I found that this was typically the case with projects all around the country. Obviously the issues varied and some issues were bigger than others, but for reasons like this, Integrated Project Delivery, or IPD, and Design Assist project delivery methods were created. However, these methods are still being developed. The integration of these methods do bring about lots of conversation before a project begins.

As I pondered these issues more and more, it lead me to some of the questions I stated in the description for this roundtable discussion. As contractors become more involved in the design process, one could see the possibility of MEP engineering firms and construction companies joining forces. Would this actually help the AEC industry? With more and more Revit models being used for construction, the need for Design Assist and IPD projects is increasing. These methods seem to produce more accurate Revit models. However, there are always issues of responsibility and money. Another big question is how would this work with design-bid-build projects?

So as you can see, there are still many questions that can be raised. But one thing that I think we can all agree on is that we are in a transition period as an industry. It is our responsibility to help our companies and our clients keep moving forward.

Discussion Questions

This session will be used as a time of discussion to help everyone determine what the best solutions are for MEP Engineering Firms moving forward. The following questions will be used to guide the discussion, if needed.

Current State and Trends

As an industry (AEC), we are in a transition. You may say it's a transition to BIM. What is the current state of MEP Engineering Firms? Are things looking better or worse?

Project Delivery Methods

What is Integrated Project Delivery, or IPD?

What is Design Assist?

Who Works for Who?

Who has more power or control during the overall project? The architect or general contractor?

How does design-bid-build projects change the workflow and responsibilities?

Revit Models

How do you see Revit models being used today? How should they be used?

Do you see a significant amount of rework or redesign when it comes from handing the design over to the contractor or sub-contractors?

What do you think is the best solution for design firms (architects and engineers) in the future? Do you think we will move to more "Design-Build" firms where everyone (architects, engineers, contractors, and maybe even sub-contractors) is not only on the same team, but a part of the same company?