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Building Information Modeling (BIM)
Part 3—Team Collaboration & Coordination
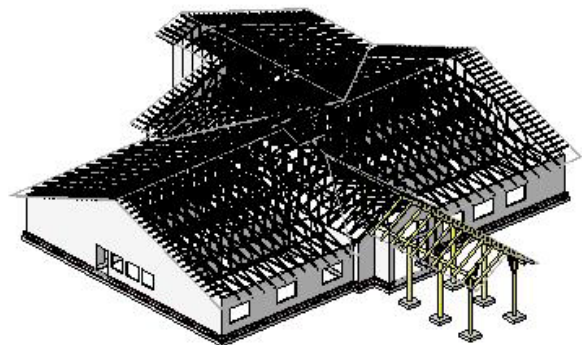
Introduction

In our previous two technical bulletins in this Building Information Modeling (BIM) series, we have defined and discussed BIM. In this final bulletin in the BIM series we will provide you with a brief overview of design team collaboration and the importance of conducting a pre-design and/or BIM meeting at the beginning of each project.

Discussion

In the pre-BIM era, information was exchanged between design team members during progress submissions and often intermittently. This information consisted of either printed drawings or electronic files of two dimensional floor and ceiling plans. The design teams would utilize this information to create their two-dimensional drawings consisting of multiple electronic files.

Now with the use of BIM, each discipline creates one model and file. Each discipline's model is combined into one central model providing a coordination mechanism between professional disciplines to aid in identifing potential constructability issues (before they become real) and potential conflicts. This can be accomplished either visually with experienced staff or with other proprietary clash detection software. Now, more than ever, each discipline is dependent on all the other disciplines to complete their given tasks and responsibilities in a timely manner. This requires continuous communication and exchange of information throughout the process. At the beginning of the project, the exchange of information may need to occur on a weekly basis as the building layout and function is finalized. Once finalized, optimally data/model exchange should occur every two to three weeks unless major changes occur.

It is imperative, before any information is exchanged among disciplines, that the design team hold a kick-off BIM collaboration meeting. All disciplines should attend this meeting to ensure everyone has an understanding of the project responsibilities, format, rules and expectations for each project.

Revit® image depicting structural elements–Speight, Marshall & Francis

Youth Center, Naval Weapons Station, Yorktown, VA

The following can be used as a basic agenda for a kick-off BIM collaboration meeting:

- Establish project goals and implementation plan
  - Owner project requirements and goals
  - Design and construction team project goals
- Project team
  - Team composition and experience
  - BIM software
- Data sharing
  - Primary responsibility for data sharing maintenance
  - Protocols for data sharing and coordination
  - Protecting intellectual property and minimizing exposure
- Project file setup and modeling Responsibilities
- Types and schedule of deliverables
- Other discussion topics should include:
  - Linking files (origin to origin)
  - Title block and sheet size
  - Drawing scales
  - Typical annotation: Font type, size, width
  - Dimensional precision
  - Copy monitor (grid lines, levels, floors and walls)
  - Linking vs importing files

Revit® image depicting architectural elements courtesy of the architect- PMA, Inc.

Youth Center, Naval Weapons Station, Yorktown, VA

Depending on each projects' unique requirements, the team may need to discuss certain topics in increased or decreased magnitude.

Summary

As you can see, Building Information Modeling (BIM) requires a high degree of teamwork and collaboration. Although this requires more effort and work by everyone, the final product can provide a more fully coordinated project, thus reducing possible construction conflicts, costs, and time for the project owner.

This technical bulletin concludes our discussions of Building Information Modeling (BIM). If you have any questions, require further information, or would like a sample of our detailed collaboration worksheet, please don't hesitate to contact our offices.

Download past issues of our Technical Bulletins here

Coming Up...

Our next Technical Bulletin will discuss steel connection design.

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