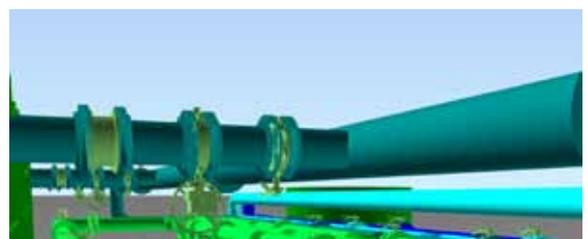
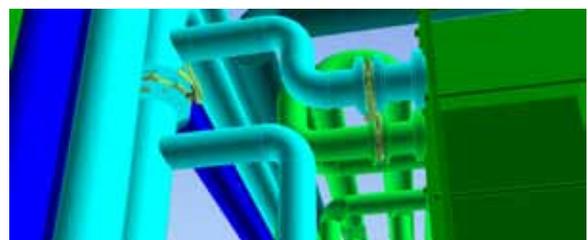
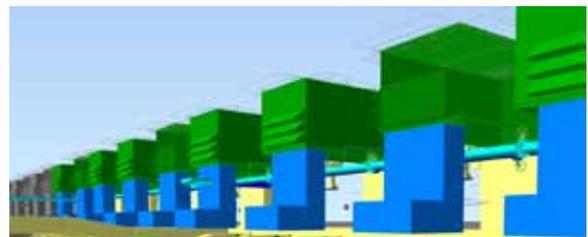


Building Information Modeling (BIM) Processes

Tim Chadwick, *Alfa Tech Consulting Enterprises*

MAY 2010



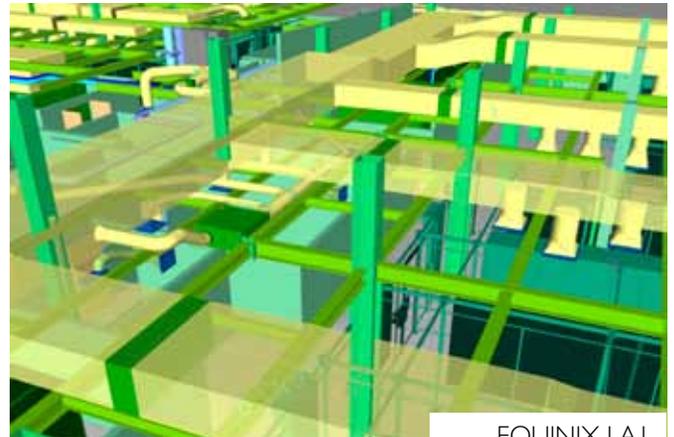
BIM Processes

Tim Chadwick,
ALFA TECH

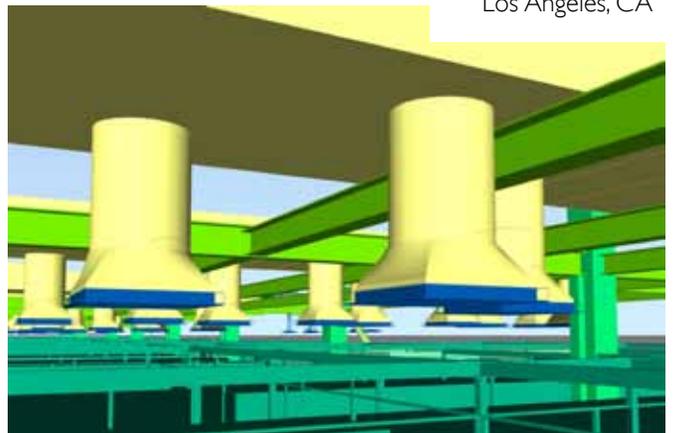
Building Information Modeling (BIM) is the process of generating and managing a building's design information. The term was popularized as a common name for "a digital representation of the building process to facilitate exchange and interoperability of coordinated and consistent information in digital format." While the definition may be complicated, here at Alfa Tech, the implementation of this new design technology is not difficult. BIM is a fully detailed (integrated) 3D model of a project which allows for detailed coordination of all design elements and for avoidance of field coordination problems in advance of construction. By inputting detailed information into each design element, the software also tracks all details of a project, including quantity counts for all the finish items, right down to the number of lights and plumbing fixtures.

It has become commonplace however that the term 'BIM' is mistaken for the software platforms such as Autocad MEP or Revit that have BIM capabilities. It is not uncommon to hear from people in the industry that their project is being done using BIM when what they really mean is the project is being done using Revit. At Alfa Tech we have also seen the confusion go the opposite direction and clients may require Revit when what they really desire is a project that utilizes BIM for 3D coordination. Whether the modeling is done in Autocad MEP (what Alfa Tech and most MEP contractors use) or Revit, the information is compatible. Furthermore, the information presented in these various platforms is rarely viewed in the platform to confirm the 3D elements do not conflict. The most common software uses for the "collision detection" is Navisworks, which Alfa Tech utilizes.

Sample BIM Projects



EQUINIX LA I,
Los Angeles, CA



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Sacramento, CA

BIM Processes

On a recent project, Alfa Tech was contracted to utilize BIM to model a Performing Arts Center project. The original design team for the project was not capable of modeling the building using BIM or even 3D techniques. Alfa Tech's design staff are trained and ready to perform BIM design efforts for any project, including the modeling of this building for architectural, structural, and MEP systems.

Alfa Tech utilized Revit to model the building architecture and structural systems and Autodesk MEP to model the mechanical, electrical, and plumbing system routing. The output of the Building System software integrates directly into Revit models for collision detection if you desire, or both models can be incorporated into Navisworks for better viewing of any conflicts.

The detailed building model, which included information on surfaces finishes, door hardware, and window sizes, allowed for the cost estimating team to generate accurate quantity counts for all materials, ensuring an accurate cost estimate.

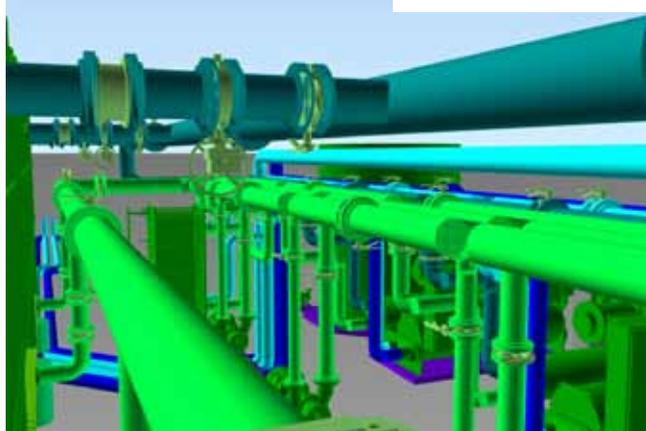
In addition, any conceptual level cost estimates would be more accurate than those using conventional design techniques. The Autocad MEP design platform is utilized by ATCE due to its unique capabilities to provide BIM as well as detailed engineering calculations and designs.

In summary, BIM is a strategy for how to assemble your building design, while Revit, Autocad MEP and Navisworks are tools to help create and troubleshoot the models. Knowing these distinct difference should help you define your latest project requirements.

Sample BIM Projects



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