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Benefits of BIM When Designing and Constructing Wall Assemblies

By Mike Murzyn

The functionality surrounding building information modeling (BIM) is changing rapidly. One of the most notable changes is the introduction of component-specific BIM add-ons for assemblies throughout a building, such as HVAC, electrical, floor, wall and ceiling systems.

Although component add-ons are still emerging in the market, it is important to remember that not all manufacturers' BIM software add-ons are the same, and users need to know some systems may be more robust than others. For example, an interior wall assembly BIM object should include accurate fire and sound test data, limiting heights information and resilient channels or wall insulation. Component-specific BIM add-ons can provide significantly more detail about certain elements of the building compared to what is captured in traditional BIM models.

Following are ways this extra layer of information benefits construction and design teams.

Accurate Estimates

Bid accuracy is essential. By accurately building interior walls using a BIM add-on, the framing contractor can confidently describe the costs required for construction and immediately anticipate areas that may require additional work to prevent clashes. This information helps the architect keep the project's budget in line and better understand the time and materials needed for a particular phase. Possessing this level of information while bidding on a project can help other stakeholders easily process the data and showcase how the interior walls integrate with other plumbing, electrical and HVAC components.

Clash Avoidance

The ability to view all of a building's integrated components helps eliminate clashes, reduce change orders and keep the project within the assigned budget. During the construction process, it is not uncommon for wall and ceiling contractors to be asked to remove or relocate partitions because of owner- or architect-initiated design changes, or to accommodate unanticipated intrusions by other trades. However, through the use of BIM and component-specific add-ons, building professionals can virtually identify clashes and design the necessary changes before the contractor puts labor on the job.

Knowledge Sharing

One of the greatest benefits of BIM is that it allows for greater collaboration among members of the design and construction teams. A BIM add-on for interior framing lets building professionals look at a BIM object or wall type and quickly understand the wall's construction, fire and sound requirements, limiting heights and design. This helps the project team answer questions about structural integrity and other building elements. Sharing this level of detail could increase efficiencies, reduce confusion and prevent clashes.

Facility Management

Component-specific BIM files can link data from manufacturers into larger, fully integrated BIM files, which makes it easier for facility managers to identify vendors and products, make replacements and maintain the facility. Having access to a detailed BIM file can significantly reduce

the amount of time necessary to track down important information as the structure ages or undergoes renovations.

Savings

The more efficient contractors can be during the early phases of the construction process, the less time and money is spent on change orders and labor. Additionally, using BIM from the beginning can lead to more accurate estimates and lists of material needs. It is easier to budget and estimate a project from a comprehensive model that includes all of the required components.

What to Look For in BIM Add-Ons

A well-built BIM add-on encompasses all the materials and information needed to develop well-constructed and effective wall solutions. A few leading interior framing manufacturers offer AutoDesk Revit BIM add-ons that allow users to seamlessly integrate a significant amount of wall data into new or existing BIM models.

When considering different wall-type BIM add-ons, ensure the program includes the following:

- detailed wall assembly data with product information;
- type and number of layers of wall sheathing;
- overall wall width, with the ability to add resilient channel or wall insulation;
- LEED details;
- product submittal sheet links;
- fire test data, including UL test number;
- sound test data and sound transmission class performance rating; and
- limiting height tables based on stud spacing, deflection and interior lateral load.

Using an interior wall-type BIM add-on effectively eliminates the need to create temporary wall libraries and makes it easier to implement changes and updates. This can save time during the design phase, predict clashes, reduce change orders, provide more accurate material estimates and possibly increase the efficiency of installation.

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