ASSEMBLE SYSTEMS

WORKFLOW GUIDE

Level of Development Tracking

Understanding the Benefits for BIM Project Collaboration

www.assemblesystems.com | 855.646.4868 | info@assemblesystems.com

assemble

assemble

LEVEL OF DEVELOPMENT

In building design, level of development (LOD) equates to the reliability of model information. When tied to the building information model (BIM), level of development specifications provide even more value. Model authors specify LOD for given systems, assemblies, and components to indicate the degree to which the element's geometry and attached information have been thought through, which in turn allows contractors and other downstream users to clearly understand the usability and the limitations of models they receive. In other words, as the specified level of development increases, so too can one's confidence in the model's information for decision making.

These valuable benefits of LOD specifications and their role in supporting BIM project collaboration are driving increased use across AEC and especially by contractors, who have so much riding on the accurate understanding of the state of a BIM model and their use of that information. In fact, contractors managing today's BIM-based building projects often are requiring that each stage of design meet a specific LOD so the contractor can begin project planning and execution as early as possible, knowing which information is or isn't complete at any given point.

Take, for example, the process of materials quantification. A structural engineer may place columns in a model, but that information is not useful to the contractor until calculations have been completed to size them. The tonnage of the columns at an early level of development will be wrong. Conversely, when the data for those same columns progresses to a higher LOD standard, the contractor knows he or she can rely on the specified tonnage to accurately carry out quantification.

Project owners, too, are demanding specific model-based deliverables, so contractors must measure and demonstrate that they are meeting these requirements, including the level of information provided in the final model.

AEC industry organizations have recognized the value of LOD specifications and are developing standards to optimize its use. For example:

1. The American Institute of Architects has recognized the growing trend to include levels of expected development in contract documents and has outlined a standard in its Building Information Modeling Protocol guide.

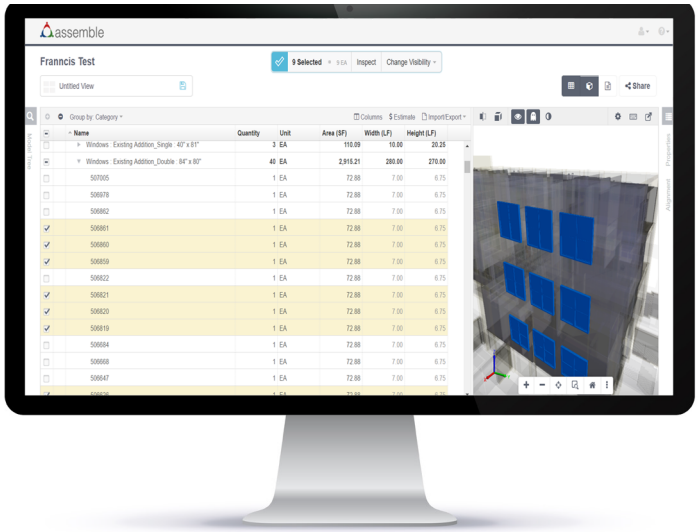
2. BIMForum produced the Level of Development (LOD) Specification reference in 2013 and updates it annually based on industry input. The document defines a scale for the state of development of elements within a BIM to help ensure a common standard for use across the industry and facilitate effective communication of BIM milestones and deliverables.

assemble

Traditionally, when LOD is part of a building project, a specification or matrix is laid out within the BIM execution plan and not tied directly to the model. This makes it very difficult to understand which components of the model relate to which values in the matrix. Contractors, as a result, don't fully utilize the information and miss out on the benefits of LOD specifications.

On the other hand, pushing LOD information into the model, where it can be tied to the relevant components, makes it easy for contractors to assess the usability of model data and be able to act on it quickly.

A BETTER WAY FOR CONTRACTORS



Contractors today have access to technology that does exactly that, meaning they can easily tap into the potential value of BIM-based LOD specifications to understand the status of model components at any given time; generate precise preconstruction estimates based only on the elements (and quantities) in the model that have reached a specified level of development; and avoid the costly and time-consuming mistakes that occur when they make decisions based on incomplete or incorrect information.

Assemble Systems has developed an affordable solution that helps contractors tackle the traditional challenges of LOD tracking. With Assemble, you can surface the information associated with model components that have reached the specified level of development while excluding elements of the model (and their associated quantities) that have not. You're able to base project planning, decisions, and spending solely on data that meets your LOD criteria. Assemble's cloud-based platform means project team members can access information and generate reports any time, regardless of location, from any Internet-connected device.

Specifically, Assemble allows you to:

- Define the required LOD and associate it with model components based on a specified assembly code, then manage and adjust the data as needed in Assemble or in a Microsoft Excel file
- Filter by LOD to show current LOD versus required
- Substitute or plug 2D takeoff numbers in your project budget with quantities and/or cost derived from model as it progresses and meets required LOD for different elements and/or divisions
- Validate numbers and manage quantities used for budgeting purposes.

Assemble's approach is highly beneficial to preconstruction and estimating groups, who can use model quantities during the design development stage to produce or update project budgets and quantities depending on each specific level of development. Assemble highlights issues early, typically even before construction begins, to help avoid oversights and mistakes that wreak havoc on project budgets.

Construction managers on design-build and construction management at risk (CM@R) projects can use Assemble to monitor the design in progress and provide feedback to the design team regarding budget implications and constructability. At the conclusion of projects in which the owner requires specific level of development in the delivered model, Assemble can help demonstrate LOD compliance.

assemble

FOUNDATION FOR SUCCESS

The benefits of level of development specifications are clear for contractors; however, those benefits become diluted or even lost entirely when project managers use outdated LOD procedures that must be manually monitored and updated. Fortunately, Assemble Systems has developed an approach that ties LOD specifications directly to the BIM model, allowing contractors to clearly and easily understand the usability and limitations of model information. Tapping into this data means contractors can make informed decisions that help streamline construction timelines and budgets and improve overall project quality.

Assemble Systems with offices in Boston and Houston provides construction data management solutions. Its core offering, Assemble Insight is a cloud based platform allowing AEC firms to leverage 3D data for increased project insight, advanced project collaboration and data driven decision making. Assemble is used today to manage over 8,000 projects.

WWW.ASSEMBLESYSTEMS.COM