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## Benefits of Including Wall Assembly Data with BIM Files

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By Mike Murzyn, technical product and marketing manager, ClarkDietrich™ Building Systems

By now, most contractors and building professionals are familiar with Building Information Modeling (BIM) and the advantages it brings to managing the design and construction process. However, until recently, there's been little information about incorporating interior framing into BIM models.

ClarkDietrich Wall Creator

Wall Type: 09.22.16 - NonStructural Metal Stud Framing

Build for Height | Build for STC Rating | Build for UL / Fire Rating

Web Depth: 3-5/8" | Stud Spacing: 24" o.c. | Deflection: L / 240 | Lateral Load: 5 psf

Wallboard Material Type: 5/8" Type X Gypsum Wallboard

Layers of Wallboard: Int. Side: (2) Layer - Ext. Side: (2) Layer

Limiting Height Chart Design: Composite Design (Based on 1 layer each side)

Wall Info

Family: System Family: Basic Wall

Wall Type Name: Interior - 6-1/8" Partition (U419 2hr - STC 54) ClarkDietrich 3-5/8" ProSTUD 25 @ 24" o.c. w/Batt

Description: Interior - 6-7/8" (U419 1hr - STC 48) ClarkDietrich 3-5/8" ProSTUD 25 @ 24" o.c. w/ 2&2 Layers 5/8" Type X w/Batt

Type Comments: Interior - 6-1/8" Partition (U419 2hr - STC 54)

Type Mark:

Limiting Heights

Select Wall Height Below to Build Wall System

Web	Stud Member	Spacing	Lateral Load	L / 120	L / 40	L / 360
3-5/8"	ProSTUD 25	12" o.c.	5 psf	21'-0"	16'-8"	14'-7"
3-5/8"	ProSTUD 25	16" o.c.	5 psf	19'-1"	15'-2"	13'-3"
3-5/8"	ProSTUD 25	24" o.c.	5 psf	15'-11" f	13'-3"	11'-7"
3-5/8"	ProSTUD 20	12" o.c.	5 psf	23'-9"	18'-11"	16'-6"
3-5/8"	ProSTUD 20	16" o.c.	5 psf	21'-7"	17'-2"	15'-0"
3-5/8"	ProSTUD 20	24" o.c.	5 psf	18'-11" f	15'-0"	13'-1"

f. Flexural stress controls s. Shear/End reaction controls \*. Higher heights can be achieved by using end bearing stiffeners

UL / Fire Rating for Selected System: UL U419 2 Hour

STC Rating for Selected System: w/ batt insulation 54 STC

Add UL Info to Wall Type Properties  Add STC Info to Wall Type Properties

Build Wall Type

A primary advantage to BIM is its ability to bring together all of a building's components into a singular, searchable database. This allows professionals involved with the design and construction, maintenance and operation of a building to easily make decisions, changes and reduce the time it takes to track down building information as the structure ages. A comprehensive BIM model shows nearly every detail about the construction of a building, including the interior wall system, plumbing, HVAC system, flooring, energy usage, manufacturers' names and square footage. When changes are made and entered into the BIM software, the file can describe how those changes impact other components within the building. The ability to view the complete integration of all of a building's components helps eliminate clashes, reduce change orders and keep the project within the assigned budget. Most often, BIM models have concentrated on the efficiency of a building and the lifecycle costs of building materials, without including information about the interior framing.

During the construction process, it is not uncommon for walls and ceilings contractors to be asked to remove or relocate partitions. Partition removal and relocation occur due to design changes by the owner or architect, or to accommodate unanticipated intrusions by other trades such as mechanical, electrical or plumbing. However, through the use of BIM and component-specific add-ons, building professionals can identify these clashes “virtually” and design the necessary changes before the contractor puts labor on the job.

With this in mind, ClarkDietrich™ Building Systems recently introduced BIM Wall Creator™, a comprehensive BIM system tailored specifically for interior wall creation and steel framing. Wall Creator provides building professionals with detailed wall assembly data that includes product information, type of sheathing, overall wall width, UL codes, STC ratings, wall height design, LEED® information and product SubmittalPro/data sheet links. The program is a free add-on to AutoDesk® Revit®, and allows users to seamlessly integrate wall types into existing BIM models.

ClarkDietrich chose to develop a steel-framing specific BIM add-on as a way to help architects and contractors solve complex questions about the many variables associated with designing and installing wall assemblies. For example, it is not uncommon for change orders to be placed for wall assemblies that are in contradiction with a previously specified combination of limiting heights, fire and sound ratings. These common mistakes easily add additional costs to the project. BIM Wall Creator was designed to help building professionals accurately specify products that meet the STC sound ratings, UL fire ratings and LEED guidelines needed for their project, while still meeting the limiting height requirements.

When including ClarkDietrich BIM Wall Creator into a BIM model, users will be asked common questions such as:

1. What type of wall is being built? (According to height, STC and UL rating, etc.)
2. How wide is the wall?
3. Is insulation or resilient channel required?
4. What type and how many layers of wall sheathing is needed?

Once answered, the request processes through the program’s three combined systems, which include limiting height tables, UL and STC systems. When a wall type is created, it displays the actual materials and assembly needed for correct installation. Each time the profile is changed, all the corresponding parts will update as well. This amount of detail allows architects or contractors to see exactly how the wall needs to be constructed.

The advantages of including a wall creator addition to a BIM model, are that it can eliminate individual, temporary libraries of different wall types and can quickly adjust to changes. Building professionals no longer need to keep a separate file of wall assemblies that need to be updated piece-by-piece when changes happen. BIM Wall Creator encompasses all the materials and information needed to develop well constructed and effective wall solutions.

By including such a large amount of detail within the BIM model, building professionals can save a significant amount of time locating and identifying systems to meet the requirements of the change order, even before a project is fully underway. For example, framing contractors using the ClarkDietrich BIM Wall Creator can meet with architects to visually discuss the goals of the project, and confirm that what is on the screen aligns with the architect’s vision. This ability to have open, productive conversations where changes can take place in real time, helps the building industry as a whole streamline communication and ease the building process.

BIM models help construction professionals, facility managers and building owners evaluate a building’s envelope, and with the addition of a wall-framing option, users can construct a more complete picture of the building’s overall efficiency and lifecycle.

### **ClarkDietrich(TM) Introduces Detailed Interior Wall Creation, Steel Framing BIM System**

ClarkDietrich’s BIM Wall Creator(TM)Offers Robust Database to Enhance Collaboration and Create Information-Rich Wall Types

ClarkDietrich(TM) Building Systems recently introduced the construction industry's most comprehensive Building Information Modeling (BIM) system tailored specifically for interior wall creation and steel framing. ClarkDietrich BIM Wall Creator(TM) develops information-rich wall types, with specific details on UL, STC and limiting heights. Professionals using AutoDesk(R) Revit(R) can add the new ClarkDietrich BIM Wall Creator by visiting [www.clarkdietrich.com/BIM](http://www.clarkdietrich.com/BIM) and downloading the free add-on software.

"The ClarkDietrich BIM Wall Creator is the first design tool that intelligently incorporates detailed information on wall elements and design properties, such as UL assemblies based on fire rating requirements, STC sound ratings and limiting height design," said Mike Murzyn, Technical Product and Marketing Manager, ClarkDietrich. "This type of interactive platform, in which details have been linked together, is truly unparalleled and gives architects and contractors everything needed to successfully design even the most challenging wall assemblies."

The system's intuitive design and integrated data on wall assemblies allows users to seamlessly search and update entire wall designs based on specific input parameters. The wall type is created to reflect the proper assembly of materials necessary for wall construction, including: manufacturer and product information, types of sheathing, overall wall width, UL and STC data, wall height design, LEED(R) information and product SubmittalPro/data sheet links.

"ClarkDietrich recognized a need among architects and contractors for BIM systems to include more detail on wall assemblies, in order to automate and streamline the building process. The BIM Wall Creator opens the door for architects to pass models onto contractors with the assurance all materials will work together within the overall building design," said Robert Warr, PE, Director of ClarkDietrich Engineering Services.

In addition to the new BIM system offering, ClarkDietrich Engineering Services (CDES) helps support building projects with customized services for detailed wall framing profiles.

"Over the past few months, our engineering team has developed more than one million square feet of BIM coordinated models for our clients," added Warr. "Our team can create a full engineering package that includes calculations and shop drawings directly from the BIM model in order to complete required documentation and design. We offer the industry's most knowledgeable, trusted team of experts to support BIM questions and projects."

CDES offers BIM coordination and engineering design services for cold-formed steel framing to architects, general contractors and subcontractors. BIM coordination includes assisting with clash avoidance, collaborating with other trades, creating 3D visuals for cold-formed steel framing, providing detailed documentation/shop drawings that include wall elevations, sections and plan views, and other customized BIM services. To contact CDES, email [BIMinfo@clarkdietrich.com](mailto:BIMinfo@clarkdietrich.com).

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