Revit LT or Revit? That is the question

Architecture

By Jeff Hanson

While not quite as existential as Hamlet's soliloquy on the nature of life and death, we do see this question asked by customers: Revit LT vs Revit? They are trying to figure out which version of Autodesk Revit software is going to work best for them and understand the real differences between them. In this article, I hope to shed a little light on the differences between Revit LT vs Revit so you can decide for yourself.

My knowledge of Revit LT is based on my work as a researcher and designer on Revit LT. While "full" Revit is BIM (building information modeling) software designed for a multidiscipline, collaborative design process and includes features for architectural design, MEP and structural engineering, and construction, Revit LT was derived from Revit software as a stepping stone for smaller architectural design firms looking to move towards a BIM work flow. The persona we designed for was an individual Architect designing and developing a small-scale project who needed to create BIM deliverables but who did not need the full collaboration and analysis capabilities of Revit. Of course, as Revit LT has come into the market there are plenty of other situations where Revit LT is the right fit.

Let's look at the Revit features *not* included in Revit LT and consider what that might mean

to you as a designer. A detailed side-by-side comparison of Revit and Revit LT features, is here.

Features *not* included in Revit LT

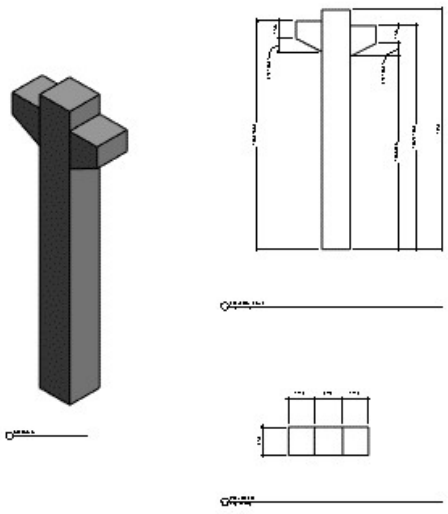
Deployment and Installation

Network deployment – This feature lets you easily install software on many computers at one time, or to install the software unattended. If you have a small number of computers to install to, this probably does not matter too much to you. If you have many installs to do, network deployment will be more important.

Construction Modeling

Parts – Parts let you break up a big thing into smaller sections to coordinate how it is built. For example consider a floor slab of a building. In the model, the slab is created as one monolithic element, but perhaps the floor is big enough to be created in multiple concrete pours. The Parts feature lets you break up that monolithic element into those smaller elements to help reflect the construction process.

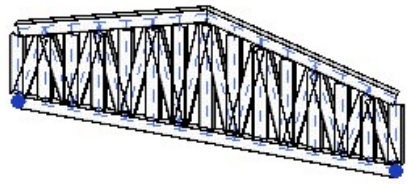
Assemblies – Assemblies are often prefabricated and delivered to a site, and most users want to track the different elements delivered. Assemblies also assist in creating shop drawings for these pre-built elements. For example, this column and the shoulders might be created as an assembly, and then the shop drawings for the column are generated from the assembly.



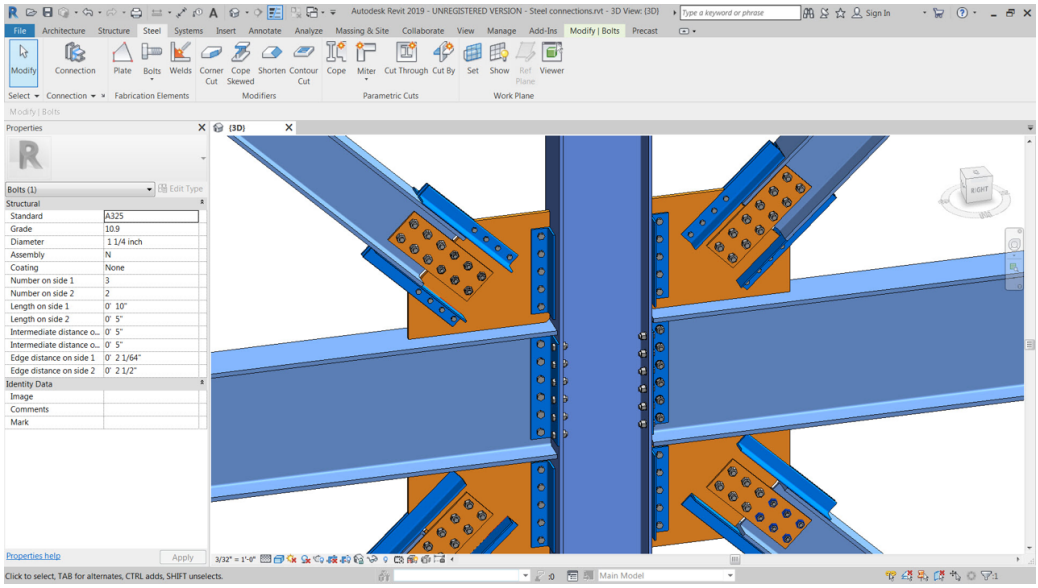
Structural Modeling

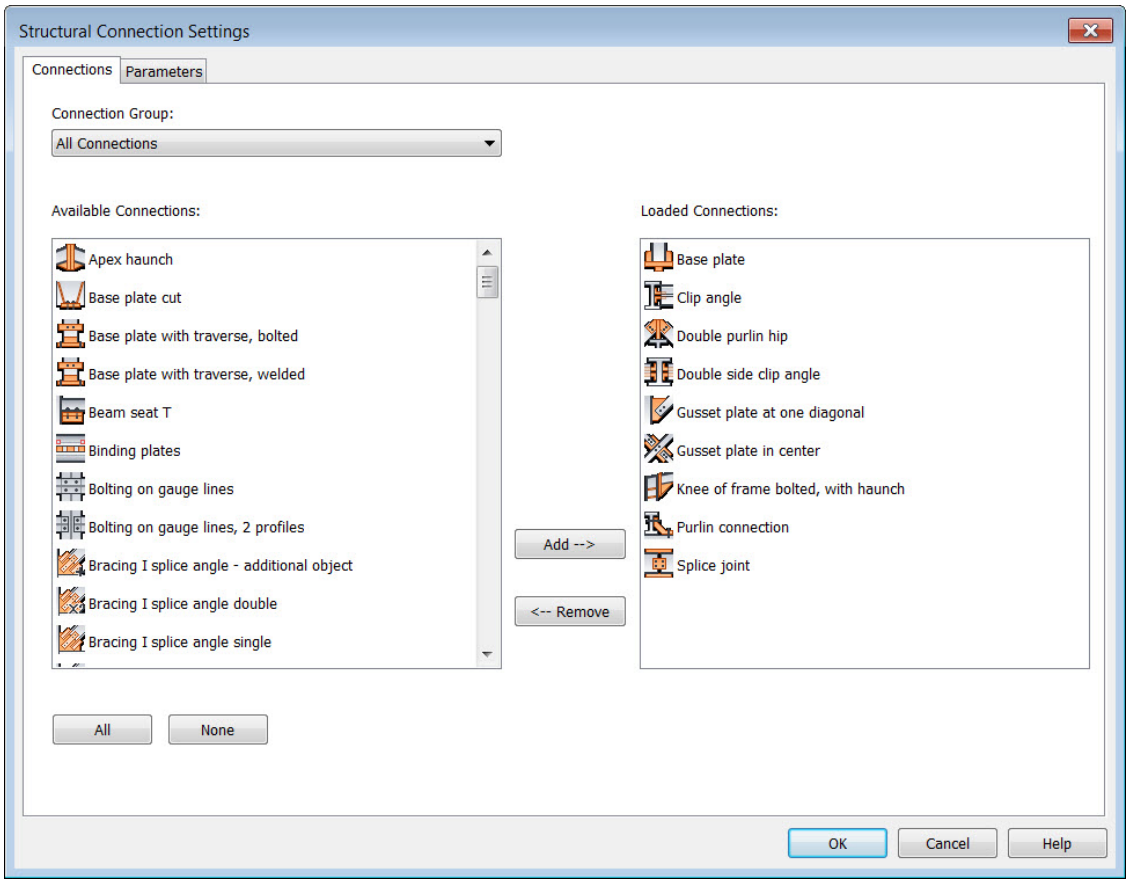
Slanted columns – This is exactly what it sounds like: a column element that is placed in a non-vertical position. In Revit LT, you can model a slanted element like this, but it is not recognized as a column for scheduling and other purposes. If you connect it to other structural elements some functionality is different.

Trusses – In Revit, trusses are a special kind of family made up of smaller structural elements. You can easily change the size and shape of a truss, and its component pieces adapt accordingly. In Revit LT vs Revit, you can make an element that looks like a truss, but it does not have the quick-change ability of a true truss element.



Steel connections for Revit – When detailing steel, advanced steel connections let you model the connection in 3D. Without this functionality, doing a detailed model of a steel connection is a manual process.





Reinforcement, rebar modeling –In Revit, you can model concrete reinforcement in 3D, understanding every shape and position of a bar in the concrete. With Revit LT vs Revit, you must represent rebar with lines and place each one manually.

MEP Modeling

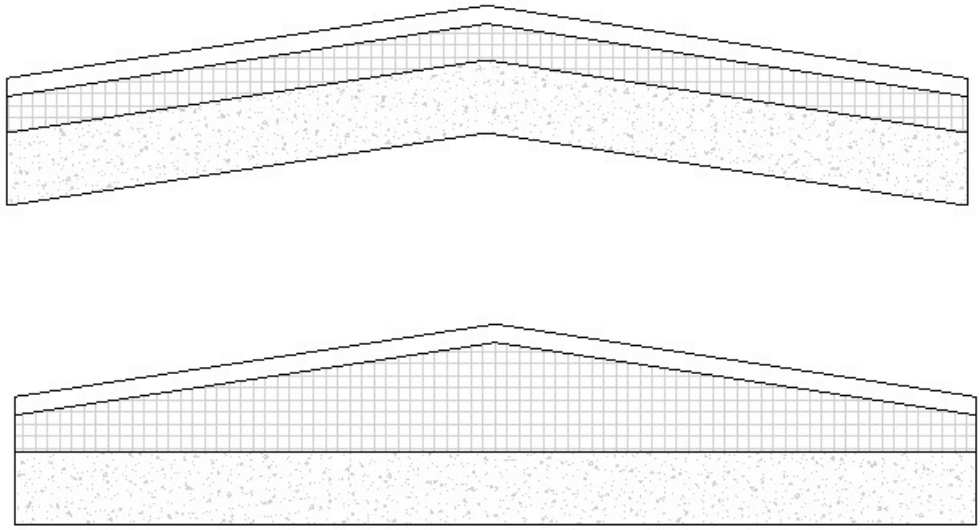
While Revit has MEP features for HVAC duct systems, mechanical equipment, piping & piping systems, fabrication parts, and electrical and lighting systems, there are no MEP features in Revit LT, so for this section I will speak a little more generally. The MEP features of Revit are used to build a network of HVAC, plumbing and electrical systems. While you cannot use Revit LT to understand relationships between these systems, you can use Revit LT to place elements at the ends of the systems, such as a sink, a vent, or a lighting fixture. However with Revit LT, you cannot connect pipes to the sink, ducts to the vent, or wires to the light.

Fabrication parts – This MEP modeling feature is not systems-related. Fabrication Parts is a Revit tool that allows the designer to convert or lay out a system using real-world parts. These parts can then be used to directly drive machines to fabricate all the components of the system.

Advanced Modeling

In-place modeling – In Revit LT, you can make in-place models, but only for the Wall category. In-place models allow you to create elements in context with other things in the project. They come in handy to model conditions that are difficult geometrically or not standard conditions. Think of them as a piece of clay you can mold to whatever shape is needed.

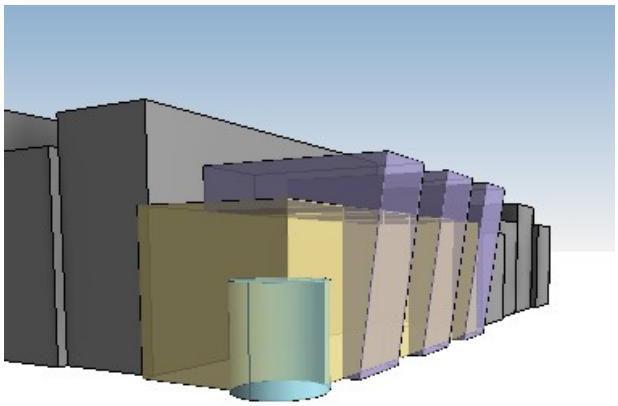
Shape-edited floors and roofs – Shape-editing lets you take a flat slab and warp it in any way you like by adjusting the elevation of points on the slab. For example, a flat roof with a center roof drain could be modeled with a shape-edited slab. To do this in Revit LT, you need to model a few slabs separately, and then slope each one to the drain, or just model the slab flat and illustrate the slope with some line work.



Global parameters – These parameters let you define relationships within a model and have one location to control a value. For example, if all the doors in a model need to be X distance away from a corner of the room you can use a global parameter to maintain this distance through all design changes.

Conceptual massing and adaptive components – Conceptual massing tools let you think about the massing of a building before you consider walls, windows, and doors, providing a rough way of thinking about the building at very early stages. The masses can then be converted to building elements. Conceptual massing also allows you to create free-form shapes.

Adaptive components work in tandem with free-form shapes. They let you build elements that can flex and change as you place them to adapt to a more free-form condition.



Presentation and Visualization

In-product rendering – With Revit LT vs Revit, you cannot do rendering locally on your own computer. All rendering must be done outside Revit LT. You can send model views to the Autodesk online rendering service, or you can render images using another application.

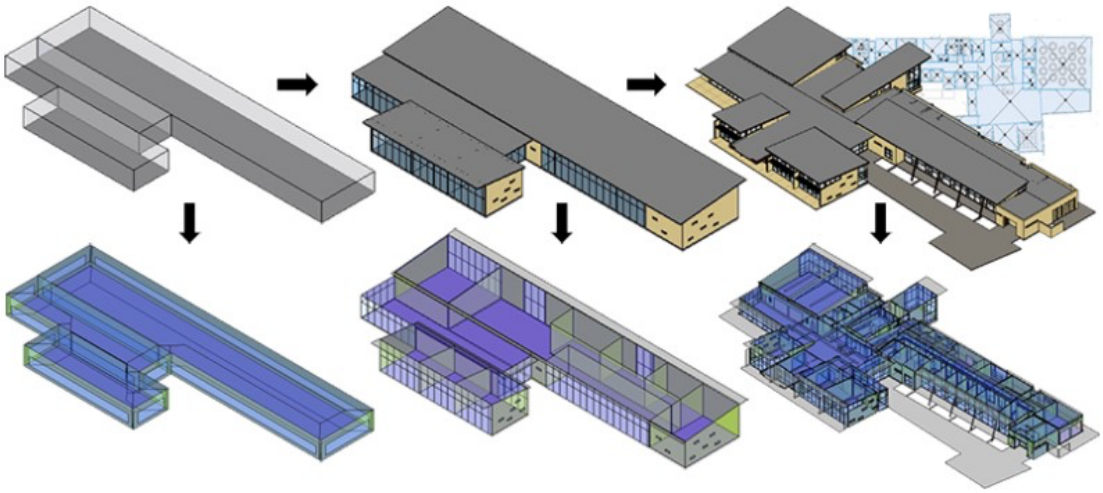
Decals – Decals are part of the rendering operation in Revit. You can use them to simulate a TV screen, a painting on a wall, or a sign on a building. Because Revit LT does not support the ability to render in product, you also cannot use the Decal function.

Ray trace (in-canvas rendering) – The Ray Trace visual style lets you quickly render a scene in-canvas as you are working and manipulating the model. The longer you wait, the higher the quality of rendering. Again, without local rendering, Revit LT is not able to use

this visual style.

Analysis

While Revit has tools for area analysis, analytical models, structural loads and boundary conditions, heating and cooling loads, massing studies, and solar studies, Revit LT does not have these structural and MEP analysis tools. Revit LT does have tools to do solar/shade studies on a model, but they must be done one view at a time. In Revit, the solar and shade studies can be animated and give a more comprehensive understanding of the building as it relates to solar and shade conditions.



Documentation

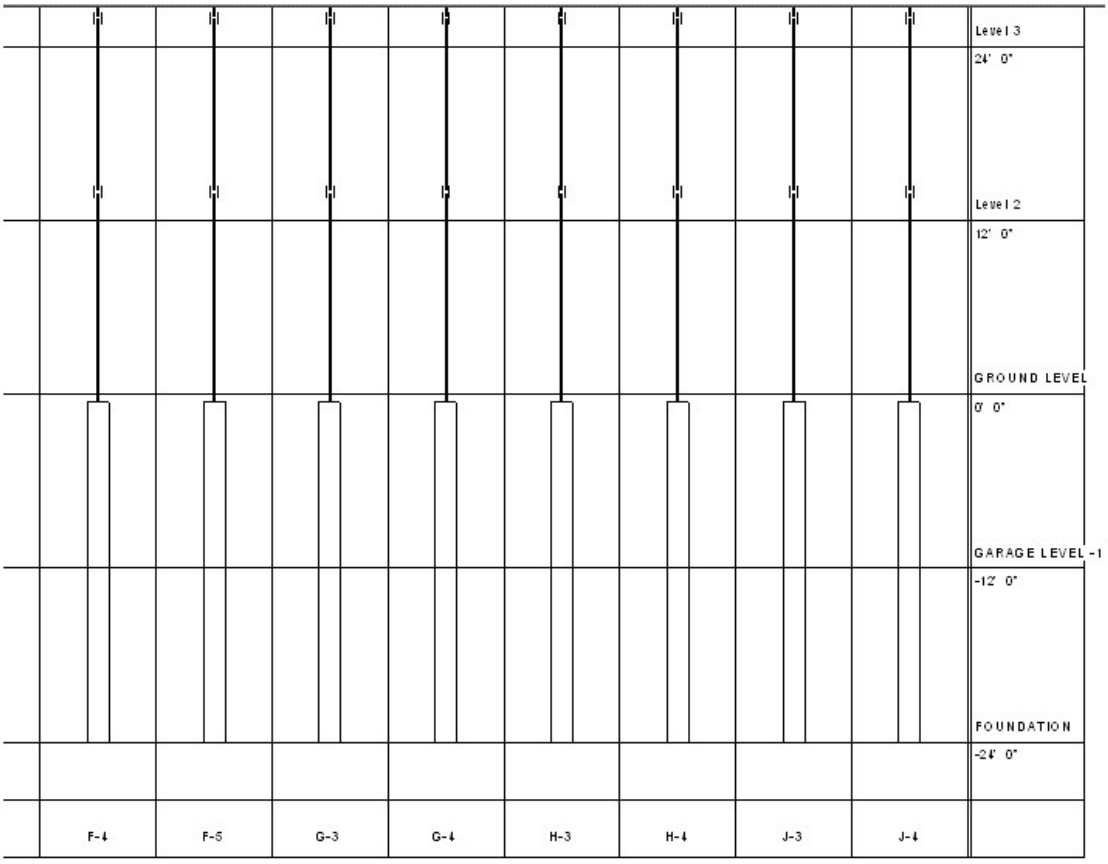
Embedded schedules – An embedded schedule creates a schedule of specific kinds of elements that are typically composed of smaller elements. Embedded schedules will combine these into one so they are understood together. For example, you might make a room schedule for properties associated with a room, but also want to include a list of furniture (and its properties) in each room. An embedded schedule lets you do this in one schedule. In Revit LT, you must create two separate schedules: one for rooms, and one for furniture.

Panel schedules, duct and pipe pressure loss reports – These features are specific to MEP capabilities. In Revit LT, you can't make the elements to drive a panel schedule nor to support pressure loss reports.

View filters – View filters allow you to specify certain properties and control the visibility of elements based on these properties. For example, suppose you want all fire-rated walls in the model to appear red. A view filter can quickly find all walls meeting this requirement and color them red in the view. In fact, the filter will work even when a new fire-rated wall is

added; it is automatically colored red because it meets the requirements of the filter. Without view filters in Revit LT, this is a manual process.

Graphical column schedules – These schedules are created to show each column in a model, listing the size, column type, and location of each column. They are primarily used by structural designers, and they are not included in Revit LT.



Collaboration

Interference check, Copy/Monitor – Both of these features are used when two models are linked together. You can check the models against each other for places where geometry overlaps, indicating a conflict (interference check). When you use the Copy/Monitor feature, you create duplicates of elements from a linked model. Then you can monitor changes to the elements to make sure the models stay in sync. For example, you might copy/monitor columns or structural walls to keep in sync with a structural engineer's designs.

Multi-user access to projects (worksharing) – Worksharing allows multiple people to work on a single model in Revit simultaneously. Everyone works on the same model, and conflicts are managed by the software. Without worksharing capability in Revit LT, only one person can work on a model at one time. If you have large projects with multiple team members, you must decide how to divide the work into multiple model files and then manually combine and coordinate them. This can introduce errors in the documentation

process. Therefore, Revit is better suited for bigger projects requiring multiple team members.

Shared coordinates – When linking projects together in Revit, you can use a shared coordinate system so they automatically line up to each other correctly. Revit LT does not offer a shared coordinate system, so linked models must be aligned manually.

Additional collaboration tools.—Teams using Revit can extend Revit worksharing capabilities to geographically distributed teams with cloud-based BIM 360 platform and BIM 360 Design and **Revit Server**

Linking and Working with Other Files

Copy/Paste elements from links – Revit LT does not support the ability to copy and paste elements from links. In Revit LT, links are intended for reference only.

Customize visibility of linked models – In Revit, you can change the visibility and graphics of categories and elements in a linked model as needed. In Revit LT, you don't have this degree of control over the appearance of elements of links in your model.

Links/imports in some formats, point clouds – Links and imports to Revit LT are more restricted than to Revit. File types not allowed in Revit LT vs Revit are: SAT (generic solids model), RCP (point clouds from Autodesk ReCap), and 3DM (Rhino® models).

In both Revit and Revit LT, you can import DWG, DXF, IFC, DGN, and SketchUp files.

Exports

As with imports, Revit LT does not export as many file types as Revit. Files you can't export from Revit LT vs Revit are: SAT (generic solids model), ADSK (used to transfer site information to the civil engineer), gbXML (energy analysis model), ODBC (database of all elements in the model), and family types (text files used to help manage families).

In both Revit and Revit LT, you can export DWG, DXF, DGN, DWF, DWFx, and IFC files.

Application Programming Interface

As Revit LT has little capability to create customizations, you cannot use add-on applications created by yourself or a third party with Revit LT. Revit has capabilities for application programming interface (API) SDK, third party add-ins, Dynamo for Revit and also offers the ability to create macros to automate tasks embedded into a model file which can't be done in Revit LT.

Conclusion

I hope you are now more informed about which might be the best option for you: Revit vs Revit LT. Revit LT was designed for the smaller architectural design firm working on small scale projects with a single designer on a project. For that reason, the collaboration tools letting more than one person to work on a single model are not part of Revit LT. The absence of these tools is the largest difference between Revit and Revit LT. If you typically work in teams on a project, Revit is a better choice.

As a long-time user of Revit, when I work in Revit LT the tools I miss the most are view filters and conceptual modeling. Don't get me wrong: Revit LT is plenty capable without these tools, but they can make life easier if you have them. In the end, you want to make the choice that makes the most sense for your situation.

Revit or Revit LT? That is the question. I hope you are now better informed to make your decision.