ES10528

Tips and Tricks to Enhance Productivity in Revit

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Martin/Martin

Learning Objectives
- Discover at least one mind-blowing Revit tip
- Learn how to use at least one life-changing Revit trick
- Learn how to enhance Revit productivity
- Learn how to build on everyday Revit expertise

Description
This session will be a compilation of various Revit software tips and tricks that will help increase speed, productivity, and overall satisfaction in Revit software. Included in the tips and tricks will be everything from quick keystrokes, shortcuts, hidden functionality, best practices, random ideas, and more. While this session will be formatted as a lecture, we will encourage and welcome audience participation. Often the best takeaway from a conference is that single, unexpected, mind-blowing tip that may or may not have even been part of the intended curriculum in a given session. This session aims to gather a bunch of such tips into one fun lecture.

Speaker
Desirée (Dezi) Mackey has been in the architecture, engineering, and construction industry for more than 15 years. After obtaining her bachelor’s and master’s degrees from the University of California, Davis, and the Massachusetts Institute of Technology, she perpetuated her nerdy tendencies with Revit software. She started her career in California with a construction company, she continued with a structural engineering firm, and now she is a practicing structural engineer and Building Information Modeling (BIM) manager at Martin/Martin in Denver, Colorado. Dezi is a regular speaker at many conferences. She is the co-founder of the Rocky Mountain Building Information Society, the chair of the Structural Engineers Association of Colorado's BIM Committee, a member of the RTC North America Committee, and she has served as an Autodesk User Group International (AUGI) board member, treasurer, and vice president. Finally, as if that’s not enough Revit in her life, she’s married to “The Revit Geek” and acts as a partner in his BIM consulting firm, BD Mackey Consulting.

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Introduction

Oftentimes the best part of a class at Autodesk University is that one, sometimes random, tip that the speaker taught, or perhaps it was not even a presented tip, but rather something the speaker did during a demonstration. These little golden nuggets, if you will, are always the best “takeaways” from any session. This session aims to present many little golden nuggets.

Yay! Elevations in floor and foundations tags! But wait...

In the 2015 and 2016 releases of Revit functionality was added to include elevation values in foundation and floor tags. This is nothing short of glorious. Structural engineers especially are familiar with the struggle with various methods and/or work-arounds to show elevation information in tags, so this added functionality was welcomed with open arms. However, when using this new feature, there is a catch, or at least something to be cautious of.

The elevation values are based on the project internal coordinates, which initially match the project coordinates (project base point). This means that if the project internal coordinates do not match the desired elevation values for the project, the values will be wrong. This mismatch can occur for a number of reasons – for example the project base point was moved unclipped, or the displayed elevations are the elevations based on the survey point (shared coordinates).
To avoid this mismatch follow the following “rules”:

- Use project coordinates for all displayed elevations – levels, spot elevations, etc.
- Place the project base point such that the displayed elevations are as desired.
- NEVER move the project base point unclipped.
- Communicate this issue with clients/other project participants and coordinate a solution if a problem arises. This may mean that shared coordinates need to be utilized more often, or that project base points may not match between disciplines.

**Shaft Openings**

There are many ways to model openings, but Shaft Openings are a useful, perhaps lesser-known tool. Shaft openings can be used to cut through many elements/floors, or just one, and a symbolic line can be added into the sketch such that the opening “X” will be visible in all live views without having to be redrawn.
Copy and Paste Aligned

No one is a stranger to copy and pasting various elements, for various reasons. Copying to the clipboard and then utilizing one of the many paste aligned options is a great way to copy and paste. This can be used to copy elements between views, between files, from a linked file, between design options, from one level to another/many, and more.

Numerical Value Shortcuts

It is relatively well known that when using commands like copy and move, among many others, instead of moving the cursor until the desired value is achieved, an efficient way to go is to type a numerical value. However, nothing is more time consuming than typing out the tick marks for feet and inches. Instead of typing feet and inch marks, try spaces, or a dash, or even a formula (let Revit do the math for you!). All of the following images show substitutions/shortcuts for the feet and inches marks.
eTransmit

eTransmit is not a new tool, but it has been recently improved. eTransmit is an add-in that allows will save off a detached copy of a model. This model can be for archiving, milestones, for sharing out-of-house, etc. In addition to detaching, eTransmit allows a number of other purging, and clean-up options.

**FIGURE 5:** eTRANSMIT
Bulleted and Numbered Lists

Everyone who uses Revit has been requesting a better text editor for years, and while it is still not great, there are some text features that have made it better. One option now available, as of a few releases ago, are bulleted and numbered lists. The lists don’t work like they do in other programs. For example, there are not sub-bullets, skipping a line isn’t possible, etc. but having the lists available is progress.

*Figure 6: Bulleted and Numbered Lists*
Designer Notes/Internal Notes

Some sort of text notes used for internal purposes is a relatively common practice. These could be used for designer notes on typical details that come from a container file, or perhaps internal communication. Having a different text type for these sorts of notes is also probably pretty common. What may not be as common, however, is to have a second “invisible” text type such that the notes can be turned off, instead of deleted, for printing. The “invisible” text type should be very small and very light grey. When it is time to print simply do a “select all instances” of the text and swap the type, then print, and switch the type back.

Comments/Working/MarkUps

![Type Properties dialog box](image)

**Figure 7: Internal Notes**

![Autodesk University 2015 logo](image)
Why is the default section depth so big?!?

Oftentimes, when cutting a live section through a model, the default section depth is very large, so the next task is to find the back of the section and drag it into the desired place. This can be time-consuming, especially if it involves panning and scrolling around the project. Instead of dragging the back of the section, change the far clip offset value in the instance properties of the section.

![Image of section properties](image.png)

*Figure 8: Far Clip Offset*

Schedules as a Tool

A Revit model is a database of information, and the 3D model is simply a graphical representation of that database. Similarly, schedules are also just a representation of the same database. Schedules are not reports, but instead they are living representations of various parts of the model. This is often forgotten. Next time there is a time-consuming or repetitive task to be completed in the model, consider doing the same task in a schedule. For example, change all of the W16x50 beams on the second and fourth levels to be W16x36, or add a comment into all concrete columns. Sure, these tasks can be completed relatively quickly in the model, but probably more quickly and effectively in a schedule.
Sheet views are not just for construction documents

Sheet views do not have to be printed as part of a set of documents. Sheets can also be used for coordination or other internal uses. For example, a sheet (without a titleblock) could have on it a plan view, and then various live details around the slab edge of the building.

Figure 9: Coordination Sheet Example
Double Click Settings

Double clicking in Revit can do some amazing (and awful) things. One of the best uses of the double click is to activate/deactivate views on a sheet. Explore, set, or disable the various double click options in the Application Menu>>Options>>User Interface>>Double-click Options.
Temporary View Properties

View templates have been around, and evolving, for a few releases now. One of the best enhancements associated with View templates is the ability to temporarily apply view properties. Located on the View Control Bar, this feature provides a number of options:

- Temporarily suspend the view template such that the view properties can be manipulated. Once this temporary state is no longer needed, deactivating it, or restoring the view properties will return all view properties to follow the view template for the view.
- Similar to temporarily suspending a view template, this command can also be utilized without a view template. In this case, restoring the view properties will return all of the view properties to their settings when the temporary state was activated. Think of it as a way to “undo”.
- Temporarily apply a different view template, and then restoring the view properties will return the original view template/properties.

Worksharing Display

This is another feature that appeared in the View Control Bar. This display can be used to display various worksharing settings such as ownership and updates, as well as worksets themselves.
Dimension Hack...please don’t use this one unless it is ABSOLUTELY NECESSARY

This tip makes every Revit idealist weep just a little. There is a way to have a truly blank dimension. Click to override the dimension text, right click in the “Replace with Text” box, go to “Insert Unicode control character” and a number of the options will provide a blank space that Revit still sees as a character. The “Unit Separator” is a good one.

![Dimension Hack](image.png)

*Figure 13: Dimension Hack*
Dimension Formulas

Instead of displaying “EQ”, which is the typical equality text (which also can be customized), a dimension can display a formula. This formula is built similar to how a tag would be built, with various dimensional information that can be combined with prefixes and suffixes. For example, instead of reading “EQ”, a dimension could read “3 EQUAL SPACES”, and the text would update if the number of segments were to change. There are countless applications for the various combinations of formulas that could be useful. Please note that this is a type property, so each variation of equality formula has to be assigned to a unique dimension type.

**Figure 14: Dimension Formulas**
Select Previous

How often does this scenario occur in day-to-day workflows: “Click…click….click…what feels like an hour later….click…click….click….okay, everything is selected. Now click to change views, accidentally click off the selection, etc. and suddenly the painfully achieved selected elements are lost….start over….click…click…click…” This used to happen all the time, right? Not anymore. Now, when that precious selection is lost, simply right click, and choose select previous to get it back. Ctrl + Left Arrow also works.

![Select Previous](image)

**Figure 15: Select Previous**

A totally cool different way to copy things

Instead of the standard copy options, try this way to copy: Select an element, hold down the Ctrl button, then drag the element buy pressing and holding the left mouse button. Instead of dragging the element itself, a copy will be created and can now be placed by releasing the left mouse button. This is actually a windows-based functionality, so this tip will work in all sorts of programs. Bonus!
Orient to View

This is a classic tip that is often forgotten. In a 3D view, right click on the view cube to orient to any live view in the model. What this does is modifies the section box to match the view extents of the selected view (in all three directions). It will also orient the view the view cube to match the perspective of the view.

I don’t want to see a whole view, just a few elements...

This tip is a new feature that builds on the Orient to View feature. Instead of modifying the section box in the 3D view to match the view extents of a view, the Selection Box feature, on the Modify Contextual Tab, will change the extents of the section box to isolate the selected elements. This will occur in whatever 3D view is open, or in the default 3D view.
Move views between sheets

Instead of removing views from one sheet, and then searching for them to add to another, try this tip. Expand the sheet view of the sheet that currently has the view(s) that need to move. Open the destination sheet, then select the views in the project browser and drag them from the original sheet to the current one, just like dragging the views onto a sheet in the first place.

Copy Sheets and Schedules

Creating sheet after sheet can be tedious. Instead, try copying them. Simply select a sheet in the project browser, right-click, copy to clipboard, then click into the drawing window and use Ctrl + V to create duplicates of the sheet. Some items to note:

- This does not work if there are live views on the sheet
- Any annotations on the sheet will copy to the duplicates
- Sheet numbering will continue in the same automated fashion as with creating new sheets
- Any drafting views on the sheet will be duplicated on the new sheet
- This will also work to duplicate schedules
Project Browser Functionality

There are a number of tasks, often rather tedious and redundant, that have to be performed on numerous views, or on numerous sheets. Such tasks could include applying view templates to multiple views, or changing various properties on a bunch of sheets. Instead of doing the task over and over and over again, use the project browser to do it only once. Simply hold down Ctrl to select multiple views, and then use the properties palate to apply/edit the desired properties.

Navigating through open windows

Sometimes navigating between views in Revit is half the battle. Here are some tips:

- Use Ctrl + Tab to cycle through open windows
- Use Ctrl + Shift + Tab to cycle through the windows in the opposite direction
- This functionality works in other programs too, and it is similar to cycling through open programs by using Windows + Tab
- Try tiling windows (View Tab) to watch changes in other views while working in a different view

Add some functionality to Levels

Levels have instance properties called “Structural” and “Building Story”. These properties are simply added information, but could be useful since they can be used as criteria in view filters. Try setting these properties differently in levels such as “Top of Steel” or “Top of Footing” that are really just meant to help build the structural model. If these levels have the Structural property checked, and not the Building Story property, then a view filter could be created to filter out all levels only set to Structural. This would help streamline toggling off various levels that do not need to be included in live views.

Figure 19: Structural Levels
Too many tips, so little time...

Here are several more tips to consider:

- Quick Access Toolbar – customize the buttons and put it above/below the ribbon, whatever works best for you.
- Propagate Extents – change the 2D extents of grids and levels in parallel views. Don’t waste time making the same edits to every plan, just do it once.
- Associate grids and levels to scope boxes – this is an instance property in the grids and levels. Use when appropriate.
- Keyboard Shortcuts – customize them and use them.
- Isolate (not just hide) – In the sunglasses on the View Control Bar, try the isolate options too.
- Manage Worksets of linked files – Turn off worksets you don’t need/want in Manage Links.
- Tab for chains – Everyone knows tab will select chains of elements, but if one element is already selected, hovering over another element along the chain and pressing tab will complete the chain between those two elements. If the chain is a polygon the chain will be completed based on the hover location.
- Right click on a view in the project browser to open the sheet it is on.
- Don’t forget about the pick line and offset tools on the drawing panel/options bar.
- Spacebar will rotate or toggle a flip control of elements prior to placement. If the desired placement is non-orthogonal, hover over any line/element and pressing the spacebar will cause alignment with that element.
- When modeling braces, model them from beam to beam, with 3D Snapping toggled on, and utilize the Attachment Distance and Ratio options to locate the end of the braces. (Instance Properties under Structural)
- Switch Join Order – Now an option within the join commands.
- Open .rvt files in Navisworks – this will create a live link between the Revit file and the Navisworks file that will automatically update.
- Select an element, right click, create similar to duplicate the element. Create Similar is also a button on the Modify Contextual Tab.
- Notice that there are recently used types available on type selector.
- Right click on a dimension padlock and select “Show Related...” to bring up a dialog box that will show what elements are being dimensioned.
- Replicate View – On the View Tab, create another (temporary) instance of the current view.
- Right click on grids to reset extents to reset/maximize the 3D extents.

Conclusion

The goal of this class was to present a number of great tips such that at least one was a “little golden nugget” that can be taken back to your office to help improve some aspect of production in Revit. Hopefully that was achieved, and hopefully we all had a little fun while doing it.