Revit Timeline:
Understanding Revit Phasing

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Description:

Revit has a pretty ingenious way of dealing with project phasing. You do not manually configure each object as new, existing or demo. Rather, phases in Revit are like points in time. You develop a timeline of your project's life cycle and then each object is plotted along this timeline. You can view any point in the past, present or if you are clever, the future as well by creating phase views. "Existing" happened before the project began. Any number of "new construction" phases can be configured after this point. Demolition however is not a phase. Instead it is the point in time where an object's "life" ends. Sound intriguing? In this session we'll learn how to set up phases, configure views and display demolition, existing and new construction in appropriate ways. As if that weren't enough, we'll even explore a little work-around to overcome Revit's inability to display future work. Intrigued now? Then join us for this walk along the Revit timeline!

Learning Objectives:

- **Understand Revit phasing tools**
- **Set up object phasing**
- **Configure phasing properties on views**
- **Customize the experience**

Revit Phasing

Phasing in Revit gives us the ability to apply the fourth dimension—or time—to our projects. Revit's approach to phasing is simple and straightforward. A simple timeline is established for the project that includes one or more points in time (each point in time is a phase). The out-of-the-box default project template includes just two phases: "Existing" and "New Construction." You can add additional Phases as project needs dictate. (***Note:*** *Phases vary slightly in the out-of-the-box Construction and Commercial templates*). To add or edit Phases, go to the Manage tab, on the Phasing panel and click the ***Phases*** tool (see Figure 1).
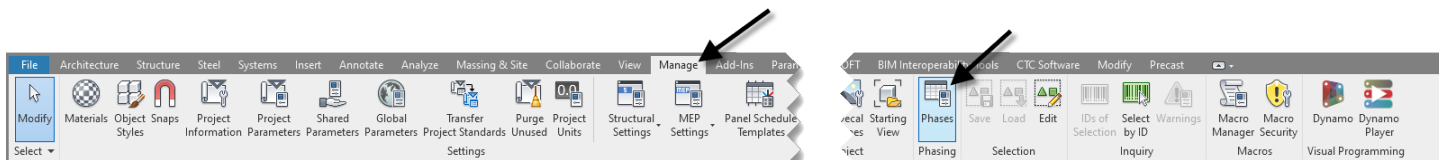

Figure 1—The Phasing dialog is found on the Manage tab on the Phasing panel

Project Phases

Every element in your model exists at a period in time defined by two phasing parameters. These are the Phase when the element was created and the Phase when it was demolished (see Figure 2).
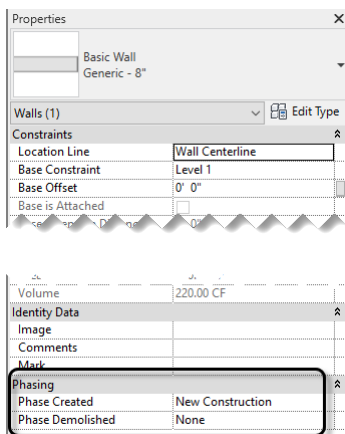

Figure 2—Every model element has a Phase Created and Phase Demolished parameter on the Properties palette

The Phase Created setting will default to the same value as the current view when the object is created. You can always change it on the Properties palette later if necessary. The Phase Demolished defaults to **None**. This is the correct setting for existing construction to remain.

The Phasing Dialog

Access Phasing settings on the Manage tab (see Figure 1 above). This three-tabbed dialog allows us to add and remove phases, configure graphical settings for objects assigned to a phase and controls for how views will display phased objects.

Demo is *not* a phase

The settings on the three tabs are tightly interconnected, so be sure you understand the overall concepts and procedures before attempting to customize.
For example, the most common mistake made by users new to phasing (particularly those coming from AutoCAD) is to create a "Demo" phase. This is not the correct way to convey demolition in Revit. *Every* phase in Revit can end with demolition. Demolition is the point in time when an object is removed (or demolished). It is *not* a separate phase.

Project Phases

On the Project Phases tab, you can add or remove phases. Your project must have at least one phase, but in most cases two (or more) is more appropriate. Every project can make use of the default **Existing** (what was there before your project starts construction, like the site or an existing structure) and **New Construction** (what you are adding to the site, like your building). If your project is more complex than this, you can add additional phases on the Project Phases tab. A new phase can be added before or after an existing one. The top of the list is earliest (in the past) and the bottom is in the future (see Figure 3).
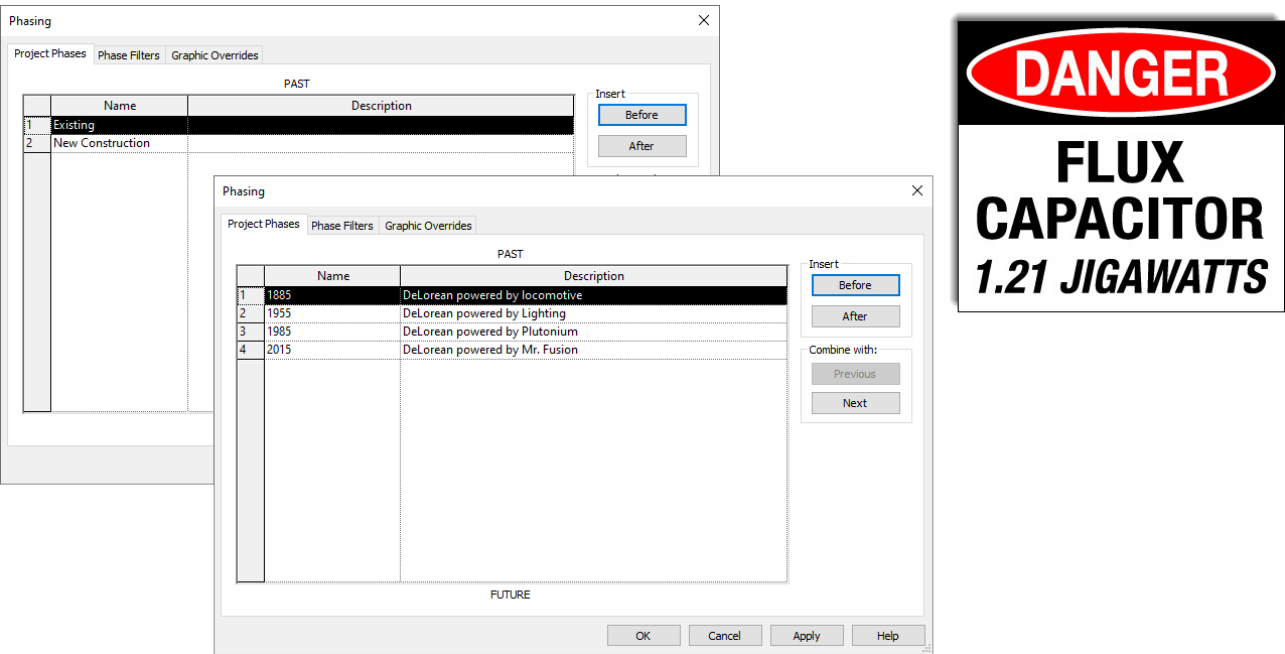

Figure 3—Phases occur sequentially in time, use the Project Phases tab to create and modify phases

You cannot delete a phase. Rather, you combine it with the previous or next phase. This will reassign all the objects and views in the model appropriately as required.

Graphic Overrides

The Graphic Overrides tab lists four "Phase Status" conditions and their corresponding settings. Phase Status conditions are built into the software. You can edit their characteristics, but you cannot rename, add or delete them. Phase Status conditions can be used to graphically override the display of model elements at any point in time, based on their phase settings.

Phase Status is relative to the current view

The most important characteristic to understand about Phase Status conditions is that they are *not* static. Each of the Phase Status conditions is *relative* to the currently active phase (in the view). In other words, if you are working in a view set to the Existing phase, the objects created in that view will not appear using the "Existing" phase status, but rather they will appear as "New!" This is because at that point in time (the earlier phase called "Existing") they were new elements.

On the other hand, objects that represent new construction in your project do not appear in such a view at all. This is because relative to that point in time, they do not yet exist… Just ask Marty… (see Figure 4)

Figure 4—Marty's view appears to be set to the previous phase…

Change to another view set to New Construction, and the same objects now displayed grayed out to indicate that they are "existing" as seen relative to the current view. Furthermore, all the previously hidden new construction now displays. Here is a brief description of each Phase Status condition (see Figure 5)

Figure 5—Revit includes four built-in Status conditions

Existing—Relative to the currently active Phase, items created in an earlier phase that have not been demolished are considered Existing.

New—Items created in the current Phase and not yet demolished are considered New.

Demolished—Items created in an earlier Phase and demolished in the current Phase are considered Demolished.

Temporary—This designation is used for items that are both created and demolished within the same Phase.

View Phase Properties

Like objects, each view is also assigned a Phase. This is the point in time into which we are viewing the model. If Doc Brown had been using Revit, he would have set the DeLorean's View properties to: 1955 (see Figure 6).
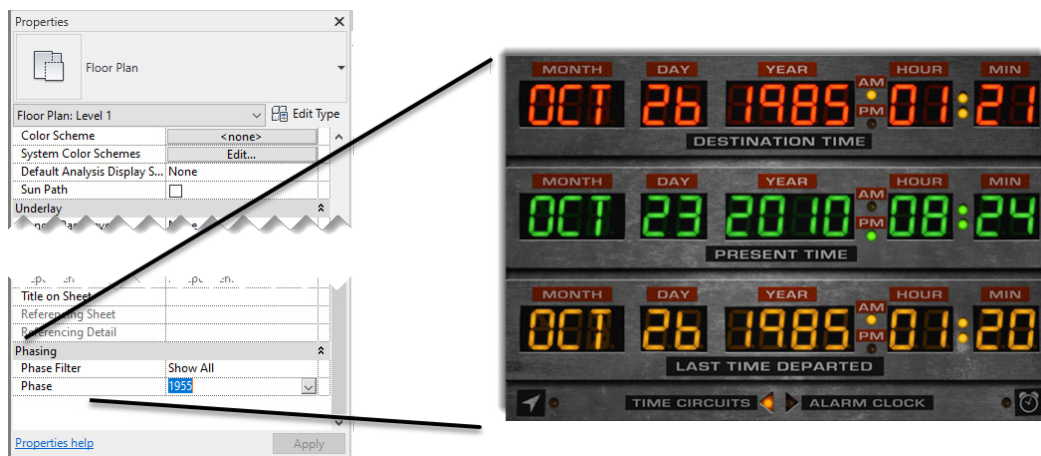
Figure 6—Is this the New Construction phase or 1985?

Another important aspect of the Phase setting is that the Phase assigned to a view is the *active* Phase for that view. In other words, if a plan view is assigned the Existing Phase, all elements drawn in that view will automatically inherit this setting and become existing elements. You can of course override the setting by editing the element's properties but working with the currently active view Phase can be a much more efficient way to work. It is often desirable to create a view for each major Phase of work and then simply make the appropriate view active before drawings any objects.

Phase Filters

View properties also have a Phase Filter setting. (Return to the Phasing dialog to configure them). This is how you display the graphical overrides built into each of the Phase Status conditions noted above in the current view. A Phase Filter determines how (and if) objects assigned to each Phase will display in the current view (see Figure 7).
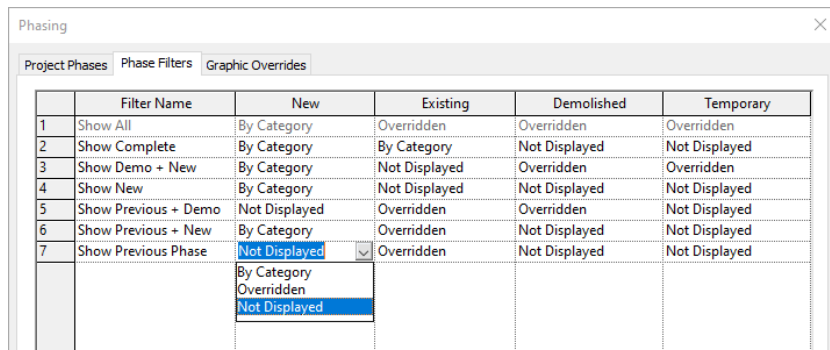

Figure 7—Phase Filters determine what displays in a view and how (or if) it is overridden

Show All is built in and cannot be changed. Several others are included with the default templates and you can customize these and/or create your own. For each of the four Phase Status conditions, you can choose one of three options:

By Category—This setting makes no change to the item's display. They will display using their default settings as determined by the Object Styles command (Manage tab) and/or any Visibility/Graphics overrides.

Overridden—This setting applies the override listed on the Graphic Overrides tab to elements meeting this Phase Status condition. (Making existing gray or demo dashed for example).

Not Displayed—When this setting is active, elements meeting the condition are invisible in the view.

In all three cases, view specific overrides are still possible using Visibility/Graphics (VG) or object level overrides.

Remember, all conditions are relative to the current view's Phase setting. So, if you have two new construction phases such as: Phase 1 New Construction and a Phase 2 New Construction, items added and displayed as new construction in a Phase 1 view will appear as existing in a Phase 2 view.

The best way to get a good sense of the behavior of each of the Phase Filters included in the out-of-the-box template is to try them out one at a time. Before doing so, create an additional Phase like Phase 2 New Construction. With at least three Phases, the various filters will be easier to understand (see Figure 8).
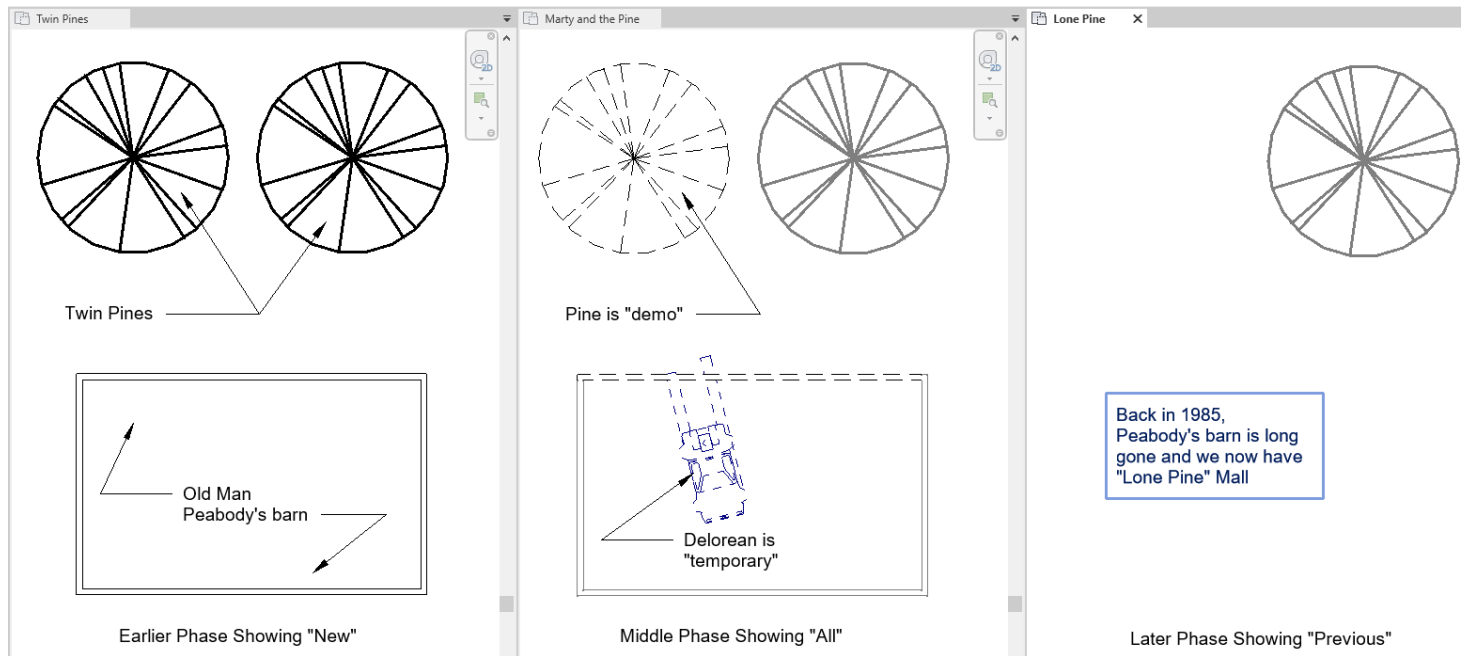

Figure 8—The combination of phases and phase filters

Working with Phasing – Procedure

The most efficient way to work with Phasing is to create views for each major Phase. In this way, when you add new elements to your model, they will be added automatically to the correct Phase.

Here is an overview of the steps:

Open the Phasing dialog (Manage tab) and edit or add Phases if required.

Note: The default project settings include Existing and New Construction phases and all new views default to New Construction unless you specify otherwise.

1. **At minimum, create an Existing construction floor plan view for each level of the project. (Add other kinds of views (sections, elevations, etc.) as required).**
2. **Open the First Floor Existing floor plan view and layout the Walls, Doors and Windows of any existing construction.**
3. **Switch to the New Construction views and add geometry representing the new work.**
4. **Repeat for each Phase/view combination you have.**

5. **As you work, you can switch between views to add or edit geometry or simply edit the properties of an element to change its Phase settings on the Properties palette after it is drawn.**

6. **Using the hammer icon on the Modify tab, Geometry panel (or the Properties palette), demolish any elements as required.**

Hands-on

This topic includes a hands-on exercise to explore the phasing toolset.
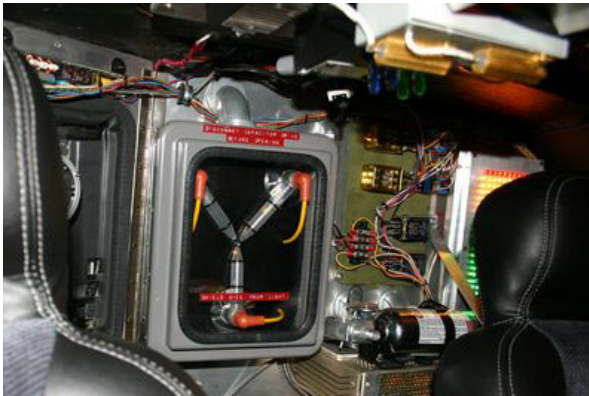
Phasing Basics

In this first exercise, we will get acquainted with the mechanics of working with Revit's phasing tools.
All steps and screen shots here are Revit 2020 (Architectural configuration), but most should work in other flavors or versions.
Steps have been kept brief to improve the flow of the hands-on portion. Please refer to the topics above if required for further details on the concepts showcased herein.

1. In your web browser, visit: https://paulaubin.com/conferences/

2. Download the files for this session. If necessary, use the Conference Archives link to search for them. Search by session name, conference or topic. The Revit version used for these files is 2020.

3. If Revit is not already running, launch it now.

4. From the File Menu, (or on the Recent Files screen), choose **Open > Project**.

5. Browse to the folder where you downloaded the above dataset files and open the file named: *01_Timeline.rvt*.

A very simple building plan appears. (This file was built from the out-of-the-box *default.rte* Revit template).

Assign objects to Phases

Let's see what happens when we change the phase that some of the objects in this file.

1. Make sure that the *Level 1* floor plan is active. Select the vertical Wall on the right side of the plan.

2. On the Properties palette, for the Phase Created parameter, choose **Existing**. Deselect the Wall (see Figure 9).
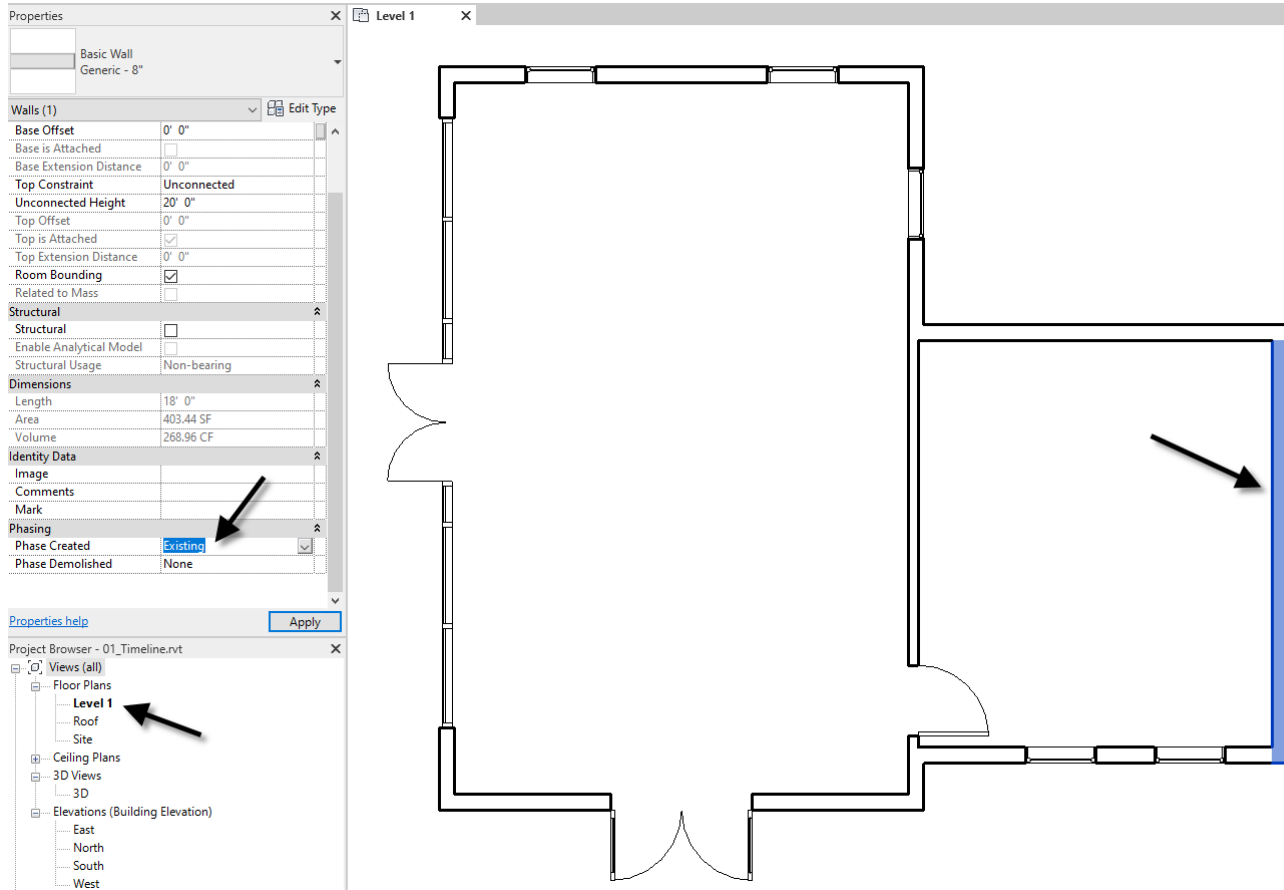
Figure 9—Change the Phase Created on the Properties palette

Notice how when you deselect the Wall, it turns gray and a lighter lineweight.

3. Select the two horizontal Walls adjacent to the one just edited. (Select just the Walls, not the Windows yet). Change them to **Existing** the same way.

Notice that the Walls change the same way, but that the Windows in the lower Wall remain new construction. This triggers the Window openings to become demolition! Very cool (see Figure 10).
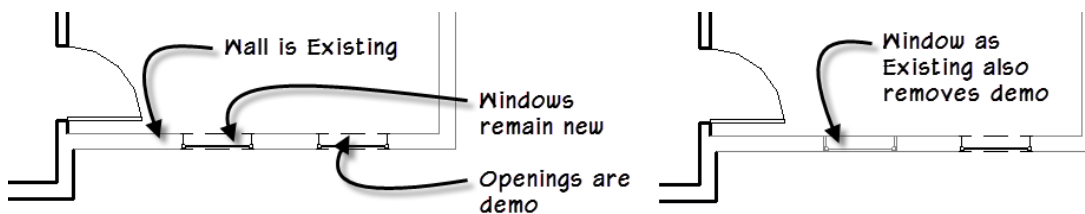

Figure 10—Demo for the Window openings is managed automatically

If you want the Windows to be existing, you must change them as well.

4. Select one of the Windows in the lower Wall. On the Properties palette, change it to **Existing** the same way.

When changing the window to existing, the demo disappears because it is no longer necessary. Both the wall and window are created in the same phase, so no demo is required. Doors work the same way. What

happens if you change just a Door or Window to Existing without first changing the Wall? No demolition will be created, but in an existing view, you would have a Door or Window with seemingly no host. That would be a little odd indeed. More common is the case where a new Door or Window is added to an existing Wall. Let's try that.

5. Create a new Door near the top of the vertical Wall at the right (see Figure 11).
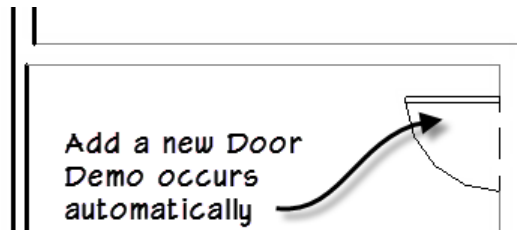

Figure 11—Add a new Door and the Wall hole is shown as demo automatically

Notice how the opening for the Door is automatically demolished from the existing Wall.

Demolition

Now let's demolish some elements.

6. On the Modify tab, on the Geometry panel, click the *Demolish* tool.

7. Click on the top horizontal existing Wall.

The Wall now displays as dashed indicating it is demolished.

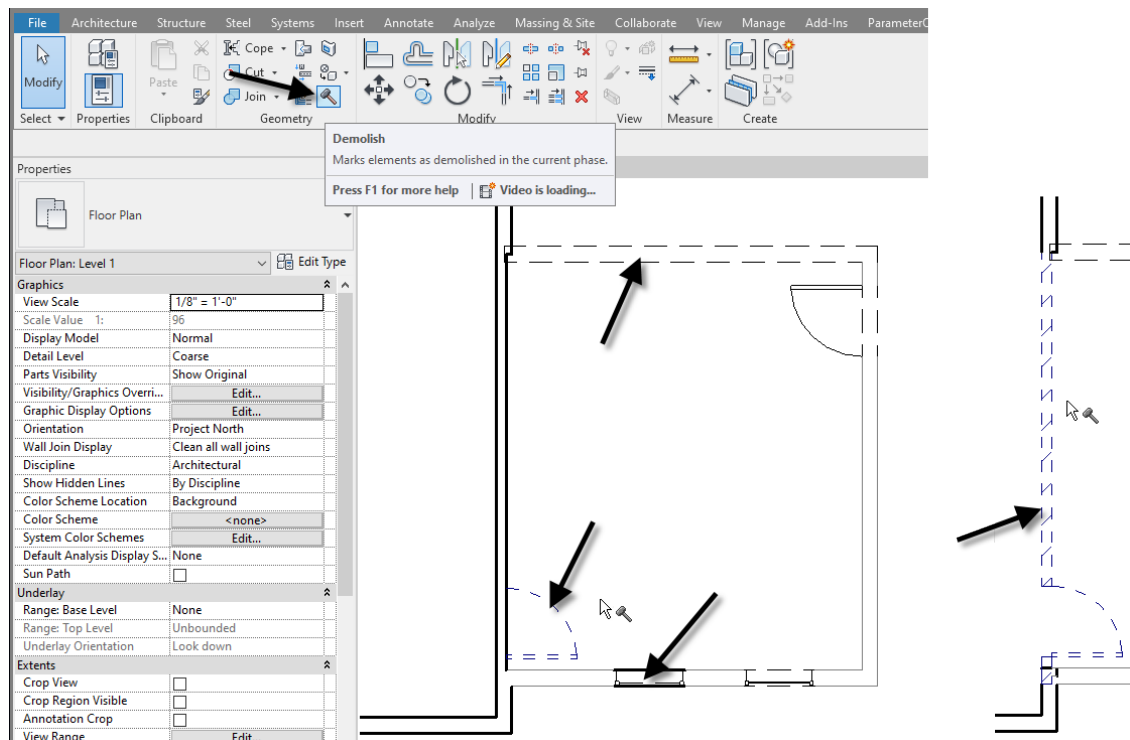8. Demolish some additional items (see Figure 12).

Figure 12—Use the Demolish tool to demo various objects (Do the vertical wall last)

Demolishing a Door or Window will infill a piece Wall at the opening automatically. If you demolish an element in the same phase it was created, it displays differently. (dashed and hatched by default). This indicates temporary construction (see the right side of the figure).

So, what exactly does the **Demolish** tool do? It just changes the Phase Demolished setting on Properties palette for the selected element. It is a convenient way to do this and kind of fun.

9. Cancel the Demolish tool and then select the horizontal Wall demolished above.

10. On the Properties palette, take note of the Phase Demolished parameter.

11. Repeat for the temporary Wall and a Wall that is not demolished (see Figure 13).
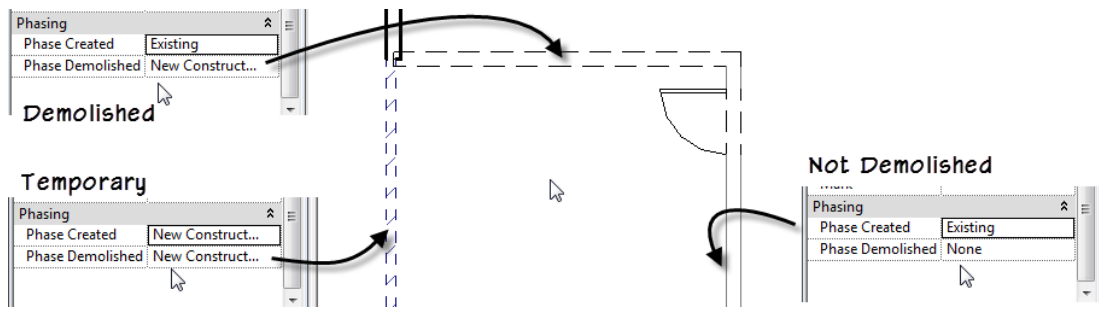

Figure 13—Using the Demolish tool simply changes the Phase Demolished parameter on the Properties palette

Studying these settings exposes an alternative to the **Demolish** tool. If you prefer, you can simply select the phase at which an object is demolished from the Phase Demolished parameter on the Properties palette. To "un-demolish" an object, set this parameter to **None**.

A good way to think of these settings is that you are litteraly setting the "lifespan" of each element in your model. The object is "born" at the Phase Created setting and "dies" at the Phase Demolished setting. Your project and its views is nothing more than a snapshot of this timeline (see Figure 14).
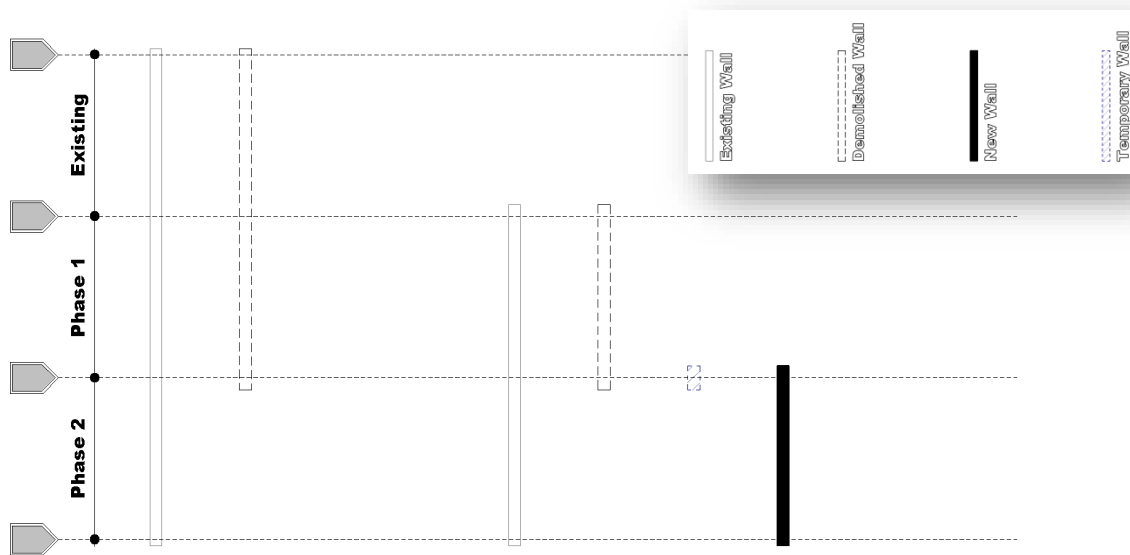
Figure 14—Phasing parameters are like the lifespan of your model elements

Understanding Phasing Settings

Now that we understand the mechanics involved in changing an object's phasing parameters, let's dig a little deeper into how to configure phasing settings.

Add Phases

Most projects are well served by the two phases provided in the default project template. These phases give a clear distinction between existing, demolition and new construction. However, in more complex projects where construction is staged across multiple phases, you can add additional phases to the list. You add phases in the "Phasing" dialog[1].

1. On the Manage tab, on the Phasing panel, click the Phases button.

On the Project Phases tab, we can add or remove phases. You must have one phase, but most projects will have two or more. Phases are points in time. So, before you add a phase, decide if it comes before or after the phases already in the list.

2. On the Project Phases tab, select New Construction and then on the right, click the After button.

A new Phase 1 will appear.

3. Rename this **New Phase 2** and rename New Construction to **New Phase 1**. Add descriptions if you like and then click OK (see Figure 15).

Figure 15—Edit the Phases and add a new one

This change is global. All elements previously assigned to **New Construction** now use **New Phase 1** instead.

4. To the right of the existing building, use the *Wall* tool and create a new building approximately the same size as the existing main building.

5. Add some Doors and Windows.

6. At the top of the plan, draw a wall between the two buildings (see Figure 16).

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[1] It should be noted that the names of the phases can be changed to anything you like. So if you are not satisfied with the default names of "Existing" and "New Construction" there is nothing special or required about these names. Further, it is possible to merge phases together if you do not need all the phases in the list. This means that it is possible to have only one phase if you like. However, in my view, two is a much better and more accurate minimum. Even in projects with only new construction on a new piece of land, the land itself is "existing."
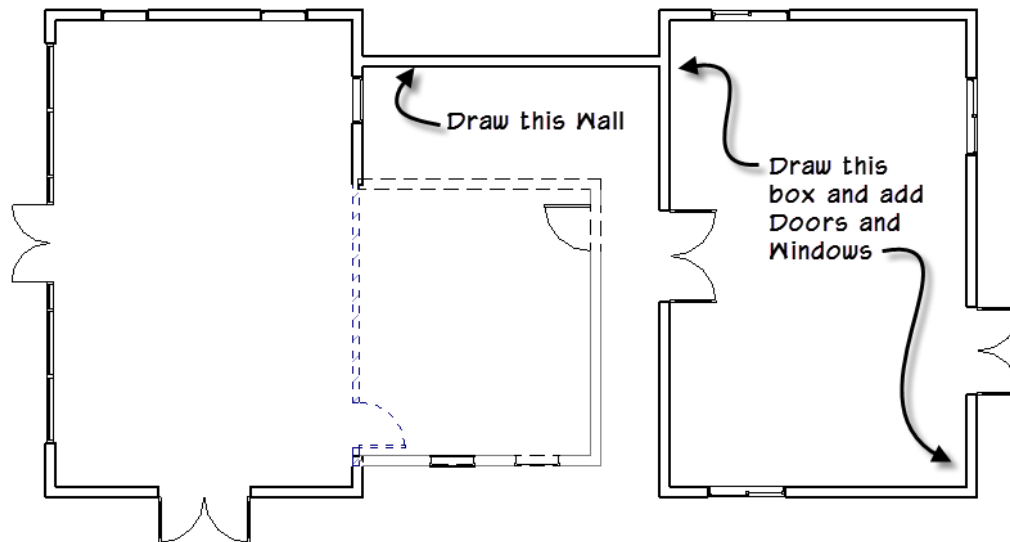
Figure 16—Create new geometry

Selecting any of the elements just drawn reveals that all the elements are assigned to New Phase 1. How does Revit know which phase to assign to new elements? The phase assigned to new elements is determined by the view in which they are drawn.

Assign Phases to Views

Like model elements, views also have a phase parameter on the Properties palette. This is used to determine what is seen in that view and what phase new elements inherit.

7. Deselect all elements to make sure that the Properties palette is showing the properties of the Floor Plan.

8. Scroll down and notice that the Phase parameter is set to **New Phase 1**. Don't change anything yet.

9. Select the Wall between the two buildings and change it to **New Phase 2**.

It disappears! This is because relative to the current view, which as we saw is set to New Phase 1, this Wall does not exist yet.

10. Deselect the Wall and for the *Level 1* view, change the Phase setting to **Existing**.

Notice that all elements not assigned to the Existing phase disappear and the existing elements remaining now display bold as if they were new construction. This is very important because in Revit, what it means to be "Existing", "Demo" or "New" is *not* static. Rather it is relative to the setting of the view in which it is seen!

The Phase setting for the view's properties is like setting the destination time in the DeLorean. Remember when Marty went back in 1955 and tried to go to his house? It was the same tract of land, but his subdivision had not even been built yet! (see Figure 4 above)

11. For the *Level 1* view, change the Phase setting to **New Phase 2**.

Now everything turns gray except the one Wall between the buildings which we moved to this phase.

12. Draw another Wall between the two buildings near the bottom of the plan this time. Ignore any warnings (see Figure 17).
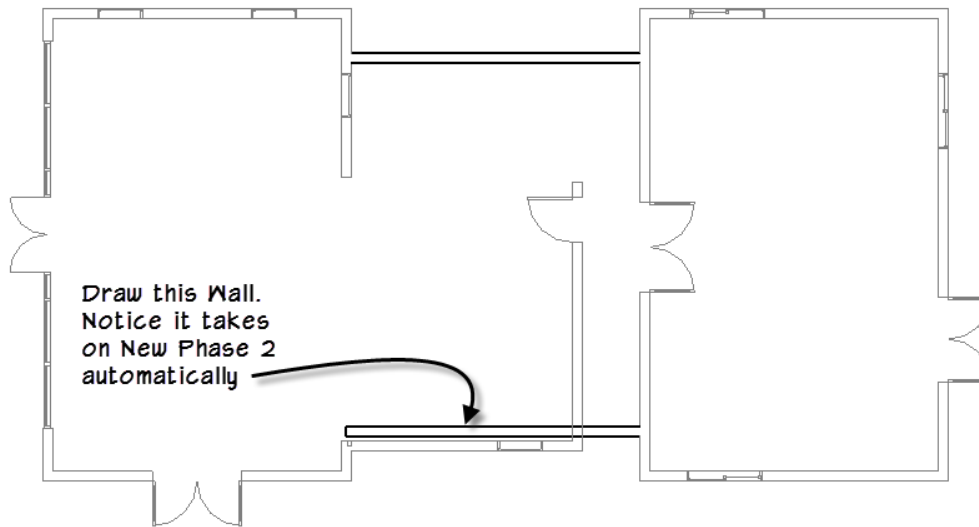

Draw this Wall.
Notice it takes
on New Phase 2
automatically

Figure 17—Objects take on the phase of the view at the time they are created

As you can see, if the view is set to the correct phase, it is easier to add elements because they inherit the correct phase automatically. Therefore, it is best practice to create a few copies of the view: one for each major phase where work is being performed. In this way, you can quickly view each phase and add or edit objects easily.

Clean up

Before we get too much further, let's clean up the phase assignments of the rest of the geometry. The building on the far left is existing to remain. The addition to it in the middle will be demolished at the end of Phase 1. The new building that we drew on the right is created in Phase 1 and finally the connector building in the middle (just the two Walls currently) is built in Phase 2.

13. Make a window selection around the building on the left (drag from top left to bottom right).

Notice that the Phase settings on the Properties palette are grayed out. This is because of the Curtain Wall. You cannot assign the sub-elements of a Curtain Wall (which are currently part of the selection) to a different phase than the parent Curtain Wall. (We will discuss this below).

14. On the ribbon, click the *Filter* button and uncheck Curtain Panels, Curtain Wall Grids and Curtain Wall Mullions. Click OK and then using the SHIFT key, deselect the Curtain Wall Door (see Figure 18).

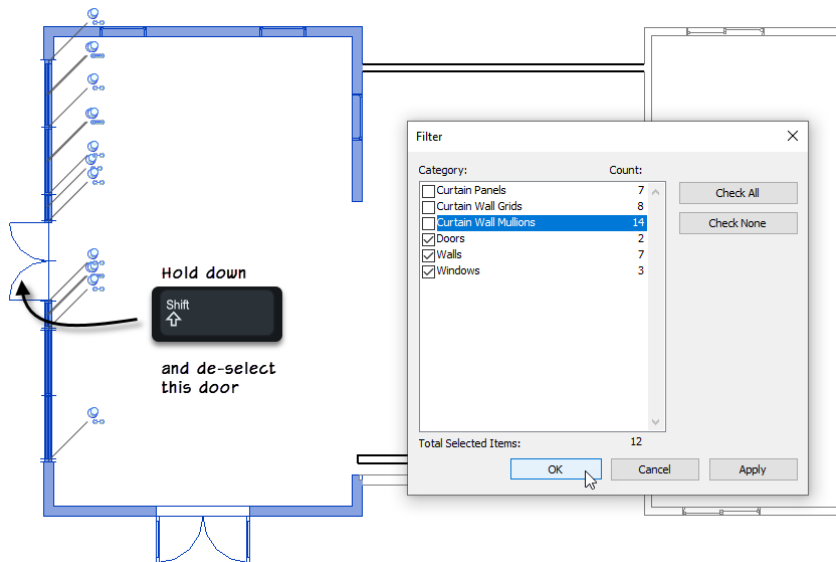15. On the Properties palette, change the Phase to Existing.

Figure 18—Use the Filter command and SHIFT key to deselect Curtain Wall elements

16. Deselect all objects and on the Properties palette, set the Phase for the *Level 1* view back to **New Phase 1**.

17. Change the Phase setting of the view back to: **New Phase 1**.

18. Using the CTRL key, select the Walls of the small addition in the middle, the two Windows and the Doors. (Hint: don't select the Wall infills by the Windows.)

19. Include the vertical wall and door previously set to temporary construction.

20. Set their Phase Created parameter to **Existing** and the Phase Demolished parameter to **New Phase 2** (see Figure 19).
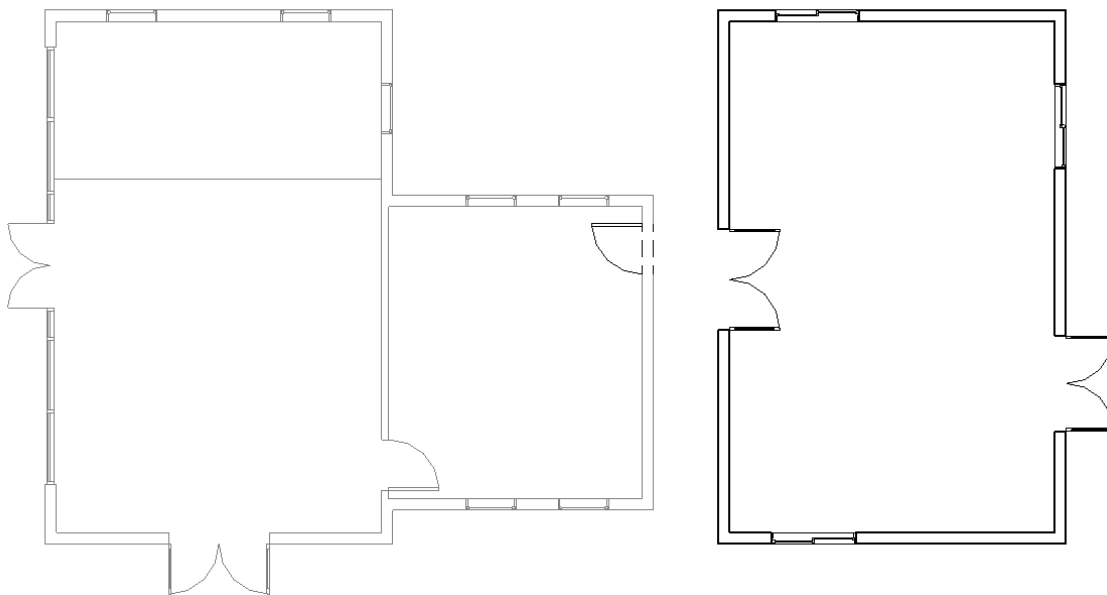

Figure 19—The catchup file has the elements phased correctly

We'll use the catch-up file here to continue. All the objects have been assigned the correct phase, and a few more elements were added. Now we need to create and configure the views.

Duplicate and assign phases to views

To see the results of the changes we just made, let's duplicate the plan view a few times.

1. On the Project Browser, right-click the *Level 1* view and choose **Duplicate View > Duplicate**. Rename it to **Level 1 (Exist)**.

2. Repeat twice more creating **Level 1 (Phase 1)** and **Level 1 (Phase 2)**.

3. All three views should have opened as tabs. Click the *Level 1 (Exist)* tab to make it current.

4. Make sure no objects are selected and on the Properties palette, change the Phase to **Existing**.

5. Repeat for the other two views.

Phase Filters

As you can see, the objects change display characteristics based on the phase assigned to the view. It is like a window looking at just a limited portion of our timeline. However, the other very important behavior here has already been noted above: what it means to be "Existing", "Demo" or "New" is not static. This is controlled by Phase Filters and Graphic Overrides. You can refer to the general descriptions of these features above, in this sequence we'll explore them first-hand.

6. Compare the *Level 1 (Phase 1)* and *Level 1 (Phase 2)* floor plans.

The Phase 1 plan is easy to understand, but the Phase 2 plan is a little busy. Phase Filters can help to limit what is displayed in a view and where appropriate override the graphics. Let's explore a few.

7. Open the *Level 1 (Phase 2)* floor plan.

8. Make sure no objects are selected and on the Properties palette, change the Phase Filter to: **Show Demo + New**.

Not perhaps a setting you would use for views destined for plotting, but it could be helpful for troubleshooting if object's phases are properly configured. There are a couple others with similar diagnostic value:

9. Try **Show New** and then try **Show Previous Phase**.

Be careful with Show Previous Phase as you can draw new objects in this mode, but they will not appear! Revit will warn you, but just the same it can be confusing if someone leaves a view set this way.
The next two that we are going to try do have utility in plotted views.

10. Try **Show Previous + Demo** next.

This is basically your typical demolition plan. Again, the same caution applies about drawing new objects as "new" construction is not displayed in this filter. But you can set a view this way, add demolition notes and serves very well for a demo plan.

11. Duplicate the current view, rename it to: *Level 1 (Demo)* and leave it assigned to the **Show Previous + Demo** Phase Filter.

12. Reopen the *Level 1 (Phase 2)* floor plan. Change the Phase Filter to **Show Previous + New.**

This is a typical floor plan. It shows existing and new construction. Notice that since the current view has its Phase set to New Phase 2, both the left and right buildings appear gray. Remember, what it means to be "existing" or "new" is relative to the active Phase.

13. Double-click the *Level 1 (Phase 1)* floor plan. Change the Phase Filter to **Show Previous + New.**

Notice that the building on the right is now bold. In this view, it is "new" construction.

14. Reopen the *Level 1 (Phase 2)* floor plan (see right side of Figure 20).
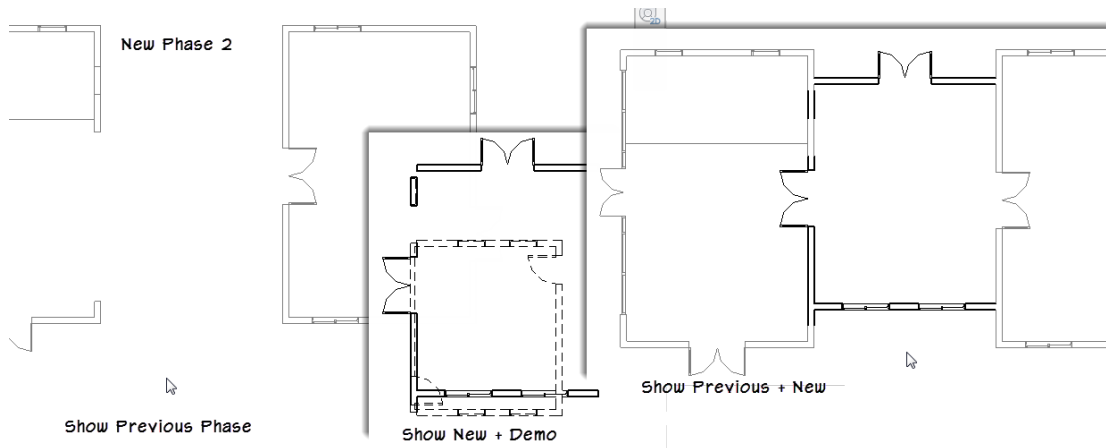
Figure 20—Phase Filters can dramatically impact what is displayed in the view

15. Try the last two options of **Show Complete** and **None**. Set it back to **Show Previous + New** when done.

Show complete displays how the building looks when the project is finished. So, there is no longer a need to show any demolition nor to show existing and new differently, so all construction shows bold.
When you choose: None, there is no filter applied. So even though phasing settings still exist, they are no longer expressed graphically.
Graphic Override Settings, View Phase Properties and Phase Filters were all discussed in topics above. If you want to explore the settings a bit more, on the Manage tab, on the Phasing panel, click the **Phases** button. Phase Filters have three options for each condition. To leave objects alone and apply no overrides, leave the setting at By Category. Not Displayed makes elements invisible. When it says Overridden, the settings on the Graphic Overrides tab apply. Feel free to explore the settings on your own.

Special Considerations

That concludes most of the basic procedures for phasing. In the topics that follow, we will consider many special cases and considerations with respect to the phasing toolset.

Copy and Paste

When you copy and paste elements, the phasing is NOT retained! Always make sure you paste into a view that is set to the phase you want to use. If you don't you will have to adjust the phasing of the pasted elements afterwards.

Schedules

Schedules are views. Therefore, the same rules apply. They are assigned to a Phase and Phase Filter. Only elements allowed by that Phase and Filter combination will be displayed (see Figure 21).

Figure 21—Schedules like other views have both Phase and Phase Filter settings

Use a View list schedule

When you have a project with many views, you should consider creating a View List Schedule to manage their settings. A View List is simply a schedule of your project's views. The nice thing about a View List is that you can edit directly in the schedule which can often be more efficient than opening one view at a time
(see Figure 22).

Figure 22—You can use a View List Schedule to edit the settings of a view

Curtain Walls

You cannot demolish part of a Curtain Wall. So, if you are keeping most of the Curtain Wall but need to demo just a few bays to add a door or some other feature, you must be clever about how you handle it.
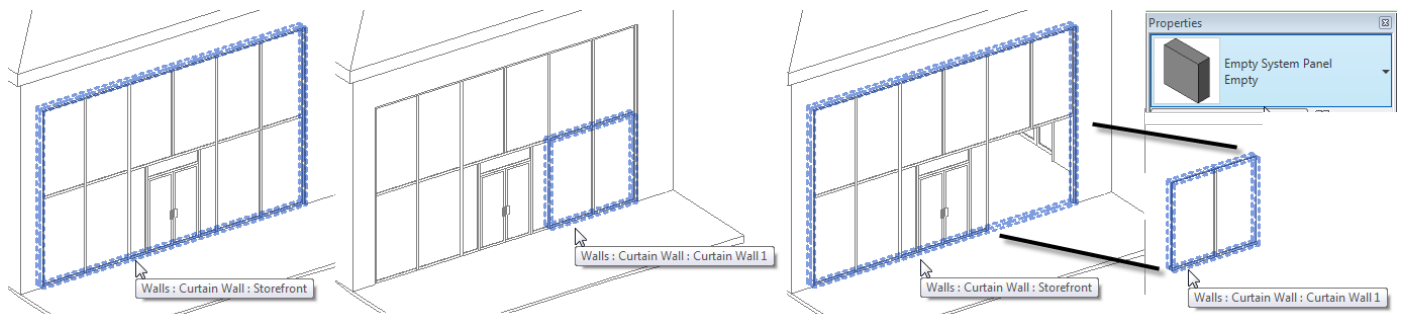

Figure 23—You cannot demolish a portion of a Curtain Wall, instead you must manually break the Curtain Wall into sections

Start by removing the Grid segments and Mullions in the area that you want to demolish. Select the Panel that remains and choose **Empty System Panel**. You cannot delete it; you must use the Empty Panel (see Figure 23).

Next, draw a new Curtain Wall in the place where you created the void. You can then demolish this smaller Curtain Wall, which will automatically demolish its Mullions and panels. Finally, build a new Curtain Wall in the same location for the new construction and assign it to the proper phase.

Roofs and Floors

Roofs and floors are similar to Curtain Walls. You cannot demolish part of a Roof or Floor Slab. Instead, you'll have to build it in two or more pieces and demolish the part you want to demolish and build a new Roof or Floor in that location for the new construction. An example is provided in the dataset.

Topography

Topography and Building Pads can be a little challenging when it comes to phasing. You assign Phase Created and Phase Demolished settings just like other model elements. Revit has some very basic Cut and Fill calculation tools. You will find a tool on the Massing & Site tab, Modify Site panel, named ***Graded Region***. To use this, it requires that your toposurface be assigned to a previous phase and then it will be demolished. In its place, a new surface is created whose grading you modify either point by point or by completely regrading all points. You then create a Schedule and include the Cut and Fill fields to quantify the results.

Pads are really the trouble spot. Even though a Pad can be demolished, it influences ALL toposurface elements with no regard to phasing. Furthermore, you cannot have two Pads overlapping (even on separated phases!), so you must sometimes break them into many pieces to try to properly represent the excavation in time. In reality, it is probably easier to do the topography in a separate linked Revit file and then do a save-as for the new construction and simply swap in and out the appropriate Linked file.

Levels and Grids

Levels and Grids do not use Phasing. You will have to create all the Levels and/or Grids you need and hide them manually in views that do not need to see them.

Rooms

People often find Revit's handling of Rooms in phasing a bit baffling. Rooms can only exist in a single phase. Or another way of saying it is that each phase must have a complete set of Rooms. When you consider that Rooms conform to the shape of the surrounding geometry, you could end up with many

situations where Room shapes change radically from one phase to the next given the demolition of even a few Walls. Not to mention that many Rooms would likely overlap one another after such edits, and you can hopefully begin to appreciate the issue.

So, while this is little comfort in those cases where many (or most) Rooms are unchanged from one phase to the next, remember that Copy and Paste (as noted above) do not retain their phasing. Therefore, all you must do is copy all the Rooms that are unchanged from a view and paste them into a view in the next phase. Then you add any missing or new Rooms as required. Let's do a quick example.

CATCH UP! You can open the file completed to this point named: ***03_Timeline.rvt***.

---

1. On the Project Browser, double-click the *Level 1 (Exist)* plan.

There are three Rooms here and a Room Separation Line. Room Separation Lines behave like other model elements. They CAN exist across multiple phases, and then can be demolished. Therefore, in the coming steps, you only copy and paste the Rooms, not the separations.

2. Add Room tags to each Room in the view.

3. Select Room 101, 103 and their tags. Copy them to the clipboard (CTRL + C).

4. Double-click the *Level 1 (Phase 1)* plan.

5. Demolish the Room Separation line at the top of the plan.

6. On the Modify tab, click the Paste drop down and choose **Aligned to Current View** (see Figure 24).
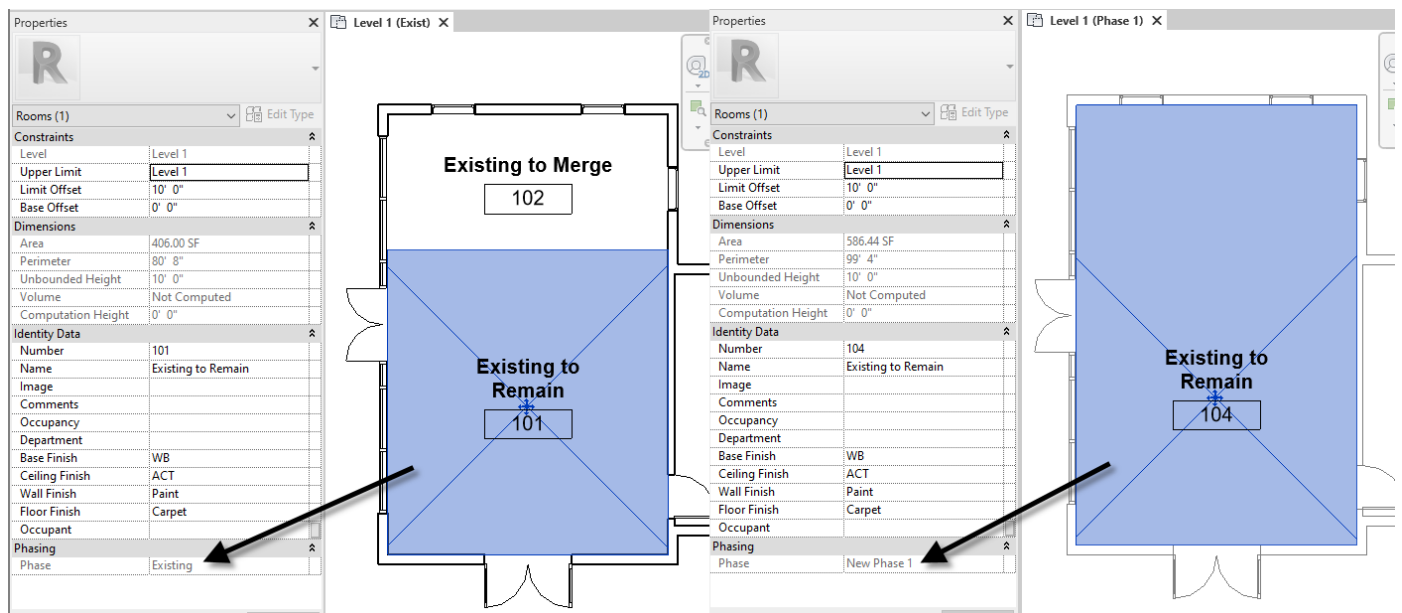

Figure 24—Rooms occupy only a single phase, copy and paste to more than one

Notice that the Room on the right conforms to the full space now that the separation line has been demolished. You can rename and renumber as desired. It *is possible* to reuse the same numbers; but Revit will complain. You can ignore the warnings, but unfortunately it can be tedious. Using a Schedule or a third-party renumber routine is usually the fastest way to renumber many Rooms.

Despite the inconveniences of having to rely on copy and paste and with duplicate numbering, copy and paste is important since it retains all identity data associated with the Room. So, if you are not changing the finishes or other information, this is an important aspect to keep in mind.

Future Work

It seems to me that of the provided phase status conditions, the one that is missing is Future Work. There is no automated or built in way to have Revit display the future. This is where Marty and his DeLorean certainly have a leg up on us. However, it is not too hard to "trick" Revit into displaying a future phase. There are a couple approaches that are workable. The first uses a custom Phase Filter, the other uses Design Options.

CATCH UP! You can open the file completed to this point named: **04_Timeline.rvt**.

We'll use the catch-up file here to continue. This file has some of the preliminary work that we need for our future work example already setup to save us a few steps.

1. Open the *04_Timeline.rvt* project file and make sure the *Level 1 (Future)* floor plan view is open.

The *Level 1 (Future)* floor plan view is a copy of the *Level 1 (Phase 2)* view and is currently configured the same way. There are two components to this solution. First, we need to create a new Future Work phase at the end of our list of phases. You draw any work not in the current contract but planned for the future in this phase. You could theoretically have more than one such phase, but since the next part of the solution relies on Phase Filters and Graphic Overrides, it really works best if you can have a single "Future Work" phase.

The second part of the solution takes advantage of the Graphic Override for the *New* status. If you study the list of existing Phase Filters, you will see that none of them uses the override option for New. So, we will create a new Phase Filter that overrides new and then we can customize the settings of the new status to match how we would like future work to display. We will essentially be using the New status for Future in this work around.

2. On the Manage tab, on the Phasing panel, click the *Phases* button.

3. Click the Project Phases tab.

Notice that there is already another phase here called: **Future Work** (see Figure 25).
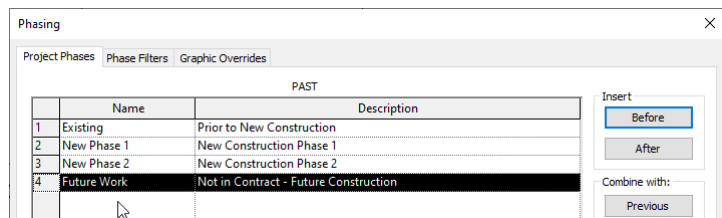

Figure 25—Add a Future Work phase

4. Click the Phase Filters tab and then click the New button. Name it: **Future Work**.

5. In the New and existing columns, choose **Overridden**. In the Demolished and Temporary columns choose **Not Displayed** (see Figure 26).
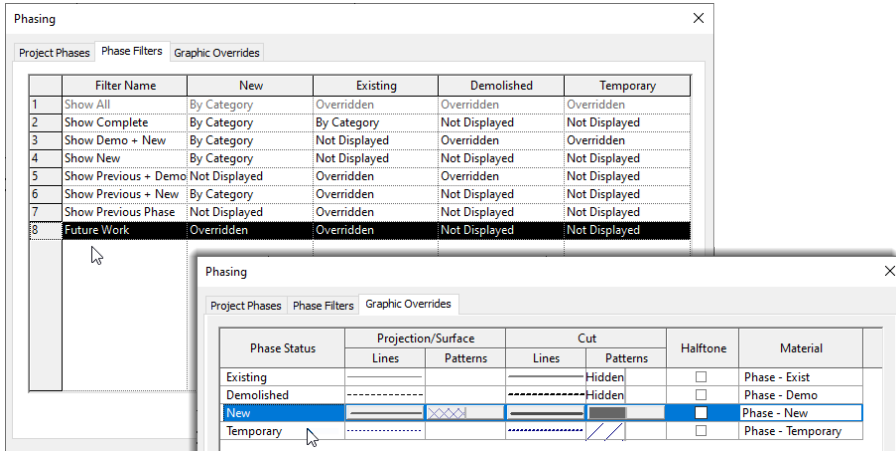
Figure 26—Configure a Future Work Phase Filter and accompanying override

6. On the Graphic Overrides tab, you can customize the settings for the New condition to suite your preferences.

7. Click OK to exit.

The final step is to assign these new settings to the view. (To save time, there is already some geometry in the file assigned to the Future Work phase.)

8. On the Properties palette for the *Level 1 (Future)* view, change both the Phase and Phase Filter to **Future Work** (see Figure 27).
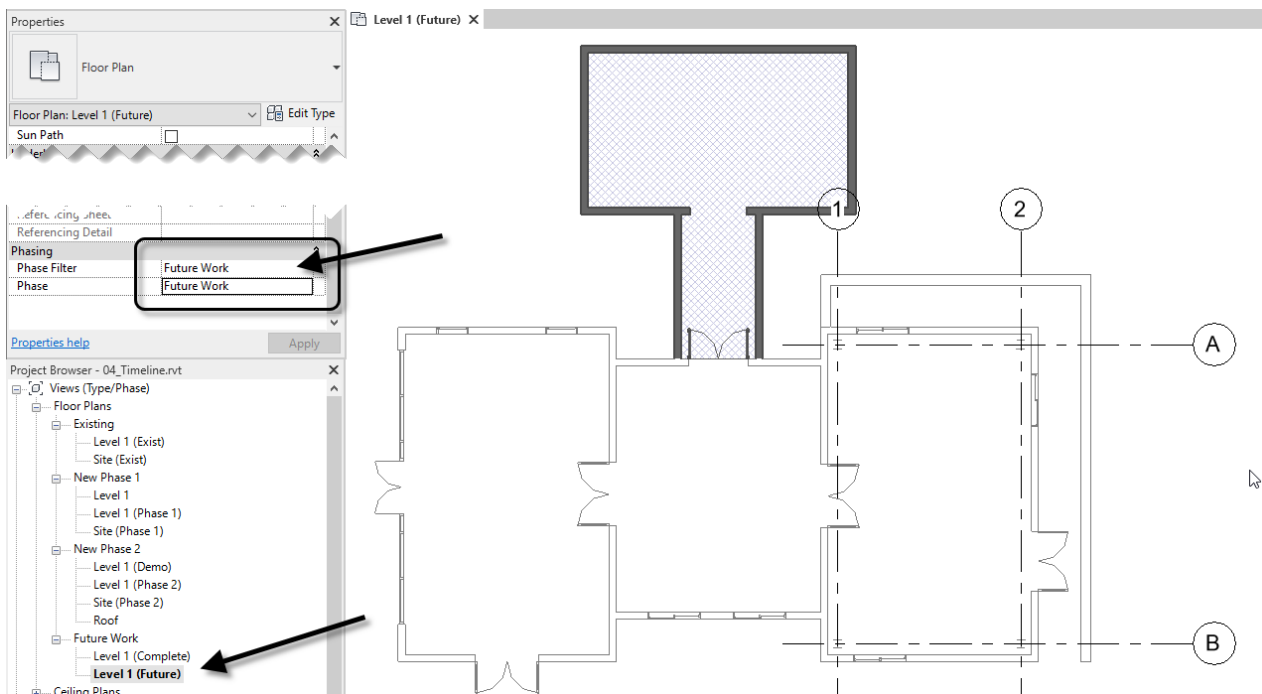

Figure 27—Assign the view to the new settings to display Future Work

The downside to this approach is that you can no longer use the **Show Complete** Phase Filter. This is because it would show all the future work as being completed which would not be accurate. If you have a

project with future proposed work and you need to use the Show Complete option to show the project at the completion of the current contract, you can use Design Options for the Future Work instead.

Design Options for Future Work

Design Options do not work the same as Phasing. Curiously however, they are often presented together. I think it is because they both offer a way to conditionally manage the display of parts of the model. With phasing as we have seen, the determining factor is time. With each phase potentially showing more of the completed project than the ones prior (demolition notwithstanding). With Design Options, you are creating a fork in the road. If you take one path, you see one thing, take the other path and you see something else. In other words, the intention of Design Options is to allow for multiple variations of a design idea to be housed and maintained in a single model. However, only one of the options for a work area (called an "Option Set") can be viewed at a time. Design Options do not take time into account at all in determining what displays. Rather, each view simply has a setting to determine which design option(s) will appear in that view.

Since Design Options are not limited by time, if we use them to convey Future Work, we can decide which views should see the future work and which ones should not; regardless of the current phase.

The following steps outline the process, but these steps have already been performed in the provided file. If you would like to try this process from scratch, you will need to build your own geometry for the future work after setting up the design options.

1. On the Status Bar or the Manage tab, click the *Design Options* button.

2. Click the New button for Option Set.

3. Rename Option Set 1 to **Future Phasing**. Rename Option 1 (Primary) to **Current Work**.

4. Add a second Option and name it: **Future Work**.

5. Select Future Work, click the Edit Selected button and then draw the objects representing your future work. You can also use the Add to Set button to copy or add existing geometry to this option.

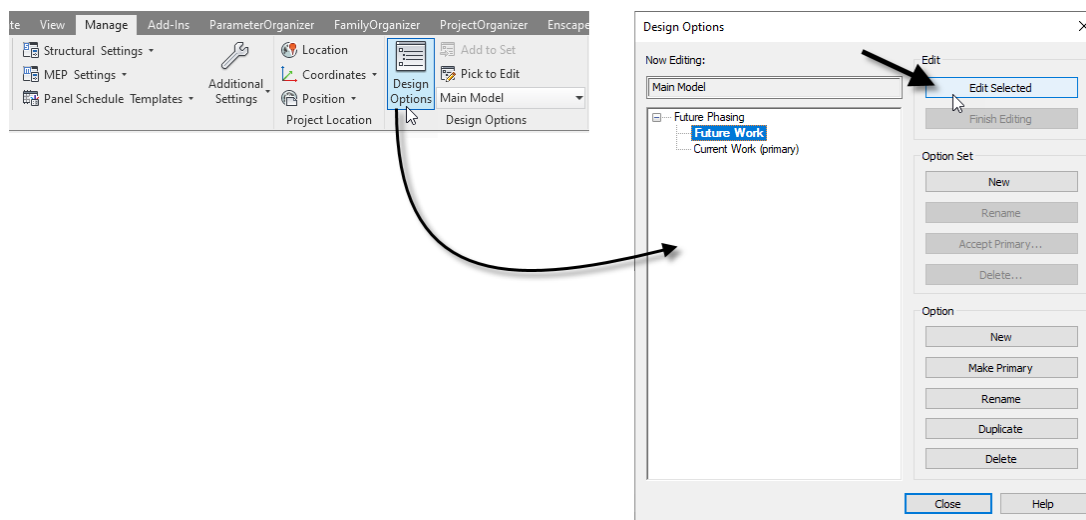6. When finished, return to Design Options and click Finish Editing (see Figure 28).

Figure 28—Design Options offer a potential alternative approach to Future Work

Dismiss the dialog when you are done. When using Design Options, you typically want the option that you are most likely to accpet to be the primary, but in the case of future work, we do NOT want the Future Work to be Primary or it will show in all views. The Primary Option shows automatically in all views that do not have an override. To display our Future Work, we will rely on this override feature to limit where it shows.

7. Create a view to display the Future Work and then edit Visibility/Graphics (VG).

8. There will now be a Design Options tab, click it and from the Future Phasing Option Set, choose **Future Work** (see Figure 29).

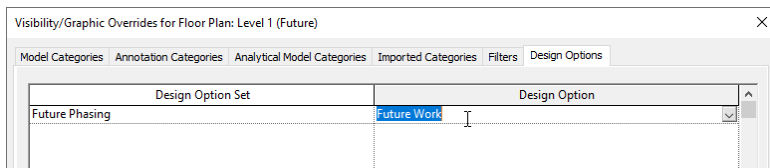When you return to the view, the Future Work will display.

Figure 29—Create a view and override its visibility/graphics to display the Design Option

Since Design Options can show in any view, regardless of phase, we could use this approach to manage multiple "future phases" as well.

**CATCH UP!** You can open the file completed to this point named: ***05_Timeline.rvt***.

Further Study

You can find more information and tutorials in:

*Renaissance Revit: Creating Classical Architecture with Modern Software***.** This book can be thought of as a "deep dive" into the family editor. It starts with the basics but gets very advanced as well. The entire book is on family creation using classical architectural examples. Both the traditional and massing family editors are covered.

The Aubin Academy Revit Architecture: 2016 and beyond. The book is authored in an earlier release, but most functions are still relevant in current releases.
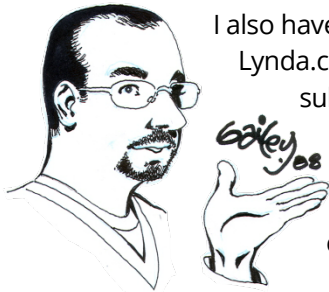
I also have Revit video training available at LinkedIn Learning.
Lynda.com has recently been rebranded as LinkedIn Learning. If you are a Lynda.com subscriber, you can access all the offerings on that platform as well. If you are Professional member of LinkedIn, you already have access to the entire training library.
If you have any questions about this session or Revit in general, you can use the contact form at https://paulaubin.com/contact/ to send me an email.
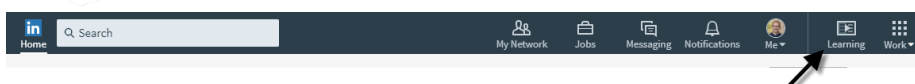
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