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Autodesk®

Revit® 2019 Architecture Certification Exam Study Guide

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Lesson
01

Building Information Modeling and Revit Basics

This lesson addresses the following certification exam questions:

- Building Information Modeling
- User Interface
- Building Elements
- Revit Projects

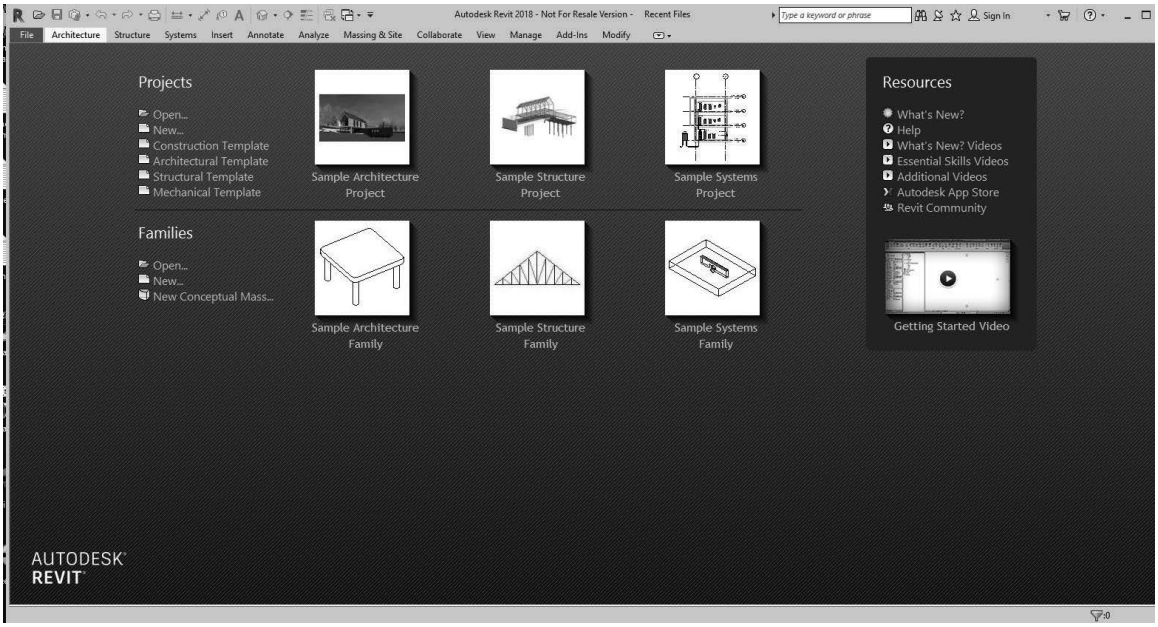
There will be at least one question on the certification exam regarding Building Information Modeling. You will be expected to understand what BIM means and how it works. Autodesk is extremely proud that Revit is BIM software.

BIM means that Revit uses intelligent objects to create and manage a building model. In AutoCAD, you draw a set of lines to symbolize a door. In Revit, you place a door object which has parameters embedded in the object. These parameters contain data concerning the door: everything from the material, cost, and size to function and manufacturer information. This information can be leveraged to be used in schedules and in Excel spreadsheets. You can create an unlimited number of views for your building model and they all reside in a single file.

Revit boasts “bidirectional associativity,” which means that if you make a change in one view, all related views also update.

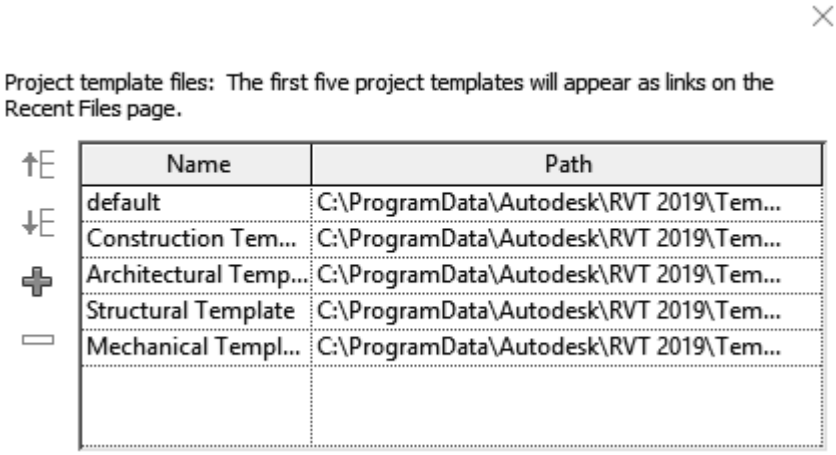
Revit has parametric relationships within the model. For example, floors are constrained to walls, so if a wall is shifted in any direction, the floor will automatically update.

When you first launch Revit, a startup window named Recent Files is displayed.



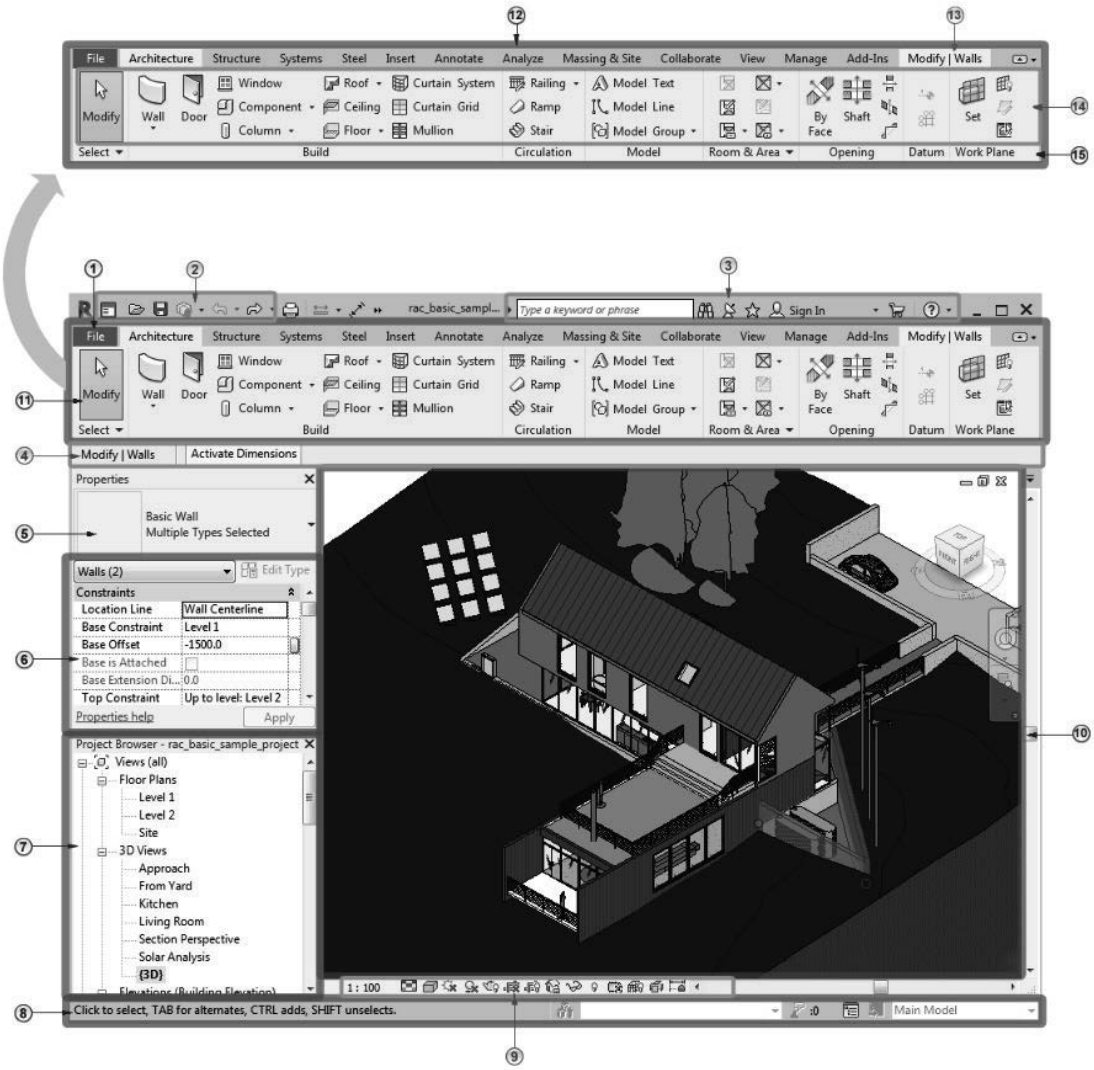
The Recent Files page shows the recent files you have worked on. It is divided into three sections: Projects, Families, and Resources.

Under Projects, you can see the templates you have set up using the Options on the Application Menu. These are set up on the File Locations tab of Options.



Project template files: The first five project templates will appear as links on the Recent Files page.

Name	Path
default	C:\ProgramData\Autodesk\RVT 2019\Tem...
Construction Tem...	C:\ProgramData\Autodesk\RVT 2019\Tem...
Architectural Temp...	C:\ProgramData\Autodesk\RVT 2019\Tem...
Structural Template	C:\ProgramData\Autodesk\RVT 2019\Tem...
Mechanical Templ...	C:\ProgramData\Autodesk\RVT 2019\Tem...



1	File Tab
2	Quick Access Toolbar
3	InfoCenter
4	Options Bar
5	Type Selector
6	Properties Palette
7	Project Browser
8	Status Bar
9	View Control Bar
10	Drawing Area
11	Ribbon
12	Tabs on the ribbon
13	A contextual tab on the ribbon, providing tools relevant to the selected object or current action
14	Tools on the current tab of the ribbon
15	Panels on the ribbon

You will be expected to identify the different areas of the Revit User Interface in the exam.

For example, you may have a question asking you to indicate where the View Control Bar is located.

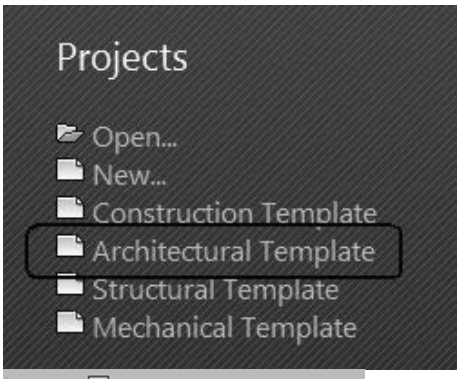
Exercise 1-1

Quick Access Toolbar

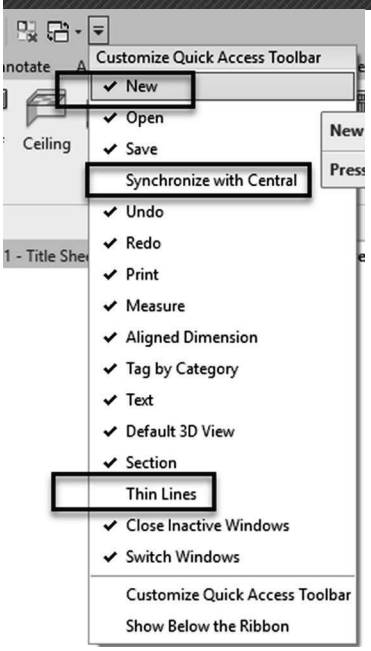
Drawing Name: **(none, start from scratch)**
Estimated Time to Completion: 10 Minutes

Scope
Learn how to add and remove tools from the Quick Access Toolbar.

Solution

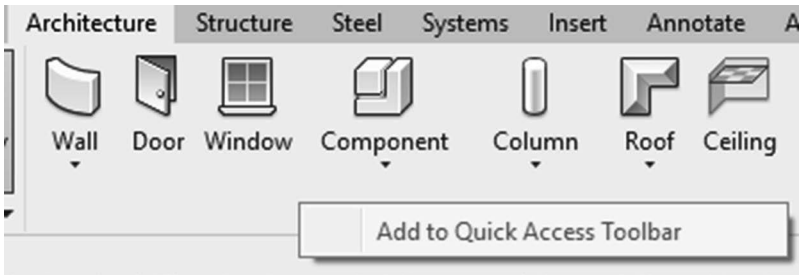
1. 

Select the **Architectural Template** under Projects to start a new project.

2. 

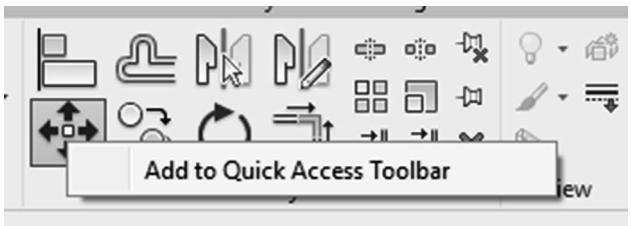
Select the drop-down arrow on the Quick Access toolbar.
Enable **New**.
Disable **Synchronize with Central**.
Disable **Thin Lines**.

The Quick Access toolbar updates with the new settings.



3. Place your mouse over the Wall tool on the Architecture ribbon.
Right click and select **Add to Quick Access Toolbar**.

Note: *The Wall tool is grayed out unless you are in a plan view.*



4. Activate the **Modify** ribbon.
Right click on the **Move** tool.
Select **Add to Quick Access Toolbar**.

The Quick Access toolbar now displays the Move tool.

5. Close the project by pressing **Ctrl+W**.

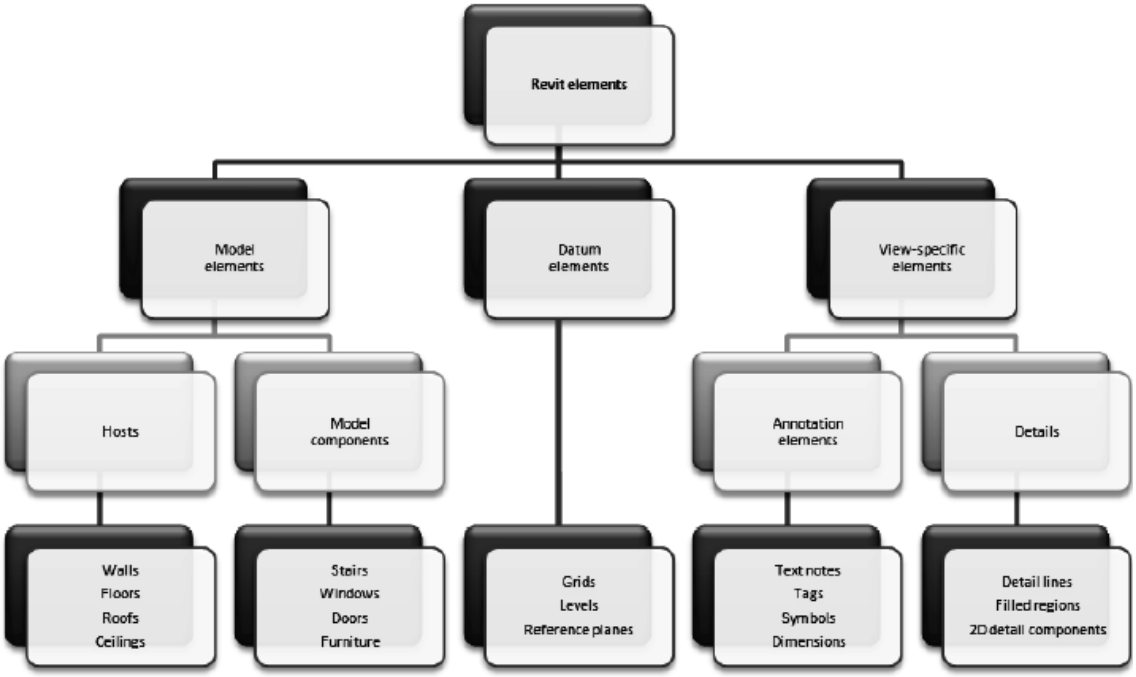
Tips & Tricks

The Quick Access toolbar behaves like the ribbon as some tools may become disabled depending on the mode you are in.

Building Elements are used to create a building design. There are five classes of building elements: host, component, datum, annotation, and view. Building elements fall into three categories: Model, View, and Annotation. To pass the User exam, users need to identify which category a building element falls in.

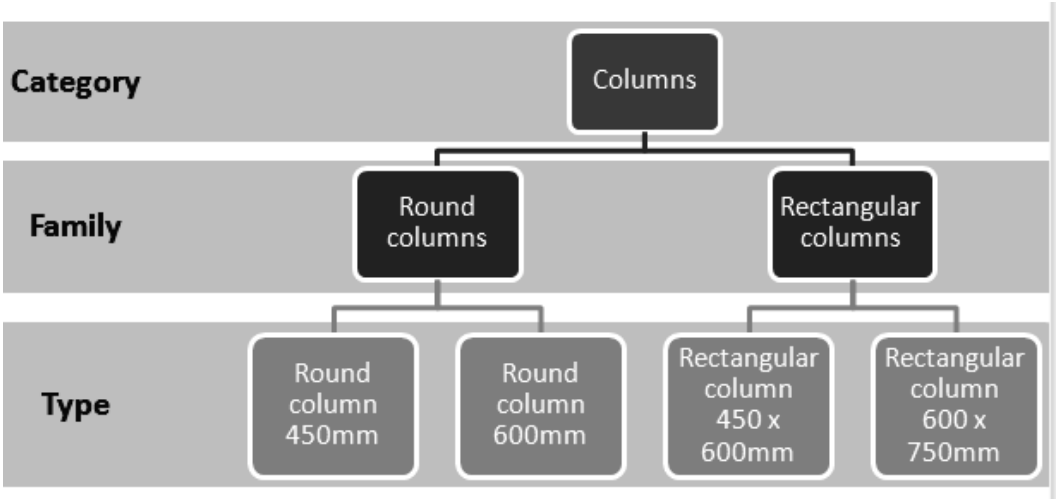
Each element falls into a category, such as wall, column, door, window, furniture, etc. Each category contains different families. Each family can have more than one type. The type is usually determined by the size or parameters assigned to that family.

These are very difficult concepts for many students, especially if they have been used to dealing with lines, circles, and arcs.



Revit elements are separated into three different types of elements: Model, Datum and View-specific. Users are expected to know if an element is model, datum or view-specific.

Model elements are broken down into categories. A category might be a wall, window, door, or floor. If you look in the Project Browser, you will see a category called Families. If you expand the category, you will see the families for each category in the current project. Each family may contain multiple types.



Every Revit file is considered a Project. A Revit project consists of the Project Environment, components, and views. The Project Environment is managed in the Project Browser.

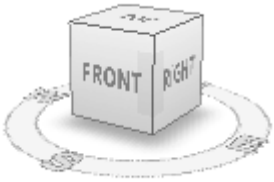
Exercise 1-2

Exploring the User Interface

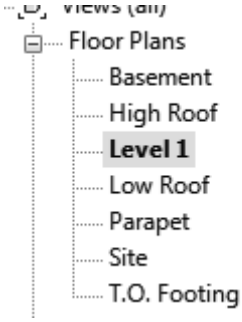
Drawing Name: c_user interface.rvt
Estimated Time to Completion: 5 Minutes

Scope
Review the user interface to prepare for the exam.

Solution



1. The file will open in a 3D view. Note that there is a ViewCube in the upper left corner.



2. Open the Level 1 Floor Plan view.

Double left click on Level 1 listed in the Project Browser.

The ViewCube is only visible in 3D views. This is a possible question on the exam.

Note that the ViewCube is no longer visible and has been replaced with the Navigation Bar.

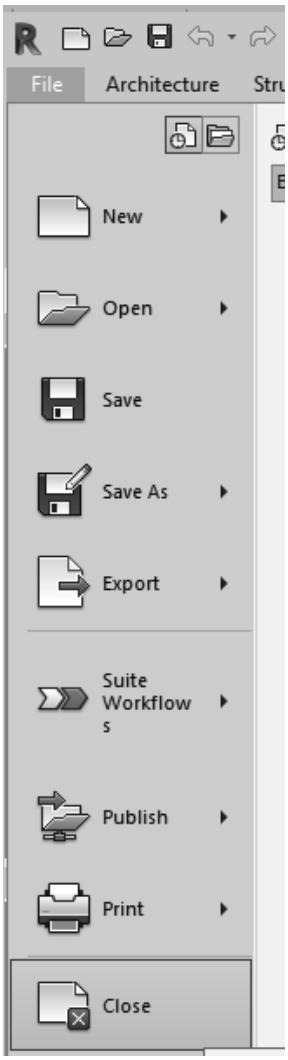
Exercise 1-3

Recover and Use Backup Files

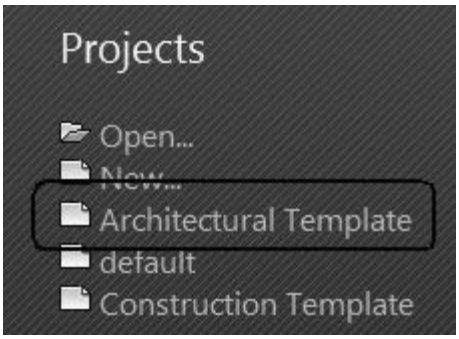
Drawing Name: **new**
Estimated Time to Completion: 15 Minutes

Scope
Recover and Use Backup Files

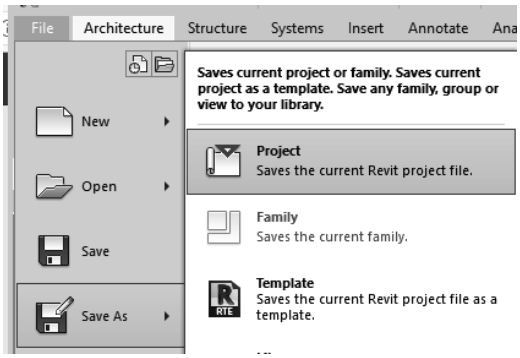
Solution

1. 

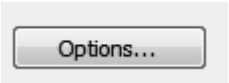
Close any open projects.
Go to the File Menu and select **Close** or press **Ctrl+W** on the keyboard.

2. 

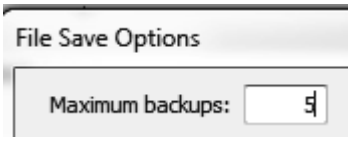
Select **Architectural Template** under Projects.
This starts a new project using the Architectural template.

3. 

Go to **File→Save As→ Project**.

4. 

Select the **Options** button next to the file name.

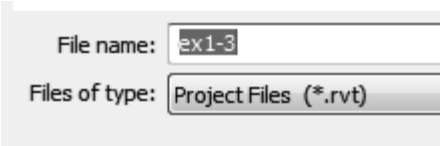
5. 

Set the Maximum backups: to **5**.

Some students prefer not to save any backups so that their flash drive doesn't fill up. Those students set the number of backups to 0.

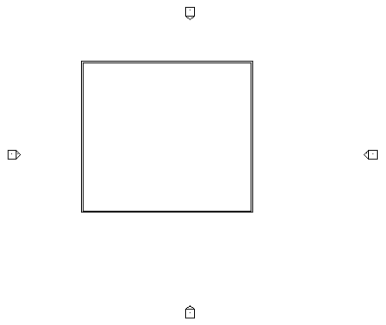
Notice that the number of backups is unique to each project. This might be a question on the exam.

Press **OK**.

6. 

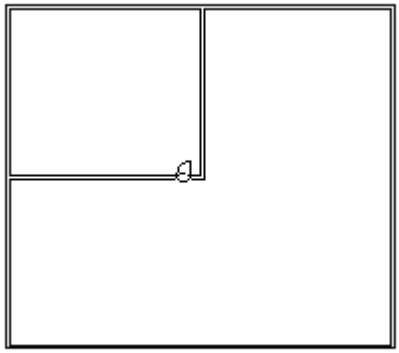
Save as *ex1-3.rvt*.

7. Draw four walls.



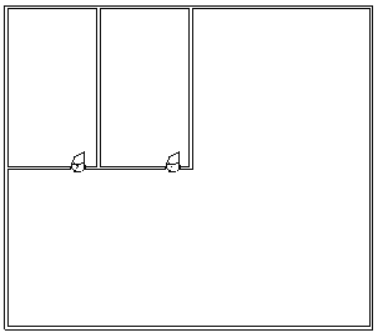
8.  Press **Save**.

9. Add two more walls.
Add a door.



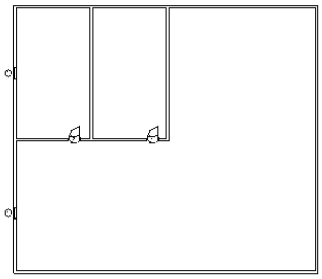
10.  Press **Save**.

11. Add one wall.
Add one door.



12.  Press **Save**.

13. Add two windows.

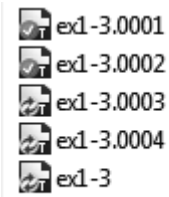


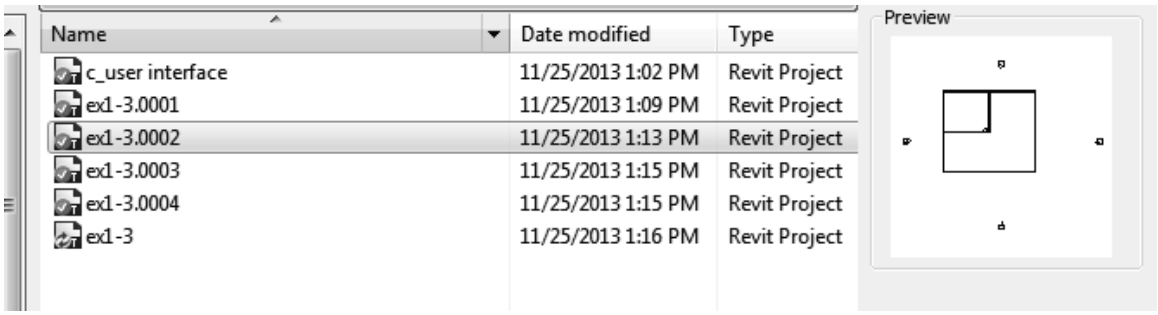
14. Press **Save**.

15. Select **Open**.

16. Note that you have several versions of ex1-3.

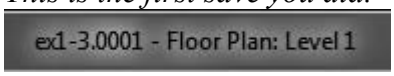
The .0000x indicates the backup number.





Note that you can highlight a version and check in the preview window which backup you want to select.

17. Open *ex1-3.0001.rvt*.
This is the first save you did.



18. *Note the file name at the top of the screen.*
Close all files without saving.

Design Options

Design Options allow you to explore different options for various parts of your project. Design Options work best when you wish to study varying options for small, distinct elements in your building model. The majority of your project should be stable. For example, the building footprint should be decided and the floor plan for the most part should be determined, but you might want to use Design Options to explore different kitchen or bathroom layouts. The building footprint and floor plan are considered part of the Main Model – those elements which are unchanged and not part of the design options.

For each Option set, you must designate a preferred or "primary" option. This is the option which will be shown by default in views. It will also be the option used back in the main model.

Design Options are considered an advanced tool, so you won't be asked about them for the User exam, but you will be expected to answer at least one question regarding Design Options for the Professional exam.

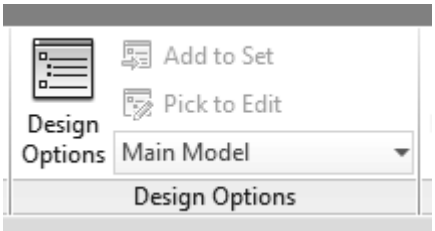
Exercise 1-4

Design Options

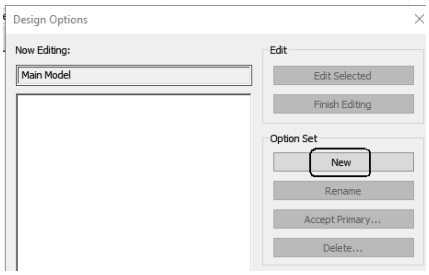
Drawing Name: **i_Design_Options**
Estimated Time to Completion: 90 Minutes

Scope
Use of Design Options
Place Views on Sheets
Visibility/Graphics Overrides
Duplicate Views
Rename Views

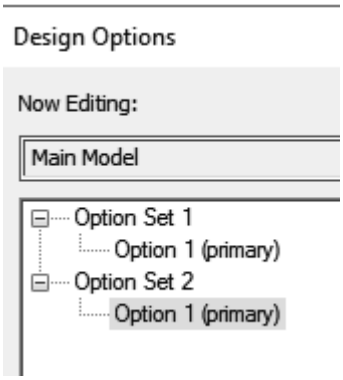
Solution

1. 

Activate the **Manage** ribbon.
Select **Design Options** under the Design Options panel.

2. 

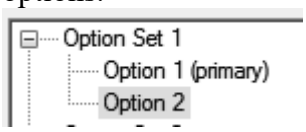
Select **New** under Option Set.
Select **New** a second time.

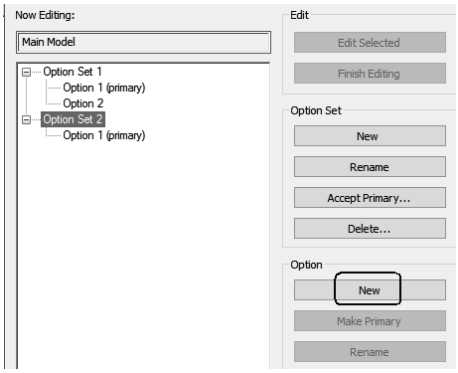
3. 

There should be two Option Sets displayed in the left panel.
Each Option set represents a design choice group.
The Option set can have as many options as needed. The more options, the larger your file size will become.

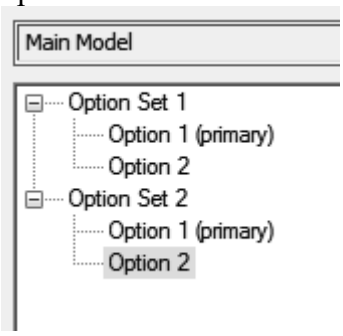
4. 

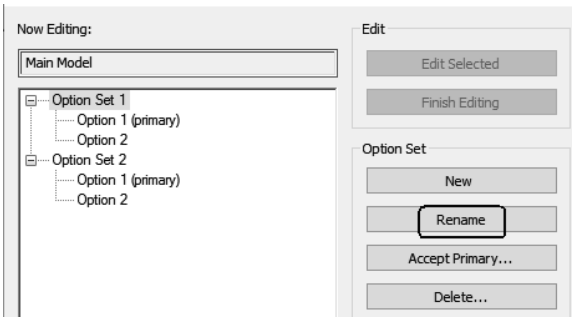
Highlight the **Option Set 1**.
Select the **New** button under Option.
Note that Option Set 1 now has two sub-options.



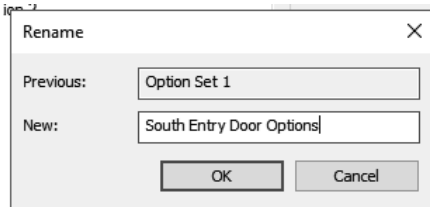
5. 

Highlight the **Option Set 2**.
Select the **New** button under Option.
Note that Option Set 2 now has two sub-options.

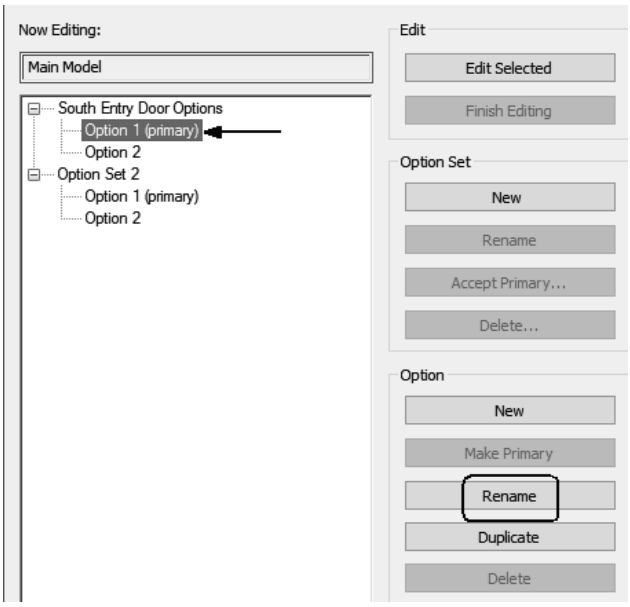


6. 

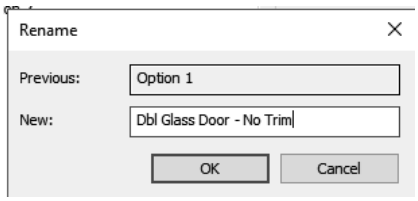
Highlight **Option Set 1**.
Select **Rename**.

7. 

Rename Option Set 1 **South Entry Door Options**.
Press **OK**.

8. 

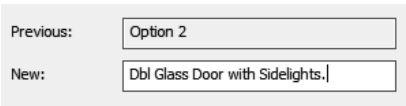
Highlight **Option 1 (primary)** under the South Entry Door Options.
Select **Rename**.

9. 

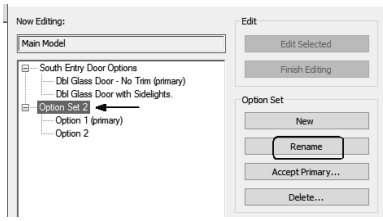
Rename to **Dbl Glass Door - No Trim**.
Press **OK**.

10. 

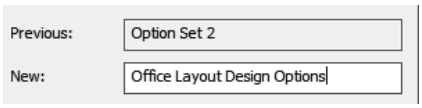
Highlight **Option 2** under the South Entry Door Options.
Select **Rename**.

11. 

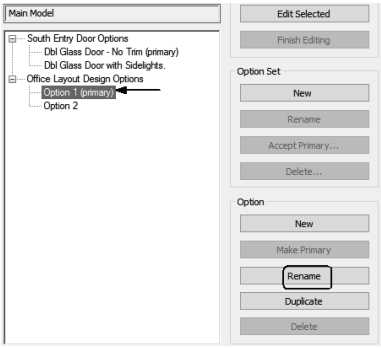
Rename to **Dbl Glass Door with Sidelights**.
Press **OK**.

12. 

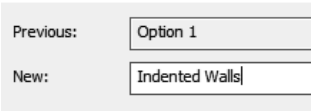
Highlight **Option Set 2**.
Select **Rename**.

13. 

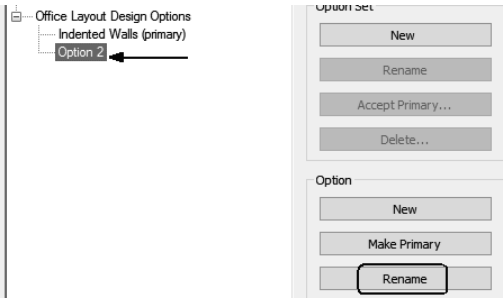
Rename Option Set 2 **Office Layout Design Options**.
Press **OK**.

14. 

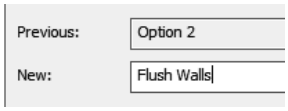
Highlight **Option 1 (primary)** under the **Office Layout Design Options**.
Select **Rename**.

15. 

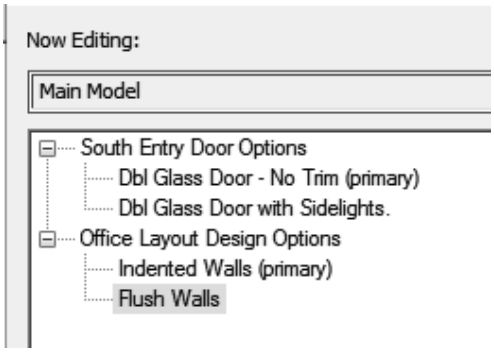
Rename to **Indented Walls**.
Press **OK**.

16. 

Highlight **Option 2**.
Select **Rename**.

17. 

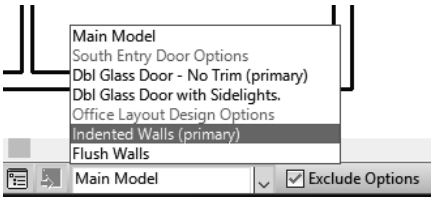
Rename Option 2 **Flush Walls**.
Press **OK**.



You should have two Option Sets.
Each Option Set should have two options.

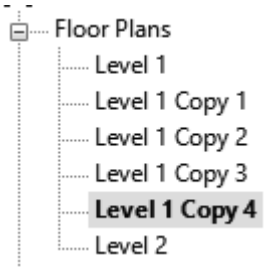
An Option Set can have as many options as you like, but the more option sets and options, the larger your file size and the more difficult it becomes to manage.

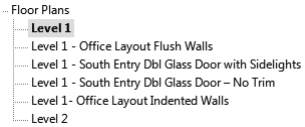
18. Close the Design Options dialog.

19. 

Note in the bottom of the window, you can select which Option set you want active.

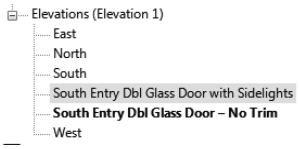
20. Using **Duplicate View→Duplicate**, create four copies of the Level 1 view.



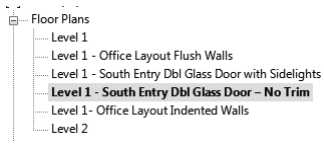


Rename the duplicate views:
Level 1 - Office Layout Indented Walls
Level 1 - Office Layout Flush Walls
Level 1 - South Entry Dbl Glass Door – No Trim
Level 1 - South Entry Dbl Glass Door with Sidelights

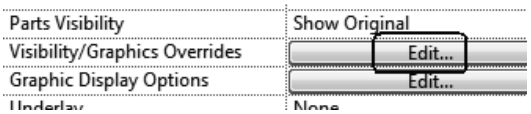
To rename, highlight the level name and press F2.

21. 

Using **Duplicate View→Duplicate**, create two copies of the South Elevation view.
Rename the duplicate views:
South Entry Dbl Glass Door – No Trim
South Entry Dbl Glass Door with Sidelights

22. 

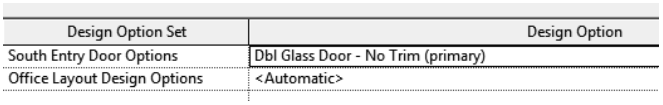
Activate **Level 1 - South Entry Dbl Glass Door – No Trim**.

23. 

In the Properties pane:
Select Edit for **Visibility/Graphics Overrrides**.

24. 

Select the **Design Options** on the Status Bar.

25. 

Design Option Set	Design Option
South Entry Door Options	Dbl Glass Door - No Trim (primary)
Office Layout Design Options	<Automatic>

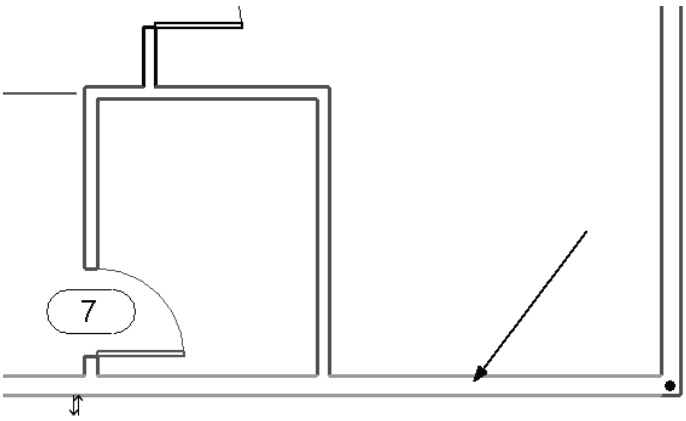
Set South Entry Door Options to **Dbl Glass Door - No Trim (primary)**.
Press **OK**.

26. 

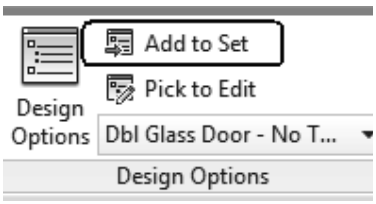
Set the Design Option to **Dbl Glass Door - No Trim (primary)**.

27. 

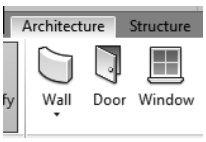
Uncheck **Active Only**.

28. 

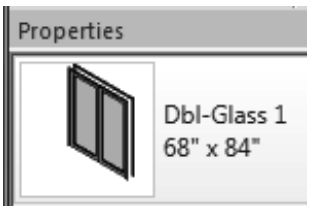
Select the south horizontal wall.

29. 

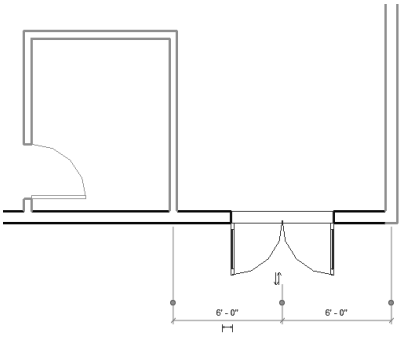
Activate the **Manage** ribbon.
Under Design Options, select **Add to Set**.
The selected wall is added to the **Dbl Glass Door - No Trim (primary)** *set.*
We need to add the wall to the set so we can place a door. Remember doors are wall-hosted.

30. 

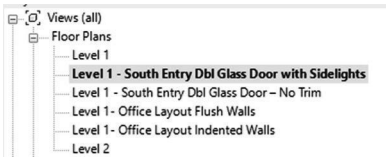
Activate the **Architecture** ribbon.
Select the **Door** tool from the Build panel.

31. 

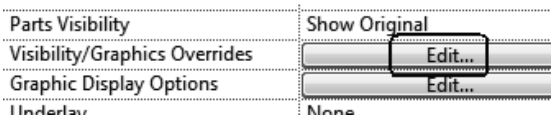
Set the Door type to **Dbl-Glass 1: 68″ x 84″**.

32. 

Place the door as shown.

33. 

Activate **Level 1 - South Entry Dbl Glass Door with Sidelights**.

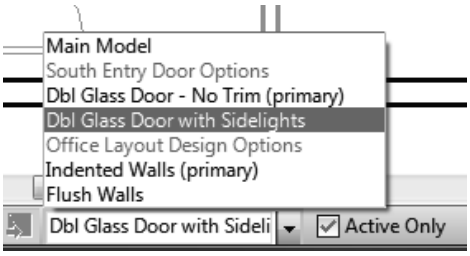
34. 

In the Properties pane:
Select **Edit** Visibilities/Graphics Overrides.

35. Activate the **Design Options** tab.

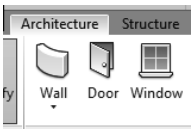
Set **Dbl Glass Door with Sidelights** on South Entry Door Options. Press **OK**.

36.



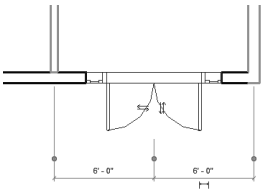
Set the Design Option to **Dbl Glass Door with Sidelights**.

37.



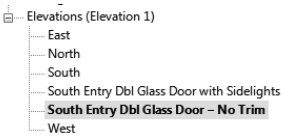
Activate the **Architecture** ribbon. Select the **Door** tool from the Build panel.

38.



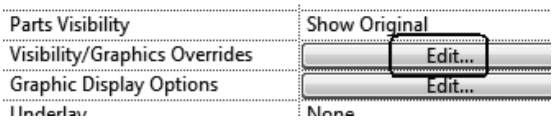
Place a **Double-Raised Panel with Sidelights: 68″ x 80″** door as shown.

39.



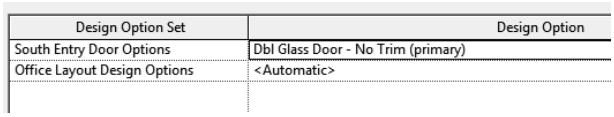
Activate the **South Entry Dbl Glass Door – No Trim** elevation.

40.



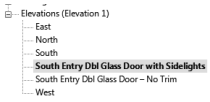
In the Properties pane: Select **Edit** Visibilities/Graphics Overrides.

41. Activate the **Design Options** tab.



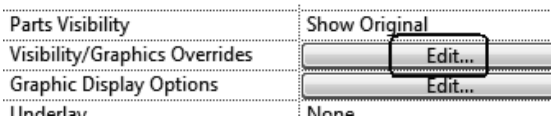
Set **Dbl Glass Door - No Trim** on South Entry Door Options. Press **OK**.

42.



Activate the **South Entry Dbl Glass Door with Sidelights** elevation.

43.



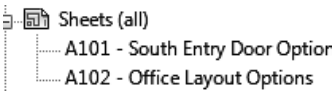
In the Properties pane: Select **Edit** Visibilities/Graphics Overrides.

44. Activate the **Design Options** tab.

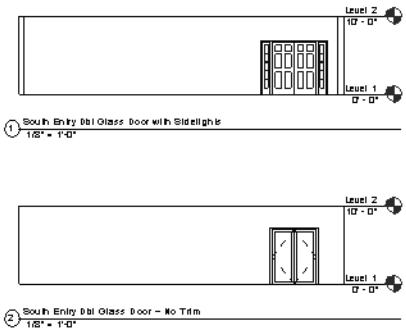
Set **Dbl Glass Door with Sidelights** on South Entry Door Options.

Design Option Set	Design Option
South Entry Door Options	Dbl Glass Door with Sidelights
Office Layout Design Options	<Automatic>

Press **OK**.

45. 

Activate the Sheet named **South Entry Door Options**.

46. 

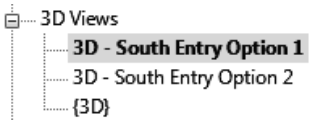
Drag and drop the two South Entry Option elevation views on the sheet.

47. 

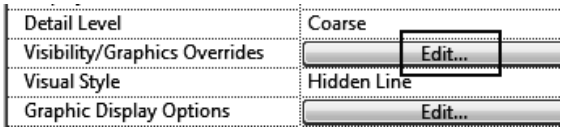
Switch to 3D view.

48. Use **Duplicate View→Duplicate** to create two new 3D views.

Rename the views:
3D - South Entry Dbl Glass Door - No Trim
3D - South Entry Dbl Glass Door with Sidelights

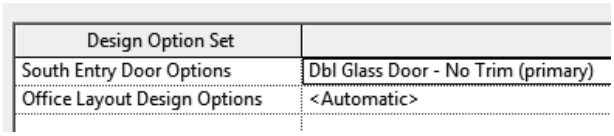
49. 

Activate **3D - South Entry Dbl Glass Door - No Trim**.

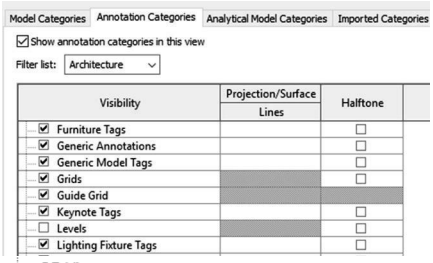
50. 

In the Properties pane:
Select **Edit** Visibilities/Graphics Overrides.

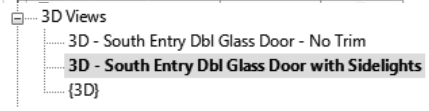
51. Activate the **Design Options** tab.



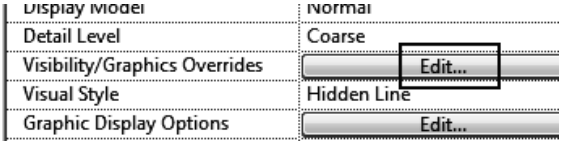
Set **Dbl Glass Door - No Trim** on South Entry Door Options.
Press **OK**.

52. 

Disable the visibility of **LEVELS**.

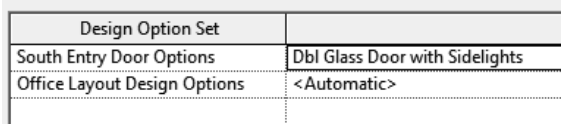
53. 

Activate **3D - South Entry Dbl Glass Door with Sidelights**.

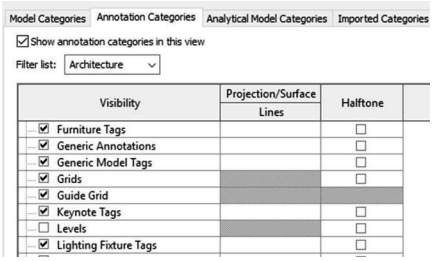
54. 

In the Properties pane:
Select **Edit** Visibilities/Graphics Overrides.

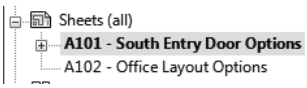
55. Activate the **Design Options** tab.



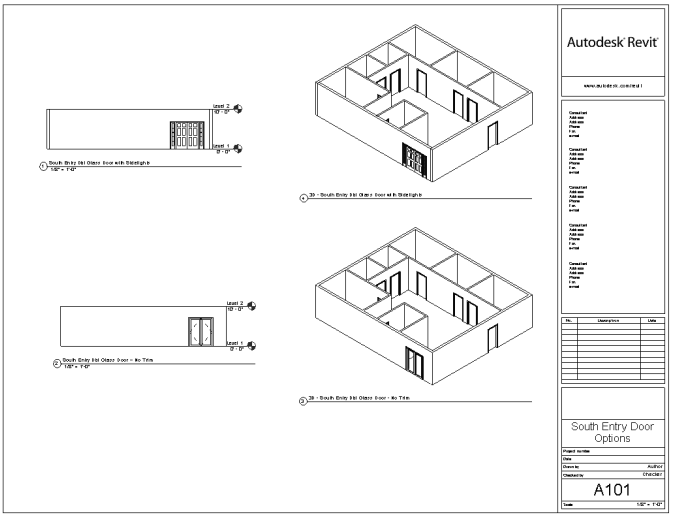
Set **Dbl Glass Door with Sidelights** on South Entry Door Options.
Press **OK**.

56. 

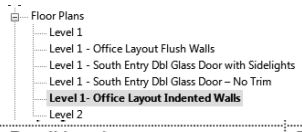
Disable the visibility of **LEVELS**.

57. 

Activate the Sheet named **South Entry Door Options**.

58. 

Drag and drop the 3D views onto the sheet.

59. 

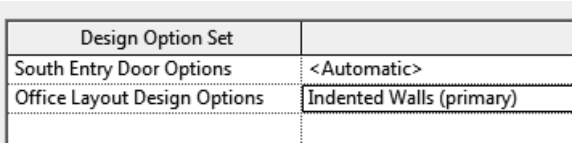
Activate **Level 1 - Office Layout Indented Walls**.

60. 

In the Properties pane:
Select Edit for **Visibility/Graphics Overrrides**.

61. 

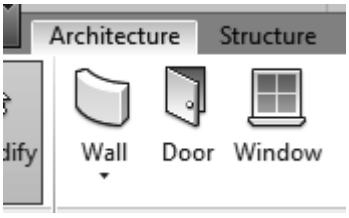
Select the **Design Options** tab.

62. 

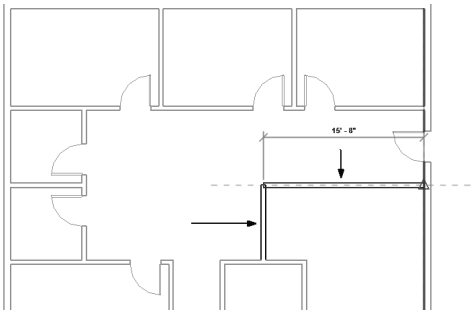
Set Office Layout Design Options to **Indented Walls (primary)**.
Press **OK**.

63. 

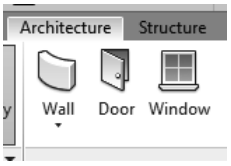
Set the Design Option to **Indented Walls (primary)**.

64. 

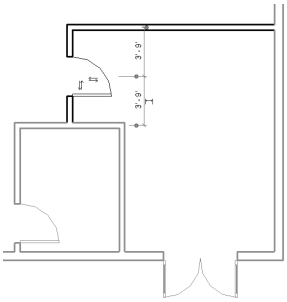
Select the Wall tool from the Architecture ribbon.
Select the Basic Wall: Interior - 5" Partition (2-hr).

65. 

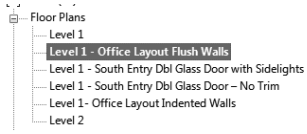
Place the two walls indicated.
The vertical wall is placed at the midpoint of the small horizontal wall to the south.
The horizontal wall is aligned with the wall indicated by the dashed line.

66. 

Activate the **Architecture** ribbon.
Select the **Door** tool from the Build panel.

67. 

Place a **Sgl Flush 36″ x 80″** door as shown.

68. 

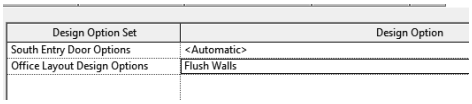
Activate **Level 1 - Office Layout Flush Walls**.

69. 

In the Properties pane:
Select Edit for **Visibility/Graphics Overrrides**.

70. 

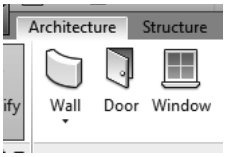
Select the **Design Options** tab.

71. 

Set Office Layout Design Options to **Flush Walls**.
Press **OK**.

72. 

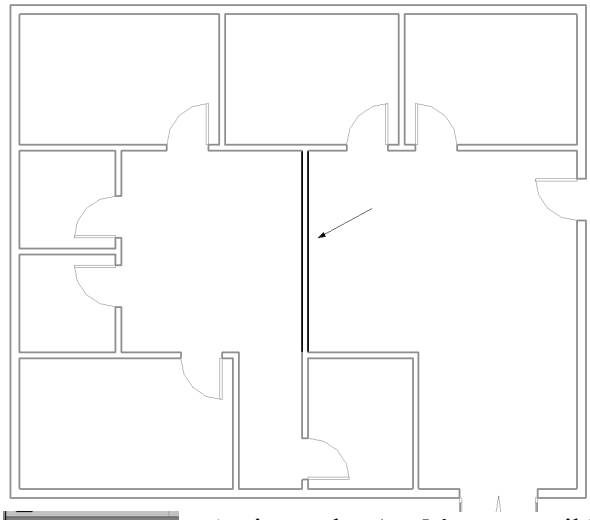
Set the Design Option to **Flush Walls**.

73. 

Activate the **Architecture** ribbon.
Select the **Wall** tool from the Build panel.

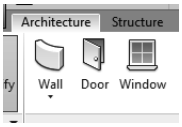
74. 

On the Properties pane:
Select the **Basic Wall: Interior - 5″ Partition (2 hr)** wall type.

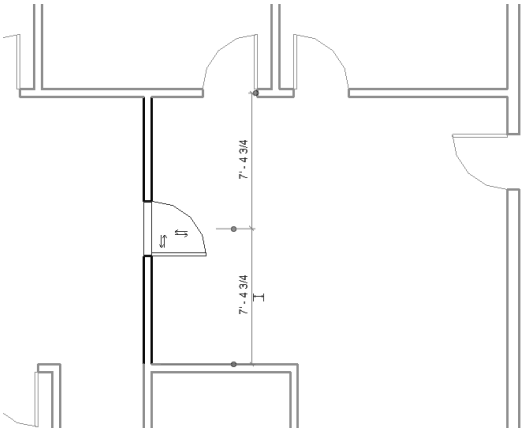
75. 

Add the wall shown.

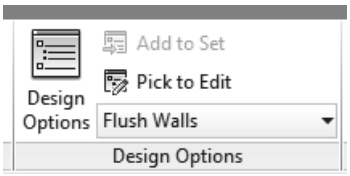
Note that the walls and door added for the Indented Walls option are not displayed.

76. 

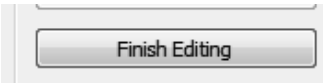
Activate the **Architecture** ribbon.
Select the **Door** tool from the Build panel.

77. 

Place a **Sgl Flush 36″ x 84″** door as shown.

78. 

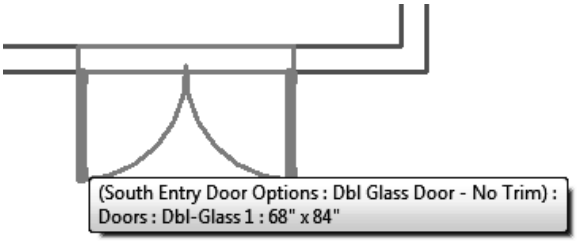
Activate the **Manage** ribbon.
Select **Design Options** on the Design Options panel.

79. 

Select **Finish Editing**.
Close the dialog.

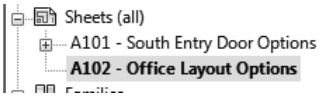
80. 

Change the Design Option to **Main Model**.

81. 

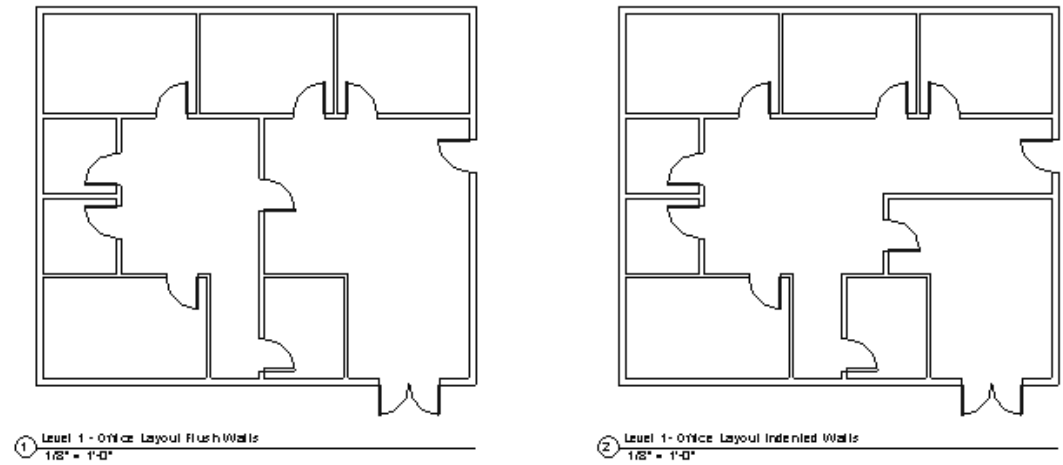
Note that if you hover your mouse over the element, it will display which Option set it belongs to.

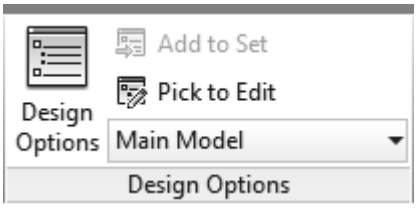
This only works if Active Only or Exclude Options is disabled.

82. 

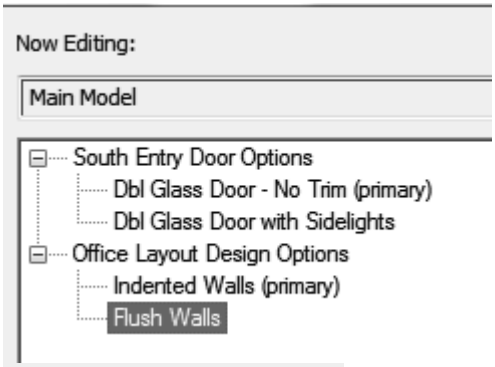
Activate the Sheet named **Office Layout Options**.

83. Drag and drop the two Office Layout options onto the sheet.



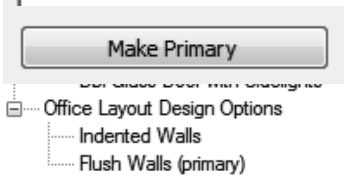
84. 

Activate the Manage ribbon.
Select **Design Options**.

85. 

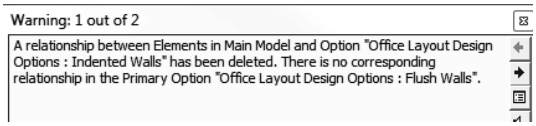
Let's assume that the client decided they prefer the flush walls option.

Highlight the **Flush Walls** option.

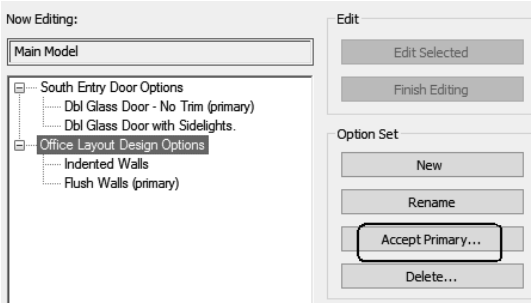
86. 

Select **Make Primary**.

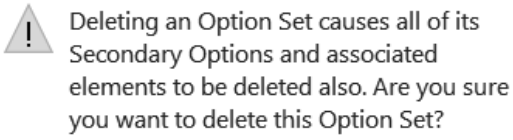
Note that (primary) is now next to Flush Walls.



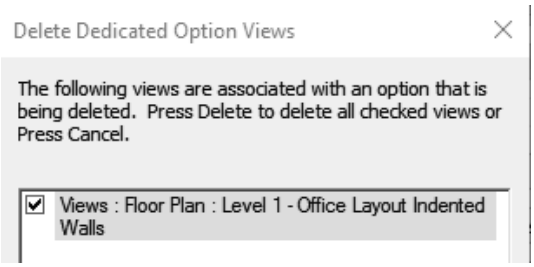
If you see an error message, you can click to ignore it.

87. 

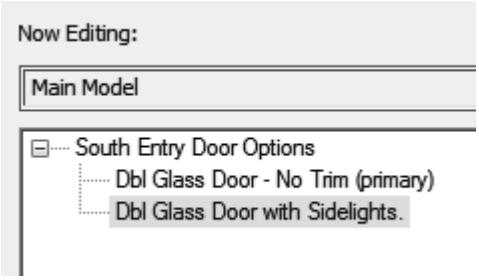
Highlight the **Office Layout Design Options**.
Select **Accept Primary**.

88. 

Press **Yes**.

89. 

The view used with the design option can also be deleted.
Press **Delete**.

90. 

Now only the design options for the doors remain.
Close the Design Options dialog.

91. Close without saving.

Exercise 1-5

Design Options Practice Question

Drawing Name: i_Design_Options_Question.rvt
Estimated Time to Completion: 5 Minutes

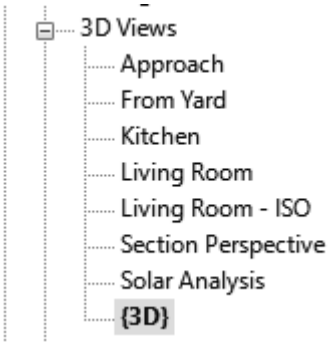
Scope
Design Options
Properties

Solution

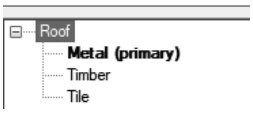
1.  Select the **Open** tool.

2. 

Locate the i_Design_Options_Question file.
Select Open.

3. 

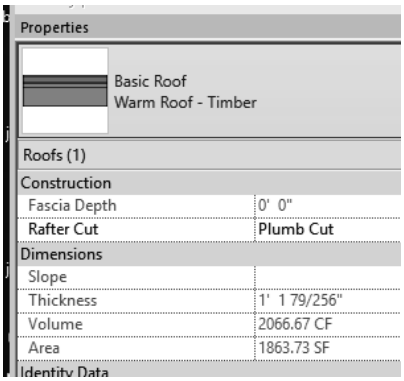
Activate the {3D} view under 3D Views.

4. 

What is the volume of the roof in Design Option – Timber?

5. 

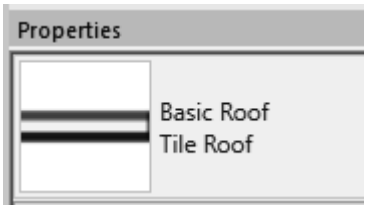
Select the **Timber** design option.
Enable **Active Only**.

6. 

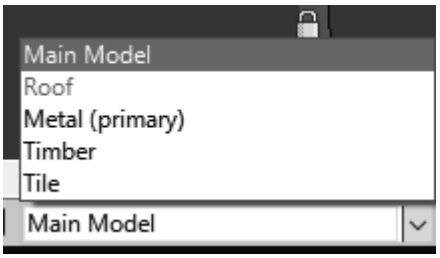
Select the roof.
Go to the Properties panel.

Scroll down.

What is the volume of the roof?

7. 

If you switch design options, does the volume of the roof change?



Phases

Phases are distinct, separate time periods within the life of a building. Phases can represent either the time periods or how the building appeared during that time period. By default, every Revit project has two phases or time periods already pre-defined. They are named Existing and New Construction.

The most common use of phases is to keep track of the "Before" and "After" scenarios. If you are a recovering AutoCAD user, you probably created a copy of your project and did a "Save As" to re-work the existing building for the proposed remodel. This has a number of disadvantages – not the least of which is the use of external references, the possibility of missing something, and the duplication of data.

If you are working on a completely new building project on a "clean" site, you still might want to use Phases as a way to control when to schedule special equipment on the site as well as crew. You might have a phase for foundation work, a phase for framing, a phase for electrical and so on. You can create schedules based on phases, so you will know exactly what inventory you might need on hand based on the phase.

You determine what elements are displayed in a view by assigning a phase to the view. You can even control colors and linetypes of different phases so you get a visual cue on which elements were created or placed in which phase.

Exercise 1-6

Phases

Drawing Name: c_phasing.rvt
Estimated Time to Completion: 75 Minutes

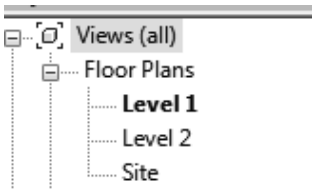
Scope
Properties
Filter
Phases
Rename View
Copy View
Graphic Settings for Phases

Solution

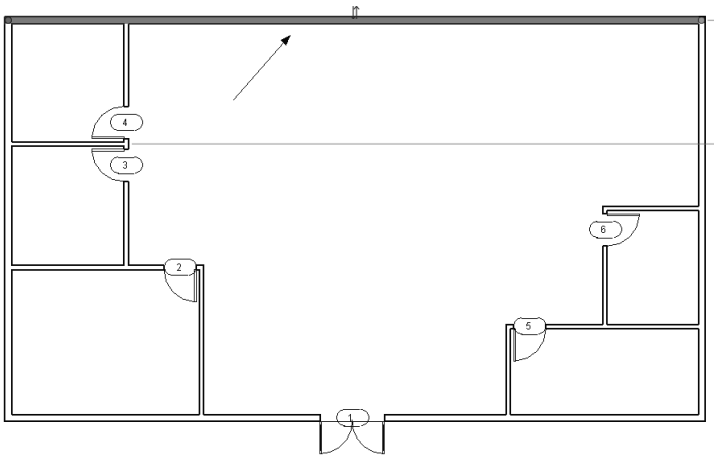
1.  Select the **Open** tool.

2. 

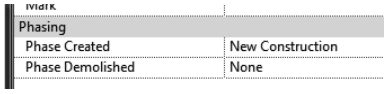
Locate the *c_phasing.rvt* file. Select **Open**.

3. 

Activate **Level 1** under Floor Plans.

4. 

Select the wall indicated. It should highlight.

5. 

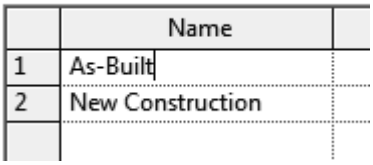
Scroll down to the Phasing category in the Properties panel on the upper left.

6. This wall was created in the New Construction Phase. Note that it is not set to be demolished.

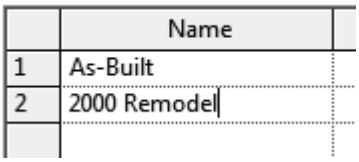
7. Right click and press **Cancel** to deselect the wall. 

8. 

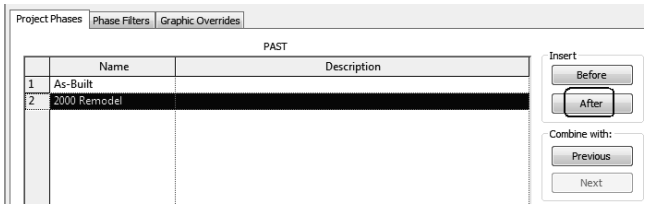
Go to the **Manage** ribbon.
Select **Phasing→Phases**.

9. 

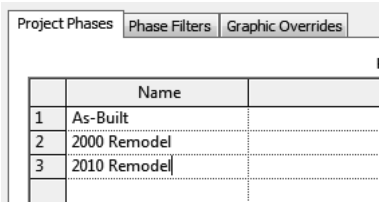
Rename Existing to **As-Built**.

10. 

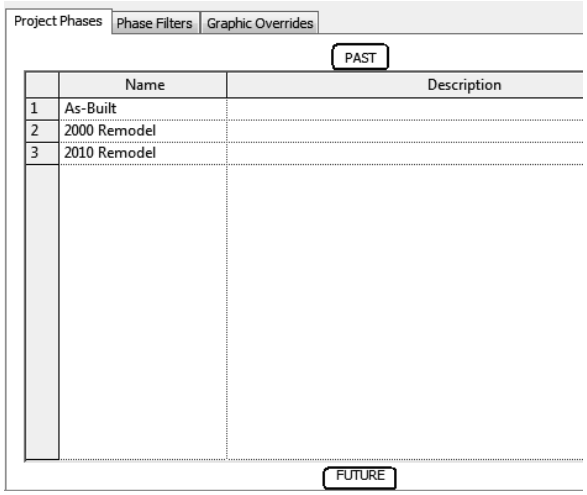
Rename New Construction to **2000 Remodel**.

11. 

Highlight the **2000 Remodel**.
Select **After**.

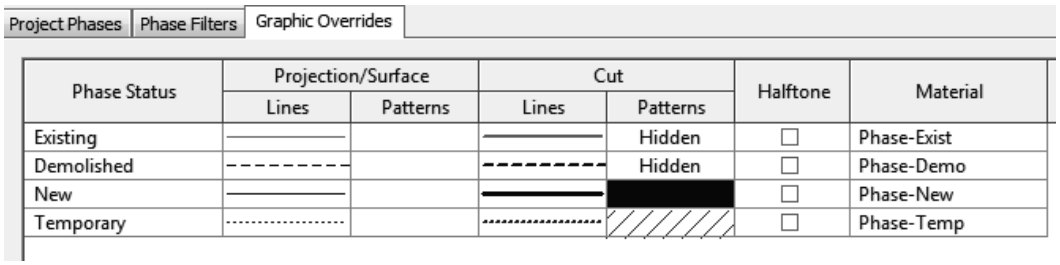
12. 

Name the new phase **2010 Remodel**.

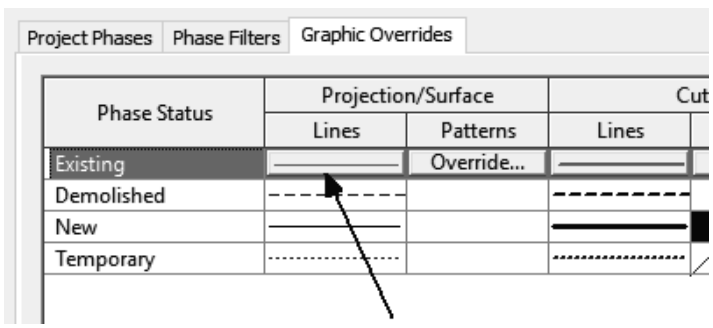


Note that the top indicates the past and the bottom indicates the future to help orient the phases.

13. Select the **Graphic Overrides** tab.



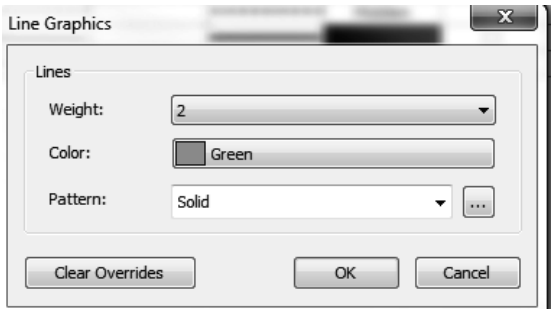
14. Note that in the Lines column for the Existing Phase, the line color is set to gray.

15. 

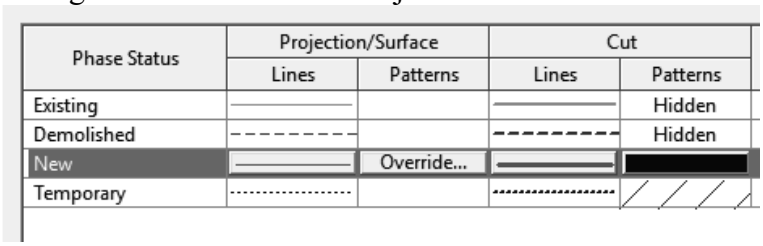
Highlight **Existing**. Click in the **Lines** column and the Line Graphics dialog will display.

Projection/Surface is what is displayed in the floor plan views.
Cut is the display for elevation or section views.
Override indicates you have changed the display from the default settings.

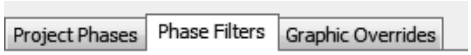
16. Set the Color to **Green** for the Existing phase by selecting the color button. Press **OK**.



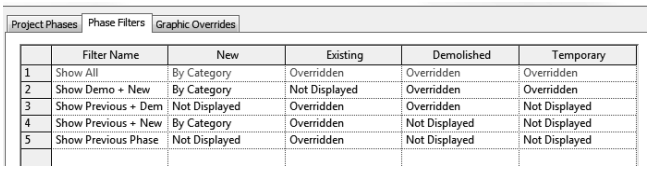
Set the Color to **Blue** for the Demolished phase.
Set the Color to **Magenta** for the New phase.
Change the colors for both Projection/Surface and Cut.



Phase Status	Projection/Surface		Cut	
	Lines	Patterns	Lines	Patterns
Existing				Hidden
Demolished				Hidden
New		Override...		
Temporary				

17. 

Select the **Phase Filters** tab.

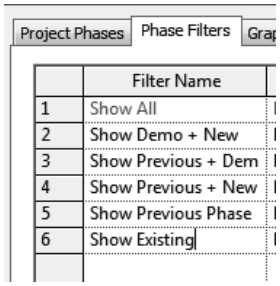
18. 

	Filter Name	New	Existing	Demolished	Temporary
1	Show All	By Category	Overridden	Overridden	Overridden
2	Show Demo + New	By Category	Not Displayed	Overridden	Overridden
3	Show Previous + Dem	Not Displayed	Overridden	Overridden	Not Displayed
4	Show Previous + New	By Category	Overridden	Not Displayed	Not Displayed
5	Show Previous Phase	Not Displayed	Overridden	Not Displayed	Not Displayed

Note that there are already phase filters pre-defined that will control what is displayed in a view.

19. 

Press the **New** button on the bottom of the dialog.

20. 

	Filter Name
1	Show All
2	Show Demo + New
3	Show Previous + Dem
4	Show Previous + New
5	Show Previous Phase
6	Show Existing

Change the name for the new phase filter to **Show Existing**.
Show Previous + Demo will display existing plus demo elements, but not new.
Show Previous + New will display existing plus new elements, but not demolished elements.

21. In the New column, select **Overridden**.
In the Existing column, select **Overridden**.
This means that the default display settings will use the new color assigned.
In the Demolished column, select **Not Displayed**.

Project Phases | Phase Filters | Graphic Overrides

	Filter Name	New	Existing	Demolished
1	Show All	By Category	Overridden	Overridden
2	Show Demo + New	By Category	Not Displayed	Overridden
3	Show Previous + Dem	Not Displayed	Overridden	Overridden
4	Show Previous + New	By Category	Overridden	Not Displayed
5	Show Previous Phase	Not Displayed	Overridden	Not Displayed
6	Show Existing	Overridden	Overridden	Not Displayed

Phasing

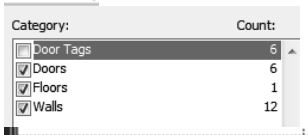
Project Phases | Phase Filters | Graphic Overrides

	Filter Name	New	Existing	Demolished	Temporary
1	Show All	By Category	Overridden	Overridden	Overridden
2	Show Demo + New	Overridden	Overridden	Overridden	Overridden
3	Show Existing	Not Displayed	Overridden	Not Displayed	Overridden
4	Show Previous + Demo	Not Displayed	Overridden	Overridden	Not Displayed
5	Show Previous + New	Overridden	Overridden	Not Displayed	Not Displayed
6	Show Previous Phase	Not Displayed	Overridden	Not Displayed	Not Displayed

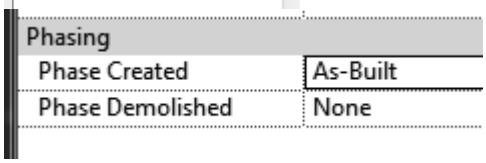
22. Use Overridden to display the colors you assigned to the different phases.
Verify that in the Show Previous + Demo phase New elements are not displayed.
Verify that in the Show Previous + New phase Demolished elements are not displayed.
Press **Apply** and **OK** to close the Phases dialog.

23. 

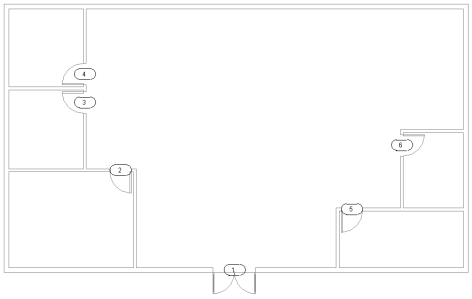
Window around the entire floor plan.
Select the **Filter** button.

24. 

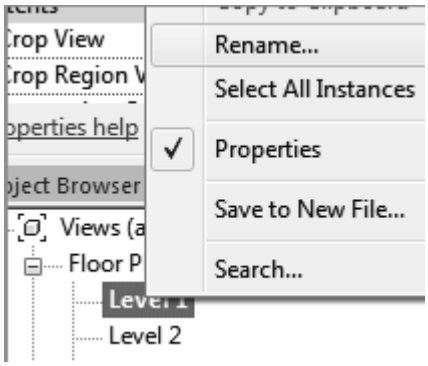
Uncheck **Door Tags**.
Tags and annotations are not affected by phases.
Press **OK.**

25. 

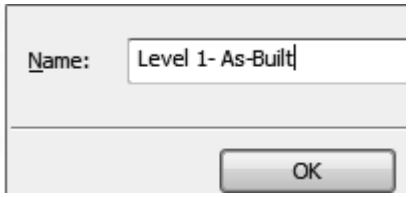
Set the Phase Created to **As-Built**.

26. 

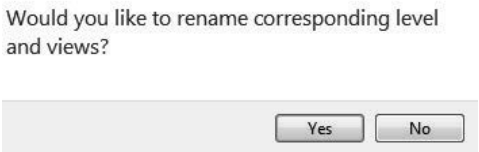
Note that the view changes to display in Green.
This is because we set the color Green to denote existing elements.

27. 

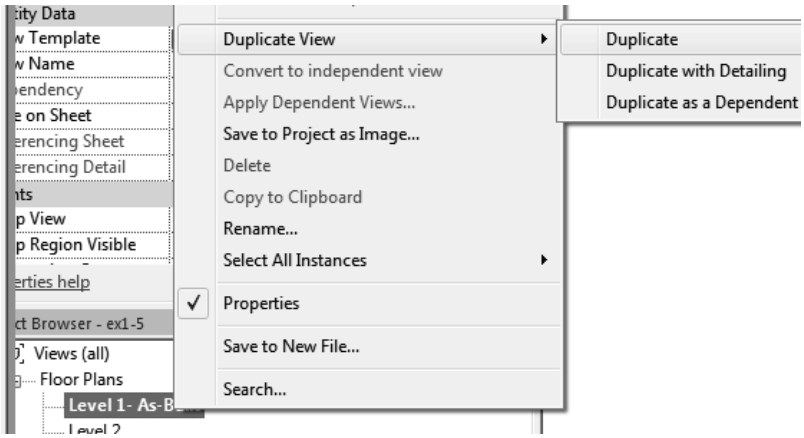
Next, we create three Level 1 floor plan views for each phase.
Highlight **Level 1** under Floor Plan.
Right click and select **Rename**.

28. 

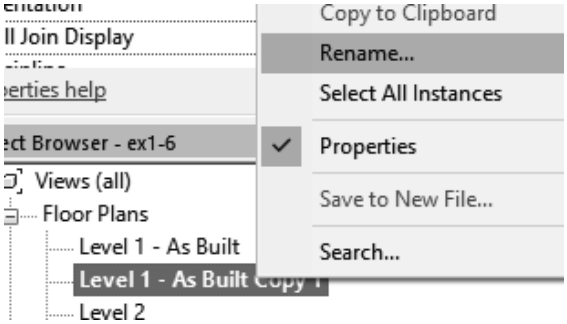
Rename the view **Level 1- As Built**.
Press **OK**.

29. 

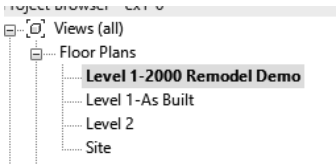
Press **No**.

30. 

Highlight **Level 1- As Built** under Floor Plan.
Right click and select **Duplicate View→Duplicate**.

31. 

Highlight **Level 1-As Built Copy 1** under Floor Plan.
Right click and select **Rename**.

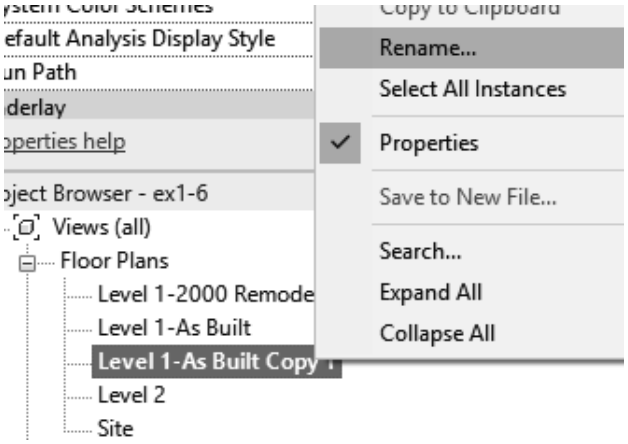
32. 

Enter **Level 1-2000 Remodel Demo**.

33. 

Highlight **Level 1-As Built** under Floor Plan.

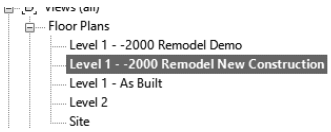
34. Right click and select **Duplicate View→Duplicate**.

35. 

Highlight **Level 1-As Built Copy 1** under Floor Plan.
Right click and select **Rename**.

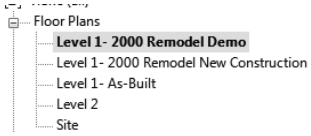
36. 

Enter **Level 1-2000 Remodel New Construction**.

37. 

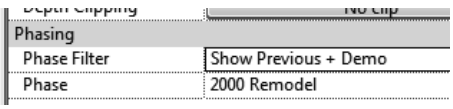
You should have three Level 1 floor plan views listed:

- As Built
- 2000 Demo
- 2000 New Construction.

38. 

Activate the **Level 1-2000 Remodel Demo** view.

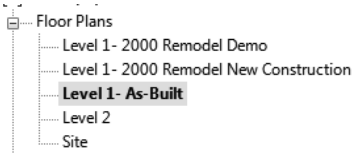
39. In the Properties dialog:



Set the Phase Filter to **Show Previous + Demo**.
The previous phase to demo is As-Built. This means the view will display elements created in the existing and demolished phase.

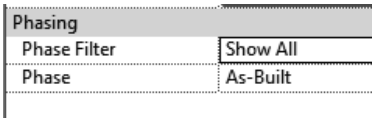
Set the Phase to **2000 Remodel**.

40. Activate the **Level 1-As Built** view.

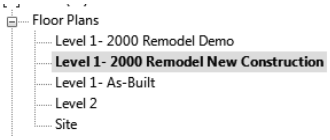


The display does not show the graphic overrides. By default, Revit only allows you to assign graphic overrides to phases AFTER the initial phase. Because the As-Built view is the first phase in the process, no graphic overrides are allowed. The only work-around is to create an initial phase with no graphic overrides and go from there.

41. In the Properties dialog:

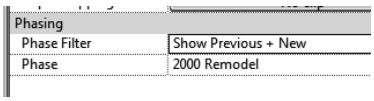


Set the Phase Filter to **Show All**.
Set the Phase to **As-Built**.

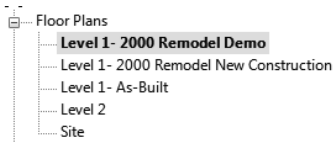
42. 

Activate the **Level 1-2000 Remodel New Construction** view.

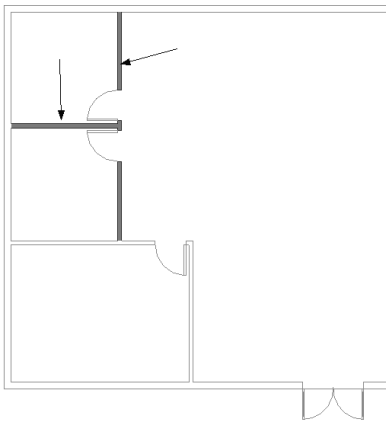
43. In the Properties dialog:



Set the Phase Filter to **Show Previous + New**.
This will display elements created in the Existing Phase and the New Phase, but not the Demo phase.
Set the Phase to **2000 Remodel**.

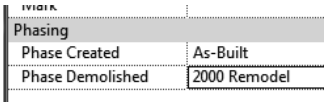
44. 

Activate the **Level 1 - 2000 Remodel Demo** view.

45. 

Hold down the Ctrl button.
Select the two walls indicated.

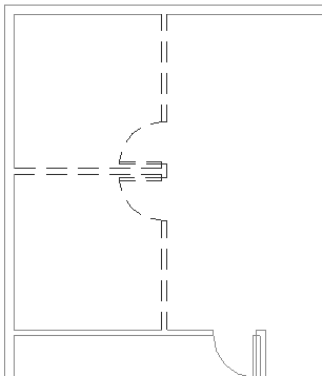
46. In the Properties pane:



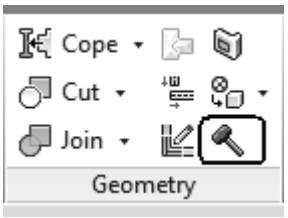
Scroll down to the bottom.
In the Phase Demolished drop-down list, select **2000 Remodel**.

47. Press **OK**.

48. The demolished walls change appearance based on the graphic overrides.
Release the selected walls using right click→Cancel or by pressing ESCAPE.

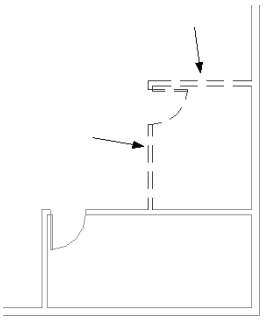


49.



Activate the **Modify** ribbon.
Use the **Demolish** tool on the Geometry panel to demolish the walls indicated.

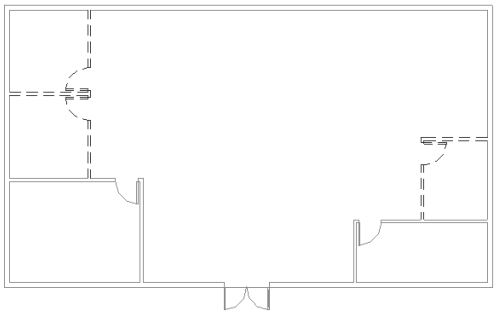
50.



Note that the doors will automatically be demolished along with the walls. If there were windows placed, these would also be demolished. That is because those elements are considered *wall-hosted*.

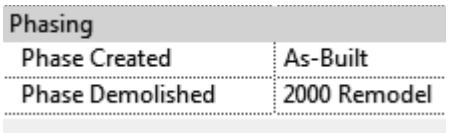
Right click and select Cancel to exit the Demolish mode.

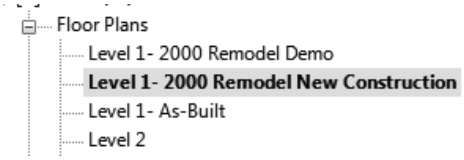
51.



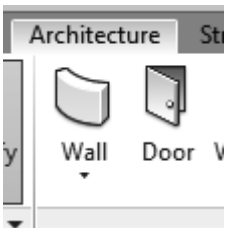
This is how the Level 1- 2000 Remodel Demo view should appear.

If it doesn't, check the walls to verify that they are set to Phase Created: As Built, Phase Demolished: 2000 Remodel.

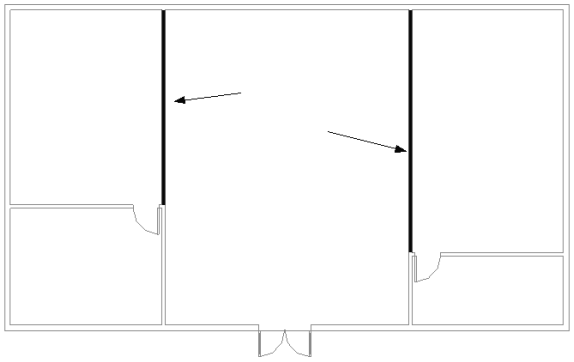


52. 

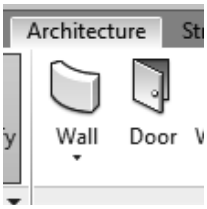
Activate the **Level 1 - 2000 Remodel New Construction** view.

53. 

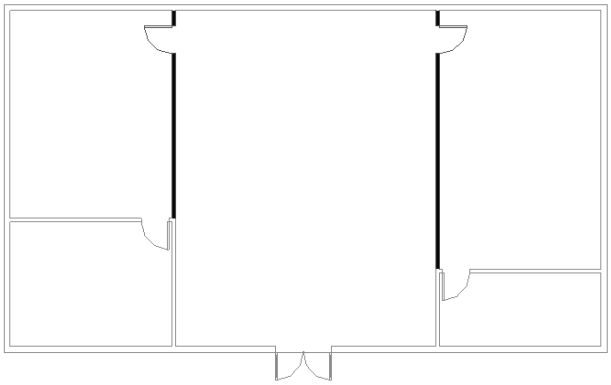
Select the **Wall** tool from the Architecture ribbon.

54. 

Place two walls as shown. Select the end points of the existing walls and simply draw up.
Right click and select **Cancel** to exit the Draw Wall mode.

55. 

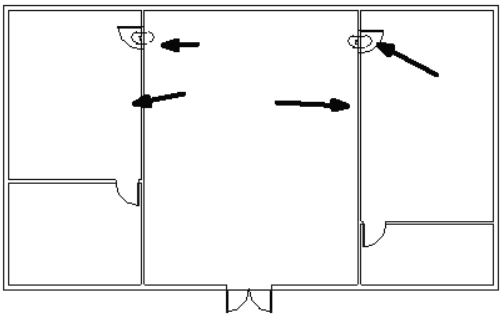
Select the **Door** tool under the Build panel on the Architecture ribbon.

56. 

Place two doors as shown. Set the doors 3′ 6″ from the top horizontal wall. Flip the orientation of the doors if needed.

You can press the space bar to orient the doors before you left click to place.

Note that the new doors and walls are a different color than the existing walls.

57. 

Select the doors and windows you just placed.
You can select by holding down the CONTROL key or by windowing around the area.

Note: If Door Tags are selected, you will not be able to access Phases in the Properties dialog.

58. Look in the Properties panel and scroll down to Phasing.

Phasing	
Phase Created	2000 Remodel
Phase Demolished	None

Note that the elements are already set to **2000 Remodel** in the Phase Created field.

59. Switch between the three views to see how they display differently.

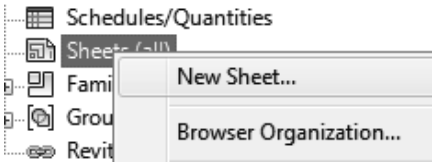
60. Remember that Existing should show as Green, Demo as Blue, and New as Magenta.

If the colors don't display correctly in the Level 1 Remodel Demo or Remodel New Construction, check the Phase Filters again and make sure that the categories to be displayed are Overridden to use the assigned colors.

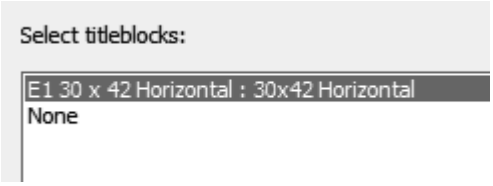
Phasing

Project Phases | Phase Filters | Graphic Overrides

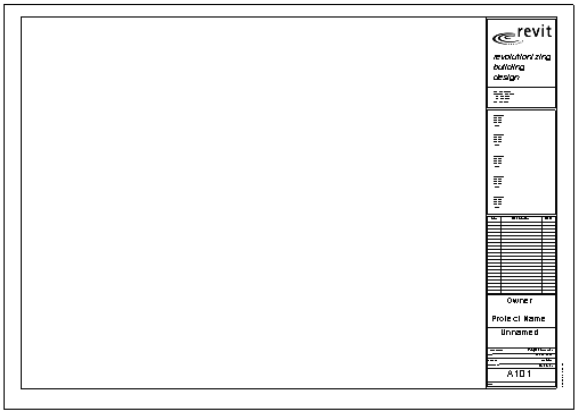
	Filter Name	New	Existing	Demolished	Temporary
1	Show All	By Category	Overridden	Overridden	Overridden
2	Show Demo + New	Overridden	Overridden	Overridden	Overridden
3	Show Existing	Not Displayed	Overridden	Not Displayed	Overridden
4	Show Previous + Demo	Not Displayed	Overridden	Overridden	Not Displayed
5	Show Previous + New	Overridden	Overridden	Not Displayed	Not Displayed
6	Show Previous Phase	Not Displayed	Overridden	Not Displayed	Not Displayed

61. 

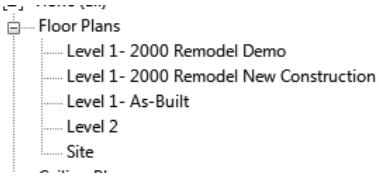
Highlight **Sheets** in the Project Browser.
Right click and select **New Sheet**.

62. 

Press **OK** to accept the default title block.

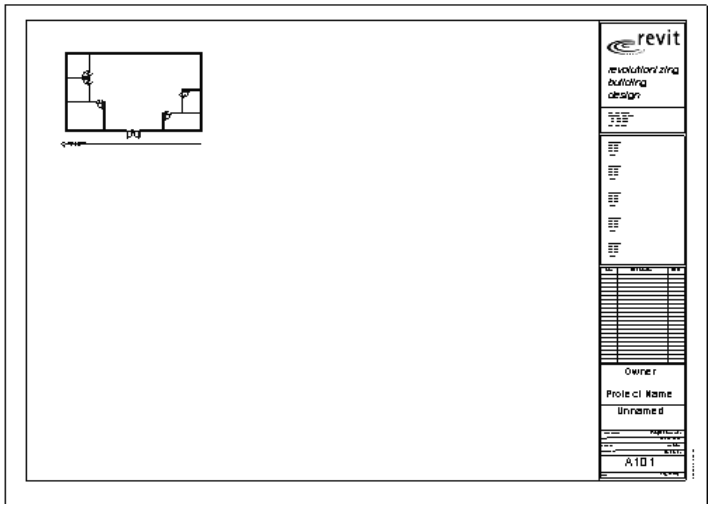
63. 

A view opens with the new sheet.

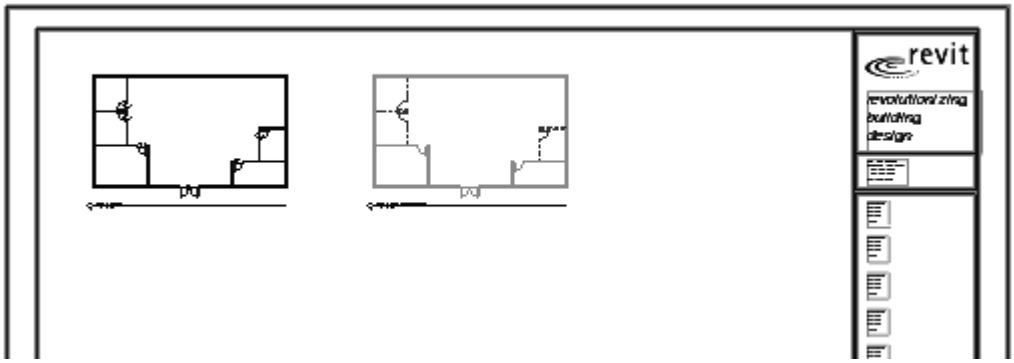
64. 

Highlight the Level 1 – As-Built Floor plan.
Hold down the left mouse button and drag the view onto the sheet. Release the left mouse button to click to place.

65. A preview will appear on your cursor. Left click to place the view on the sheet.

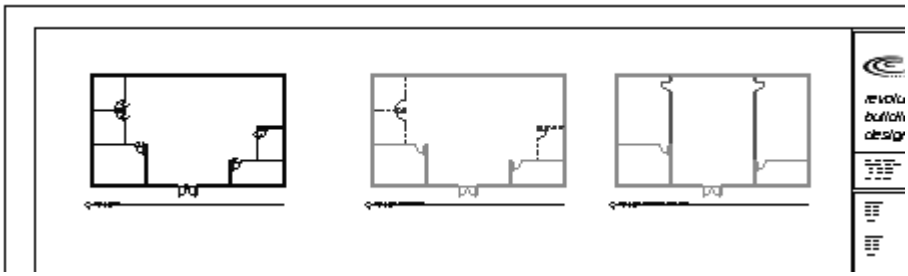


66. Highlight the Level 1 - 2000 Remodel Demo Floor plan.
Hold down the left mouse button and drag the view onto the sheet. Release the left mouse button to click to place.



The two views appear on the sheet.

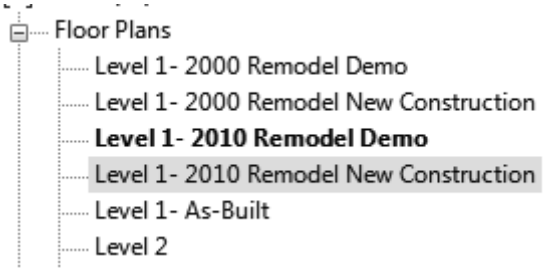
67. Highlight the Level 1 - 2000 New Construction plan.
Hold down the left mouse button and drag the view onto the sheet. Release the left mouse button to click to place.



68. Save as *ex1-6.rvt*.

Challenge Exercise:

Create two more views called Level 1 2010 Remodel Demo and Level 1 2010 Remodel New Construction.



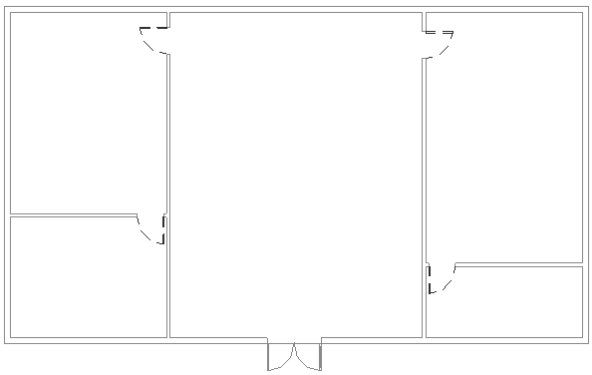
Set the Phases and phase filters to the new views.

The 2010 Remodel Demo view should be set to:

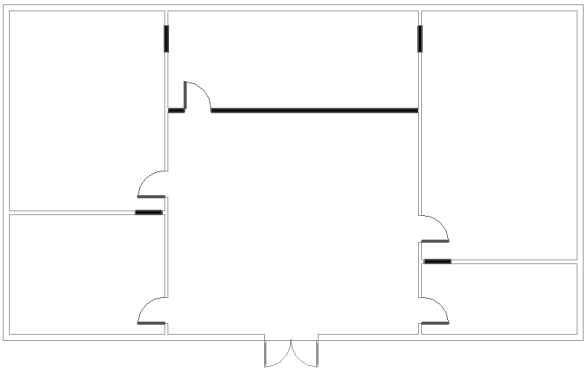
Phasing	
Phase Filter	Show Previous + Demo
Phase	2010 Remodel

The 2010 Remodel New Construction view should be set to:

Phasing	
Phase Filter	Show Previous + New
Phase	2010 Remodel



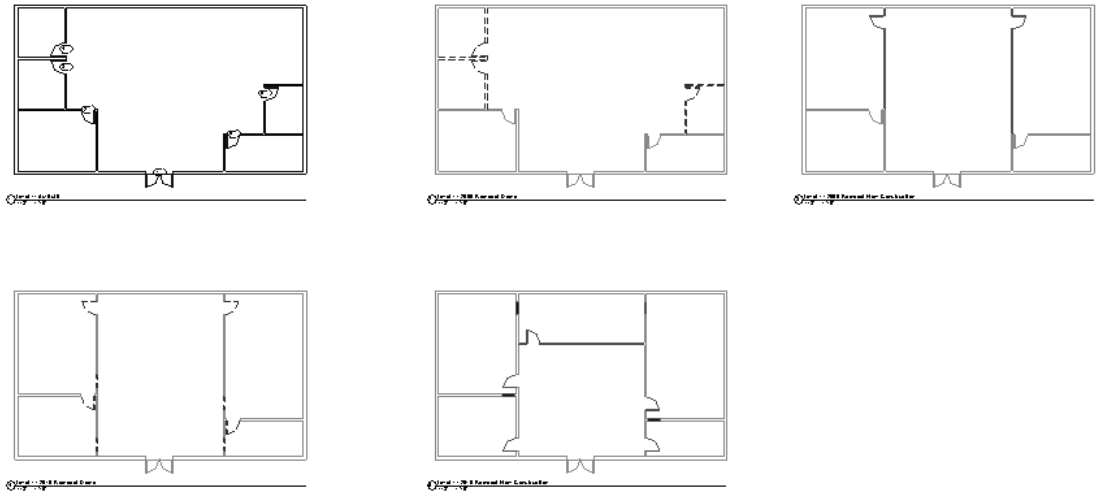
On the 2010 Remodel Demo view: Demo all the interior doors.



For the 2010 remodel new construction, add the walls and doors as shown.

Note you will need to fill in the walls where the doors used to be.

Add the 2010 views to your sheet.



Answer this question:

When should you use phasing as opposed to design options?

Certified User Practice Exam

1. Select the answer which is NOT an example of bidirectional associativity:

    A. Flip a section line and all views update.
    B. Draw a wall in plan view and it appears in all other views.
    C. Change an element type in a schedule and the change is displayed in the floor plan view as well.
    D. Flip a door orientation so the door swing is on the exterior of the building.

2. Select the answer which is NOT an example of a parametric relationship:

    A. A floor is attached to enclosing walls. When a wall moves, the floor updates so it remains connected to the walls.
    B. A series of windows are placed along a wall using an EQ dimension. The length of the wall is modified and the windows remain equally spaced.
    C. A door is placed in a wall. The wall is moved and the door remains constrained in the wall.
    D. A shared parameter file is loaded to the server.

3. Which tab does NOT appear on Revit's ribbon?

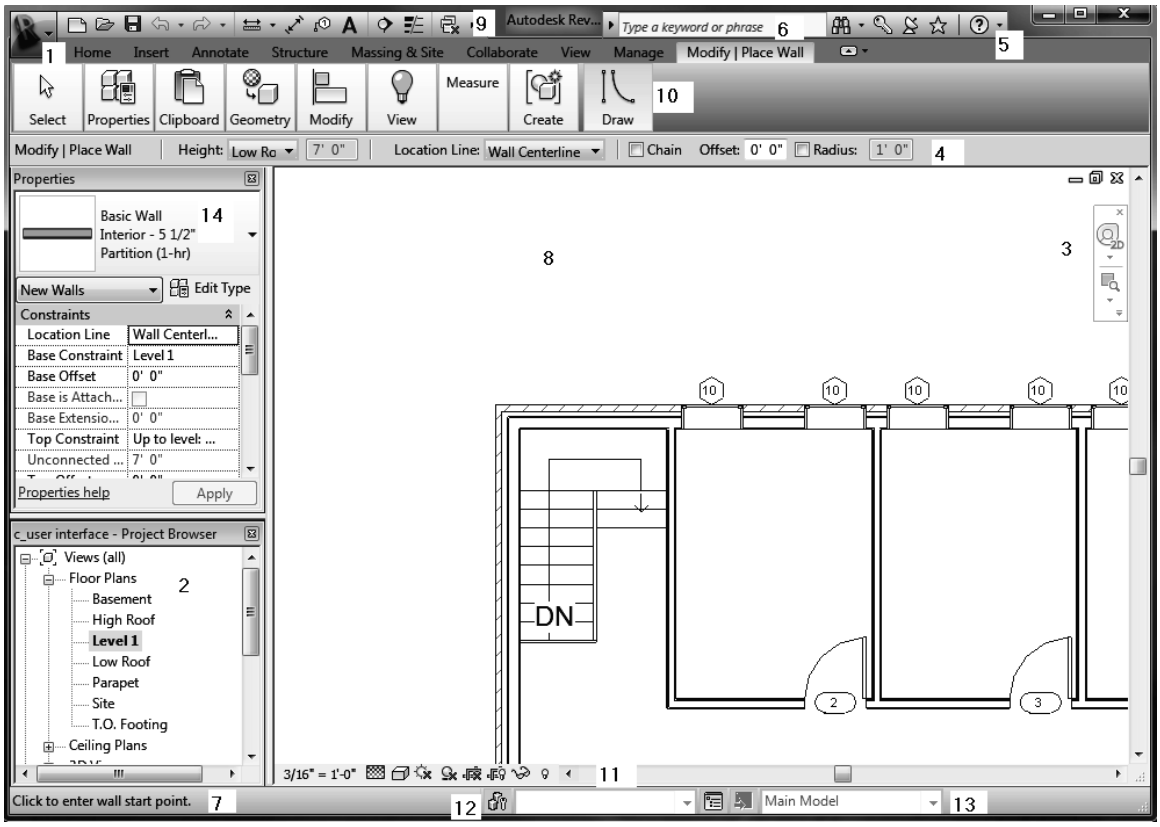
    A. Architecture
    B. Basics
    C. Insert
    D. View

4. Which item does NOT appear in the Project Browser?

    A. Families
    B. Groups
    C. Callouts
    D. Notes

5. Which is the most recently saved backup file?

    A. office.0001
    B. office.0002
    C. office.0003
    D. office.0004



6. Match the numbers with their names.

View Control Bar	InfoCenter
Project Browser	Status Bar
Navigation Bar	Properties Pane
Options Bar	Application Menu
Design Options	Drawing Area
Help	Quick Access Toolbar
Ribbon	Worksets

Answers:

1) D; 2) D; 3) B; 4) D; 5) D; 6) 1- Application Menu, 2- Project Browser, 3- Navigation Bar, 4- Options Bar, 5- Help, 6- InfoCenter, 7- Status Bar, 8- Drawing Area, 9- Quick Access Toolbar, 10- Ribbon, 11- View Control Bar,12- Worksets, 13- Design Options

Certified Professional Practice Exam

1. When using design options, the active option is the _____

    A. Preferred design option in the design option set.
    B. Part of the building that is not defined using design options.
    C. Design options currently being edited.
    D. Collection of all design options.

2. A _____ is a rule that you apply to a view to control the display of elements based on the phase status.

    A. View Template
    B. Display State
    C. Phase Filter
    D. Design Option

3. If you demolish an element in one view:

    A. It is displayed as demolished in all views with the same phase.
    B. It is displayed as demolished only in plan and elevation views with the same phase.
    C. It is displayed as demolished in all views with the same phase except for section views.
    D. It is displayed as demolished in that view only.

4. When a view is opened or created, by default the View Phase is set to:

    A. Default
    B. Demolished
    C. Existing
    D. New Construction

5. The two properties used to control the phase and display of a view are:

    A. Phase Filter
    B. Phase
    C. Graphic Display Options
    D. Visibility/Graphics Overrides

6. The _____ is the entire building model, excluding any design options.

    A. The Main Model
    B. The Basic Model
    C. The Primary Model
    D. The Primary Option

7. The _____ is the preferred option in a Design Option set.

    A. Main Model
    B. Primary Option
    C. Secondary Option
    D. Active Option

8. The _____ is the design option which is active and currently being edited.

    A. Main Model
    B. Primary Option
    C. Active Option
    D. Default Option

9. A _____ is a view that is dedicated to a specific design option. When the view is active, Revit displays the design option along with the rest of the building model.

    A. Dedicated view
    B. Phased view
    C. Design Option view
    D. Primary Option view
    E. Active view

Answers:

1) C; 2) C; 3) A; 4) D; 5) A & B; 6) A; 7) B; 8) C; 9) A