

Apartment: Using Basic Building Components

Before you begin...

The following files are needed for this Let Me Try exercise:

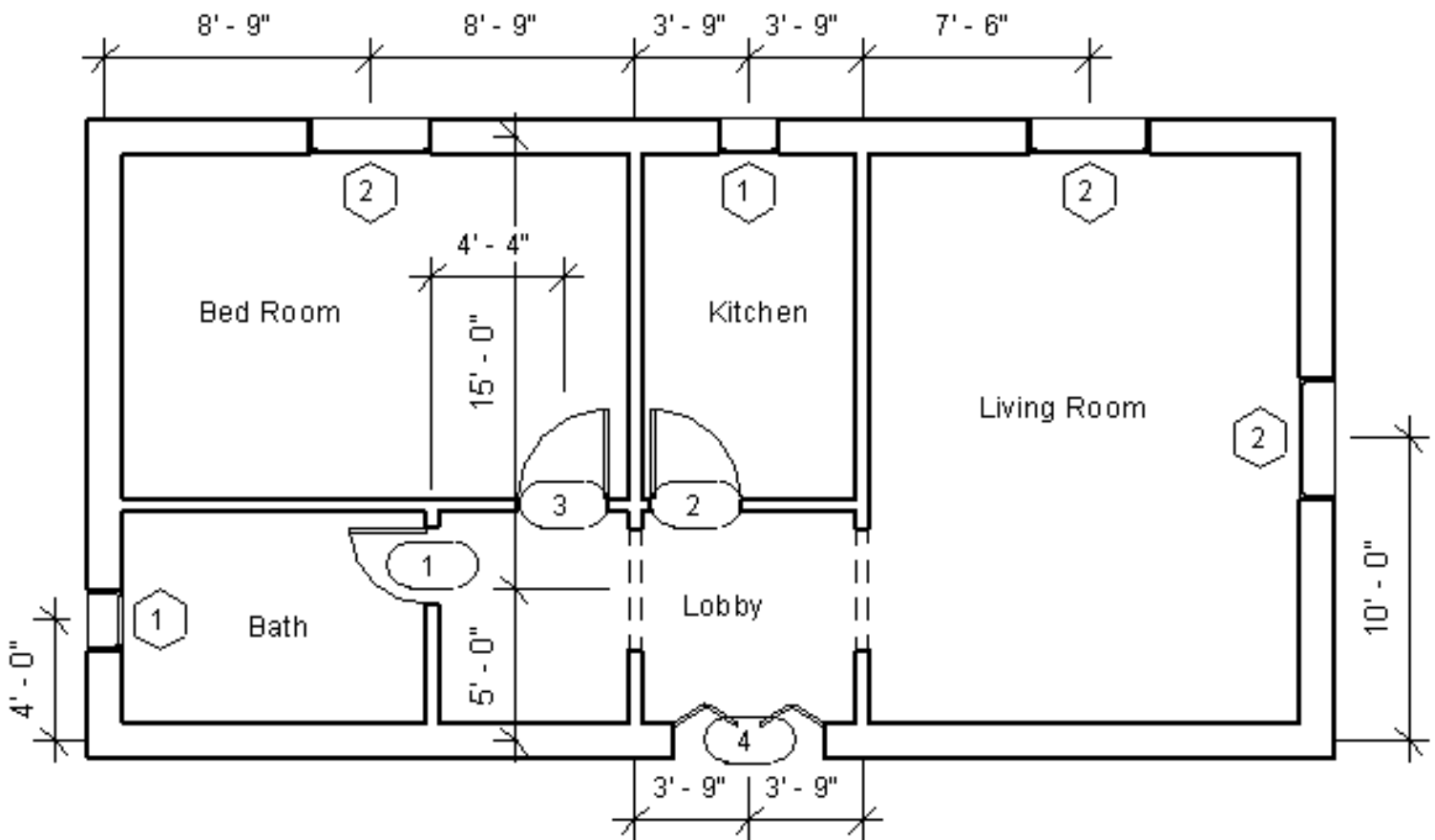
For Imperial *c03_Apartment1_tut3.rvt*
For Metric *M_c03_Apartment1_tut3.rvt*

You have several options available for accessing the file(s):

1. You can access the file(s) in the attachment window of this pdf. To do this:
 - Click on the paper clip icon of this pdf to open the attachments window.
 - You will see a list of the files for this exercise.
 - Click on the file name.
 - The file will open in the appropriate program, if the program is installed on your computer.
 - Once it has opened, go under File – Save As and save the file to your desktop.
2. To access the files from your dataset:
 - If you haven't downloaded the dataset yet, open your course homepage.
 - Click on the link: **Click here to download the dataset for this course.**
 - Save the course dataset to the C:/ drive on your computer.
3. Options for opening a Revit MEP project file(s):
 - Begin by dragging it directly into the application or by using the **Open** command from the Application menu.
 - Double click a Revit Architecture file, but be aware that if you have more than one version of Revit Architecture installed on your computer, the file will open in the **last version** of Revit Architecture you used.

Please ensure you save all your projects to your computer as directed by the *Let Me Try* instructions.

In this exercise, you will add doors and windows to the apartment project file. Refer to the image below for adding these elements. The dimensions and the text have been given for reference and are not to be added.



Opening the Existing Project and Invoking the Door Tool

(If using the attached file, follow the instructions for accessing files found in the introduction.)

First, you need to open the specified project and invoke the **Door** tool from the **Architecture** tab.

1. Choose **Open > Project** from **Application Menu** and open the **c03_Apartment1_tut3.rvt** for Imperial or **M_c03_Apartment1_tut3.rvt** for Metric project file.
2. Double-click on **Level 1** under the **Floor Plans** head in the **Project Browser**; the floor plan view is displayed.

- Invoke the **Door** tool from the **Build** panel of the **Architecture** tab; the **Modify | Place Door** tab is displayed.
- On invoking the **Door** tool, the properties of the door to be added are displayed in the **Properties** palette. In the palette, select the type of door from the **Type Selector** drop-down list.

For Imperial
For Metric

Single - Flush: 30" x 84"

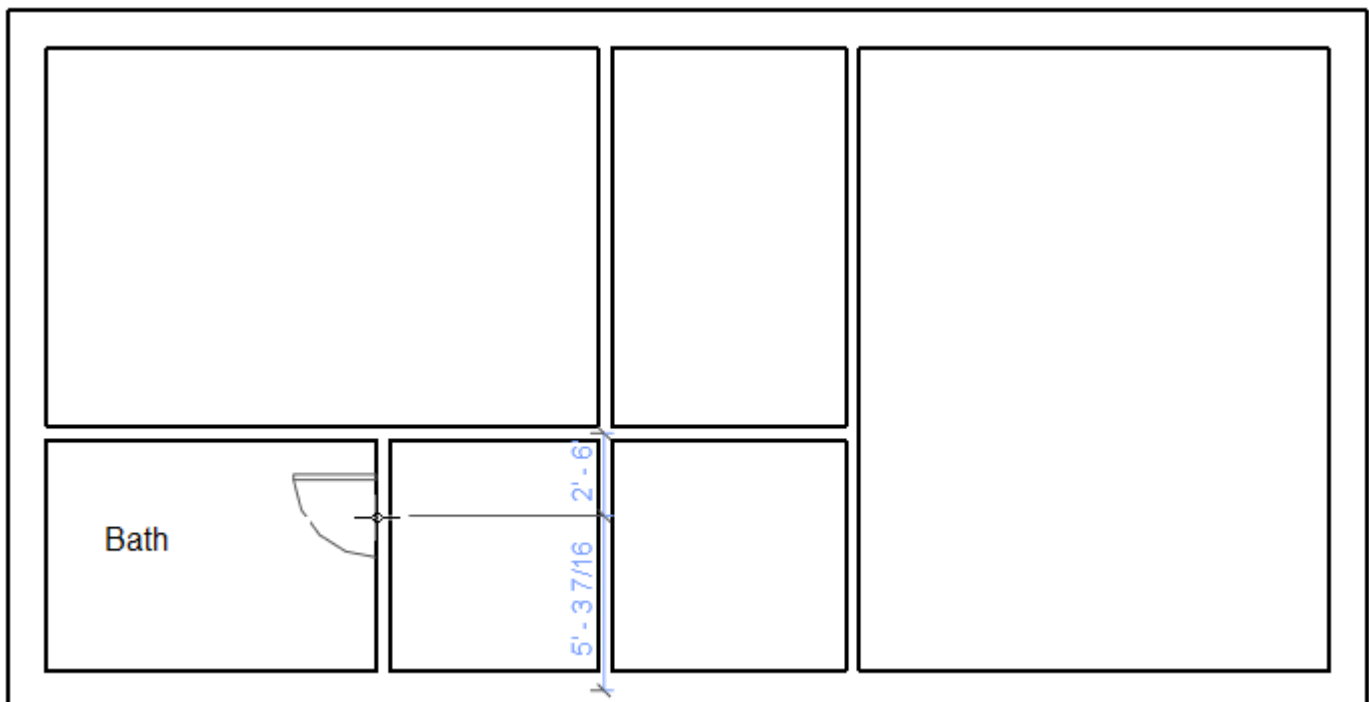
M_Single - Flush: 0762 x 2134 mm

- Ensure that the **Tag on Placement** tool is chosen from the **Tag** panel of the **Modify | Place Door** tab.

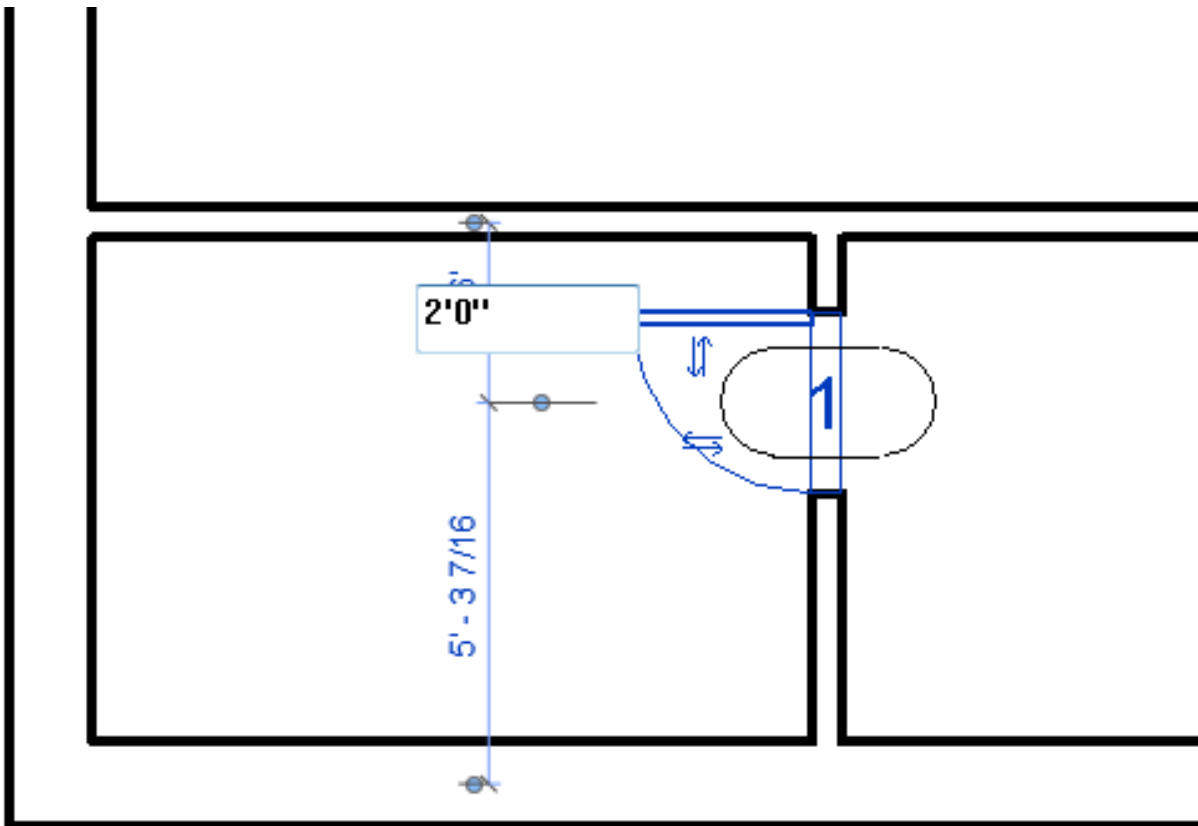
Adding Doors

In this section, you need to add doors at the approximate location and then modify its location by specifying the exact dimension. You will also use the **Load Family** tool to load the desired door type in the project.

- Move the cursor close to the interior wall of the Bath area to display the door symbol, as shown in the image below. Notice that as you move the cursor, the side of the door is changed. Click on the interior wall; the door is created at the specified location.



- To move the door to the exact location, choose the **Modify** button in the **Select** panel of the **Modify | Doors** tab. Next, select the door added in the drawing; the selected door gets highlighted in blue with the controls and the related temporary dimensions are displayed in it.
- Since the location of the door is given with reference to the upper interior wall, click on the upper temporary dimension, and then enter **2'0" (610 mm)**, as shown in the image below. Next, press ENTER; the door moves to the specified location.



- To place the door type 2, invoke the **Door** tool from the **Build** panel of the **Architecture** tab; the **Modify | Place Door** tab is displayed.
- Choose the **Load Family** tool in the **Mode** panel of this tab; the **Load Family** dialog box is displayed.

6. In this dialog box, choose the **Doors** subfolder from the **US Imperial** folder. Next, select the required door family.

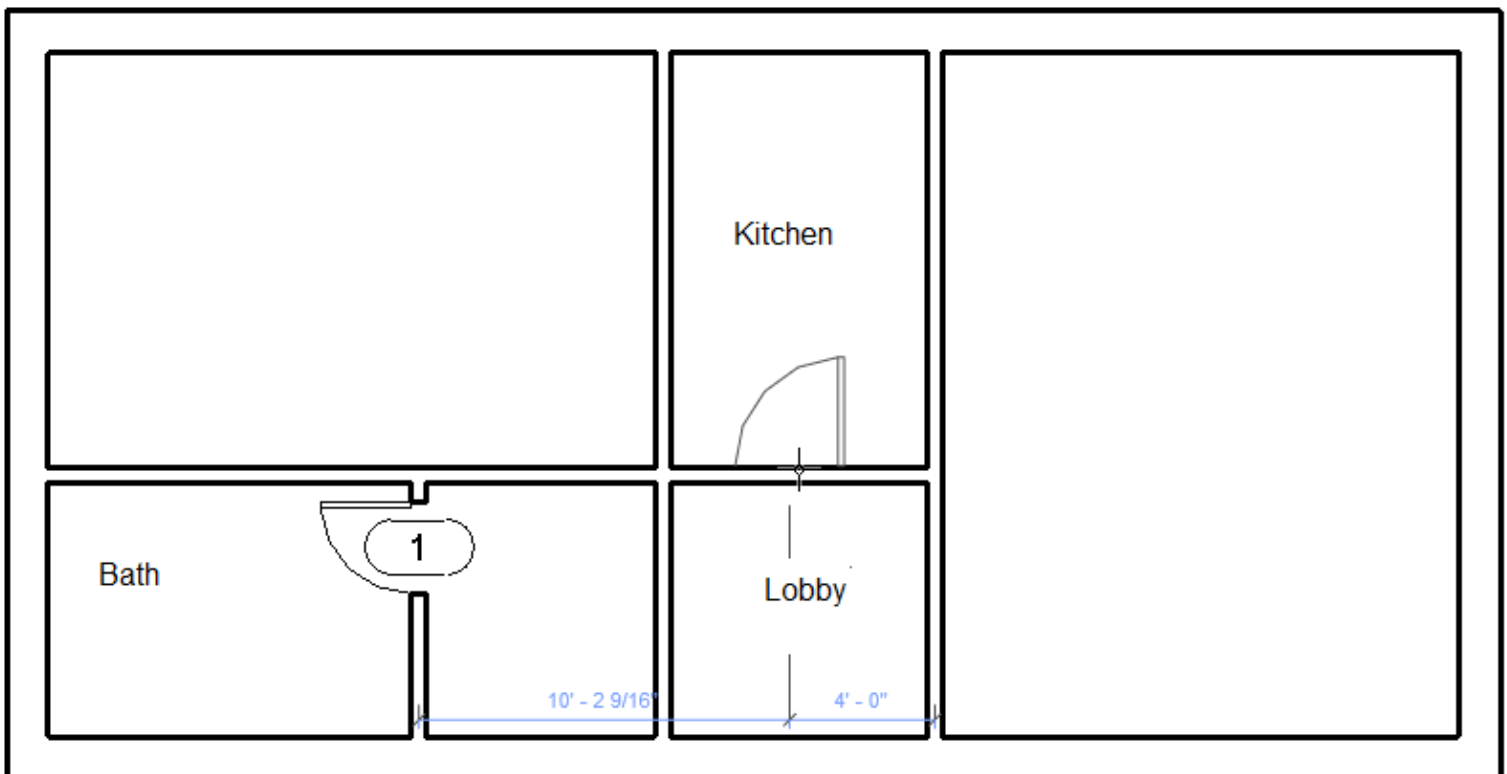
For Imperial	Single Decorative 2
For Metric	M_Single Decorative 2

Next, choose the **Open** button.

7. In the **Type Selector** drop-down list, select the door type, as specified in the project parameters.

For Imperial	Single Decorative 2 - 36" x 84"
For Metric	M_Single Decorative 2 - 0762 x 2134 mm

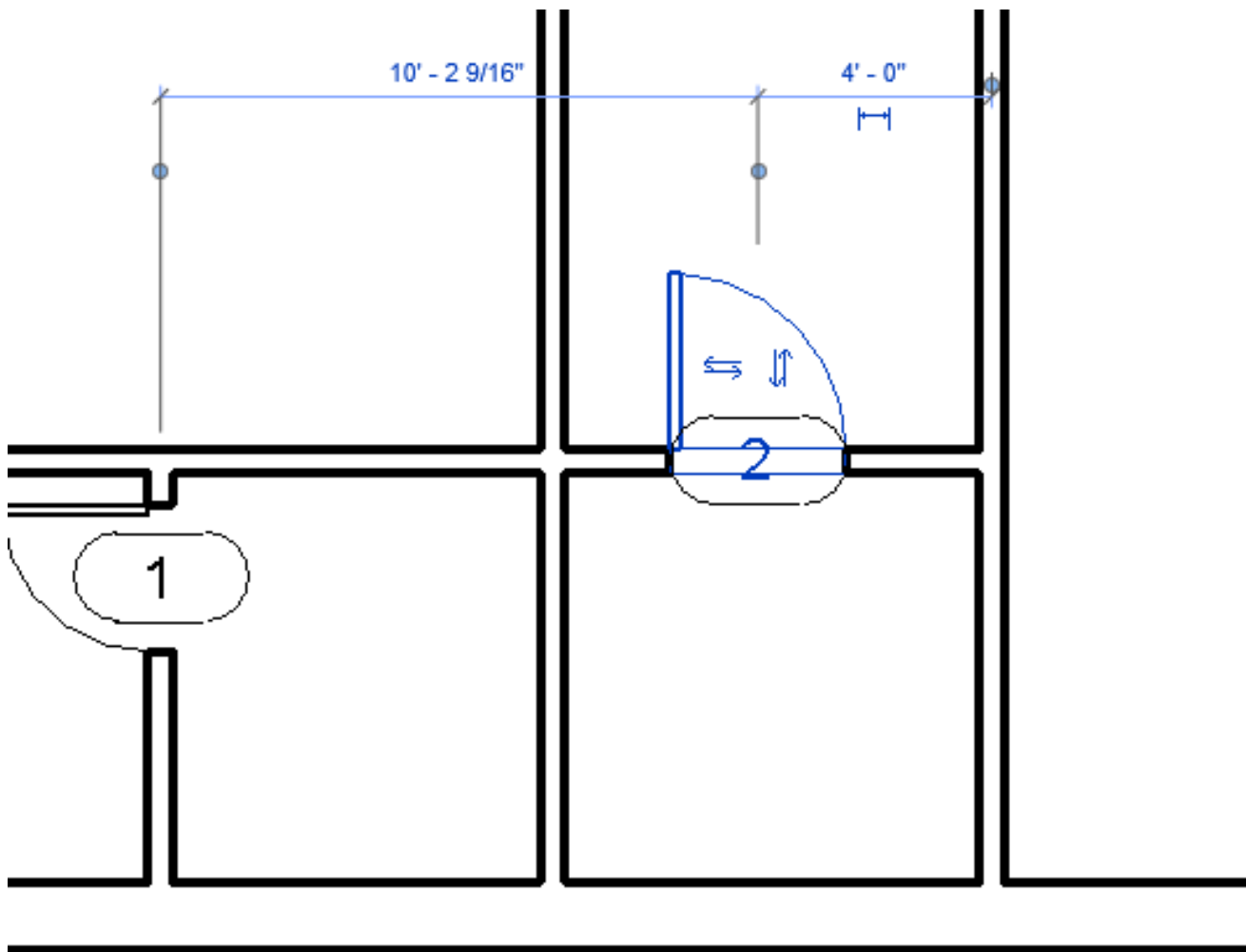
8. Move the cursor near the interior wall common to the Lobby and the Kitchen areas, as shown in the image below, and click to add the kitchen door close to this location.



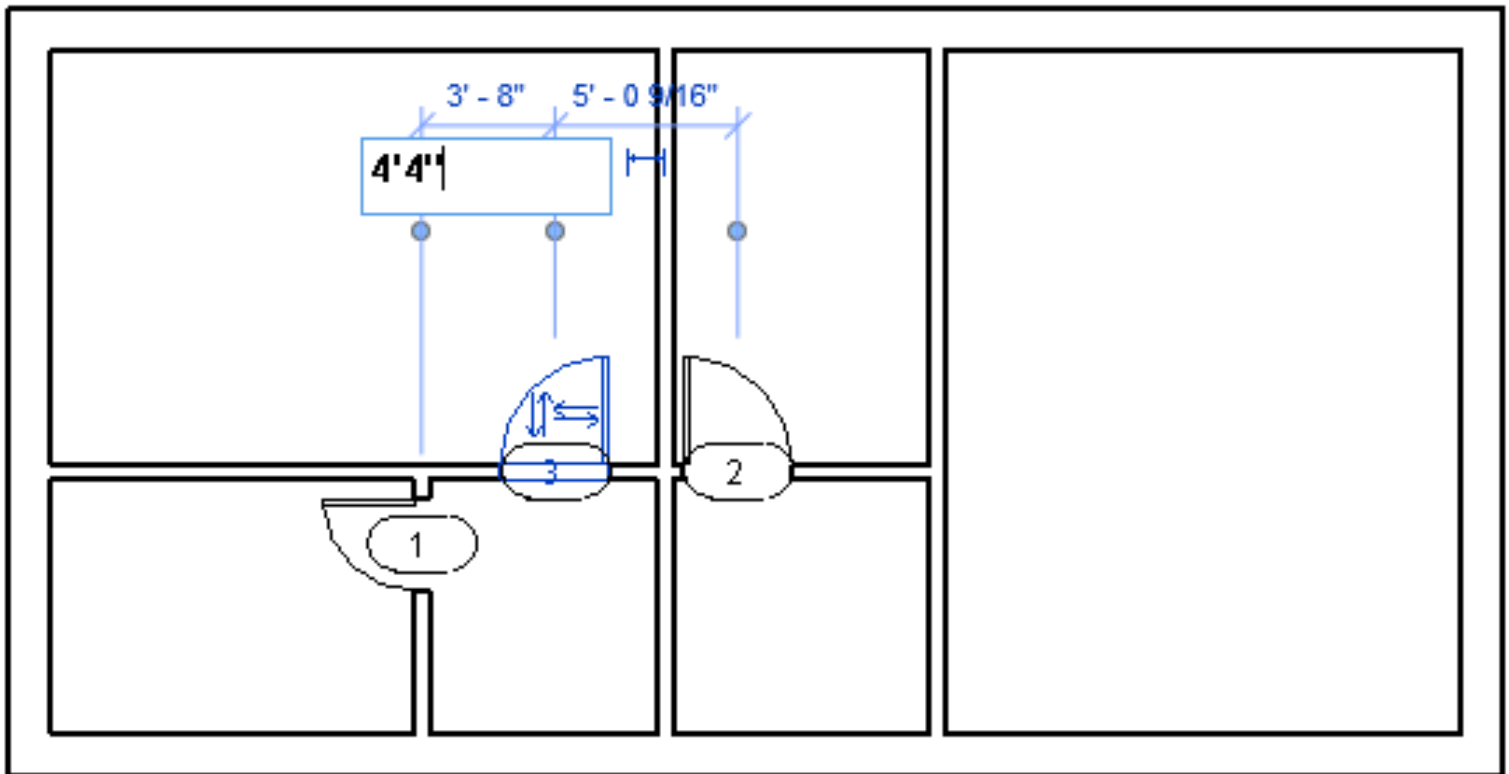
9. Choose the **Modify** button from the **Select** panel. Next, select the door inserted in the drawing; the door gets highlighted and its controls are displayed.

Notice that the door placed has the swing on the right side whereas the sketch shows a left side opening door, so you need to flip the swing side.

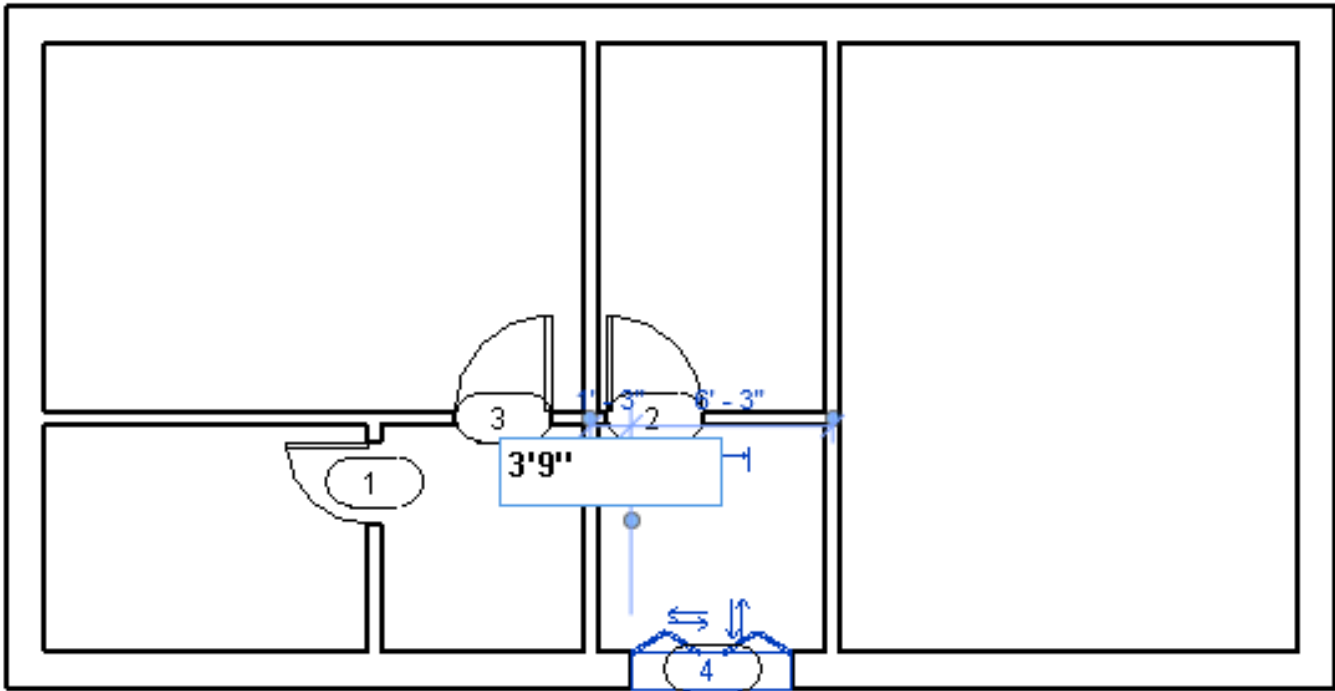
10. Click on the horizontal arrow key to flip the swing side. The swing side of the door is changed, as shown in the image below.



11. Click on the right side dimension to set it to **5'6" (1677 mm)**, as specified in the sketch plan.
12. Add the door of the same type in the bedroom area at a distance of **4'4" (1320 mm)** from the internal wall, as shown in the image below.



13. To create the entrance door of the apartment, choose the **Load Family** tool from the **Mode** panel of the **Modify | Place Door** tab; the **Load Family** dialog box is displayed. In this dialog box, add the **Bifold- 4 Panel** for Imperial (**M_Bifold- 4 Panel** for Metric) family type from the **Doors** subfolder in the **US Imperial** folder.
14. Ensure that the **Bifold-4 Panel - 60"x 84"** option for Imperial or **M_Bifold-4 Panel - 1525 x 2134 mm** option for Metric is selected in the **Type Selector** drop-down list, and then add the door to the lobby area, as per the sketch plan, refer to the image below. While adding the door, you can use the spacebar to flip the door swing side.



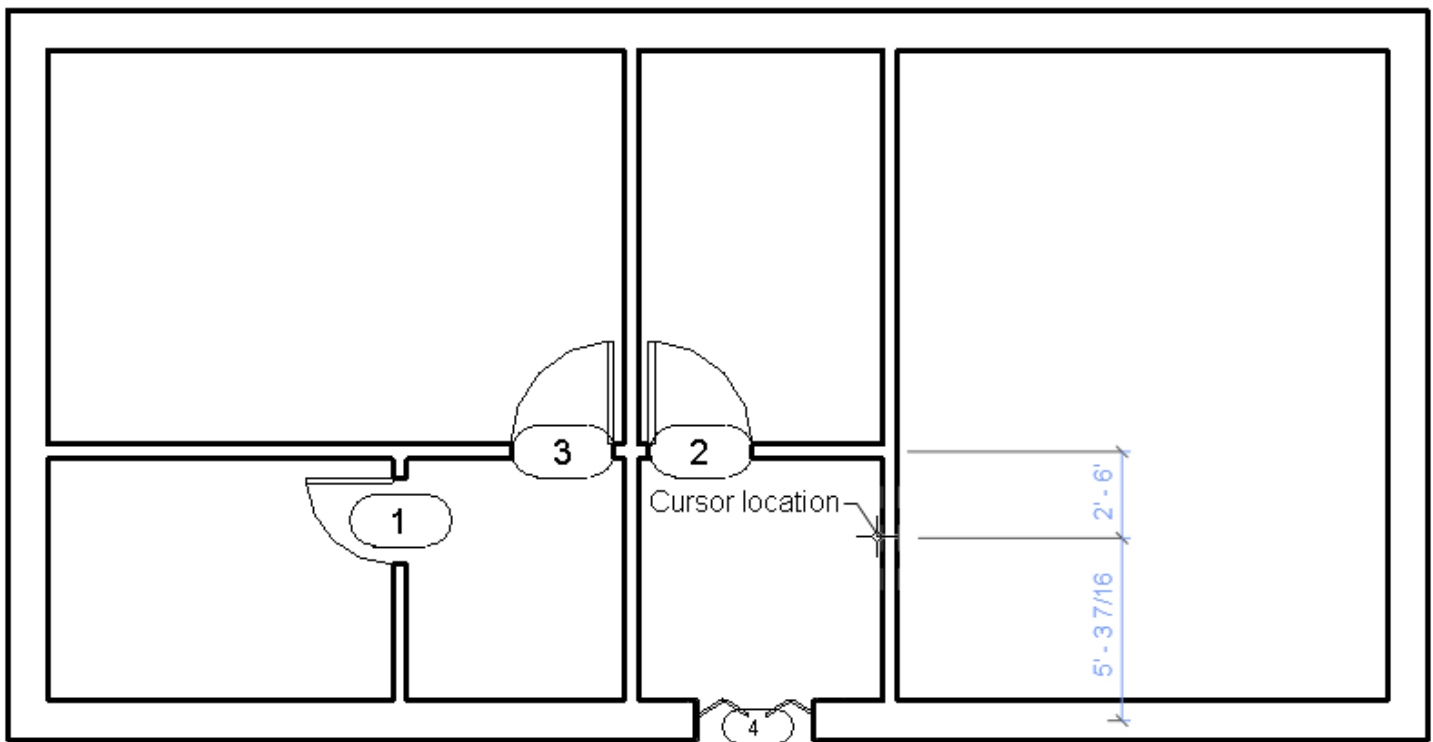
15. After adding the door, choose the **Modify** button and select the recently created door; the temporary dimension is displayed. Click on the left of the temporary dimension and then enter the value **3'9" (1143 mm)**, as shown in Figure 4-24, to move the door to the exact location as given in the sketch plan. Now, press ESC to exit the **Modify | Doors** tab.

Adding Door Openings

Next, you need to create two door openings in the lobby walls as given in the sketch plan. The openings can be loaded as door families but are added to the model as components.

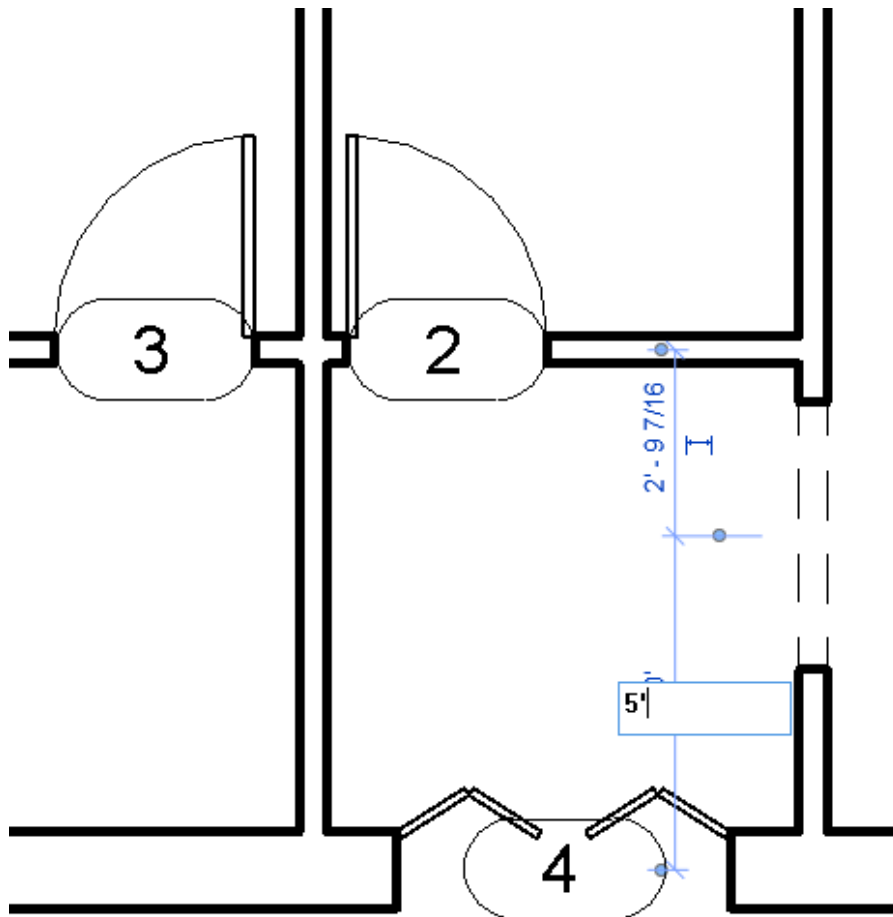
1. Choose the **Insert** tab and then choose the **Load Family** tool from the **Load from Library** panel; the **Load Family** dialog box is displayed.
2. In the **Load Family** dialog box, select the **Passage Opening-Cased** family from the **Openings** sub-folder of the **US Imperial** folder or select the **M_Passage Opening-Cased** family from the **Openings** sub-folder of the **US Metric** folder. Next, choose the **Open** button to load this family; the **Passage Opening - Cased** family is added as a component type.

- Invoke the **Place a Component** tool from **Architecture > Build > Component** drop-down; the **Modify | Place Component** tab is displayed.
- Select the **Passage Opening - Cased 36" x 84"** option for Imperial or **M_Passage Opening - Cased 915 x 2134 mm** for Metric from the **Type Selector** drop-down list in the **Properties** palette, if it is not selected by default.
- Move the cursor near the location shown in the image below and then click to specify the location for the center of the opening. The opening is created.

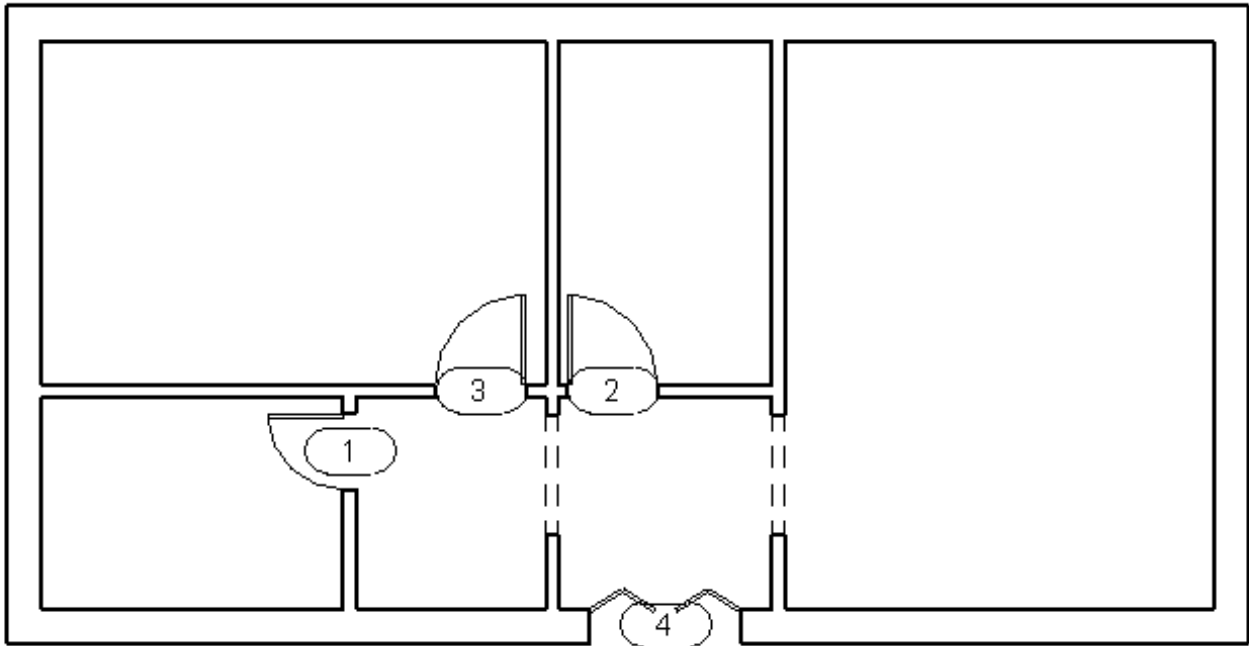


- Now to modify the width of the opening, choose the **Modify** button from the **Select** panel. Select the recently created opening from the drawing; the **Modify | Generic Models** tab is displayed.
- In this tab, choose the **Type Properties** tool from the **Properties** panel; the **Type Properties** dialog box is displayed.
- Choose the **Duplicate** button; the **Name** dialog box is displayed. In this dialog box, enter **48" x 84"** for Imperial or **1220 x 2134 mm** for Metric in the **Name** edit box. Next, choose the **OK** button to close the **Name** dialog box.

- Click in the **Value** field of the **Width** parameter and enter **4'0"** as the new value.
- Choose the **OK** button in the **Type Properties** dialog box to close it.
- To move the opening to the exact location, click on its temporary dimension, and enter **5' 0"(1524 mm)**, as shown in the image below. Next, press ENTER and ESC to accept the value entered and exit the editing mode.



12. Similarly, create the opening of the same size on the opposite wall to complete the creation of doors and opening for the *Apartment 1* project. After adding them, the layout plan of the project will look similar to the plan shown in the image below.

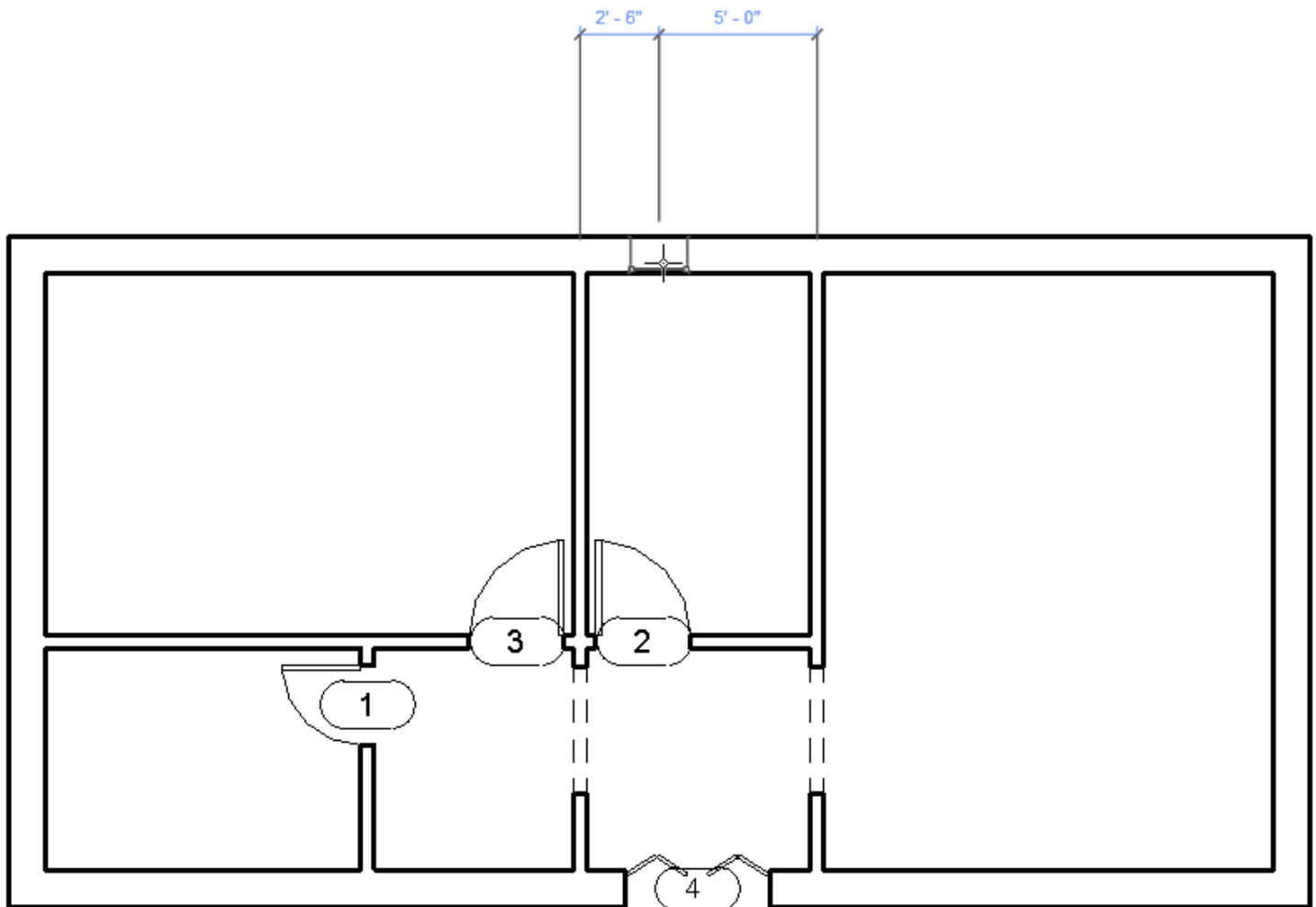


Tip: Doors and door openings can also be added in 3D view, sections, and elevations. You should, however, choose the appropriate view to place the door. You can use the temporary dimensions to place the door at the exact location. In case you add a door incorrectly (for example, if the door is not entirely placed on the wall), Autodesk Revit displays a message, alerting you about the conflict and prompting you to take an appropriate action.

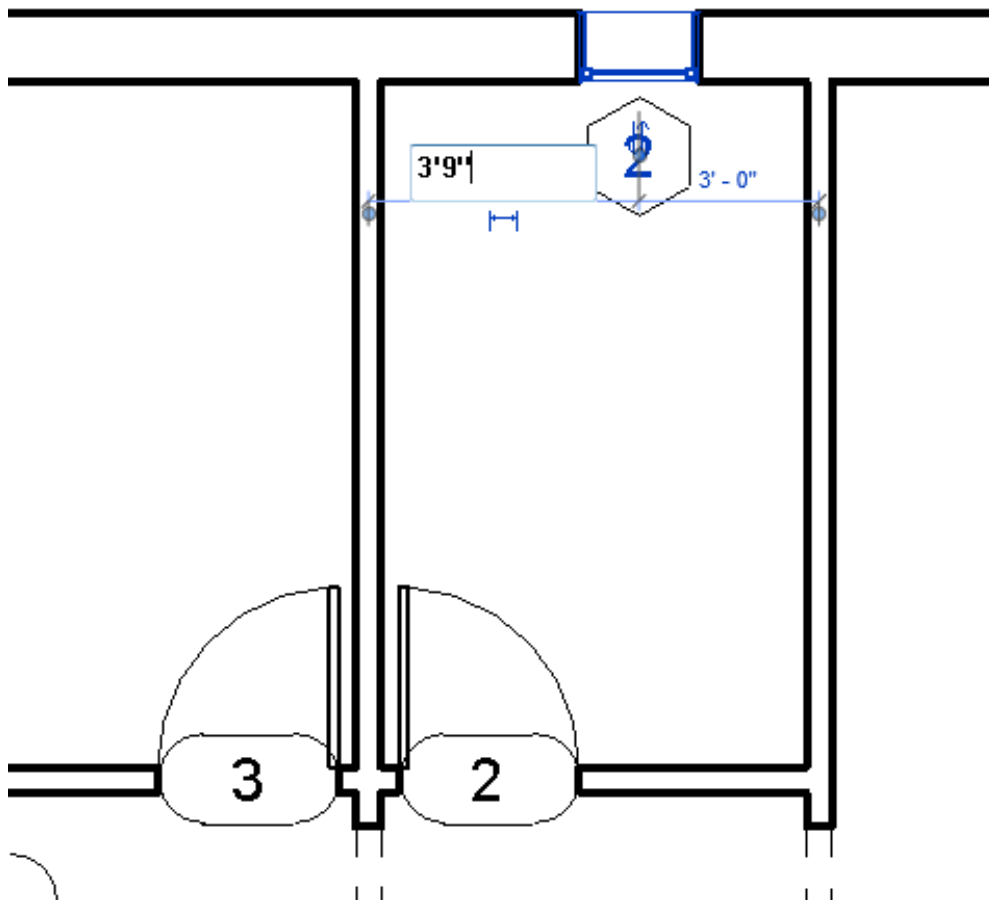
Adding Windows

The procedure of adding windows is quite similar to that of adding doors. Invoke the **Window** tool, select the window type, and add the window at an approximate location. You can then modify its location based on the sketch provided next in this tutorial.

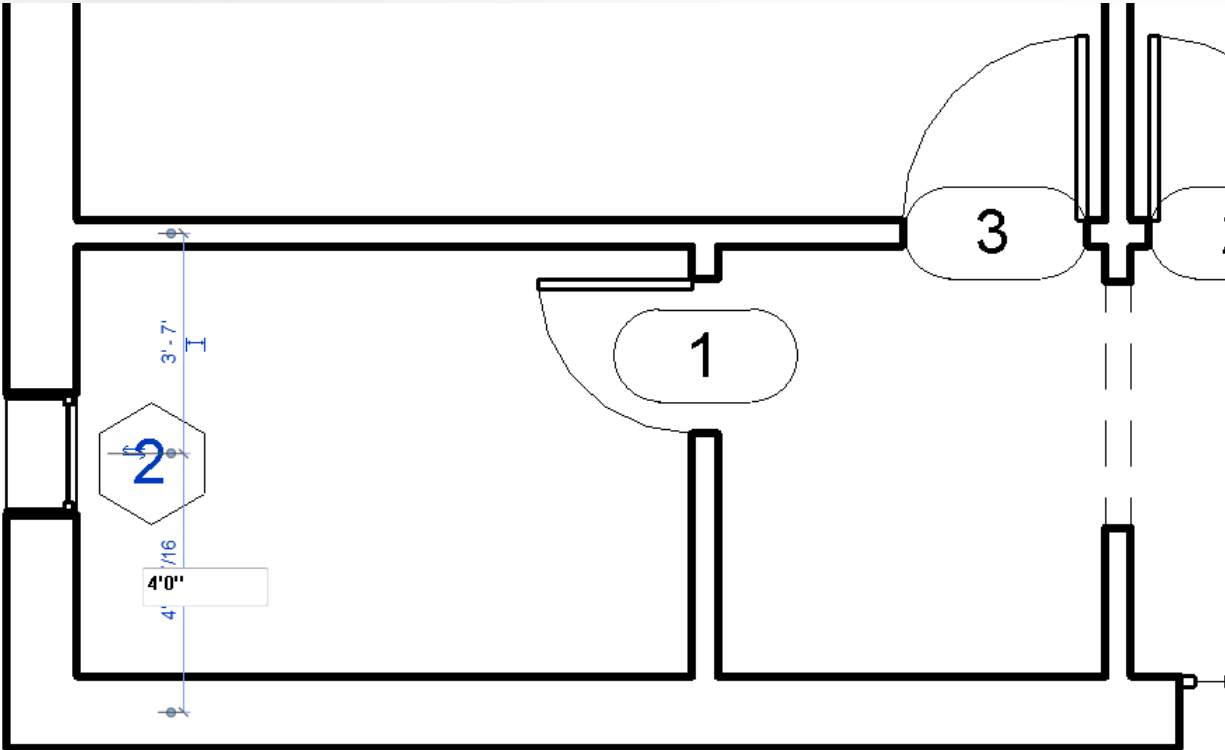
1. Invoke the **Window** tool from the **Build** panel of the **Architecture** tab; the **Modify | Place Window** tab is displayed.
2. Ensure that the **Tag on Placement** tool is chosen from the **Tag** panel of the **Modify| Place Window** tab.
3. Click on the **Type Selector** drop-down list to view the in-built window types. To create the window number 1, select **Fixed 24" x 48"** for Imperial or **M_Fixed: 0610 x 1220 mm** for Metric from the drop-down list.
4. Move the cursor close to the exterior wall of the kitchen to display the window symbol, as shown in the image below. Add the window by clicking on the inner face of the exterior wall. The window is created at the specified location.



5. To move the window to the exact location, choose the **Modify** button from the **Select** panel and then select the window from the drawing; it gets highlighted in blue and its controls are displayed.
6. Click on the left temporary dimension and enter **3'9" (1143 mm)**, as shown in the image below.



Press ENTER; the window is moved to the specified location. Similarly, add another window of the same type near the external wall of the bath by invoking the **Window** tool from the **Build** panel, refer to the image below.



- After adding the window in the external wall of the bath, you need to move it to the exact location. To do so, select the window; it is highlighted in blue. Click on the lower temporary dimension; an edit box is displayed. Enter **4'0" (1220 mm)** in the edit box, refer to Figure 4-30, and then press ENTER. The window is moved to the desired location. Press the ESC key and exit.

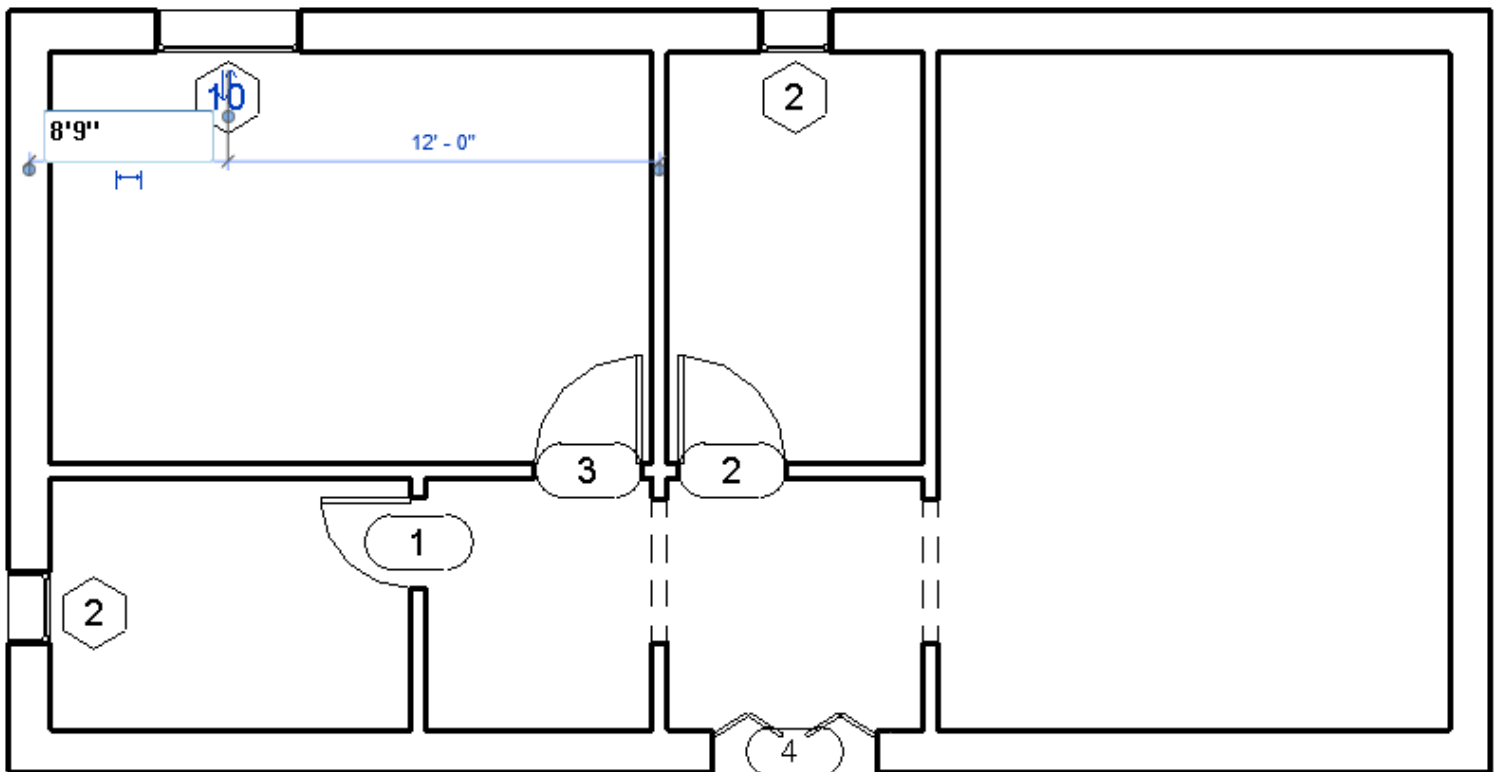
Now, you need to add the windows of type 2 to the drawing. These windows have a modified width of 4'0" (1220 mm). To add these windows, select the **Fixed: 24" x 48"** for Imperial or **M_Fixed: 0610 x 1220 mm** for Metric window type and create the window type duplicate. Modify window width to 4'0" (1220 mm) by using the **Type Properties** dialog box and add the window at the desired location.

- Invoke the **Window** tool from the **Build** panel of the **Architecture** tab; the **Modify | Place Window** tab is displayed.
- In the **Type Selector** drop-down list, select the **Fixed: 24" x 48"** (**M_Fixed: 1220 x 1220 mm** for Metric) window type. Next, choose the **Edit Type** button in the **Properties** palette; the **Type Properties** dialog box is displayed.
- In this dialog box, choose the **Duplicate** button; the **Name** dialog box is displayed. In the **Name** edit box, enter **48" x 48" (1220 x 1220 mm)** and then choose the **OK** button.

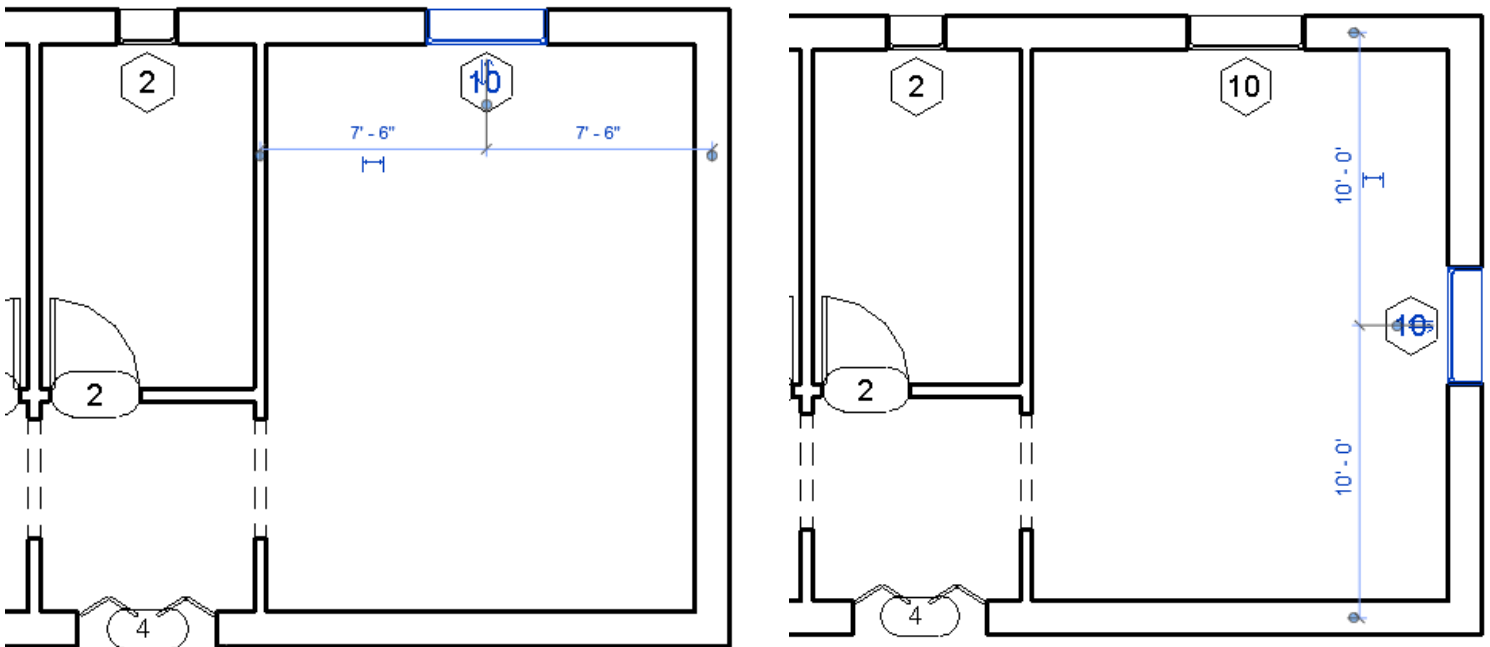
- In the **Value** field for the **Width** type parameter, enter **4'0" (1220 mm)** and then choose the **Apply** and **OK** to close the **Type Properties** dialog box and return to the drawing window.

Notice that the **Fixed: 48" x 48" (M_Fixed: 1220 x 1220 mm for Metric)** window type is added to the **Type Selector** drop-down list.

- Move the cursor near the exterior wall of the bedroom and click to place the window. Press ESC twice to exit.
- Now, select the added bedroom window; the window gets highlighted in blue color and its controls are displayed. Click on the temporary dimension displayed at the left and enter **8'9" (2667 mm)** to specify the location of the bedroom window, as shown in the image below.

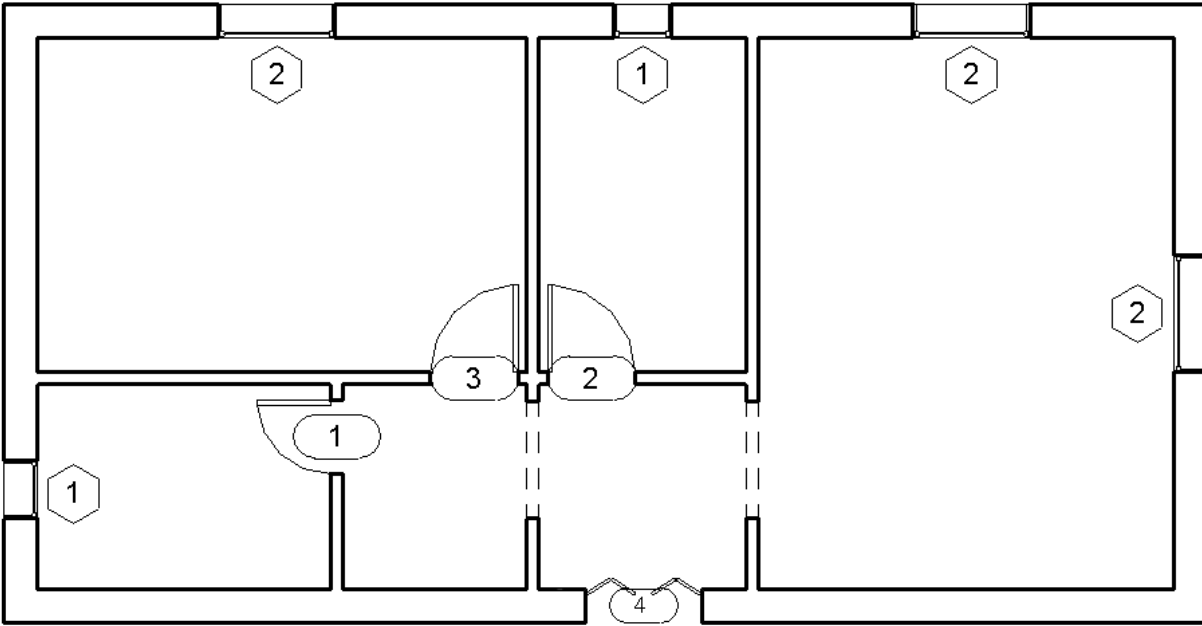


The window is moved to the desired location. Similarly, add the windows of the same type to the walls of the living room and specify their respective locations based on the sketch plan given, refer to the image below.

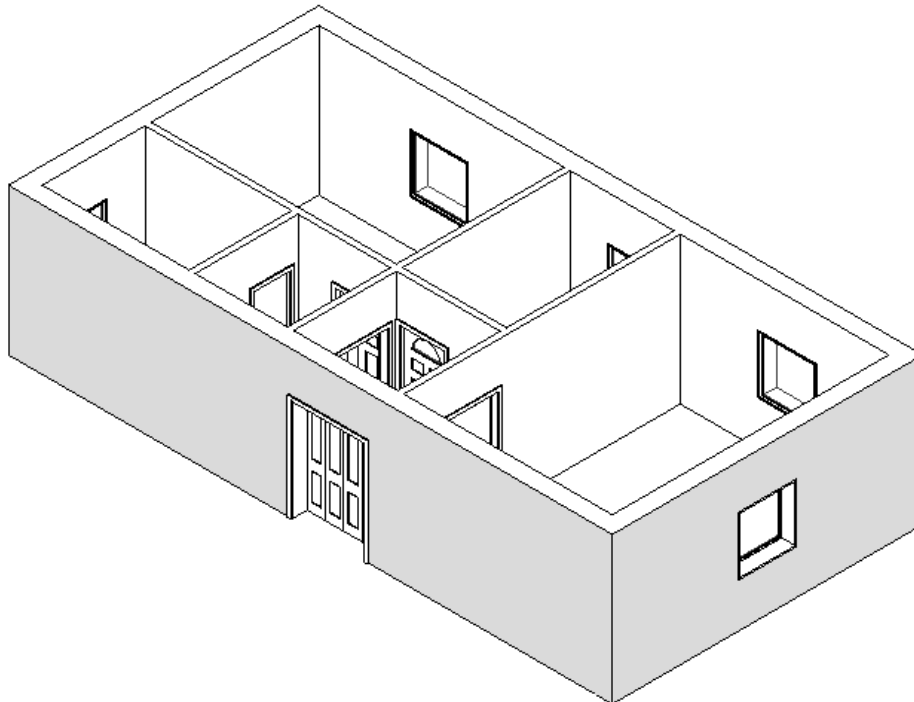


14. To change the window tag numbers, move the cursor over the number in any of the window tags marked 2 (tag number may vary) and double-click; an edit box is displayed. Enter **1** in the edit box and press ENTER; the **Revit** message box is displayed. Choose **Yes** in the message box; the window tag is renamed. Similarly, replace the other window tags marked 2 with the tag mark 1 and those marked 10 with the tag mark 2, refer to the image below. You will notice that the tag marks of other instances of the same window type are immediately modified.

The Level 1 plan should look similar to the plan shown in the image below.



15. To view the plan in 3D, choose the **Default 3D View** tool from the **View > Create > 3D View** drop-down; the 3D view of the project is displayed, as shown in the image below.



16. Choose **Save As > Project** from **Application Menu**; the **Save As** dialog box is displayed. Enter the desired name in the **File name** edit box.

For Imperial **c04_Apartment1_tut1**

For Metric **M_c04_Apartment1_tut1**

Choose **Save**; the file is saved.

17. Choose **Close** from **Application Menu** to close the project file.