

# Building a Gable Dormer in Home Designer Pro

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Reference Number: **KB-00236**

Last Modified: **July 21, 2021**

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The information in this article applies to:



## QUESTION

How do I build a gable dormer?

## ANSWER

This presentation details each step, and the corresponding result in Home Designer Pro. Once you understand the reason for each step, and how each impacts your design, you will be better equipped with the knowledge to complete your gable dormer.

Before we begin drafting, let's examine the objective of the tutorial. The image below illustrates the gable dormer that this tutorial walks you through creating. Additionally, this tutorial illustrates how to create a hip roof condition for your dormer and further describes how to create a gable roof for the rest of the structure.






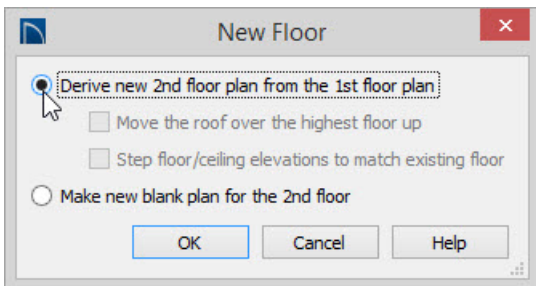
Next, let's examine a cross-section showing the dormer we'd like to create. In the image below, we see that the roof intersects the wall on the first floor. We also see that there are short attic spaces on either side of short



walls. Lastly, we see that the roof is fairly steep, allowing for headroom inside the main area. Before we create the automatic dormer, let's learn how to create this type of roof automatically.

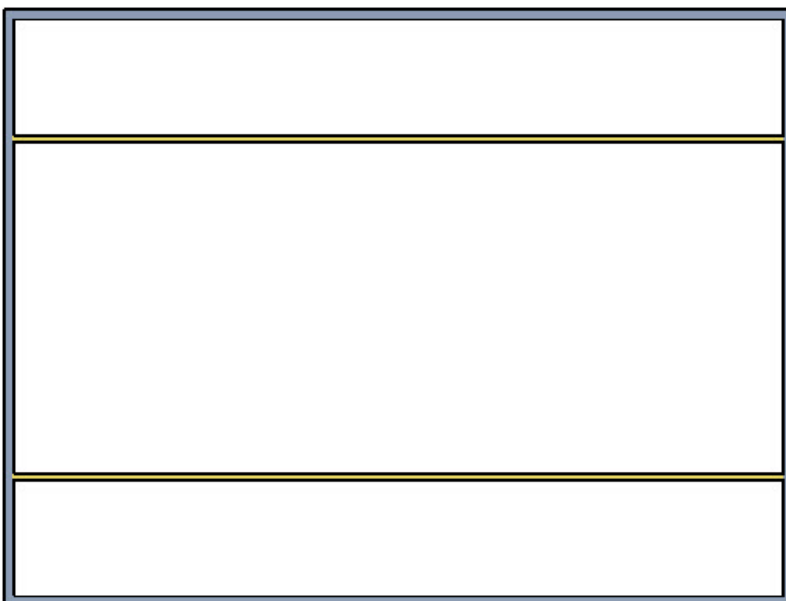
Now that we fully understand the type of structure we are going to create, it's time to begin drawing in a new plan.

To start our new plan

1. To begin, launch your **Home Designer Pro** software and select **File> New Plan**  to start a new, blank plan
2. Select **Build> Wall> Straight Exterior Wall**  and create a basic, enclosed 4-wall rectangular structure by drawing your walls in a clockwise fashion.
  - o For the purposes of this example, we used a **30'x40'** structure.
3. Once you have built your first floor, select **Build> Floor> Build New Floor**  to display the **New Floor** dialog, choose to **Derive New 2nd Floor plan from the 1st Floor plan**.



4. On Floor 2, select **Tools> Reference Floors> Reference Floor Display**  so that you can see the relationship to the first floor when you draw in your second floor plan.
5. Next, select **Build> Wall> Straight Interior Wall**  and then click and drag from left to right, two interior walls as shown in the image below.

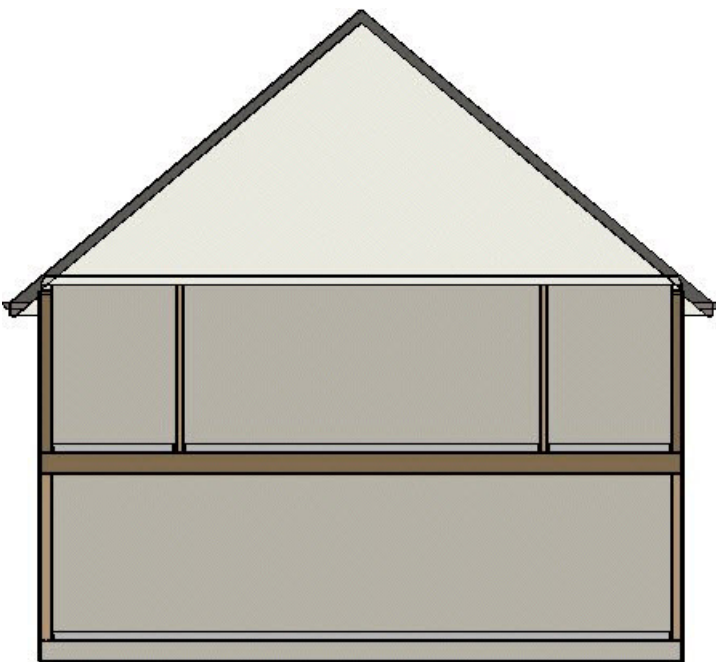


- These walls are necessary for the correct construction of our roof. Once this tutorial has been completed and the roof and dormer correctly created, these walls can be redefined as invisible walls, and the entire second floor can be made available for stairway access and additional rooms.

6. Now select **Build> Roof> Build Roof**  to display the **Build Roof** dialog.

7. On the **BUILD** panel of the **Build Roof** dialog, increase the Pitch (in 12) to **10"**, place a check-mark in the **Build Roof Planes** box, and click **OK** to build the automatic hip roof for this structure.

8. Select **3D> Create Orthographic View> Cross Section/Elevation**  and click and drag out a Cross Section of our result thus far, as in the image below.





**Note:** The cross section begins at the point where the camera arrow is drawn and continues through the entire model.

Now that a roof has been automatically created, we can see that the roof is placed on the second story walls, which allows for a ceiling over the small upstairs rooms. However, we don't want ceilings over these attic rooms because we need the roof to cut down to the first floor, so that they become attic spaces.

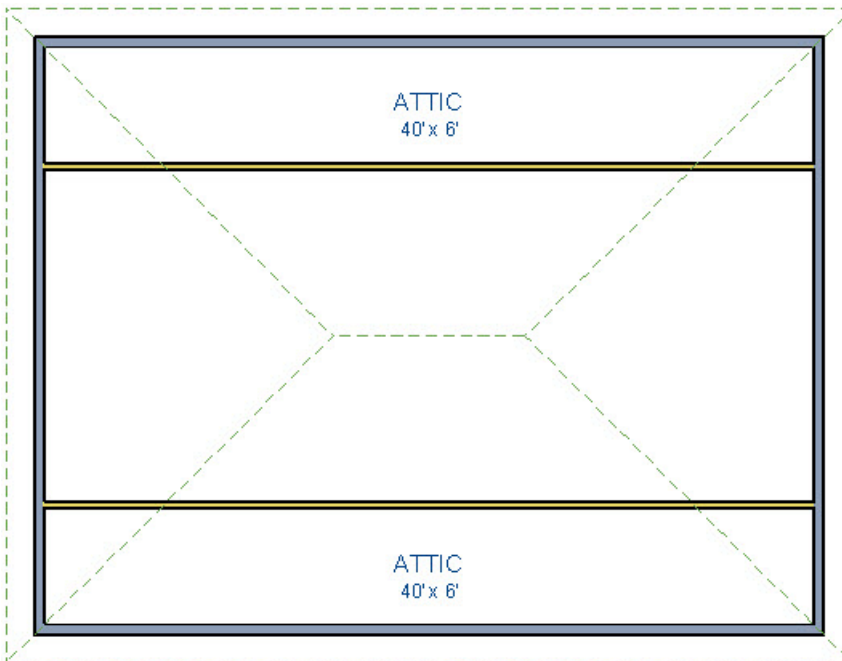
To define the rooms as Attic space



1. First, let's close the cross-section view by selecting **File> Close** to return to our floor plan view to learn how to do this.

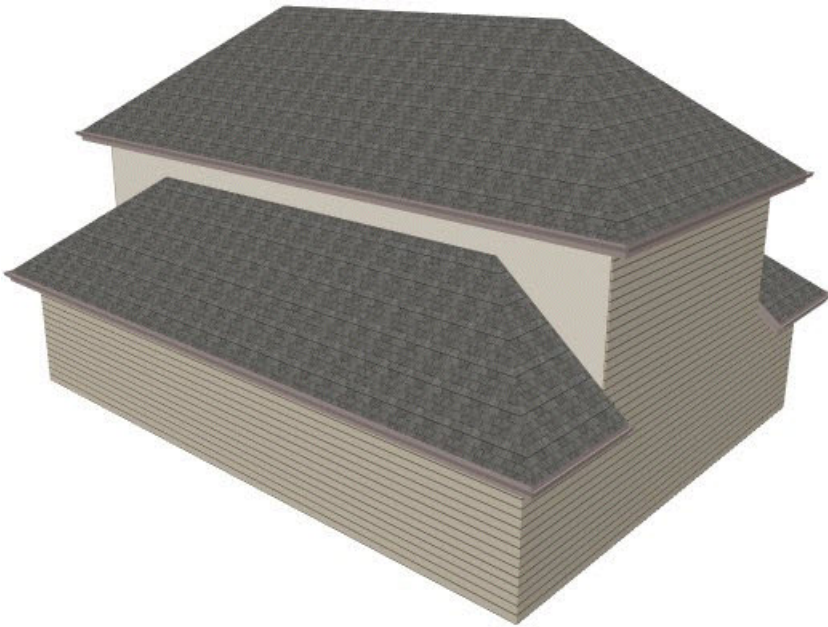
2. Use the **Select Objects**  tool to select first the uppermost room in the structure, then click the **Open Object**  edit tool to display the **Room Specification** dialog.
3. On the **GENERAL** panel of the **Room Specification** dialog, use the **Room Type** drop-down menu to select **Attic** and click **OK** to apply this change.

By setting a room as Attic, we are telling the automatic roof generator to ignore this room's ceiling height. For most rooms, the automatic roof generator uses ceiling height to decide where to put the roof, but we don't want that for this room. Rather, we'd like the roof to continue down through the room onto the outer wall.

4. Repeat this process for the lower room as well, so that both the upper and lower rooms on the second floor are defined as Attic, as in the image below.








5. Now select **Build > Roof > Build Roof**  to display the **Build Roof** dialog again, place a check-mark in the **Build Roof Planes** box, and click **OK** to build the automatic hip roof for this structure.
6. Select **3D > Create Perspective View > Full Overview**  to examine the current shape of our roof, as shown in the image below.



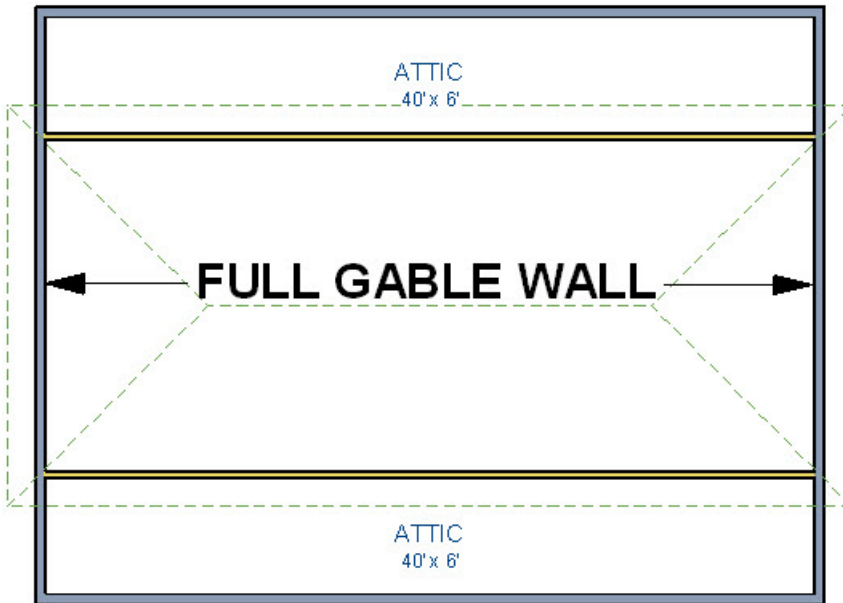
Now, we can see two tasks ahead of us. First, the interior walls are supporting the roof, which is not what we want. Also, the shape of the roof is a hip roof style, as we can see by the roof planes facing out resting on all of the walls.

Let's first focus on creating our gable roof, and then we'll look at correcting the interior walls. In the image above, we can see that there is a roof over both the second and the first floors, and both are hip roof styles. We'll change this by setting wall properties on the first and second floors.

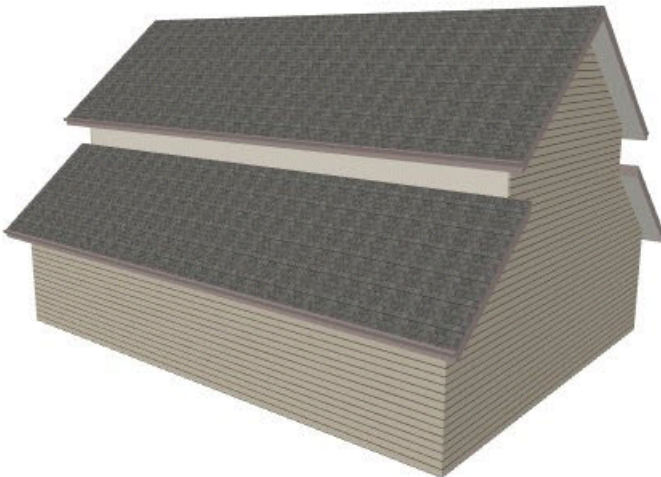
To change the wall properties

1. Let's close the Full Overview by selecting **File> Close** to return to our floor plan view.
2. While still on Floor 2, use the **Select Objects**  tool to select the left exterior wall, then hold down the **Shift** key on your keyboard to select the right wall as well, and click on the **Open Object**  edit tool to open the **Wall Specification** dialog for both of these walls.
3. Select the **ROOF** panel, place a check-mark in the **Full Gable Wall** option, and click **OK** to apply this change.
4. Next, select **Tools> Reference Floors> Down One Floor**  to return to the Floor 1 of our plan.
5. Since part of the roof is on this first floor, we'll follow the same procedure to select both the left and right walls, open them for specification, and on the **ROOF** panel, choose **Full Gable Wall**.
6. Select **Tools> Reference Floors> Up One Floor**  to return to the Floor 2 of our plan.
7. Next, select **Build> Roof> Build Roof**  to display the **Build Roof** dialog again, place a check-mark in the

**Build Roof Planes** box, and click **OK** to rebuild the automatic roof.





8. Select **3D> Create Perspective View> Full Overview**  to examine the current gable condition of our roof, as shown in the image below.



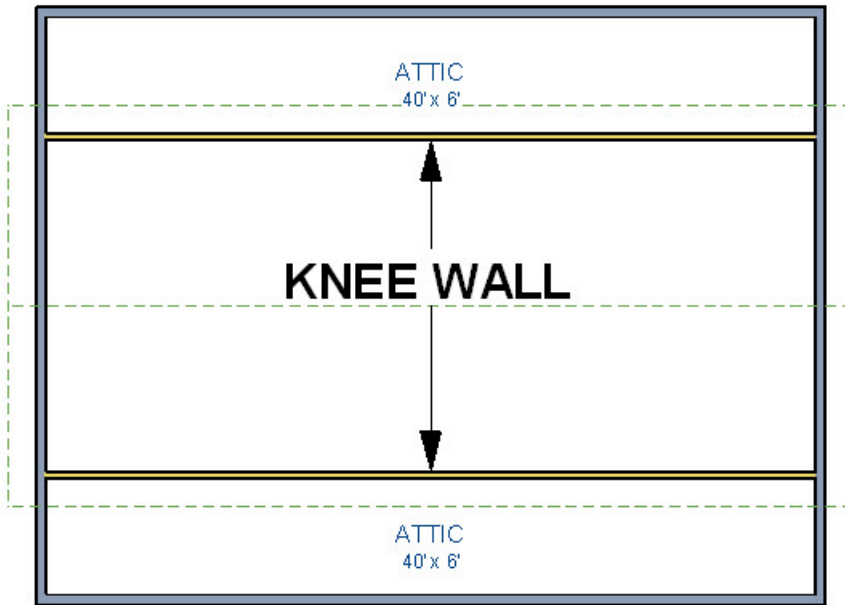
We can see that our attic rooms are constructed correctly. However, we see that the interior walls are still supporting the roof. This is because Home Designer Pro is using these walls to determine how high the ceiling should be over the main room.



To create knee walls

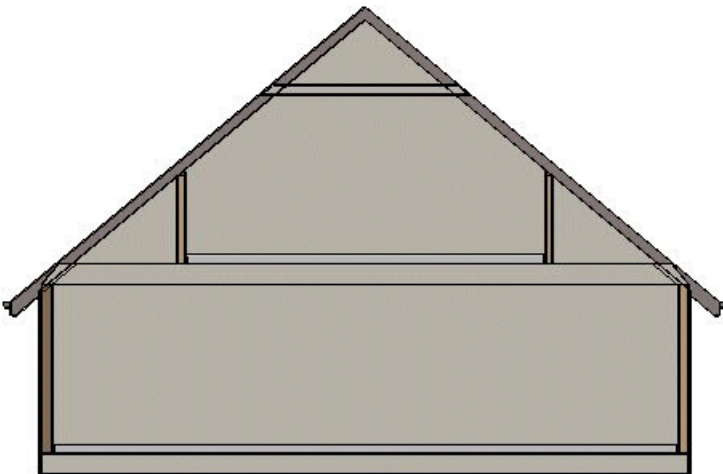
1. Let's close the Full Overview by selecting **File> Close** to return to our floor plan view.
2. Next, use the **Select Objects**  tool to select the upper interior wall, hold down the **Shift** key on the keyboard to select the lower interior wall as well, and click on the **Open Object**  edit button to display the **Wall Specification** dialog for these two walls.

3. Select the **ROOF** panel check the **Knee Wall** option to change both of these walls into knee walls.





A knee wall is a short wall on an upper story that is cut by a roof plane. By setting this wall to a knee wall, we'll ensure that the roof cuts it and continues down to the first floor. We'll set the lower wall to be a knee wall as well. By doing this, Home Designer Pro will know that the roof should cut the wall, instead of the wall reaching the ceiling.





4. Now, select **Build > Roof > Build Roof**  to display the **Build Roof** dialog again, place a check-mark in the **Build Roof Planes** box, and click **OK** to rebuild the automatic roof from the changes that we have made.
5. Select **3D > Create Orthographic View > Cross Section/Elevation**  and click and drag out a Cross Section of our result thus far, as in the image below, to see that we have created the roof that we want.

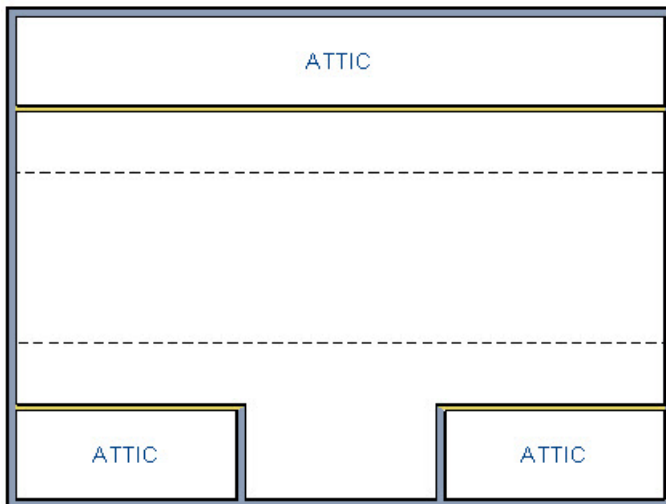


To create the shape for our dormer

1. Let's close the Cross Section/Elevation view by selecting **File> Close** to return to our floor plan view.
2. Select **Build> Wall> Straight Exterior Wall**  and draw two exterior walls from this interior wall down to the bottom exterior wall, forming three rooms.
3. The center "room" will be our dormer area, so select **Build> Wall> Break Wall**  and click to place breaks at the positions where the lower interior wall meets the two newly drawn exterior walls.
4. Now, use the **Select Objects**  tool to select the middle segment of the lower interior wall that you have created, and click on the **Delete**  edit button or the **Delete** key on your keyboard.

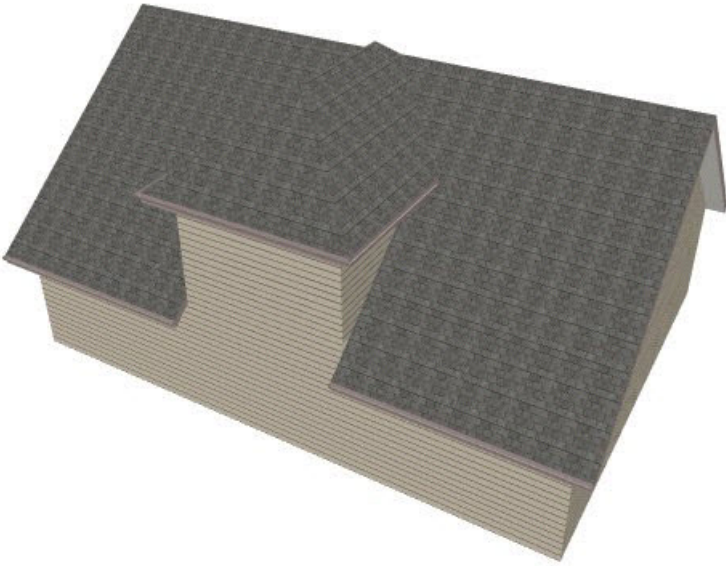
You might be tempted to draw two interior walls to start, but we'd like the walls to be lined up accurately, and it is easier to break an existing wall than to align two separate walls.

5. Choose the **Select Objects**  tool again, and click in the lower right room to select it, hold down the **Shift** key on your keyboard, and click in the lower right room so that both are selected, and click on the **Open Object**  edit tool to display their **Room Specification** dialog.
6. On the **GENERAL** panel of the **Room Specification** dialog, use the **Room Type** drop-down menu to select **Attic** and click **OK** to apply this change.






7. Select **3D> Create Perspective View> Full Overview**  to see our results so far.

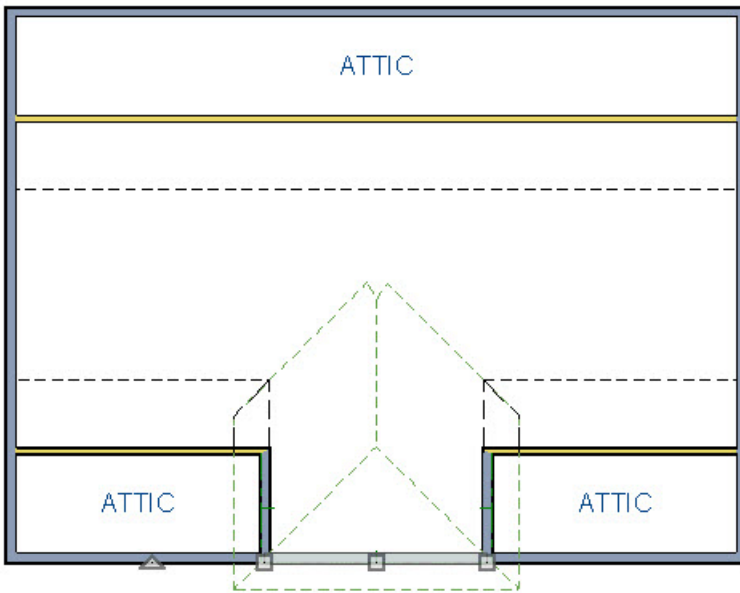






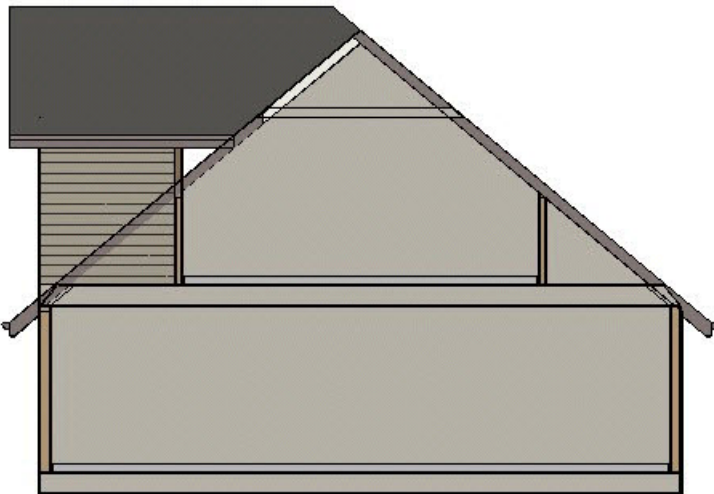
When we created the Full Overview, we see that we have created a dormer with a hip roof style. We're getting close; we just need to change the dormer wall to a gable wall.

To change the dormer front to a gable wall

1. Close the Full Overview by selecting **File> Close** to return to our floor plan view.
2. While still on Floor 2, select **Build> Wall> Break Wall**  and place a breaks on the bottom exterior wall the two left and right exterior walls meet it.
3. Now, use the **Select Objects**  tool to select the middle segment of the lower exterior wall that you have created, click on the **Open Object**  edit tool to display its **Wall Specification** dialog.
4. On the **Roof** panel of the **Wall Specification** dialog, set this wall segment to be a **Full Gable Wall**, and click **OK** to apply the change.





- Now, select **Build> Roof> Build Roof**  to display the **Build Roof** dialog, make sure that the **Pitch (in 12)** is still set to 10", place a check-mark in the **Build Roof Planes** option, and click **OK** to rebuild the automatic roof from the changes that we have made.
- Select **3D> Create Orthographic View> Cross Section/Elevation**  and click and drag out a Cross Section of our result thus far, we can see that the roof comes down through the knee walls, down through the attic rooms, and matches with the first-story walls, as illustrated in the image below.

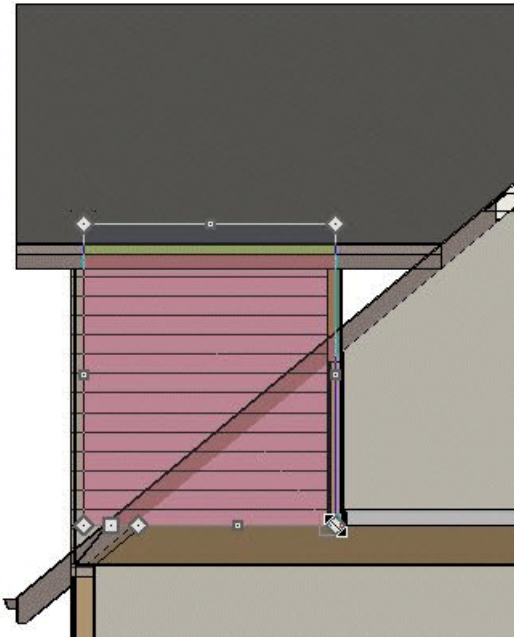


Our dormer is nearly complete. The next step is to adjust the interior walls to conform to the slope of the roof.

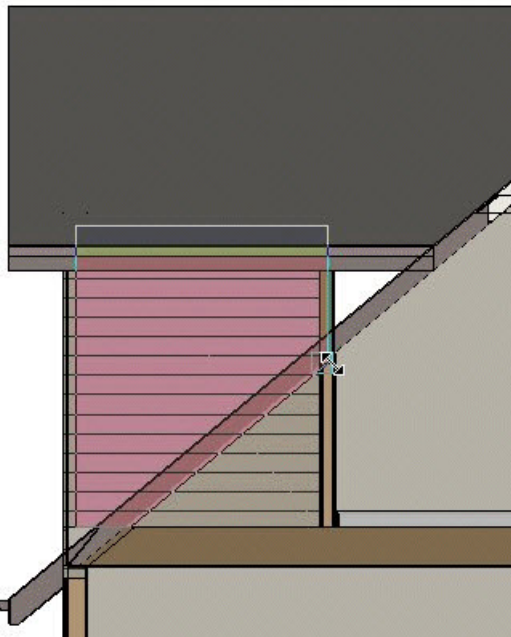
To conform to the slope of the roof


- With the Cross Section/Elevation view still open, click on the **Select Objects**  tool, then select the dormer wall.
- With the dormer wall select, click on the **Break Line**  edit tool, and add a single break to the wall, as

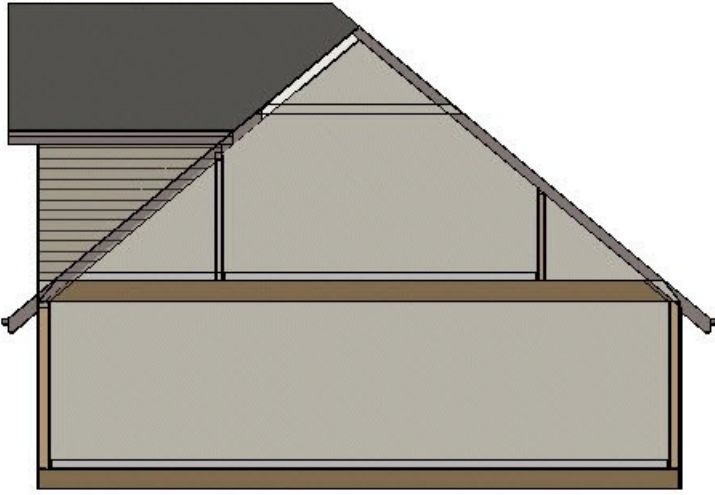
illustrated in the image below.



3. Now that a new break has been defined in the dormer wall, the corner edit handle can be selected, and the wall pulled up to match the slope of the roof as illustrated in the image below.



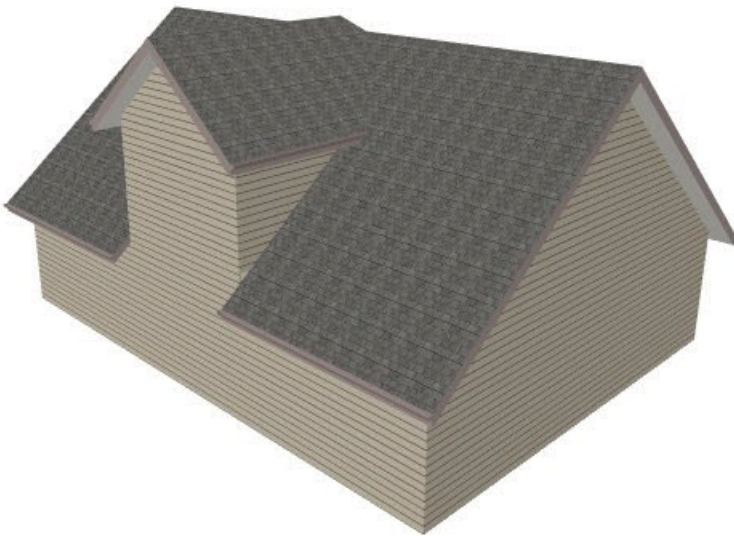
4. The last step is to close the gap that appears on the exterior of the dormer, between the dormer wall and the roof. Close the **Full Overview** by selecting **File> Close** to return to our floor plan view.
5. On the Floor 2, you can select the interior knee walls and drag them toward the center of the room.
6. Select **3D> Create Orthographic View> Cross Section/Elevation**  and click and drag out a **Cross Section/Elevation** to see the result in the form of a Cross Section.



- Here, the gap has been closed and the dormer is complete.

As previously mentioned, once you are happy with the dormer and roof, all interior knee walls can be converted to **Invisible** walls on the **GENERAL** panel of their **Wall Specification** dialogs, and the space inside the second floor utilized for the purposes of your choice.

These interior walls should not be deleted, however, until you are happy with the appearance of your roof and dormer, and you are certain that you will not be rebuilding the roof.



If you do rebuild the roof and dormer, the interior walls will need to be present to properly generate the roof and dormer. Keep in mind that the exterior walls used to define our dormer will need to remain visible, however, and should not be deleted.