Chief Architect
Architectural Home Design Software

Creating an Energy Heel Truss

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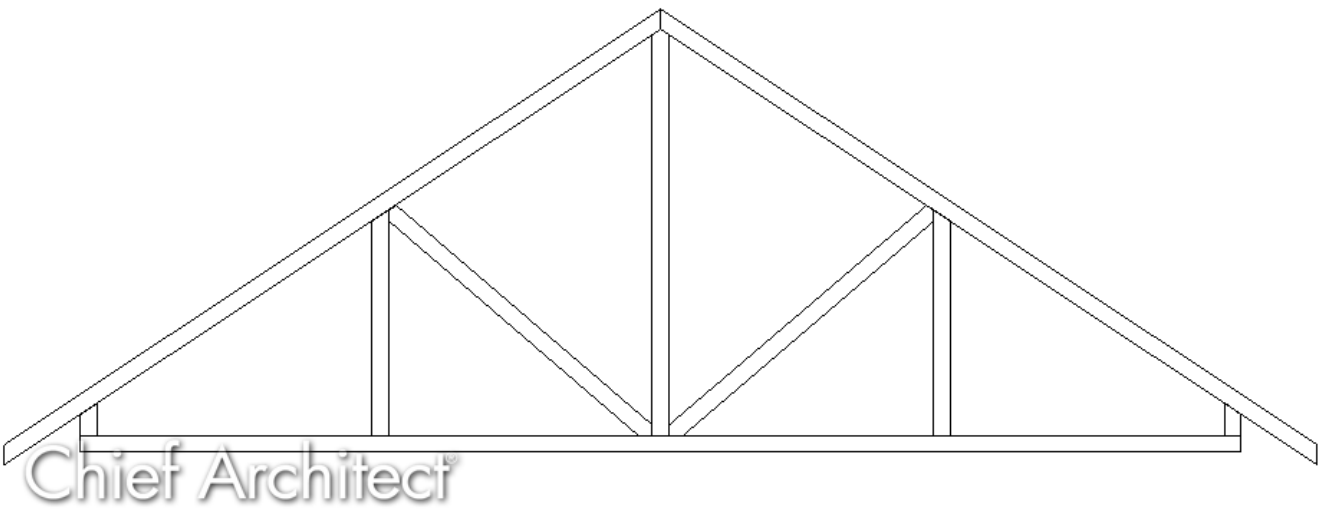
The information in this article applies to:

PREMIER | PRO

QUESTION

How do I create an energy heel truss?



ANSWER

For energy efficiency, some areas recommend an energy heel, or raised heel, so that there is not a cold spot in the intersection where the roof meets the wall. An energy heel raises the roof, and allows for more insulation to reach the outside wall.

In this article, we will build build a basic gable roof over a 20' x 30' structure, create a single energy heel truss, then replicate the truss across the roof.

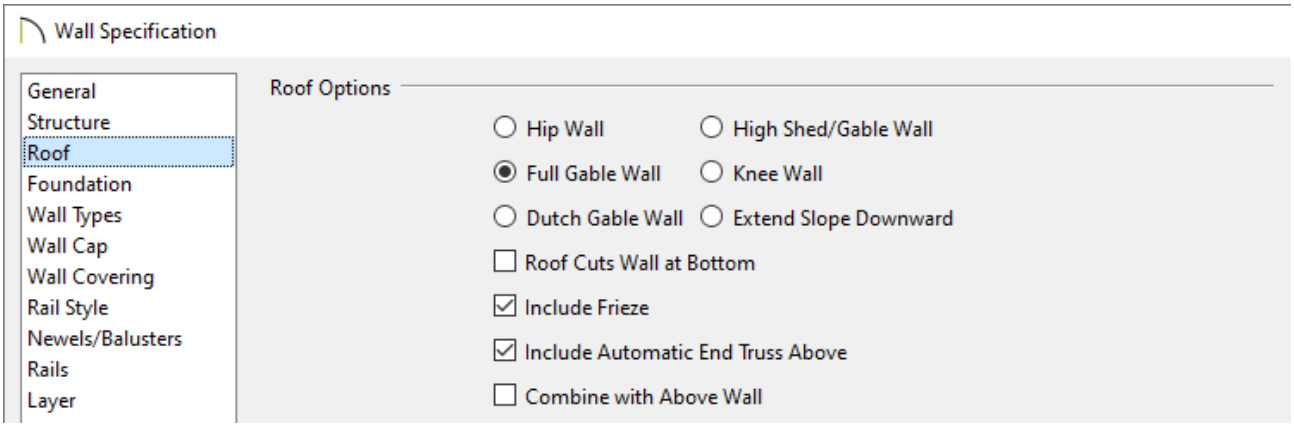
To build the structure and roof

1. **Open** the plan in which you would like to create roof trusses, or select **File> New Plan**.

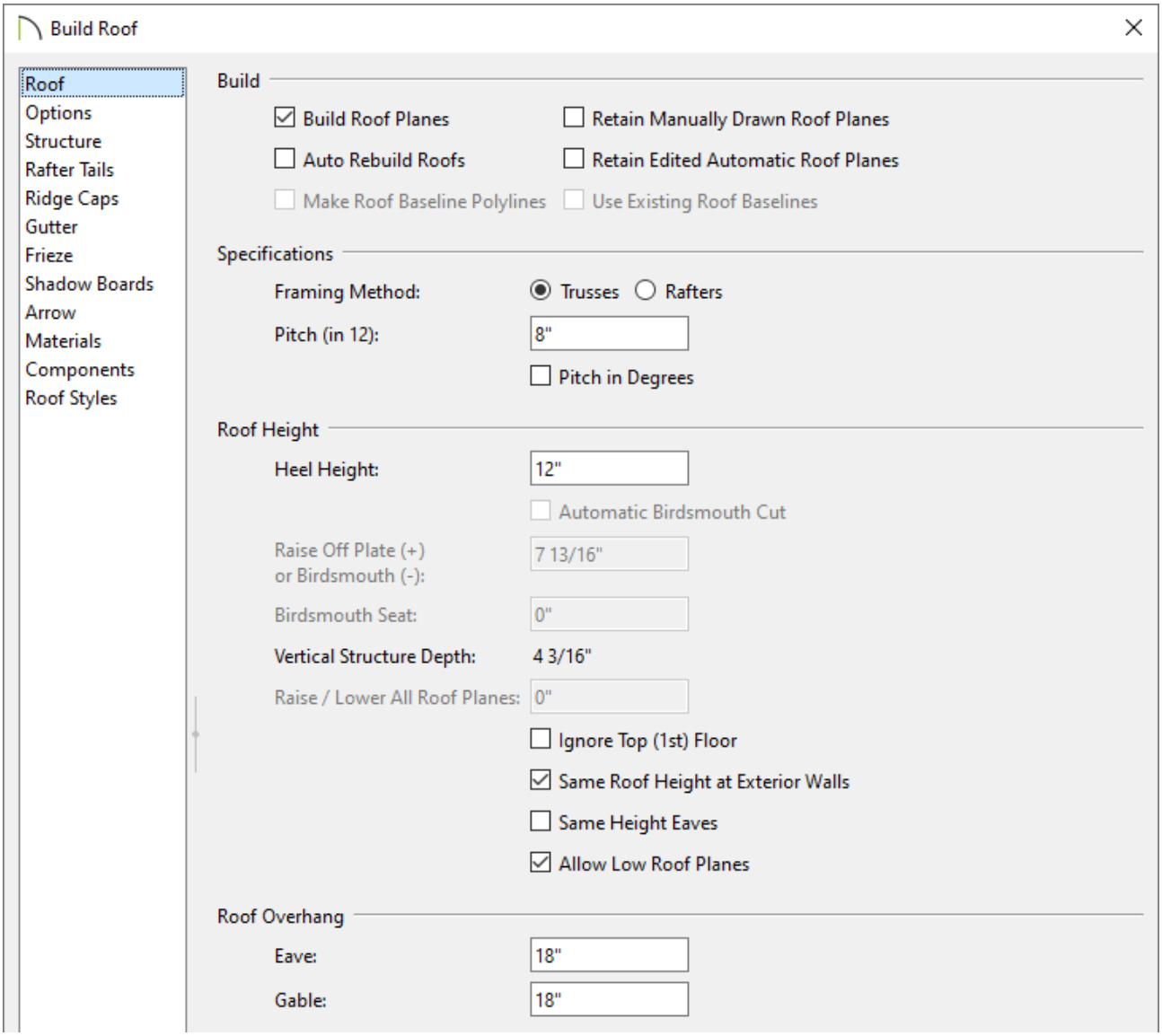
   In this example, a simple 20' x 30' structure is used.

2. With the **Select Objects** tool, select the left and right walls, then click the **Open Object** edit button.

3. On the ROOF panel of the **Wall Specification** dialog that opens, choose the **Full Gable Wall** option, then click **OK**.



4. Select **Build> Roof> Build Roof** from the menu, and on the ROOF panel of the **Build Roof** dialog that appears:



- Check **Build Roof Planes** or **Auto Rebuild Roofs**.
- Select the **Trusses** Framing Method.

  In X14 and prior versions, check Trusses (no Birdsmouth) instead.
- Specify your desired **Pitch (in 12)** and **Roof Overhang** values.

  In this example, the default 8" in 12" pitch is specified with the default 18" overhangs.
- Set the **Heel Height** to your liking.

  In X14 and prior versions, uncheck Automatic Birdsmouth Cut, then specify the Raise Off Plate (+) or Birdsmouth (-) value to the height you want the energy heel.

  In this example, the value of 12" is used.

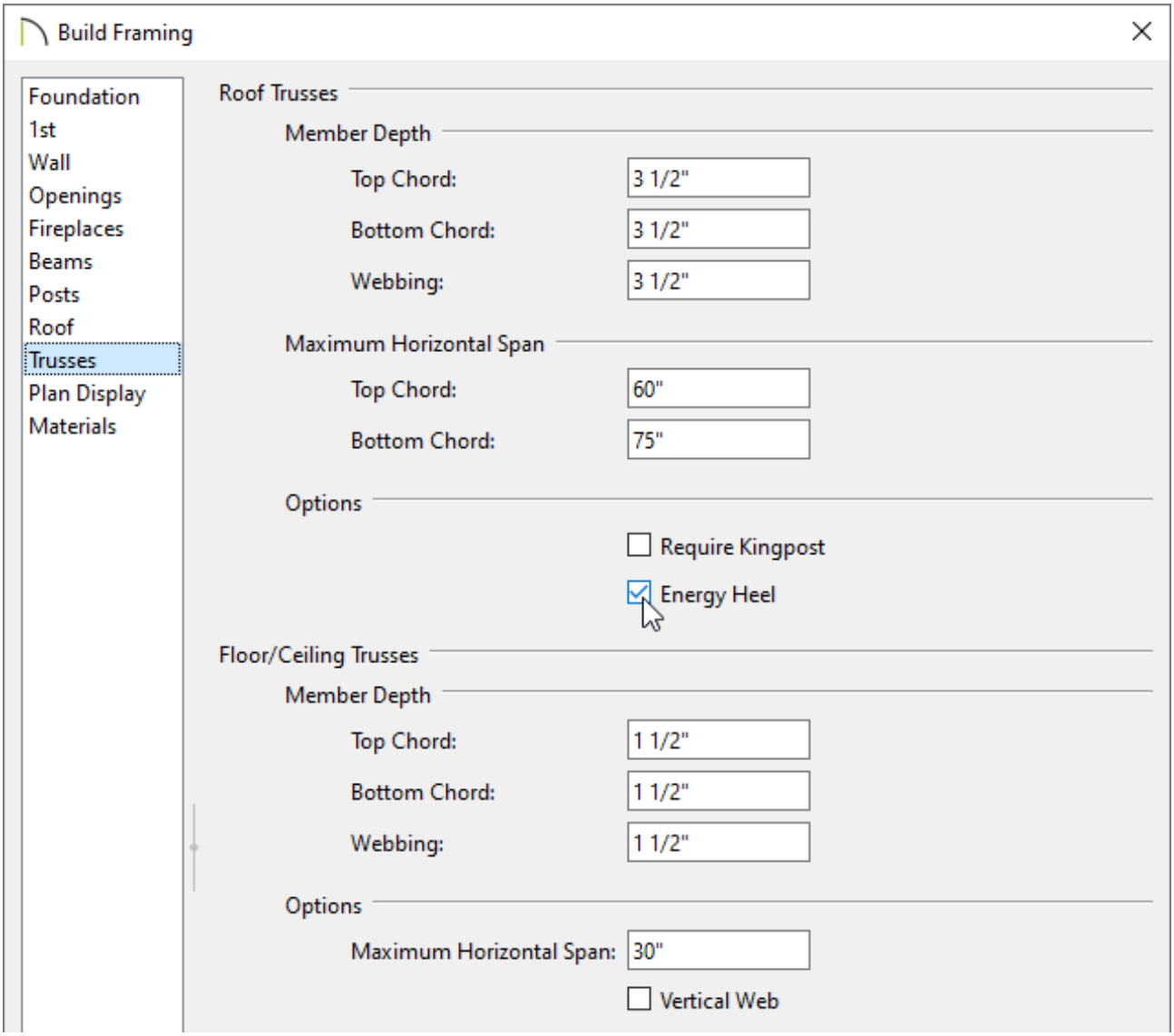
5. Click **OK** to close the dialog and generate the roof planes based on these settings.

To create energy heel trusses automatically*

*Applies to Chief Architect Premier X15 and newer versions.

1. Click **Build> Framing> Build Framing** from the menu.

2. In the **Build Framing** dialog that appears:



   - On the TRUSSES panel, ensure that the Member Depth and Maximum Horizontal Span properties are set to your liking, then check the **Energy Heel** box.

- On the ROOF panel, verify that the **Rafter/Truss Spacing** and other roof framing settings are to your liking, then check the **Build Roof Framing** box.

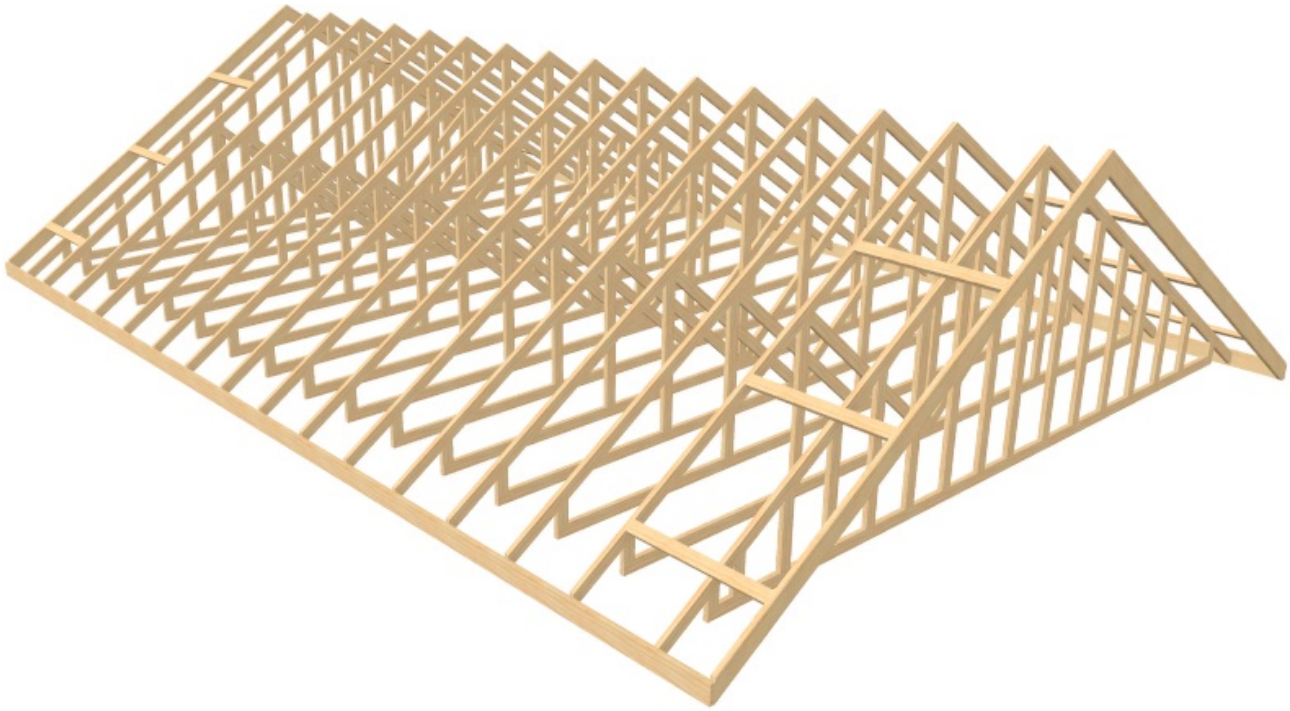
  In this example, the default Rafter/Truss Spacing value of 24" is used and the Ridge box is unchecked so that a ridge board/beam is not generated.

- Click **OK** to generate automatic trusses, along with any other automatic framing components, such as lookouts and fascia boards.

  You may be prompted to choose whether or not to display roof framing layers in the active view. Whichever choice you choose will not affect the generation of the framing components.

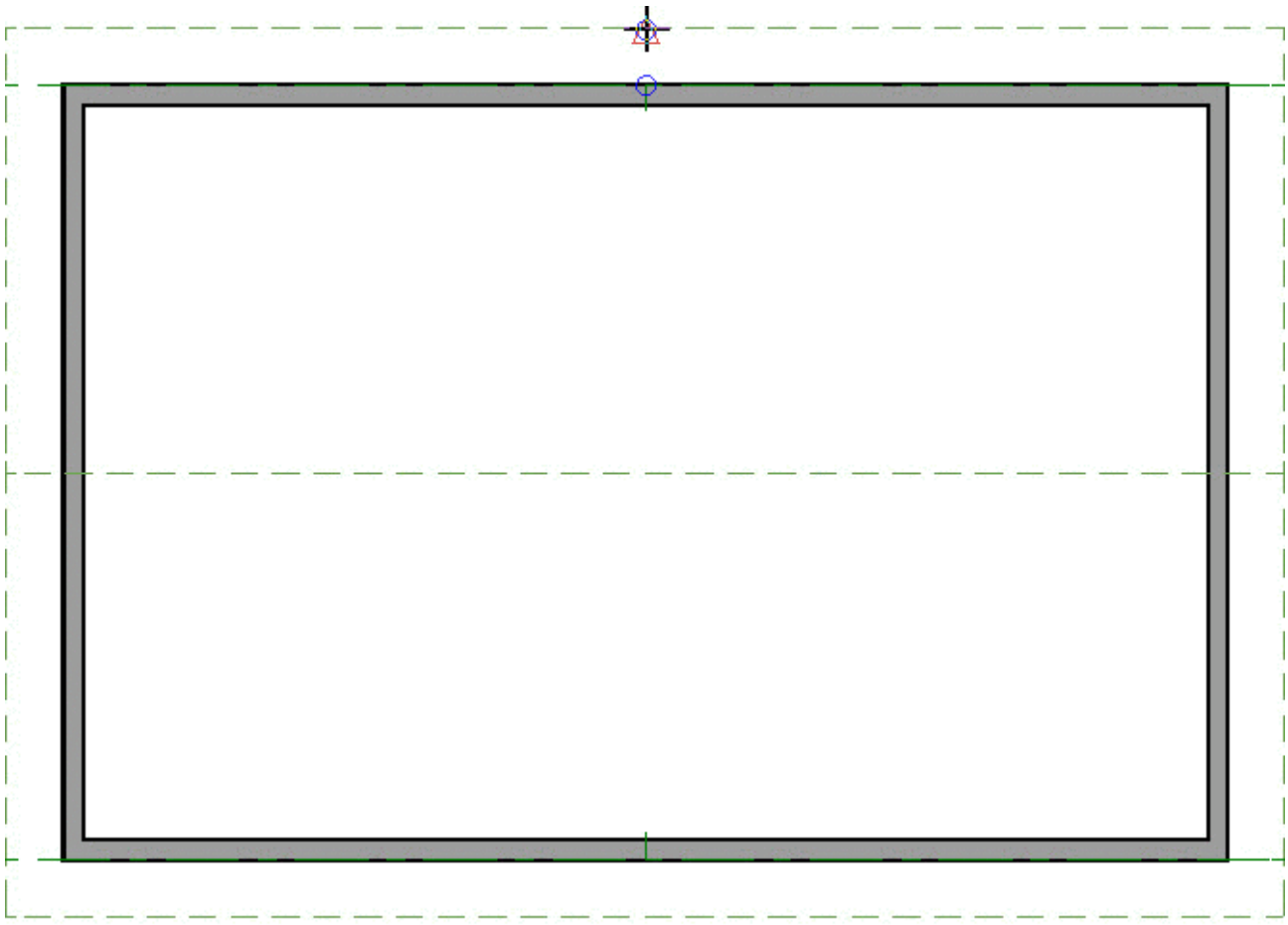
> The trusses located on each end of the structure will be reduced gable end trusses. If you don't want these types of trusses to be built automatically, open the two gable walls up to specification, select the Roof panel, and uncheck the "Include Automatic End Truss Above" box. Once you regenerate the roof framing, end trusses will no longer be built.

3. Navigate to **3D> Create Perspective View> Perspective Framing Overview**  to see the results.



To create energy heel trusses manually

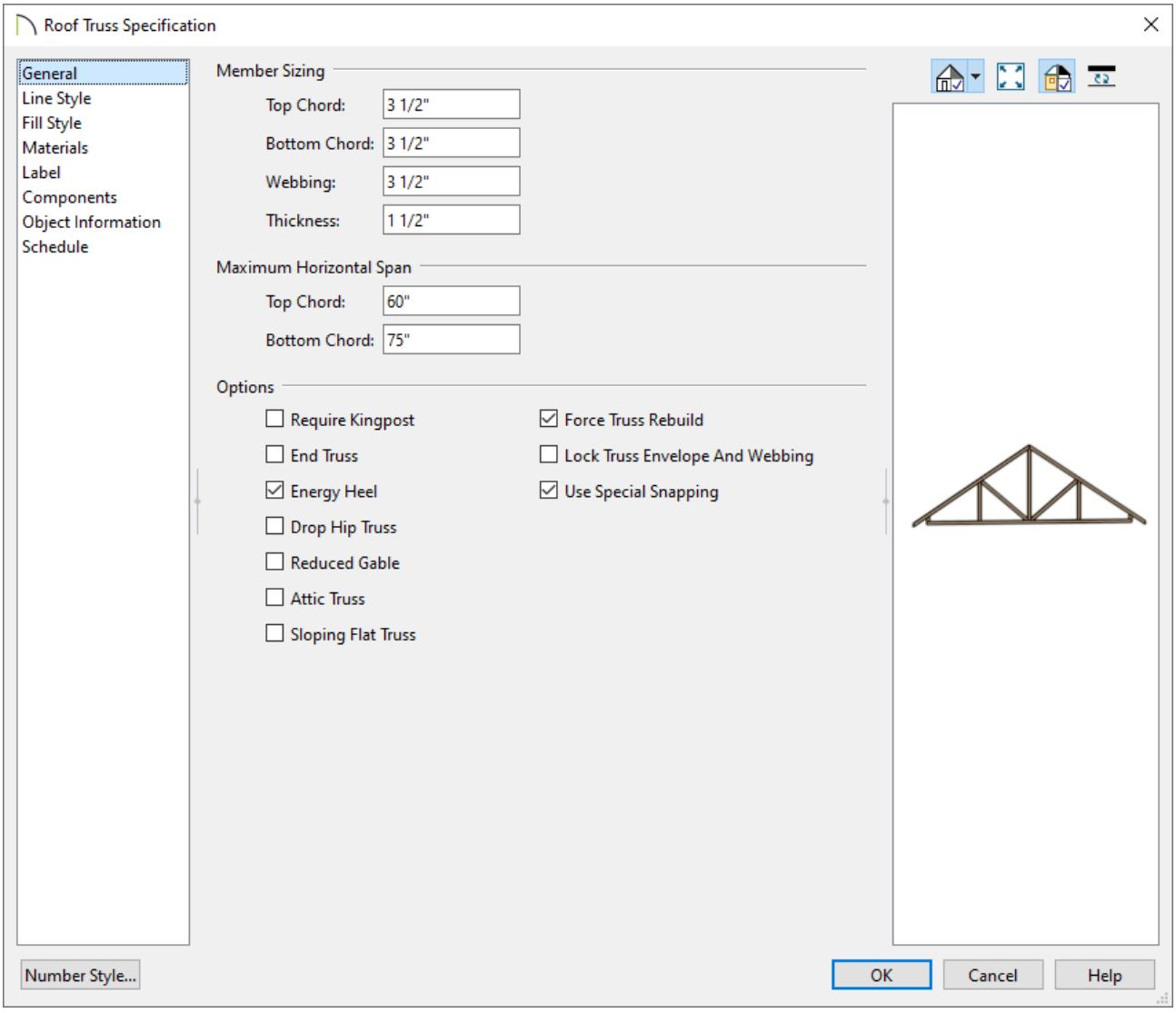
1. Click **Build> Framing> Roof Truss** from the menu, then click and drag to draw a roof truss.



Note: A Message may appear asking "The layer 'Framing, Roof Trusses' is not displayed. Do you want to turn on the display of this layer in the current view?" Click Yes to display the Roof Trusses layer in this view.

2. Using the **Select Objects** tool, select the roof truss, then click the **Open Object** edit button.

3. On the GENERAL panel of the **Roof Truss Specification** dialog that displays:



   - Check **Energy Heel**.

> Starting in X14, trusses can be setup to have the "Energy Heel" option selected by default. To do this, navigate to Edit> Default Settings, select the Framing category, then click Edit. In the Framing Defaults dialog, select the Trusses panel, then place a check in the "Energy Heel" box.

- Check **Force Truss Rebuild**.
- Click **OK**.

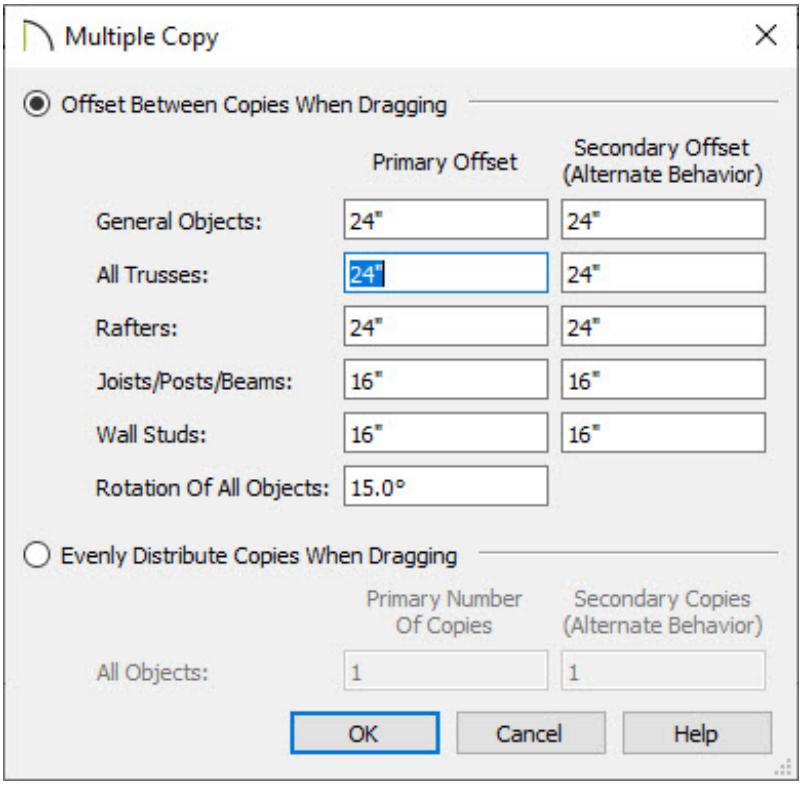
4. Next, **Move** the truss to the edge of your structure.

> **Note:** If you receive a message stating that the "Roof and ceiling planes cannot be found or they are too close together", the truss has been moved too far and is not bearing on the wall properly. Zoom into the area and move the truss so that it is located on the main framing layer of the wall.

5. With the truss still selected click on the **Multiple Copy** edit tool.

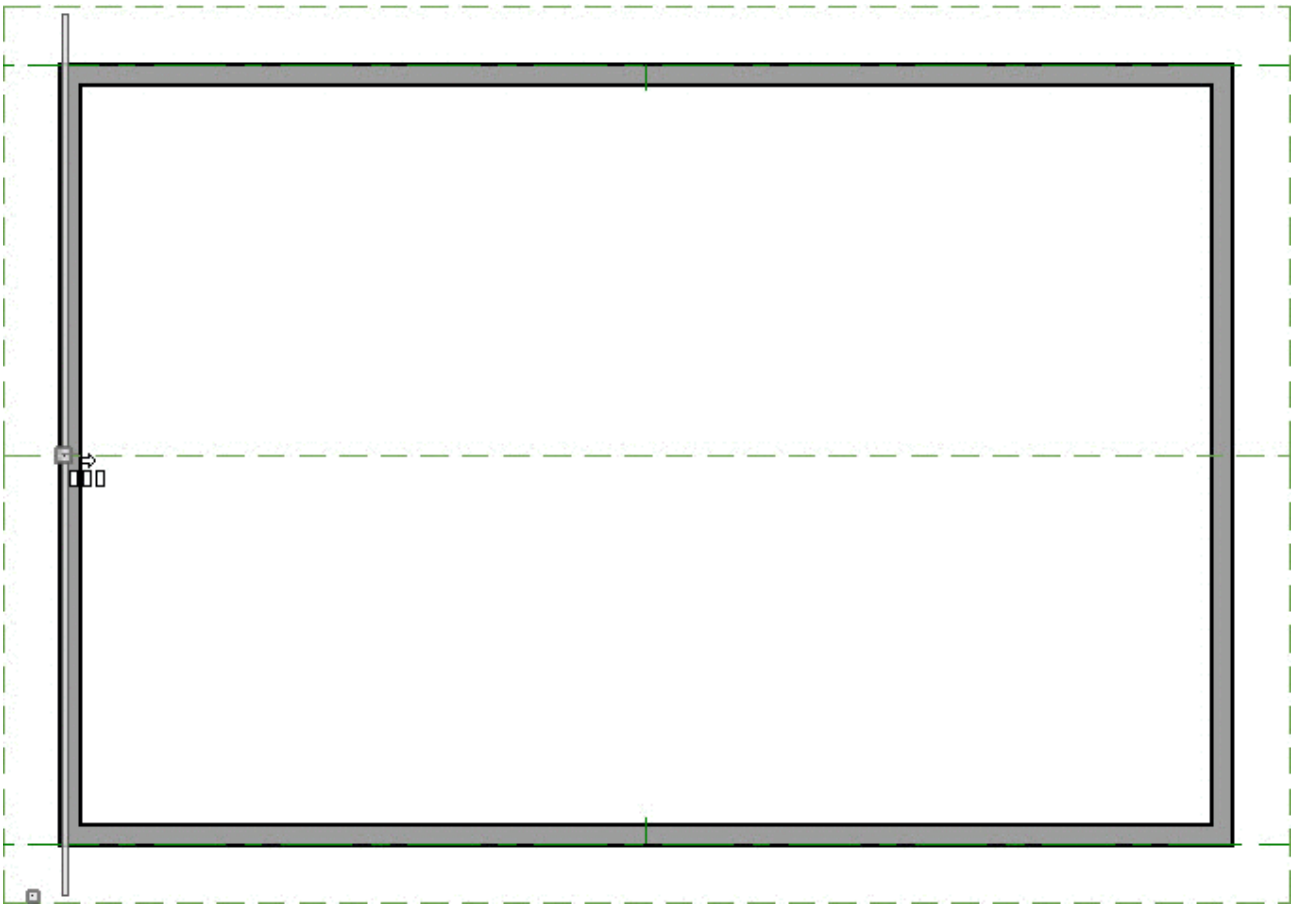
   Multiple Copy is not available in Home Designer Pro; instead, use the **Transform/Replicate** edit tool. As an example, if you wanted to create 6 copies all separated a certain distance from each other, you would check the **Copy** box, set the Number of Copies to **6**, then check the **Move** box and set the X Delta to be **24"**. Negative values can also be set for each of the Deltas if needed.

6. Click on the **Multiple Copy Interval** edit button and verify that the **All Trusses** is set to the desired spacing and click **OK**.



7. Move your cursor over the **Move** edit handle of the truss. You will notice that your cursor changes to the **Multiple Copy** cursor.

8. Click and drag across your plan to place trusses at regular intervals.



9. Create a **Perspective Framing Overview** to see the results.

Now, additional framing components, such as lookouts and fascia boards, can be generated automatically using the Build Framing dialog.

Related Articles

- Creating a Log Truss (/support/article/KB-02781/creating-a-log-truss.html)
- Creating a Vaulted Ceiling and Scissor Trusses (/support/article/KB-00068/creating-a-vaulted-ceiling-and-scissor-trusses.html)
- Creating an Attic Truss (/support/article/KB-00933/creating-an-attic-truss.html)
- Creating Roof Trusses (/support/article/KB-00981/creating-roof-trusses.html)

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