Chief Architect®

Architectural Home Design
Software

Creating Exposed Trusses in a Cathedral Ceiling

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The information in this article applies to:

PREMIER

QUESTION

How can I create exposed roof trusses in a room with a cathedral ceiling?

ANSWER

When a roof truss is drawn in Chief Architect, the program locates a roof plane to define the top chords of the truss, and a ceiling plane to define the location of the bottom chord. You can create exposed trusses by creating a ceiling to define where you want the trusses' bottom chords, drawing the trusses, and then removing the ceiling.

To set up the structure

1. **Open** 📁 the plan file in which you would like to create exposed roof trusses.
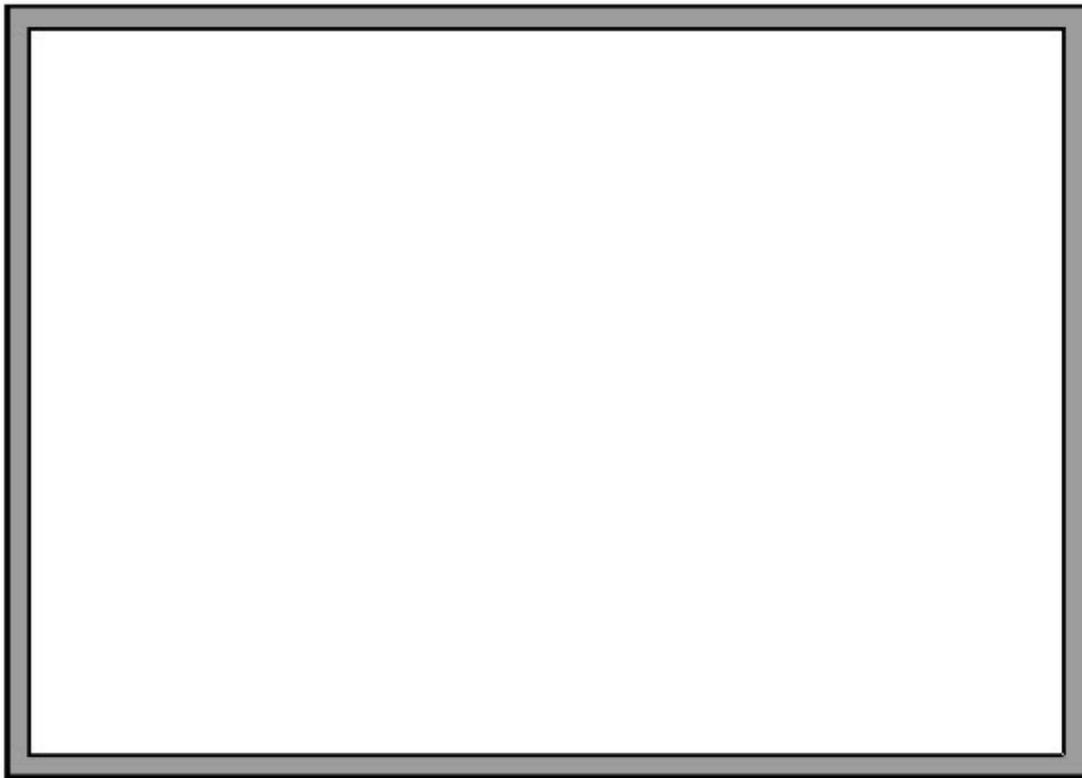
- In this example, a simple rectangular structure with a gable roof is used.

- If your plan has multiple floors, go to the floor where you want to create exposed trusses.

2. Using the **Select Objects** ⤢ tool, click in the center of the room to highlight it, then click the **Open Object** ⊓ edit button.

3. On the STRUCTURE panel of the **Room Specification** dialog that opens, set the **Rough Ceiling** height to the height for the wall top plates, then click **OK**.
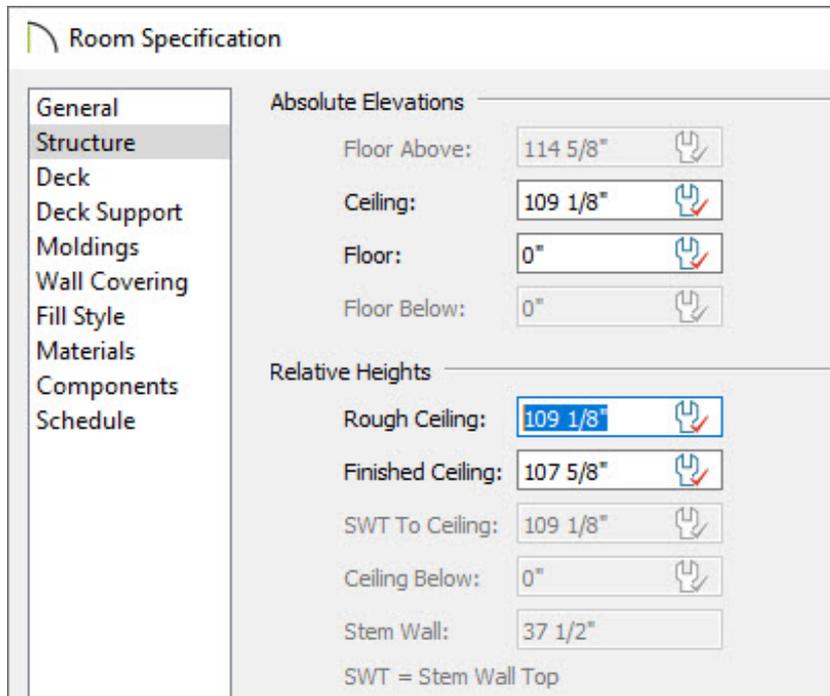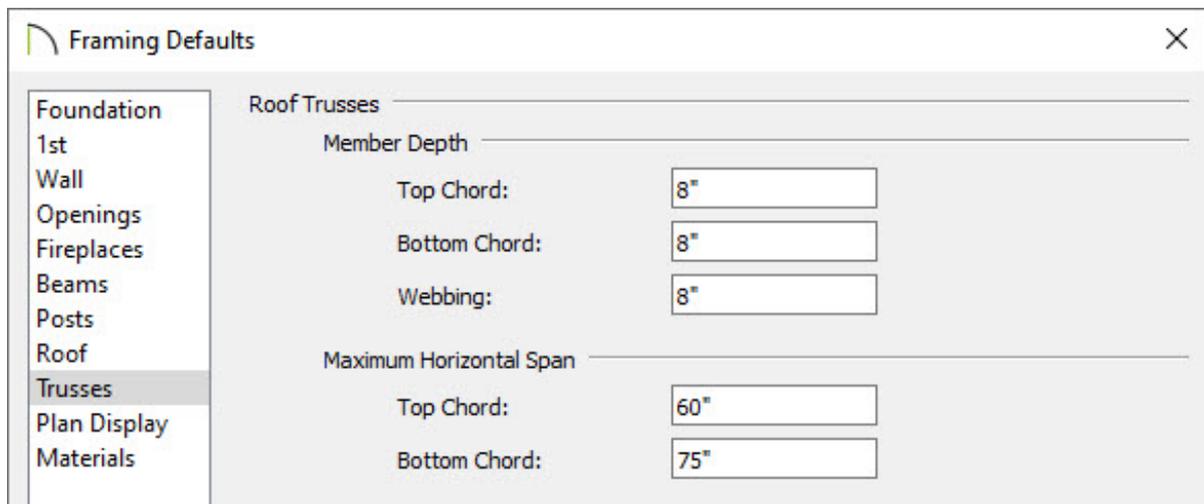

> If all rooms on this floor have the same plate height, it is best to set the Rough Ceiling value in the Floor Defaults.

4. Next, select **Edit> Default Settings** ⚒ , select the **Framing** category, then click **Edit**.

5. On the TRUSSES panel of the **Framing Defaults** dialog, specify the desired **Member Depth** and **Maximum Horizontal Span** properties, then click **OK** and **Done** to close the dialogs.

In this example, the Depth values are set at 8" and the Span values are unchanged.

Framing Defaults

	Roof Trusses	
Foundation	Member Depth	
1st	Top Chord:	8"
Wall	Bottom Chord:	8"
Openings	Webbing:	8"
Fireplaces		
Beams	Maximum Horizontal Span	
Posts	Top Chord:	60"
Roof	Bottom Chord:	75"
Trusses		
Plan Display		
Materials		

6. Select **Build> Roof> Build Roof** and on the ROOF panel of the **Build Roof** dialog that opens:

    o   Check **Build Roof Planes**.

    o   Uncheck **Auto Rebuild Roofs** if it's checked.

    o   Select the **Trusses** Framing Method.

   In X14 and prior versions, check the **Trusses (no Birdsmouth)** box instead.

    o   Specify the desired **Pitch (in 12)**.

    o   Click **OK** to close the dialog and build the roof.

7. Ceiling modifications may need to be made before generating your trusses. For example:

    o   Use the default flat ceiling to produce standard trusses.
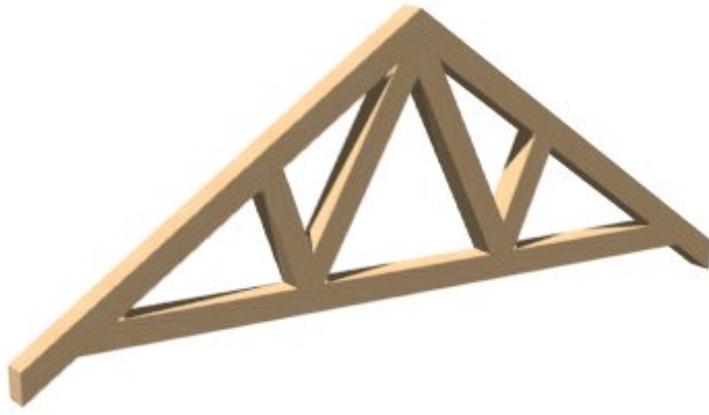
- Raise the ceiling height of a room if you'd like to create trusses with a raised bottom chord (make a note of the original value before doing so).
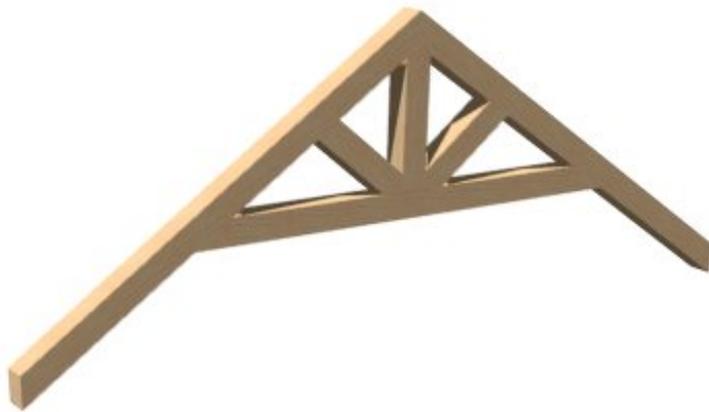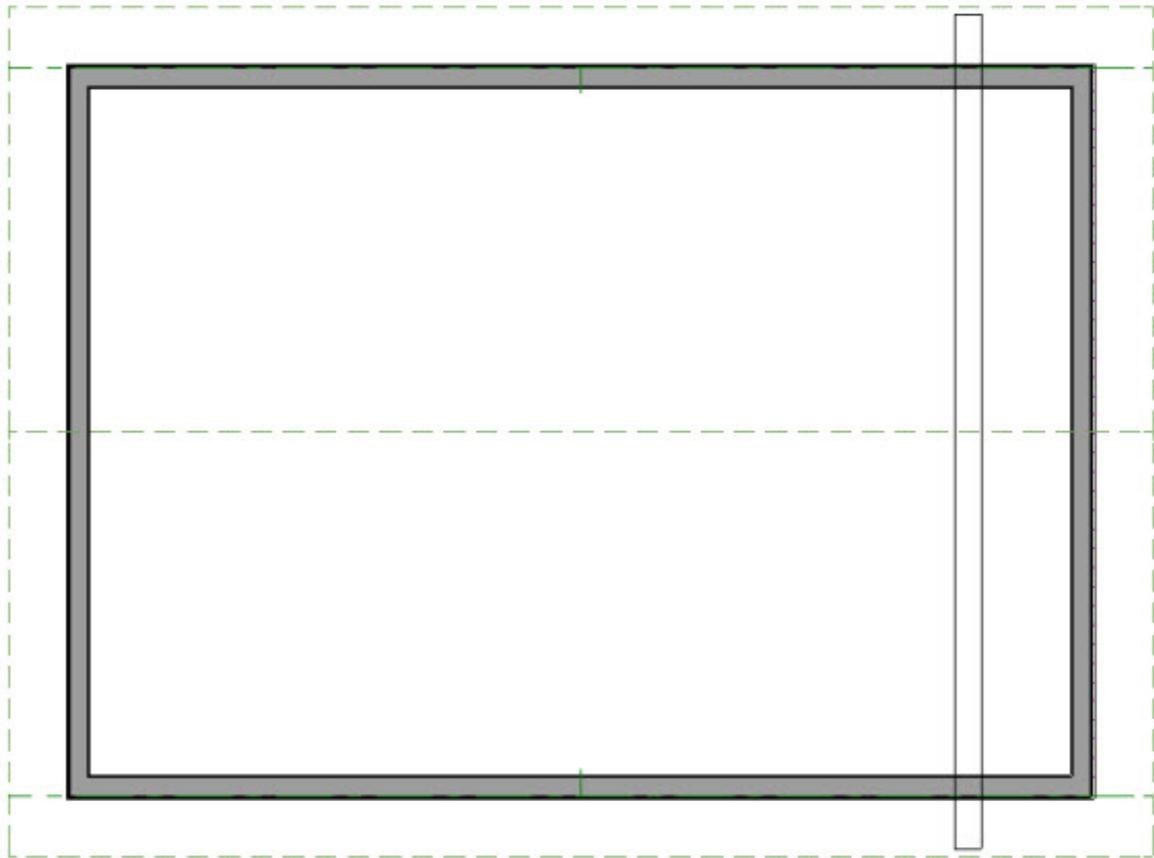

- Remove the default flat ceiling and draw sloped ceiling planes to produce scissor trusses. More on creating scissor trusses can be found in the Related Articles section below.
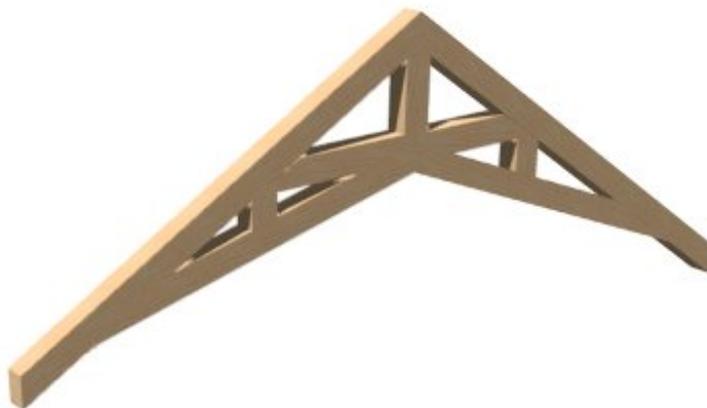
To draw and replicate the trusses

1. Select **Build> Framing> Roof Truss** ⟁ from the menu, then click and drag a line over the roof to create a single roof truss.


> **Note:** If you receive a Question dialog stating that "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.

2. Using the **Select Objects** ▷ tool, select the newly created truss and click the **Open Object** ⬚ edit button.

3. In the **Roof Truss Specification** dialog that opens:

   ○ On the GENERAL panel, specify the **Thickness**.

     In this example, an 8" thickness is specified to match the member properties set in the section above.

- On the MATERIALS panel, specify your desired material for the truss.

- Click **OK** once all desired changes have been made.

4. Next, move the truss into position over a non-bearing wall by either using its edit handles or by using a dimension line.
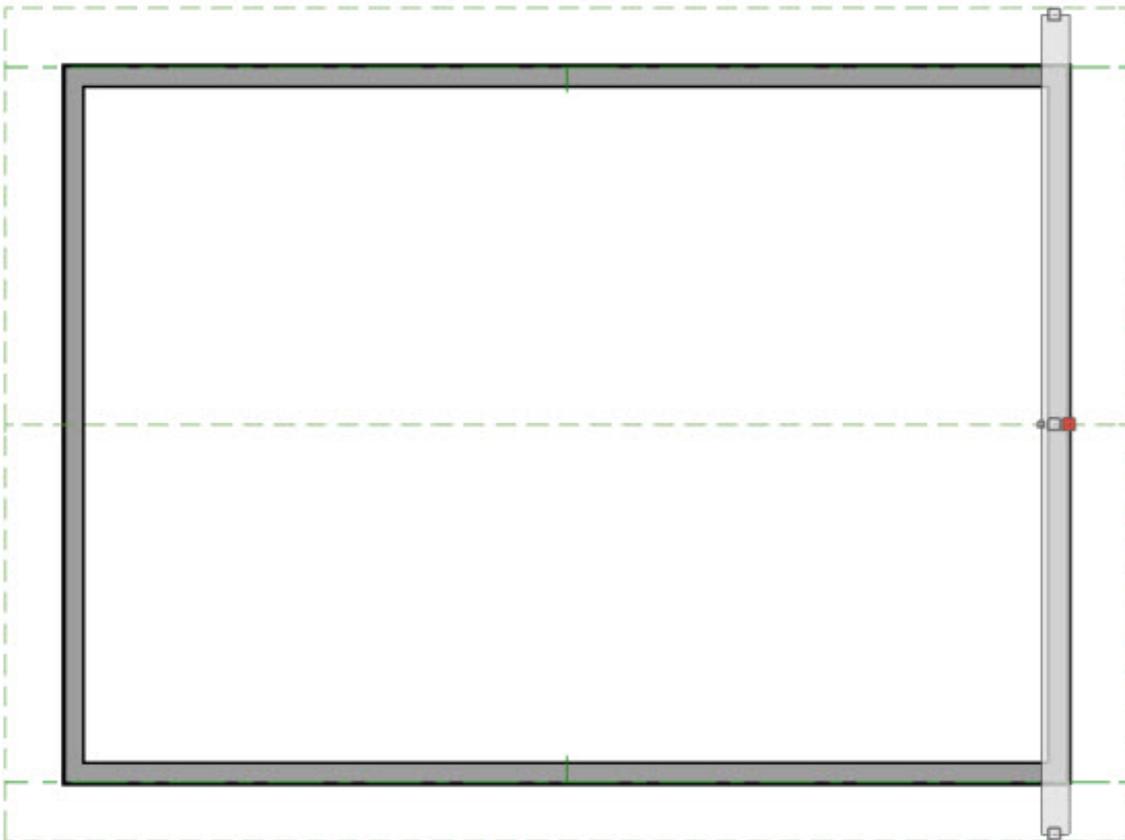

5. With the first truss in place over an exterior wall, click on it to select it, then click the **Multiple Copy** edit button.

6. Next, click the **Multiple Copy Interval** edit button to open the **Multiple Copy** dialog:

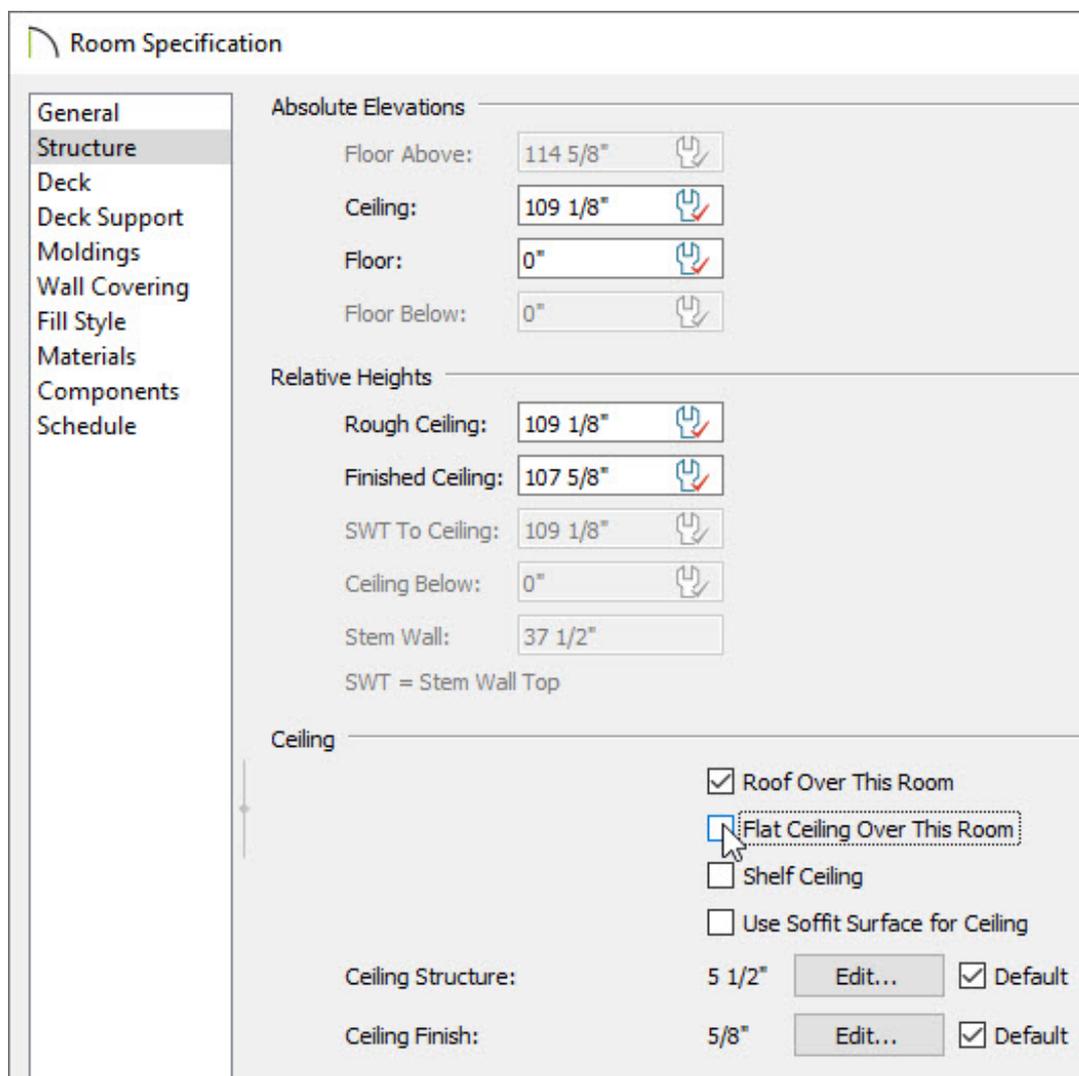- Specify the desired **Offset Between Copies When Dragging** for **All Trusses** and click **OK**.

- When you click **OK**, the truss will still be selected and the **Multiple Copy** edit tool will still be active.

7. Click and drag the truss perpendicular to itself using the **Move** edit handle to create copies of the truss at the specified intervals. As you drag, your cursor will display the **Multiple Copy** icon.
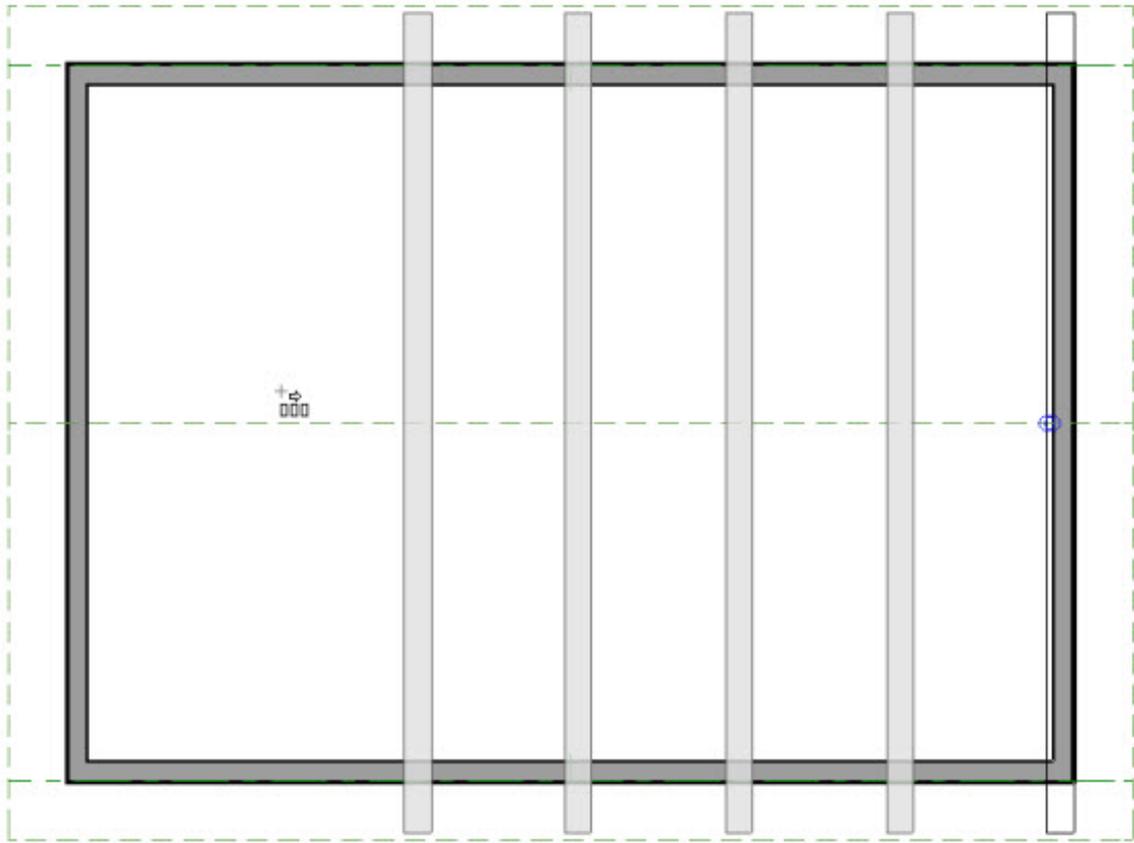
8. When you have the desired number of trusses, release the mouse button.

To make the trusses exposed

1. When your trusses are in place, use the **Select Objects** ↖ tool to select the room once again, then click the **Open Object** ▯ edit button.

2. In the **Room Specification** dialog that opens:

Room Specification

General
Structure
Deck
Deck Support
Moldings
Wall Covering
Fill Style
Materials
Components
Schedule

Absolute Elevations
Floor Above: 114 5/8"
Ceiling: 109 1/8"
Floor: 0"
Floor Below: 0"

Relative Heights
Rough Ceiling: 109 1/8"
Finished Ceiling: 107 5/8"
SWT To Ceiling: 109 1/8"
Ceiling Below: 0"
Stem Wall: 37 1/2"
SWT = Stem Wall Top

Ceiling
☑ Roof Over This Room
☐ Flat Ceiling Over This Room
☐ Shelf Ceiling
☐ Use Soffit Surface for Ceiling
Ceiling Structure: 5 1/2" Edit... ☑ Default
Ceiling Finish: 5/8" Edit... ☑ Default

- On the STRUCTURE panel, uncheck the box beside **Flat Ceiling Over This Room**.

- If you changed the Ceiling height value to produce a modified truss (mentioned in Step 7 of the first section of this article), you may want to restore the previous value at this time.

- Click **Edit** next to Ceiling Finish if you'd like to change the thickness of the ceiling material.

- On the MATERIALS panel, select the Ceiling Finish component, then click the **Select Material** button to choose your desired ceiling material.

- Under the Ceiling heading, remove the check beside **Flat Ceiling Over This Room**.

- Click **OK** once you have chosen a material, then click **OK** again to apply your changes.

3. Select **3D> Create Perspective View> Full Camera** 📷 from the menu, then click and drag a camera arrow inside the room where the trusses are.

4. With the 3D view active, select **Tools> Layer Settings> Display Options** ☑ from the menu.

5. In the **Layer Display Options** dialog, place a check in the **Disp** column next to the "Framing, Roof Trusses" layer, then click **OK**.
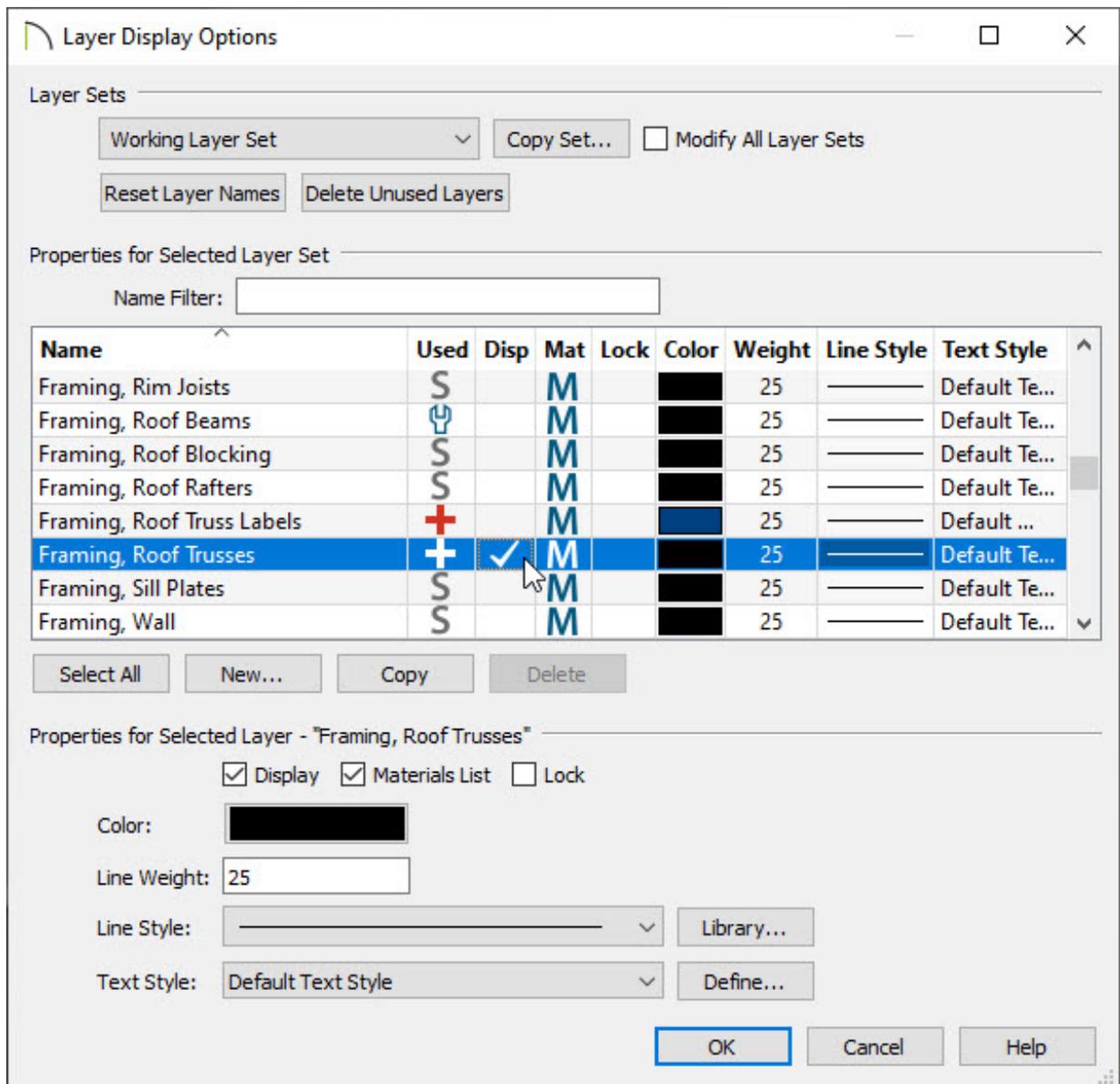
Your camera view may now look similar to the image below.

6. If you would like the top chords of your trusses to be exposed, click on the roof planes above to select them, then click **Open Object** edit button.

> **Note:** You can group select multiple roof planes by holding down the Shift key on your keyboard, then clicking on each roof plane. For more information on group selecting objects, please see the Related Articles section below.

7. In the **Roof Plane Specification** dialog that displays:

   ○ On the GENERAL panel, lock the pitch by clicking the radio button to the right of the **Pitch (in 12)** text field, then increase the **Baseline Height** value.

     In this example, the Baseline Height value was increased by 9 5/8". If your ceiling finish is a material other than drywall, such as tongue and groove for example, you may want to adjust this value accordingly.

   ○ Click **OK** to close the dialog and apply the change.

   Your exposed trusses are now in place. If you would like to make additional changes to the roof's structure, consider following the optional steps below.

8. Navigate to **Build> Framing> Build Framing** 🏠, and on the WALL panel of the **Build Framing** dialog, uncheck **Automatically Build Wall Framing**, then click **OK**.

9. **Open** ▯ the roof planes up to specification once more, and on the STRUCTURE panel, change the **Rafter Depth**, along with any other roof properties to your liking.

> If the rafter depth is changed prior to turning off automatic wall framing, your wall top plates may conflict with the exposed trusses. It's best to only perform this step after your walls are in place and the wall framing is complete.

Specifying a rafter depth value of 0" will allow the surface layers of the roof to sit directly on the trusses.

Related Articles

📄Creating a Vaulted Ceiling and Scissor Trusses (/support/article/KB-00068/creating-a-vaulted-ceiling-and-scissor-trusses.html)
📄Creating Roof Trusses (/support/article/KB-00981/creating-roof-trusses.html)
📄Group Selecting Objects (/support/article/KB-00623/group-selecting-objects.html)

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