Chief Architect®

Architectural Home Design
Software

Generating Automatic Hip and Gable Roofs

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QUESTION

How do I build hip and gable roofs automatically?

ANSWER

The automatic roof functionality in Chief Architect allows you to create a wide variety of roof designs in your plans. In this tutorial, we will cover building an automatic hip roof, an automatic gable roof, an automatic dutch gable roof, as well as how to control the roof's height.

Before continuing, it's important to have an understanding of how the automatic roof functionality works in the program. In Chief Architect, a structure's roof is automatically generated using the "Build Roof Planes" and "Auto Rebuild Roofs" settings located within the Build Roof dialog. While the "Build Roof Planes" setting allows you to build the roof based on the current state of the plan, and requires you to recheck the box each time you want to rebuild the roof, the "Auto Rebuild Roofs" setting is a persistent setting that, when enabled, rebuilds the roof in the plan any time a change is made.

Although these settings allow you to quickly, and effortlessly, create a roof for your structure, you will want be aware that its generation is contingent on having properly defined rooms that have been established using the Wall tools. This is important because the roof planes that are generated automatically receive directives from the established rooms (such as the specified room height) and the walls that they bear on.

For example, creating a roof gable is accomplished by opening a wall that is part of an enclosed room up to specification and specifying it to be a Full Gable Wall (we will discuss this more later on in the article).

If you have created rooms within a plan using the Wall tools, but the roof isn't generating or updating when using one of the mentioned settings within the Build Roof dialog, it may be caused by one of the following:

- One or more established rooms have the "Roof Over This Room" setting unchecked in the Room Specification dialog. When this setting is unchecked, the program will not generate a roof over the area when using the automatic roof functionality.

- Roof baseline polylines are being used. When the "Make Roof Baseline Polylines" box is checked in the Build Roof dialog, the program creates one or more roof polylines, in which the automatic roof utility receives its directives from. Although useful in many situations, these polylines take precedent over the roof settings set within the Wall Specification dialog. Please refer to the <u>Related Articles</u> section below to learn more about roof baseline polylines.

Use the links below to quickly navigate to the various sections within this tutorial:

- <u>Automatic Hip Roof</u>
- <u>Automatic Gable Roof</u>
- <u>Automatic Dutch Gable Roof</u>
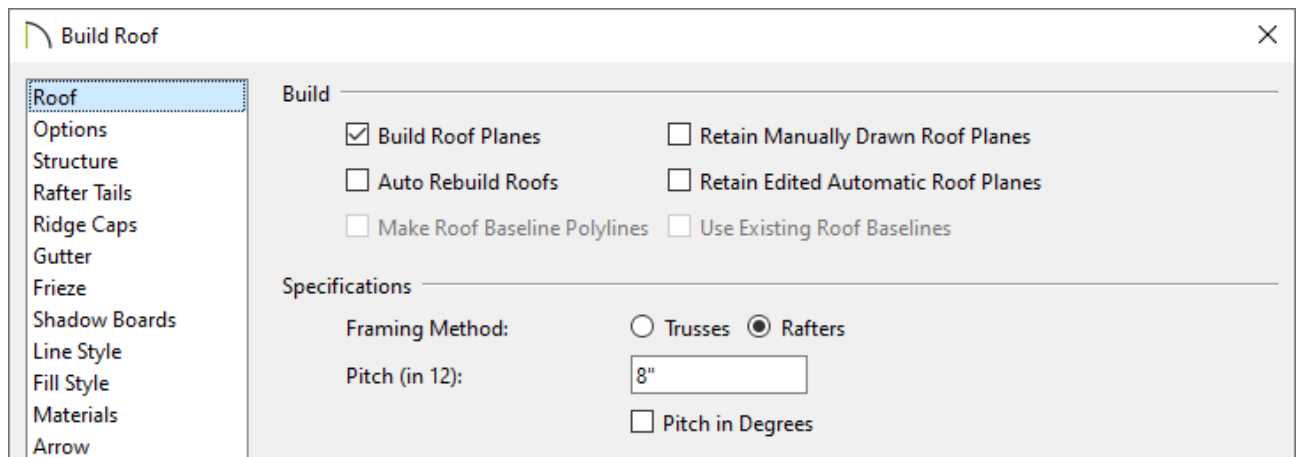- <u>Controlling Roof Height</u>

To create an automatic hip roof

An automatic hip roof is the easiest type of roof to create in Chief Architect, because the program will generate a roof plane on each exterior wall in your plan by default, resulting in a hip condition.

1. Select **Build> Wall> Straight Exterior Wall** from the menu, then click and drag four walls to form a basic rectangular structure.

   In this example, a 30' x 40' structure is created.

2. Select **Build> Roof> Build Roof** ⌂ from the menu to display the **Build Roof** dialog:


- Check the box beside **Build Roof Planes** or **Auto Rebuild Roofs**.

- Make note of the **Pitch** and adjust it as necessary; all automatically generated roof planes will be made using the pitch specified, unless a different pitch value has been set within a bearing wall.

- Click **OK** to close the dialog and generate an automatic hip roof.
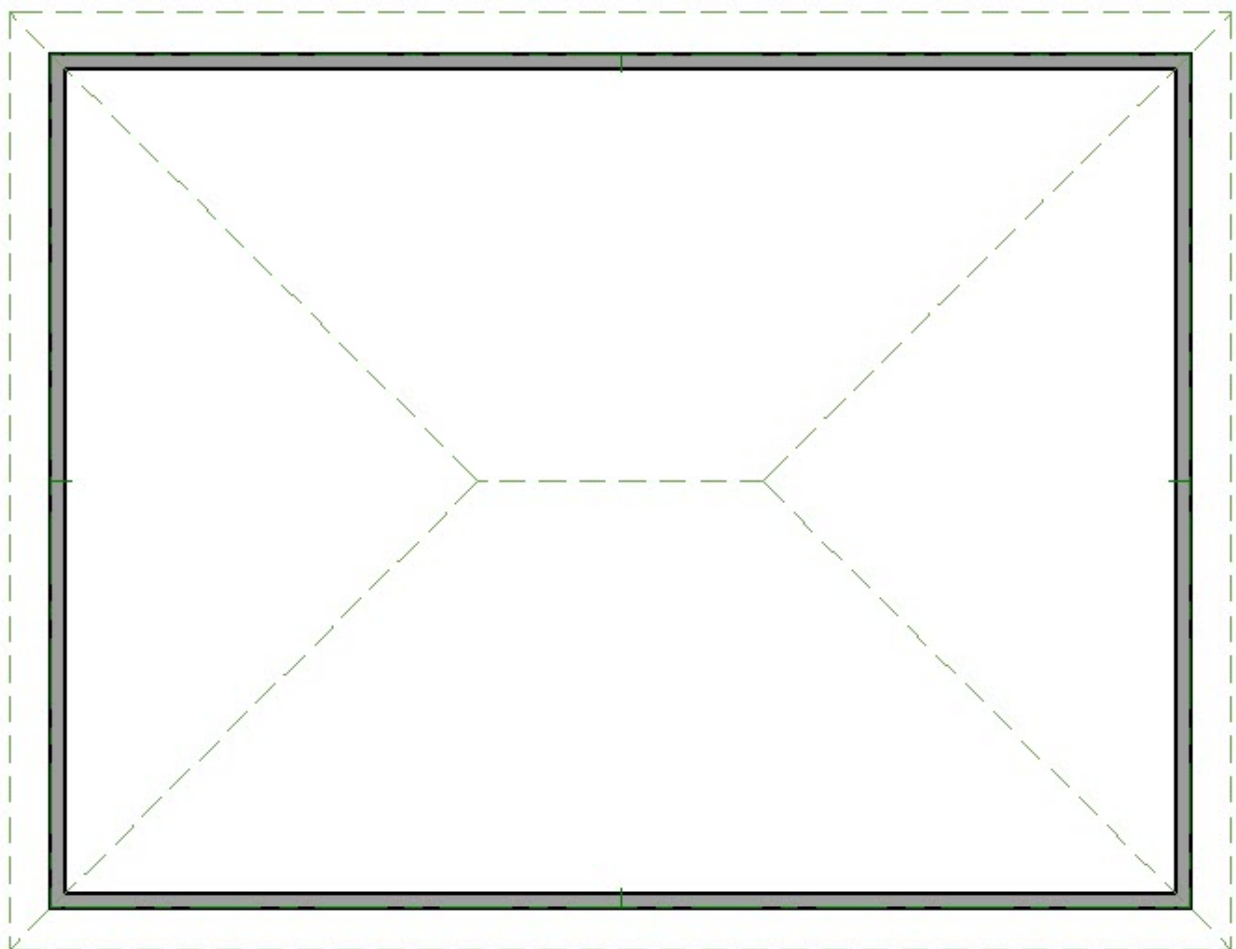
3. Select **3D> Create Perspective View> Perspective Full Overview** from the menu to see the results.
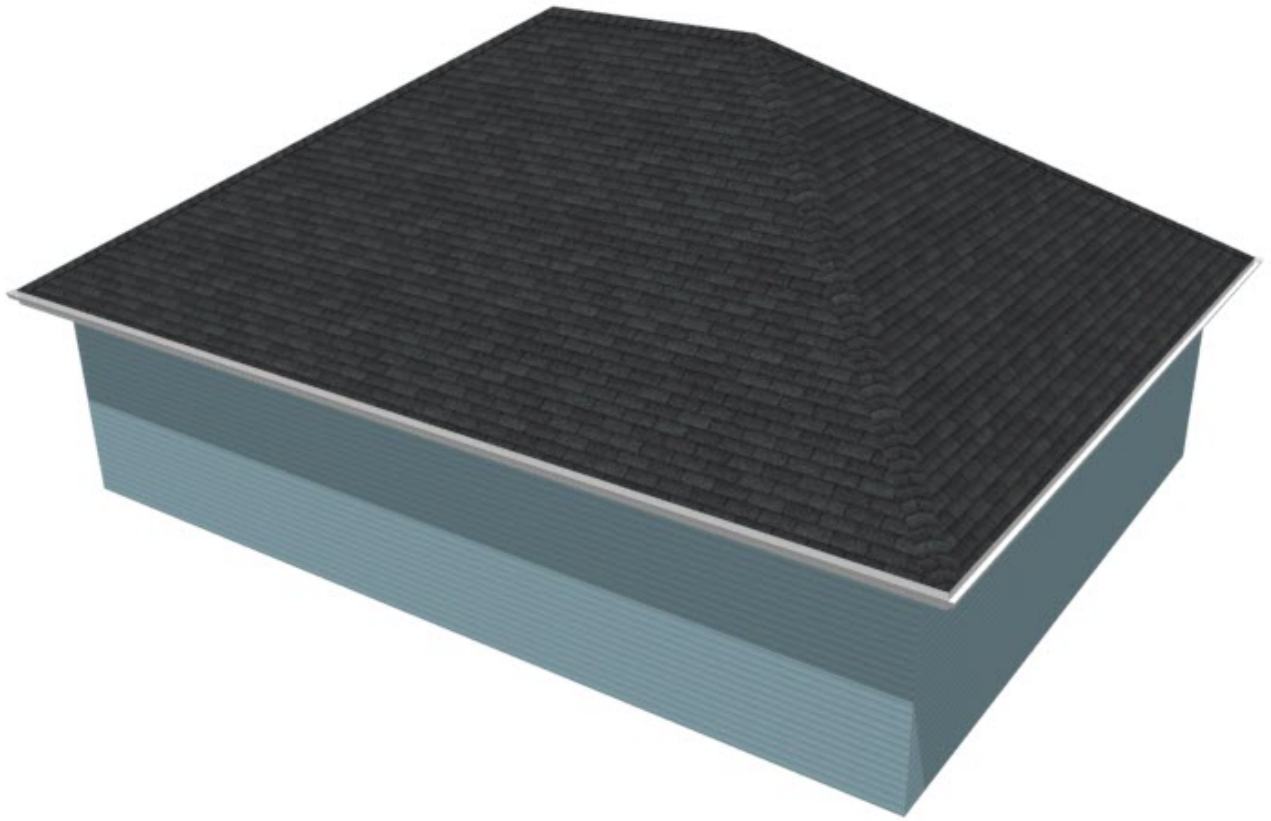
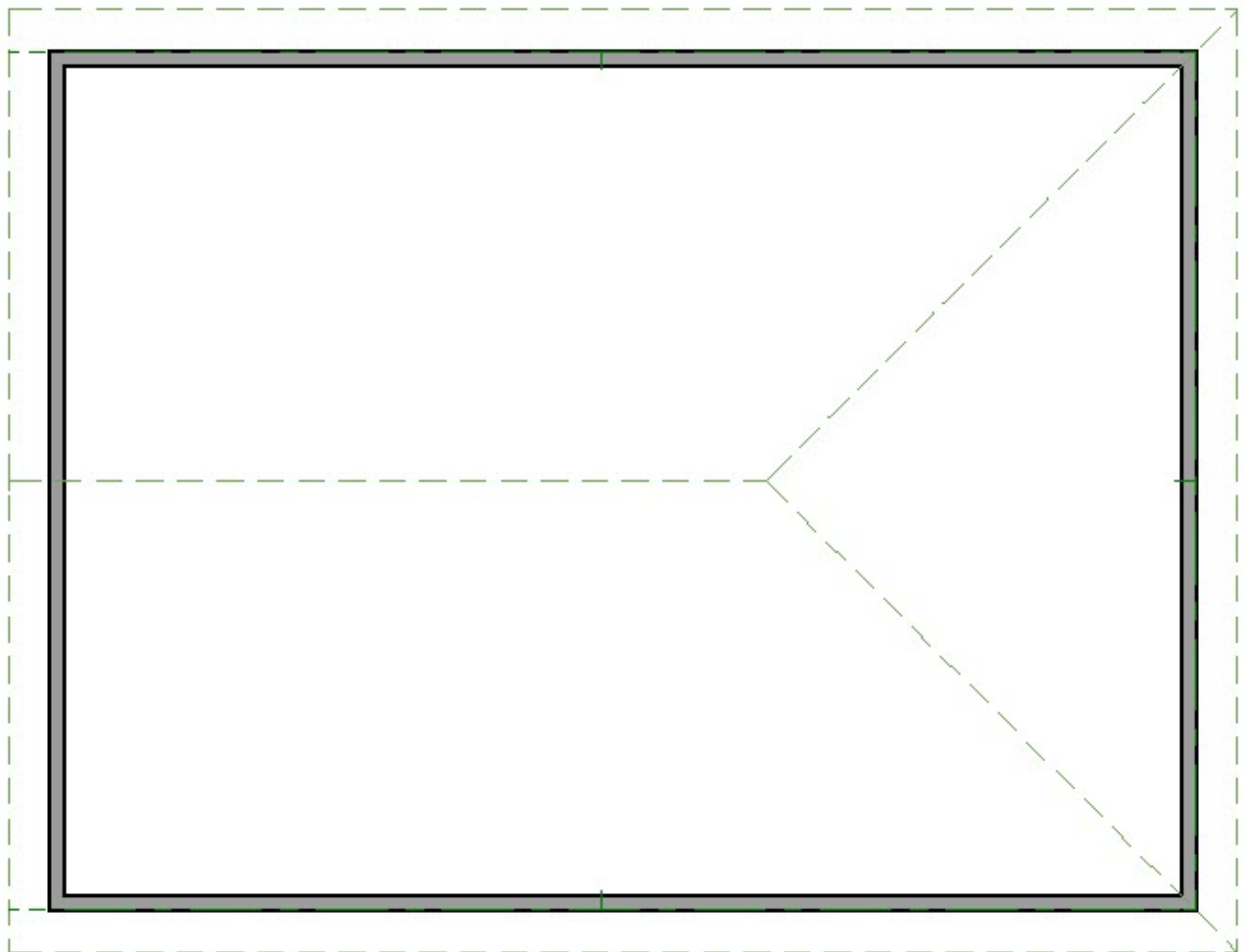## To create an automatic gable roof

If a gable is needed above a particular wall instead of a hip roof plane, this can be set in the Wall Specification dialog of the wall in question.

1. In a floor plan view, click on a wall that you would like to form a gable over to select it, then click on the **Open Object** edit button.

2. On the ROOF panel of the **Wall Specification** dialog, select the **Full Gable Wall** option, then click **OK** to close the dialog and apply the change.

Wall Specification

General
Structure
Roof
Foundation
Wall Types
Wall Cap
Wall Covering
Rail Style
Newels/Balusters
Rails

Roof Options

- ○ Hip Wall
- ● Full Gable Wall
- ○ Dutch Gable Wall
- ○ High Shed/Gable Wall
- ○ Knee Wall
- ○ Extend Slope Downward
- ☐ Roof Cuts Wall at Bottom
- ☑ Include Frieze
- ☑ Include Automatic End Truss Above

3. If **Auto Rebuild Roofs** is enabled, the roof will automatically update to reflect this change. If Auto Rebuild Roofs is not enabled, select **Build> Roof> Build Roof** ⌂ from the menu, check the **Build Roof Planes** box, then click **OK** to rebuild the roof.
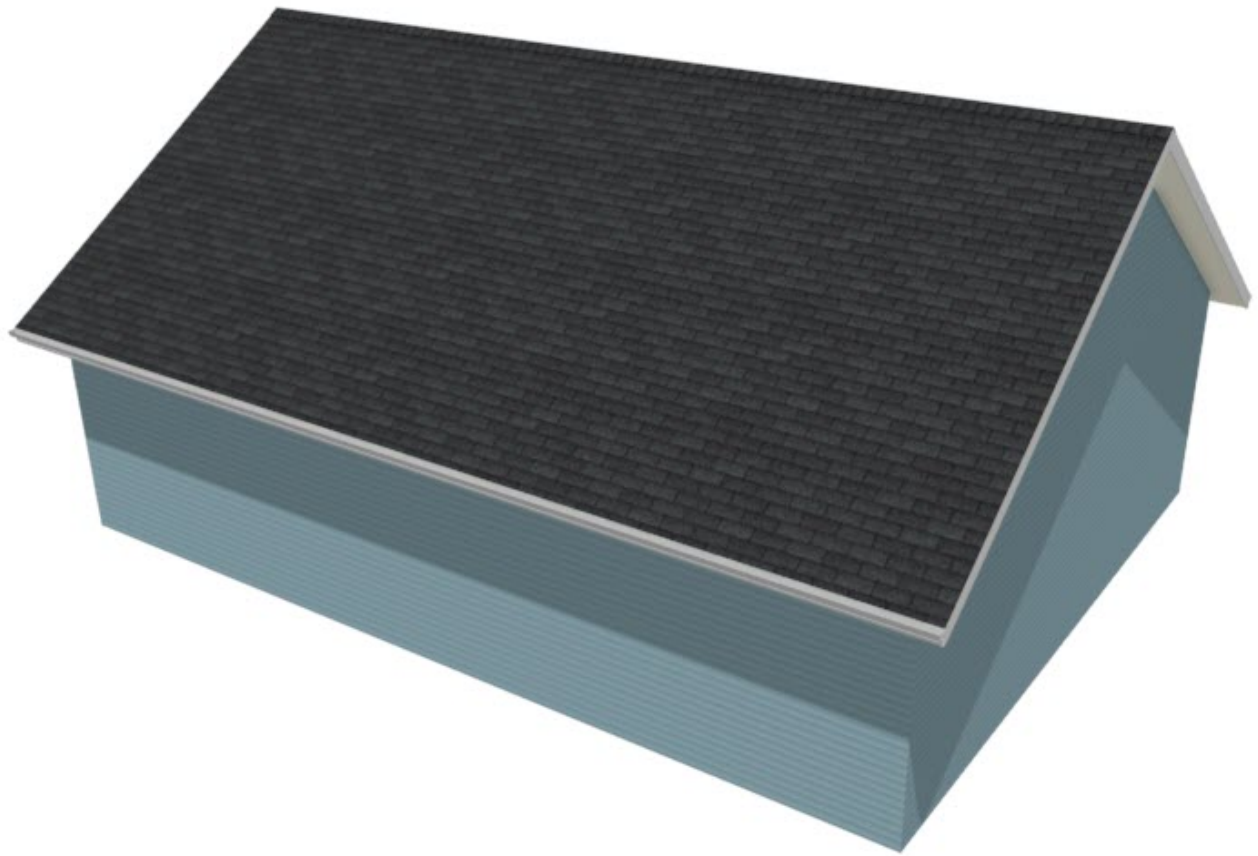

4. Click on the wall opposite the new Full Gable Wall and repeat Steps 1-3 above.

   You can also use the **Change to Gable Wall(s)** ⌂ edit tool to convert hip walls to gable walls without having to open the Wall Specification dialog.

5. Select **3D> Create Perspective View> Perspective Full Overview** 🏠 from the menu to see the results.

To create an automatic dutch gable roof

In Chief Architect X10 and newer program versions, dutch gable roofs can be generated automatically.

1. Click to select the wall in which you would like to create a dutch gable over, then click the **Open Object** edit button.

2. On the Roof panel of the **Wall Specification** dialog, select the **Dutch Gable Wall** option, specify the **Pitch** leading up to the dutch gable as well as either the **Starts at Height** or **In From Baseline** value for where the dutch gable will start, then click **OK** to close the dialog and apply the change.

Wall Specification

General
Structure
Roof
Foundation
Wall Types
Wall Cap
Wall Covering
Rail Style
Newels/Balusters
Rails
Layer
Materials
Label
Components
Object Information
Schedule

Roof Options

- ○ Hip Wall   ○ High Shed/Gable Wall
- ○ Full Gable Wall   ○ Knee Wall
- ◉ Dutch Gable Wall ○ Extend Slope Downward
- ☐ Roof Cuts Wall at Bottom
- ☑ Include Frieze
- ☐ Include Automatic End Truss Above

Pitch Options

|		
Pitch:	8"	in 12
	☑ Upper Pitch	
Upper Pitch:	Vertical	in 12
Starts at Height:	173 1/4"	
In from Baseline:	85"	

3. If **Auto Rebuild Roofs** is enabled, the roof will automatically update to reflect this change. If Auto Rebuild Roofs is not enabled, select **Build> Roof> Build Roof** 🏠 from the menu, check the **Build Roof Planes** box, then click **OK** to rebuild the roof.
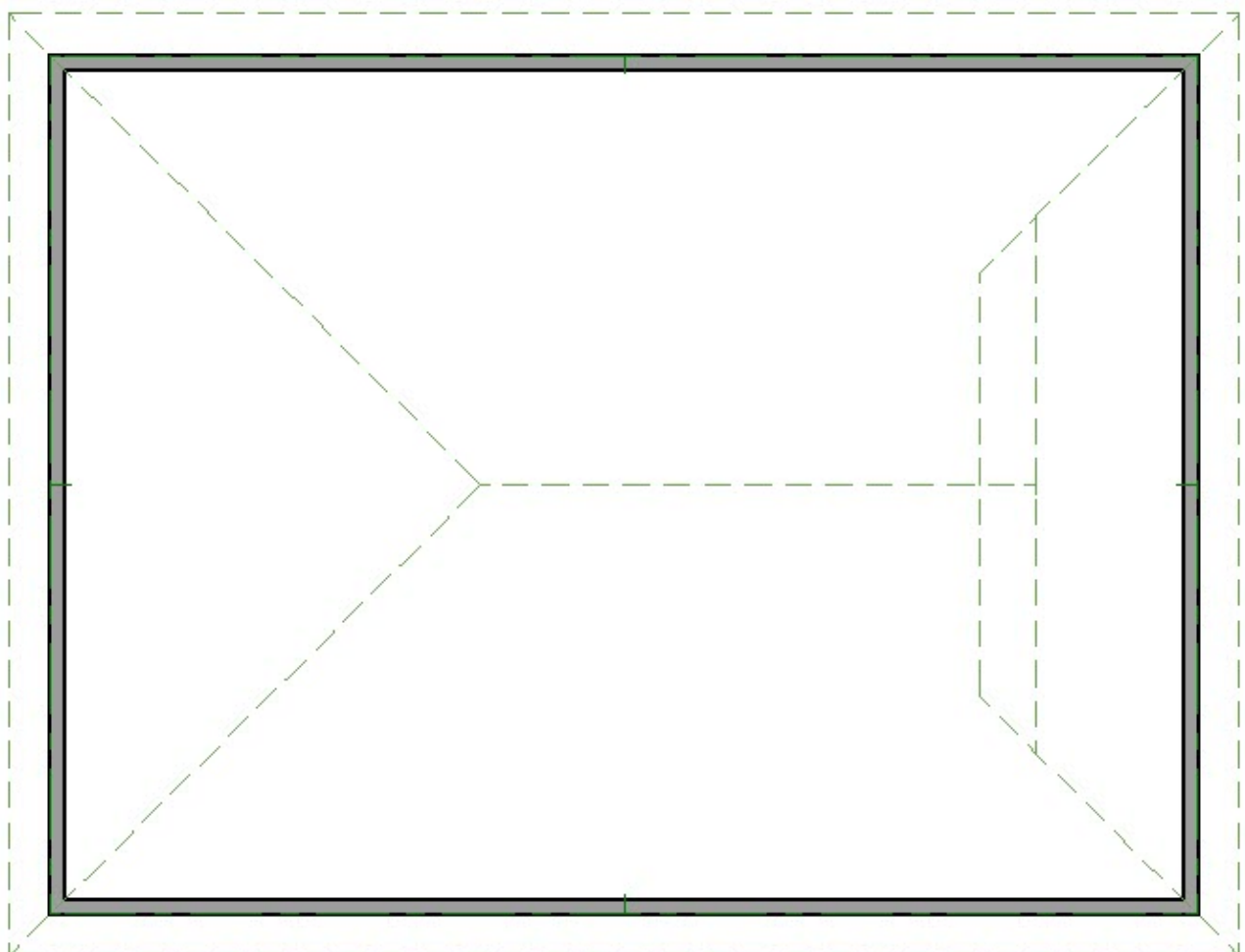
4. Select **3D> Create Perspective View> Perspective Full Overview** from the menu to see the results.
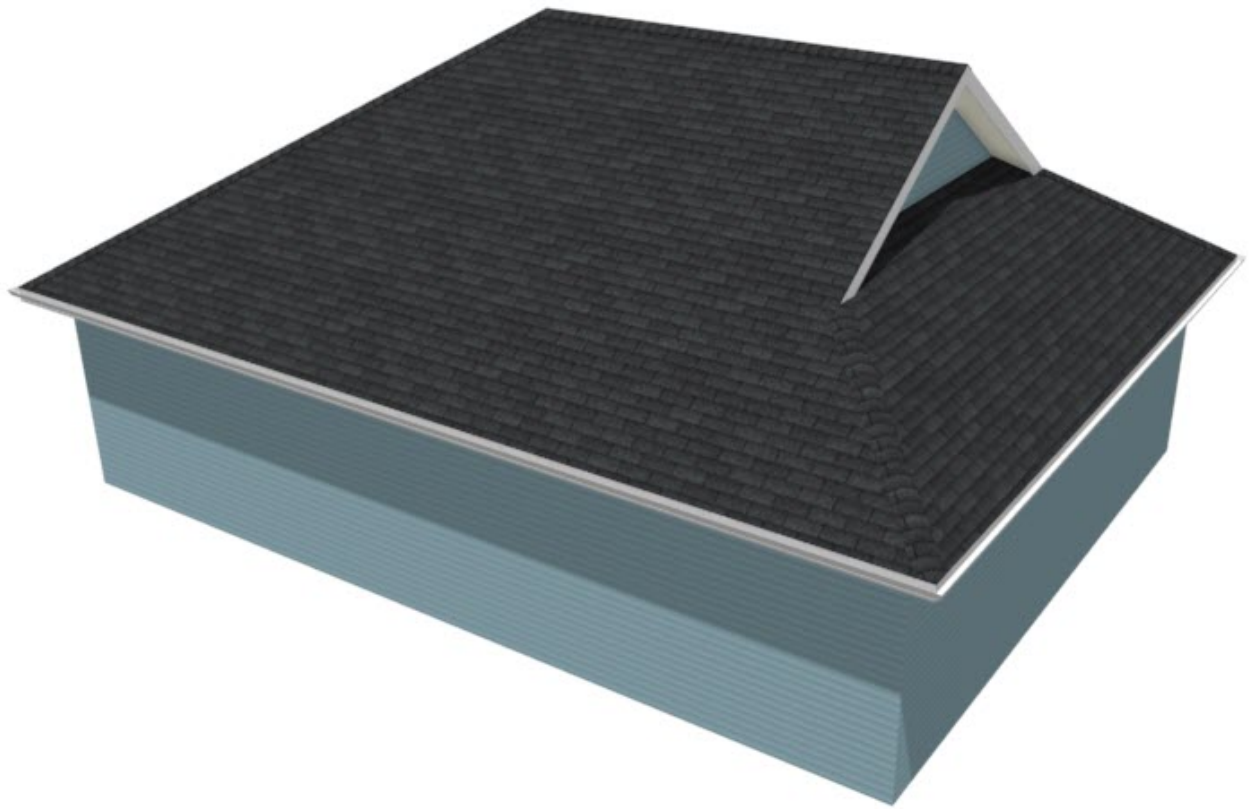
To control the height of automatic roofs

The height that automatic roofs generate at is determined by the ceiling heights within the structure. So, when the ceiling height for an area is adjusted, the automatic roof plane directly over this area will adjust accordingly when the roof is rebuilt. In the example below, a gable roof has been established over the structure.

1. Select **Edit> Default Settings** from the menu, and in the **Default Settings** dialog, expand **Floors and Rooms**, expand **Floor Levels**, select the floor you'd like to change, then click the **Edit** button.

2. In the **Floor Defaults** dialog that displays, change the **Rough Ceiling** to your liking, then click **OK** to close the dialog.

   In this example, a value of 121 1/8" is specified.

1st Floor Defaults

Structure	Absolute Elevations	
Moldings	Floor Above:	
Fill Style		
Materials	Ceiling:	121 1/8"
	Floor:	0"
	Floor Below:	

Relative Heights

Rough Ceiling:	121 1/8"
Finished Ceiling:	119 5/8"
SWT To Ceiling:	121 1/8"
Ceiling Below:	
Stem Wall:	37 1/2"

SWT = Stem Wall Top

3. If **Auto Rebuild Roofs** is enabled, the roof will automatically update to reflect this change. If Auto Rebuild Roofs is not enabled, select **Build> Roof> Build Roof** from the menu, check the **Build Roof Planes** box, then click **OK** to rebuild the roof.

4. To see the difference that this change makes on roof height, specify the structure to have a gable roof, then use the **Straight Exterior Wall** tool to separate the structure into two separate rooms, as shown in the image below.
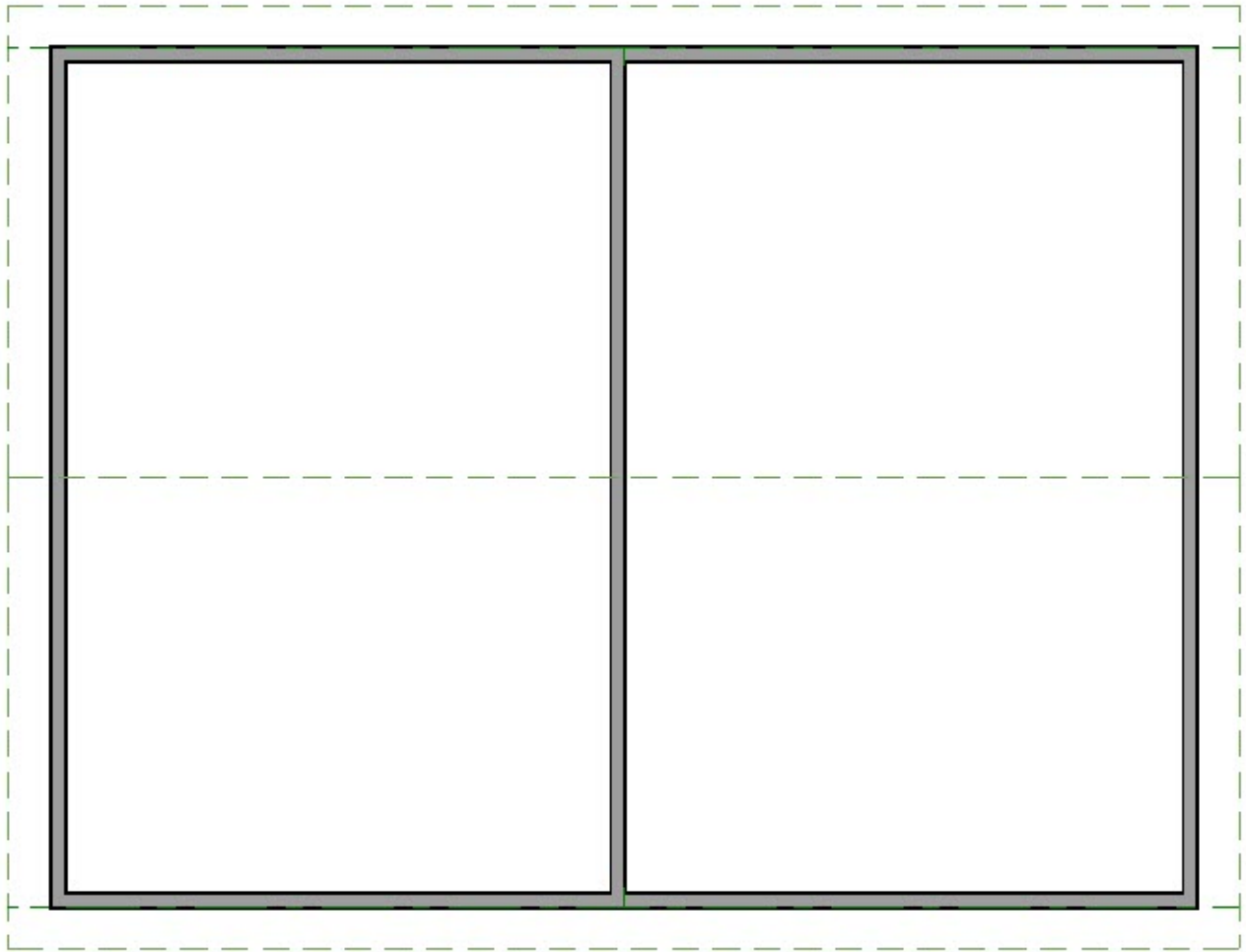
5. Click on this newly created wall to select it, then click the **Open Object** ⬒ edit tool to open the **Wall Specification** dialog.

   - On the Sᴛʀᴜᴄᴛᴜʀᴇ panel, check the **Balloon Through Ceiling Above** box.

   - On the Rᴏᴏꜰ panel, select the **Full Gable Wall** option, check the **Lower Wall Type if Split by Butting Roof** box, then specify the wall type to be used for the interior wall portion.

     In this example, an Interior-6 wall type is specified.

   - Click **OK**.

6. Click in an empty area in the room on the right to select it, then click the **Open Object** ⬒ edit button.

7. On the Sᴛʀᴜᴄᴛᴜʀᴇ panel of the **Room Specification** dialog that displays, specify a

lower **Rough Ceiling** value, then click **OK** to close the dialog.

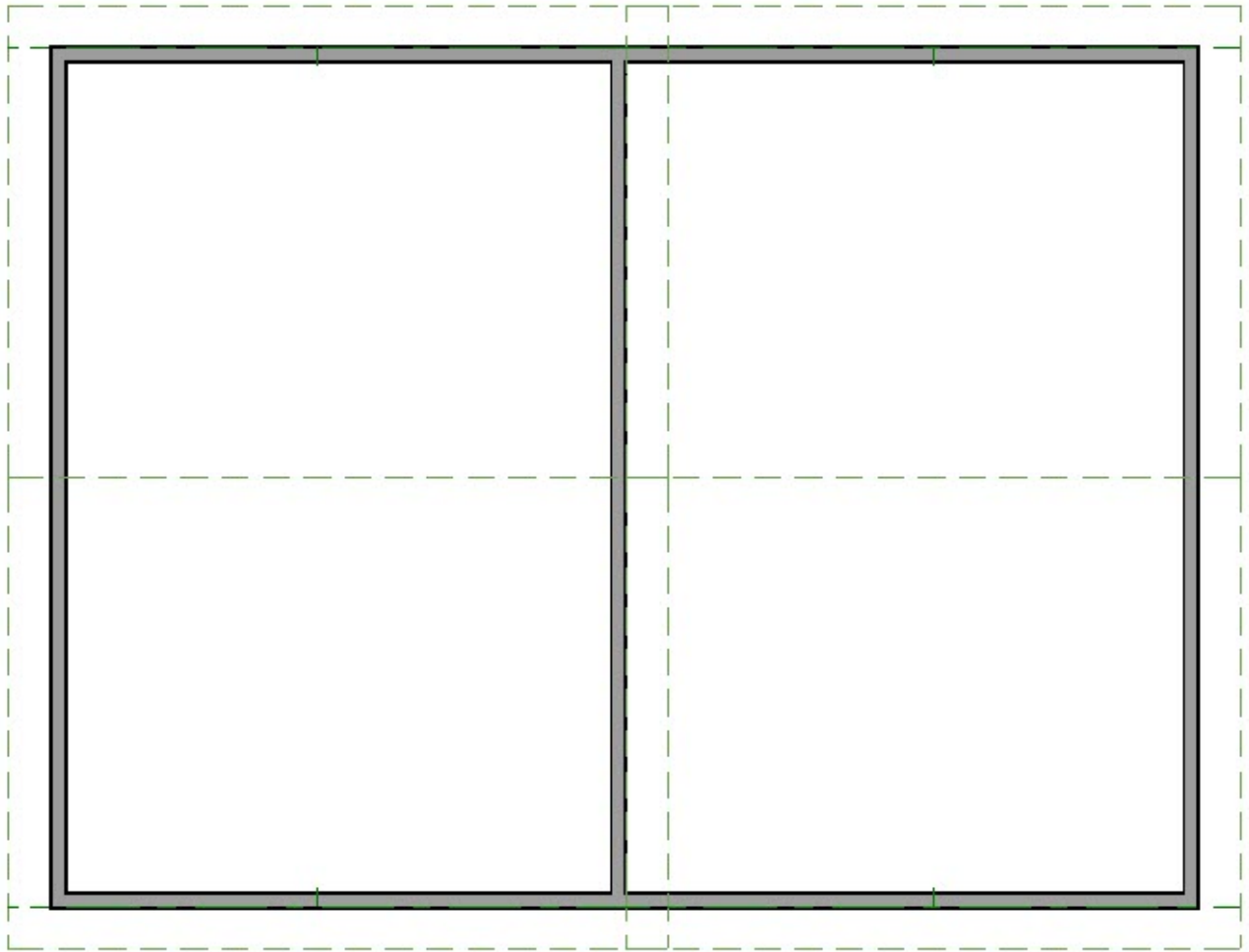In this example, a value of 97 1/8" is specified.

8. If **Auto Rebuild Roofs** is enabled, the roof will automatically update to reflect this change. If Auto Rebuild Roofs is not used, select **Build> Roof> Build Roof** from the menu, check the **Build Roof Planes** box, then click **OK** to rebuild the roof.

9. Select **3D> Create Perspective Camera> Perspective Full Overview** from the menu to see the results.
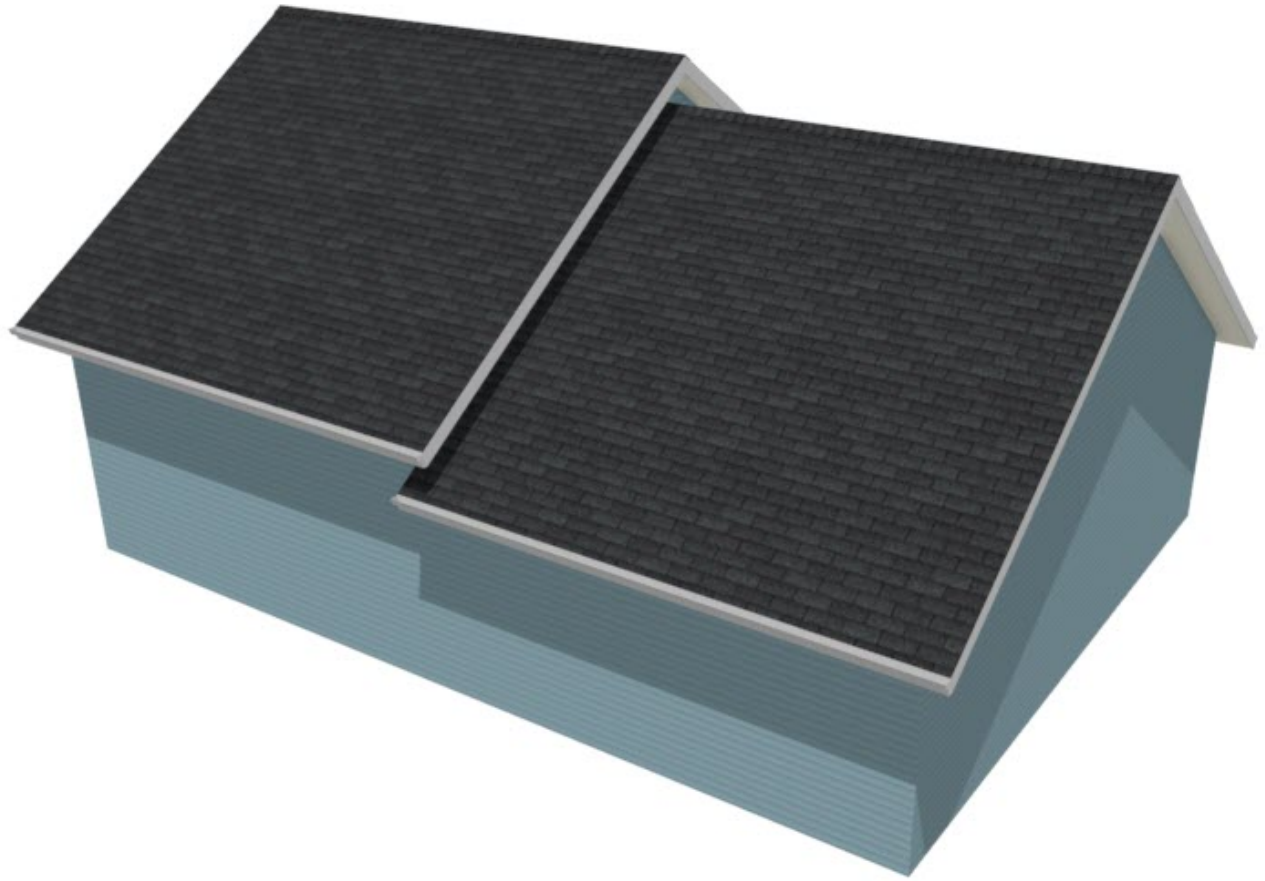
It's important to remember that automatic roofs are generated based on the current ceiling heights. If you change the ceiling height after the roof is built, the height of the roof will not be affected until it's rebuilt.

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Related Articles

- Automatically Creating a Saltbox Roof (/support/article/KB-00119/automatically-creating-a-saltbox-roof.html)
- Building an 'L' Shaped Structure with Full Gable Ends (/support/article/KB-00619/building-an-l-shaped-structure-with-full-gable-ends.html)
- Creating a Dutch Hip Roof (/support/article/KB-00749/creating-a-dutch-hip-roof.html)
- Generating a Half-Hip Roof Automatically (/support/article/KB-00736/generating-a-half-hip-roof-automatically.html)
- Utilizing Roof Baseline Polylines (/support/article/KB-00543/utilizing-roof-baseline-polylines.html)

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