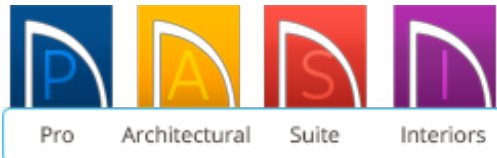


Modifying Garage Floor and Stem Wall Heights

Reference Number: **KB-01845**

Last Modified: **July 16, 2015**

The information in this article applies to:



QUESTION

After changing the room type to Garage, my floor and ceiling heights changed. Why does this happen?


ANSWER

When Auto Rebuild Foundation is turned on, naming a room as "Garage" will cause changes to the way the foundation is built under that room.

First, let's begin with creating a basic example plan, where you will be using all of the default settings for Floor 1 floor and ceiling heights and for building your foundation.

To create the basic plan



1. First, launch Home Designer and select **New Plan**  to create a new plan, using the **Default Style** template.

2. In the new plan file in floor plan view, select **Build> Wall> Straight Exterior Wall** , then click and drag out the walls to create a basic structure with attached garage, as shown in the image below.



Once the main building and garage room have been created, the foundation is automatically created with the default stem wall and footing heights.

The floor and ceiling heights in the room that you want to designate as the Garage are still at the default for floor 1. The Floor Height is 0" and in your case, the Finished Ceiling Height is 107 5/8".

3. To verify this information, use the **Select Objects**  tool to click on the smaller room, which will become your Garage, then click on the **Open Object**  edit button.
4. In the **Room Specification** dialog, notice the values set on the **STRUCTURE** panel.

Room Specification

General
Structure
Deck
Deck Support
Moldings
Wall Covering
Fill Style
Materials

Absolute Elevations

Floor Above (A): 114 5/8" Default

Ceiling (B): 109 1/8" Default

Floor (C): 0" Default

Floor Below (D): 0" Default

Relative Heights

Rough Ceiling (E): 109 1/8" Default

Finished Ceiling (F): 107 5/8" Default

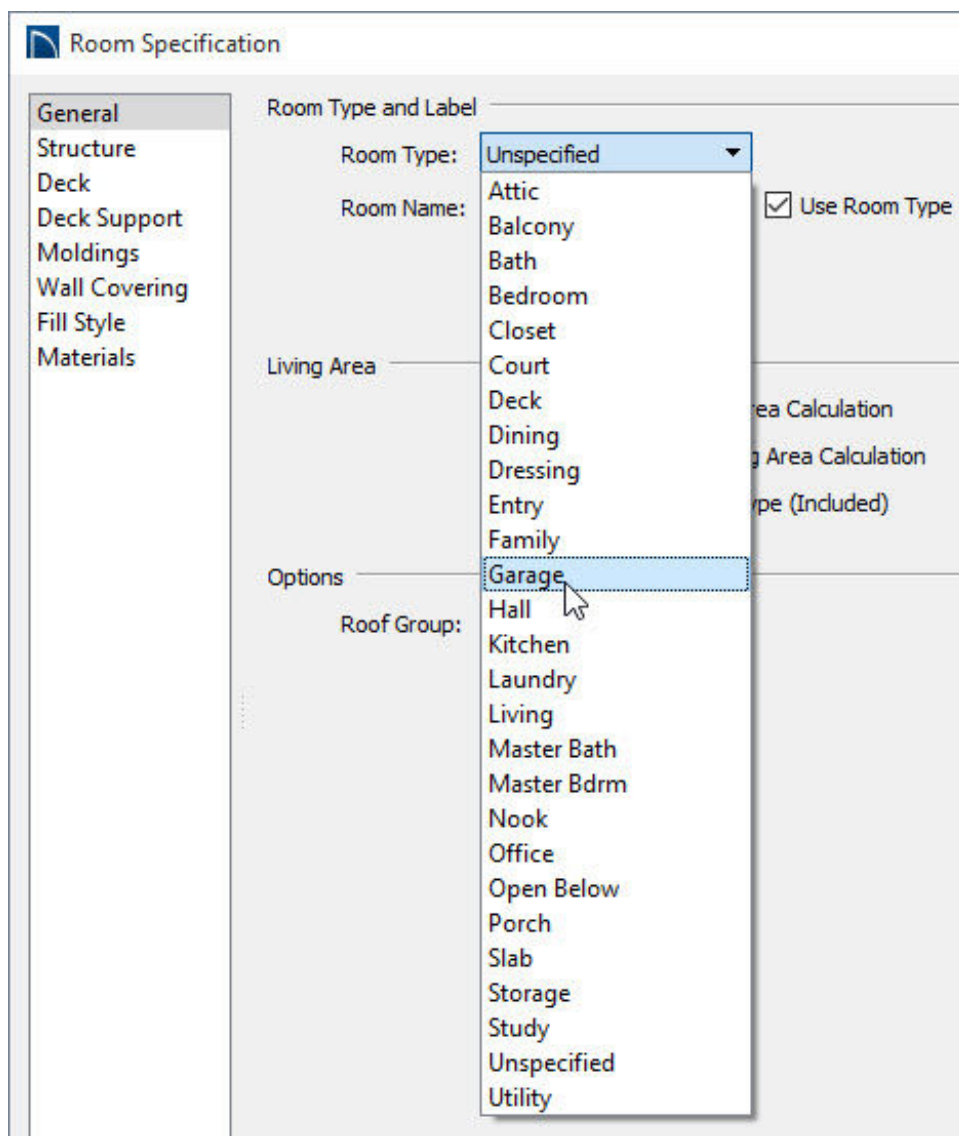
SWT To Ceiling (G): 109 1/8" Default

Ceiling Below (H): 0" Default

Stem Wall (I): 37 1/2" Default

SWT = Stem Wall Top

5. Next, select the **GENERAL** panel, and use the Room Type drop down menu to select **Garage**.



When you changed the **Room type** on the **GENERAL** panel of the **Room specification** to **Garage**, the foundation was rebuilt to reflect these changes.

6. Return to the **STRUCTURE** panel after specifying the room as a Garage and notice the changes

Room Specification

General
Structure
 Deck
 Deck Support
 Moldings
 Wall Covering
 Fill Style
 Materials

Absolute Elevations

Floor Above (A): 114 5/8" Default
 Ceiling (B): 109 1/8" Default
 Stem Wall Top (C): -14 1/8" Default
 Floor (D): -26 1/8" Default

Relative Heights


Rough Ceiling (E): 135 1/4" Default
 Finished Ceiling (F): 134 5/8" Default
 SWT To Ceiling (G): 123 1/4" Default
 Floor To SWT (H): 12" Default
 Stem Wall (I): 22 1/2" Default

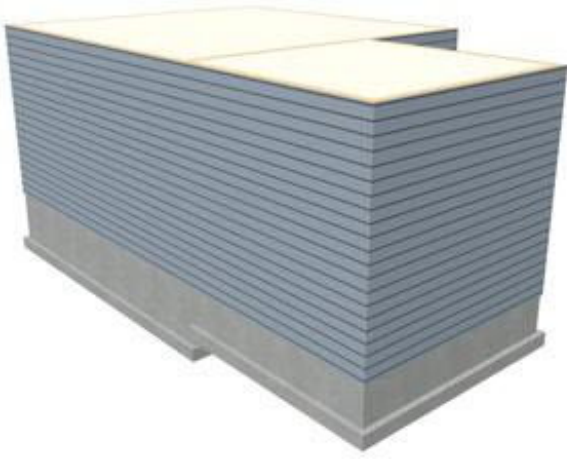
SWT = Stem Wall Top

- The **Stem Wall Top (C)** value is added to the Absolute Elevations and is set to the height of the underside of the floor joists on floor 1. The floor is changed to a slab and the slab is lowered 12" below the top of the stem wall.
- The **Stem Wall (I)** is set to 22 1/2".


7. Click **OK** to close the dialog for now.

Note: You may want to change the **Stem Wall (I)** height to meet your frost depth needs, however, before making any changes to the **STRUCTURE** settings in the **Room Specification**, you must first turn off **Auto Rebuild Foundation**.

To visually see the changes that making the smaller room set to **Garage**, you can create a **Full Overview** .



To turn off Auto Rebuild Foundation

1. Select **Build> Floor> Build Foundation** .
2. In the **Build Foundation** dialog, remove the check mark next to **Automatically Rebuild Foundation**, and set the **Minimum Garage Height** to 37 1/2" to match the main house, and click **OK**.

Build Foundation

Automatically Rebuild Foundation

Foundation Type

Walls with Footings Grade Beams on Piers Monolithic Slab

Hang 1st Floor Platform Inside Foundation Walls

Show S Markers on Stepped Foundation Footings

Slab

Slab Thickness:

Slab at Top of Stem Wall

Stem Walls

Default Type: 8" Concrete Stem Wall [Edit Default Foundation Wall...](#)

Minimum Height: Including Sill Plate

Basement Ceiling Height: 33 1/2"

Piers

Width:

Depth:

Maximum Separation:

Shape: Round Square

Garage Options

Garage Floor to Stem Wall Top:

Lower Garage Floor:

Minimum Garage Height: Including Sill Plate

Treated Sill Plate

Width:

Height:

Count:

[Number Style...](#)

- In the **New Floor** dialog, choose **Derive new Foundation from the 1st Floor plan** and click **OK** again.



New Floor ✕

Derive new foundation plan from the 1st floor plan

Move the roof over the highest floor up

Step floor/ceiling elevations to match existing floor

Make new blank plan for the foundation

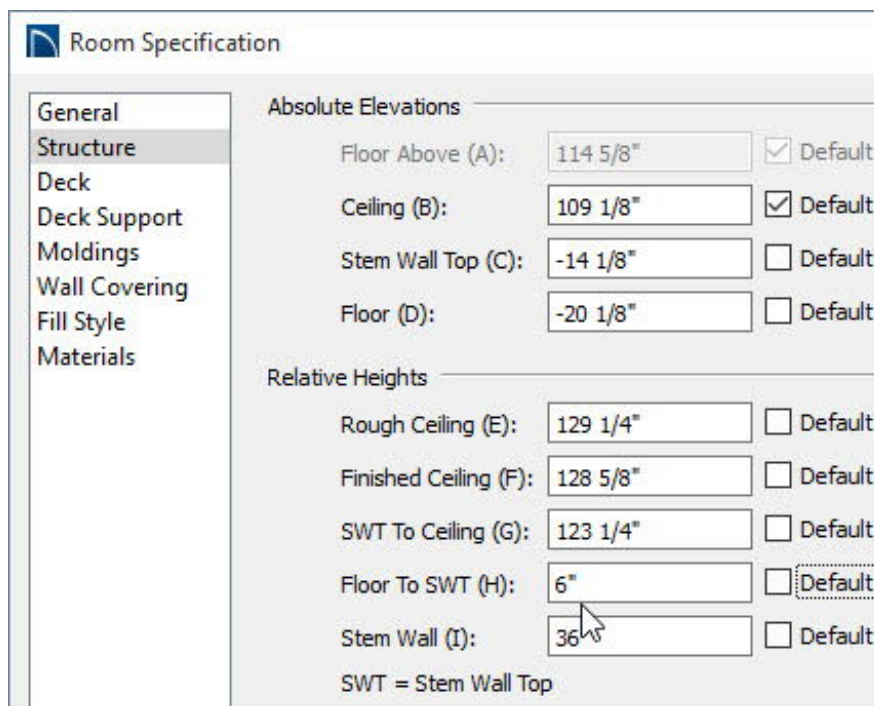
4. Use the **Select Objects**  tool to click on the Garage room, then click on the **Open Object**  edit button to again display the **Room Specification** dialog.

5. On the **STRUCTURE** panel, observe that the Stem Wall height is 36" just under the garage so that the bottom of the footing matches the footing of the main house.

The slab remains in its original position, 12" below the top of the stem wall, but the footing is moved down to accommodate the increased stem wall height.

6. You can raise or lower the slab by modifying the **Floor To SWT (H)** value from Floor 1.

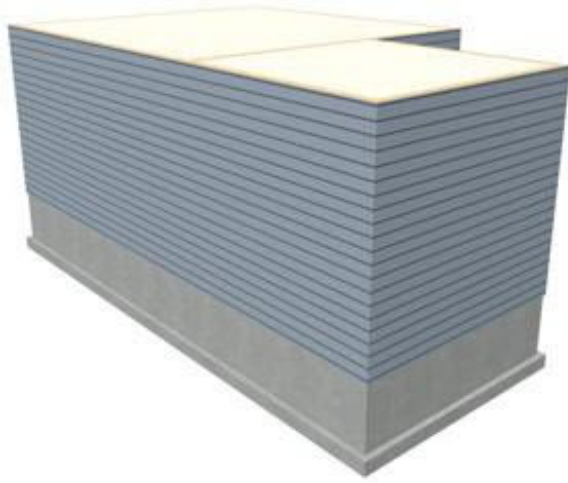
In this example, a 6" curb is generated inside the garage by changing the **Floor To SWT (H)** value.



The screenshot shows the 'Room Specification' dialog box with the 'Structure' panel selected. The 'Absolute Elevations' section includes: Floor Above (A): 114 5/8" (checked Default), Ceiling (B): 109 1/8" (checked Default), Stem Wall Top (C): -14 1/8" (unchecked Default), and Floor (D): -20 1/8" (unchecked Default). The 'Relative Heights' section includes: Rough Ceiling (E): 129 1/4" (unchecked Default), Finished Ceiling (F): 128 5/8" (unchecked Default), SWT To Ceiling (G): 123 1/4" (unchecked Default), Floor To SWT (H): 6" (unchecked Default, with a dashed box around the 'Default' label), and Stem Wall (I): 36" (unchecked Default). A mouse cursor is pointing at the 'Floor To SWT (H)' input field. A legend at the bottom indicates 'SWT = Stem Wall Top'.

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

7. Finally, create a **Full Overview**  to see the change.



Now that you understand this procedure, you can take the knowledge you have gained and apply it to your own designs.

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