



Lesson 5

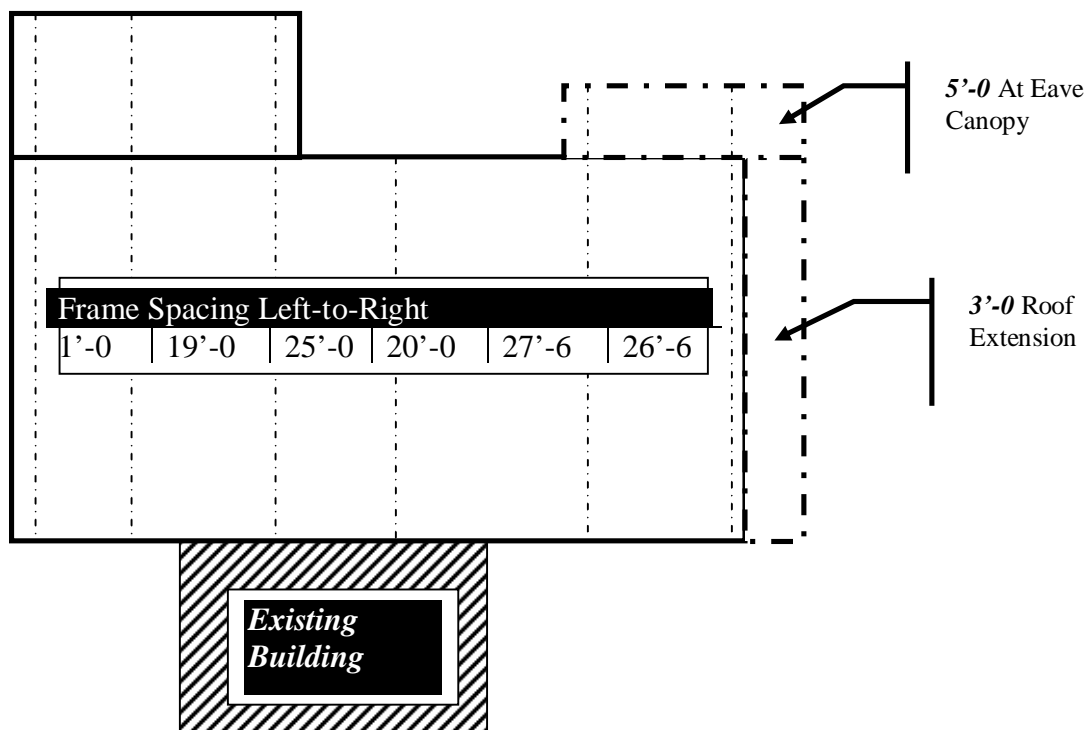


The Focus of this Lesson is:

- *Input a Single Slope Building with Mixed Bays*
- *Add an at Eave Sidewall Lean-to*
- *Add Sidewall Eave Height Canopy*
- *Add Rake Extension*
- *Add Wall to Roof Trim and Girt along High side for Existing Building*

Lesson Comments:

In this lesson you will create a Building Shape using the given parameters in the “Building Description” box. This lesson will have you work in numerous portions of VPCCommand to show you how to use certain features. Many of the features you will be using can be default information. For future projects, applying the proper default information in your projects will save you time and make input easier.

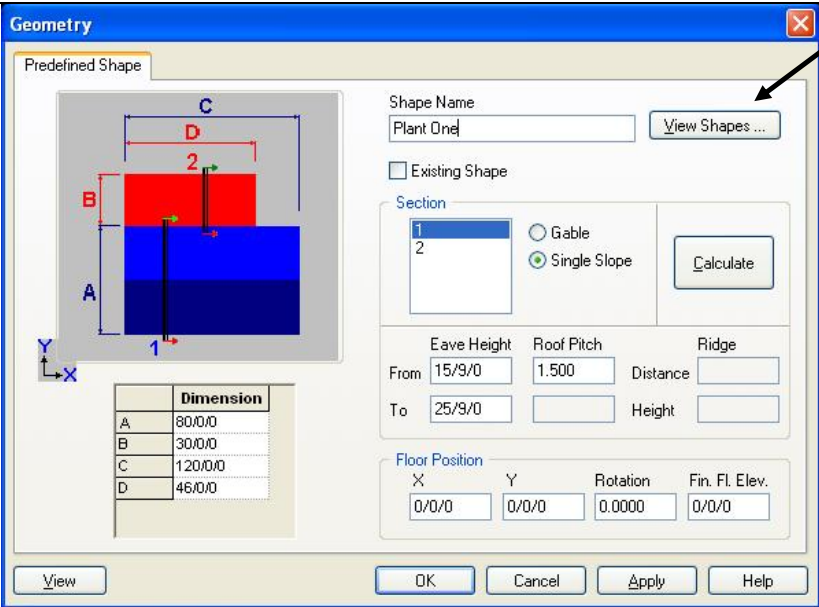


Building Description	
Main Building	Lean-To
Width = 80'-0	Width = 30'-0
Length = 120'-0	Length = 46'-0
Low Eave Height (Back Wall) = 15'-9	Low Eave Height = 12'-0
Roof Pitch = 1.5:12	Roof Pitch = 1.5:12
5'-0 At Eave Canopy	
3'-0 Roof Extension at Right Endwall	



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	<ol style="list-style-type: none">1. Access VPCommand Building Editor:2. Click Building Editor Icon on your desk.
	<ol style="list-style-type: none">3. Start a New File: This will generate a Tree and Blank Graphics pane to allow for creating your new shape
	<ol style="list-style-type: none">4. Select A Default File: From the Select a Default File screen you can select one of the defaults you have created.
	<ol style="list-style-type: none">5. Complete General Information as required.
	<ol style="list-style-type: none">6. Inserting a New Shape: From the Tree, Double-click "<i>Insert a new shape</i>" file and select Pre-defined as the input option. The predefined Shape option offers you a large range of common shapes to select from for fast and simple geometry input. The Custom Shape option is intended for complex floor shapes for which there are no pre-defined shapes. Lesson 9 will discuss how to combine shapes to create your final result.
	<ol style="list-style-type: none">7. Input Geometry for your Shape: Input Floor and Section Geometry as defined on page one. For this example use Plant One as the Shape Name.

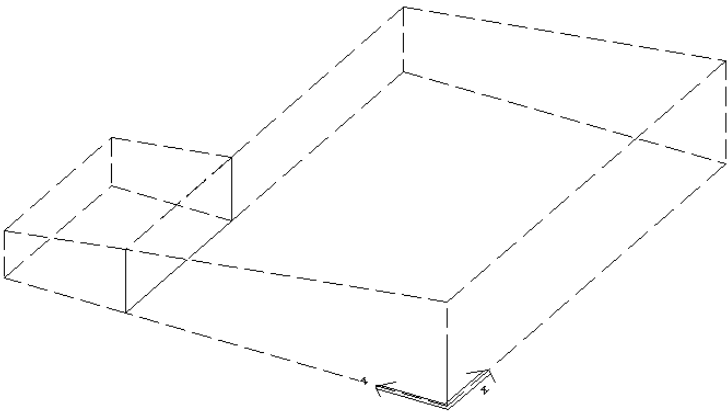


The screenshot shows the 'Geometry' window with a 'Predefined Shape' tab. A diagram on the left shows a cross-section of a building with dimensions A, B, C, and D. A table below the diagram lists these dimensions:

Dimension	Value
A	80/0/0
B	30/0/0
C	120/0/0
D	46/0/0

The right side of the window contains input fields for 'Shape Name' (Plant One), 'Existing Shape' (unchecked), 'Section' (1 and 2), 'Eave Height' (From: 15/9/0, To: 25/9/0), 'Roof Pitch' (1.500), 'Ridge' (Distance and Height), and 'Floor Position' (X, Y, Rotation, Fin. Fl. Elev.).

- Select **View Shapes** and find this Predefined shape.
- Use **Dimension** box along with **Predefined Shape** to enter Floor information for the main building and lean-to.
- **Section 1** is the **Main Building**
- Click **Single Slope**. **From** Eave Height is the **Low Eave** if a **positive** roof pitch is entered. It will be the **High Eave** if a **negative** roof pitch is entered.
- Enter all information for **Section 2** which is the Lean-to.
- Click **OK**



You have now defined Width, Length, Eave Height, and Roof Pitch for your Plant One Shape. The basic Geometry Input is complete and your screen should look like this.



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	Location	Space	Description	Angle	Group	Trib Override
1	1/0/0	1/0/0	Post & Beam	90.000		
2	27/6/0	26/6/0	Rigid Frame	90.000		
3	55/0/0	27/6/0	Rigid Frame	90.000		
4	75/0/0	20/0/0	Rigid Frame	90.000		
5	100/0/0	25/0/0	Rigid Frame	90.000		
6	119/0/0	19/0/0	Post & Beam	90.000		

Note: If you have selected Wall 4 as your “along” wall to locate the frames perpendicular to, you should use the dimensions shown on page one.

8. Locate Frames for Main Building first in this example.

- **Frames/Location/Plant One/Wall 2/Revise:** Note that *Wall 2* has been specified to be selected. For this shape and frame types, you may choose Wall 2 or Wall 4 (see Note at left if you chose Wall 4). In the attached building with Lean-To frames, it is important that you select the wall the lean-to column will be on as your *along* wall. This will place the low-side column at your along wall and extend the rafter to the opposite wall of your shape.
- **Notice:** You are facing Wall 2 and dimensioning from left to right.
- (See How to... **Locating Frames** for assistance.)

In this lesson we will work with standard **Rigid Frames and Post and Beams.**

After entering all frames your frame list should look like the following. If correct select **OK.**

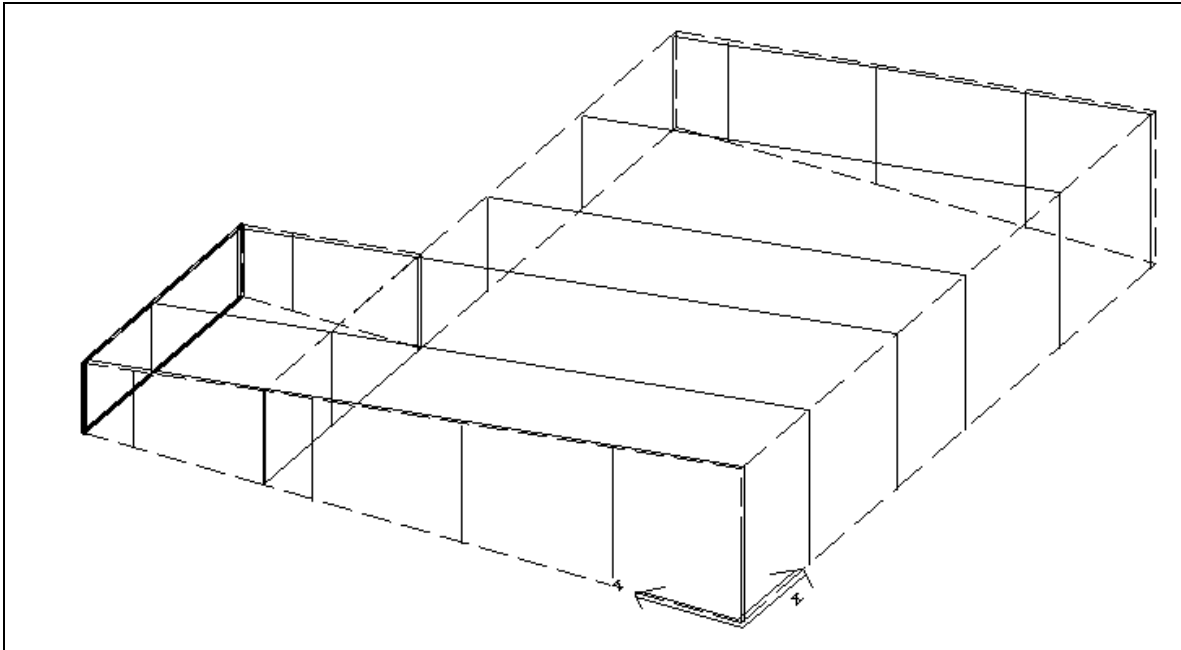
Note that these dimensions are located ALONG wall 2!

Location	Space	Description	Angle	Group	Trib. Override	Design
1	1/0/0	Post & Beam Lean-to	90.0000			Automatic Desi
2	26/0/0	Leanto	90.0000			Automatic Desi
3	45/0/0	Post & Beam Lean-to	90.0000			Automatic Desi

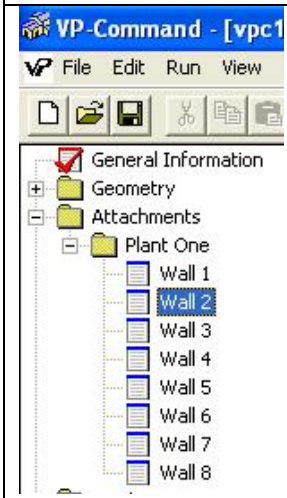
9. Enter Frame locations for the Lean-To.

- **Frames/Location/Plant One/Wall 6/Revise**
- **Notice:** You are facing Wall 6 and dimensioning from left to right.
- (See How to... **Locating Frames** for assistance.)

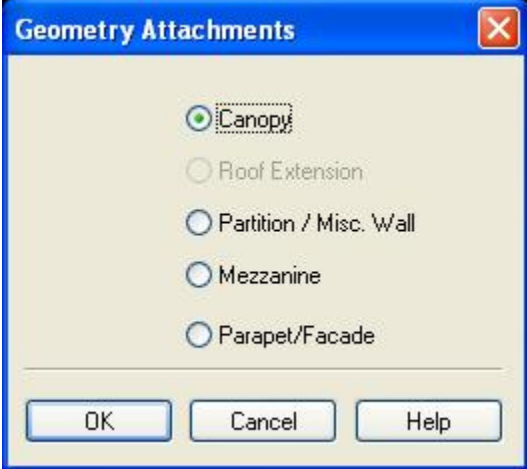
After Entering all frames your screen should look like the following. If correct select **OK.**



10. Locating Canopy: Canopy is along Low-Sidewall (wall 2) of Main Building



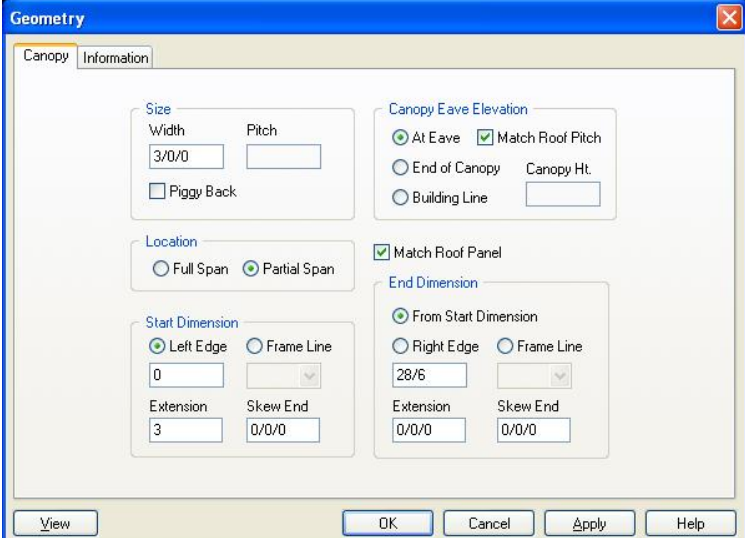
- Select *Attachments*
 - *Plant One*
 - *Double-click* file for *Wall 2*
- Note:** Canopy & Roof Extension Soffit Panel will be input under the **Liner** Folder.



The dialog box shows 'Canopy' selected with a radio button. Other options include 'Roof Extension', 'Partition / Misc. Wall', 'Mezzanine', and 'Parapet/Facade'. Buttons for 'OK', 'Cancel', and 'Help' are at the bottom.

Geometry Attachments screen appears.

- **Canopy is already selected.**
- Click **OK**.
- **Note:** For all canopies **Start** and **End** dimensions are referenced from left to right as you're looking at the wall from outside the building
- See **Help** for definition of Extension & Skew End dimensions.



The 'Canopy Information' tab is active. It shows settings for Size (Width: 3/0/0, Pitch: empty), Location (Partial Span selected), Start Dimension (Left Edge selected, value: 0), Extension (3), Skew End (0/0/0), Canopy Eave Elevation (At Eave selected, Match Roof Pitch checked), and End Dimension (From Start Dimension selected, value: 28/6).

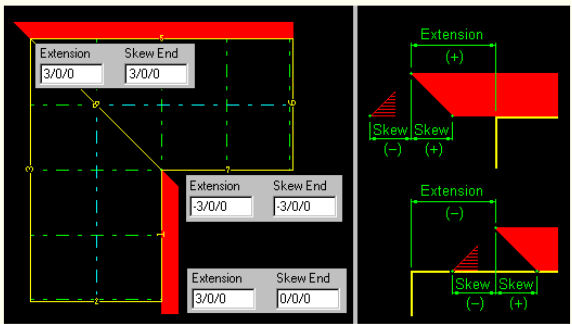
- Enter Canopy **Width**
- Select **Partial Span**

Notice on floor plan that the canopy is in one bay only.

- **End Dimension:** From start dimension (Building Line) enter length of Canopy

Start Dimension - Extension

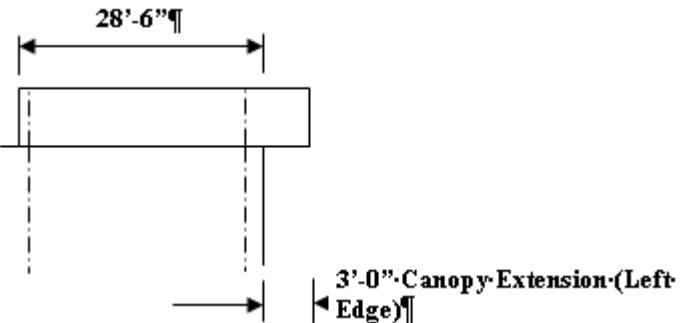
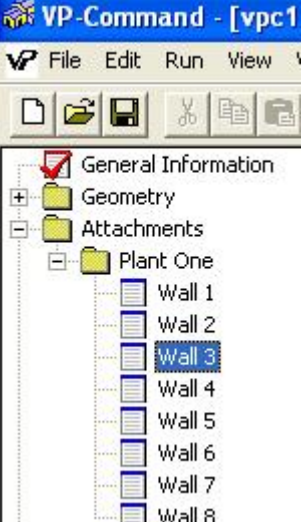
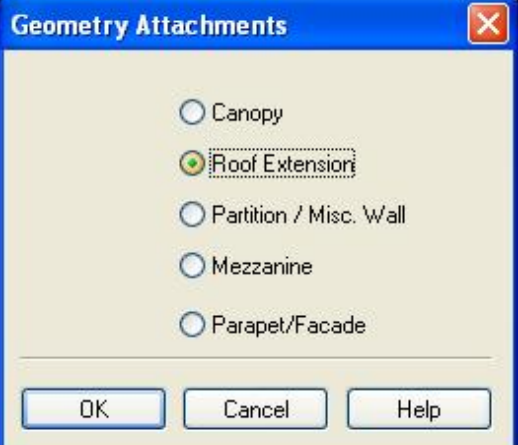
In this edit box, enter the dimension from the Left Edge or Frame Line to the beginning of the end of the canopy. A positive dimension extends the left end of the canopy. A negative dimension decreases the left end of the canopy.



The diagram shows a red canopy on a building wall. Three examples of dimensioning are shown:

- Top: Extension 3/0/0, Skew End 3/0/0. The canopy is extended to the right.
- Middle: Extension 3/0/0, Skew End -3/0/0. The canopy is extended to the left.
- Bottom: Extension 3/0/0, Skew End 0/0/0. The canopy is at its standard position.

 To the right, a vertical diagram shows 'Extension (+)' and 'Skew (-)' with arrows indicating the direction of change.

 <p>28'-6"¶</p> <p>3'-0" Canopy Extension (Left Edge)¶</p>	<ul style="list-style-type: none"> • Start Dimension / Extension: Looking at wall from outside building, Canopy extends 3' to the left
 <p>VP-Command - [vpc1]</p> <p>File Edit Run View</p> <p>General Information</p> <p>Geometry</p> <p>Attachments</p> <p>Plant One</p> <ul style="list-style-type: none"> Wall 1 Wall 2 Wall 3 Wall 4 Wall 5 Wall 6 Wall 7 Wall 8 	<p>11. Locating a Roof Extension across wall 3.</p> <ul style="list-style-type: none"> • Select <i>Attachments</i> • <i>Plant One</i> • <i>Double-click Wall 3</i>
 <p>Geometry Attachments</p> <p><input type="radio"/> Canopy</p> <p><input checked="" type="radio"/> Roof Extension</p> <p><input type="radio"/> Partition / Misc. Wall</p> <p><input type="radio"/> Mezzanine</p> <p><input type="radio"/> Parapet/Facade</p> <p>OK Cancel Help</p>	<ul style="list-style-type: none"> • Select <i>Roof Extension</i> • Click on <i>OK</i>

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Geometry

Roof Extension

Size

Left Projection: Right Projection:

Secondary Options

One Piece

Location

Full Span Partial Span

Start Dimension

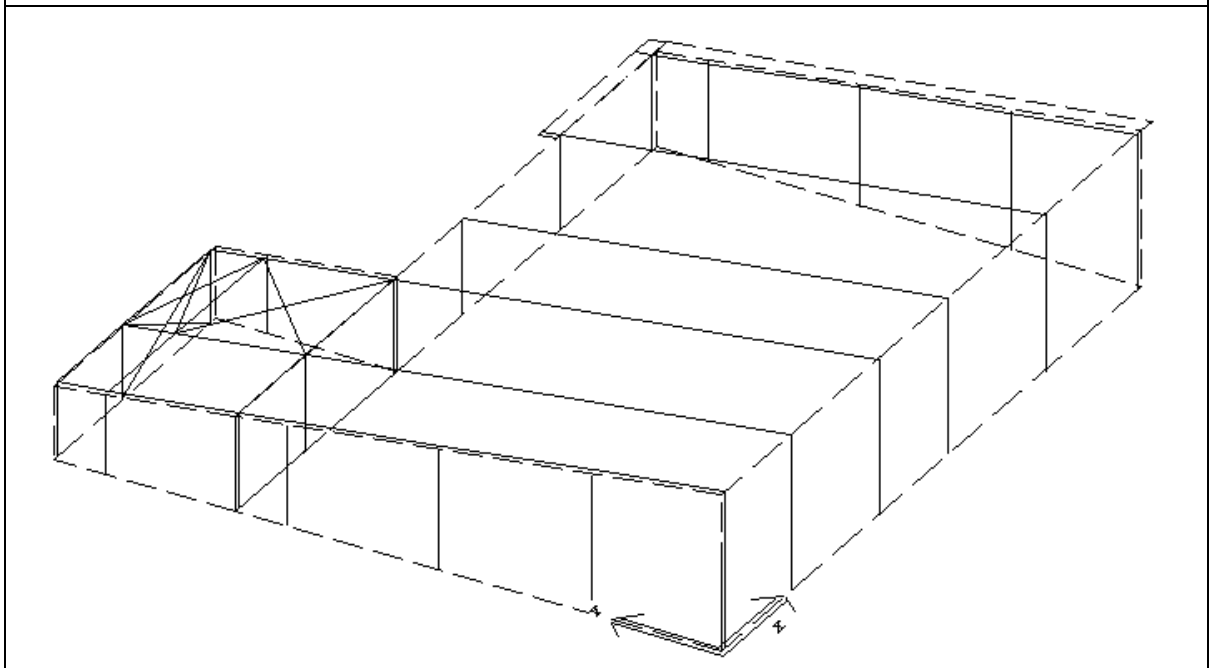
Left Edge:

End Dimension

From Start Dimension Right Edge:

- Enter Roof Extension size
- Click **OK**
- Note that you have the option of “left” and “right” projections if you require a skewed rake extension.
-

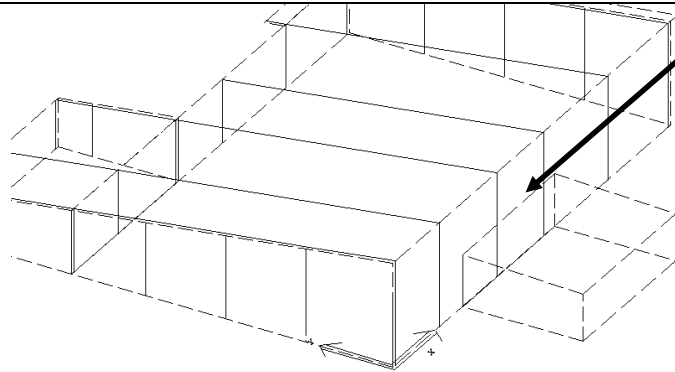
After completing Canopy and Roof Extension your graphics pane should look like the following.



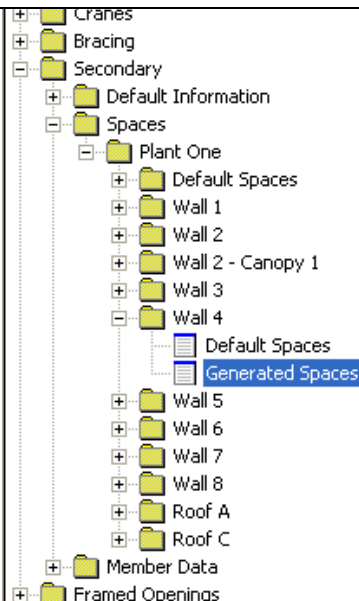
Note: Your instructor may choose to show you how to input a shape to represent the existing building. If so, steps 12 and 13 are not required.

12. Adding Secondary at the Existing Building:

This procedure will show you how to add individual secondary members for the Wall to Roof condition created by the existing building. Note that there are numerous ways to handle existing building conditions. This step is simply to familiarize you with the procedure to add secondary.



You will add girts to accept the wall-to-roof condition created by the existing building. We will then define the high side existing eave height as 13'-0" for our example.



- From the Tree, open the *Secondary / Spaces / Shape (Plant One) / Wall 4* folders.
- Double click the *Generated Spaces* file to access the *Secondary Spaces Information* window.

The existing building condition only requires girts to be from frame lines 2 through 5. Therefore we need to “Refresh” the secondary spaces list to display only the locations we wish to make changes.

- At the **Frame Intersections** pull down list, select **Start – 2**, and **End – 5**.
- Click on the **Refresh** button to display all of the secondary members between frame 2 through frame 5. Remember that frame numbers are counted from left-to-right as you face that wall surface.

Secondary Spaces Information for Plant One, Wall 4

Frame Intersections: Start End

Elevations: Low High

	Revised	Type	Shape	Composite	Depth	Thick.	Thk. Con
1	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
2	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
3	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
4	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
5	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
6	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
7	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
8	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
9	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
10	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
11	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
12	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
13	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum
14	No	Secondary Member	Zee	<input type="checkbox"/>	8.50	0.0590	Minimum

Spaces At
 Or Location At

Spaces At
 Or Location At

- Input 1 “location at” 13/6.
- Click on **Insert** to add a girt to the list at your location.

Secondary Spaces Information for Plant One, Wall 4

Frame Intersections: Start End

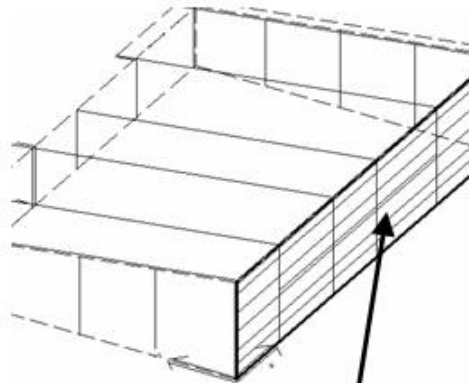
Elevations: Low High

	Start Elev.	Stop Dim.	Stop Elev.	Adjust1	Adjust2	Do Not Use	Properties	Deflectio
4	13/6/0	25/0/0	13/6/0	0/0/0	0/0/0	<input type="checkbox"/>		0
5	17/5/4	25/0/0	17/5/4	0/0/0	0/0/0	<input type="checkbox"/>		0
6	22/5/4	25/0/0	22/5/4	0/0/0	0/0/0	<input type="checkbox"/>		0
7	24/11/7	25/0/0	24/11/7	0/0/0	0/0/0	<input type="checkbox"/>		0
8	4/0/0	20/0/0	4/0/0	0/0/0	0/0/0	<input type="checkbox"/>		0
9	7/5/4	20/0/0	7/5/4	0/0/0	0/0/0	<input type="checkbox"/>		0
10	12/5/4	20/0/0	12/5/4	0/0/0	0/0/0	<input type="checkbox"/>		0
11	13/6/0	20/0/0	13/6/0	0/0/0	0/0/0	<input type="checkbox"/>		0
12	17/5/4	20/0/0	17/5/4	0/0/0	0/0/0	<input type="checkbox"/>		0
13	22/5/4	20/0/0	22/5/4	0/0/0	0/0/0	<input type="checkbox"/>		0
14	24/11/7	20/0/0	24/11/7	0/0/0	0/0/0	<input type="checkbox"/>		0
15	4/0/0	27/6/0	4/0/0	0/0/0	0/0/0	<input type="checkbox"/>		0
16	7/5/4	27/6/0	7/5/4	0/0/0	0/0/0	<input type="checkbox"/>		0
17	12/5/4	27/6/0	12/5/4	0/0/0	0/0/0	<input type="checkbox"/>		0

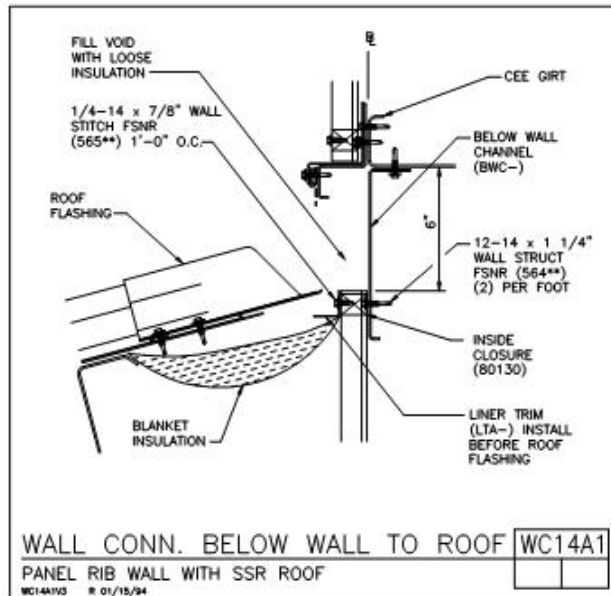
Spaces At Insert

Or Location At Delete View OK Cancel

- You can look in your list to verify that you have added “Zee” girts at 13’-6”
- Click on **OK** to close the window and accept your input.



You should see your new girts on the wall. ¶



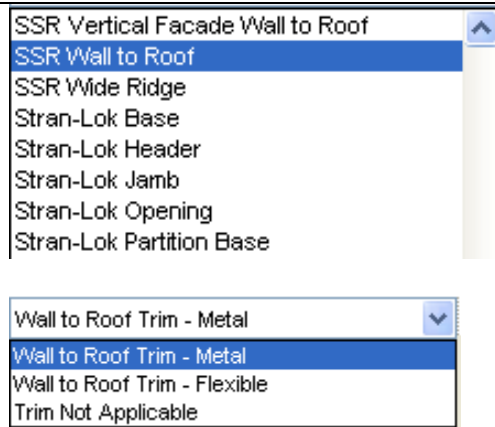


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13. **Add Wall to Roof Trim.** There is a “Below eave existing building” located **30’-0** from left corner running **40’-0** along wall 4 (high sidewall). Add wall to roof trim at 13’ elevation
 This procedure will expand on the concept of “**Partial**” you learned in adding a “partial” length canopy. As noted, to complete this condition you added a girt for the trim, and you may need some inside corner flashing as well.

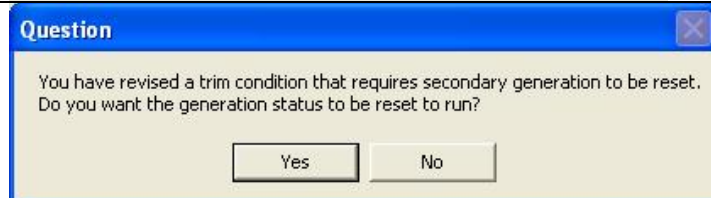
Note that there may be many ways to approach “existing buildings”. One would be to add an additional shape to represent the existing building and using the “Parts Status” folder(s) to “turn off and on” the items you desire. This approach will be discussed in Lesson 16.



- **Trim/Plant One/ Wall 4/Conditions.** Click on the **Insert** button at the **Trim Conditions** window
- Select **Condition** on line you just inserted an from drop down list Select **SSR Wall to Roof**
- Select type **Wall to Roof Trim-Metal**
- Select color to **Match Roof Color.**
- Scroll to right to enter location of trim.

Color	Start Dim.	Start Elev.	Stop Dim.	Stop Elev.	Length	Affected Coverage
Patrician Bronze	0/0/0	25/9/0	120/0/0	25/9/0	120/0/0	<input checked="" type="checkbox"/>
Patrician Bronze	0/0/0	0/0/0	120/0/0	0/0/0	120/0/0	<input checked="" type="checkbox"/>
Patrician Bronze	30/0/0	13/0/0	70/0/0	13/0/0	40/0/0	<input checked="" type="checkbox"/>
Patrician Bronze	0/0/0	25/9/0	0/0/0	25/9/0	0/0/0	<input type="checkbox"/>

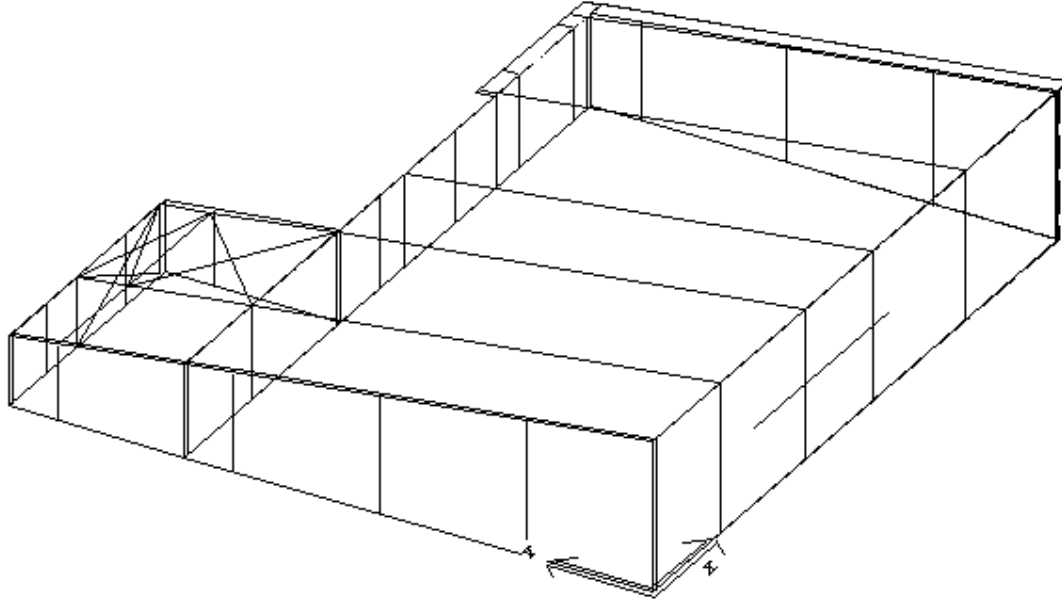
- Enter Start Dim, Start Elev., Stop Dim., Stop Elev. And notice length to make sure it’s what you needed.
- Click **OK**



- Click **yes**

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Your screen will appear as below, showing the trim you just added.



14. **Save your Project and Create any desired Reports and/or Drawings.**