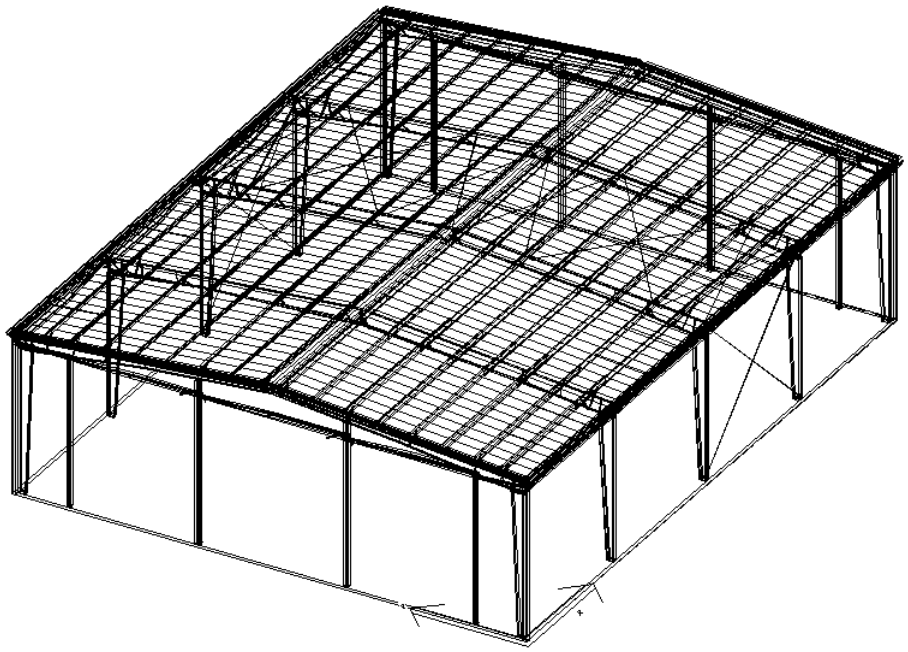
Lesson 16

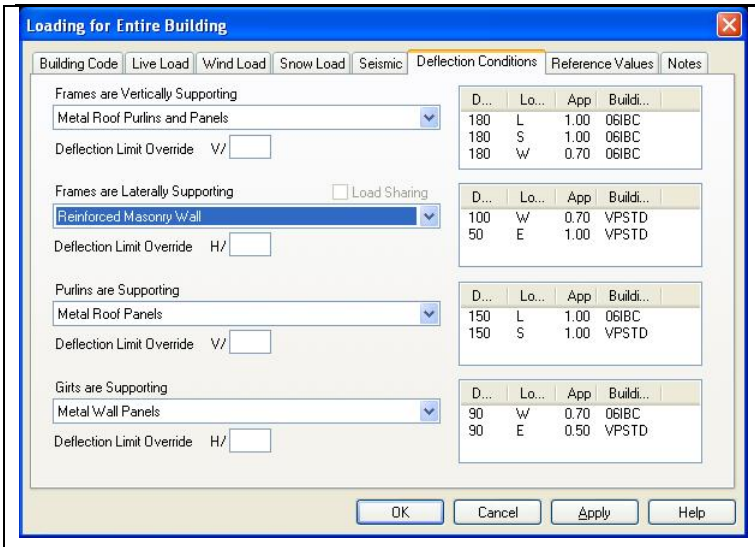
The Focus of the Lesson is:

- Wall material Not By VP
- Wind/Spandrel Beams

In this lesson we will discuss the various methods of inputting Wall Material Not By Varco-Pruden (NBVP). In Lesson 6, we introduced the concept of using a *Covering Type* to identify material other than VP panels. In this lesson we will continue that discussion and add the procedure of inputting Wind Beams for support of Masonry Walls for example.



Building Description:	
• 80 W x 100 L x 25 EH, 1:12 roof pitch • 25 ft bays • Rigid Frames Interior • RF with Endposts End frame (No Post & Beam allowed due to Masonry endwall; specify 3-Plate End posts.) • Use your Load and Code Parameters	1. Input Building Geometry as indicated in the Building Description section: Note: When locating your end frames, verify that the flanges do not exceed 11" for a frame location of 1'. Otherwise you may need to move the frame into the building further.

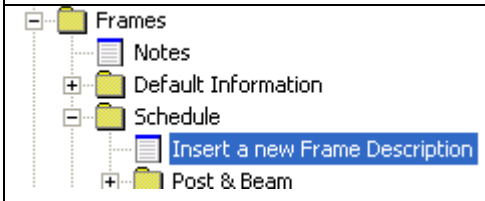


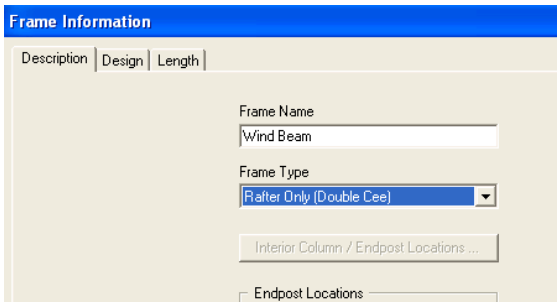
Notes:

- You must also select the appropriate Vertical Deflections Conditions; if for example, you know the VP building will be supporting a suspended ceiling, etc.
- VPCommand does NOT hold Deflection Parallel to ridge for Bracing. Please contact Estimating or PM for assistance.

2. Loading / Loads and Codes / Deflection Conditions

   - Select "Reinforced Masonry Wall" at the Frames are Laterally Supporting field. Note that the deflection (Def H) lists to the right have changed to be "100".
   - You may override the deflection limit as needed. Any value placed in the "Deflection Limit Override" field will take precedence over the values in the right hand list.





3. Defining Wind Beam:

You will be creating the Wind Beam in the Frames / Schedule and then locating it in the Secondary / Spaces / (shape name)

- From the Tree, go to Frames / Schedule / Insert a new Frame Description (double-click)
- At the Frame Information window Type in a Frame Name for your wind beam.
- Choose Frame Type as Rafter Only (Double Cee). This will allow VPCommand to design wind beam with gage members and then move to three-plate if needed.
- Click OK when finished.

4. Define Covering Definition as NBVP-Masonry:

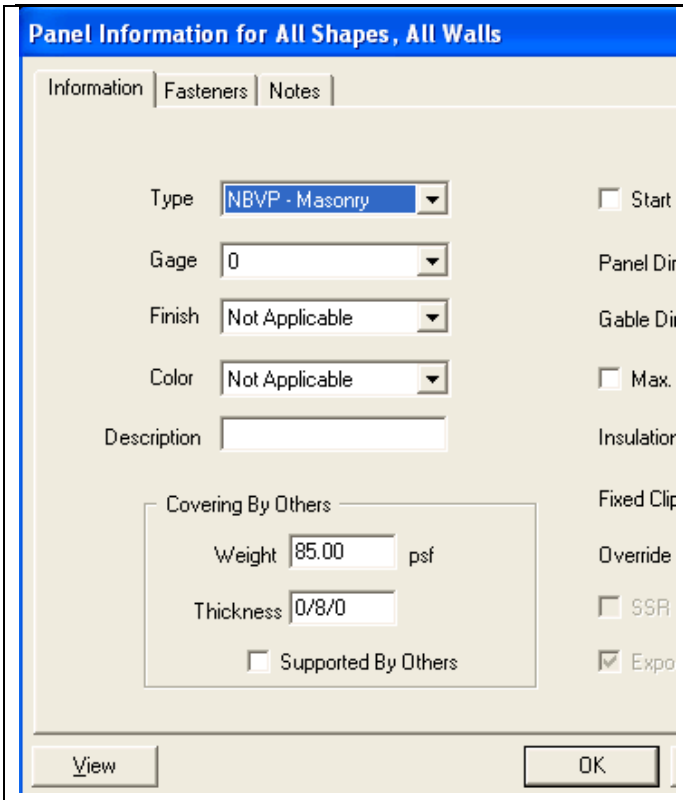
Wall/Roof Surface "Openings/Material Not By VP Buildings":

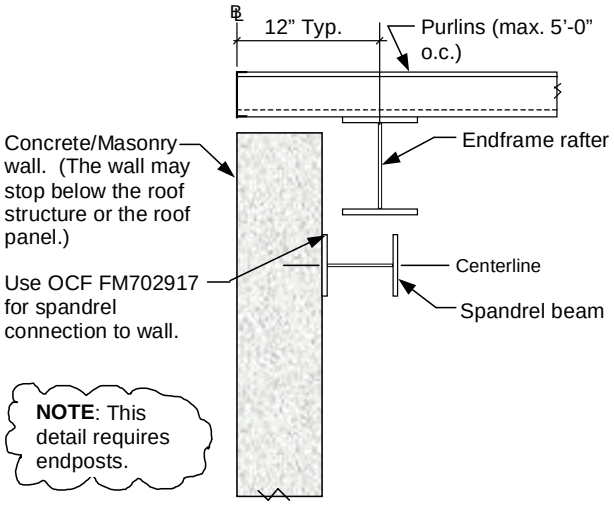
There are numerous occasions where you wish part or all of a building surface (wall or roof) to contain a material that VP Buildings does not provide, such as brick, glass, etc. There are also times when you simply wish to remove material to allow for complete access, such as for a lumber storage building.

In the Tree there are folders for Covering and Openings. You will probably have few occasions to use the Openings folder. VPCommand automatically creates Openings whenever shapes come in contact with one another, such as at lean-to and roof height change shapes to create a common wall. VPCommand will remove ALL material from this common surface. If you wish to add material back, for example to sheet a common wall, you can revise or delete the opening that was created. Note that there will be openings created at both wall surfaces and the openings on each wall will be split if there is a ridge on the building.

Note that if the masonry or other material was only on part of this surface, you would need to "Insert a New Covering Definition".

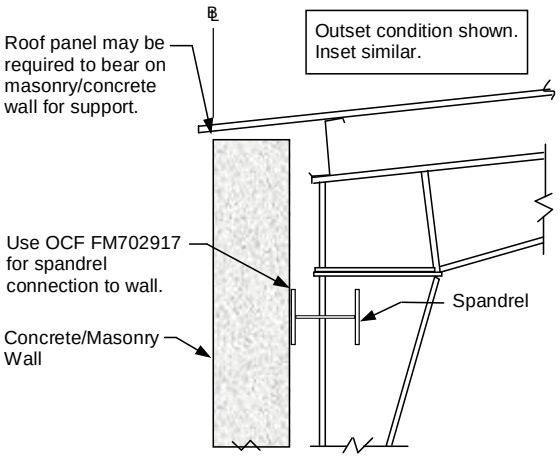
Covering Type Selection	Results
Panel Rib	**Leaves** sheeting, secondary, insulation, and/or liner unless removed elsewhere.
Vee Rib	**Leaves** sheeting, secondary, insulation, and/or liner unless removed elsewhere.
Open (one can physically walk through and will can pass through)	**Removes** all material; sheeting, secondary, insulation, and liner unless defined elsewhere and applies loading as if that portion is open for wind access, applying all environmental loads
Not by VP - Masonry	**Removes** sheeting, secondary, and insulation, unless defined differently elsewhere and applies loading as if that portion is covered. If this type is selected and "Supported by Others" is NOT selected, you must provide VP Buildings with additional information regarding the material type.
Not by VP – Tilt Wall	**Removes** sheeting, secondary, and insulation unless defined differently elsewhere and applies loading as if that portion is covered. If this type is selected and "Supported by Others" is NOT selected, you must provide VP Buildings with additional information regarding the material type.
Not by VP - Panel	**Removes** covering and **leaves** secondary, insulation, and liner unless defined differently elsewhere.
Not by VP - Other	**Removes** covering and **leaves** secondary, insulation, and liner unless defined differently elsewhere.

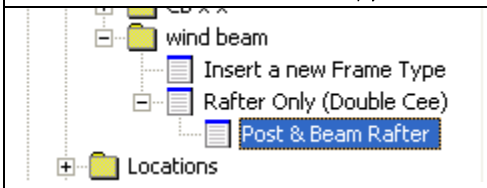


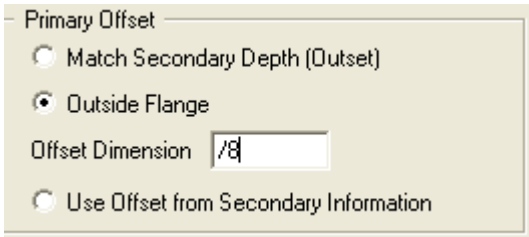


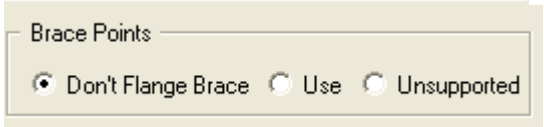
5. Specifying Masonry-NBVP

- Select: Covering / Default Information / All Walls / Default Information. Define "Type" as Not by VP – Masonry. Note that you DO NOT choose "Open".
- You may fill in the Description field if you have a material that is not true Masonry.
- Complete the Weight and Thickness fields. Use the Help screens for more information.
- Note that this condition is created at the Covering folder and NOT at the Openings folder.
- For this example we will NOT check the "Supported By Others" box as we have added wind beams (spandrel beam) in a previous step.
- Click OK when complete.

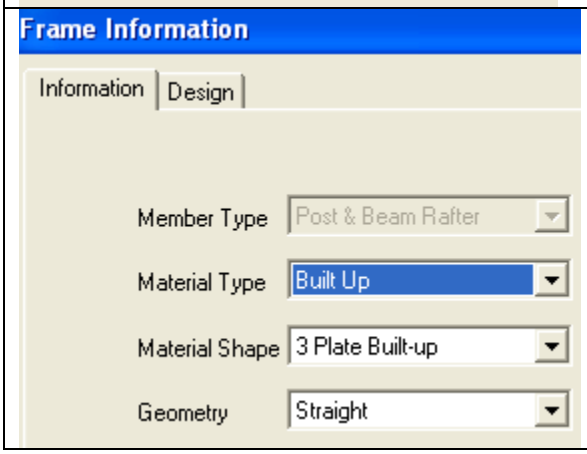




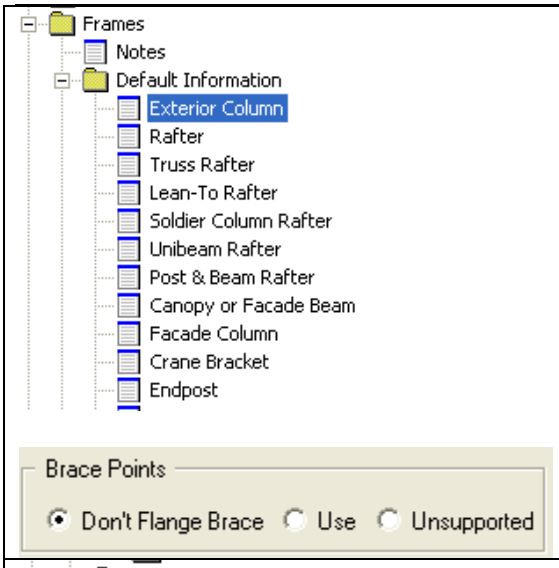




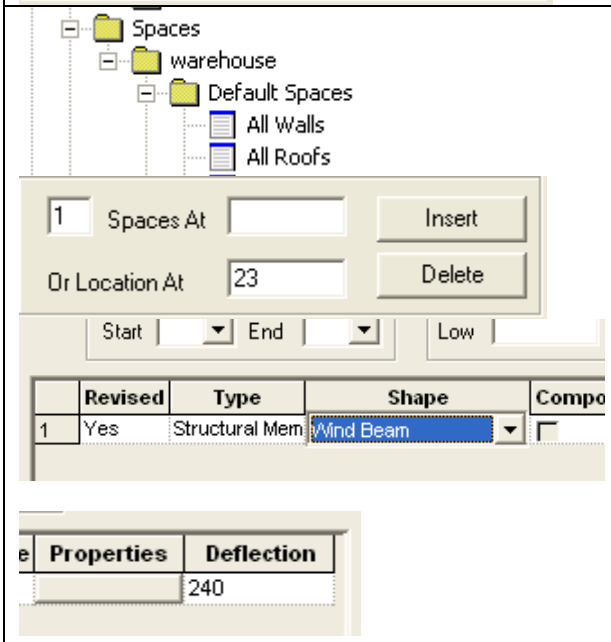
6. Defining Wind Beam dimension from Building line to Flange of wind beam (back of masonry wall) and to delete flange brace:
   - To set wind beam offset from Building Line: Frames / Schedule / wind beam (the frame folder you created in Step 3.
   - At the Primary Offset section, Click on the “Outside Flange” button and input 8 inches in the Offset Dimension field.



7. Change Material Type to Built up, Shape, to 3 Plate Built Up and Geometry to Straight.

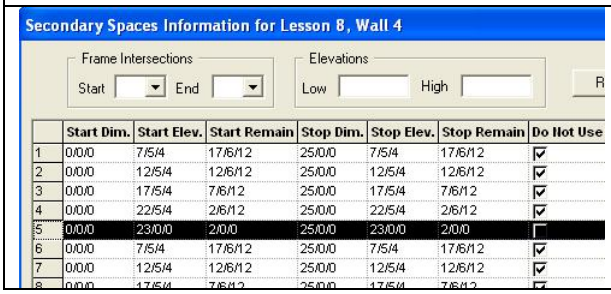


8. Frame columns and Endpost need flange braces remove because on tilt walls.
9. From the tree Frames/Default Information/Exterior Columns select Don't Flange Brace.
10. You will need to do the same steps for Endposts.



11. Inserting Wind Beams:

- Go to: Secondary / Spaces / (shape) / Default Spaces/All Walls.
- Insert 1 space at location 23 (this is 2'-0" below the eave height)
- From the list, change the Type to Structural Member and the Shape to Wind Beam (this is the name you gave it in the Frames / Schedule).
- Scroll to the right of the list and input Deflection of 240 (or whatever is required).
- Click OK when complete.



12. When covering is Masonry NBVP all Girts except user inserted are deleted (Do Not Use) by the system.

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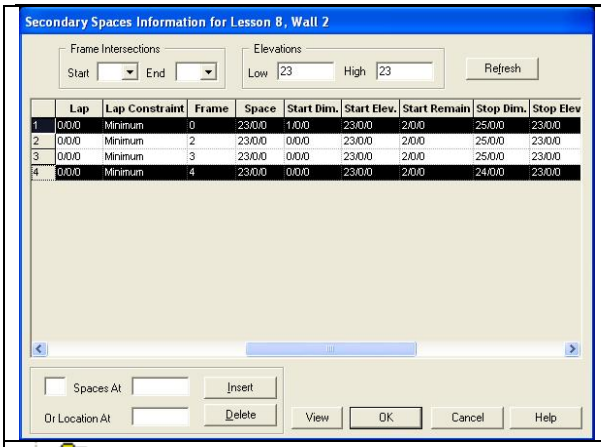
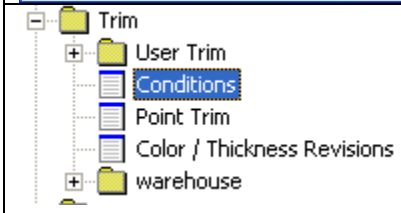
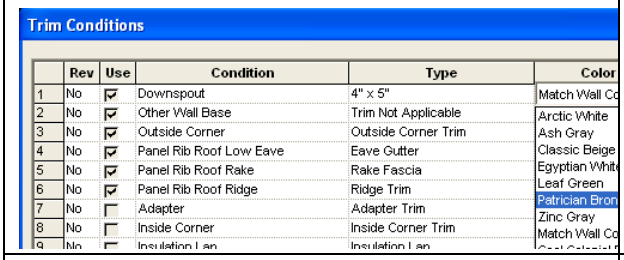


13. At sidewall each end bay member offset will need change to stop and start at centerline of frame.
14. First member will need to start at 1/0/0 and last member will need to stop at 24/0/0.





15. Specify Downspout Color: The VPC default (unless modified) for downspout material is to match wall color. Since we have specified the wall material to be Masonry-NBVP, we need to select a color.

- Go to Trim / Conditions / double-click.
- At the Trim Conditions window, Click in the Color field at the Downspout line.
- Choose desired color.
- Click OK when complete.

16. Complete a Run, review Pricing, and Edit Check Reports.

Summary: Lesson 16 is now complete. The items you have completed in this lesson are:

- Defined Wind Beam in the Frames / Schedule
- Input Wind Beam at the Secondary level.
- Defined Covering as Masonry-NBVP
- Specify Downspout color.
- Inserting Wind (Spandrel) Beams for masonry support. Please note that design may require additional wind beams on taller buildings.