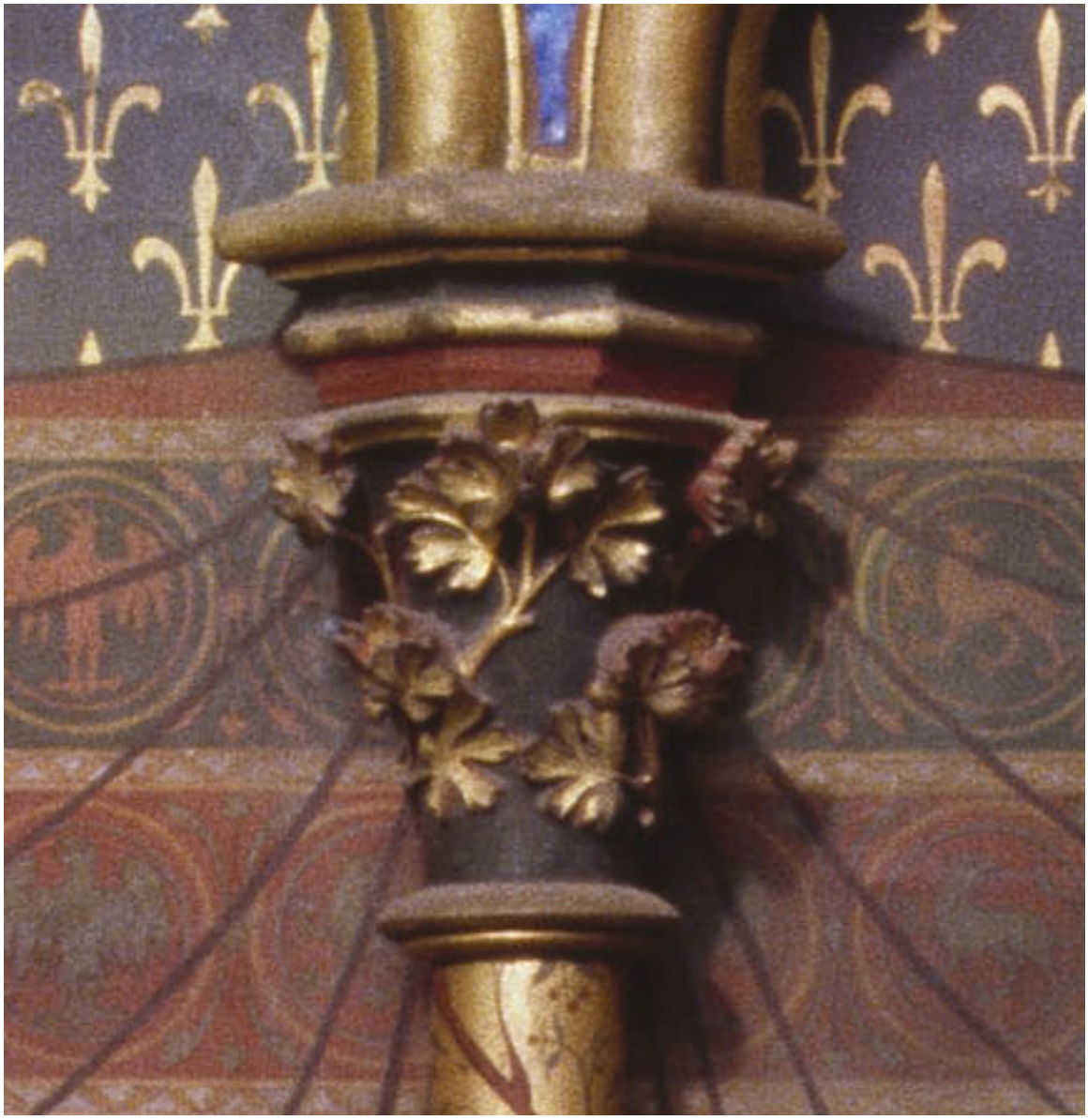
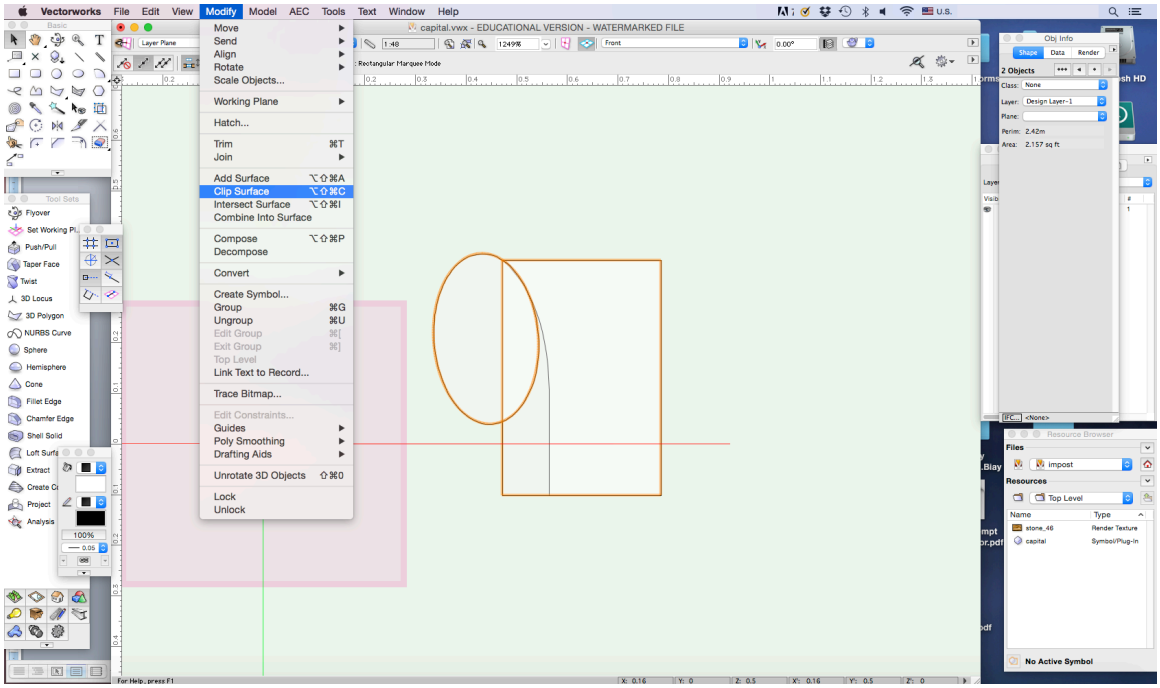
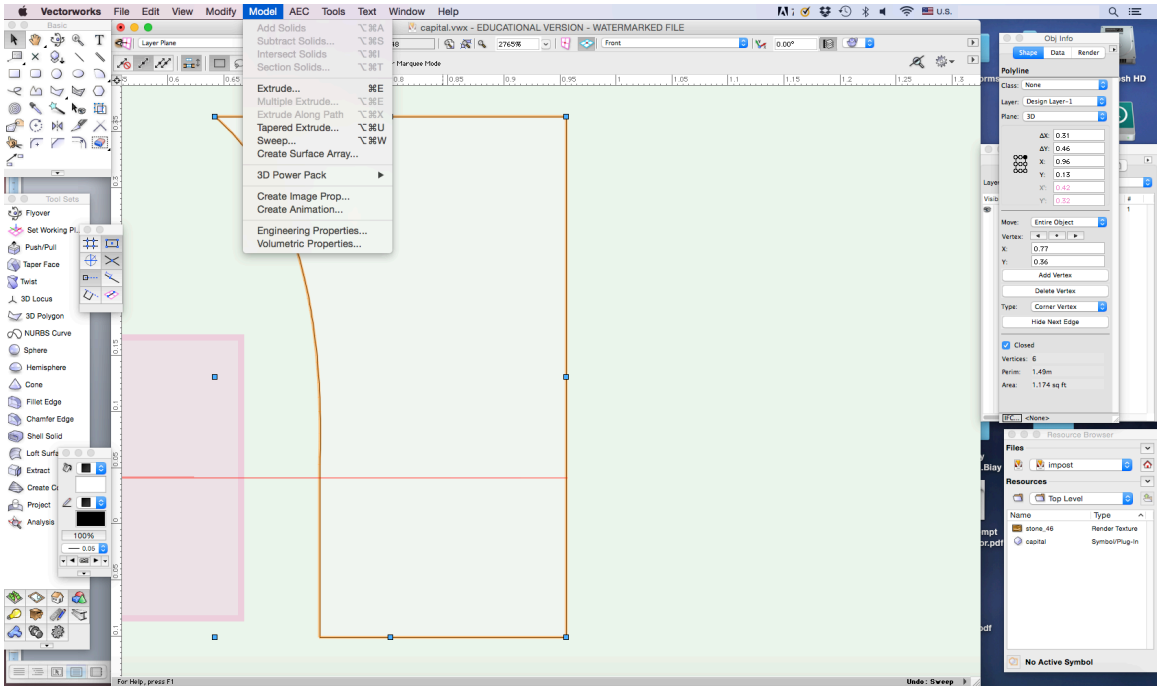
Step 1. Create a new document using course template.

1. While in “Front” view, create profile for capital. Refer to contemporary examples. For this tutorial, we are referring to the capitals in the dado at Sainte-Chapelle.

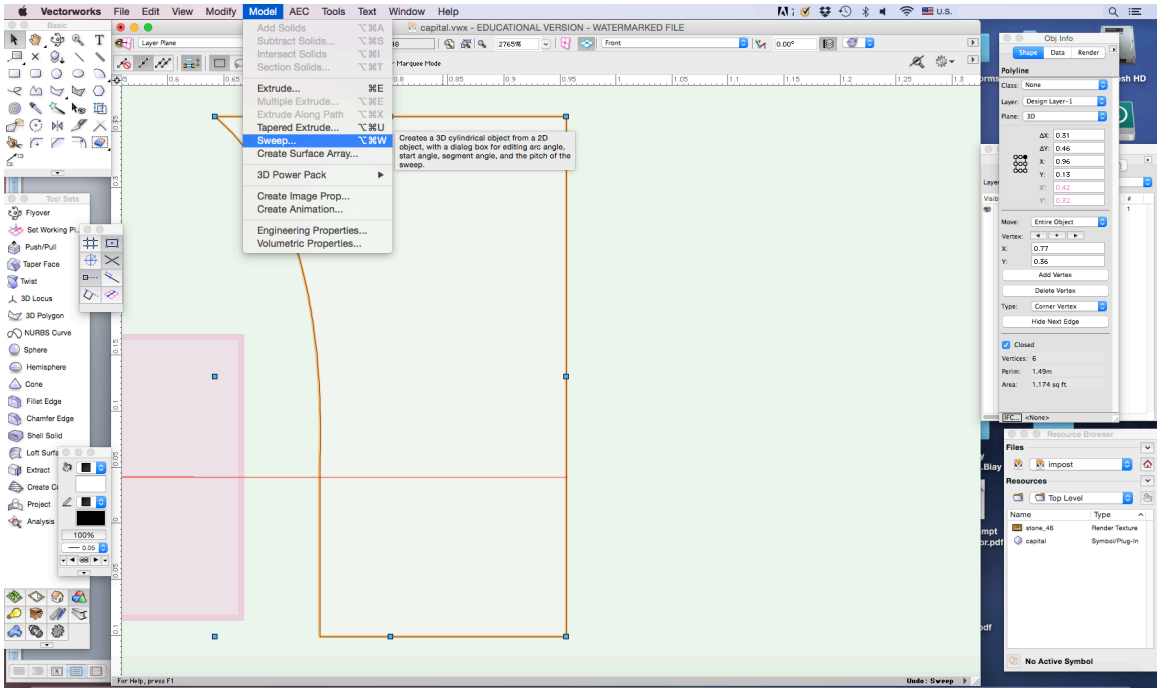


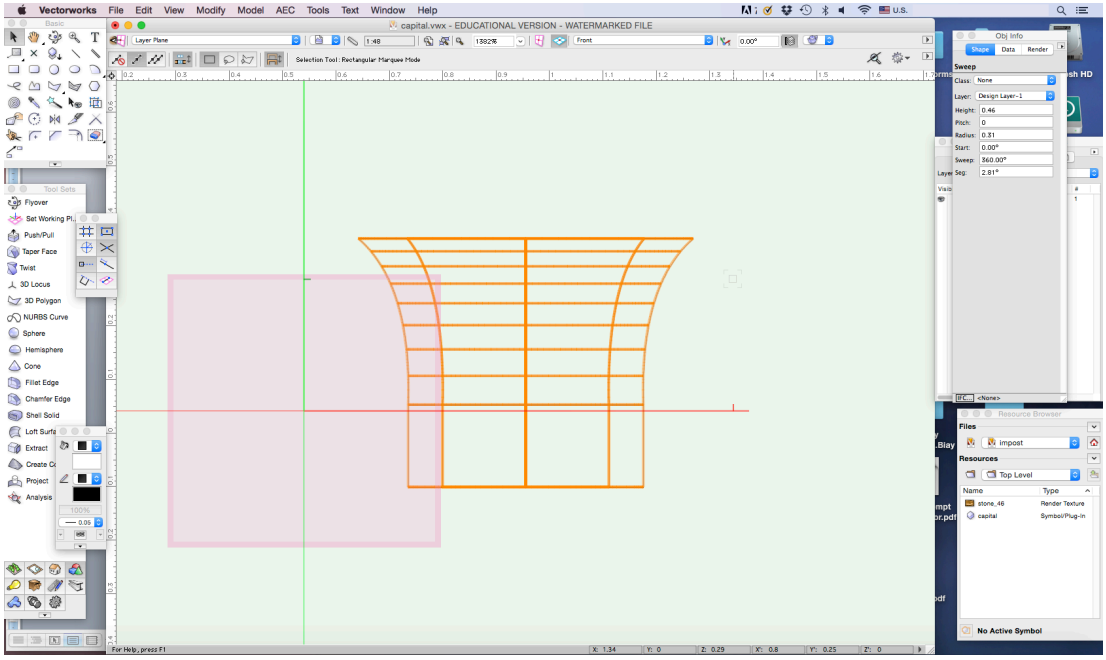
2. The capital profile will be a 2D shape conforming to half of the capital. Adding and subtracting a series of geometric shapes should create the profile. For this profile, start with a rectangle, and then using “Clip Surface,” subtract an oval shape to create the profile’s curve.



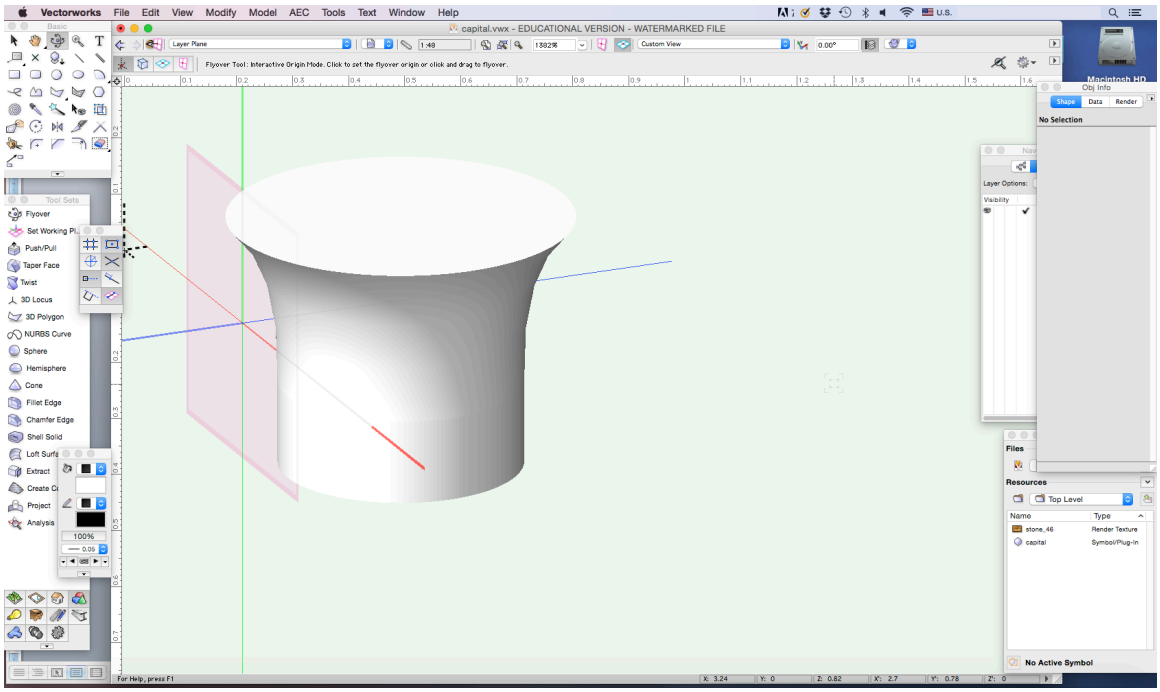


3. Now that we have our profile, we will create a 3D object.
4. Select the profile and go to the “Model” menu and select “Model > Sweep.” **Note: If it sweeps a shape that is hollow instead of a column, select the object, right click to open the Edit option. Mirror your original shape, it should adjust the sweep. Exit Edit mode.*



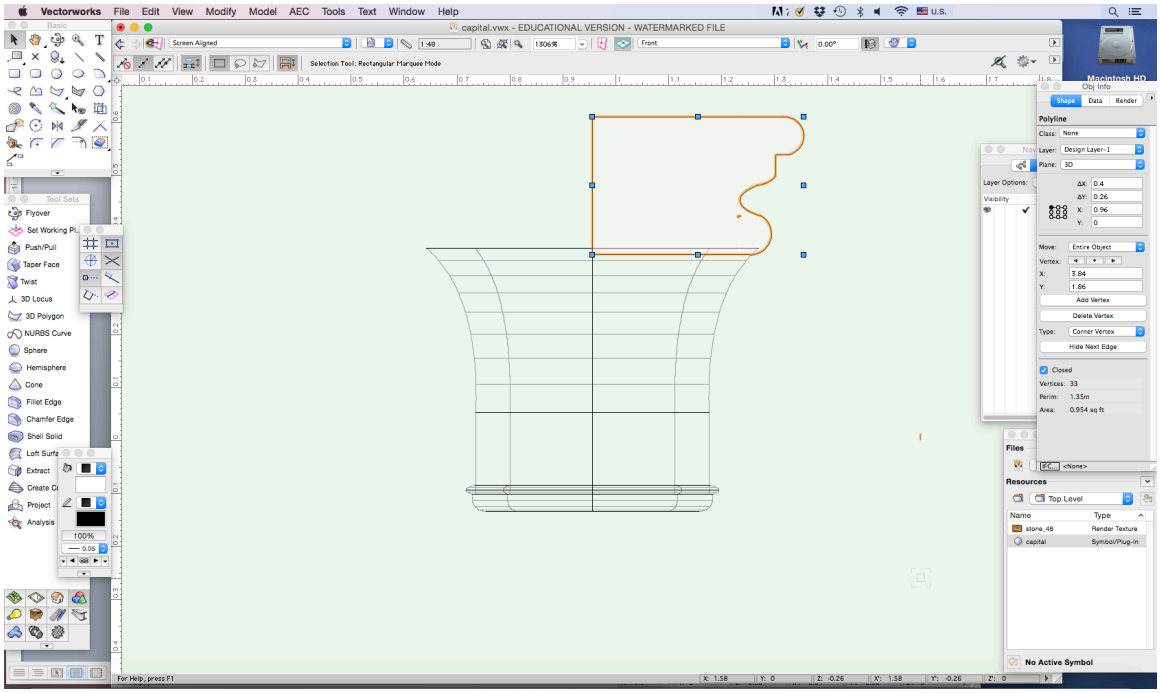


5. Render in Open GL to see the volume.

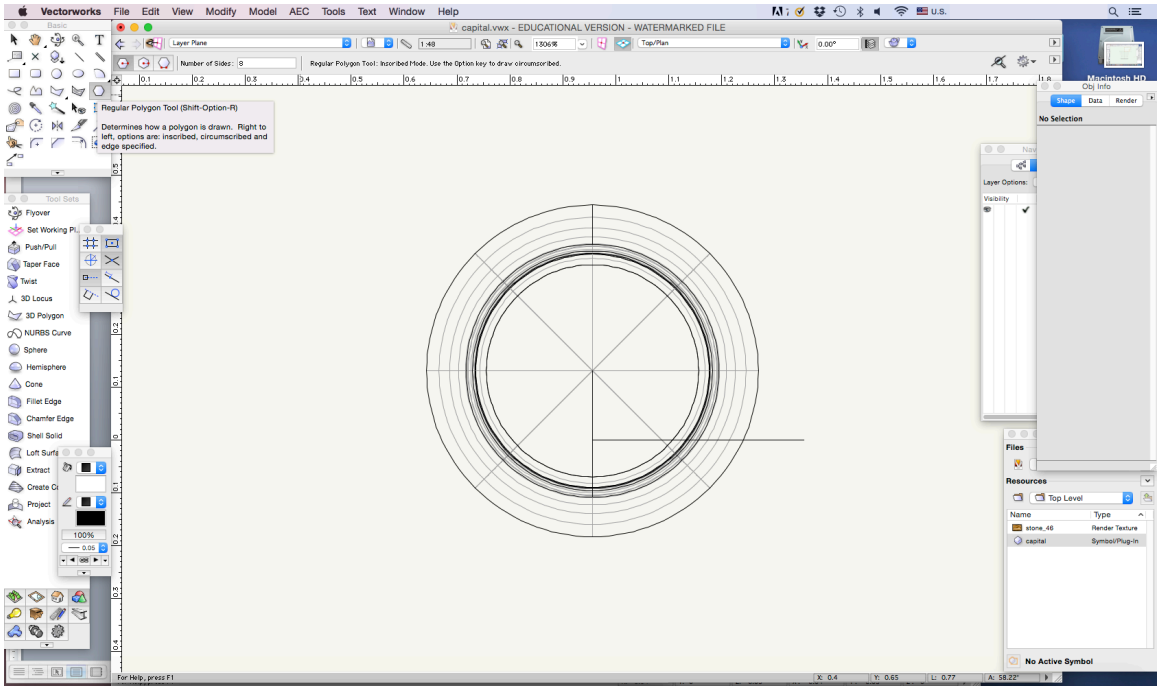


Step 2. Creating the abacus or impost block.

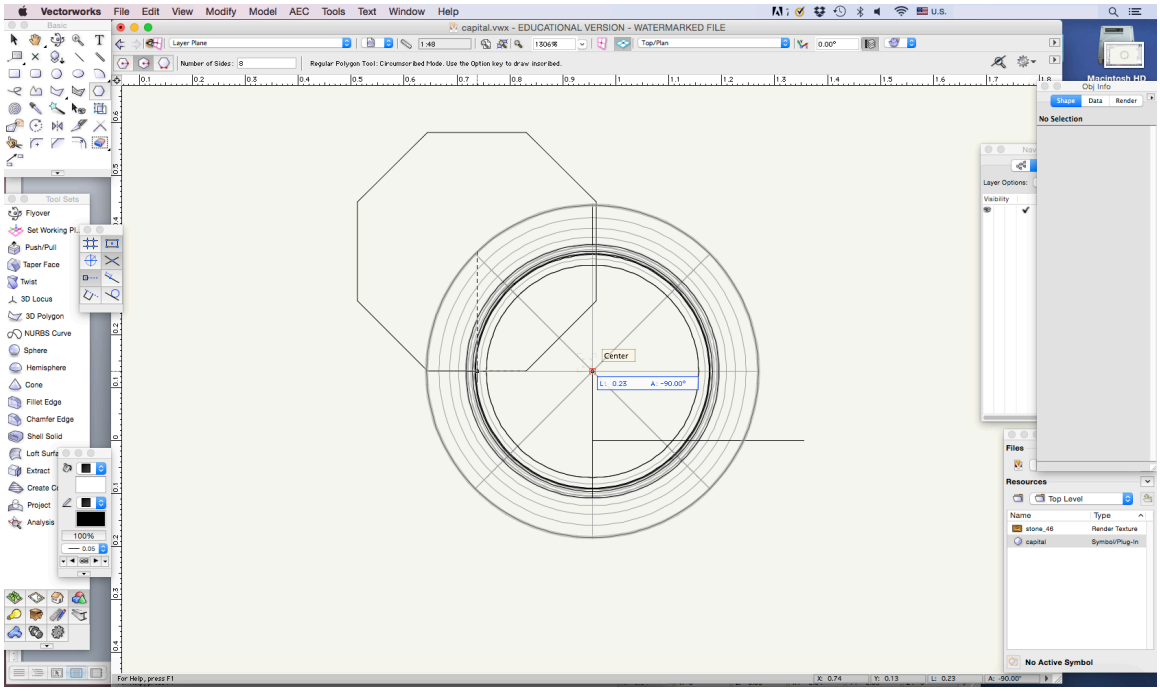
1. Refer to the image of the capital from Sainte-Chapelle to create the abacus. Because of the form's complexity, it is best to create it in pieces. Recall the 2D Molding Profile tutorial for do this. For this exercise, we will create two separate pieces.
2. Create a profile that is half the width of the upper portion of the capital. Make sure you are doing this in 3D Plane.



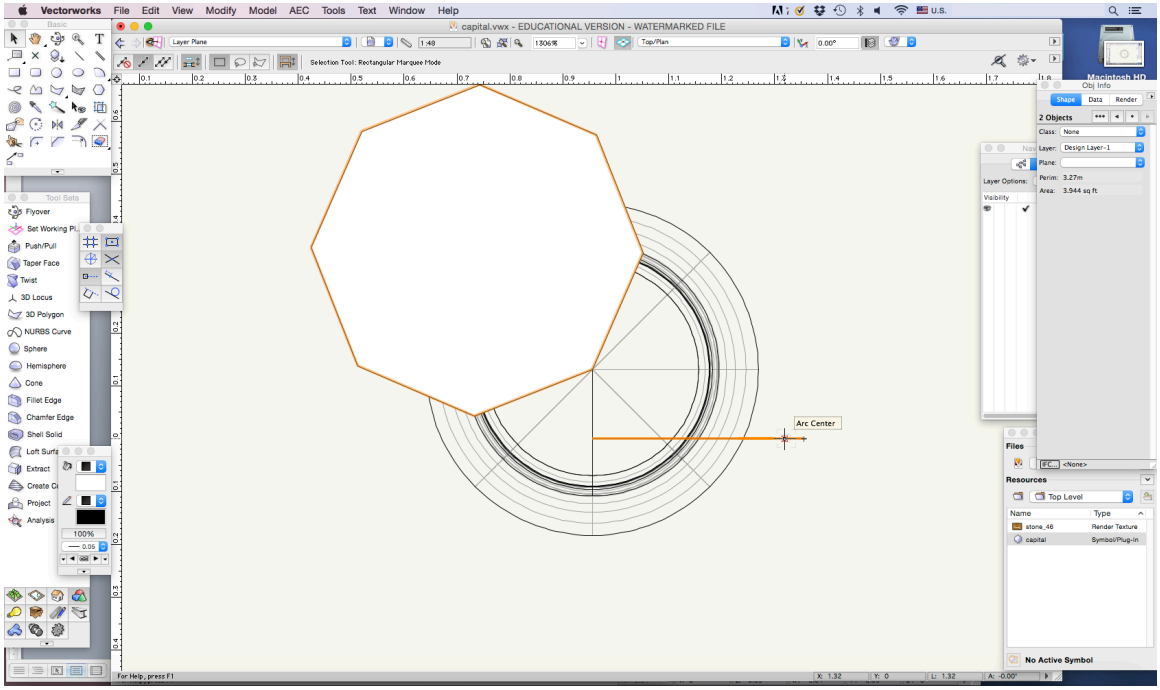
3. Switch to “Top” plan and create an octagonal path in which to sweep the abacus profile. The diameter of the octagon should be the same width as the profile.
4. Select the regular polygon tool and enter 8 in the field to indicate the number of sides.



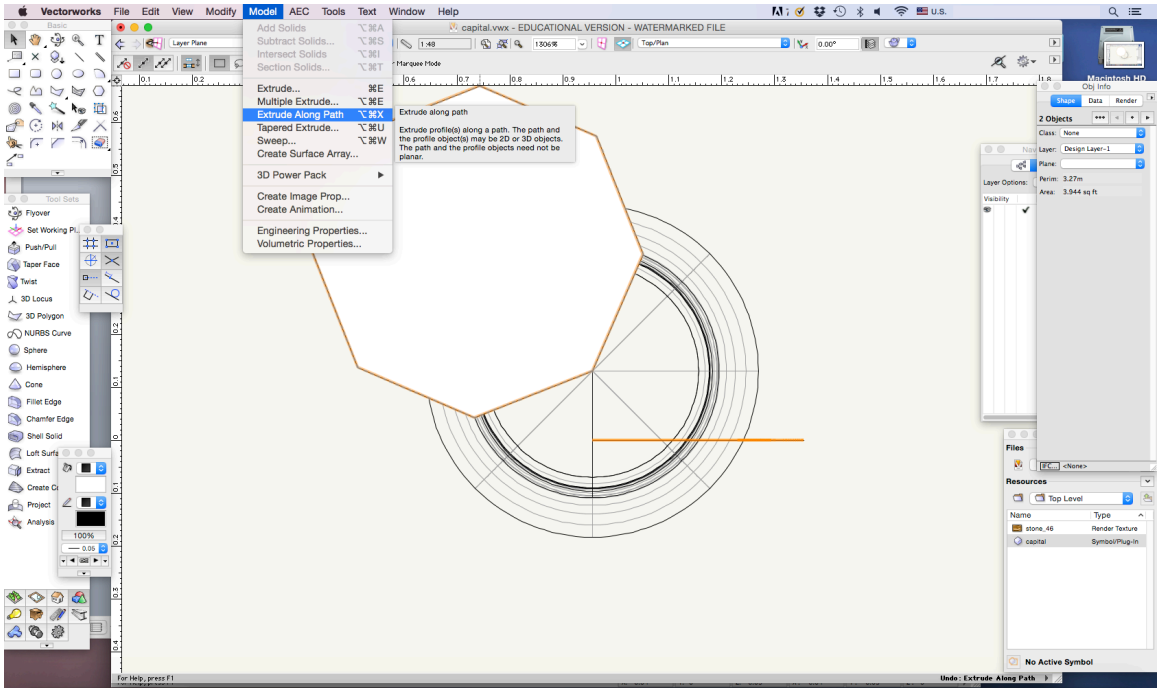
5. Draw your octagon using the ‘two-click’ method (click once, then move the cursor until the octagon is the length you need).

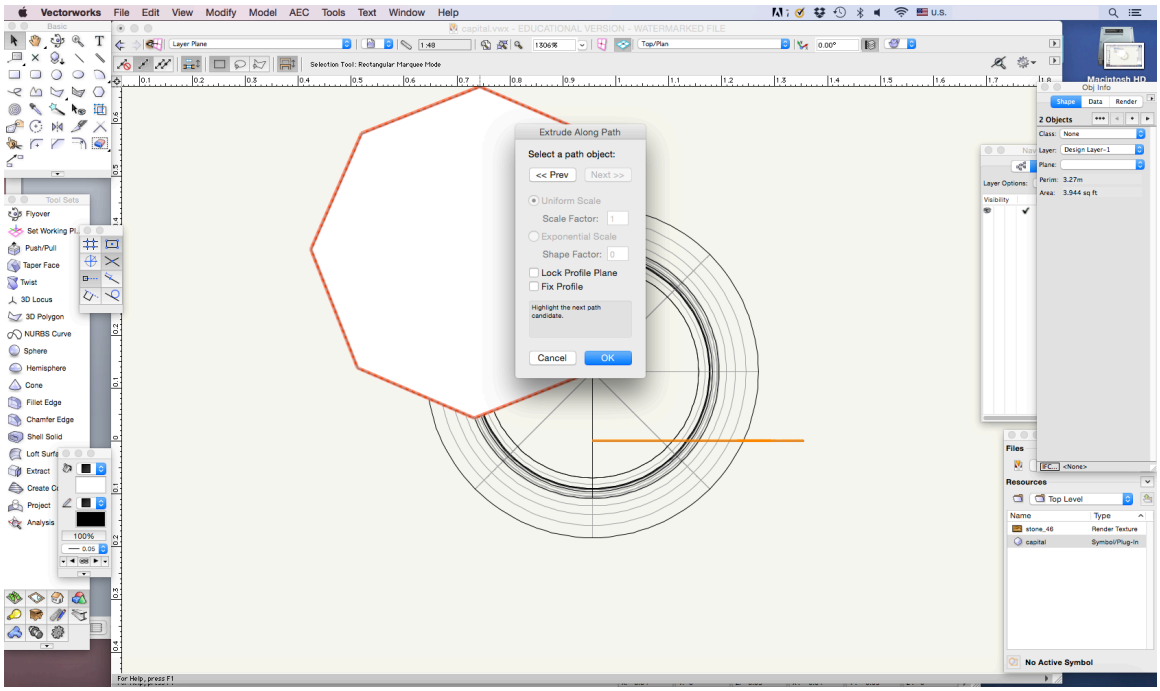


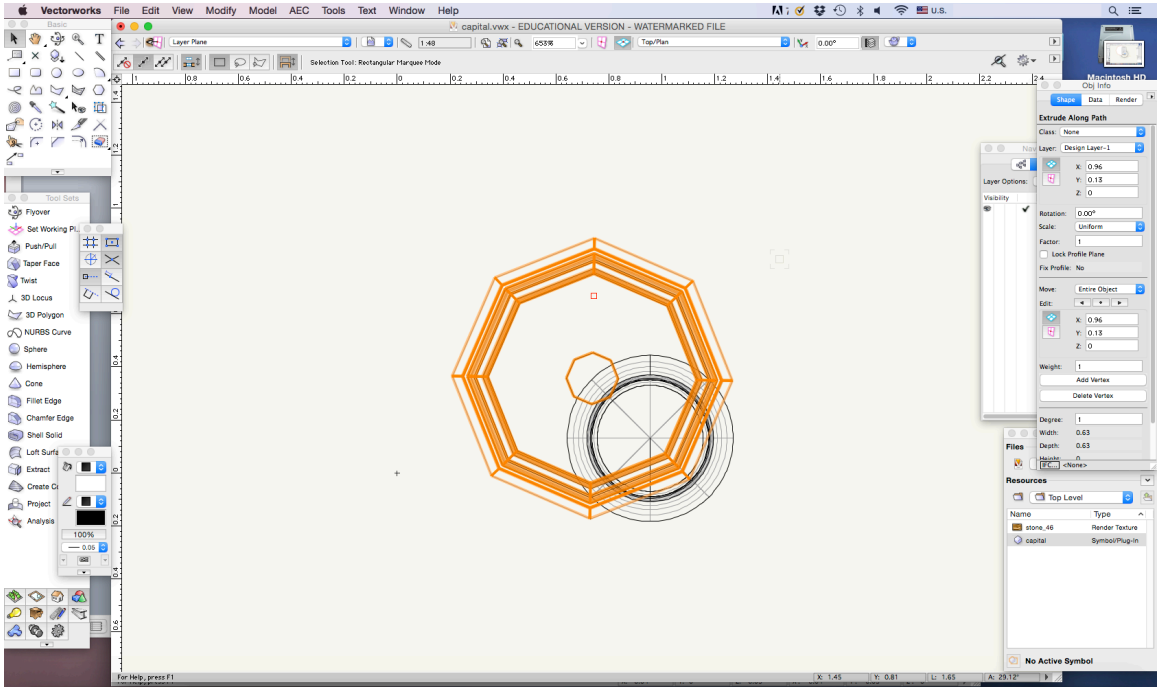
6. Select the ‘selection’ tool, then select your octagon and profile. Hold down the shift key in order to select multiple objects.



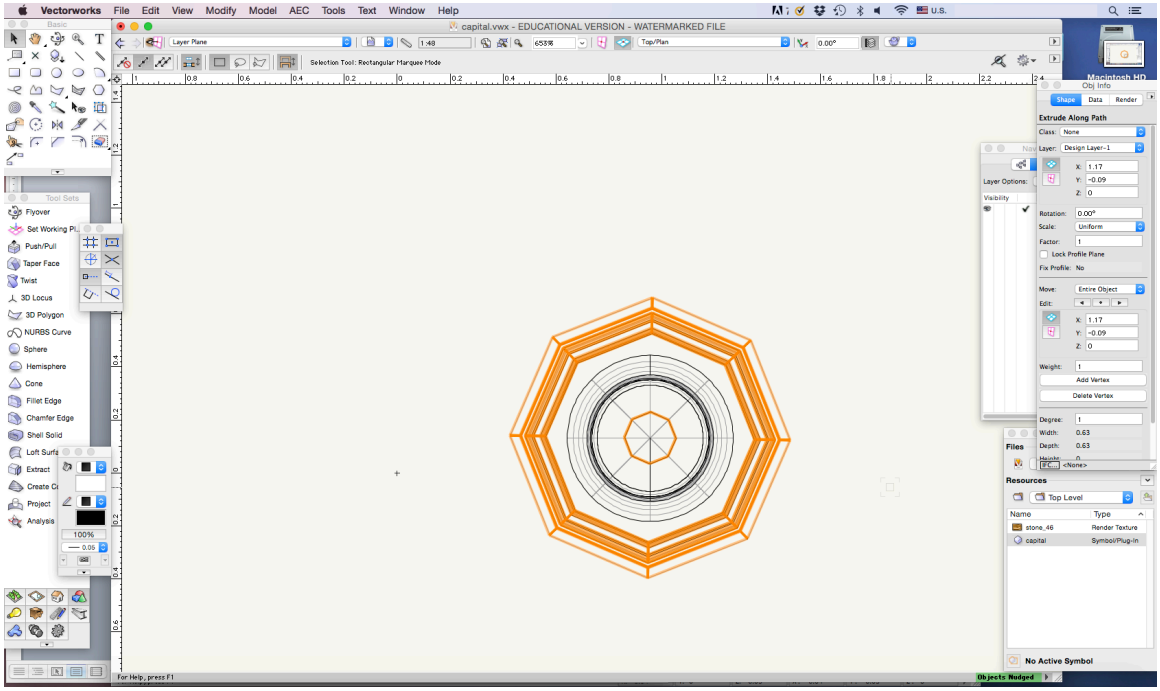
7. Go to “Model > Extrude Along Path.” Be sure that the path is highlighted in red. Click ok to create your 3D object.



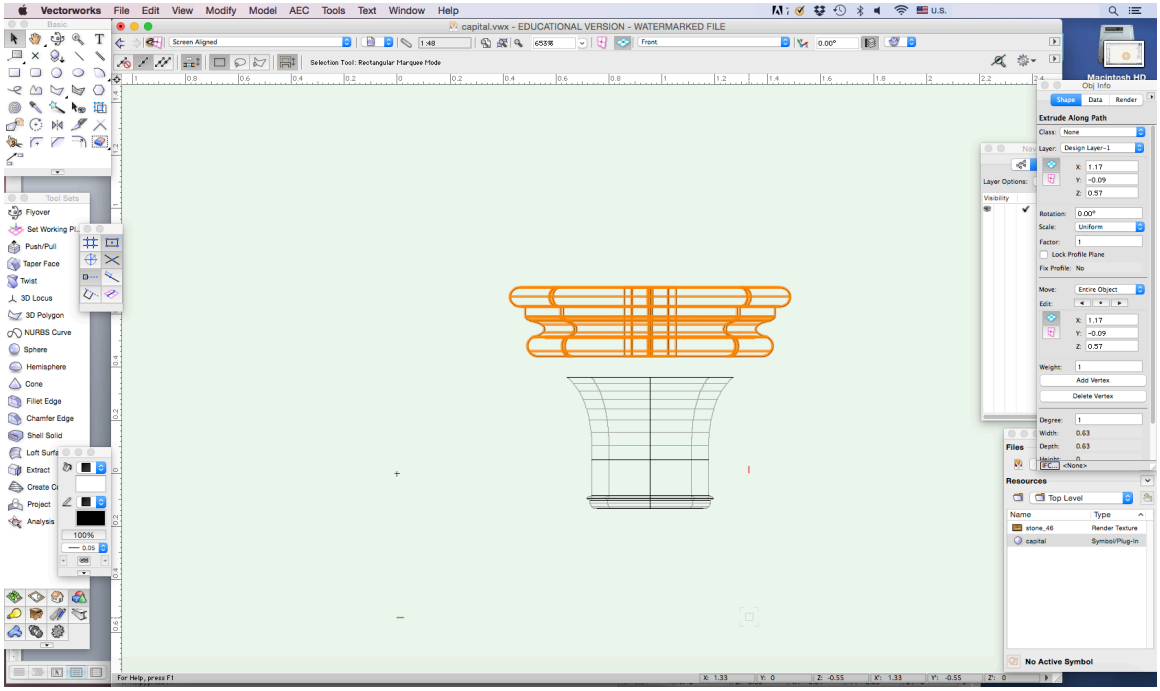




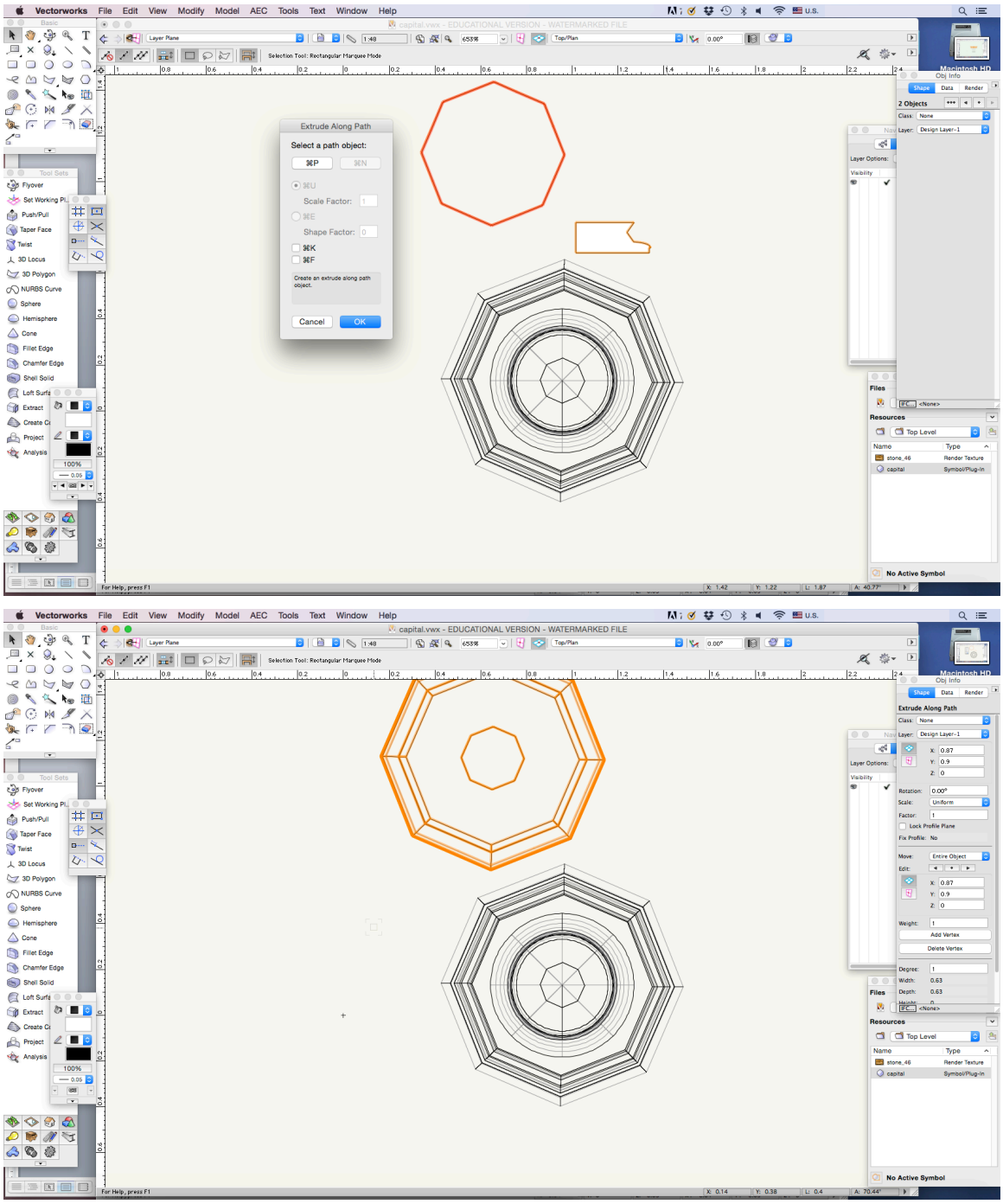
8. Now click and drag the object until it snaps to the center of the capital.
   **Note: Check this looks correct in Right Isometric view before moving on. If it is incorrect, undo and retry Extrude Path making sure to check the "Fix Profile" in the popup window.*



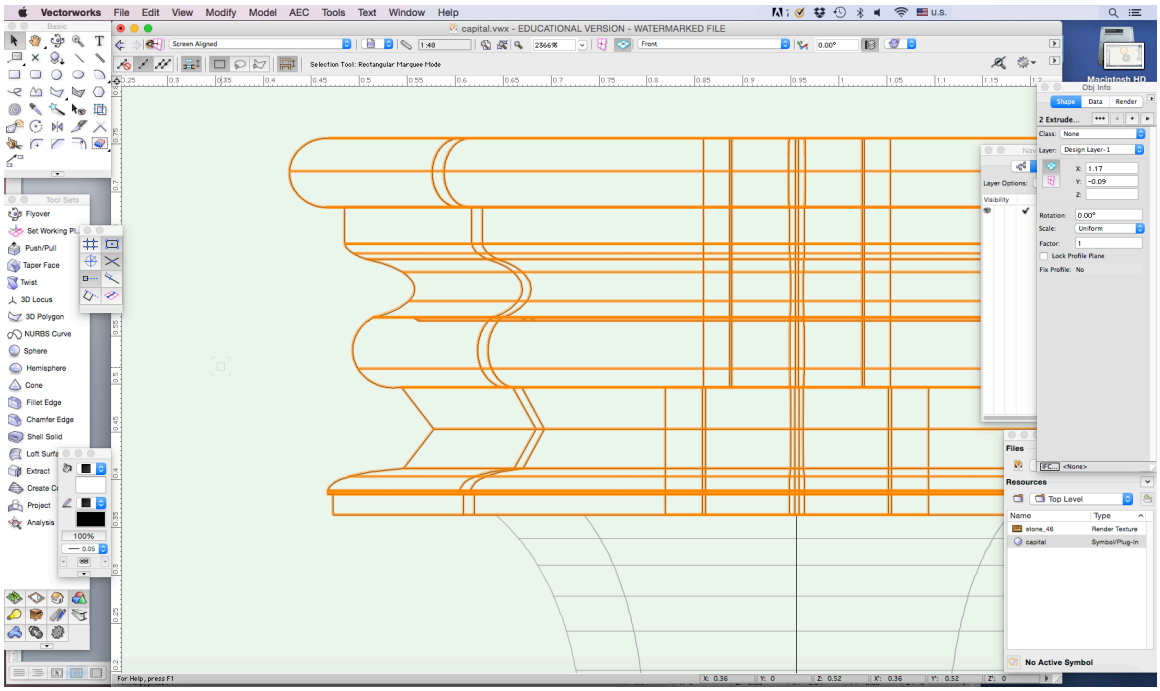
9. Switch to Front view to see the stacking order of your objects. You may need to position the abacus above the capital. Don't worry about positioning it perfectly atop the capital. We need to create another section of the abacus.



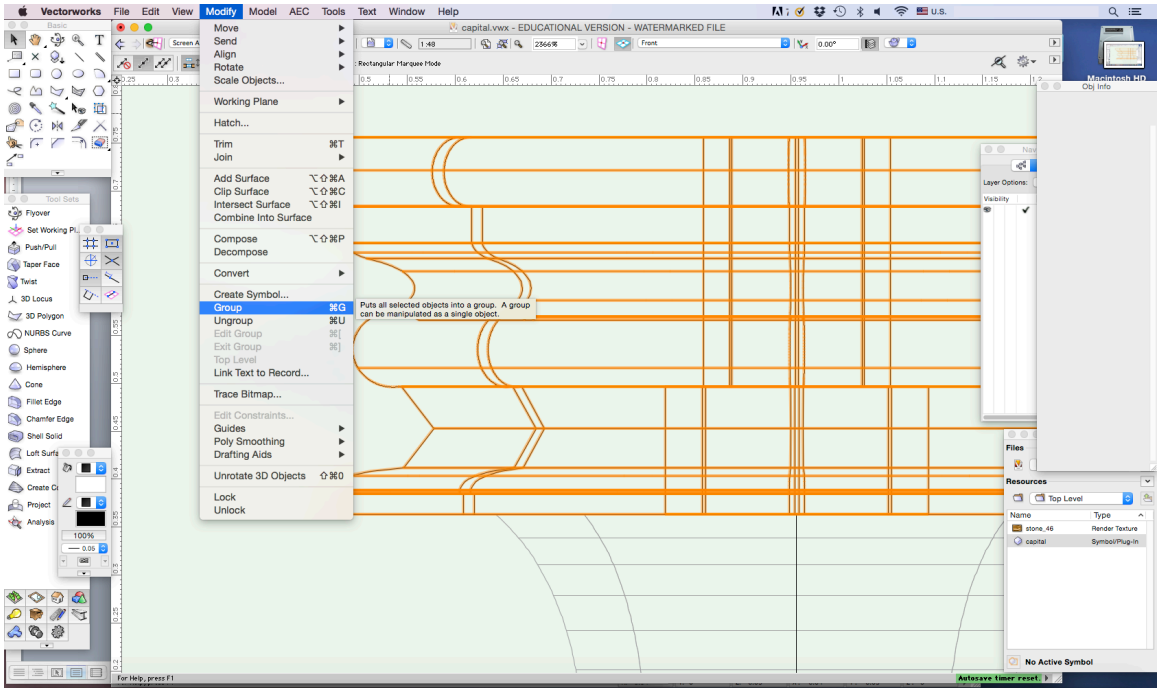
10. Repeat steps 1-9 above with your second profile for the abacus. This profile will be extruded along an octagon just like above.



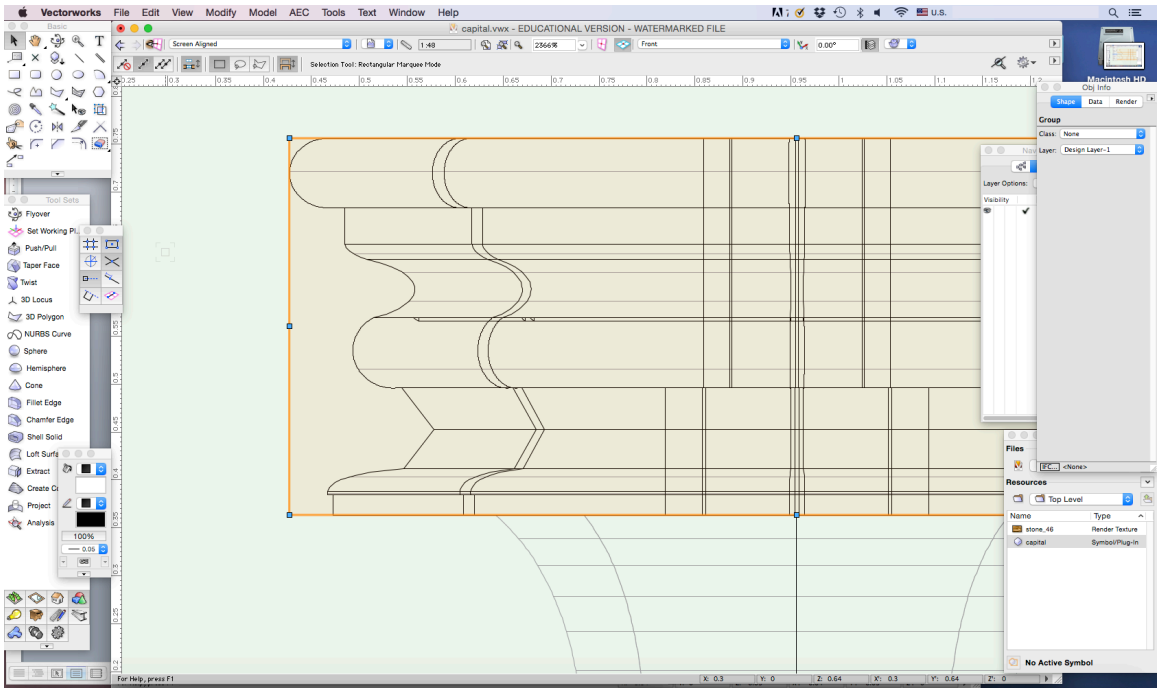
11. Position the two sections of the abacus so that they are centered when in top view and front view.



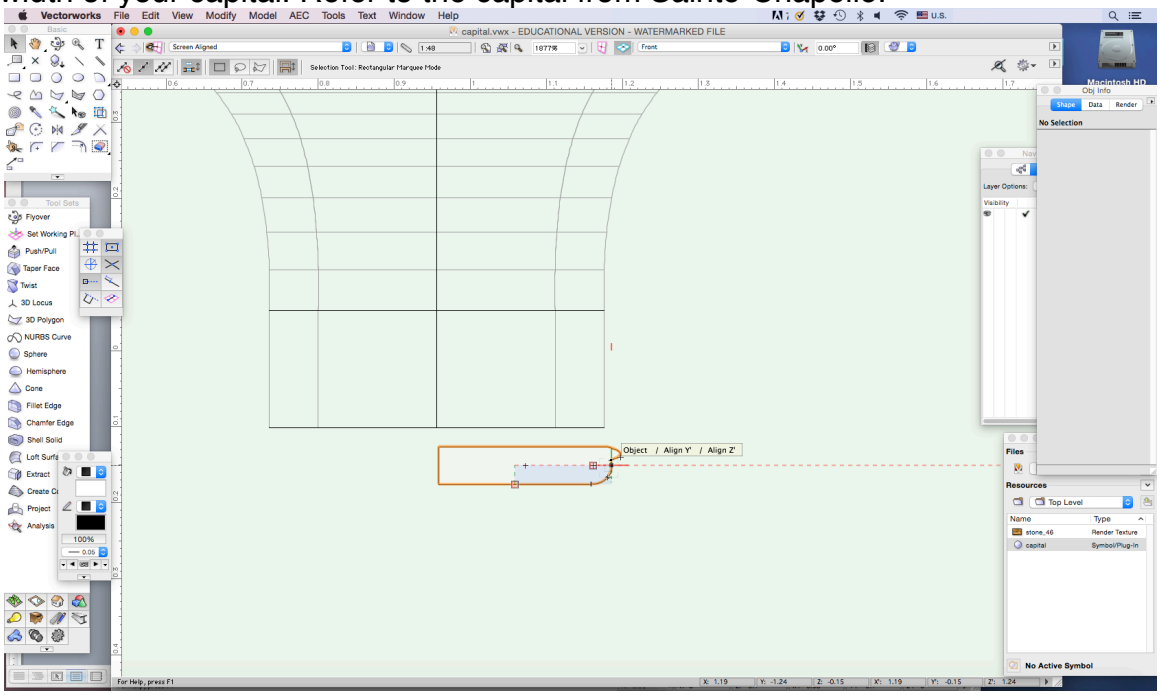
12. Group the two sections of the abacus under the ‘Modify’ menu so that they are one piece.



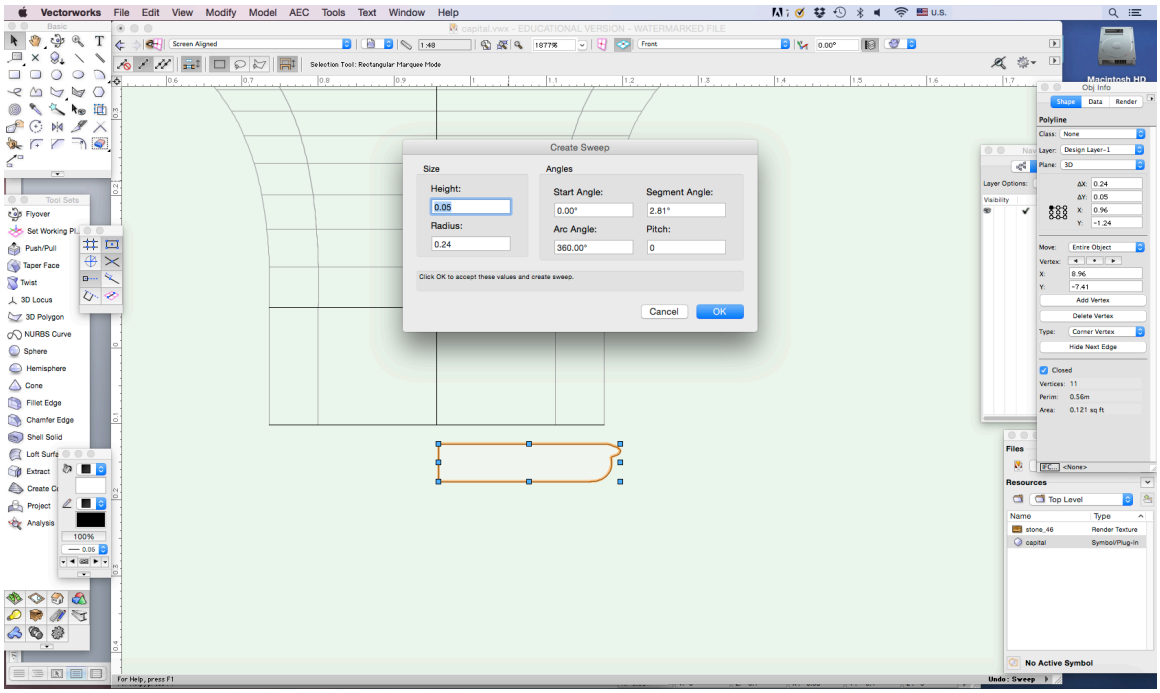
13. You may need to scale the abacus so that it is more proportional to the capital. Use the ‘scale objects’ option under the ‘modify’ menu. I chose ‘.85’.

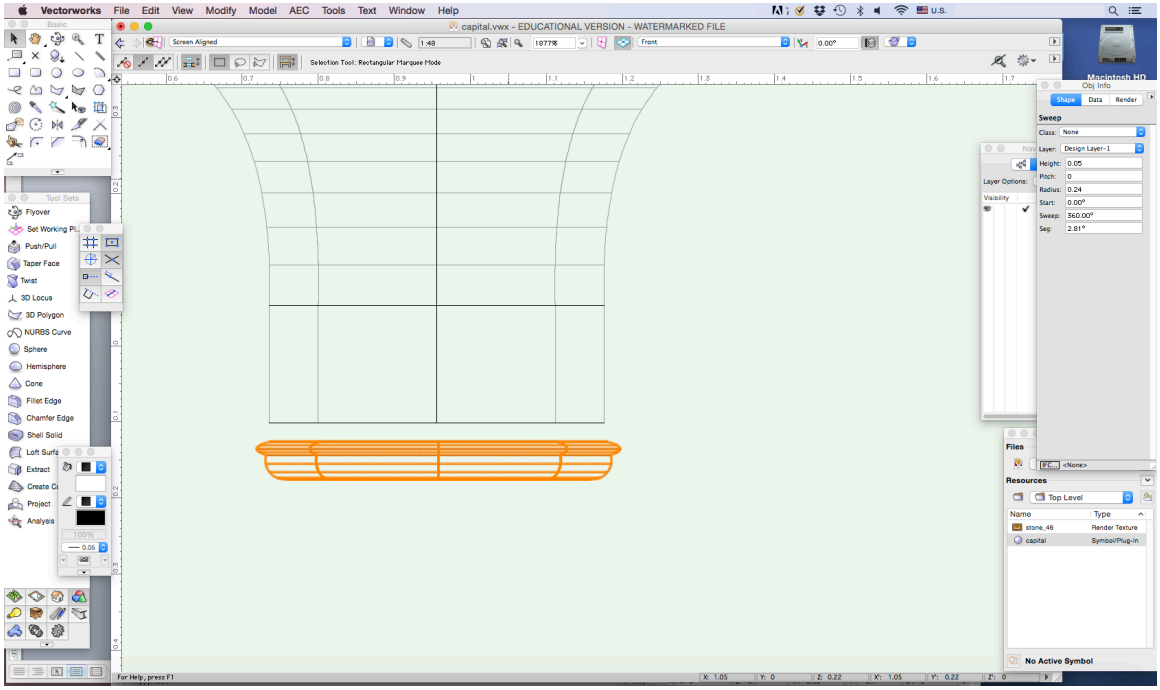
14. 

Step 3. Creating an astragal. For the astragal, create your profile that is half the width of your capital. Refer to the capital from Sainte-Chapelle.

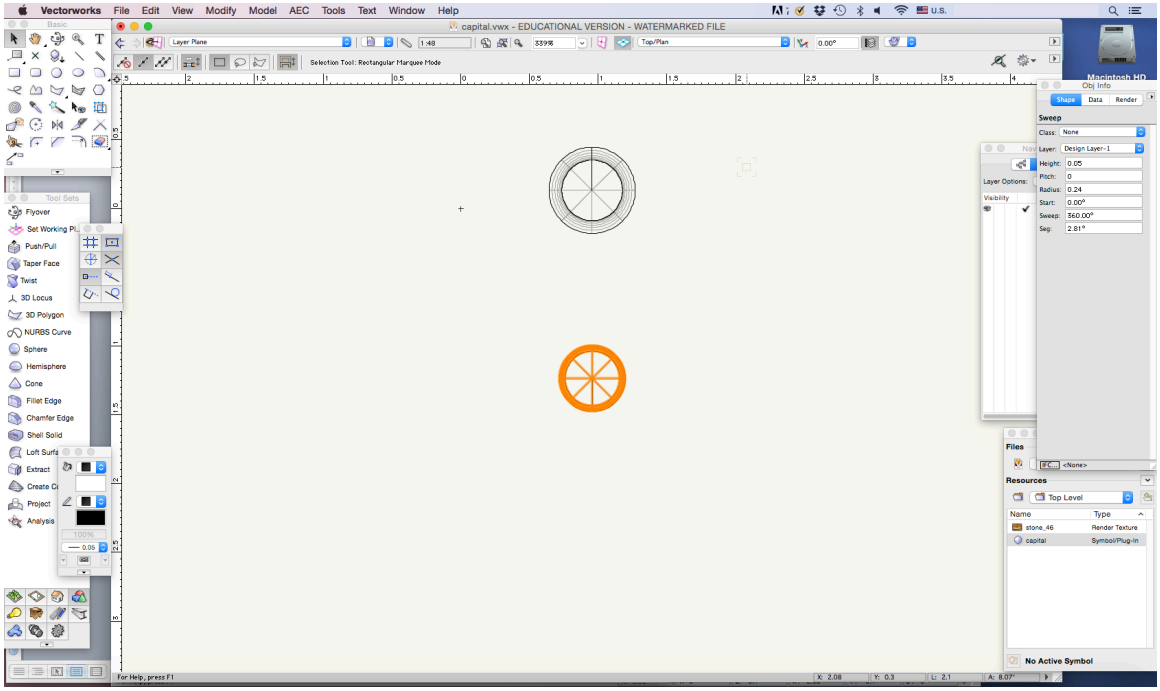


1. Just as like we created the capital, we will now make a 3D object out of the profile. Select the astragal profile and go to “Model > Sweep.”

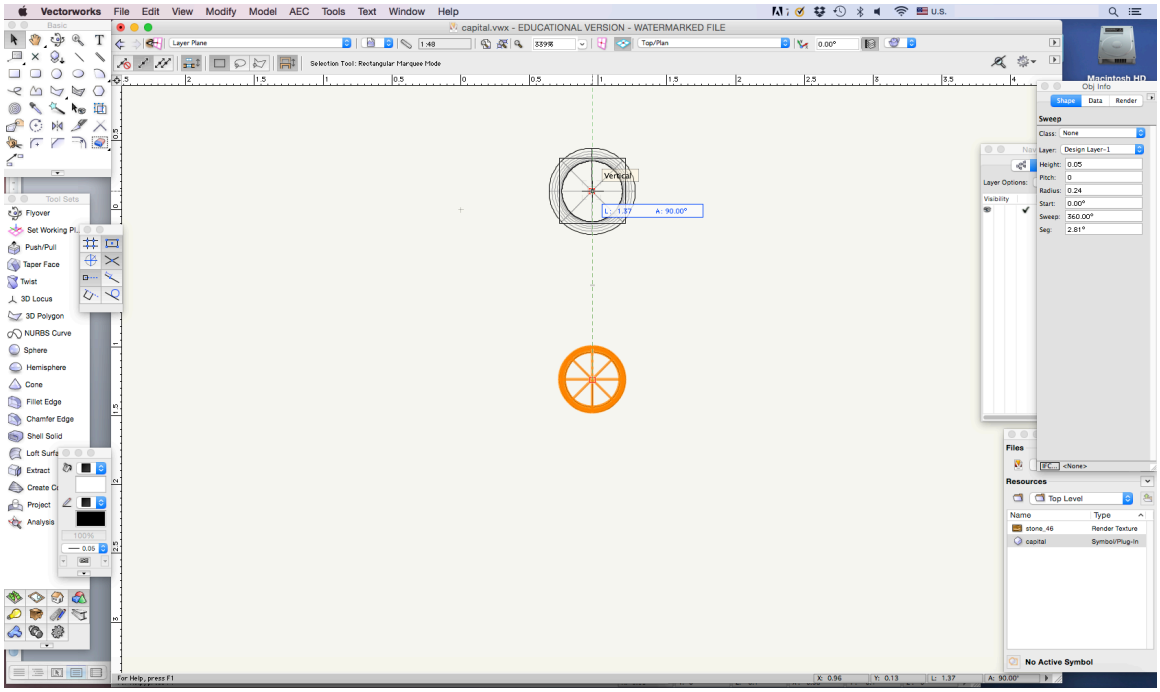




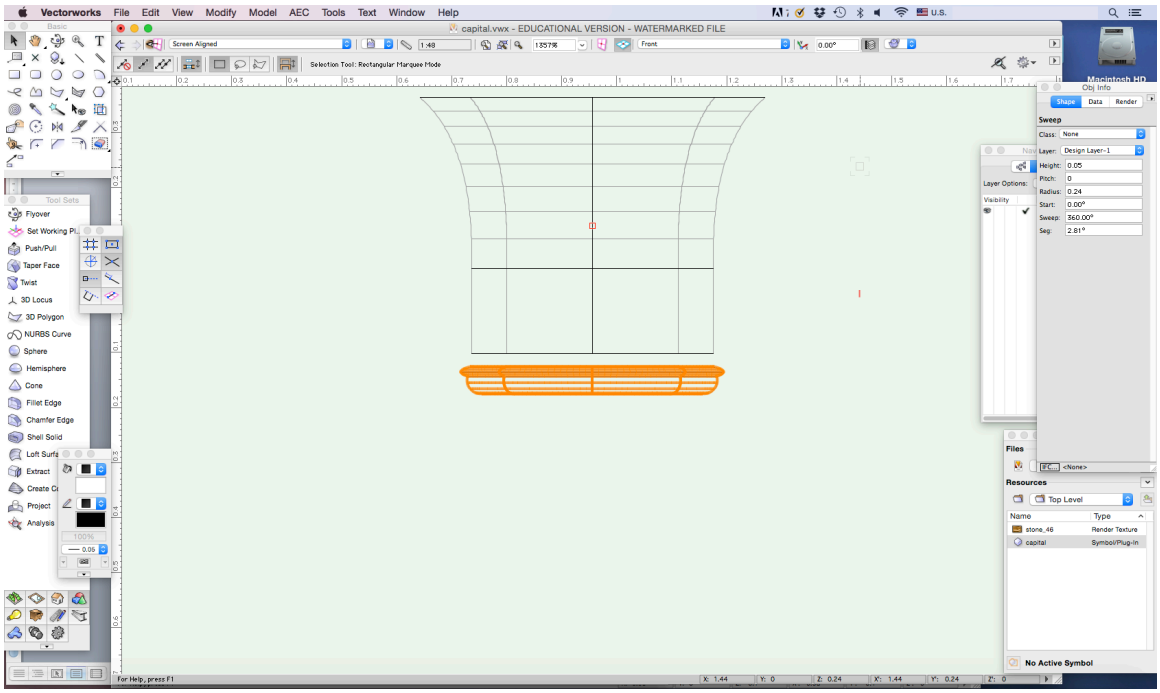
2. Position the astragal under the base of the capital. You will need to do this in top plan to assure proper alignment.



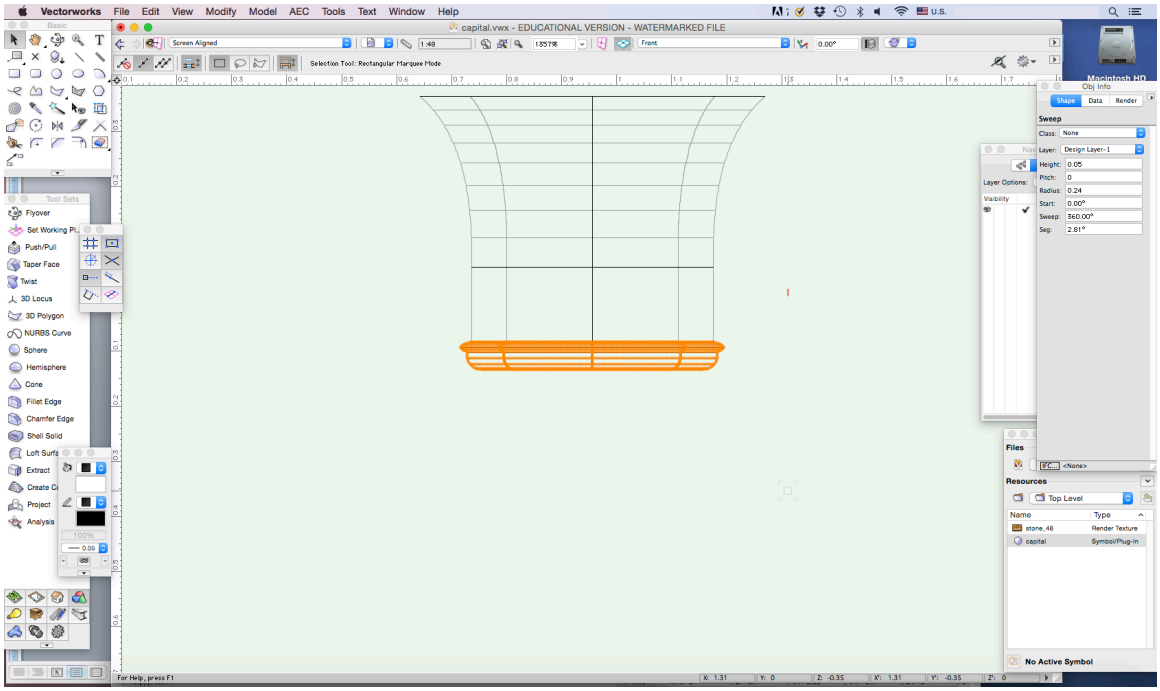
3. Select the astragal and drag it until it snaps to the center of the capital.



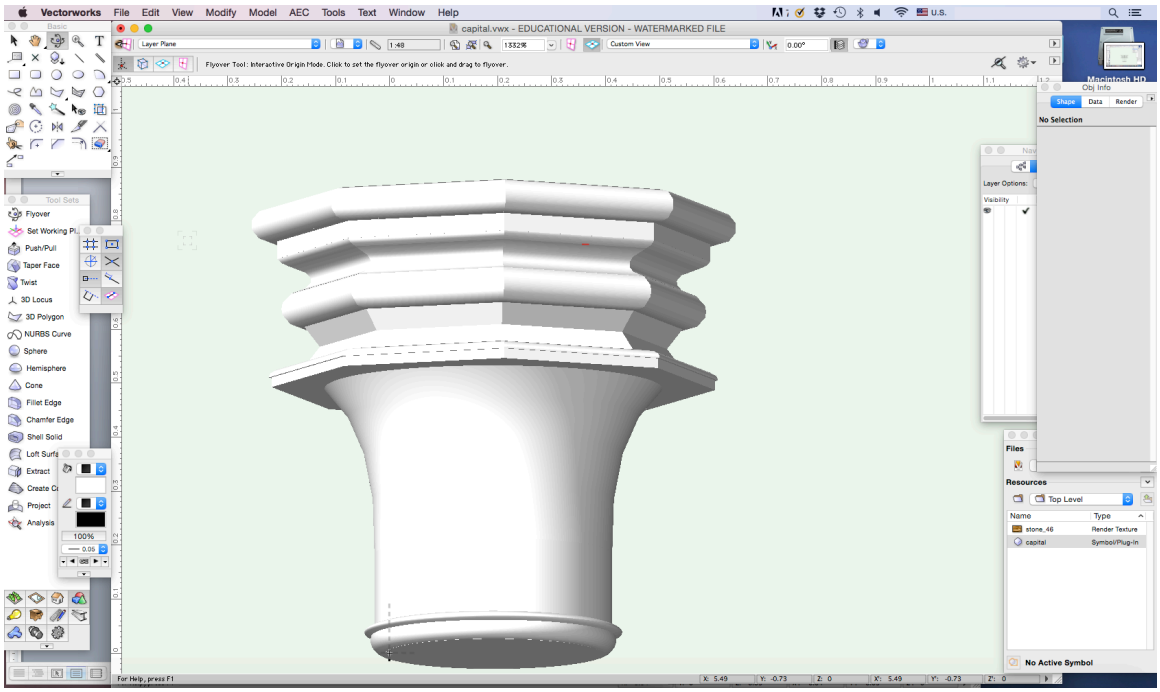
4. Switch back to front plan to attach the astragal to the base of the capital.



5. There are two ways to position the astragal to the base of the capital.
6. Select the astragal and drag it to the base of the capital until it snaps into place.
7. Hold down the shift key while using the arrow key to nudge the astragal into position.



8. Render with “Open GL” to see the volume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Taper Face
Twist
3D Locus
3D Polygon
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Sphere
Hemisphere
Cone
Fillet Edge
Chamfer Edge
Shell Solid
Extract
Project
Analysis
No Selection
Resources
No Active Symbol