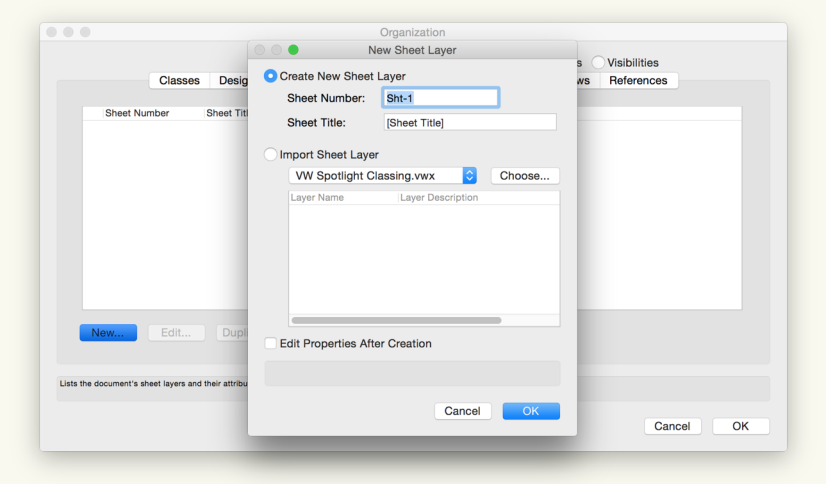
BIM – ARCHITECTUAL
PLAN VIEWPORTS

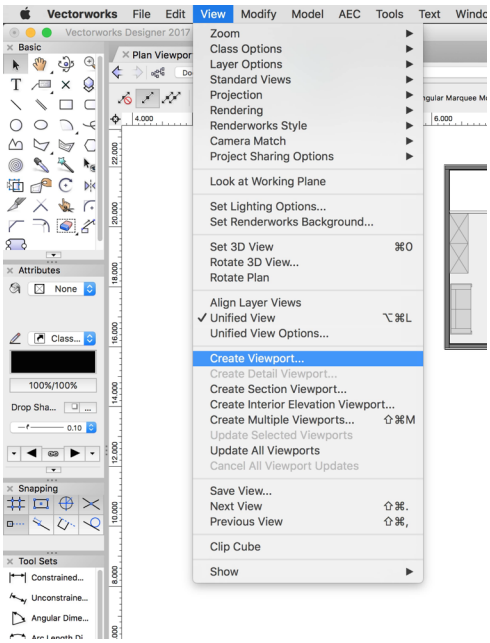
INTRODUCTION

There are many uses for viewports in Vectorworks software. Viewports can display an entire drawing, as well as cropped views of a drawing. These views can have separate layer and class visibility settings in addition to individual projection, render, and orientation settings. These viewports can then be annotated with details, notes, and dimensions. If the drawing changes, you can easily update the viewports to reflect the changes.

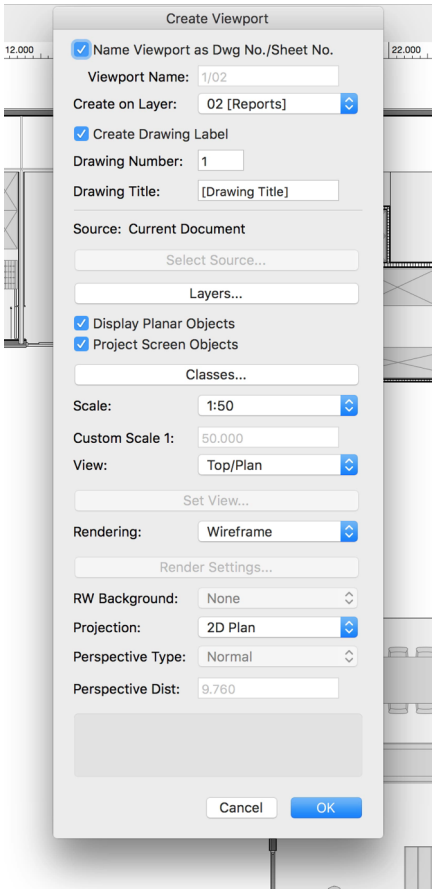
There are several different types of viewports. In this section, we are going to focus on sheet layer viewports: specifically, a sheet layer viewport of a plan view. Sheet layer viewports are created on special layers called sheet layers. Sheet layers retain their own print settings, including print area, resolution, and printer setup parameters.



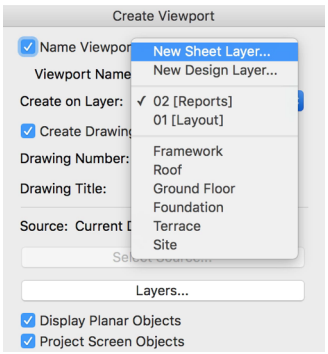
To create a sheet layer viewport, we must start on a design layer. The viewport simply displays a snapshot of objects on our design layers. When creating a sheet layer viewport, you will normally start by adjusting layer and class visibilities so that only what you would like to see in the viewport is visible. Then, go to the View menu and choose Create Viewport.



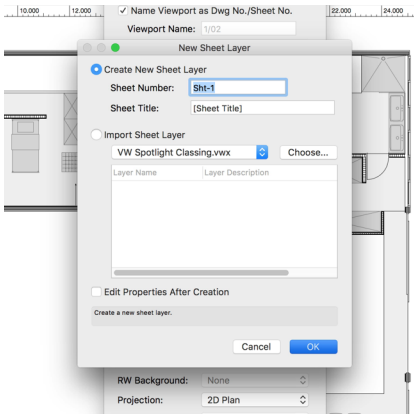
The Create Viewport dialog will appear. Here we can edit several options for this viewport. Most of these options will default to current settings from our file. The layer and class visibility settings, scale, view and so on, all will match the current settings in our file. All of these options can be edited after the creation of the viewport, as well.



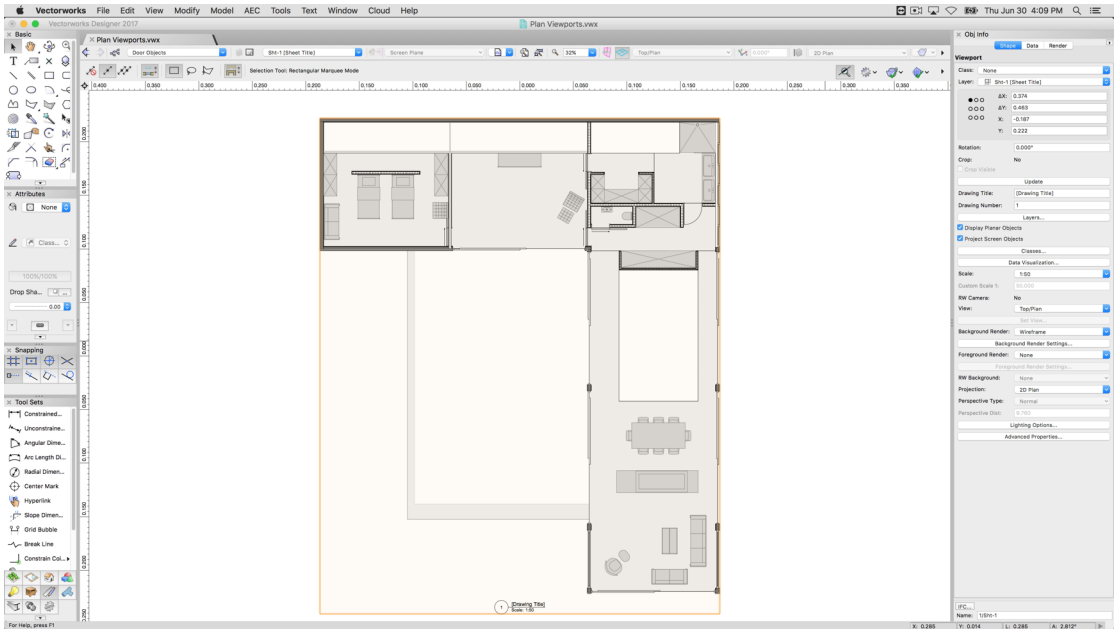
To create a sheet layer viewport, we simply need to choose an existing sheet layer or the New Sheet Layer option from the Create on Layer menu. In this case, we will choose to create a new sheet layer.



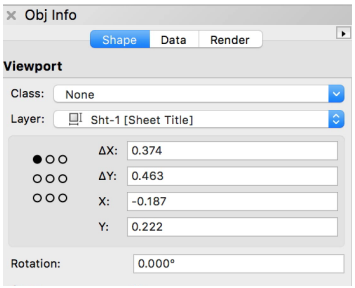
This will bring up the New Sheet Layer dialog. Here we can give the new sheet a number and a title, or if you have previously configured a sheet in another drawing, you can use the Import Sheet Layer option to import that sheet and its settings. For this example, we will accept the defaults and click OK.



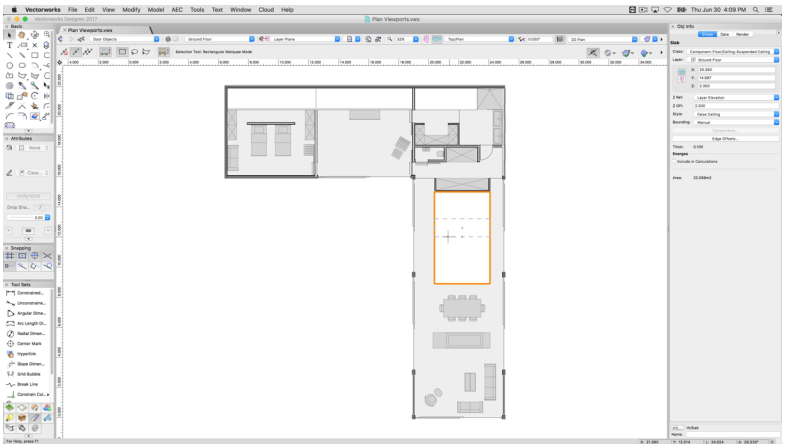
Now, that we have created a new sheet layer for our viewport, we just need to click OK to create the viewport.

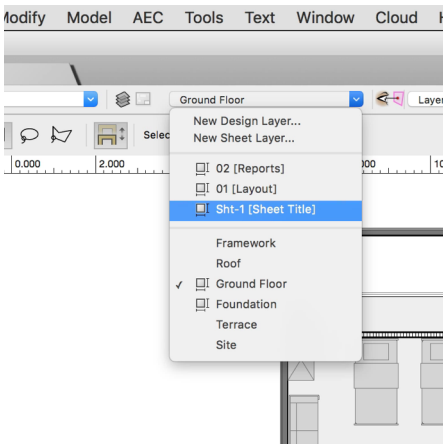


Here we have the viewport object. This may look similar to the objects on the design layer, but if we try to select an individual object, you will see that everything highlights. As you can see in the Object Info palette, we have a single viewport selected.



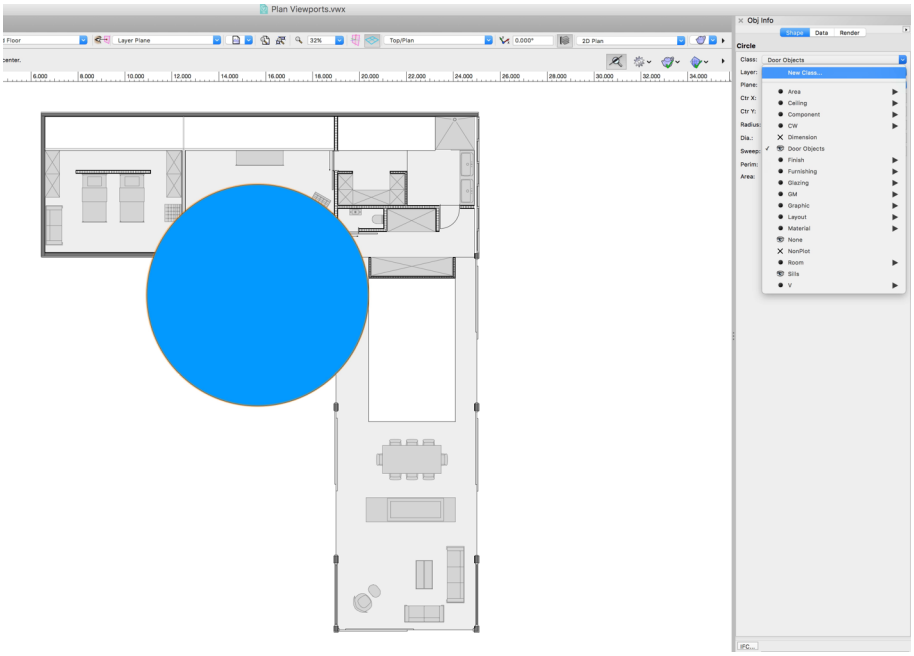
If we navigate back to a design layer, you will see the objects are still there and can be selected and edited individually. Using the Layer menu in the View bar, we can navigate back to the sheet layer.



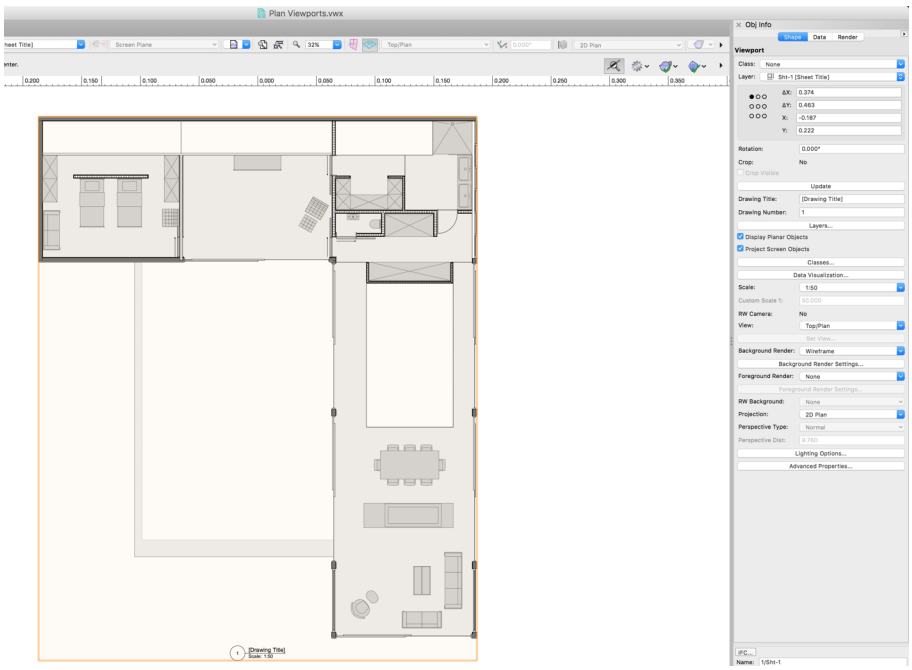


One of the main functions of viewports is the ability to display different layer and visibility settings. Changing the layer and class visibilities of the overall file will not affect the visibilities of viewports. Also, new layers or classes will not appear in existing viewports unless you choose to show them.

For example, let us navigate back to a design layer and place a new object in a new class. We place a large and very obvious blue circle in the center of the plan. Then, we move this blue circle into a new class.

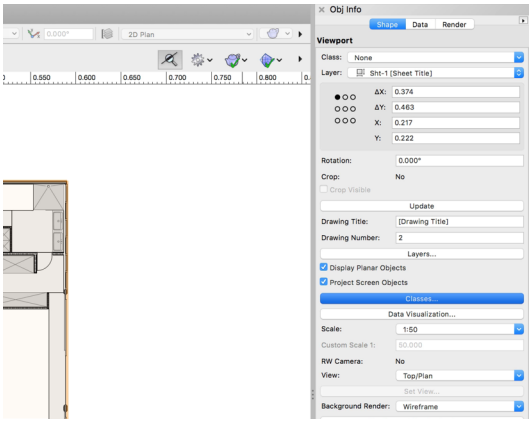


Now, if we navigate back to the sheet layer, we can see the blue circle is not visible.

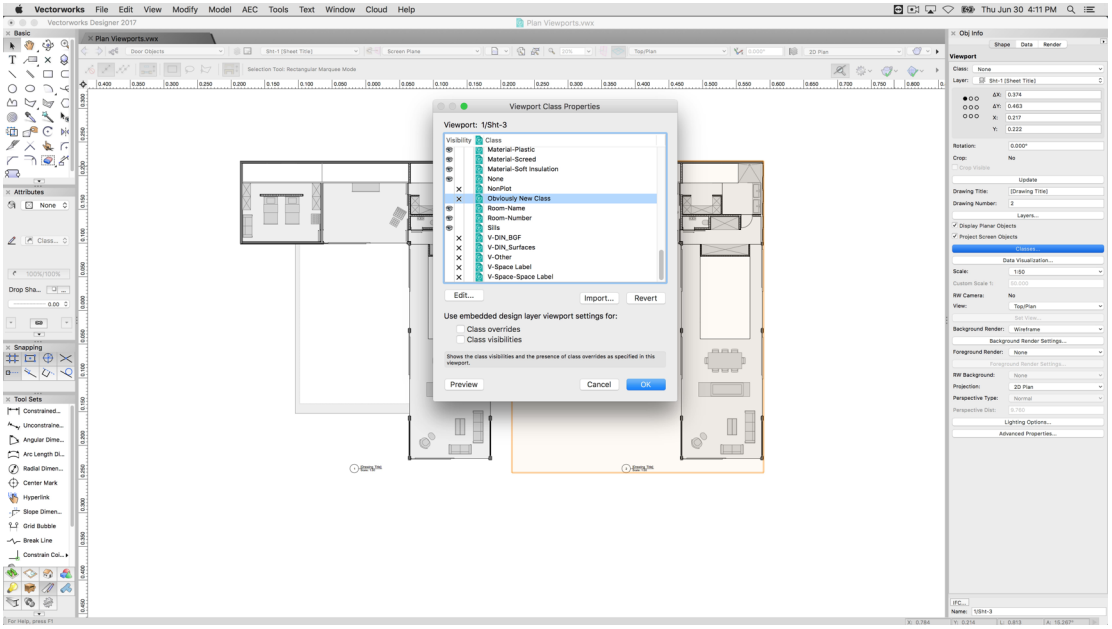


This is because the new class we created for this circle is not currently visible in the viewport. What if we wanted to see the new class and object within that class in the viewport? We will need to edit the class visibilities of a viewport. First, let us make a copy of this viewport, so we can clearly see the change.

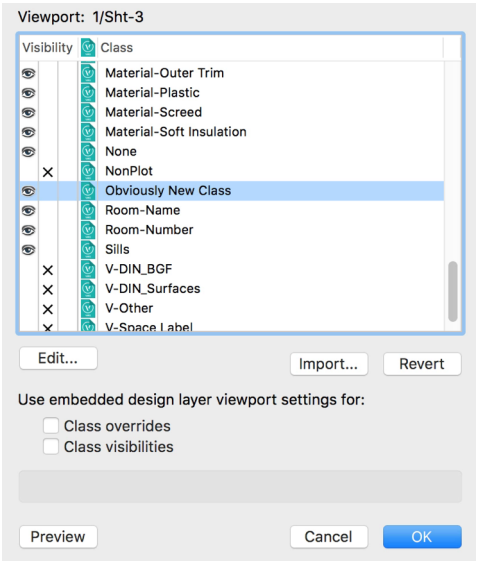
Now, we have two identical viewports. To edit the class visibilities of one of the viewports, we will not go to the Organization dialog or Navigation palette. Instead, with one of the viewports selected, click on the Classes button in the Object Info palette.

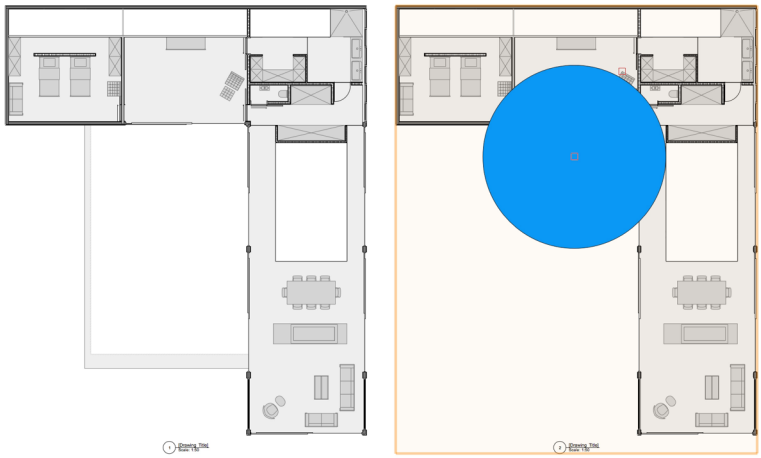


This will open the Viewport Class Properties dialog. Here you can adjust the visibility settings of the classes for just the selected viewport.

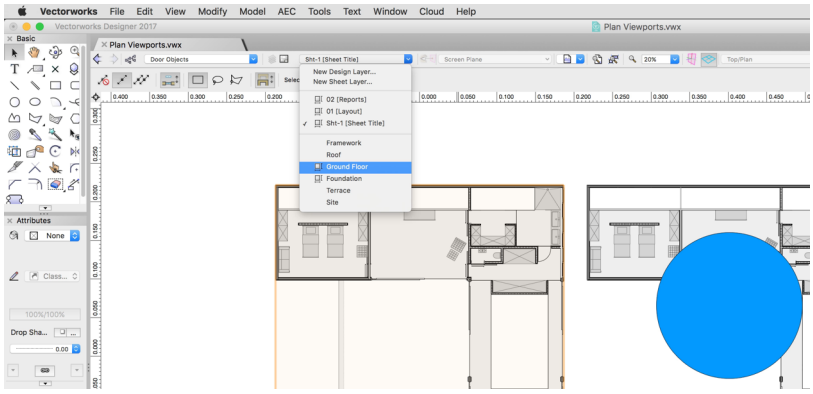


Here we can see the new class we created for the circle. If we set this class to visible and then click OK, we can see it now shows in this viewport. However, the original viewport still does not show the circle. This is because we only edited the class visibility of the other viewport.

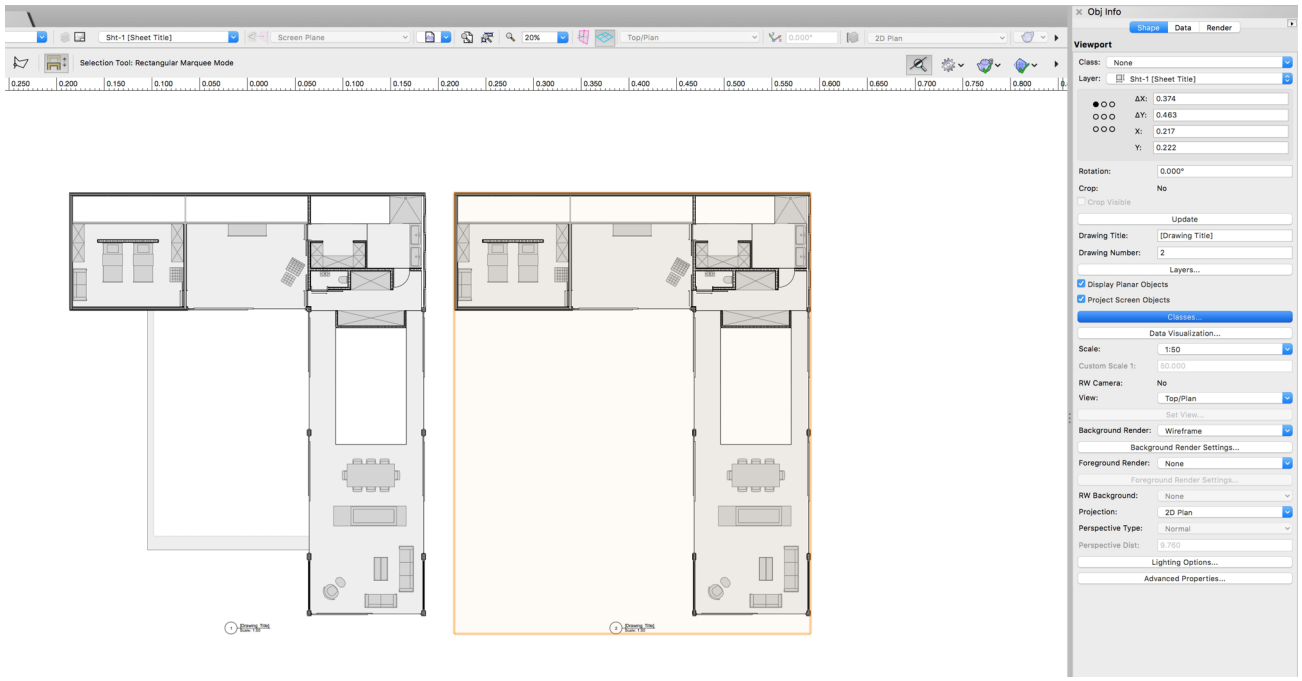




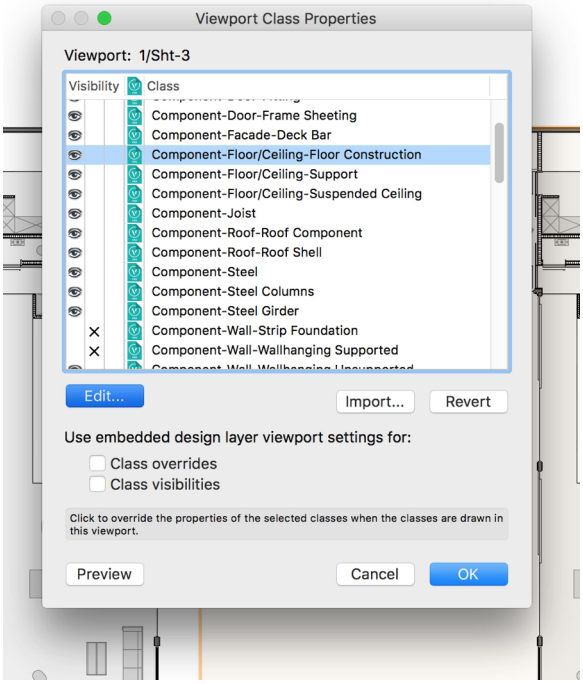
Changes to objects on the design layer that are visible in viewports will affect those viewports. For instance, if we navigate back to a design layer and delete the circle, it will no longer appear in the viewport.



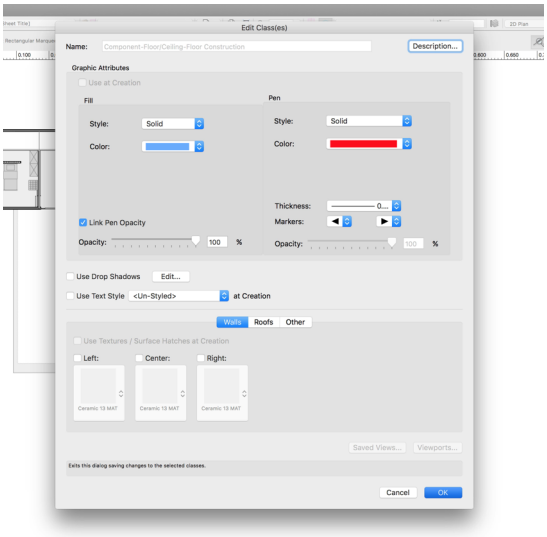
In addition to separate visibility settings, viewports can also have separate attributes settings for objects. This is handled by class overrides. For example, let us select one of these viewports and click on the Classes button in the Object Info palette.



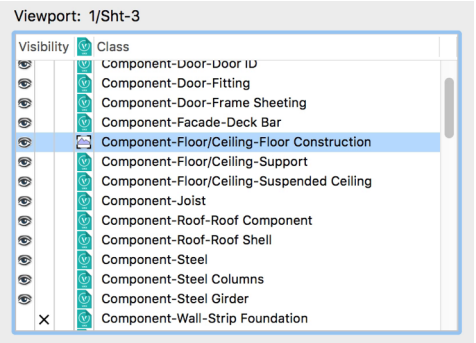
The Viewport Class Properties dialog will appear. When we select a class, in this case the Component-Floor/Ceiling-Floor Construction Class, and then click the Edit button, we can edit the attributes of this class.



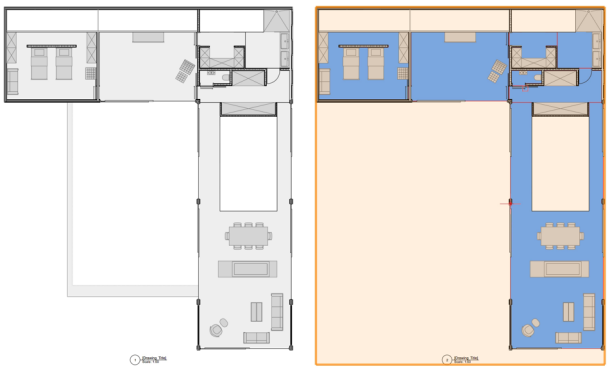
We can go ahead and give this class a blue fill color and a red pen color.



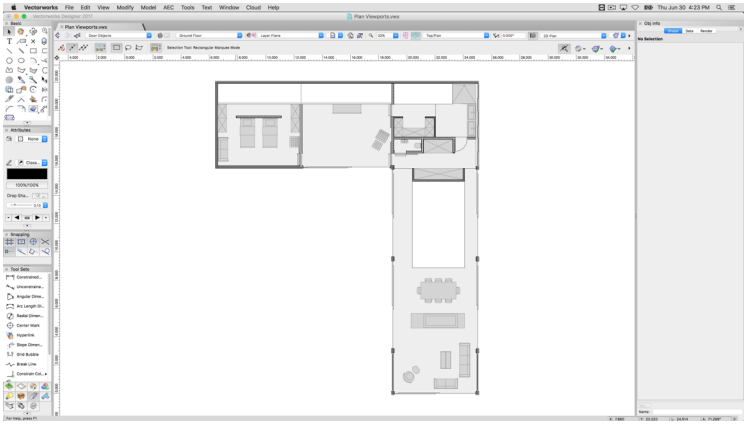
After clicking OK in the Edit Class dialog, the Viewport Class Properties dialog will reappear. If we look to the left of the class name we just edited, we'll see the icon has changed. This icon indicates the attributes of this class are being overridden in this viewport. The other classes have the standard document icon, indicating they are using the document's class attribute settings.



After clicking OK, we can see that the class's fill and pen overrides are applied to this viewport. All of the objects in the Component-Floor/Ceiling-Floor Construction Class are now using a blue fill and red pen color.

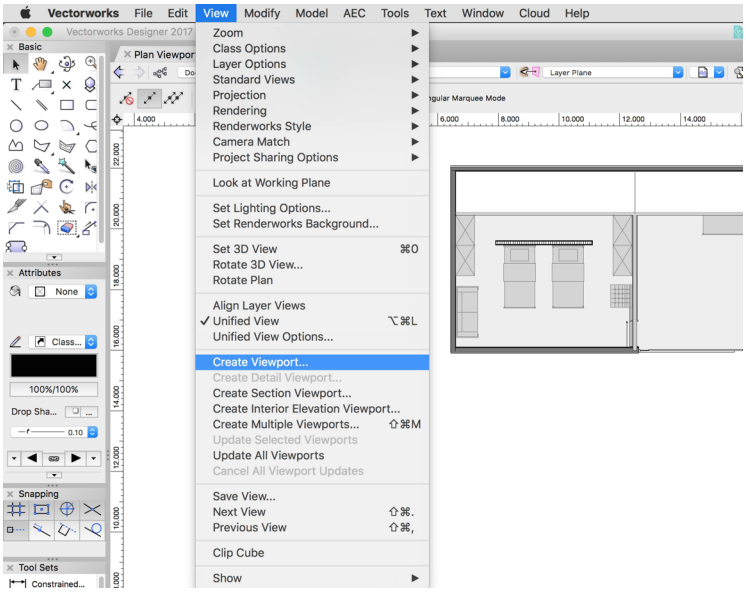


Only this viewport was changed. The original viewport still displays the original fill and pen colors. Also, if we navigate back to a design layer, we can see the actual objects are unchanged, as well.



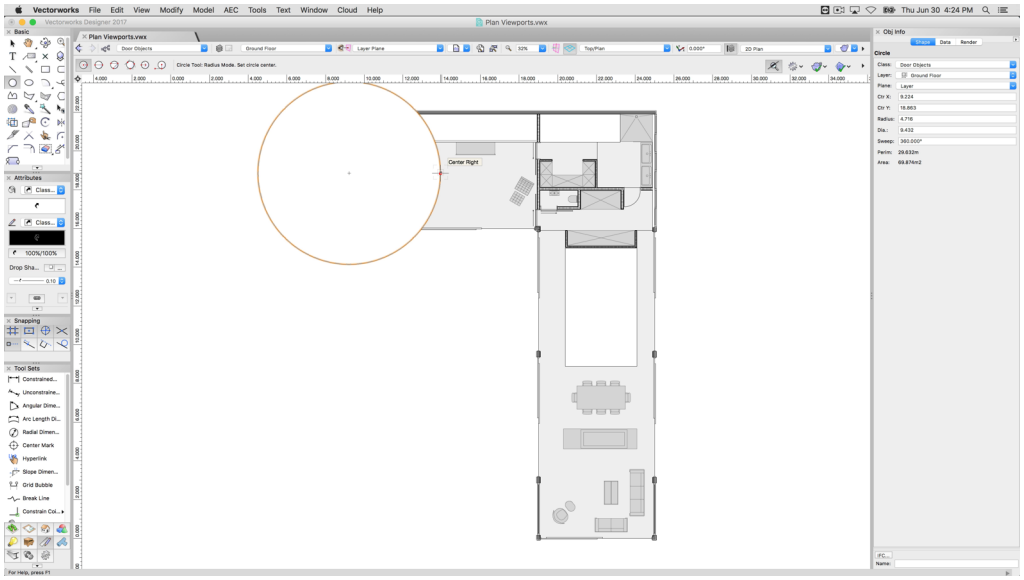
This capability allows you to draw one set of objects but display them in multiple ways without having to duplicate the objects over and over again.

Next, we will take a look at how to crop viewports. Earlier, when we created this viewport while on a design layer, we just went to View > Create Viewport.

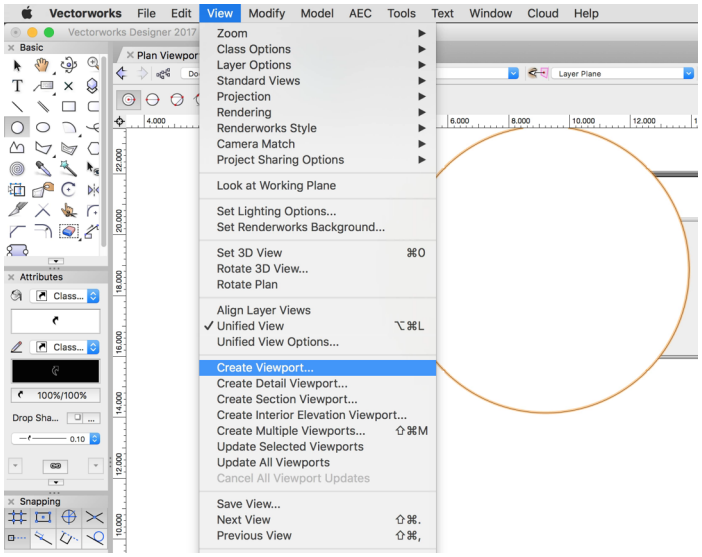


This creates a viewport of everything that is currently visible. However, what if we only wanted a portion of the visible objects? For this, we will need to crop the viewport. This can be done, either during the initial creation of the viewport or after it is created.

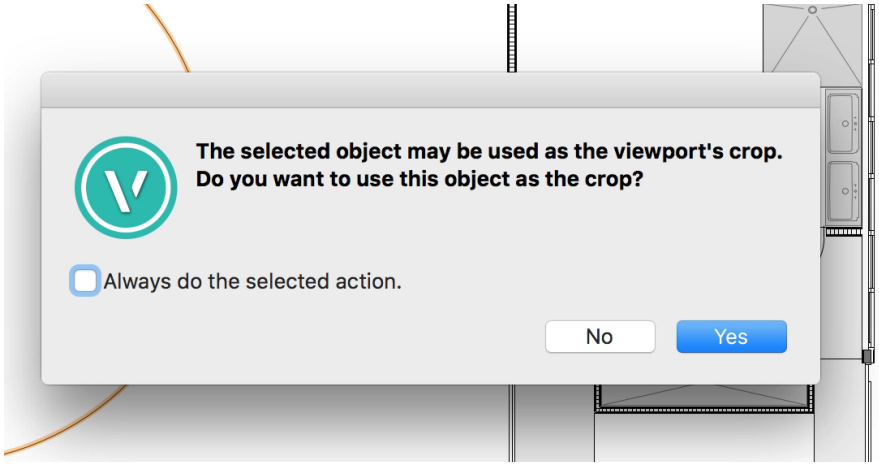
To create a cropped viewport during creation, we first need to draw the crop. Typically, this will be a rectangle, but can be any closed 2D shape. For instance, we can create a circular crop by using the Circle tool from the Basic palette.



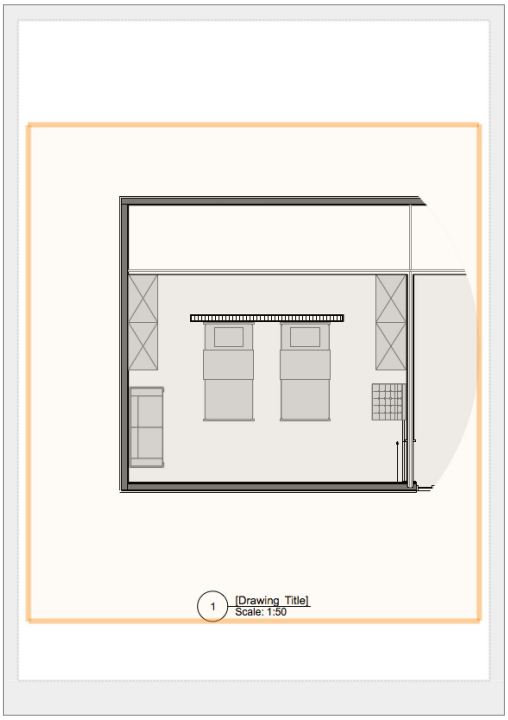
Now, let us draw a circle object overtop of the upper left portion of this plan. With the circle selected, now go to the View menu and choose Create Viewport.



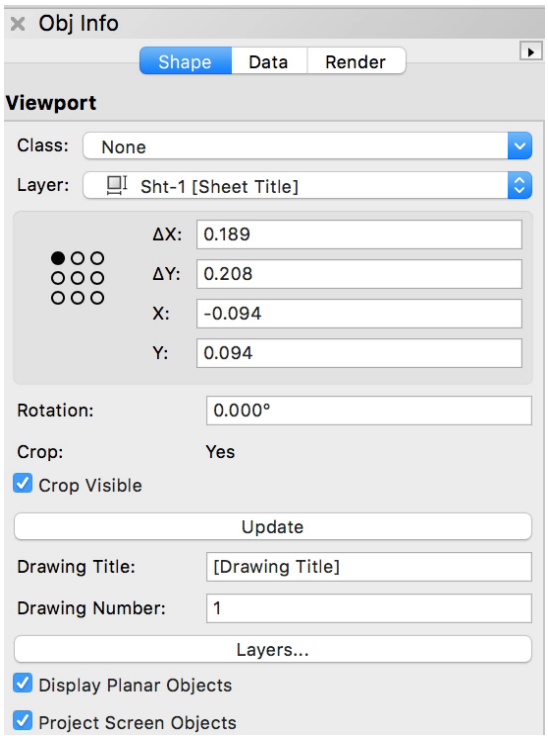
A prompt will appear, asking if you would like to use the selected object as the viewport's crop. If we click Yes, the resulting viewport will use the circle for its crop.

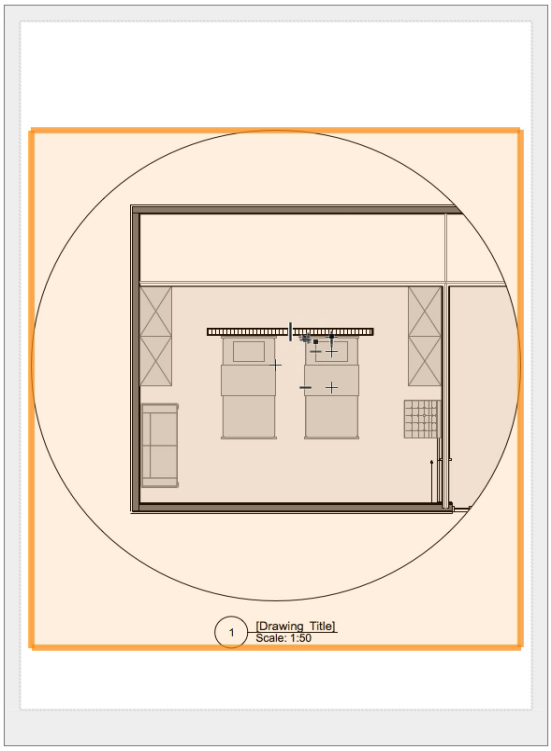


In the Create Viewport dialog, we will choose to create this new cropped viewport on the same sheet layer we created earlier and click OK. As you can see, this new viewport does not show the entire plan, only the portion of the plan that was within the circle object we drew on the design layer.

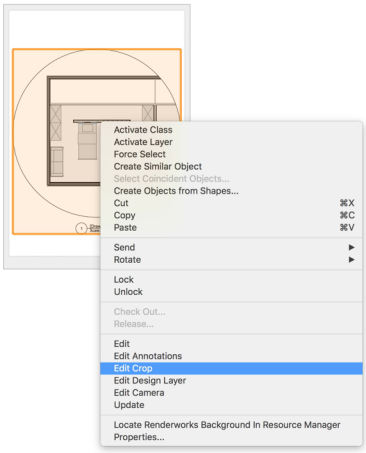


By default, if the crop is not visible, but you would still like to see the crop around the edges of the viewport, it can be enabled in the Object Info palette.

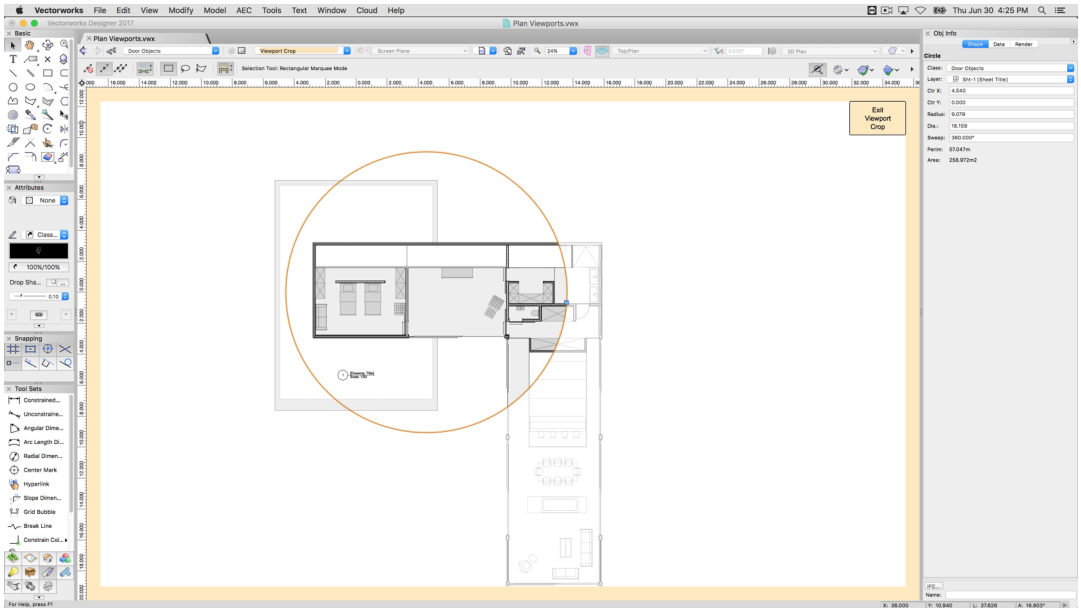




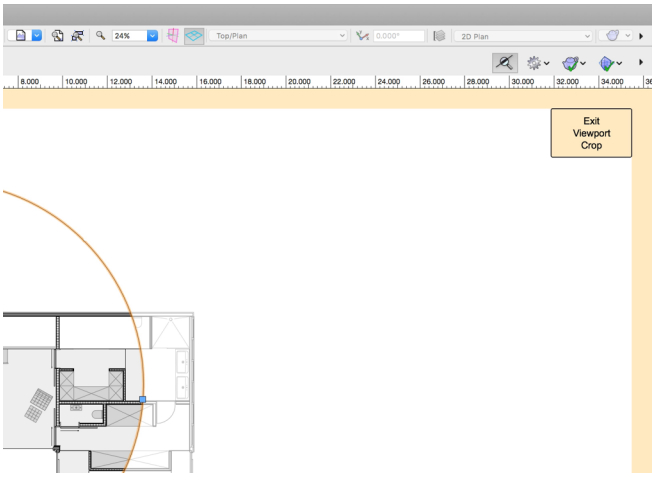
This crop can be edited if needed. Just right-click on the viewport and choose Edit Crop.

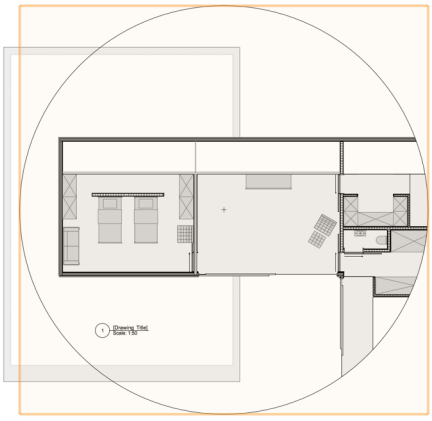


This will take you into Edit Viewport Crop mode. Here you can resize, move, or even delete the crop object.



After making a few changes, just click the Exit Viewport Crop button in the upper right corner of the drawing area.





As you can see, the viewport now shows with the updated crop. This is also how you would add a crop to an existing viewport. Just right-click on the viewport, choose Edit Crop, and draw a crop object.