SHORT SHARP TRAINING (monthly) issue 1005

Welcome to this issue of the VectorWorks Short Sharp Training (monthly). This manual is designed to work like a user group meeting. There is a main workshop topic, then extended movies showing tips or techniques and an area for beginners.

Workshop Topic
Stairs Made Simple

There are several ways to create stairs in Vectorworks. There a a few tools you can use, some for simple stairs and some for more complex stairs. Then, you can ignore all the tools and use other methods. If you want.

Extended Podcast 106 - Click here

Creating a concrete floor symbol to use with the framing member.

Extended Podcast 107 - Click here

Protrusion/Cutout tool can use used like sketchup.

Beginnercast020

Creating Associative Dimensions

Stair Tools in Vectorworks v12.5-2010

Vectorworks 2010 introduced a completely new stair tool because the previous stair tool had received so many complaints. The old stair tool is still available, but it has been renamed the Custom Stair. I Have heard some complaints about the new stair tool in Vectorworks 2010. I think a lot of these complaints arise because the tools are complex and need to be understood. That's what this manual is all about.

If you are using Vectorworks 12.5, 2008 or 2009, then look for the instructions on the Custom Stair, this is the stair tool you have. If you are using Vectorworks 2010, you can look at all the instructions. If you have Vectorworks Landmark, you do not have the Stair tool, but you do have the custom stair.

Stair Tool - Straight Stair

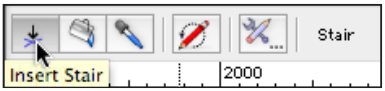
cadmovie460

This new stair tool has caused some feedback. The tool was introduced in Vectorworks 2010 after many users complained about the old Custom Stair. The new stair was originally made in Europe and was written in a completely different way to the old stair. This has caused some confusion as users try to re-use old methods on the new stair. Because of the new way of working, you have to apply new methods when using the new stair.

- Go to the **Building Shell** toolset.
- Choose the **Stair** tool.

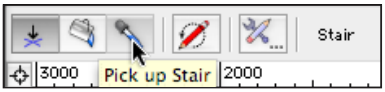
- Go to the **Tool** bar. This tool has several new icons.

- The first mode to is to insert a stair.



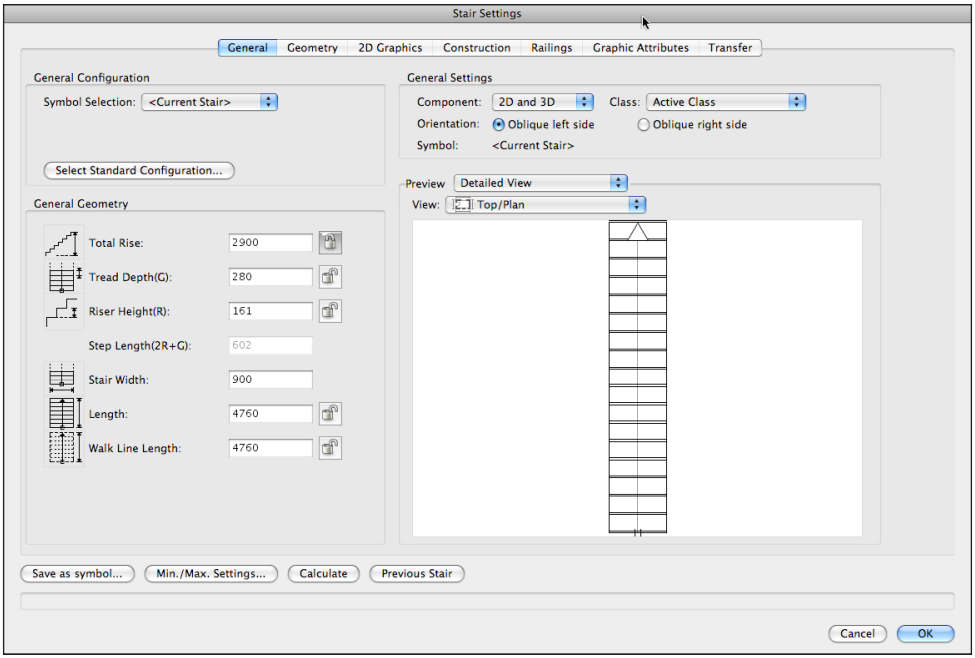
- The second mode apply the copied settings to a stair.

- The third mode is to copy settings from a stair, so you can use the second mode to apply them.

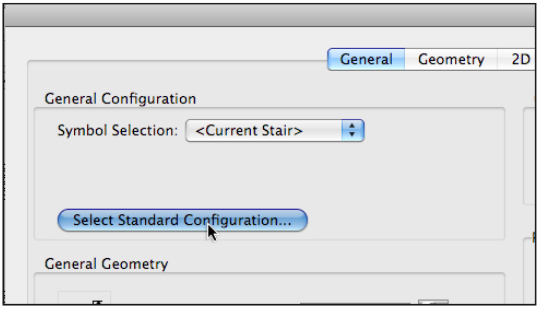


- The last mode is to set the preferences for the stair.
- Click on the **Preferences** button.

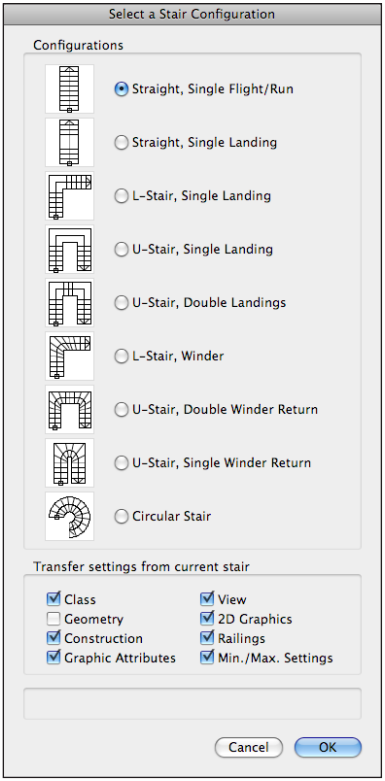
- This is the control centre for the stair. There are several things to look at here, but we will look at them one at a time.
- The General tab is the starting point. This is where you set up the stair configuration.



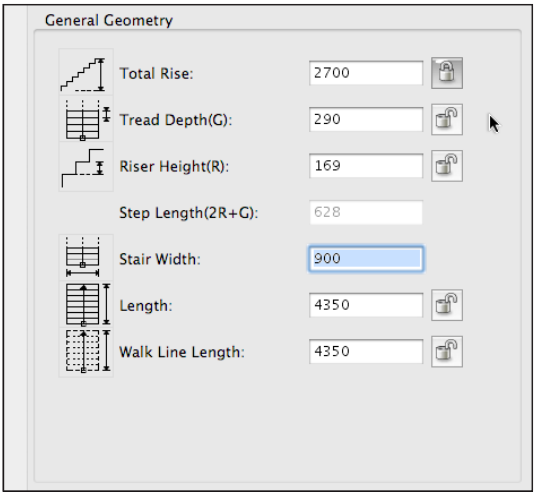
- Click on the **Select Standard configuration...** button.



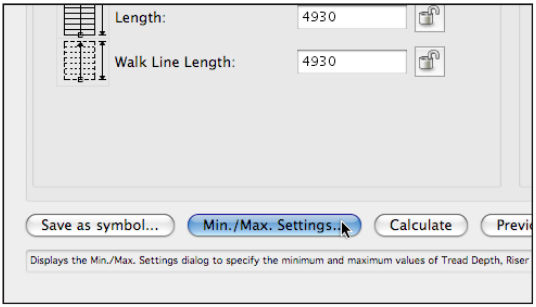
- Choose the stair configuration you want. In this case choose a straight stair.
- Click on the **OK** button.



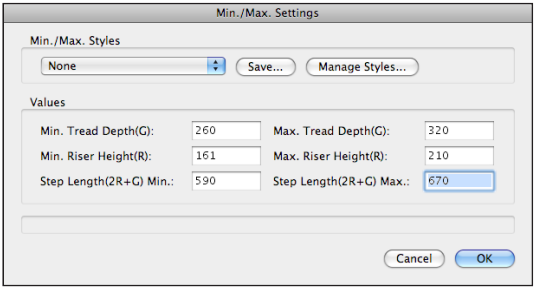
- Fill in the stair width, rise riser and so on.



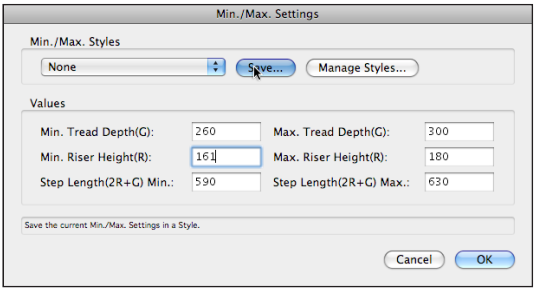
- There is an option for creating your own Min/Max. Settings, so you can set up options for residential and commercial stairs.
- Click on the **Min/Max. Settings..** button.



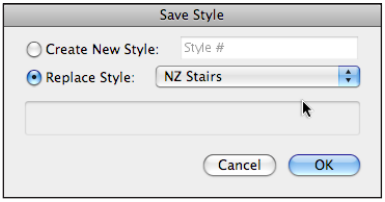
- This dialog box lets you set minimum and maximum settings for your stair. If you are working in a commercial building the maximum riser might be less than in a residential stair.



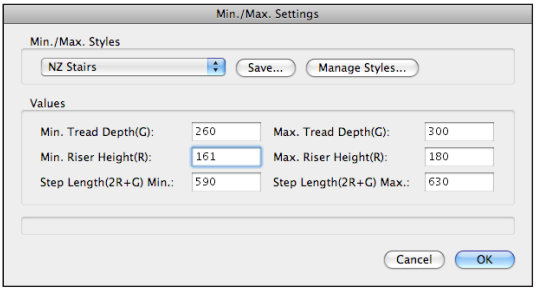
- Fill in the settings that you want.
- Click on the **Save...** button.



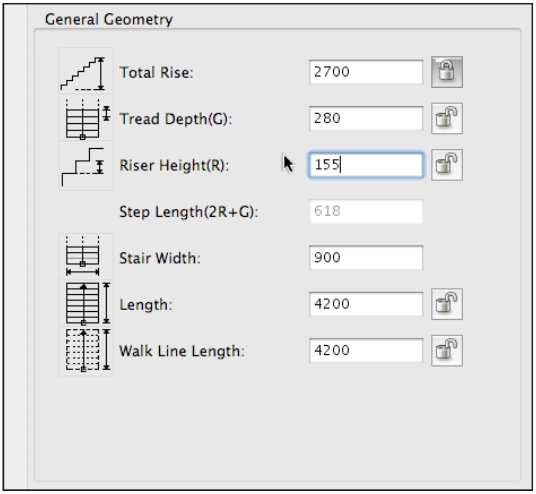
- You can create a new Style, or over -write an existing style.
- Click on the **OK** button.



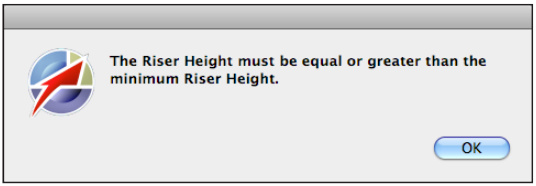
- Use this dialog box to recall settings you have saved to the type if stair you are making.
- Click on the **OK** button.



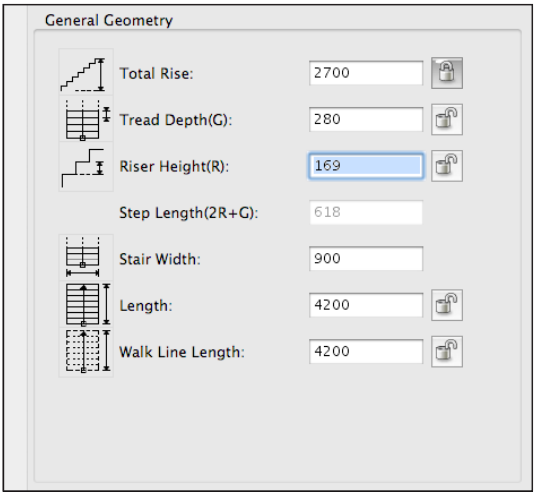
- Now, if you try to type in setting outside you the Min/ Max. settings, you will get an error message.



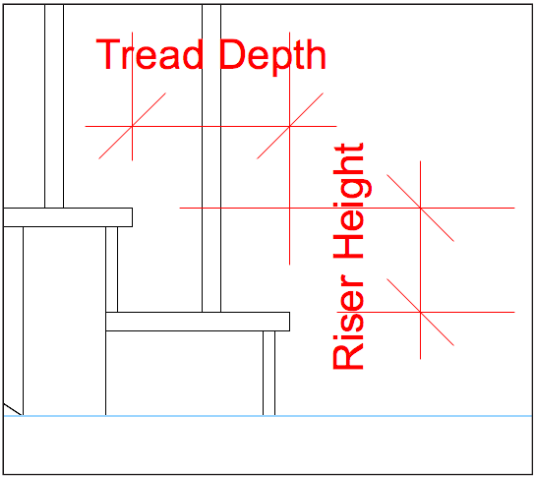
- This is the error message you get. It means that your settings are outside the limits of your Min/max...
- Click on the **OK** button.



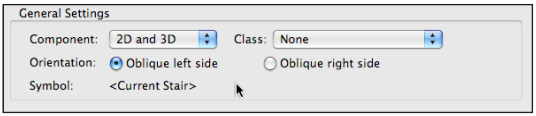
- Fix the problem setting, or the stair will fix it for you.



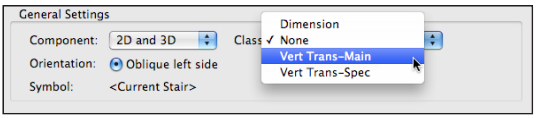
- This is what the tread depth and riser height relate to.



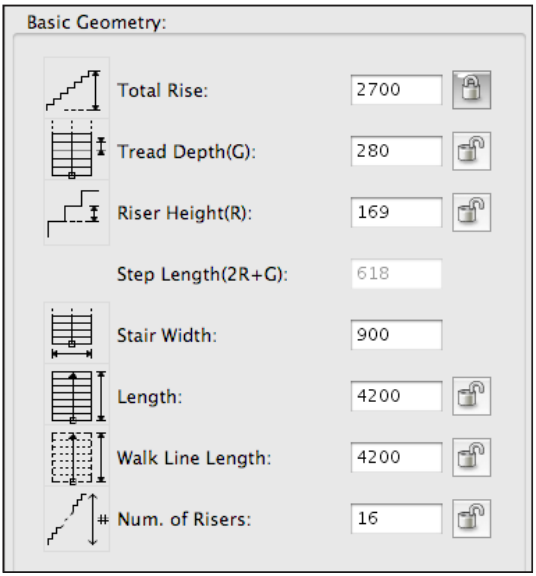
- Go to the General Settings. Choose the options you want.



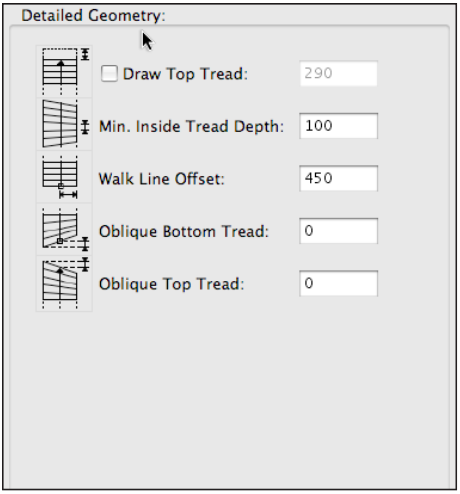
- You can choose a class for the stair. This is a class for the overall stair object.



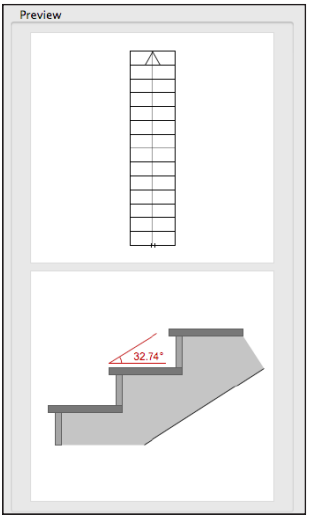
- Click on the **Geometry** tab. This is another one of those large dialog boxes. Let's look at the parts one at a time.
- Look at the **Basic Geometry**. You will notice a repeating of the basic geometry from the first part of the dialog box.



- Look at the **Detailed Geometry**. This allows you to set detailed changes to the stair.

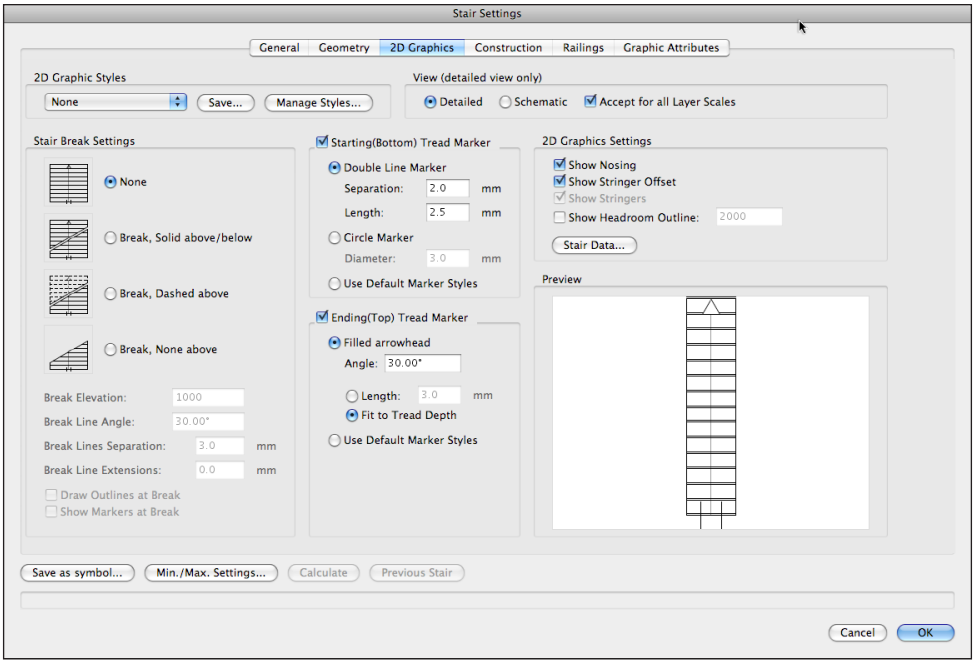


- Look at the **Preview**. This allows you to see what the stair would look like. With a simple stair like this, there isn't a lot to look at, or change.

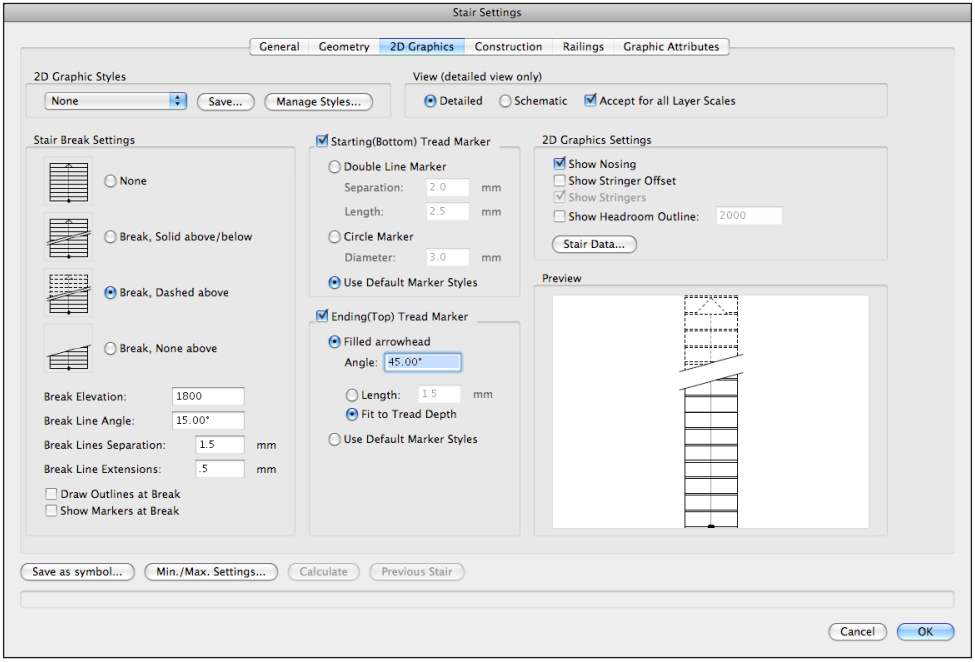


[cadmovie461]

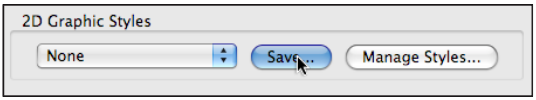
- Click on the 2D Graphics tab. This is where you control the look of the stair in 2D. You can set the break, the arrows on the stair, and so on.



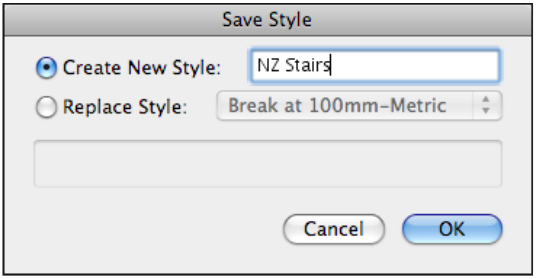
- Set the graphics to suit your way of drawing. When you make changes to the options, you can see the results in the preview window.



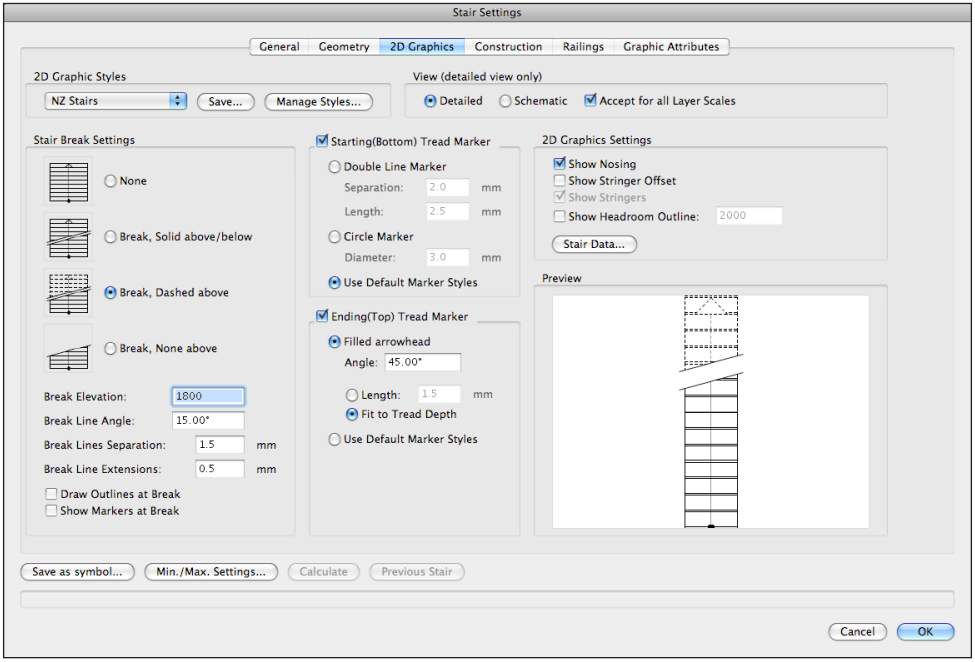
- When you are happy about your choices, click on the **Save...** button to save your style.



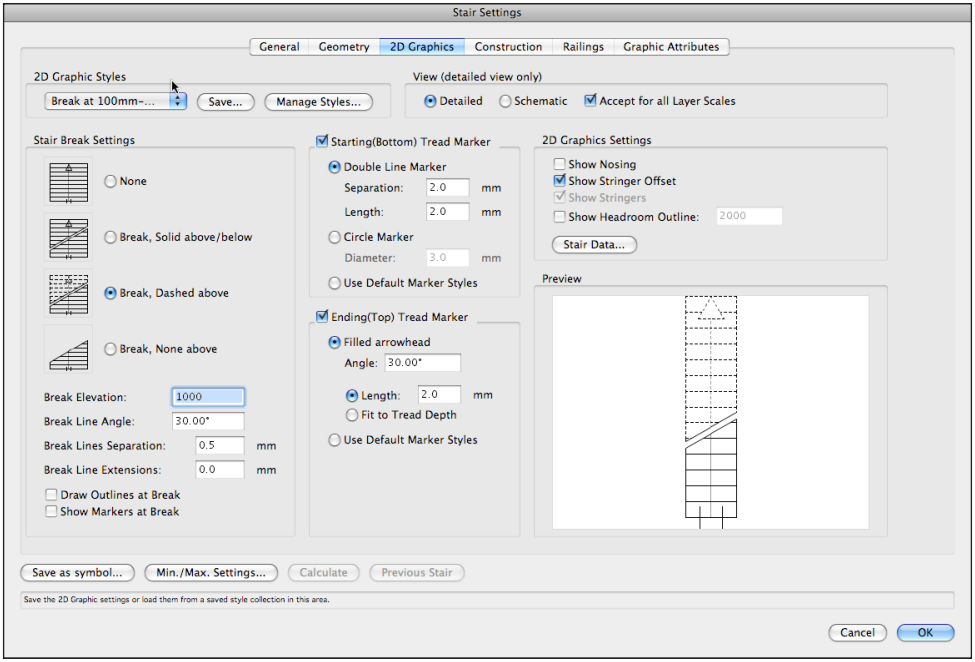
- Name the style to make it easy to find. This technique of saving styles, makes it easy to recall other styles.



- These styles are like favorites that you can recall when you want them.
- If you take some time to set them up, you will find this stair very quick and powerful.

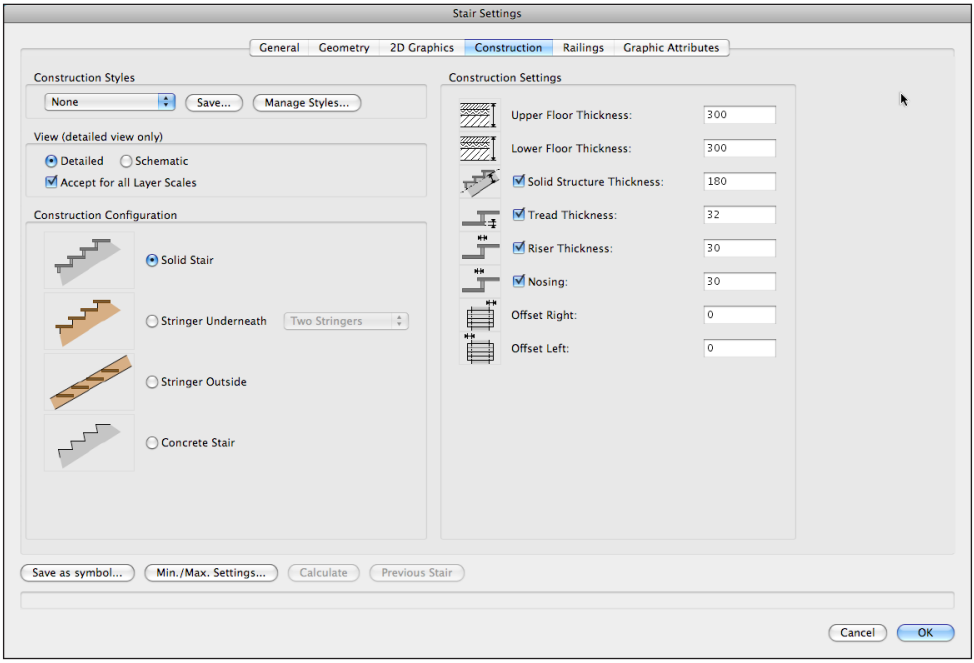


- Notice how quick it is to change the setting, when you choose a pre-made style.

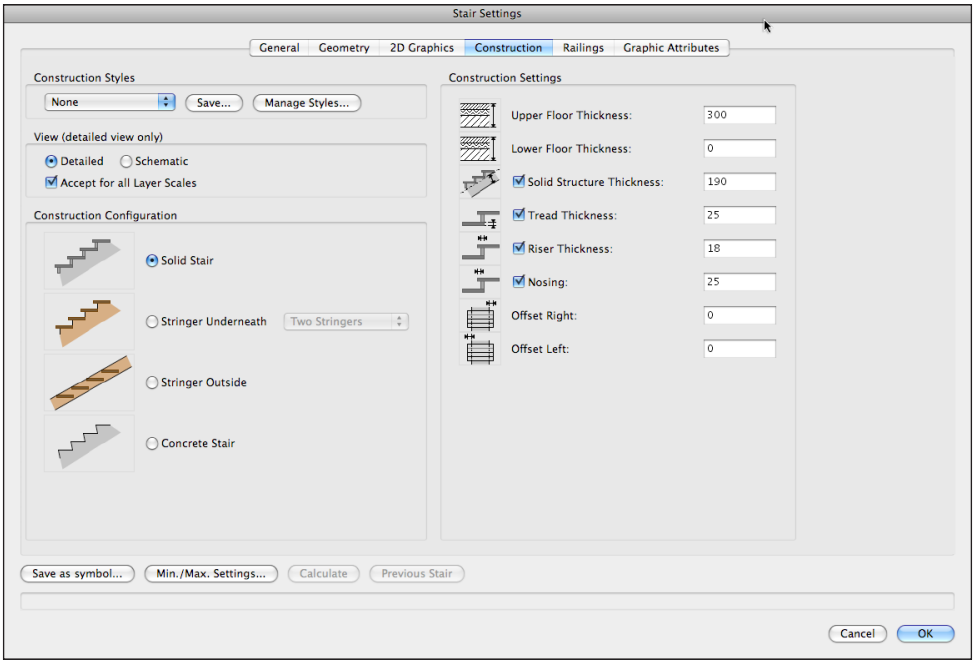


cadmovie462

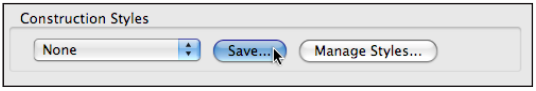
- Click on the **Construction** tab. This is where you choose the settings for the construction of the stair.



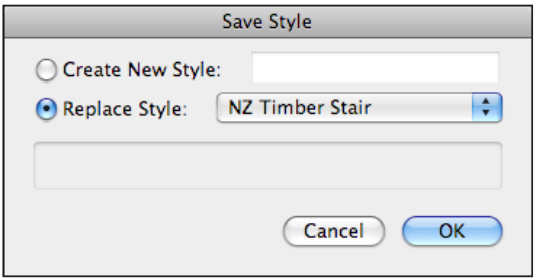
- Try out the settings on the stair until you get the stair setting that you want.



- Click on the **Save...** button to save the construction settings.

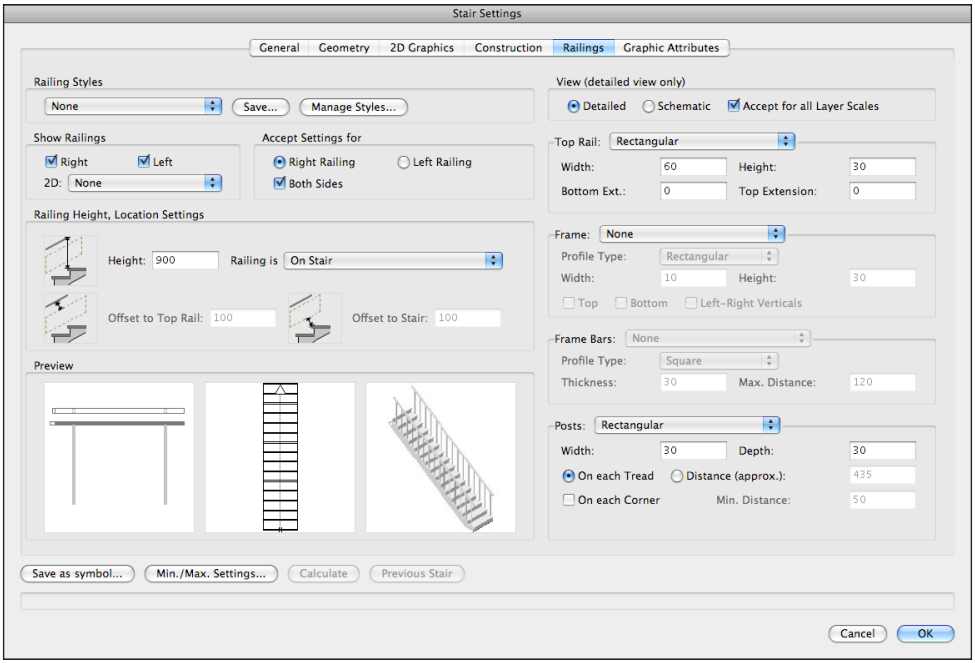


- Name the settings to make them easy to remember.
- Click on the **OK** button.

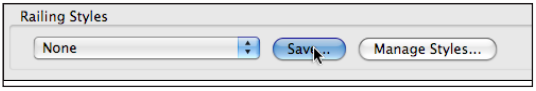


[cadmovie463]

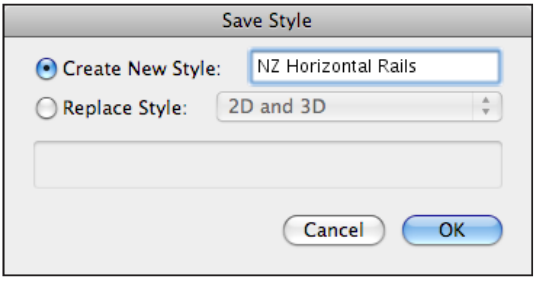
- Click on the **Railings** tab. This is where you choose the settings for the construction of the handrail and panels.
- Try out the settings on the stair until you get the handrail setting that you want.



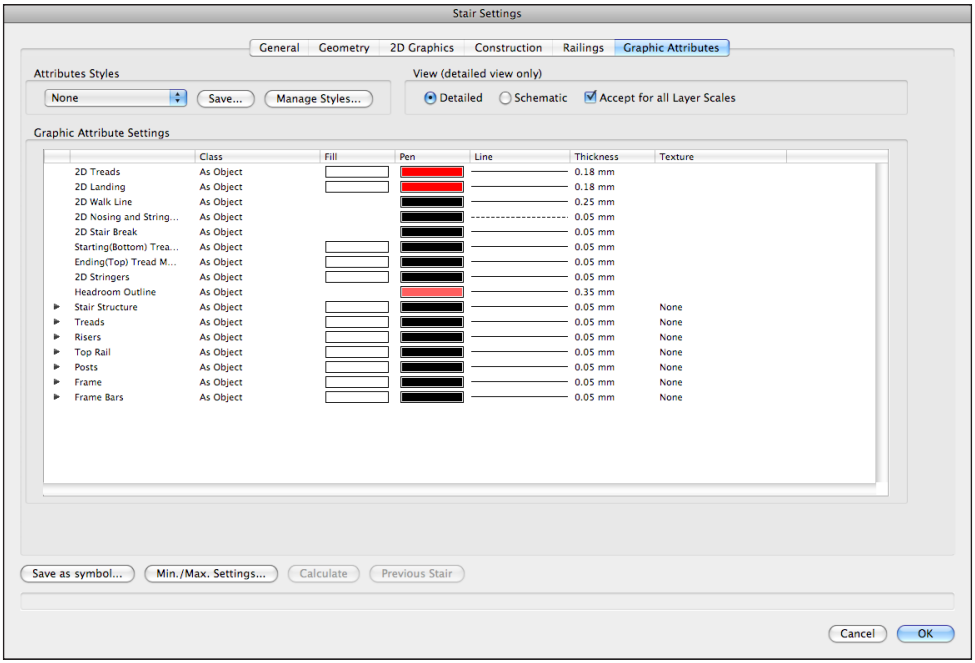
- Click on the **Save...** button to save the settings.



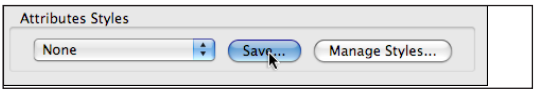
- Name the settings to make them easy to remember.
- Click on the **OK** button.



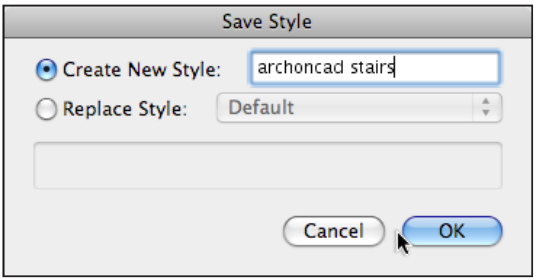
- Click on the **Graphic Attributes** tab. This is where you choose the graphic settings.
- Try out the settings until you get graphic style that you want. To edit a setting, double click on it.



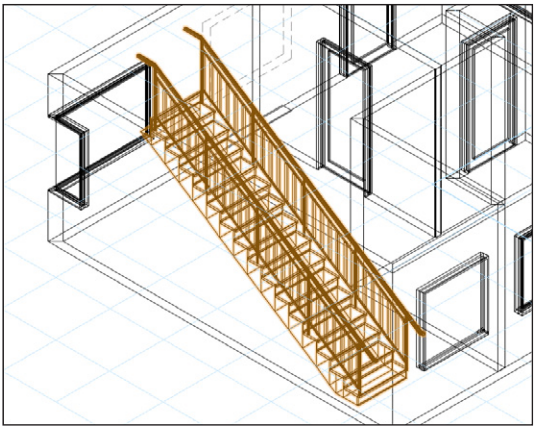
- Click on the **Save...** button to save the settings.



- Name the settings to make them easy to remember.
- Click on the **OK** button.

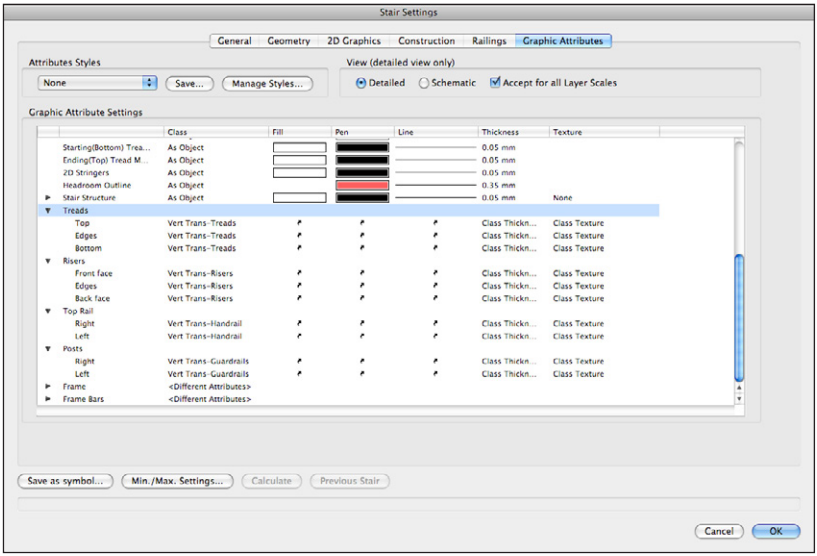


- Click on the **OK** button. The stair is created.

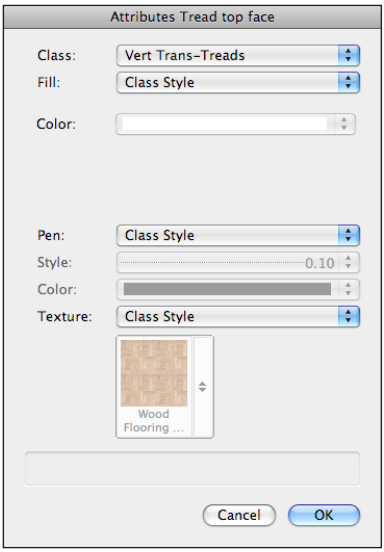


- You can set up a series of classes for the stair, and use these to control the textures on the stair parts.

- The Graphic Properties tab on the stair settings controls the textures.

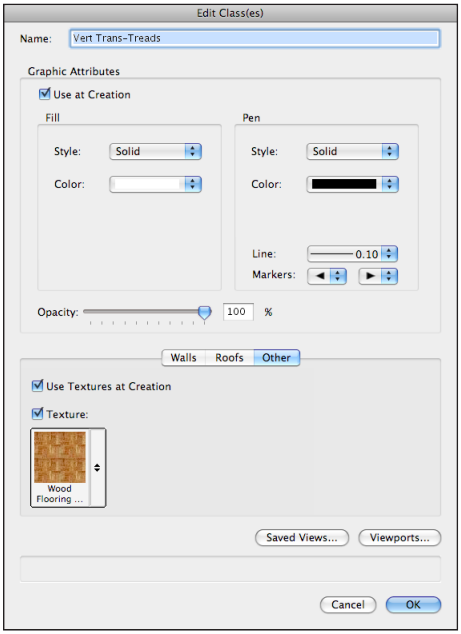


- When you edit the Attributes for a component, you can set the class of the component, and you can set the class style for the fill, line and texture.



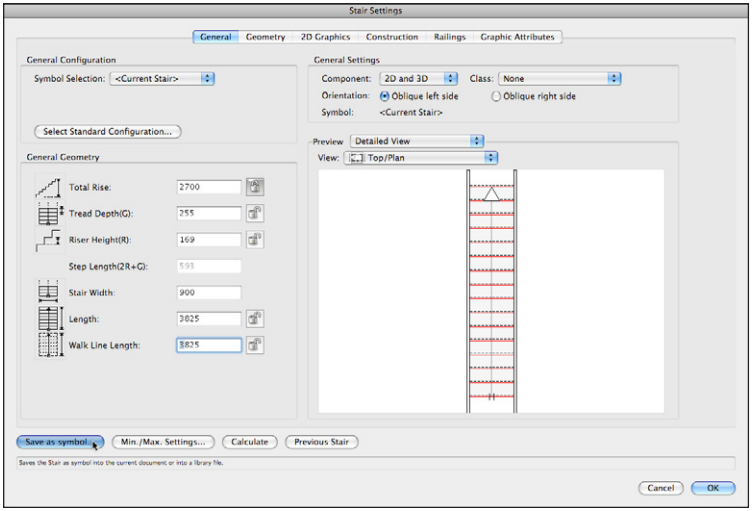
- This will allow you to use the classes to edit the textures and graphics on all the stairs, without going back into the stair settings.

If you have used the stair took in Vectorworks 2009 or earlier, this is different way of creating a stair. The saving of favorites may be strange, but when you understand it, this becomes very powerful.

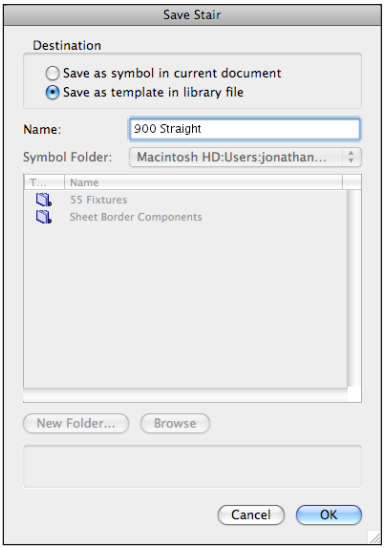


[cadmovie465](#)

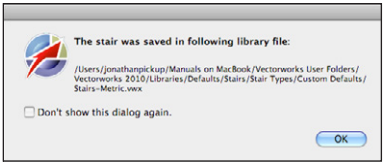
- Go to the Stair Settings...
- Click on the **Save As Symbol...** button.



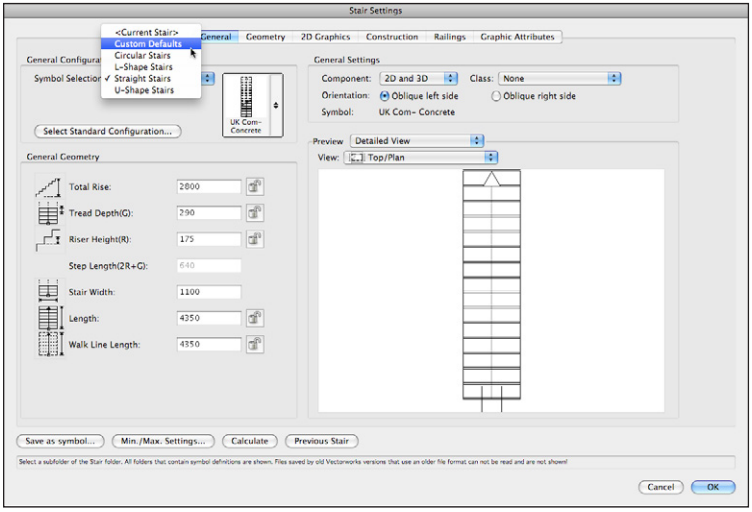
- Name the stair, and **Save as template in library** file.
- Click on the **OK** button.



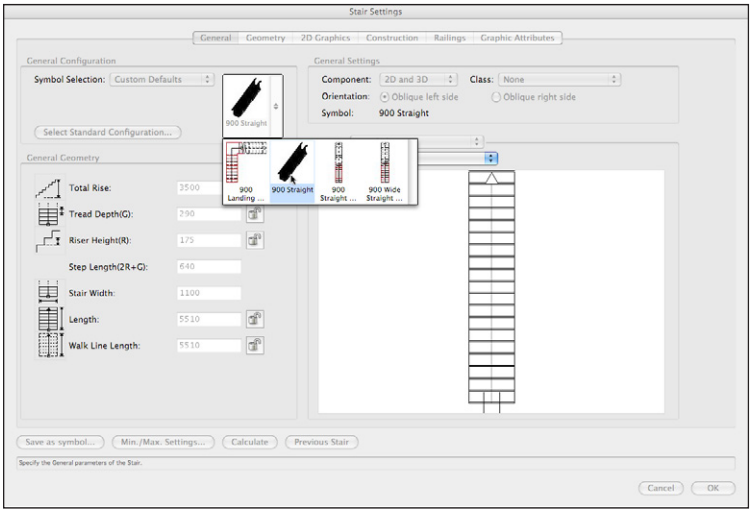
- If you get this dialog box, click on the **OK** button. This will save it the stair symbol to the library.



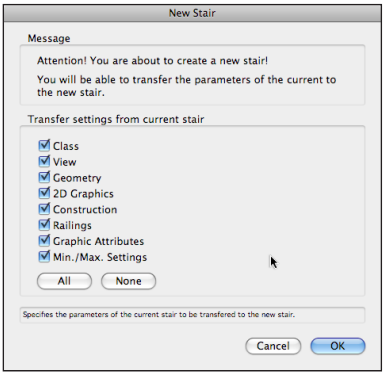
- When you are creating a stair, you can choose a stair symbol from the library.



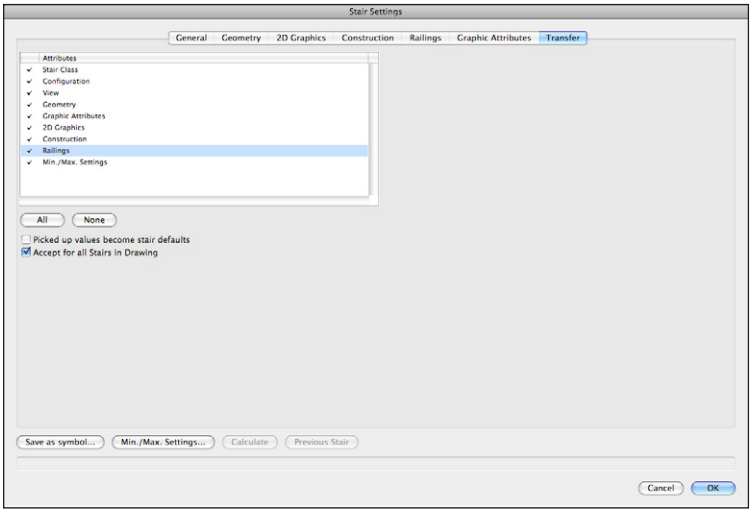
- Choose your own custom stair.



- The first time you use a library stair you get this dialog box, but you won't get it again, it will integrate into the main dialog box.
- The best way to use this would be to click on the **None** button. This will cause the imported stair to replace all the settings for the stair.



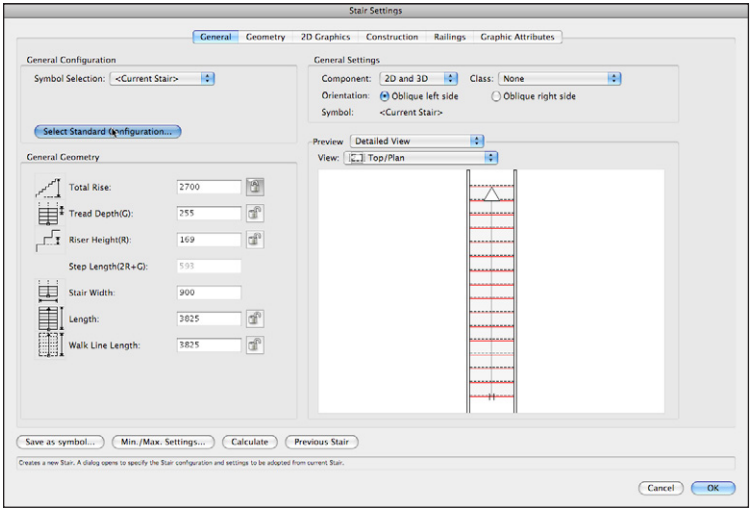
- If you make a mistake, click on the Transfer tab, and change the settings.
- Then import the stair from the library again.



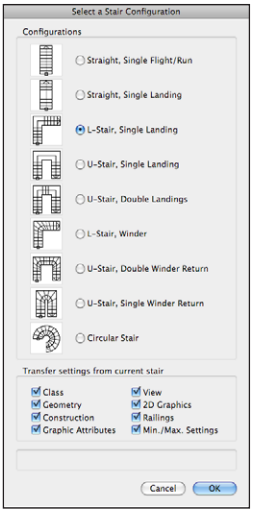
Stair Tool - Stair with Landing

cadmovie466

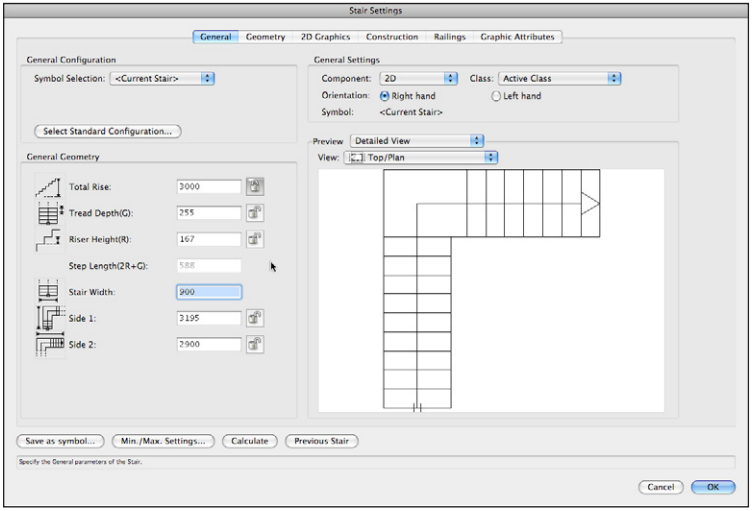
- Go to the **Tool** bar.
- Click on the **Preferences...** button.
- Click on the **Select Standard Configuration...** button



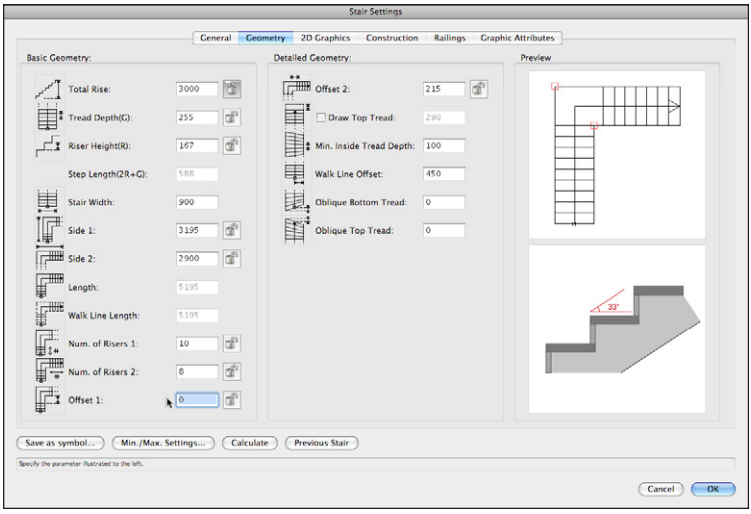
- Choose **L-Stair, Single Landing**.
- Click on the **OK** button.



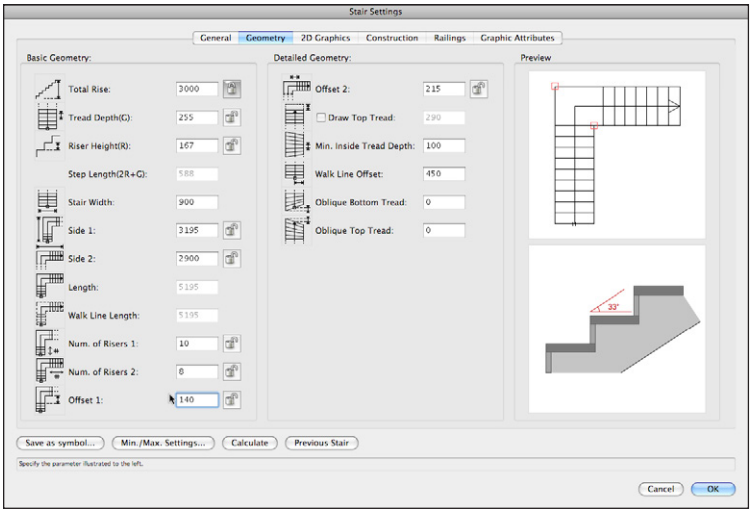
- You do not need to fill in the setting here, click on the **Geometry** tab.



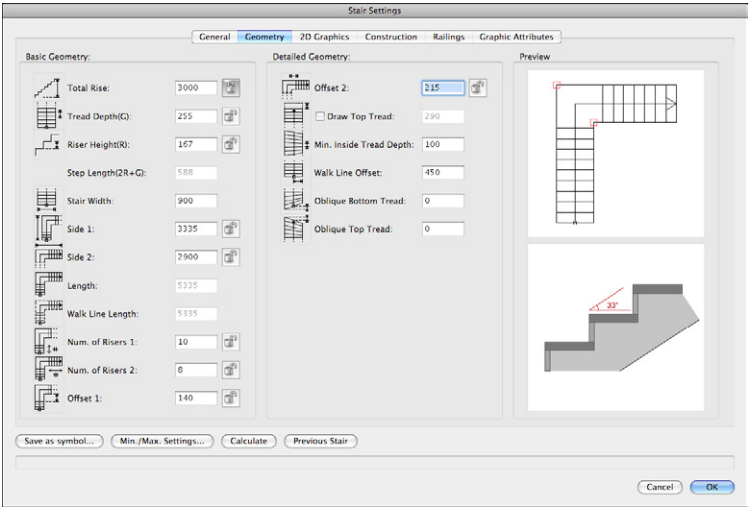
- Check the Total Rise, Tread Depth, and Riser Height.
- Click in the input field for Offset 1. I used to worry about the side 1 and side 2 lengths, but you do not need to worry about it.



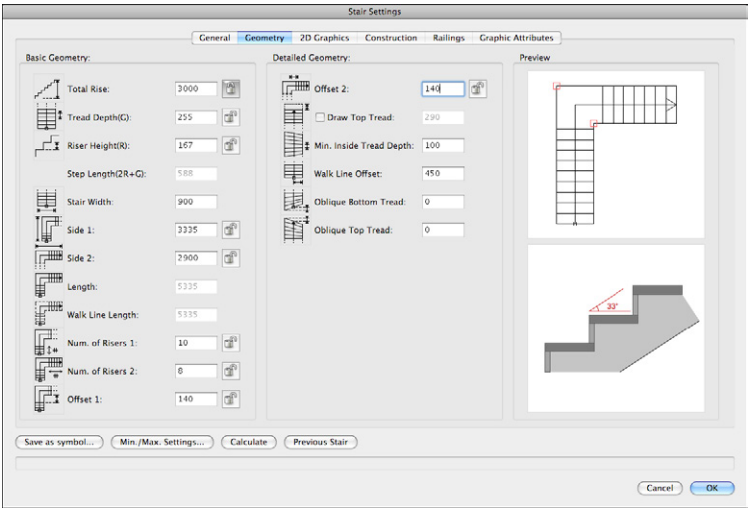
- **Offset 1** is the distance from the edge of the nosing to the change in direction. I usually use 1/2 of the tread. Type in your distance.



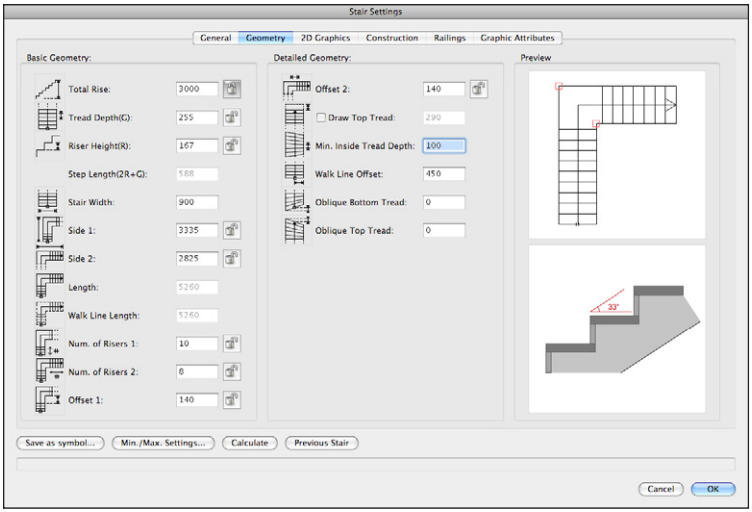
- Hit the Tab key once.



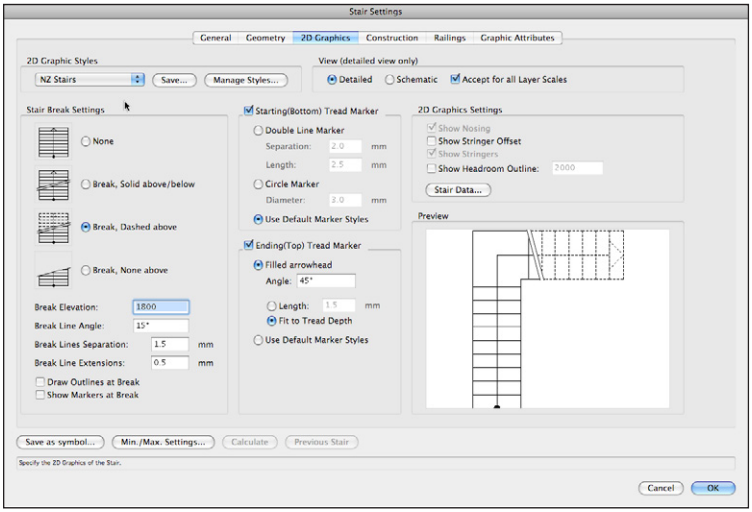
- **Offset 2** is the distance from the edge of the stair to the start of the nosing. I usually use 1/2 of the tread. Type in your distance.



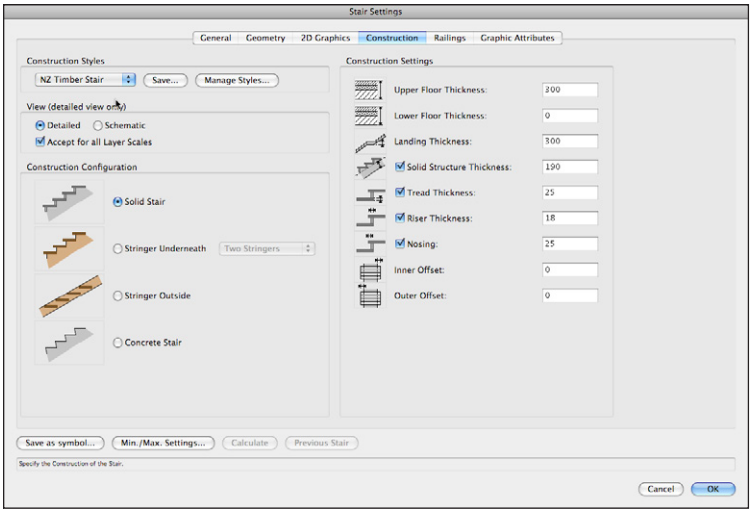
- Hit the **Tab** key once.



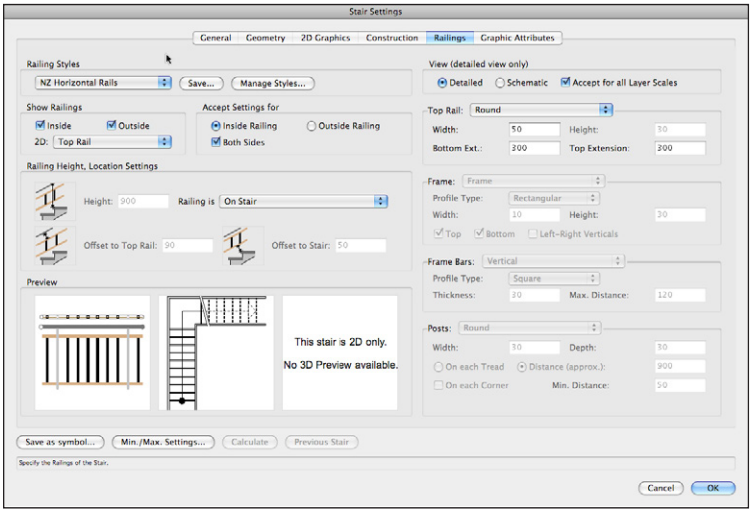
- Click on the **Geometry** tab. This is where the favorites become so useful.
- Click on the **2D Graphic Styles** pop-up menu to choose your saved style.



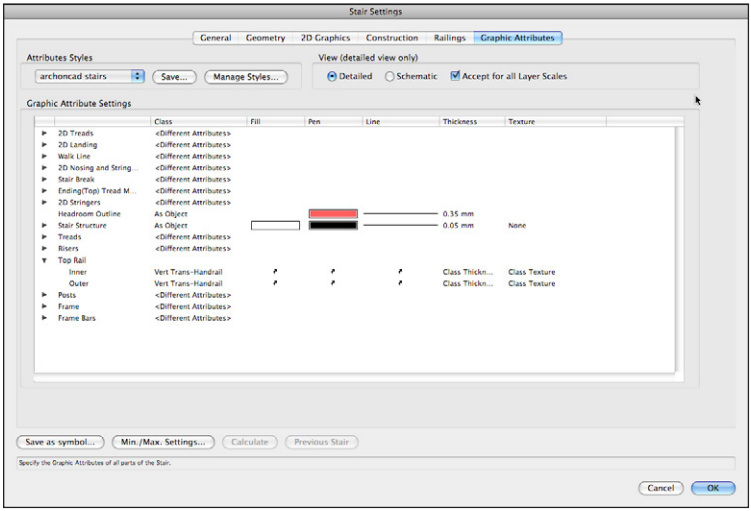
- Click on the **Construction** tab.
- Click on the **Construction Styles** pop-up menu to choose your saved style.



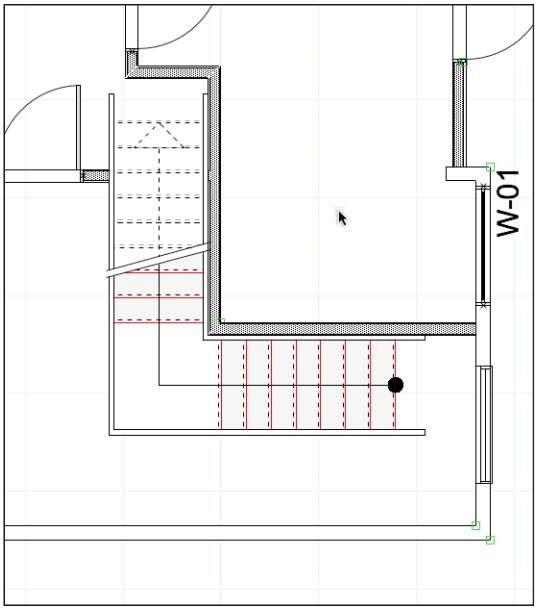
- Click on the **Railings** tab.
- Click on the **Railings Styles** pop-up menu to choose your saved style.



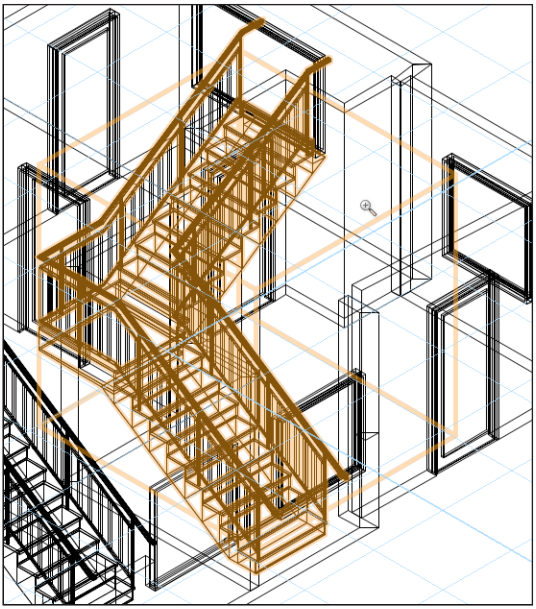
- Click on the **Graphic Attributes** tab.
- Click on the **Attributes Styles** pop-up menu to choose your saved style.



- If this was a typical stair, you should save it as a symbol to your library.
- Click on the **OK** button to finish the stair.
- In plan view the stair should have the settings you want.

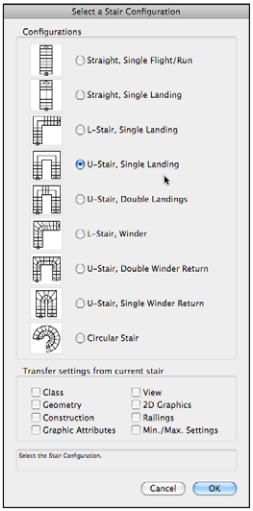


- In 3D the stair should have the setting you want.



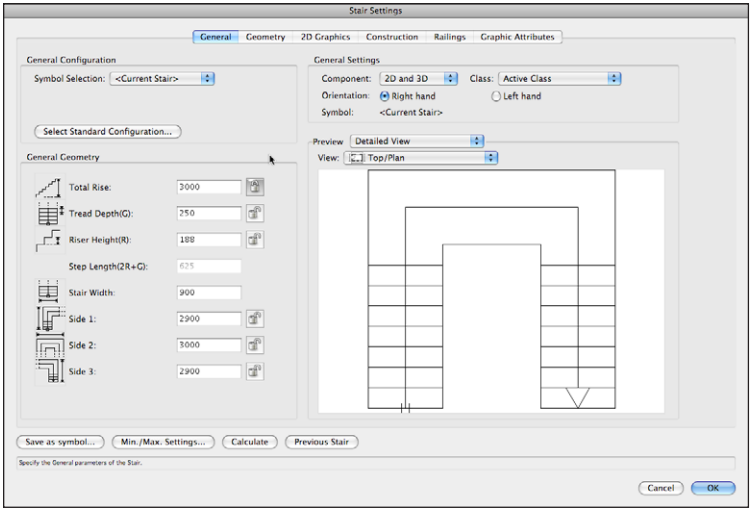
Stair Tool - U-Stair (Dog-leg Stair)

cadmovie467

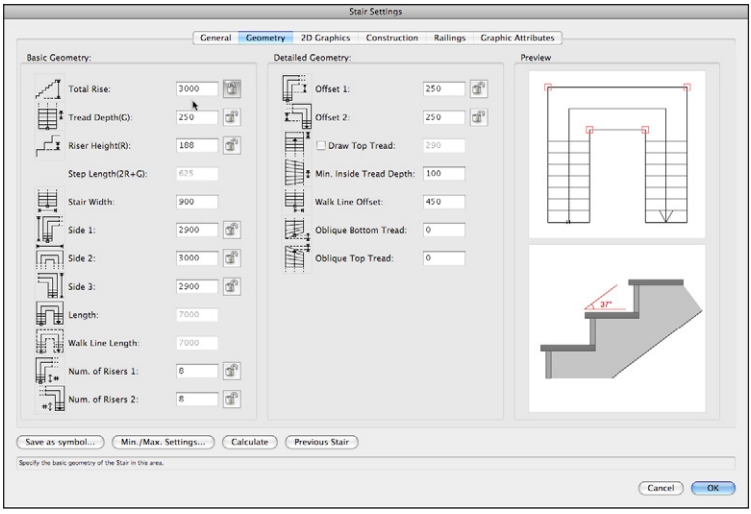


- Go to the Tool bar.
- Click on the Preferences... button.
- Click on the **Select Standard Configuration...** button
- Choose **U-Stair, Single Landing**.
- Click on the **OK** button.

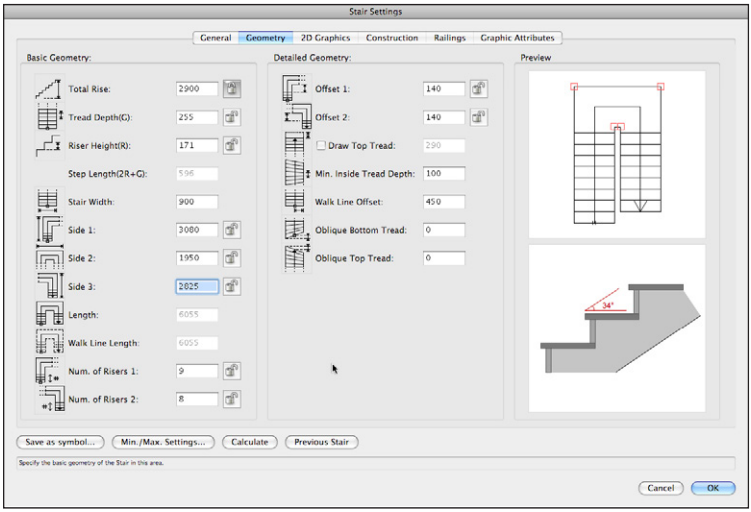
- You do not need to fill in the setting here, click on the **Geometry** tab.



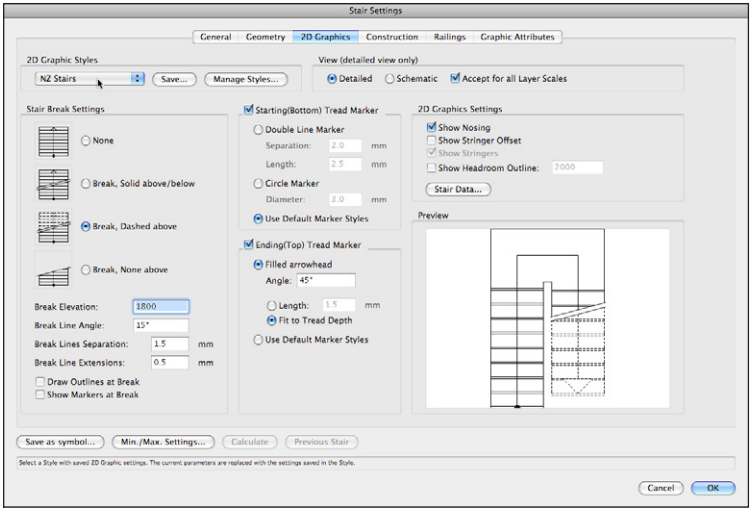
- Check the Total Rise, Tread Depth, and Riser Height.



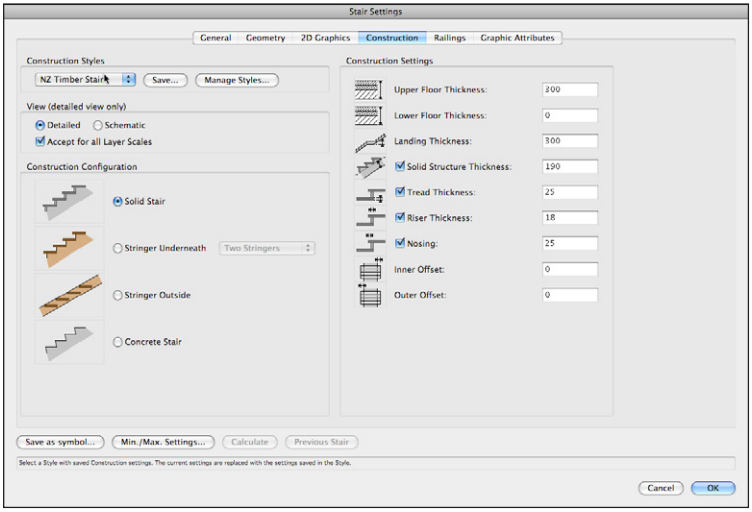
- Click in the input field for Offset 1. I usually use 1/2 of the tread. Type in your distance.
- Hit the Tab key once.
- Offset 2 is usually 1/2 of the tread. Type in your distance.
- Hit the Tab key once.
- Side 2 is the with of 2 flights plus the gap between.



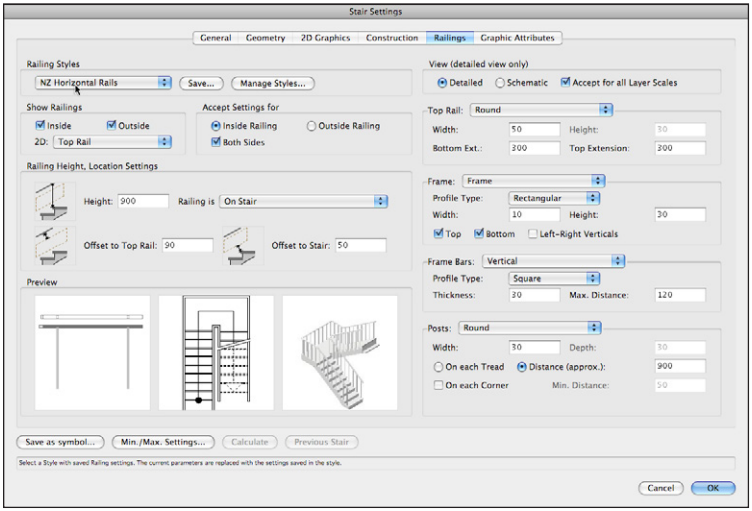
- Click on the **Geometry** tab. Choose your saved style from the **2D Graphic Styles** pop-up menu.



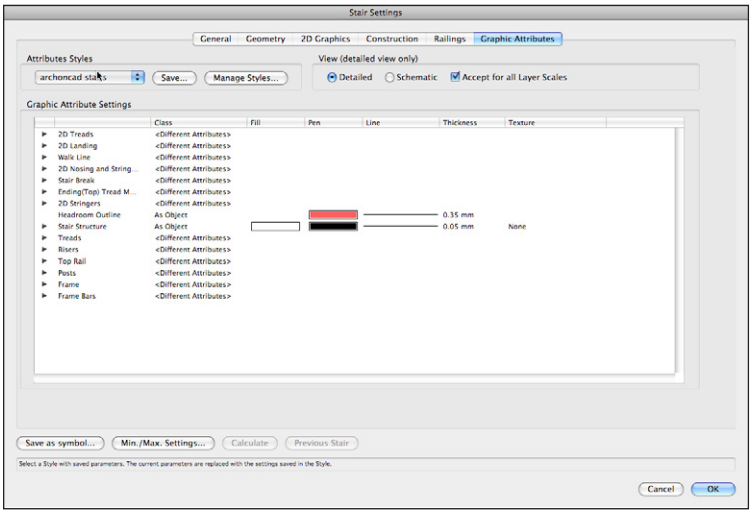
- Click on the **Construction** tab. Choose your saved style from the **Construction Styles** pop-up menu.



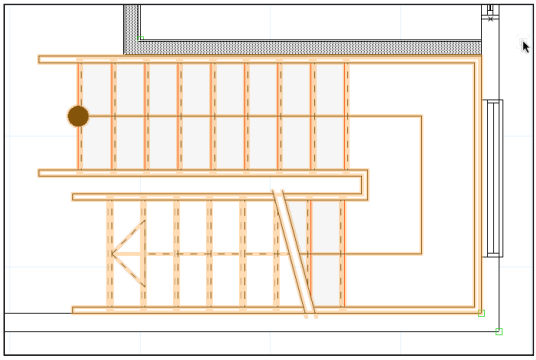
- Click on the **Railings** tab. Choose your saved style from the **Railings Styles** pop-up menu.



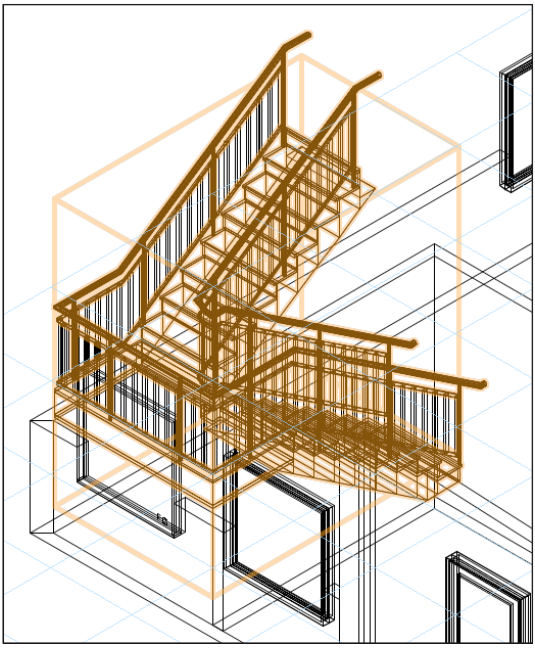
- Click on the **Graphic Attributes** tab. Choose your saved style from the **Attributes Styles** pop-up menu.
- If This was a typical stair, you should save it as a symbol to your library.
- Click on the **OK** button to finish the stair.



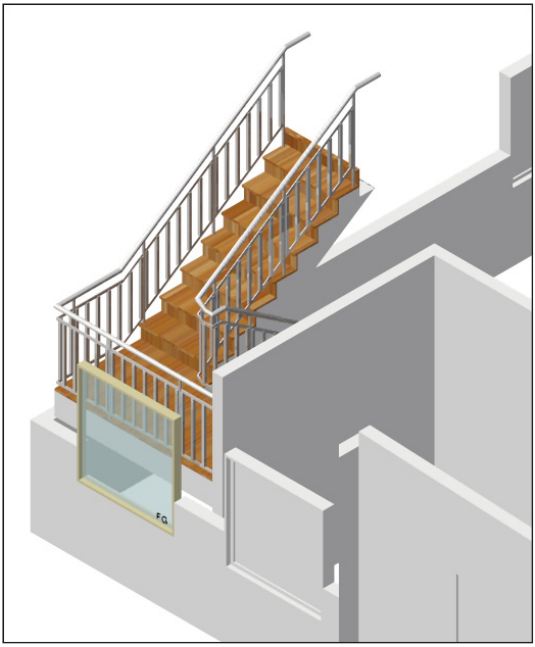
- In plan view the stair should have the settings you want.



- In 3D the stair should have the setting you want.



- Using the classes on the Graphic attributes for the stair, allows you to set he textures quickly.

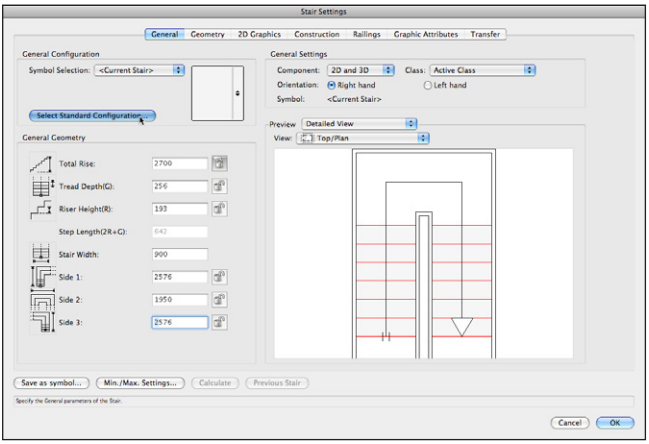


Circular Stairs

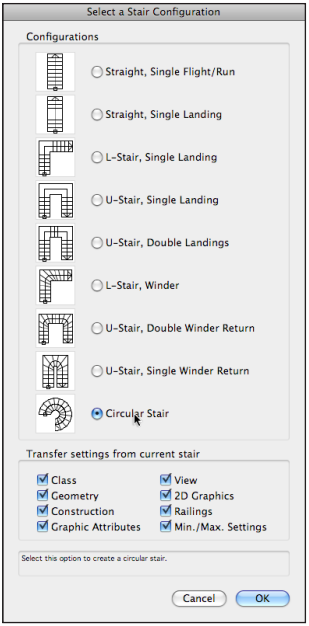
cadmovie468

The stair tool can make circular stairs.

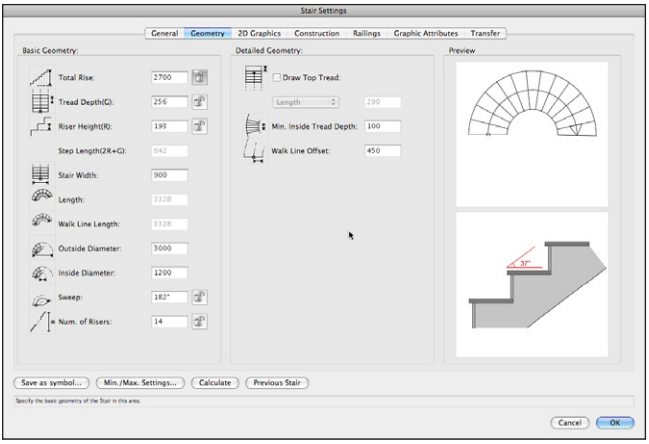
- If you have a stair on the design layer, double click on the stairs. Otherwise, click on the Preferences button on the Tool bar.
- The settings dialog box will open.
- Click on **Select Standard Configuration...** button.



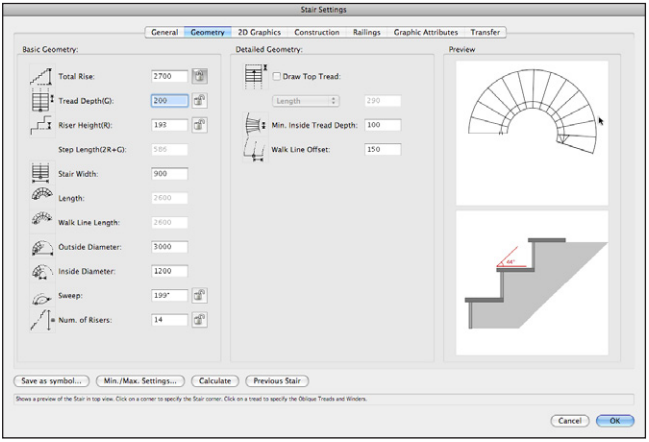
- Click on the **Circular Stair** option.
- Click on the **OK** button.



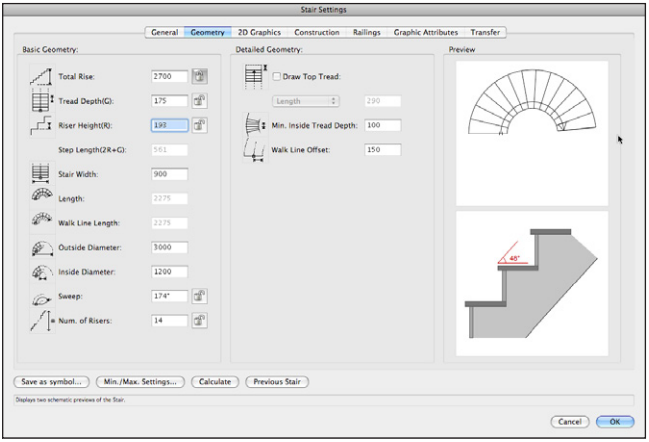
- Click on the **Geometry** tab.



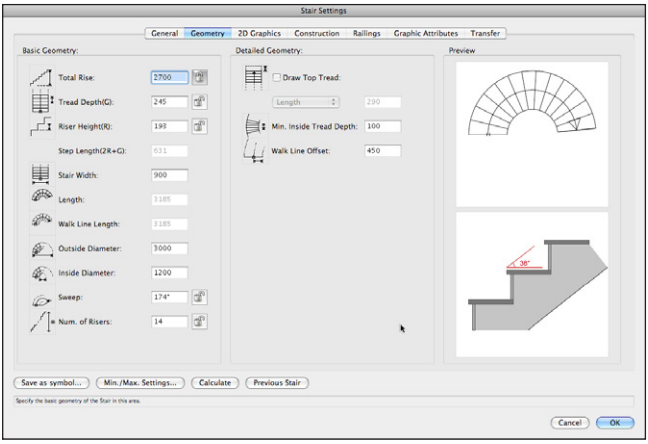
- Change the walk line. I've set the walk line to 150mm. The walk line is the distance from the edge of the stair, and in some counties this is the line to measure tread depth.
- Enter the **Tread Depth** for tread at the walk line.



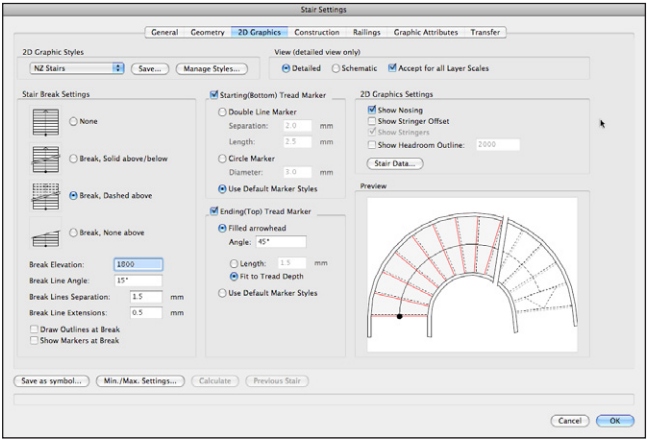
- Enter the **Riser Height**.



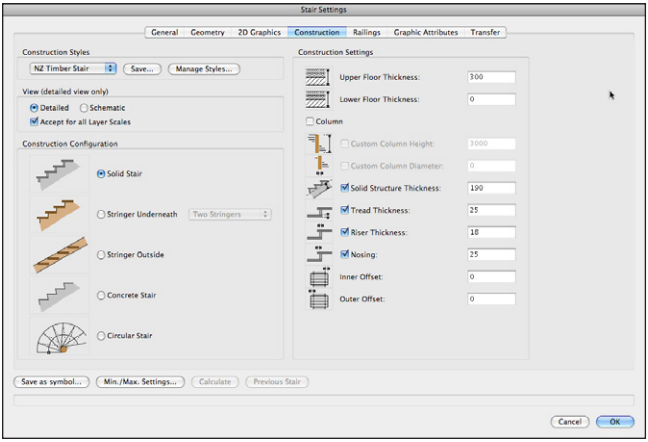
- If you change the walk line back to the center of the stair, the tread depth is re-calculated to the walk line.



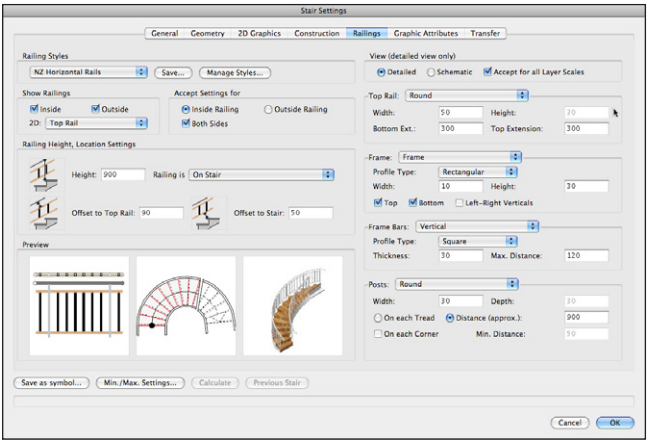
- Click on the **2D Graphics** tab.
- Use your saved styles to quickly set the graphics to suit you way of drawing.



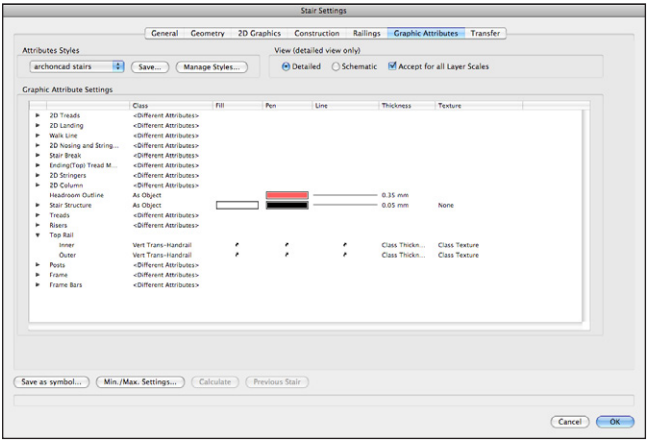
- Click on the **Construction** tab.
- Use your saved styles.



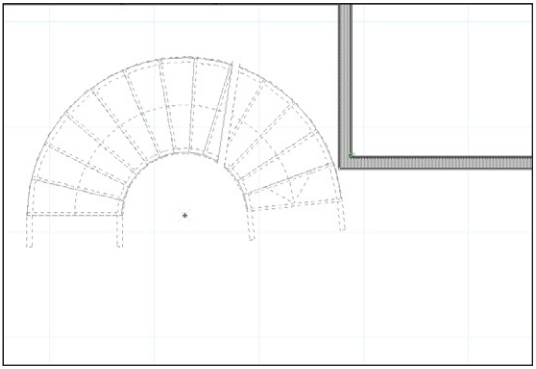
- Click on the **Railings** tab.
- Use your saved styles.



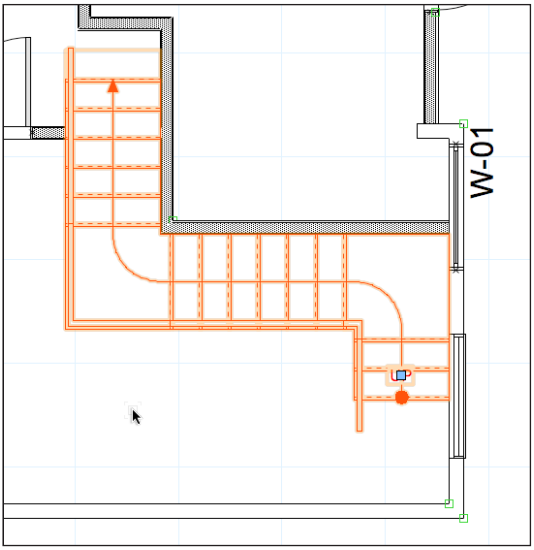
- Click on the **Graphic Attributes** tab.
- Use your saved styles.
- Click on the **OK** button.



- Click once to place the center of the stair, click once for the rotation of the stair.



- The Stair tool is great for what is can do, but there are several things it can't do:
- The stair tool will not create landings or winders at anything other that 90º.
- You can't create complex stairs like this one.
- The stair will only appear on one level.



In these situations, use the Custom Stair.

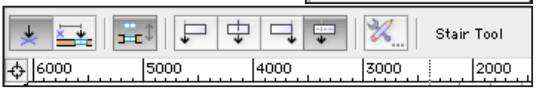
Custom Stair

cadmovie469

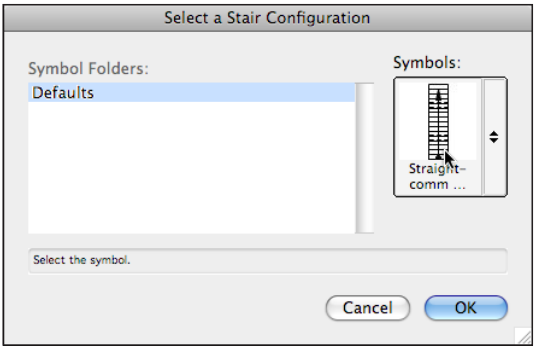
If you have Landmark or Spotlight, you will not have the new stair. You will have the custom stair. If you have Vectorworks 2009, the custom stair is called the Stair Tool.

- Go to the **Building Shell** toolset.
- Choose the **Custom Stair** tool (Stair tool if you are using Vectorworks 12 - 2009).

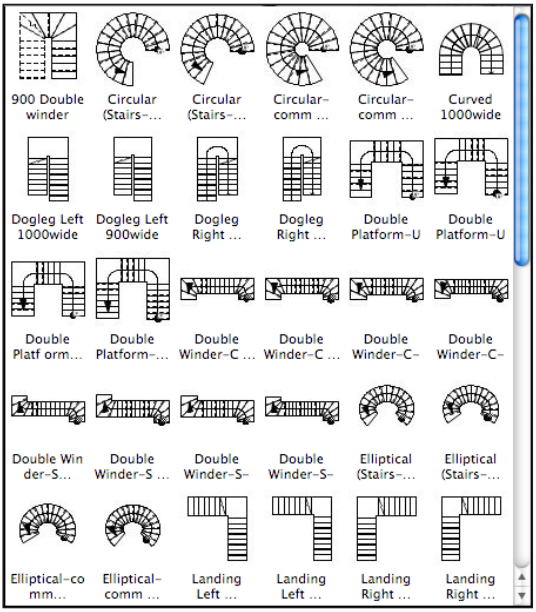
- Go to the **Tool bar**.
- The last mode is to set the preferences for the stair.
- Click on the **Preferences** button.



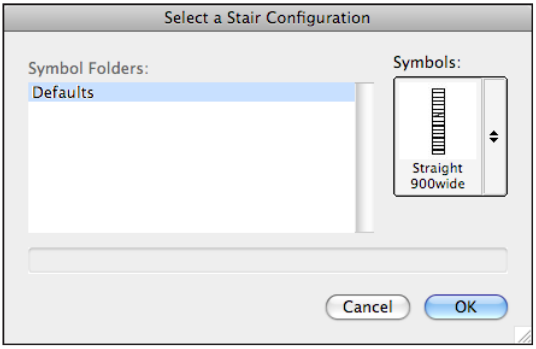
- This is where you choose your starter stair, which works like a template.
- Click on the symbols picture.



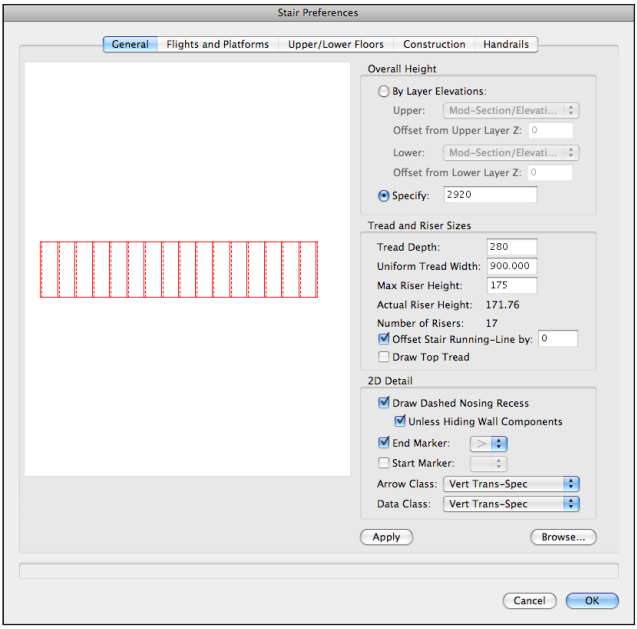
- You will see a list of all the available stair symbols. This list will reflect your default settings. I have saved some symbols into the library so I can easily create a new stair that suits me.
- Click on a **Straight** stair.



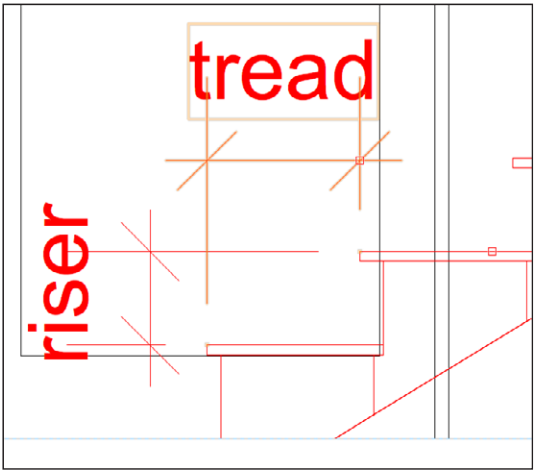
- Click on the **OK** button.



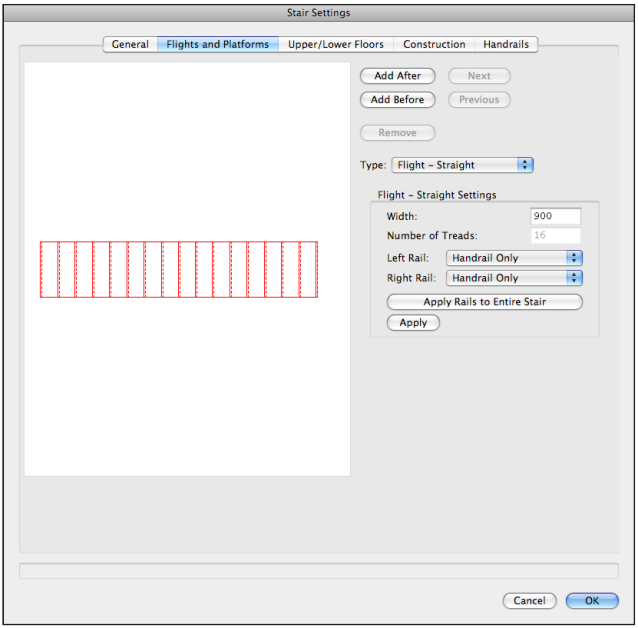
- This dialog box controls all the settings for the stair.
- Click on the **General** tab. You can set the overall height, width of the stair, riser and tread.
- I always make sure I set the start and end arrows to suit my drawing style.



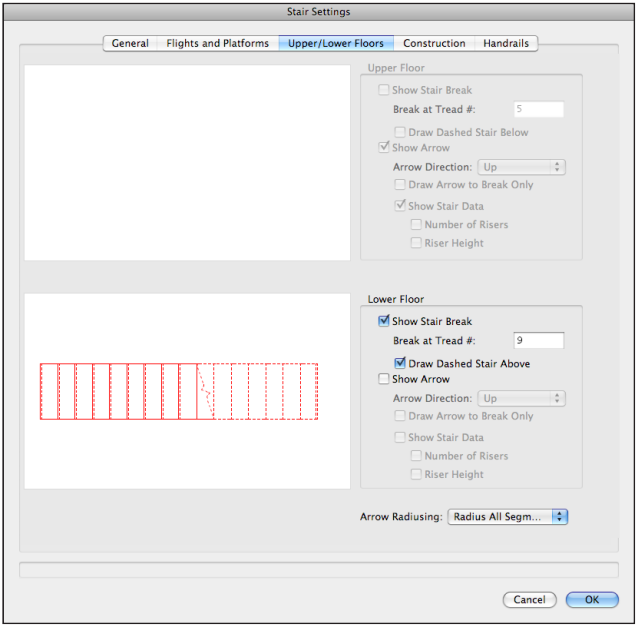
- This is what the tread depth and riser height relate to.



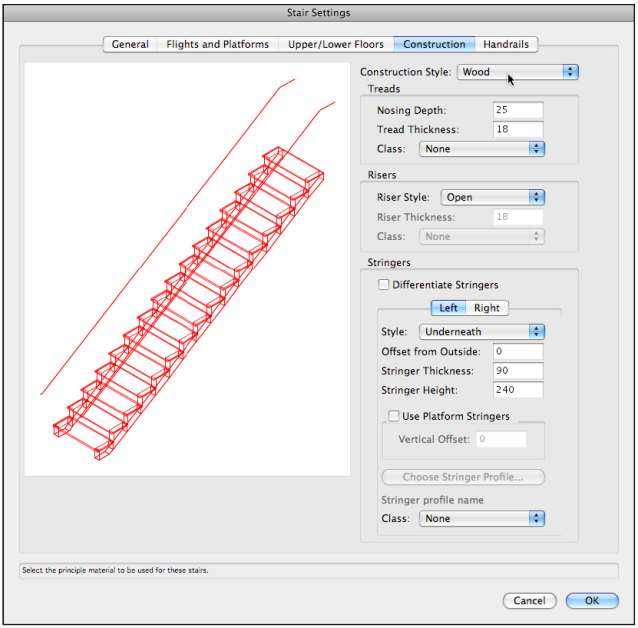
- Click on the **Flights and Platforms** tab. This is used to build the stair. Unlike the other stair tool, this stair is built out of parts (flights, platforms and winders).
- Enter the settings for the width of the stair and the handrail.



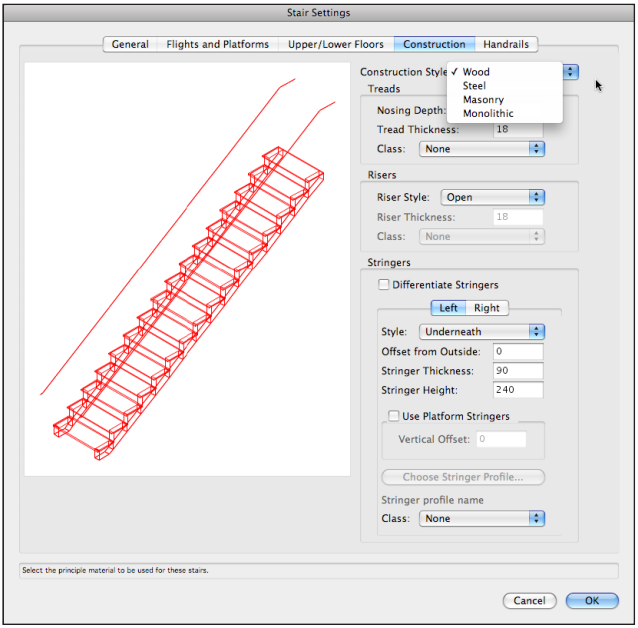
- Click on the **Upper/ Lower Floors** tab. This is only used if you use layers to set the stair height. Unlike the other stair, this one allows you to have the stair appear on two layers, and they both update when you edit the stair.



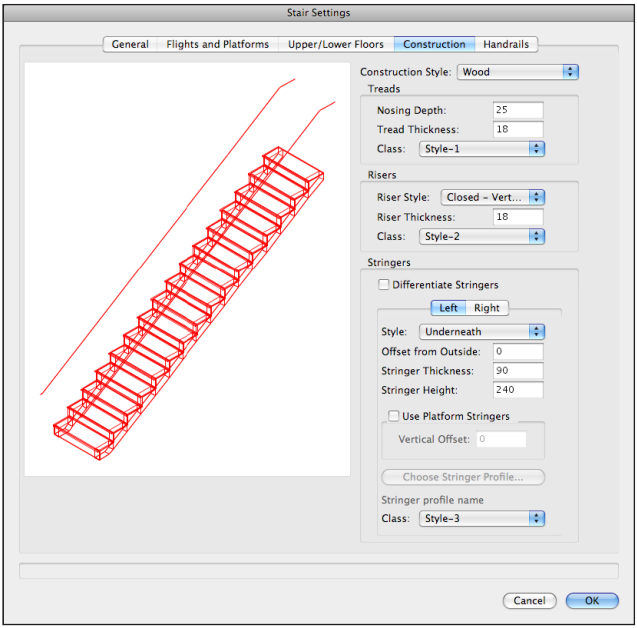
- Click on the **Construction** tab.



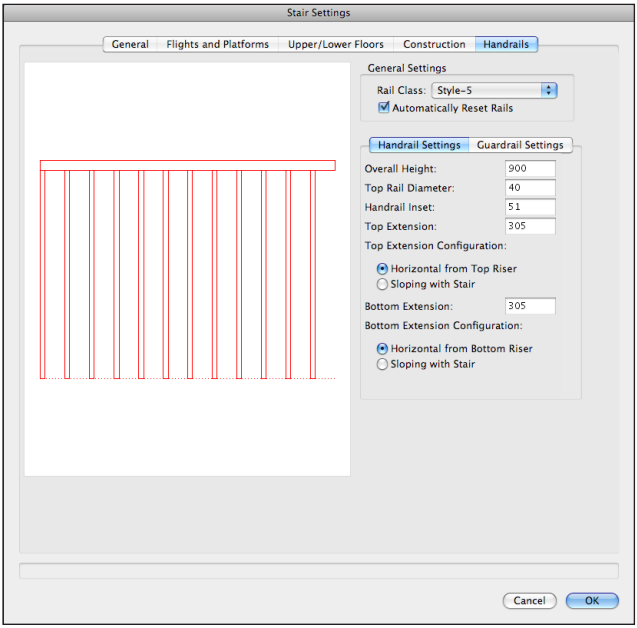
- Make your choices for the construction.



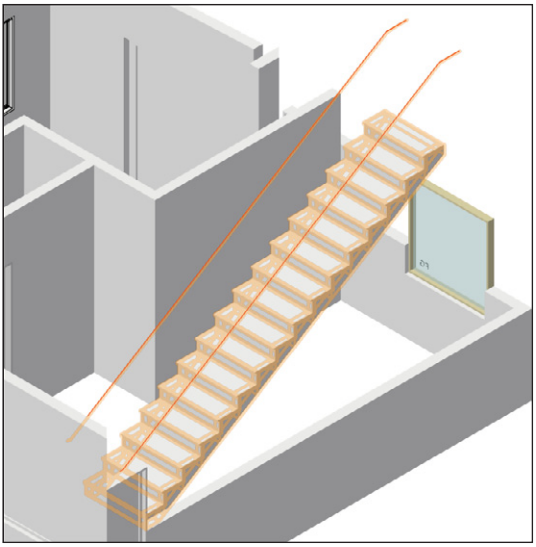
- You can assign parts of the stair to various classes, but the classes are fixed, you can't use any class names, you have to pick from the list.



- Click on the **Hand-rails** tab.
- Make your choices for the handrails and guardrails. These are not as easy to create as the other stair.
- You can assign the handrails and guard-rails to a class, but the class names are fixed, have to pick from the list.

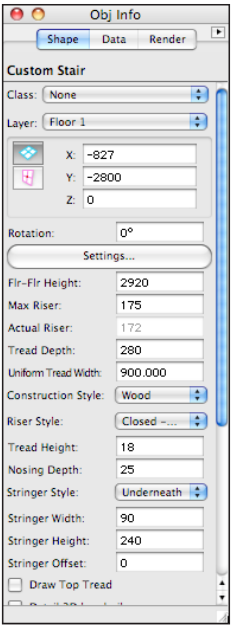


- Click on the **OK** button. To get back to the drawing.

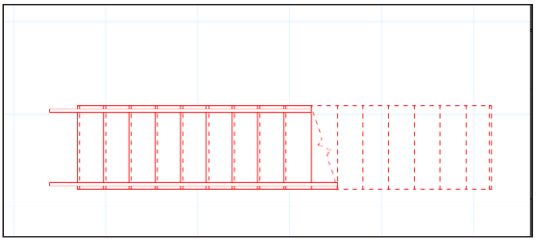


[cadmovie470]

- Most of the stair settings can be editing on the **Object Info palette**. This is not like the other stair, and it does make it quick to edit.



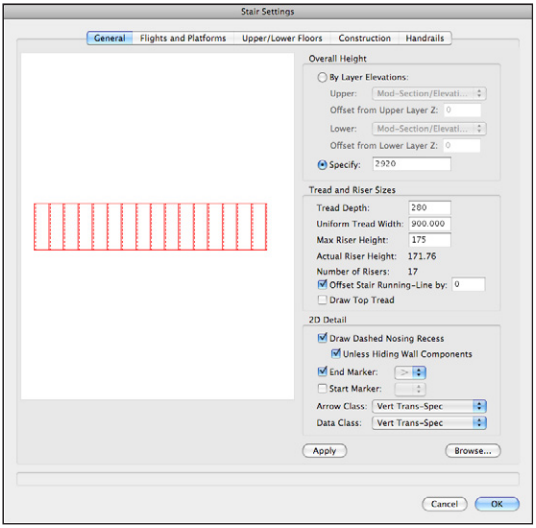
- Here is a plan view of the stair. So far, this is a simple stair. It is easier to get all the construction settings for the simple stair, then look at making the stair more complex.



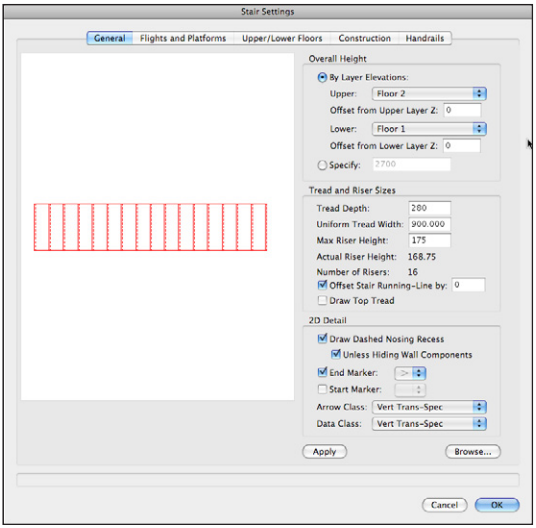
cadmovie471

The Custom stair can be placed on two layers. When you move the stair on one layer, it updates on the other automatically. The stair will use the layer settings (Layer Z) to calculate the height of the stair for you.

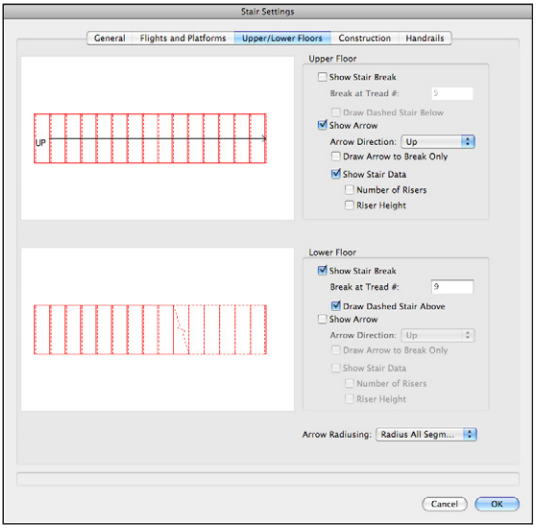
- Double click on the stair
- Click on the **General** tab.



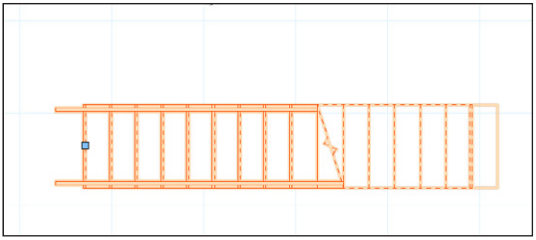
- Click on the option, **By Layer Elevation**.
- Choose your upper and lower floors.



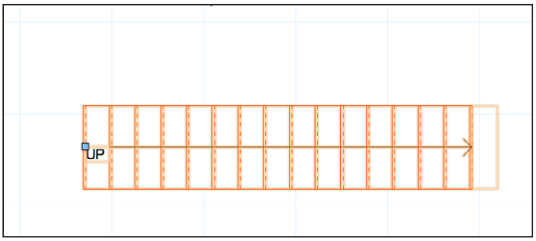
- Click on the **Upper/Lower Floors** tab.
- Now you can set the viewing options for each floor.
- Click on the **OK** button.



This is the view on the lower floor.



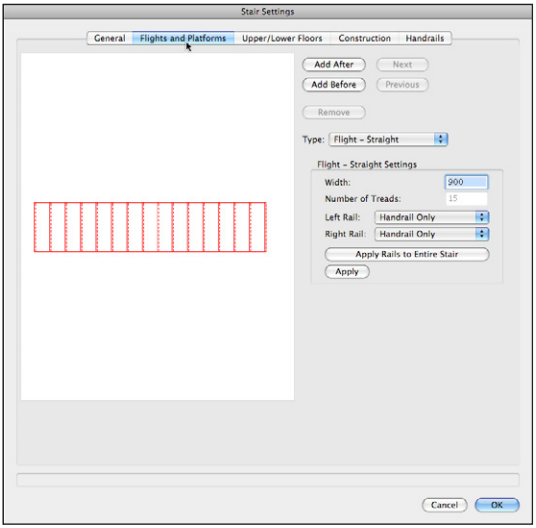
This is the view on the upper floor.



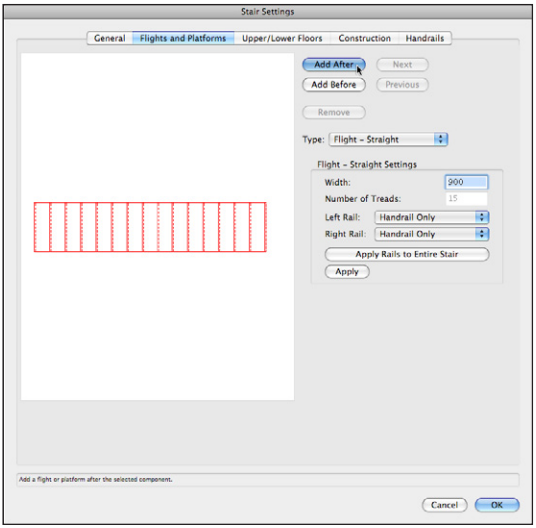
The custom stair is a flexible stair, and you can make very complex stair with it. To use the stair effectively, you need to understand the basic concept behind the stair. The custom stair is a like a kit of parts. You assemble the stair from parts. The parts can be flights (straight or curved stairs), platforms (landings) and winders. So, you do not design a stair in one go, as you do with the other stair, you design each part, and the parts add up to a stair.

cadmovie472

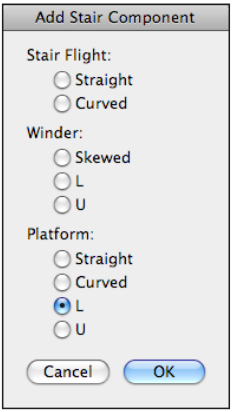
- Double click on a stair to open the settings.
- Click on the **Flights and Platforms** tab. This is where you design the stair by adding and taking away stair parts. The parts can be Flights, Winders or Platforms.



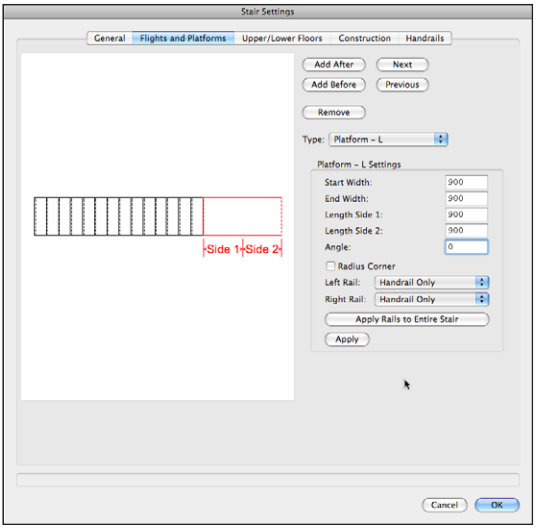
- The first platform is selected, that is what the red color shows you.
- Click on the **Add After** button. This is how you add parts to the stair.



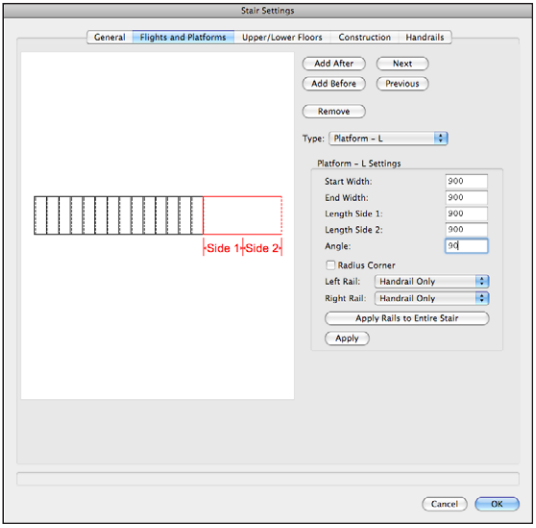
- Choose the **L Platform** option. You could choose anything want, but I wanted to show you how to make a complex stair.
- Click on the **OK** button.



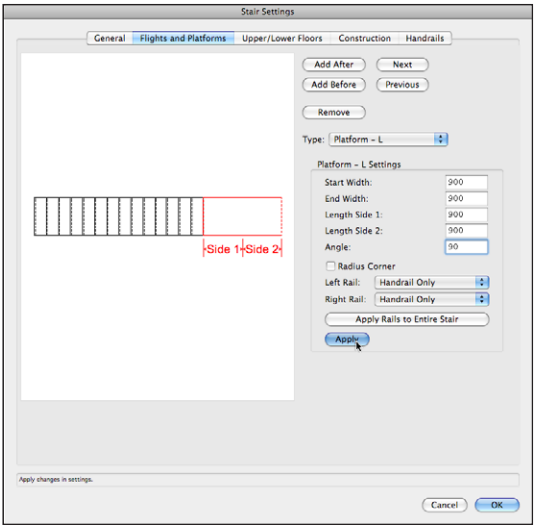
- The L Platform looks a little strange. When you edit the settings it will look more like a stair landing.



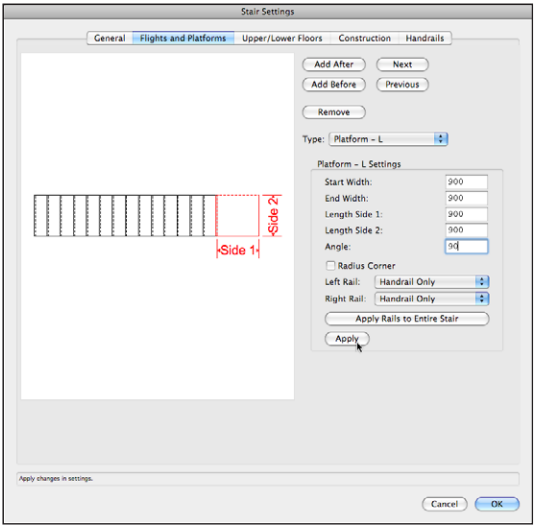
- Change the **Angle** to **90**.



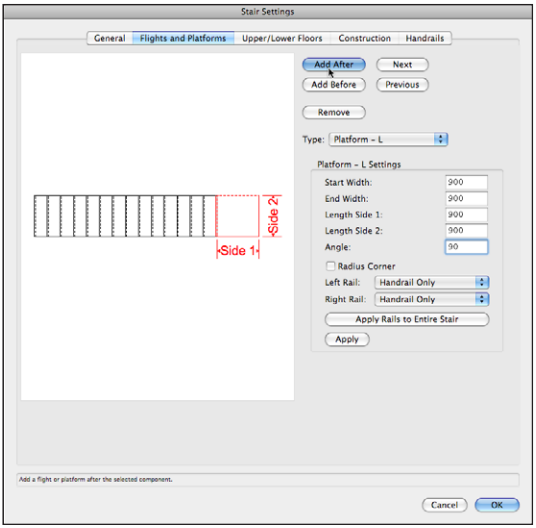
- Click on the **Apply** button to see the updated stair. Vectorworks will not act on the updated settings until you click on the **Apply** button.



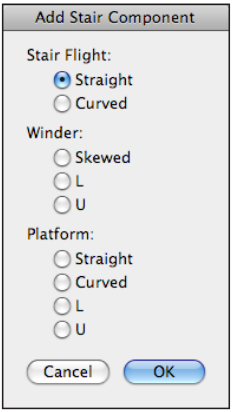
- That looks better.



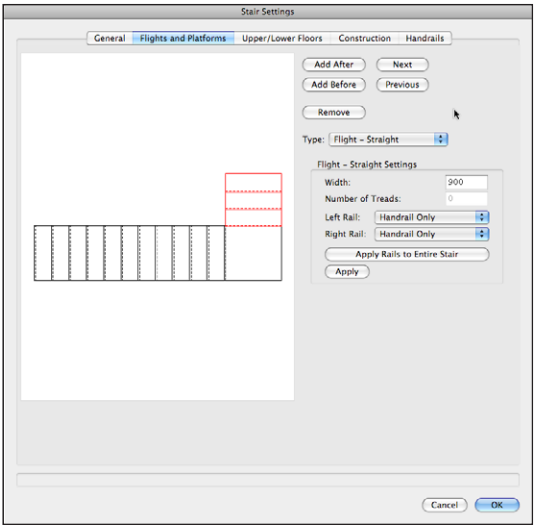
- Click on the **Add After** button.



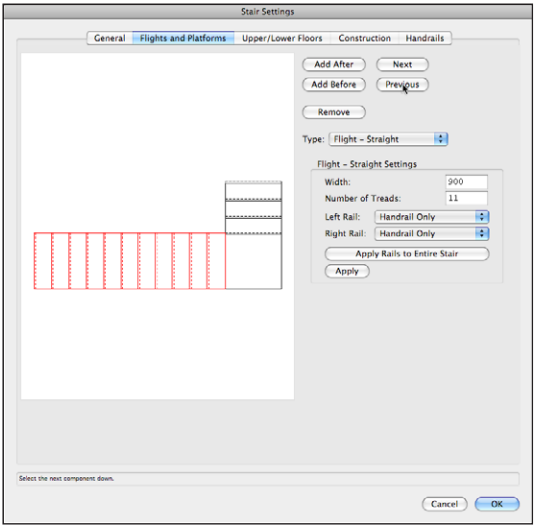
- Choose the **Straight Stair Flight** option.
- Click on the **OK** button.



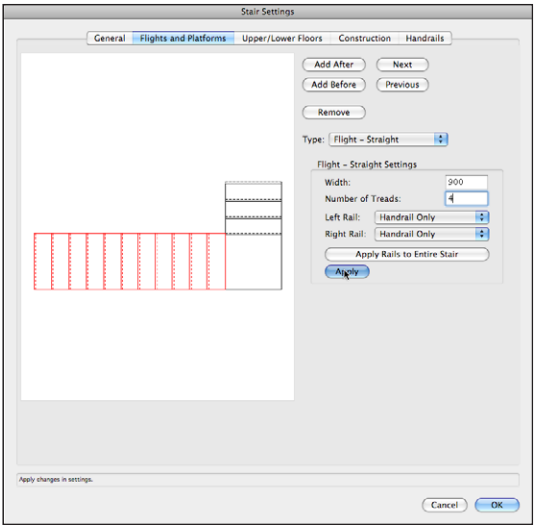
- The New flight is added.



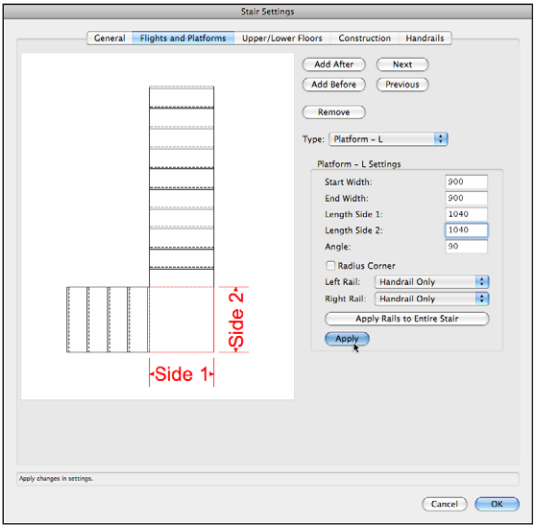
- Click on the **Previous** button until the bottom flight is red.



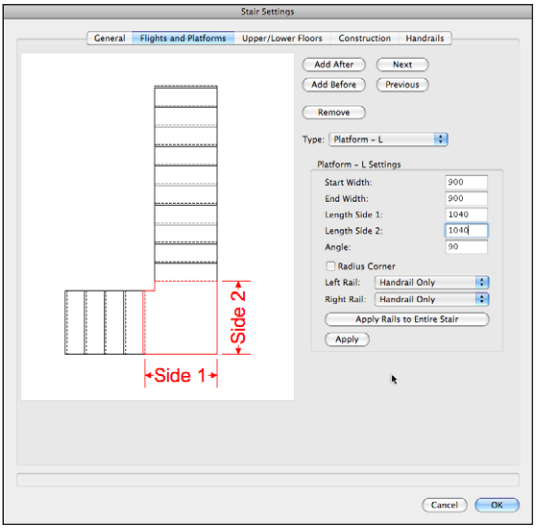
- Change the number of treads to **4**.
- Click on the **Apply** button.



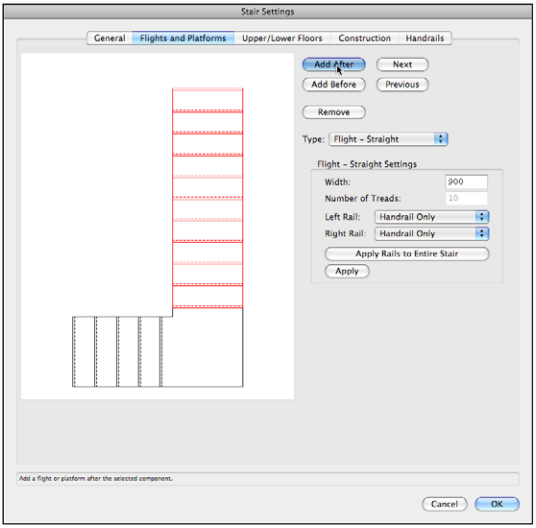
The stair requires a number of risers to reach the upper floor. When you take the treads off the bottom flight, the upper flight has to have extra treads added to it. Vectorworks does this for you.



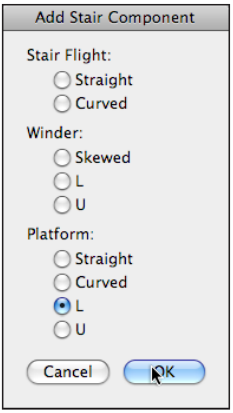
- Click on the **Next** button to highlight the Platform L (which I call a landing).
- Change the **Side 1** dimension. I always use the stair width plus half a tread.
- Change the **Side 2** dimension. I always use the stair width plus half a tread.
- Click on the **Apply** button.



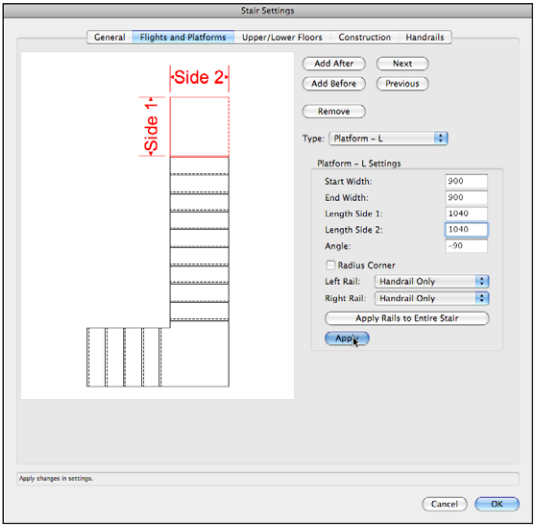
- Click on the **Next** button to highlight the top flight.
- Click on the **Add After** button.



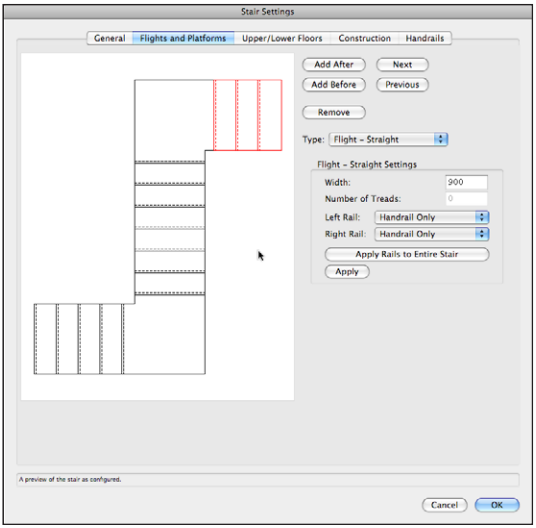
- Choose the **L Platform** option. You could choose anything want, but I wanted to show you how to make a complex stair.
- Click on the **OK** button.



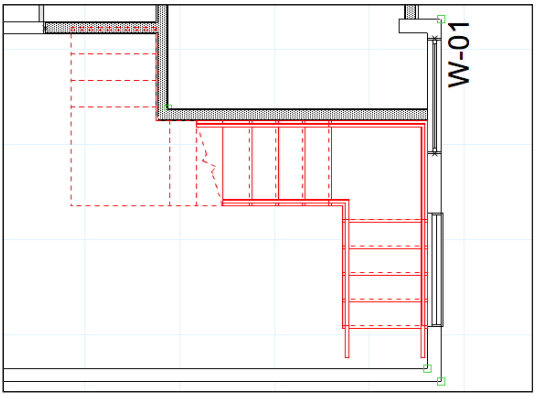
- The L Platform looks a little strange. When you edit the settings it will look more like a stair landing.
- Change the **Angle** to **-90**.
- Click on the **Apply** button to see the updated stair.



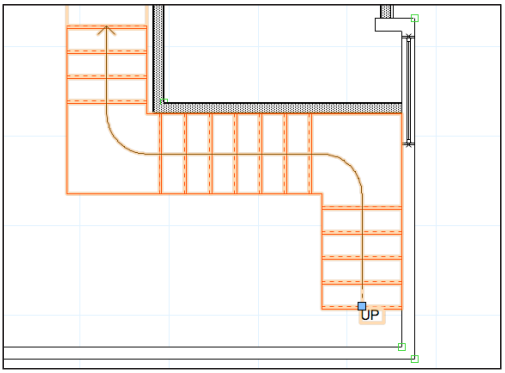
- When you have all the settings you want, click on the **OK** button.



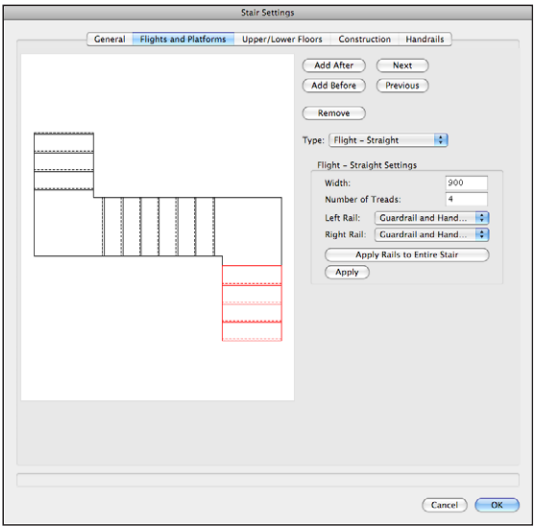
Stair on the lower floor.



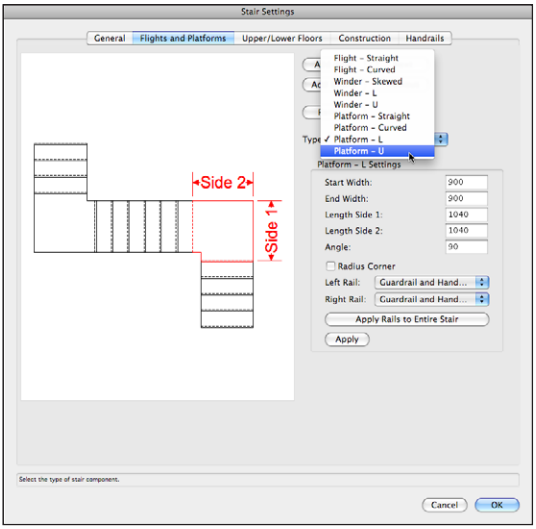
Stair on the upper floor.



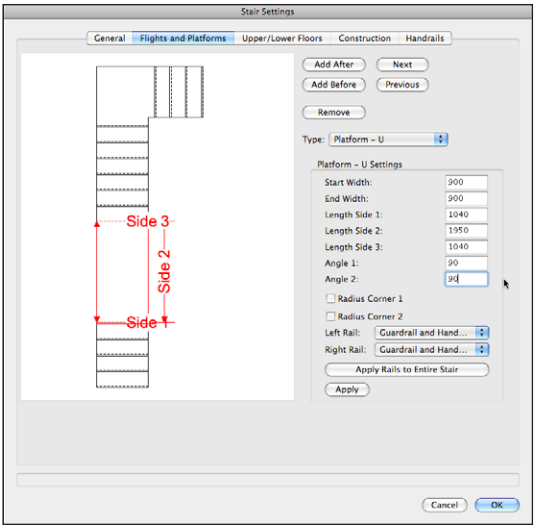
- Double click on a stair to open the settings.
- Click on the **Flights and Platforms** tab.



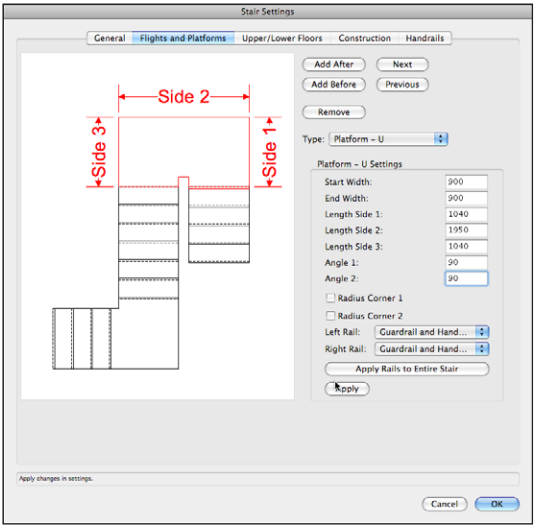
- Click on the **Next** button until you highlight the first platform (landing).
- Click on the **Type** pop-up menu.
- Choose **Platform U**.



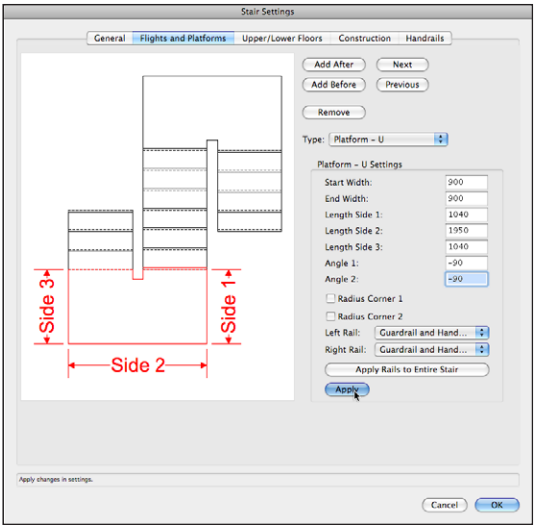
- The landing looks strange at first.
- Change the settings for the length and angle.



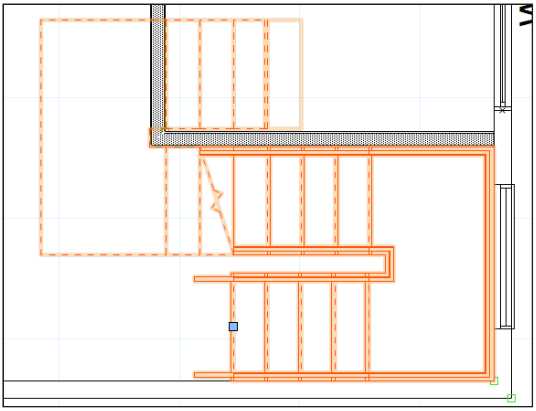
- Click on the **Apply** button. Now the landing looks better.



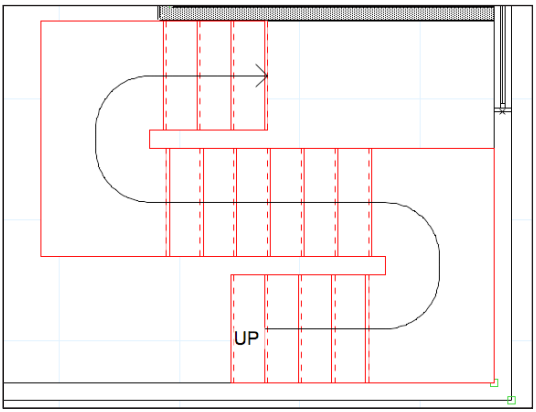
- Click on the **Next** button until you highlight the second platform (landing).
- Click on the **Type** pop-up menu.
- Choose **Platform U**.
- Change the settings for the length and angle.
- Click on the **Apply** button.
- Click on the **OK** button.



Here is the stair on the lower floor.



Here is the stair on the upper floor.

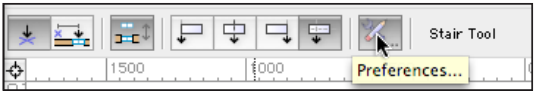


Simple Stair

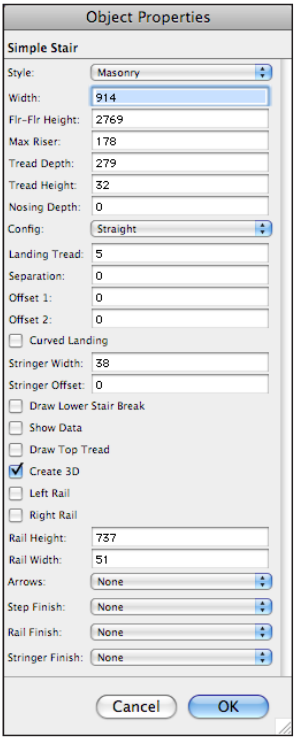
cadmovie473

This is the stair to use if you want a fast an simple stair. But remember, it is a simple stair, so it will be limited. This tool is Vectorworks 2010 only.

- If you are using the Landmark workspace, you will find this tool on the Building Shell tool set.
- If you are using the Fundamentals workspace, you will find this tool on the Building Shell tool set.
- This tool does not appear on the Architect workspace.

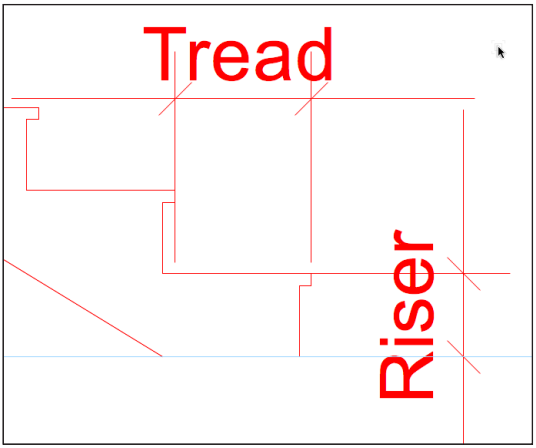


- Go to the **Tool bar**.
- Click on the **Preferences...** button.

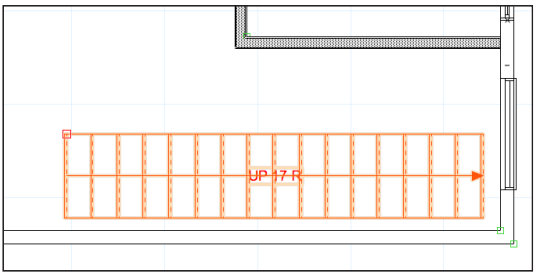


- These are the settings for the stair. There are not complex dialog boxes, just this.
- Type in the settings you want.
- You can either fill out the parameter before you place the stair or you can place the stair and then go to the Object Info Palette and change the settings.

- This what the Tread and Riser relate to.
- Click on the **OK** button.

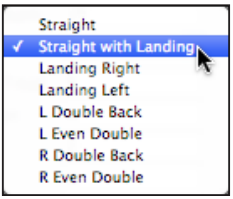


- Click in the drawing to place the stair.

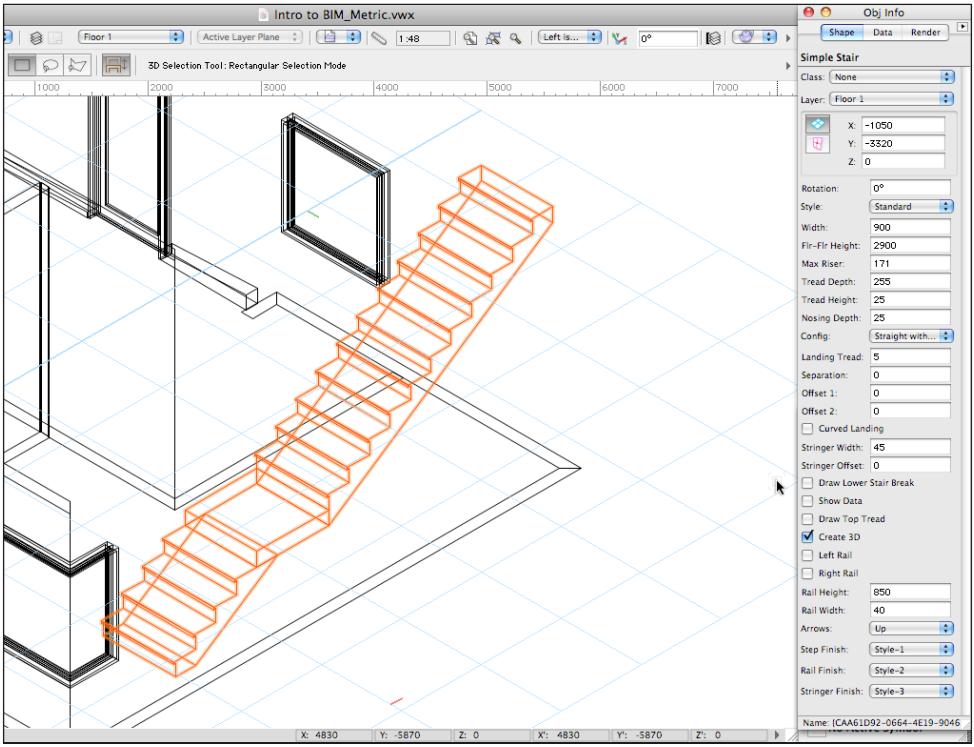


Stair with Landing

- On the Object Info Palette you can change the stair configuration to Straight With Landing.
- There is a field to fill out the landing tread. This is the number of treads up from the bottom to the landing.

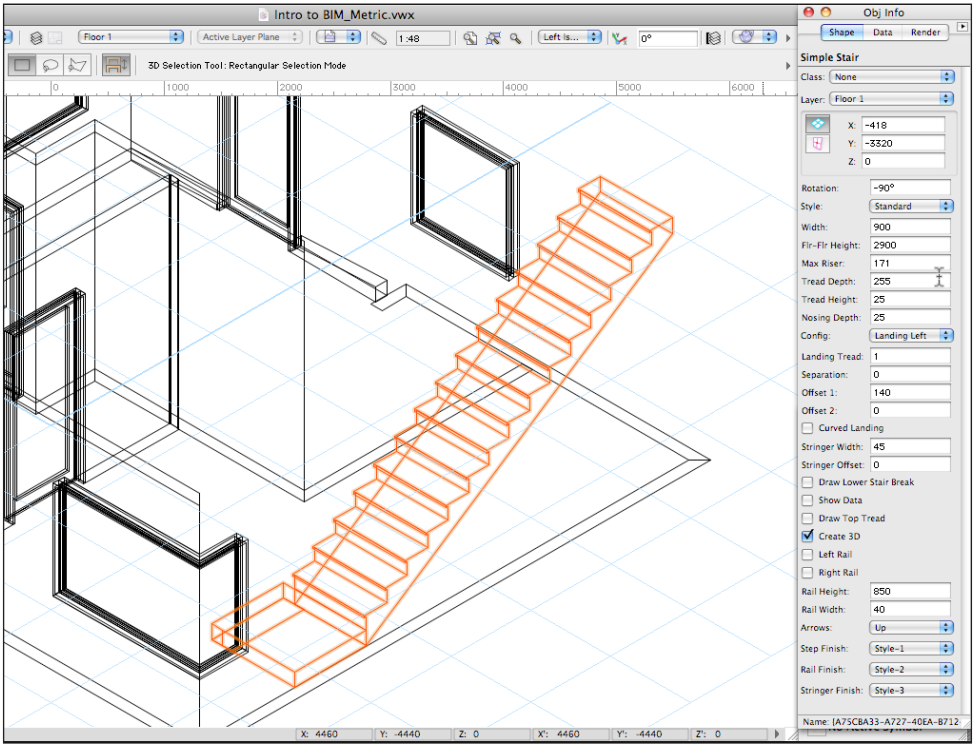


- Try the settings shown.



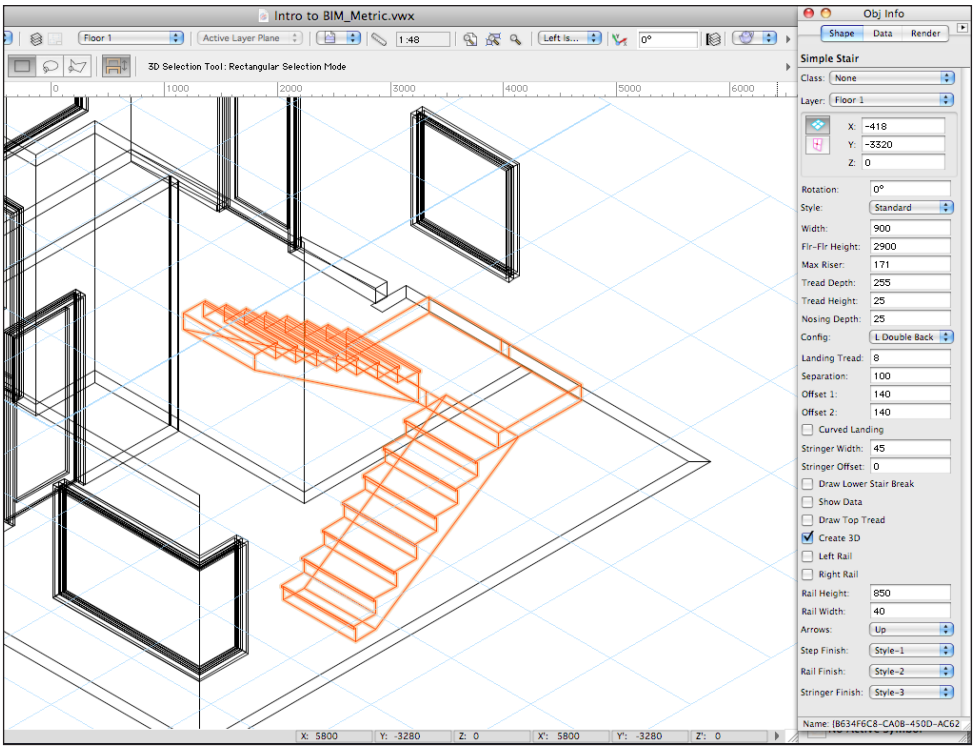
Landing Left

- The Landing Left or Landing Right stair can be used to create a corner stair, or a stair that finishes on a landing.
- To do this you set the landing tread to 1. This will make the first tread the landing.
- The offsets can be used to set the start of the tread a specific distance from the corner, as you would want to.
- Try the settings shown.



Double Back Stair (Dog-leg Stairs)

- The Double Back is used to create dog-leg stairs.
- Try the settings shown.



- You can even make stairs like this...