cadsupportonline.com

issue 0711

This newsletter is designed to work as an on-line user group. It is based on the successful New Zealand VectorWorks User Group format, where each month we cover a main topic in a workshop then have a page of general questions and answers. In this news letter you will find a link to the workshop topic, a link to the questions and answers and links to extended podcasts (tips and trick movies).

Workshop Topic
Graphics in 2D and 3D

This workshop topic will cover 2D graphics such and hatches, gradients and images and 3D graphics such as textures and image props.

Q & A
How can I use my iPod as a presentation device?

Following on from last month, I got the cable I need to connect my iPod to a TV and it's now very easy to use your iPod as a presentation device.

Can I Re-Use my VectorWorks 12 Wall style Library for VectorWorks 2008?

The answer is well, yes and no. I need to explain my thinking...

Extended Podcast 048

Should you use layer linking or design layer viewports? Watch this podcast to see more.

Extended Podcast 049

Plants are designed to behave differently in VectorWorks 2008. Watch this podcast to see more.

Graphics for 2D and 3D

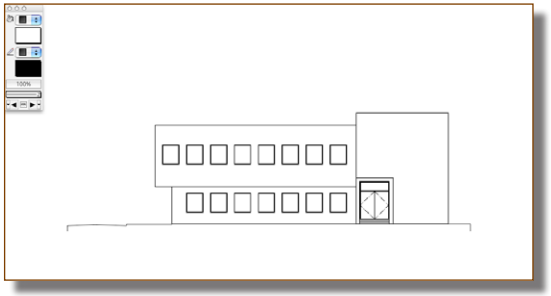
2D Graphics

Graphic Attributes

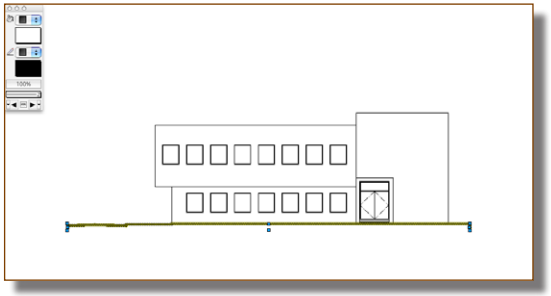
cadmovie094

The file we'll be using is an elevation of a building. We will use this to learn how to apply graphic attributes, such as line weight, hatching, image fills and graphic symbols to a drawing.

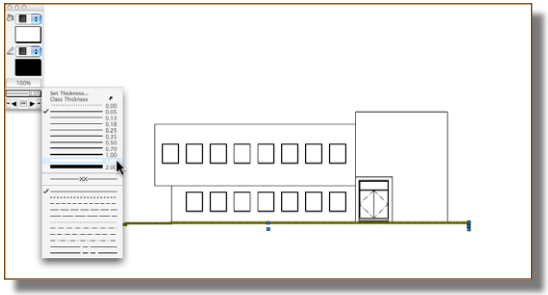
- Open a Vectorworks file.



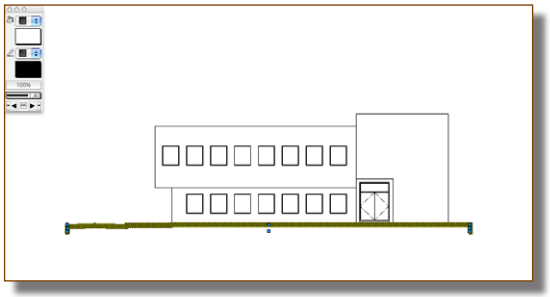
- Use the 2D Selection tool to select the ground line.



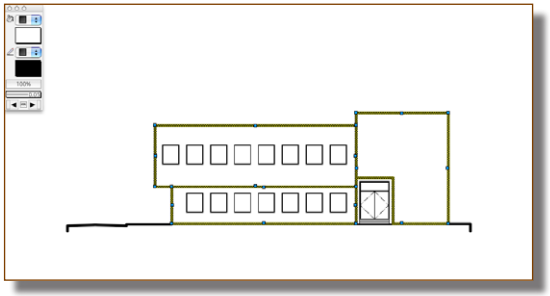
- Use the Attributes Palette to change the line weight to a heavy line.



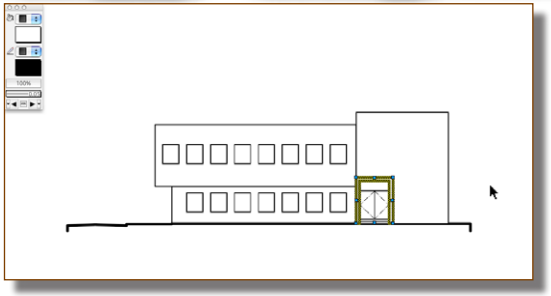
- The ground line has a heavy line.
- Select the building outlines.
- Set the line weight to a medium line weight.



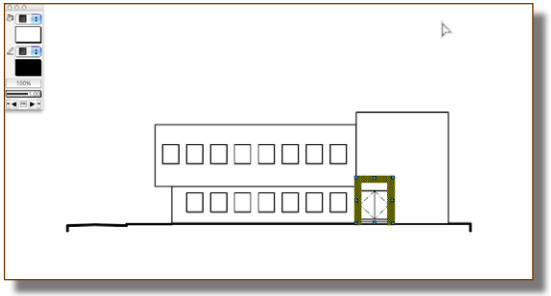
- You can see the building outlines.



- Select the building entry.
- Set the line weight to a medium-heavy line weight.



- You can see the building entry is now emphasised.
- Next we will add brick hatching to the base of the building.



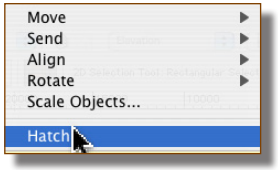
Hatches

cadmovie095

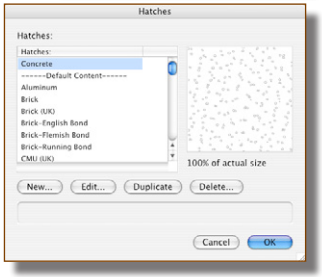
Applying Hatches

- Select the base of the building.
- You can apply a hatch to this part of the build in several ways.
- You can use the Attributes Palette to select the hatch.
- You can use the Resource Browser to find a hatch and then either double click on the hatch in the Resource Browser or drag the hatch to the object that you want to hatch.
- None of these options allows you to control the start point of the hatch.

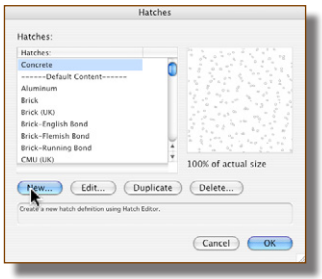
- From the menu bar choose **Modify > Hatch...**



- From here you can choose a default hatch or you can make a new hatch.



- Click on the **New...** button.

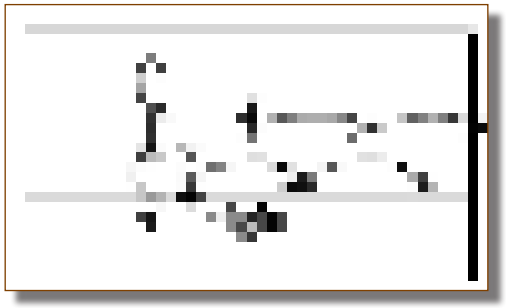


Creating Hatches

To create a new hatch pattern, first decide what the hatch should look like.

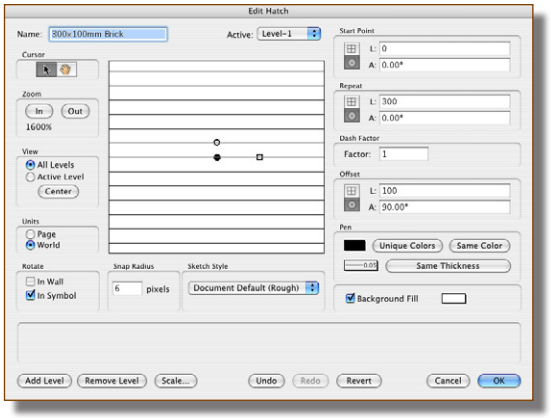
For this example we will make a brick hatch 300x100mm (12”x4”) stretcher bond. We have to look for lines that repeat, and often I will sketch out the hatch pattern so that I can work out where the lines repeat.

- If you look at the figure to the right you will see that I have worked out that we need 3 lines, or 3 layers to use the naming conventions that VectorWorks uses.



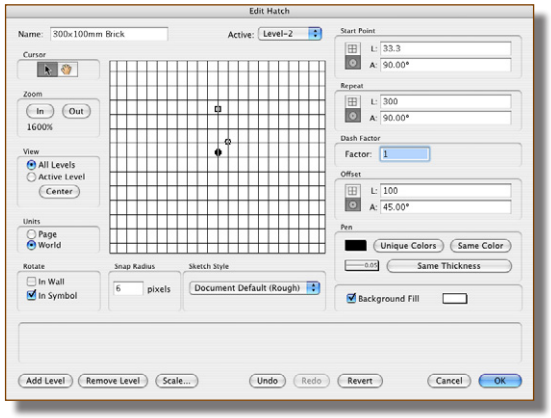
Step 1

- Now you see the Edit Hatch Dialog.
- Name the hatch **300x100mm Brick** (**12x4 in. Brick**).
- Change the Units to **World Units.**
- Set the Start point to be **0,0.**
- Set the repeat to be **300mm @ 0º** (**12” @ 0º**).
- Set the Offset to be **100mm @ 90º** (**4” @ 90º**).

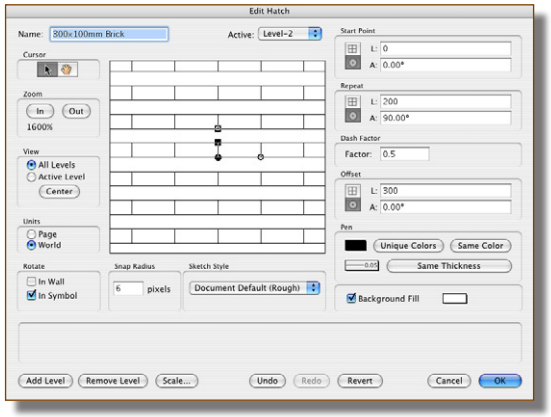


Step 2

- Click on the **Add Level** button.
- When it creates the new line (level) it’s at the wrong angle. VectorWorks will not let you have both the offset and the repeat at 0º.
- Change the Offset angle to **45º**.
- Then you can change the Repeat angle to **90º**.

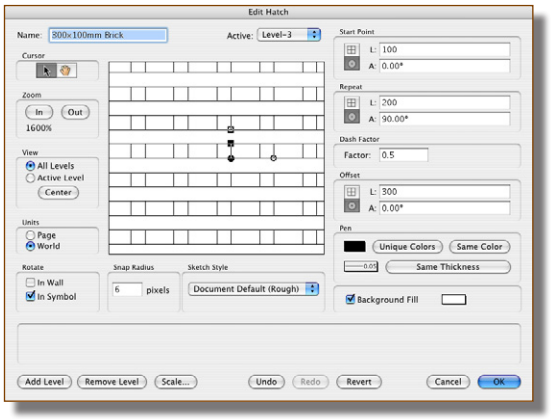


- Set the start point to **0,0**.
- Set the repeat to be **200mm @ 90º** (**8” @90º**).
- Set the dash factor to 0.5. We will end up with a repeating line 200mm long that skips a tile course of 100mm.
- Set the Offset to be **300mm @ 0º** (**12” @ 0º**).

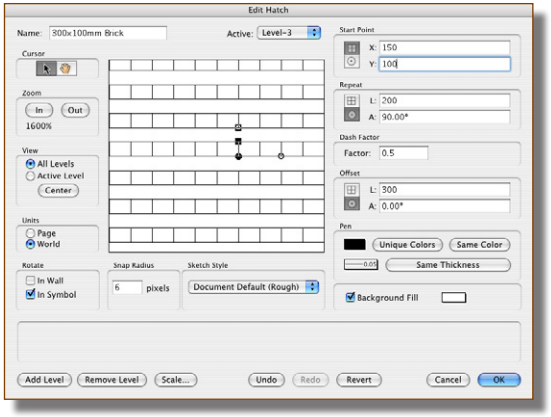


Step 3

- Click on the **Add Level** button.
- It should repeat the first tile course.
- Set the start point to **150,100mm** (**6”, 4”**).

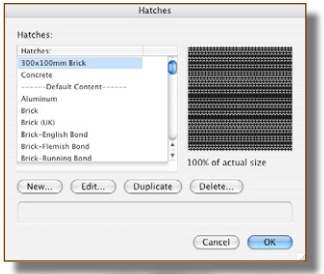


- When you are happy click on the **OK** button. You are finished, nearly...

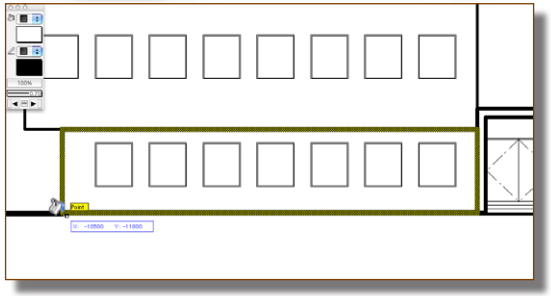


Step 4

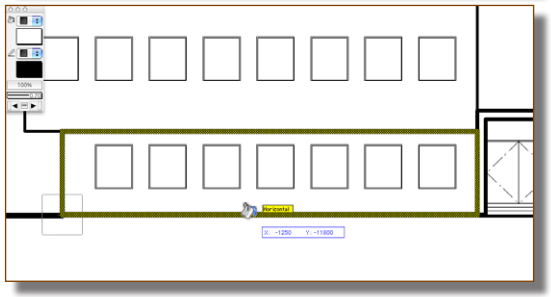
- The hatch is now selected in the Select Hatch dialog box.
- Click on the **OK** button.



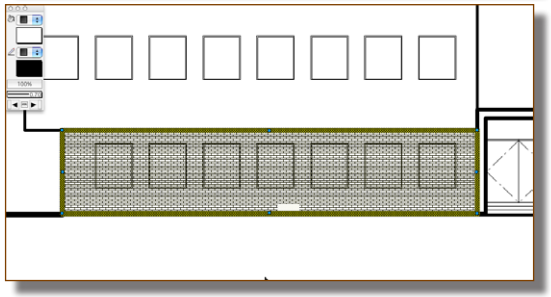
- Zoom into the base of the building.
- Click at the bottom left corner of the building. This sets the insertion point of the hatch.



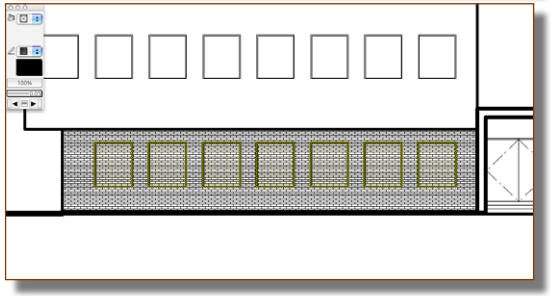
- Move along the ground line.
- Click once. This finishes the hatch placement.



- The windows are behind the hatch.



- Use the 2D Selection tool.
- Drag marque around the windows.
- From the Menu Bar choose **Modify > Send > Send to Front**.

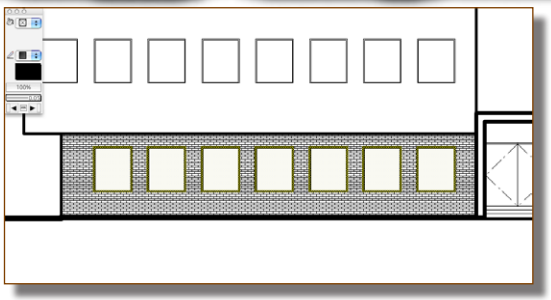


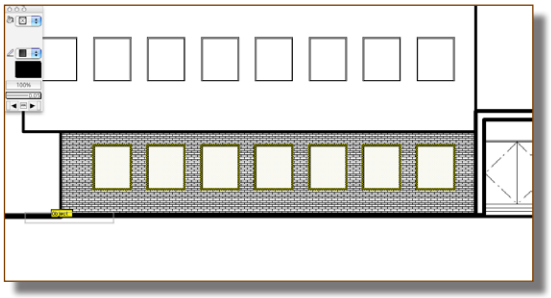
- Now the windows are visible.

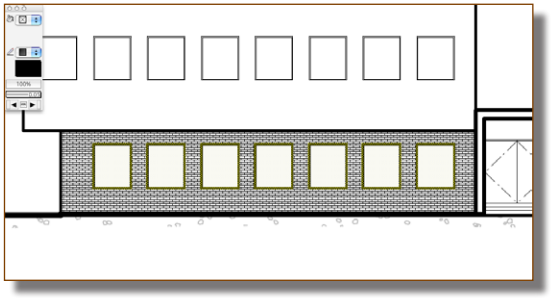
- If there are other windows that are behind the hatch, do the same for them, bring them to the front.

- Drag the concrete hatch from the Resource Browser to the ground line.

- This is quick, but you can't control the insertion point of the hatch. Great for this type of hatch.







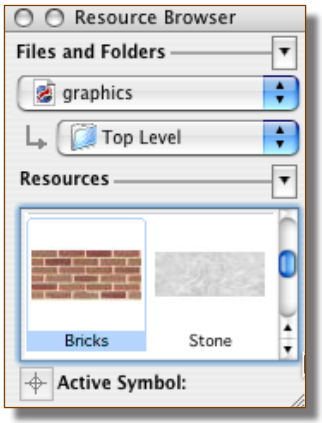
Images

Images are a great way of applying a graphic image to your drawings.

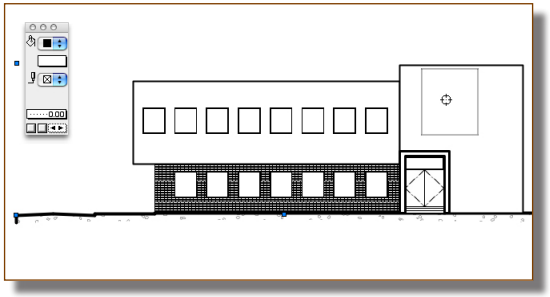
cadmovie096

Applying Images

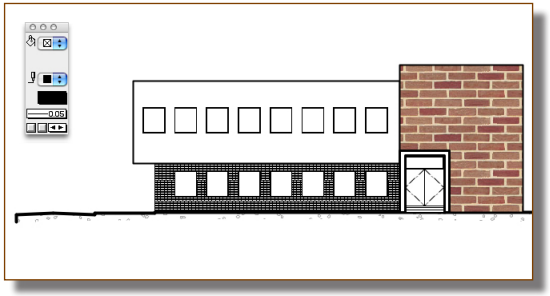
- In the Resource Browser you will find an image of bricks. If you can't see the bricks, make sure that your Resource Browser is pointing to the current file.



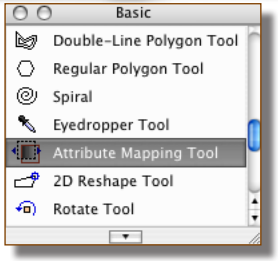
- Drag the brick image from the Resource Browser to the right end of the building.



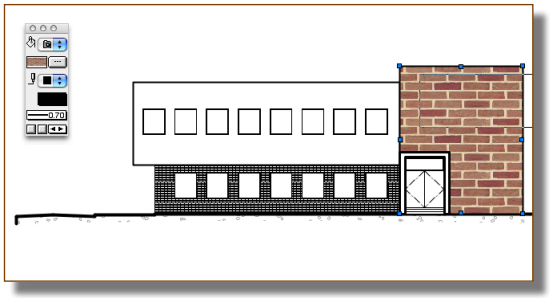
- When you let go of the mouse the image is applied to the elevation.



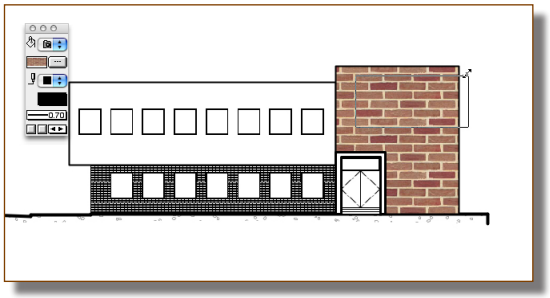
- To edit the image, use the **Attribute/Mapping tool**.



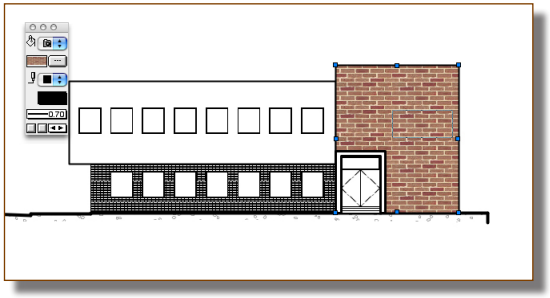
- Click on the brick elevation. You will see a rectangle appear. This is used for editing the image...



- If you go the top right corner you can drag your mouse to change the size of the bricks.

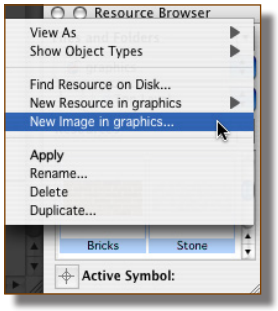


- If you go to the middle of the rectangle you can drag the start of the brick around.

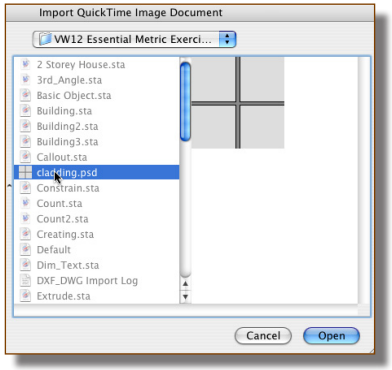


Creating Images

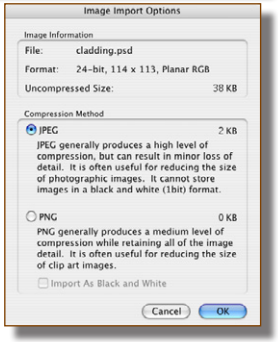
- To create a new image, go to the Resource Browser.
- Right mouse click in the Image area of the Resource Browser. It doesn't matter if you right mouse click on an existing image.
- Choose **New Image in...**
- Choose the option to import an image file. You can use this option to make an image from an existing resource, like a texture for example.



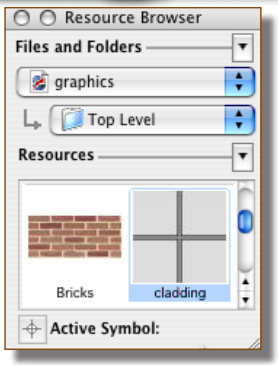
- Find the **Cladding.psd** image in the exercise folder.
- Click on the **Open** button.



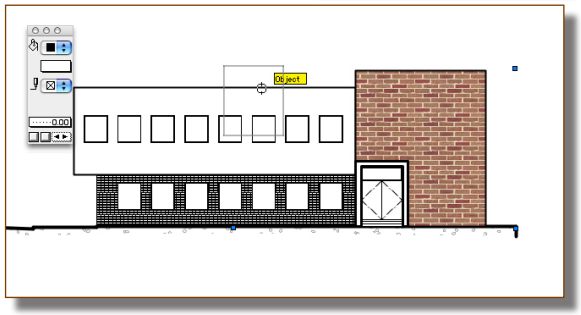
- Choose your compression options if they appear. If they don't appear do not worry about it.



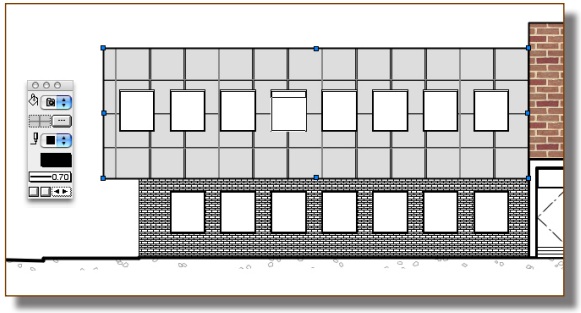
- The new image appears in the Resource Browser.
- Click on the image in the Resource Browser.



- Drag your mouse to the building



- When you let go of the mouse button the image is applied to the building.
- Edit the image on the elevation using the **Attribute/ Mapping tool**.



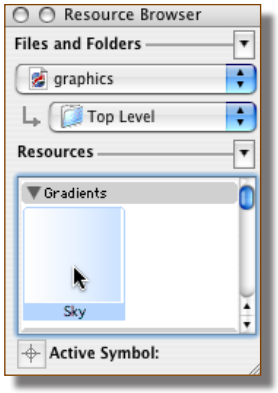
Gradients

[cadmovie097]

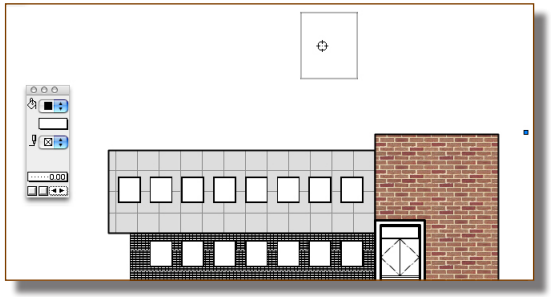
Gradients are a great way of adding colour fill where you want the colour to change from one colour to another (or several colours).

Applying Gradients

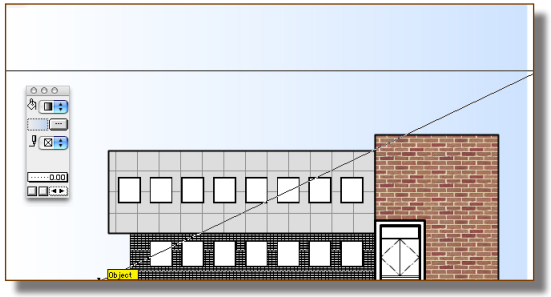
- Select the **Sky** gradient in the Resource Browser.



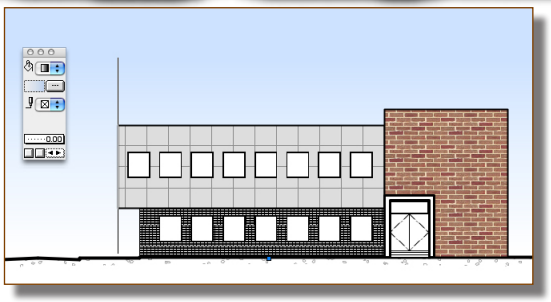
- Drag the sky gradient to the background behind the building. It hard to see, but just let go of the mouse.



- When you choose the **Attribute/Mapping tool,** you see a line. This line defines the length and angle of the gradient
- Click on the left end of the line.
- Move to the ground line.

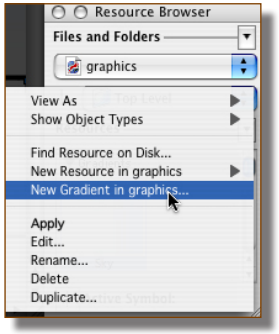


- Click once.
- Click on the right end of the line.
- Move vertically up from the road.
- Click once.



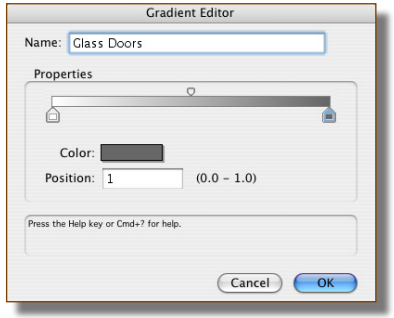
Creating Gradients

- To create a new gradient, go to the Resource Browser.



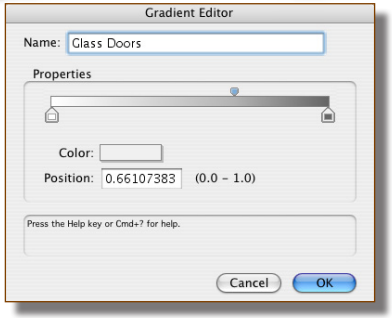
- Right mouse click in the Gradient area of the Resource Browser. It doesn't matter if you right mouse click on an existing image.
- Choose **New Gradient in filename...**

- When the dialog box opens it shows a default name. Remember to give the gradient a name that will be meaningful. We will be making this one from white on the left to blue on the right.
- At the top where it says name, type in **Glass Doors**.

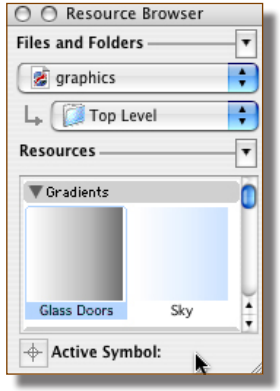


- The colours are controlled by the slider at the bottom of the gradient line.
- Double click on the black slider.
- Choose the colour blue you want, then click on the OK button to close the colour palette.

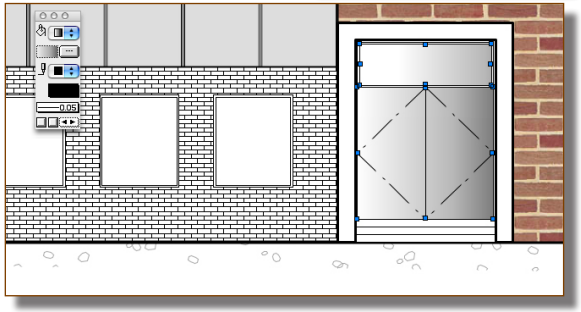
- The slider at the top of the gradient line is used to control the mid-point of the gradient. You can slide this left or right to change the gradient.
- Click on the **OK** button.



- When you close the Gradient Editor VectorWorks adds the new gradient to your Resource Browser.



- Zoom into the entry doors.
- Use the Resource Browser to add the glass door gradient to the glass above the doors.
- Use the Resource Browser to add the glass door gradient to the doors.

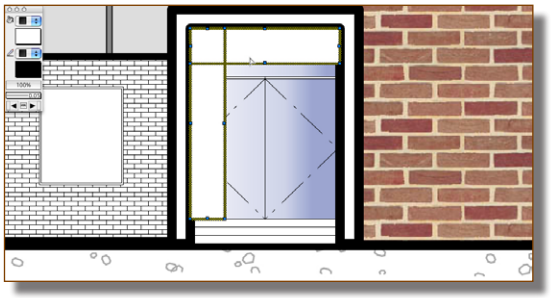


Object Opacity

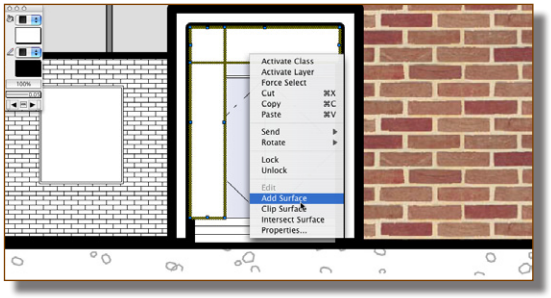
cadmovie098

Object opacity is the ability to make an object transparent. For an elevation like this we could draw shadows for the building and make them transparent.

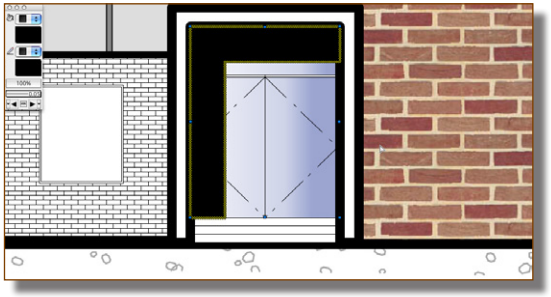
- This is the elevation as we have been drawing.
- Draw two rectangles for the shadow.



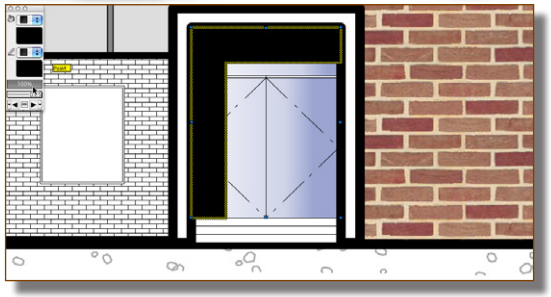
- Select them both.
- Right mouse click.
- Choose **Add Surface**.



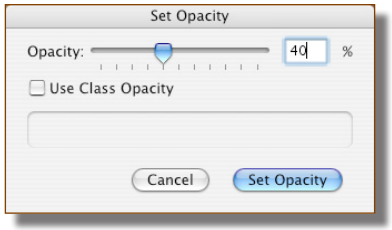
- Use the **Attributes Palette** to give the polygon a solid black fill.



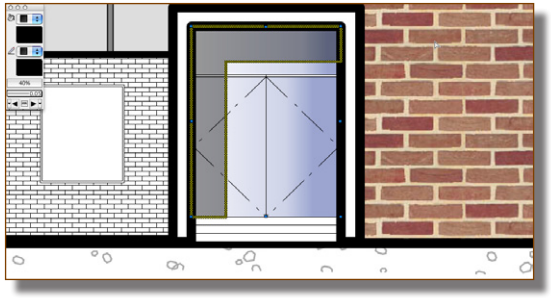
- Back to the **Attributes Palette** and click on the **Opacity** button, where it says 100%.



- Change the opacity to 40%.
- Click on the **OK** button.



- Now you can see transparent shadows. You can apply different opacity to individual objects, so if you want some shadows to be darker than others you can do this...



Line Styles

cadmovie099

VectorWorks 2008 has a new linestlye editor that makes it easier to create your own dashed line styles.

Lighting

Lighting is a really important part of rendering, without good lighting a rendered model can look dull.

Good lighting can save a dull model!

The are two types of lighting:

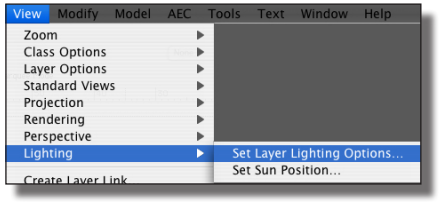
- Ambient Lighting
- Light Sources

Layer Lighting Options

cadmovie100

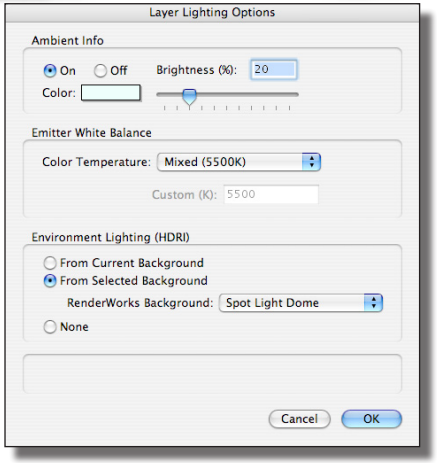
The Layer Lighting Options control the ambient lighting is the lighting all around, it has no direction and therefore casts no shadows. The real world equivalent is the southern sky, also know as the sky dome.

- Change to the **Lighting** layer.
- To set ambient lighting, from the Menu Bar choose **Views > Lighting > Set Layer Lighting Otions...**



- This opens a dialog box for you to set the level of ambient lighting. Usually 30-40% is about right.
- Ambient lighting on it's own is not good enough. We also need to have some directional lighting.
- If you are using Radiosity, turn off the layer lighting.
- If you want to replicate blue sky light, set the colour to a very pale blue.

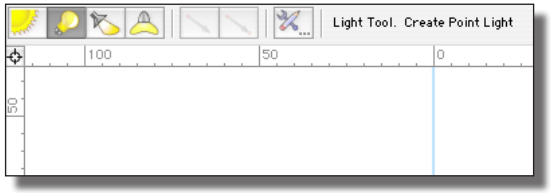
- You can also assign Background Lighting options. One of the cool options is to use HDRI Backgrounds. HDRI stands for High Dynamic Range Image (http://en.wikipedia.org/wiki/HDRI). HDRI backgrounds are really effective, but they take a long time to render.



Light Sources

- The light sources are the lights that make the rendered image come to life.

There are 4 types of light sources that you can make with the light tool:
- Directional
- Point
- Spot
- Custom



Textures

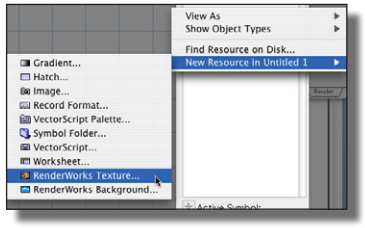
Textures are the things that make you drawing stand out and have a bit of zing. They can be created inside VectorWorks and can be created from digital images, or from shaders (built in mathematical descriptions of textures).

You should consider having an office library to store resources like symbols, layer and class standards and textures. It will be a lot easier for you to find textures that you like using in your library rather that hunting through all your old files.

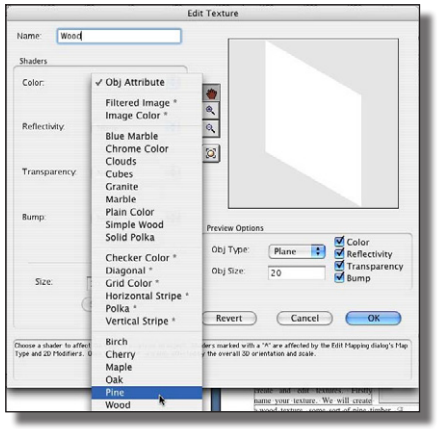
Creating Textures

cadmovie101

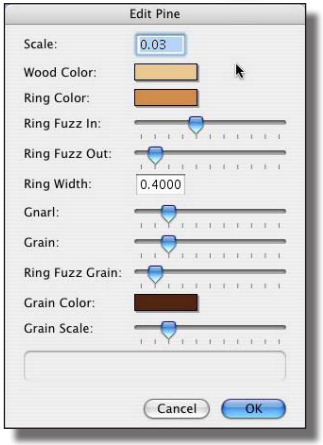
- Change to the **Rendering** layer.
- Open the resources palette and right click on an empty area of the Resource Brower.
- Choose **New Resource in... > Texture**.



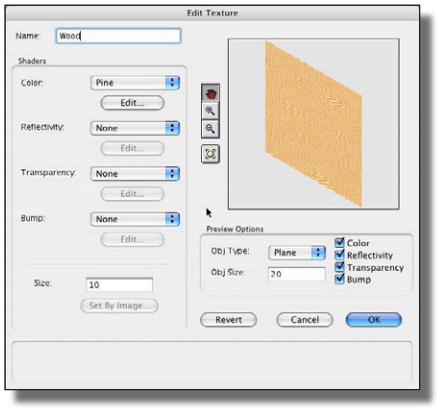
- This dialog box allows you to create and edit textures.
- Name your texture. We will create a wood texture, some sort of pine timber.
- Name the timber **Wood**.
- Click on the pop-up menu for colour.
- This will open a menu for you to choose the type of colour. It could be a scanned image, or one of the built in shaders.
- Choose **Pine**.



- After you have chosen pine, you can click on the edit button directly below Pine, this opens the Edit pine dialog. Here you can make your texture look like real pine by changing the colour, grain, gnarl, etc.
- Click on the **OK** button.



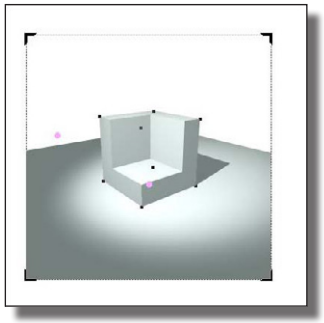
- Change the Size to **40mm (1.75")**.
- Change the **Obj Size** to **50mm (2")**, This means that the preview object is 50mm in size. This should give you a good idea of the grain on our object.
- Click on the **OK** button.



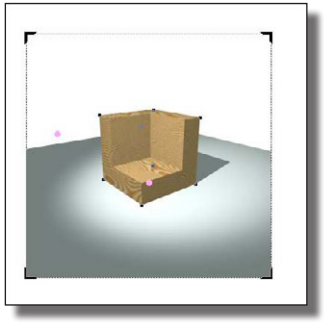
This is a great way to get an idea of what the texture will look like on your object.

Assigning Textures Directly

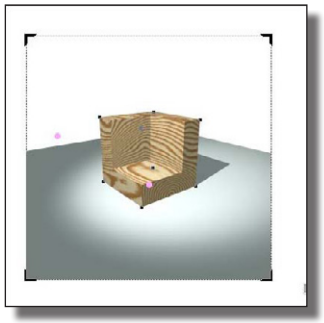
- Select the object that you want to assign the texture to.
- On the Resource Brower double click on your **Wood** texture.



- To edit the texture, right mouse click on the Wood texture on the Resource Brower.



- Choose **Edit** from the pop-up menu.
- Edit the pine texture. Change the scale to make the texture look better.
- It is important to edit the textures so that they look correct.

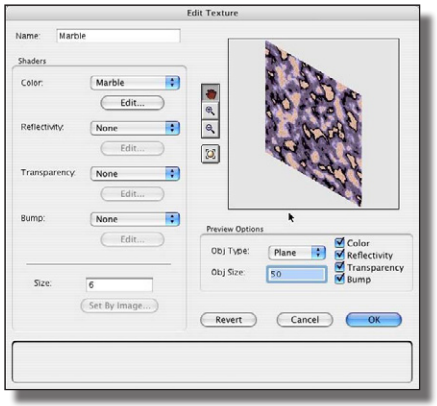


Tip:
you can also Drag and drop textures from the Resource Browser onto a 3d object to assign the textures.

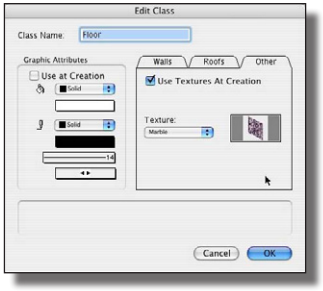
Assigning Textures Using Classes

If you set up your file early on to use textures for specific classes that you want to texture then you have an advantage when it is time to assign the textures. By going to the classes dialog you can then texture all the objects of a specific class.

- Create a new texture.
- Name it **Marble**.
- Use a Marble texture from the Color pop-up menu.
- Edit the marble so that it has better colours and grain.
- Click on the **OK** button.

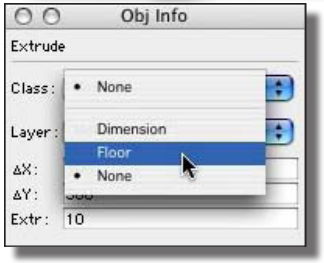


- Open the classes Setup dialog, from the Menu Bar choose: **Tools > Organization...**
- Double click on the **Floor** class.
- Set **Marble** and the texture for the class.
- Click on the **OK** button.



- If you get a dialog box asking if you want to assign the texture to all objects say yes always.
- If you use objects in VectorWorks there is often the choice to use classes for parts of the objects. This makes it very easy and quick to add textures to objects. It also makes it easy to control the textures in a project.

- Select the floor object.
- Assign the floor object to the Floor class.

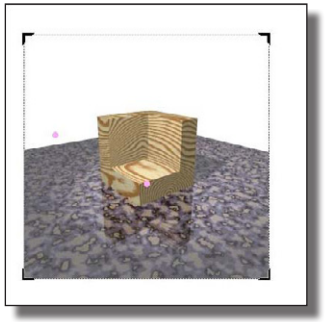


Mapping Textures

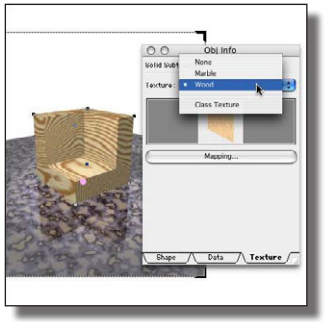
cadmovie102

Mapping textures is the way that VectorWorks (and the other CAD programs) drape the textures of the objects. One of the tricks to getting a good render is to get the texture mapping right. The wood texture has to appear the right size for the rendering to look right. When we created the texture we set the preview on the object to be 50mm, this was to give us an idea of what the texture would look like on a reasonable sized object.

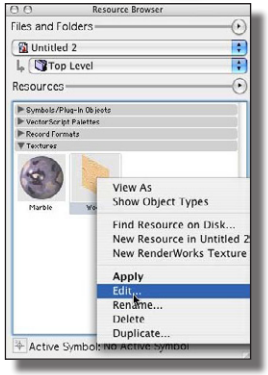
- Change to the **Texture Mapping** layer.
- This file has an object with textures already in it. .
- Open the **Object Info Palette**.



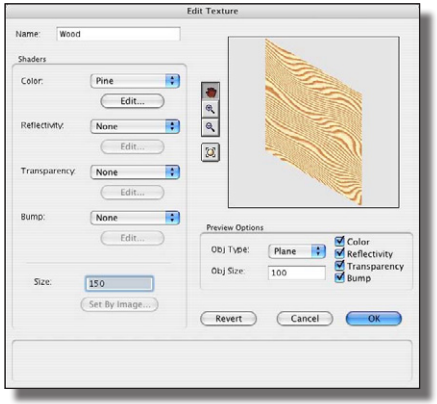
- Click on the Tab for **Render**.
- This is used to apply textures to VectorWorks objects and also allows you to adjust the mapping, depending on the way that the texture is created.
- This object has a texture that can not be edited on the Object Info Palette.



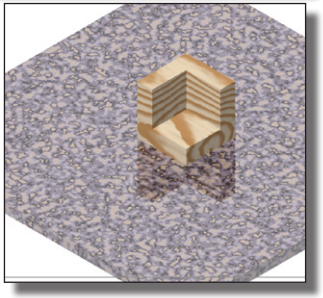
- Using the Resource Brower. Find the wood texture and right mouse click on it.
- Choose **Edit**.



- On the Edit Texture dialog, change the size to **150mm (6”)**. That is over 3x bigger than it was.
- This will cause the texture to look too big.
- Click on the **OK** button.



- You can now see the size of the texture that we created is not suitable for our timber block, , although it may be great for a far away view.



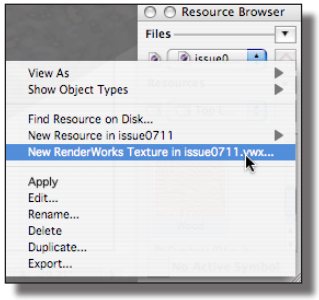
Often you need to exaggerate textures to get them to read correctly in a rendered image.

Texture From Image

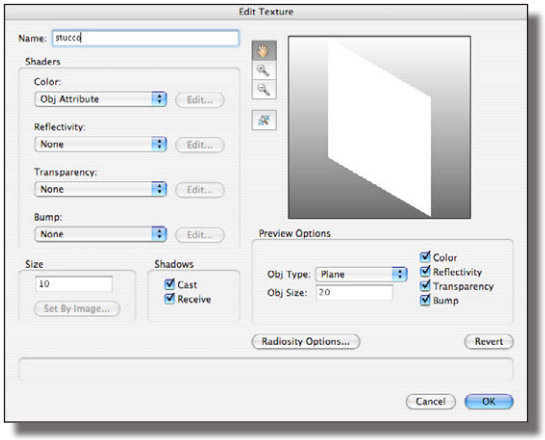
Creating a texture from an image allows you to make any texture that you want. You can scan an object, a logo, you can use a digital photo or you can make up an image in Photoshop.

[cadmovie103]

- Right click on the Resources Browser.
- Choose **New Resource in... > RenderWorks Texture...**
- To create an texture from an image you need to create the image. I have already made one for you in this file.

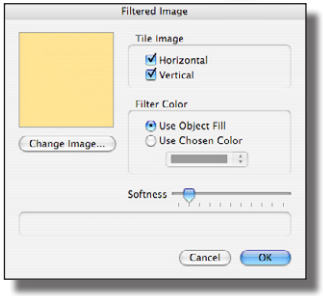


- On the texture Dialog Box choose **Image Color** from the pop-up where it says Color. When you choose this from the pop-up, VectorWorks wants to know which file to import.

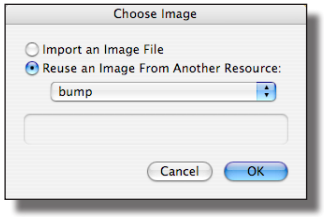


- Reuse an image from another resource. Click on the pop-up menu and choose **Stucco image**.
- Click on the **OK** button.

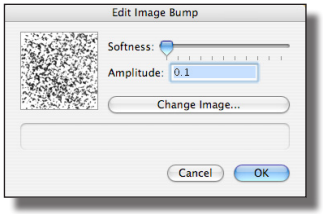
- Tile image horizontally and vertically, otherwise your texture will be a small square in the middle.
- When you choose Filtered Image, you can choose a filter colour for the image. This allows you to duplicate this texture and change the filter colour to make a different texture.
- Click on the **OK** button.



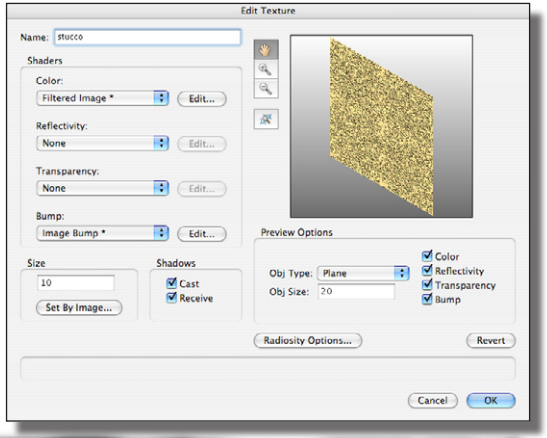
- Click on the **Bump** pop-up menu.
- Choose image bump.
- Reuse an image from another resource. Click on the pop-up menu and choose **bump**.
- Click on the **OK** button.



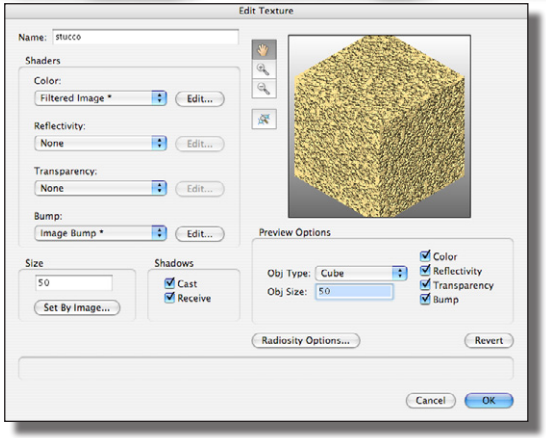
- The softness controls how the bumps appear, with soft edges, or with sharp edges. To get real control over the transition from the base texture to the bump, make sure that you have soft edges on your image.



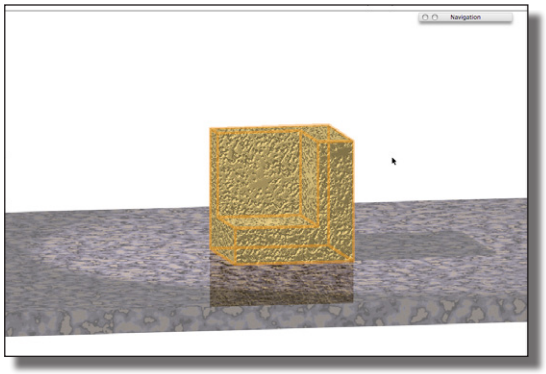
- This is the image with the bump. You can also control the size of the texture.



- Change the size to **50mm (2”)**.
- Change the Obj Size (the preview) to **50mm (2”)**. This allows you to see more accurately how the texture will look on the object.
- Click on the **OK** button.



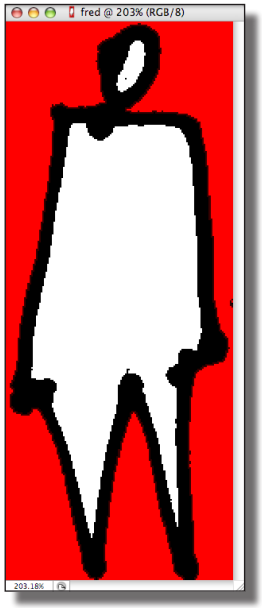
- Apply this texture to your object and render the view in Final Quality RenderWorks.



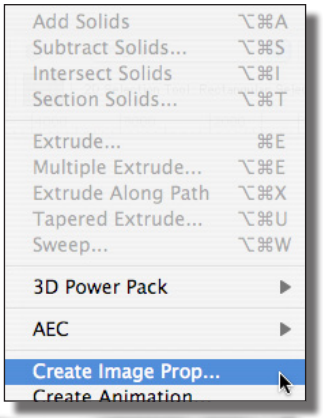
Making an Image Prop

cadmovie104

An image prop is where you take an image file and convert it into a 3D object in VectorWorks. The image file could be a photograph of a tree, a person, or even a sketch that has been scanned. In your exercise file I have scanned a couple of hand-drawn images for use to make image props from.

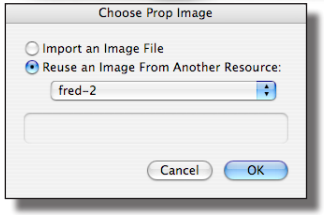


- First, you have to draw and scan your image. I drew this image with a thick felt-tip pen. Then I scanned the image as a black and white image at 300dpi.
- Open the image in Photoshop and add the red colour to it. You don’t have to use Photoshop, any image editing program should be able to do this for you.
- The red colour is the main trick. I’m going to use the red colour to refine the area that will be transparent. If you don’t add a solid colour like this, you will find it impossible to make the image prop correctly.
- You will find that I have already imported this as an image in the exercise file.

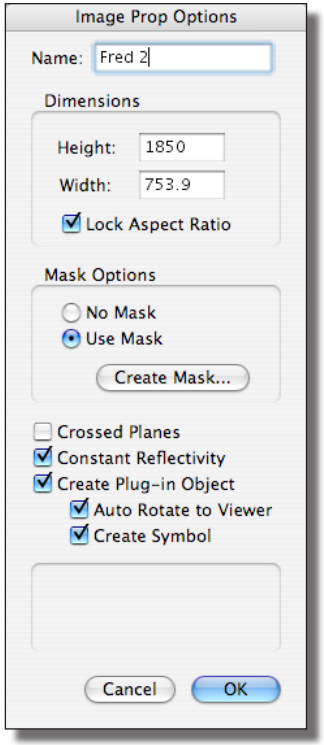


- Go to the Menu Bar.
- Choose
  Model > Create Image Prop...

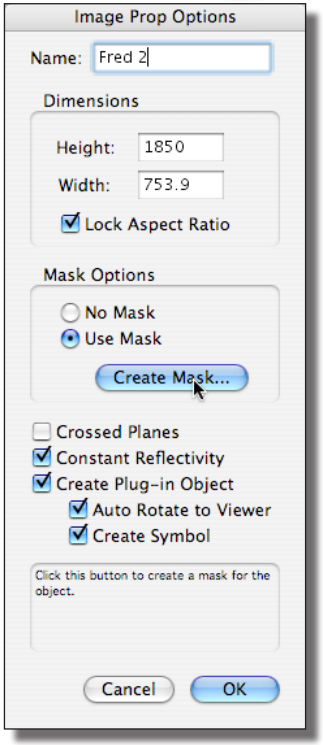
- Choose to **Reuse an Image From Another Resource:**
- Choose **fred-2**. When you make your own images, you will have to import an image file at this point.



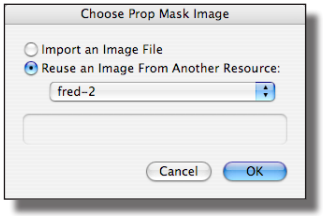
- Fill in the height of the image prop. VectorWorks then fills in the correct width for you. If you change the width, the height will automatically change if you lock the aspect ratio.
- Chose the option for **Use Mask**.
- Choose the other options that you want. I have chosen the options that I use most often.



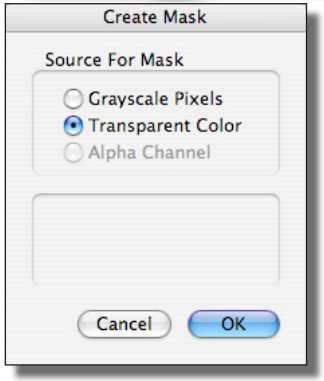
- Click on the **Create Mask...** button. This is where you choose the red colour as the transparent background.



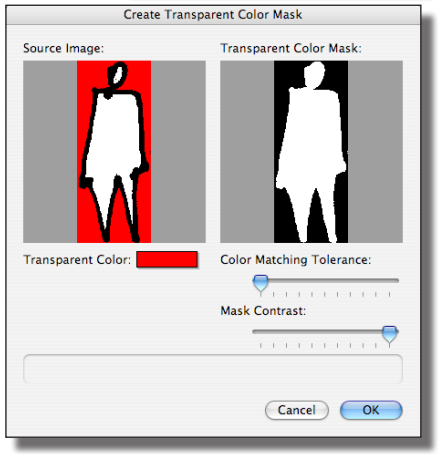
- Choose to **Reuse an Image From Another Resource:**
- Choose **fred-2**.



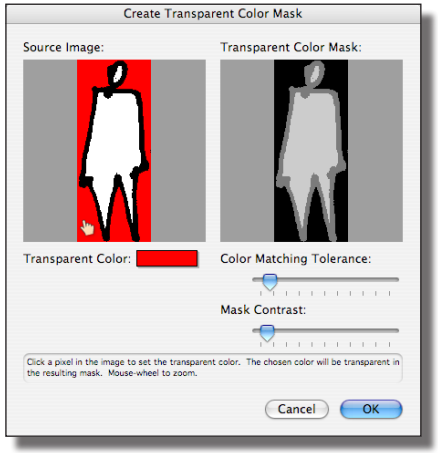
- Choose **Transparent Color**.



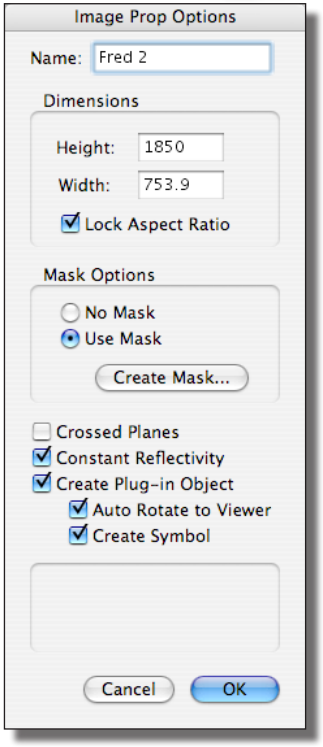
- This dialog box is where you choose the transparent colour.
- Click on the red colour. VectorWorks will the colour as the mask.



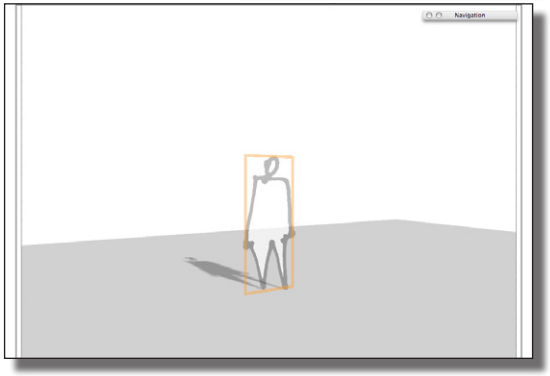
- The sliders can be used to adjust the mask and the mask contrast. These settings will make the image props slightly see-through.
- Click on the **OK** button.



- Check the options again.
- Name your image prop so that you can find it easily.
- Click on the **OK** Button.

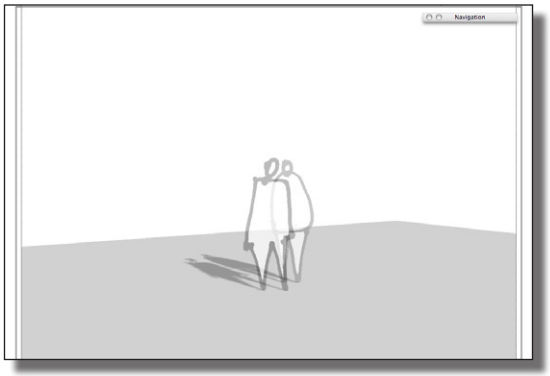


- VectorWorks places your image prop in the middle of the drawing. Notice that the image prop is slightly transparent.

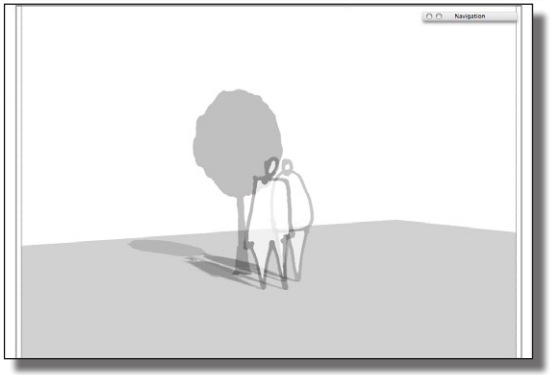


- If you want the place more image props, you can select them from the Resource Browser. They appear in the Resource Browser as a symbol.

- I have included another sketched person.



- and tree or two.



Questions and Answers

Q. "How can I use an iPod as a presentation device?"

If you are only going to use your iPod as a presentation device, not for backup and storage, then you can use any of the iPods except for the shuffle. So, you could buy a Nano 4GB or an iPhone and use it for presentation.

Step 1

Create the presentation you want. This can be photos or a movie. Using an iPod for presentation is not like a keynote or PowerPoint presentation. It can be a slide show or a series of movies, but it will not look slick if fumble about on your iPod looking for photos then a movie. On a Macintosh it is easy to turn your photos into a slideshow, so you could haave a series of movies to show your clients.

Step 2

Tell your iPod to syncronise your photos and movies. When you do this your iPod will copy the movies and photo files from your computer and it will put the photos and movies in separate areas of the iPod.

Step 3

Connect the iPod to a TV. On the Apple web site you can purchase two types of connectors; component video and composite video. Component video will be the new standard, that is, all the big new TV's have component video, but nearly all TV's have composite video (even 10 year old TV's). Component video is higher quality, but composite video is more universal.

Step 4

Set the TV to the correct video input and play the iPod.

Q. "Can I Re-use My VW12 Wall Sytle Library in VW2008?"

The answer is yes and no. You could re-use your old wall style library in VectorWorks 2008, but you will miss out on the new wall component abilities. It would be better to edit all the old wall styles to take advantage of the classes on the wall components.