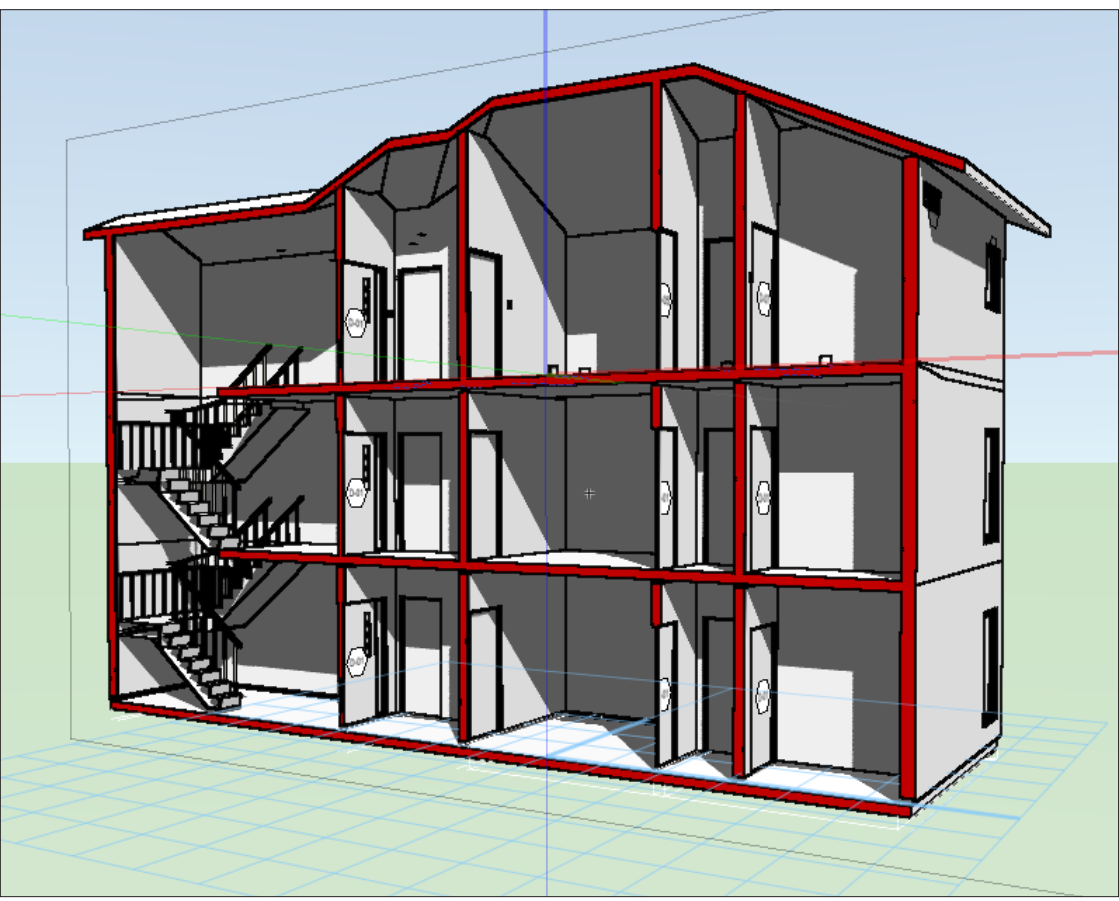
SHORT SHARP MANUALS

1401 BIM



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Contents

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Introduction

There is a lot of talk about Building Information Modeling. It is going to be the big thing when using Vectorworks. There are some countries where all jobs will be expected to be delivered using BIM principles.

BIM is not just a new catch phrase, it is also a more efficient way of creating drawings in Vectorworks. At first it may not seem faster as it looks like you have to create a lot of unnecessary information. But it only feels that way because this is a new way of working. When you get more used to BIM, Vectorworks is much faster in creating building elements like walls, doors, windows, etc. Once you have created elevations and sections from your elements, most of the work is done. The model is used to create all the drawings. But the most powerful part comes when you have to make a change to the building. When you change the design and move walls, change the roof, etc. you do not have to redraw the elevations and plans. The viewports just need to be updated. This is a great time saver, but more importantly, it manages risk. With BIM there is no opportunity to have different drawings that have different information, all drawings share the same model. If you move a door in the model, every drawing that shows that door will update automatically.

Vectorworks has a concept called stories that will help you to set up your layers. But more than that, stories are powerful at controlling the building elements in the layer. You can make walls, columns, and stairs connect to the floor above. When you change the settings on the story, the elements update automatically. If you setup the file correctly this becomes a powerful workflow.

Starting to work with BIM in mind means that you will have to change some of your working methods so that you will reap the benefits Vectorworks has to offer.

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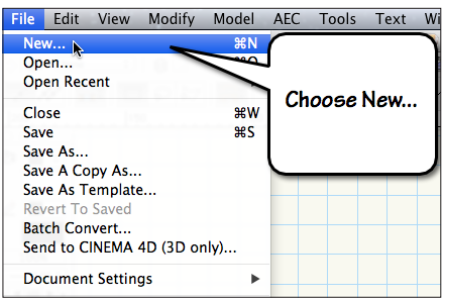
Document Setup

cadmovie1021

Start with a New File

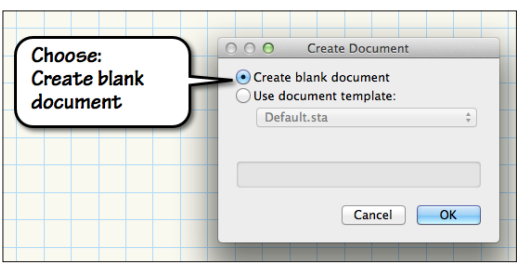
For this manual I am going to start with a new blank file. The reason for this is so that I can show you how to create a template that will allow you to work faster using new methods.

Go to the **Menu** bar.



Choose **File > New...**

Choose **Create blank document**.



This will create a completely blank document. If you have recently upgraded from an earlier version of Vectorworks, it is a good idea to rebuild your template, and starting from a blank document is the best way to go about it. Because we have a blank document, we do have to go through the document settings to make sure they are suitable.

Document Setup

- Go to the **Menu** bar.
- Choose **File > Document Settings > Document Setup...**

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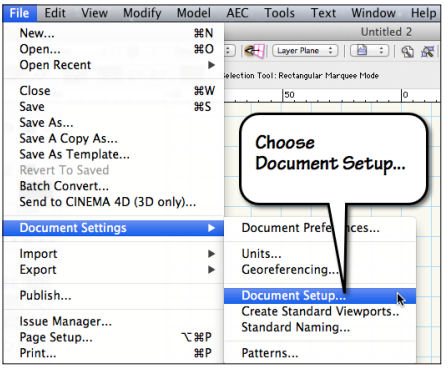
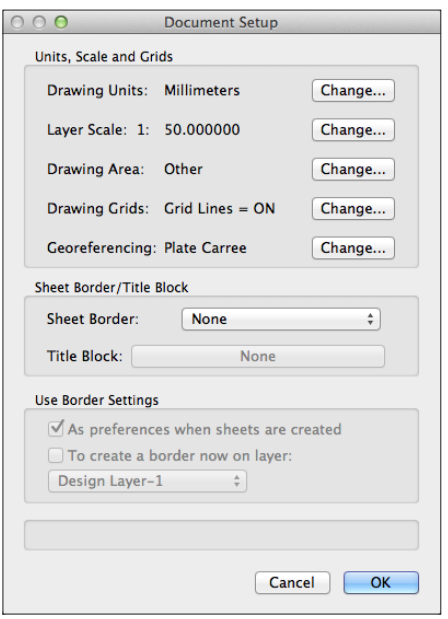
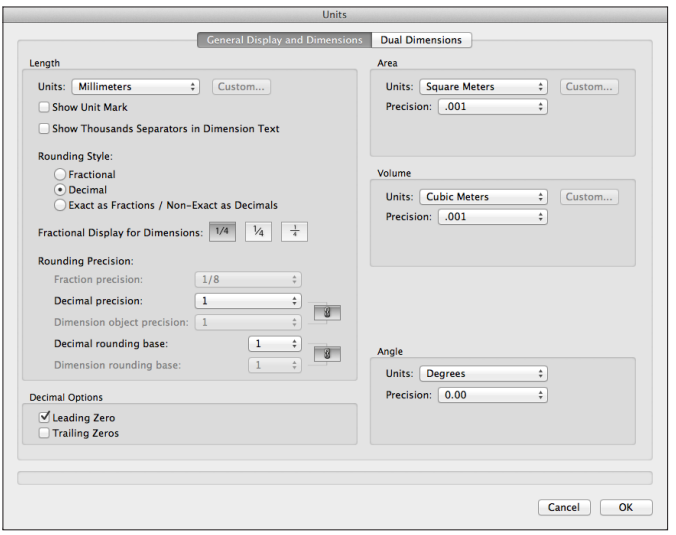


This dialog box allows you to change the major settings for your document in one easy to find place. If you save this file as a template, you will not have to access this dialog box very often, so it is worthwhile going through all the settings to make sure they suit most of your projects.

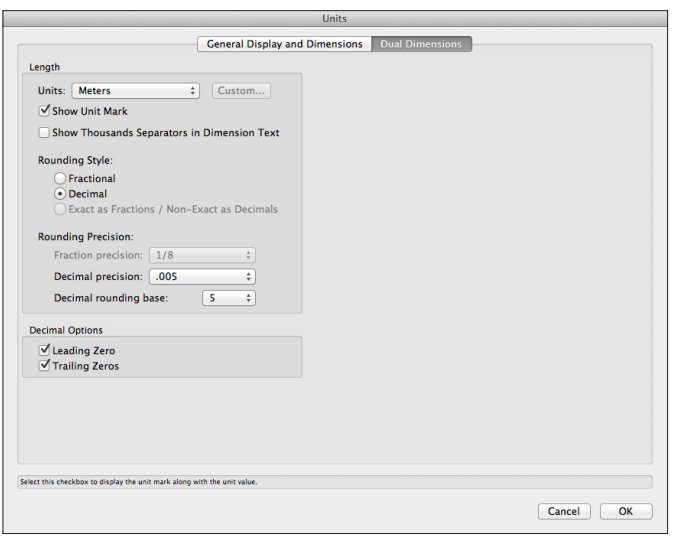


- Go to the **Drawing Units** and click on the **Change…** button.

Start by changing your drawing units to suit. If you are using **Imperial** measurements make sure that you set the correct **Rounding Style**.



Make sure that you check your **Dual Dimension** settings. We will not use these settings, but they can be useful if you create your own **Dimension Standards**.



When you have set the required dimension settings, click on the **OK** button to return to the **Document Settings** dialog box.

- Go to the **Layer Scale** and click on the **Change…** button.
- Set your design layer to the most appropriate scale. I use a scale which is similar to the final scale of the printed drawings

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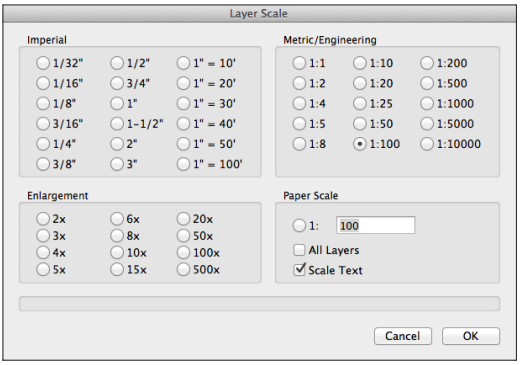
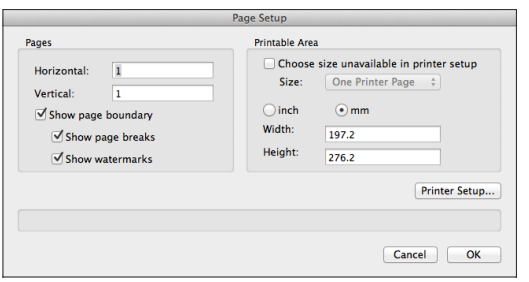
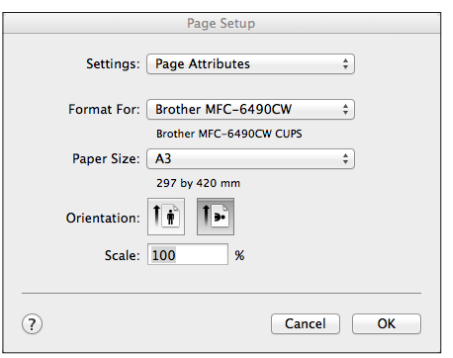


- Click on the **OK** button to return to the **Document Settings** dialog box.
- Go to the **Drawing Area** and click on the **Change…** button.



- Click on the **Printer Setup** button.
- Choose your printer.
- Choose your most common page size.
- Choose the page orientation.



- Click on the **OK** button to return to the **Page Setup** dialog box.
- Check the page numbers, **1** Horizontal and **1** Vertical.
- Click on the **OK** button to return to the **Document Setup** dialog box.

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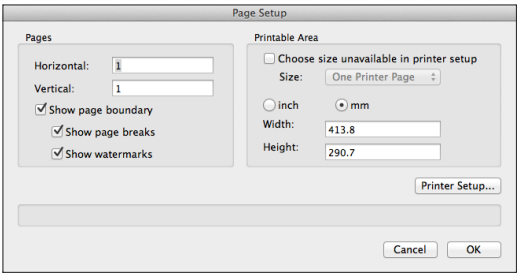
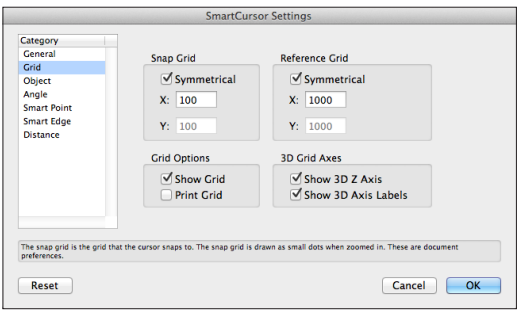
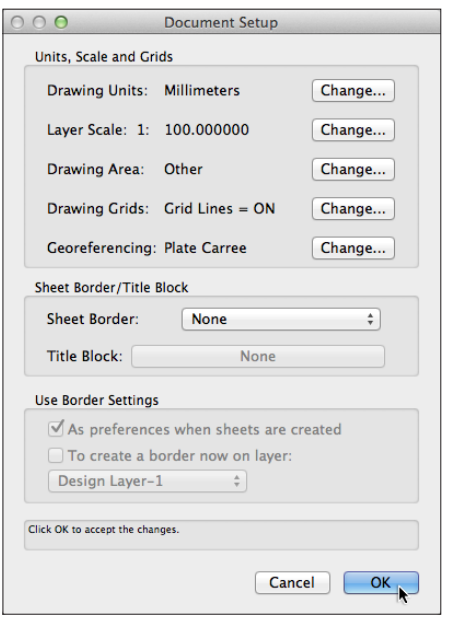


- Go to the **Drawing Grids** and click on the **Change…** button.



- Set the drawing grids to suit your drawing style.
- Click on the **OK** button to return to the **Document Setup** dialog box.



- Click on the **OK** button to close the **Document Setup** dialog box.

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Layers and Stories

Layers and stories are the keystones of your BIM workflow. Layers are used to divide the project and stories are used to group layers. Stories are an organizing concept that groups design layers to make it easy to adjust different levels of the building. They also allow you to control building elements such as stairs, walls, and so on. The story settings control the elevation of the story relative to other stories.

You will find a detailed explanation of stories in the short manual 1201.

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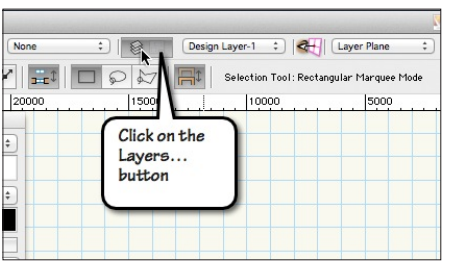
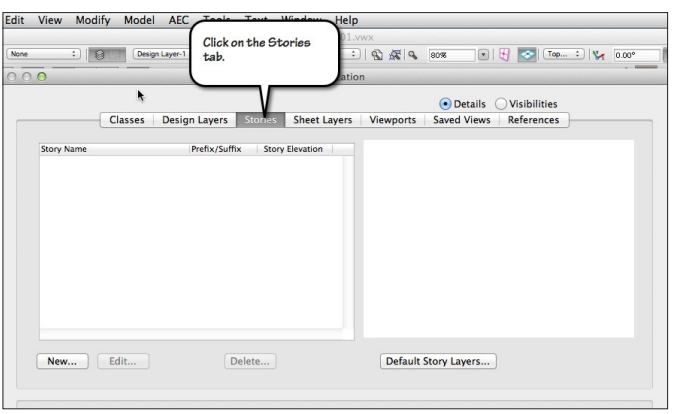
- Go to the **View** bar.
- Click on the **Layers...** button.



- This will open the Organization dialog box.
- Click on the **Stories** tab.



- Since we are using a blank document, we need to edit the **Default Story Layers** to suit our construction methods.
- Click on the **Default Story Layers...** button.

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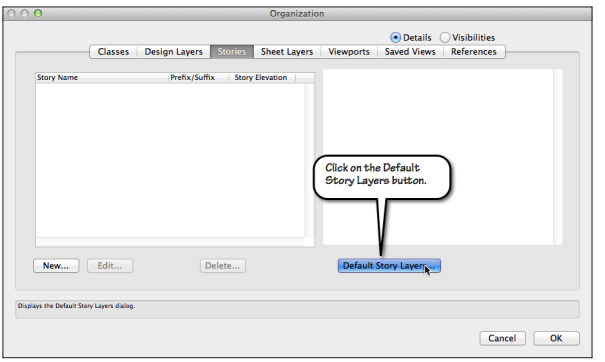
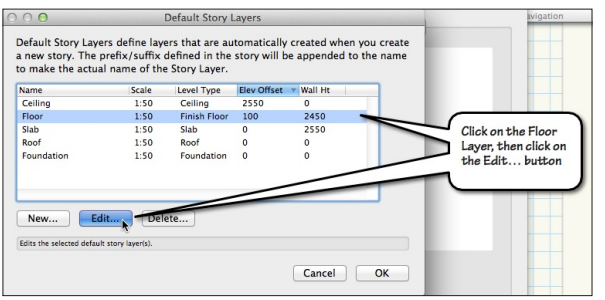
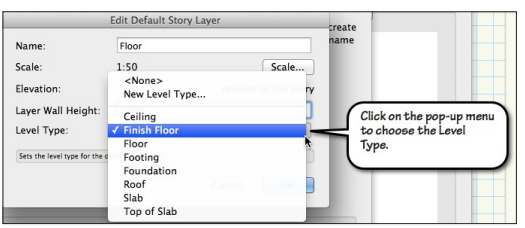


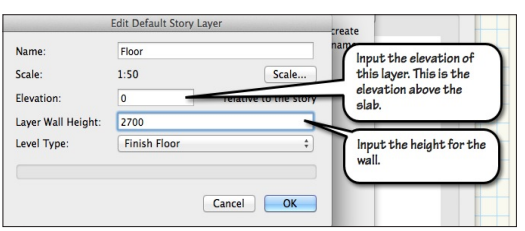
- Start by editing the **Floor** layer.
- Click once on the **Floor** layer, then click once on the **Edit…** button.



- Click on the **Level Type** pop-up menu to choose the appropriate level type to relate to a floor layer. Vectorworks uses the **Finish Floor** layer type, but you do not have to use this, you can choose any **Level Type** that you want, or you can create your own level types.



- Input the standard **Elevation** for this default story layer. The elevation is the height of this layer above the setting out of the story. Sometimes Vectorworks already has an elevation of 100 mm (4 inches). This has the effect of setting your layer 4 inches above the start of the story, which might be your finished floor level.
- I usually change this to an elevation of zero.



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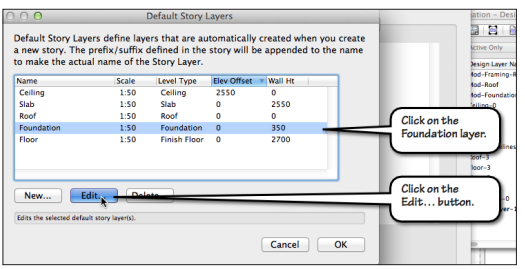
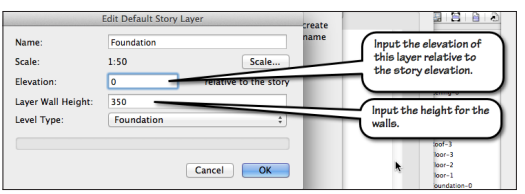
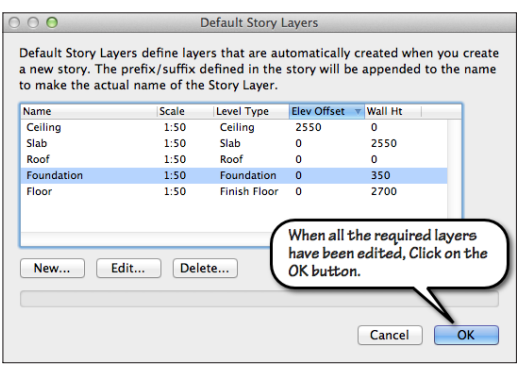
- Input your **Layer Wall Height**. This is the height of your walls on this story of the building. Remember though that we can also tell Vectorworks to use the floor to floor height (**Story Elevation**) for setting up the wall heights.
- Click on the **OK** button.
- Click once on the **Foundation** layer, then click once on the **Edit…** button.



- Click on the **Level Type** pop-up menu to choose the appropriate level type to relate to a floor layer.
- Input the standard **Elevation** for this default story layer. The elevation is the height of this layer above the setting out of the story.
- Input your **Layer Wall Height**.



- Click on the **OK** button to return to the **Default Story Layers** dialog box.



- Click once again on the **OK** button to return to the **Organization** dialog box.

If you can create **Default Story Layers** that suit most of your projects, you will not have to edit your defaults again if you use this file as a template to start your projects.

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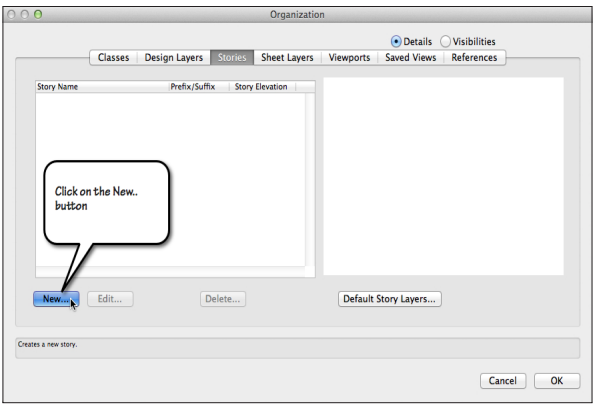
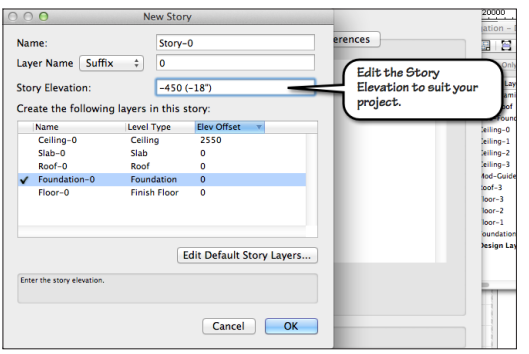
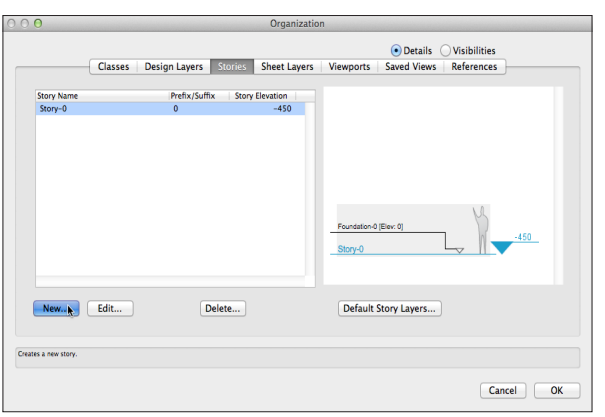
- Click on the **New...** button to create a new story.



- If your first story is a foundation, then choose the **Foundation** layer from the list of available layers in the story.



- Change the Name of the Layer. Vectorworks will not automatically create a **Story-0** story name.
- Change the suffix to **0**.
- Edit the **Story Elevation** to suit the start of the foundations. In this project I have the elevation for the start of the foundations at **-450mm (-18")** and a **Layer Wall Height** of **350mm (14")**, leaving a **100mm (4")** gap for the slab.
- Click on the **OK** button to return to the **Organization** dialog box.
- Click on the **New...** button to create a new story.



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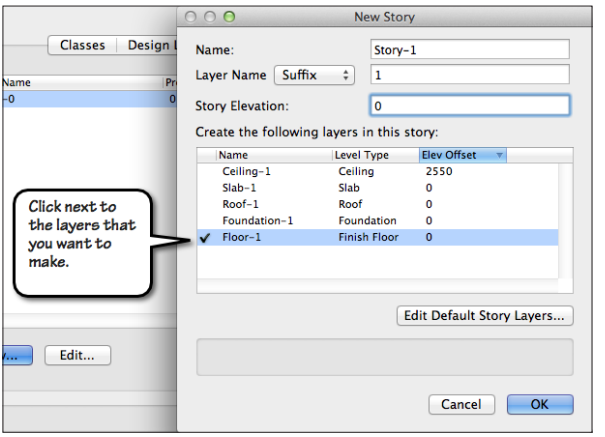
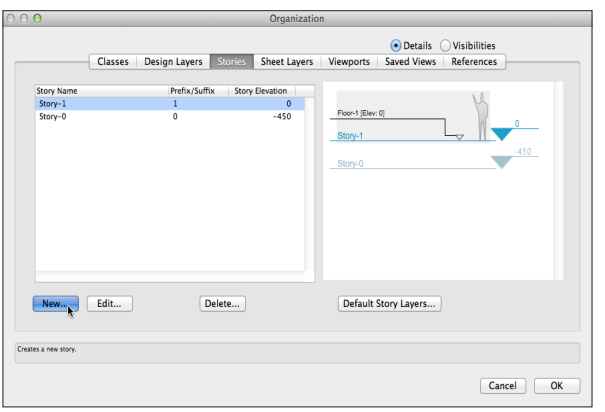
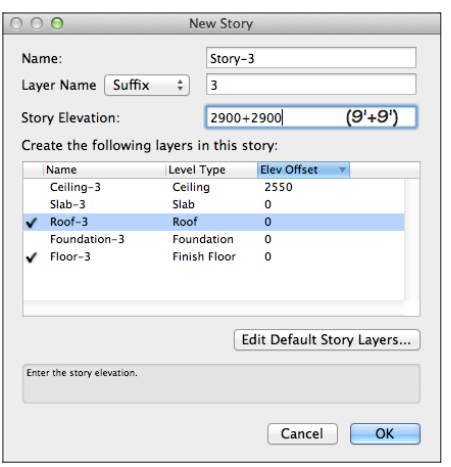
- Choose the required layers.
- Edit the **Story Elevation** to suit this project.



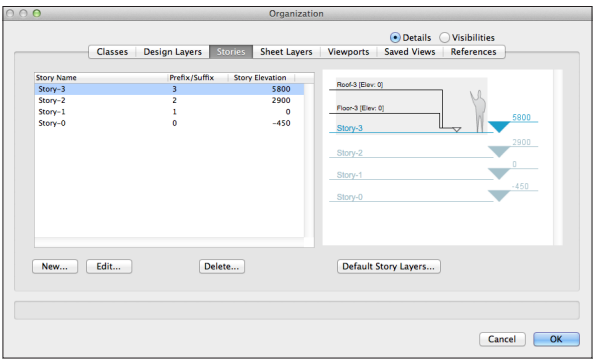
- Click on the **OK** button to return to the **Organization** dialog box.
- Click on the **New...** button to create a new story.



- Choose the required layers.
- Edit the **Story Elevation** to suit this project.



- Click on the **OK** button to return to the **Organization** dialog box.



- Create the required stories.
- Click on the **OK** button to finish.

Creating Walls and Slabs

After setting up the layers and stories, setting up your wall styles is the next most important step. For as long as I can remember, walls have had the ability to automatically extrude to the **Layer Wall Height** (ΔZ as it used to be called), so they have always been fundamental to BIM.

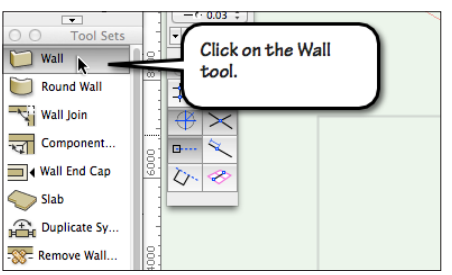
When you create your **Wall Styles** you have to remember that they can connect to the **Story** settings, not just the **Layer Wall Height**.

Foundation Walls

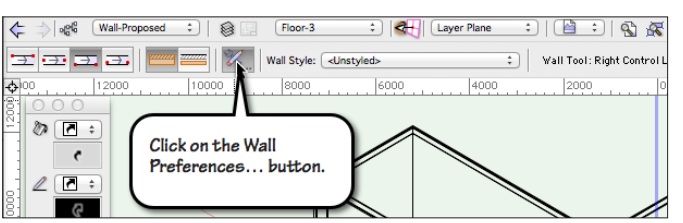
cadmovie1023

We can start with these walls, because they are the least complex. The foundation walls can use the graphic style of the class they are assigned to and they can be set up to link to the finished floor of the story above.

- Go to the **Building Shell** tool set.
- Click on the **Wall** tool.



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



- This opens the **Wall Preferences** dialog box. This is where you can create a **Wall Style**, set the class options, set the wall heights etc.
- Enter the **Overall Thickenss** of the wall. This wall is **190mm (8")** concrete block.

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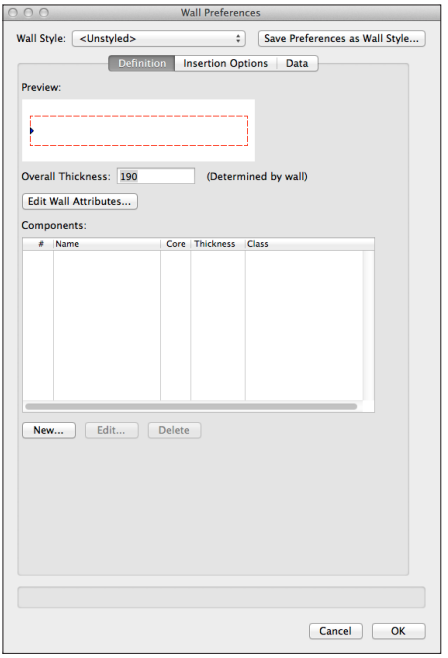
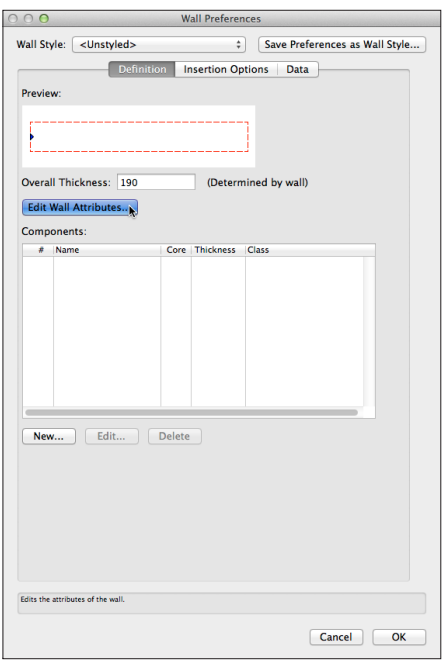
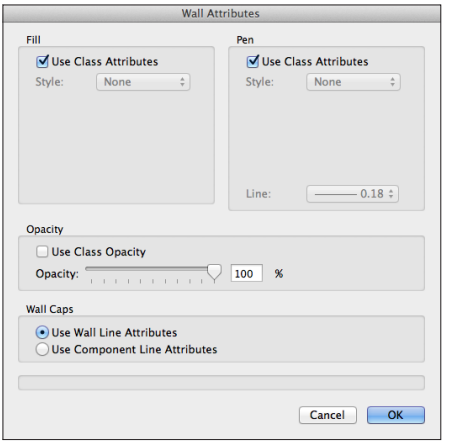


- Click on the **Edit Wall Attributes** button.

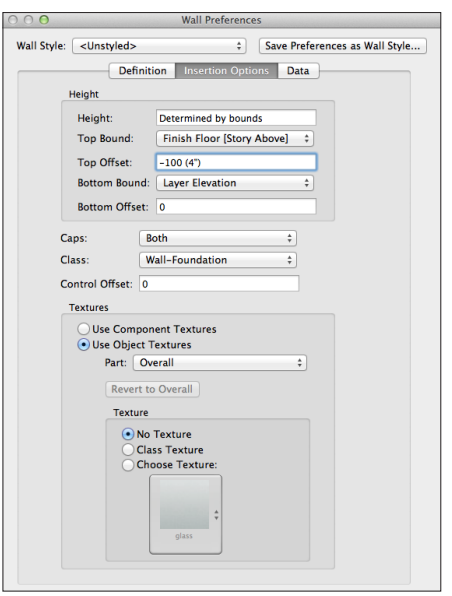


- Set all the options to use **Use Class Attributes**. This will allow you to use class overrides in your viewports to change the graphic style of the foundation walls.



- Click on the **OK** button to return back to the **Wall Preferences**.
- Click on the **Insertion Options** tab.
- Set the **Top Bound** to use **Finished Floor (story Above)**.
- Set the **Top Offset** to suit the floor slab.

Setting the **Top Bound** in this way will allow you to adjust the foundation wall height by changing the story settings, the walls will automatically adjust.



- Create a suitable class for the foundation walls using the **Class** pop-up menu.
- Click on the **Data** tab
- Fill in the information you want to record about these walls.

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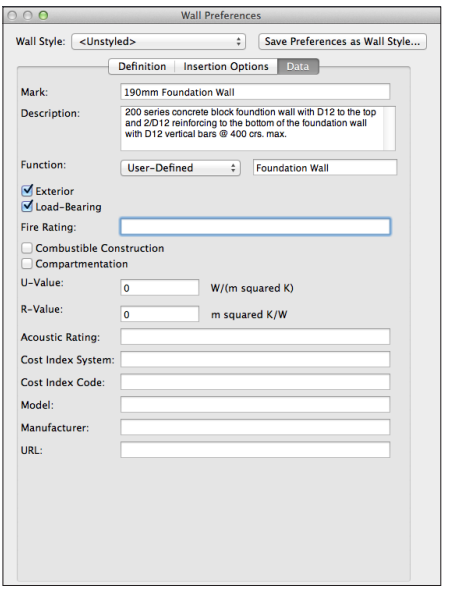


- Click on the **OK** button to close the dialog box and return to the drawing.

Lower Level Walls

cadmovie1024

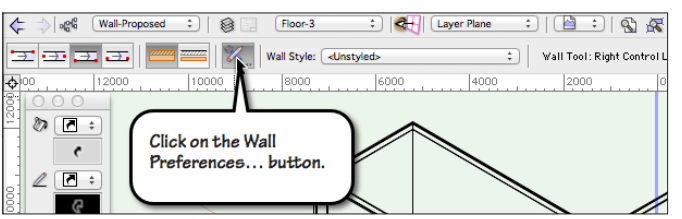
These walls can be more complex than the foundation walls, we can add components to allow us to see the walls more accurately, in plan, elevation and section.

You might be used to just showing the framing on your plans, so it might not make sense to show the cladding, cavities and interior lining. However, the components can be assigned to classes so you can choose when to see the components.

For example, for the elevation you would want to see the exterior cladding, as that could add 100mm (4") or more to the elevations. You would also want to see where the cladding stopped in relation to the floor slab. When you have detailed plans of the kitchen and bathrooms you would want to see the lining, so it makes sense to add it to the wall style.

The wall styles can then be added to your library. That way you only have to create the wall styles once, but because of the classes on the components, you will be able to use walls in multiple places.

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



This opens the **Wall Preferences** dialog box again.

- Click on the **New…** button to create a new component.

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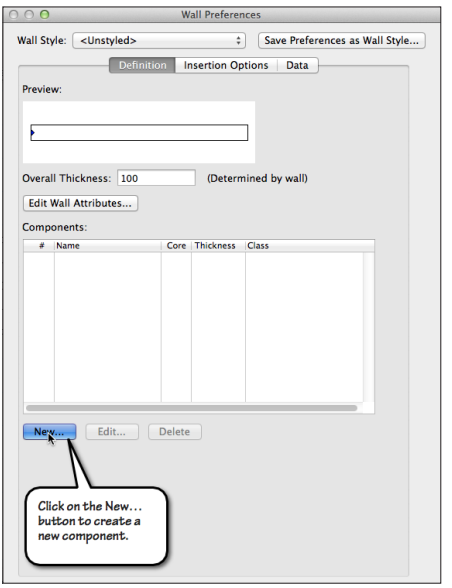
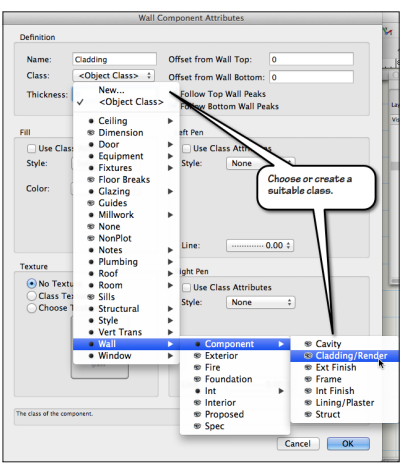
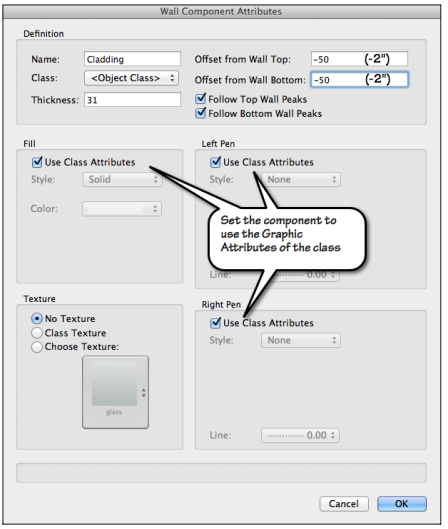


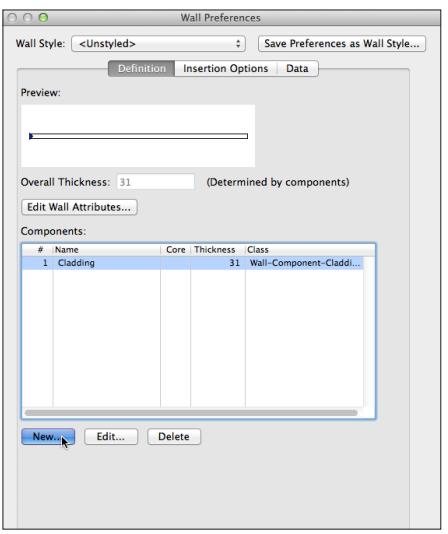
- The wall can be created from several components. Each component can have its own graphic style, its own class, and its own 3D settings. This makes it very powerful if you use components to create your walls.
- Name the component.
- Choose a class for the component, or create a new class. You will notice in this image below that the class is already created and that it follows a strategy (Wall-Component-Component Name).



- Input the thickness of the component.
- Input the Offset from **Wall Top** and **Wall Bottom**. The bottom offset is used to create that matches the correct offset a component for this cladding. The top of set is the same as the bottom offset so that I can reuse the same wall style on the next level above.



- Click on the **OK** button to return to the **Wall Preferences** dialog box.



- Click on the **New…** button to create a new component.
- Name the component.
- Choose a class for the component, or create a new class.
- Input the thickness of the component.
- Input the **Offset from Wall Top** and **Wall Bottom**.

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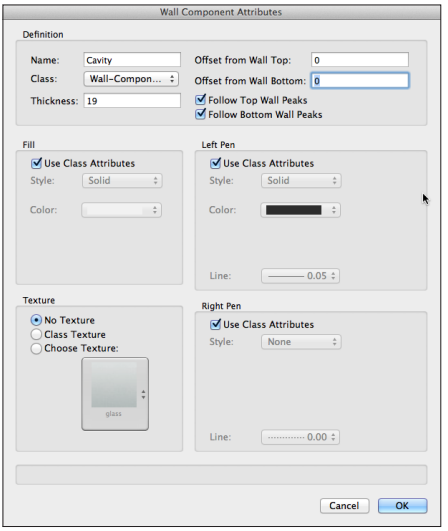
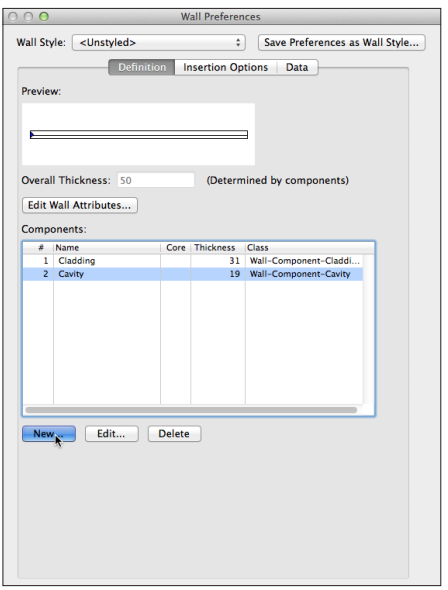


- Click on the **OK** button to return to the **Wall Preferences** dialog box.



- Click on the **New…** button to create a new component.
- Name the component.
- Choose a class for the component, or create a new class.
- Input the thickness of the component and the **Offset from Wall Top** and **Wall Bottom**.

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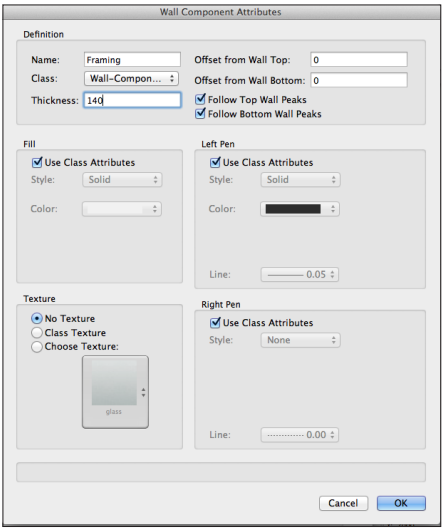
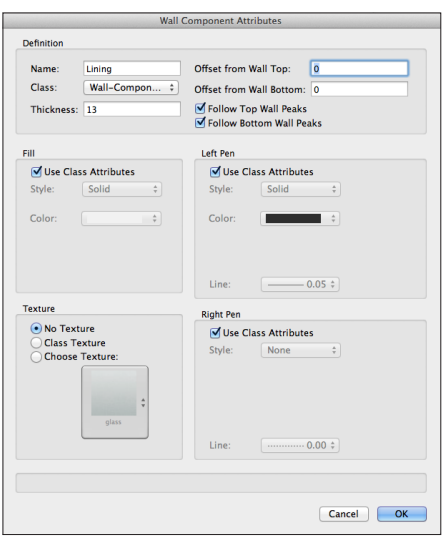


- Click on the **OK** button to return to the **Wall Preferences** dialog box.
- Click on the **New…** button to create a new component.
- Name the component.
- Choose a class for the component, or create a new class.
- Input the thickness of the component and the **Offset from Wall Top** and **Wall Bottom**.



- Click on the **OK** button to return to the **Wall Preferences** dialog box.

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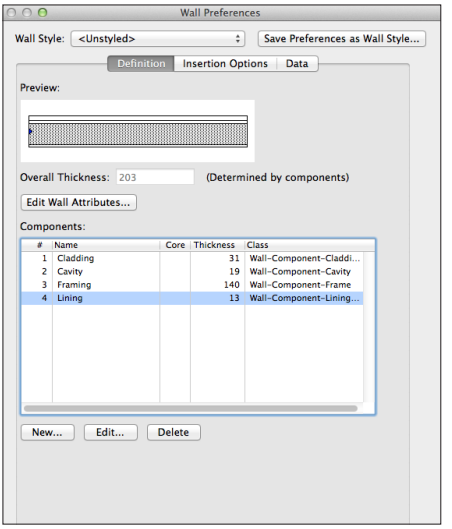
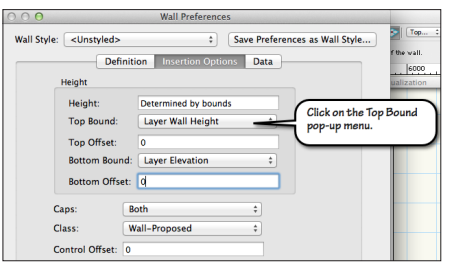
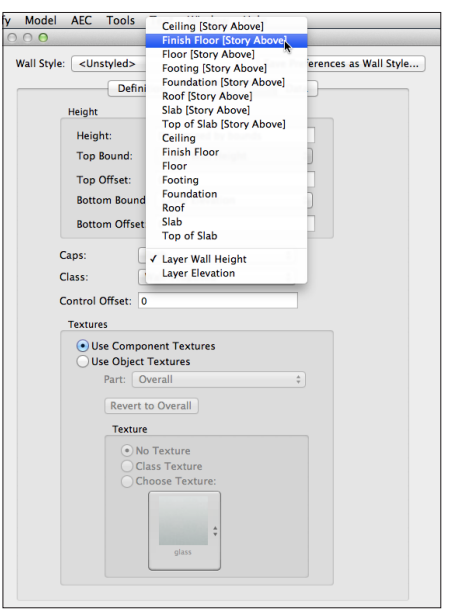


This has created the settings on the components, now we need to set the overall wall **Insertion Options**. These control the whole wall.

- Click on the **Insertion Option** tab.
- Click on the **Top Bound** pop-up menu.



- Choose **Finish Floor [Story Above]**. This option sets the top of the wall to the same height as the floor above. If you edit the story settings, this wall will adjust to suit.



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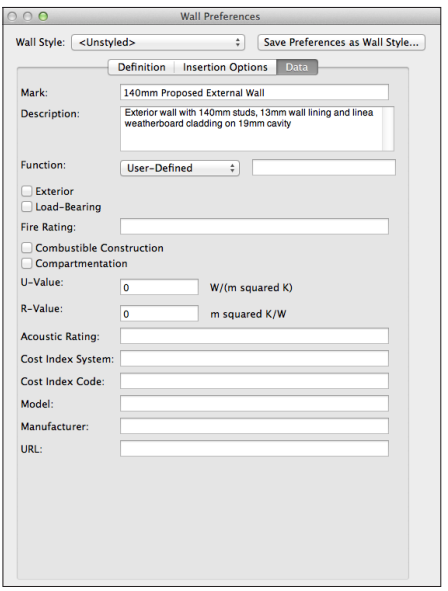
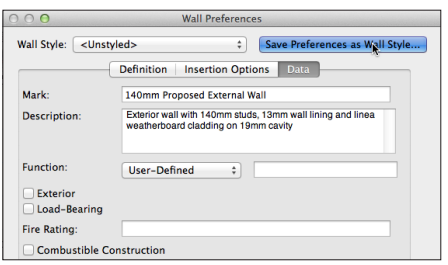
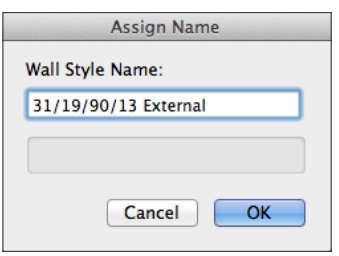
- Set the **Bottom Bound** to the **Layer Elevation**.
- Set the **Class** to a suitable class.
- Click on **Data** tab. This can be used to fill in data that you want assigned to the wall. When you create a report, this information can be returned to the report.



- When you have all the settings, click on the button **Save Preferences as Wall Style**. This will allow you to reuse the wall in this file and in other files, or export the wall style to your **Wall Style Library**.



- Type in a suitable name.



- Click on the **OK** button to save the **Wall Style**.

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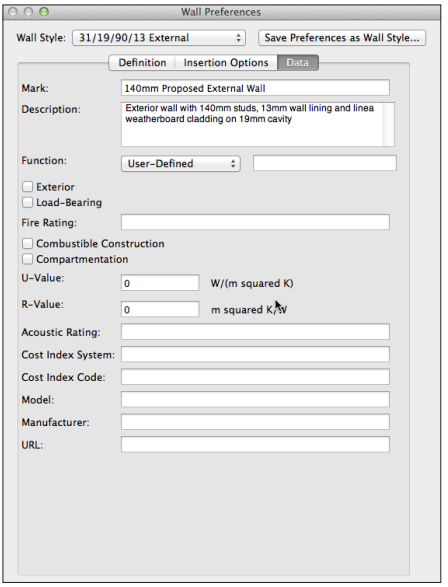
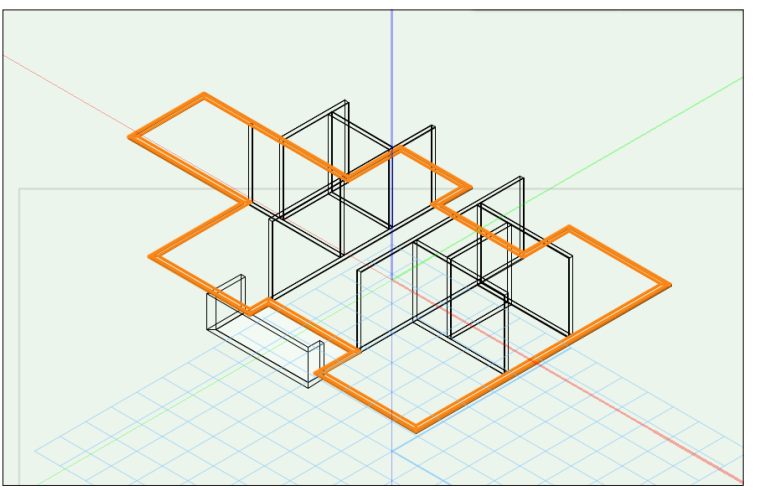


- Click on the **OK** button again to close the **Wall Preferences** dialog box.

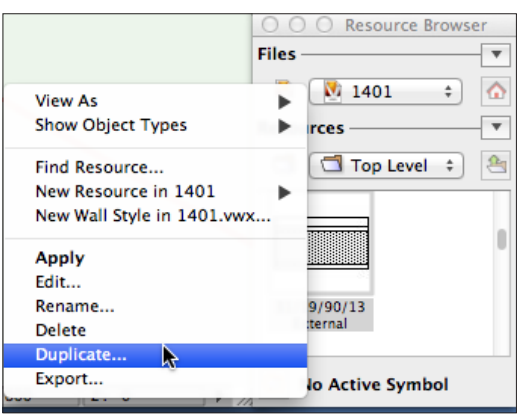
Top Level Walls

cadmovie1025

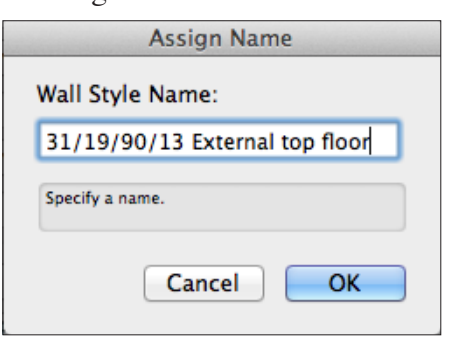
The top level walls are similar to the rest of the walls in the file, but they need to be set up so that the top bounding is not the **Finished Floor (Story Above)**. The top level has no story above, so the walls do not know where to stop. Vectorworks creates the wall with no height, as you can see in this image.



- Start by duplicating the external wall style, using the **Resource Browser**.



- Assign a name to the new wall style.



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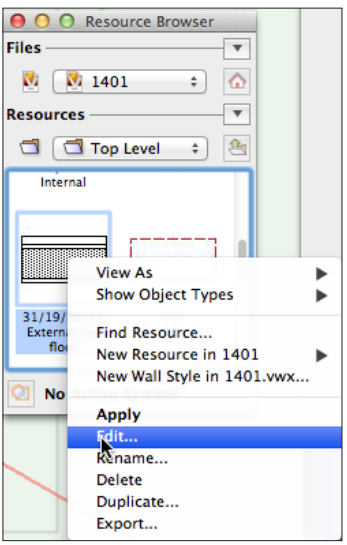
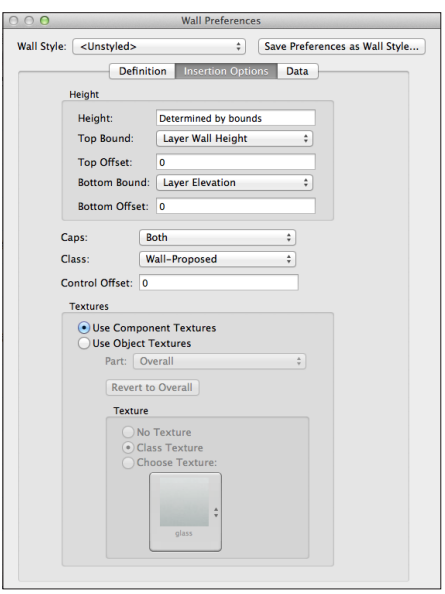
- Click on the **OK** button.
- You are back the **Resource Browser**.
- Right-click (contol-click with a one-button mouse) on the **Wall Style**.
- Choose **Edit...**



- Click on the **Insertion Option** tab.
- Click on the **Top Bound** pop-up menu.
- Choose **Layer Wall Height**. Since there is no floor above, you can't use the story above.



- Click on **Data** tab. This can be used to fill in data that you want assigned to the wall. When you create a report, this information can be returned to the report.

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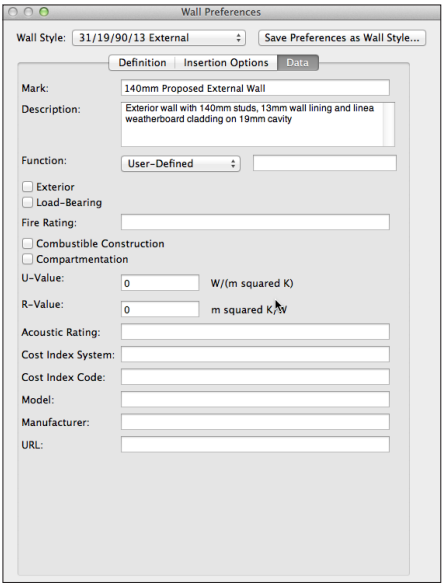
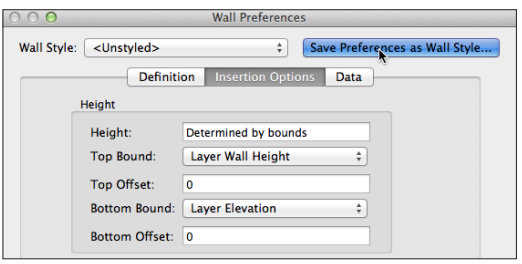
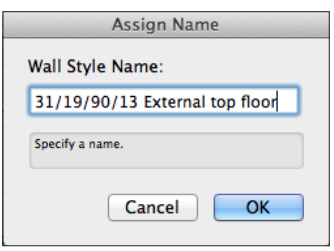


- When you have all the settings, click on the button **Save Preferences as Wall Style**.



- Type in a suitable name.



- Click on the **OK** button to save the **Wall Style**.
- Click on the **OK** button again to close the **Wall Preferences** dialog box.
- If you have drawn the walls with the original wall style, you will find that they have no height.
- Select all the walls.

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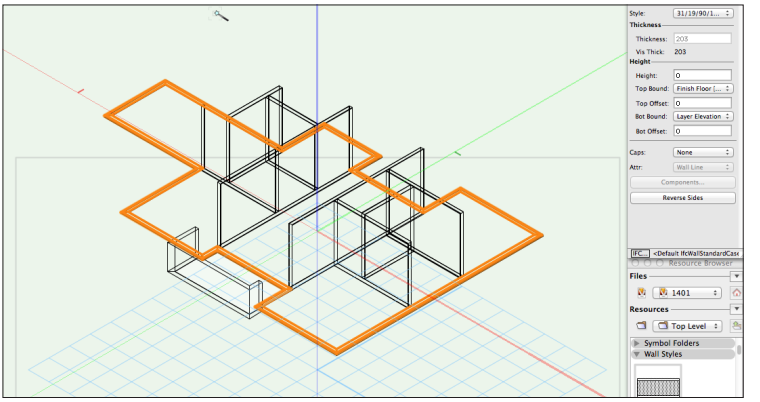
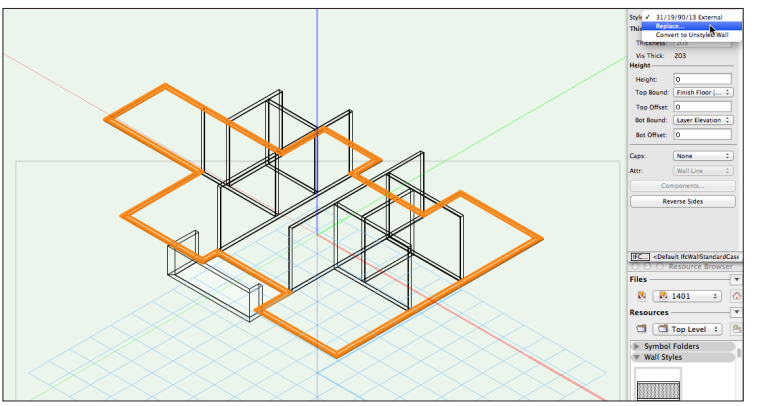
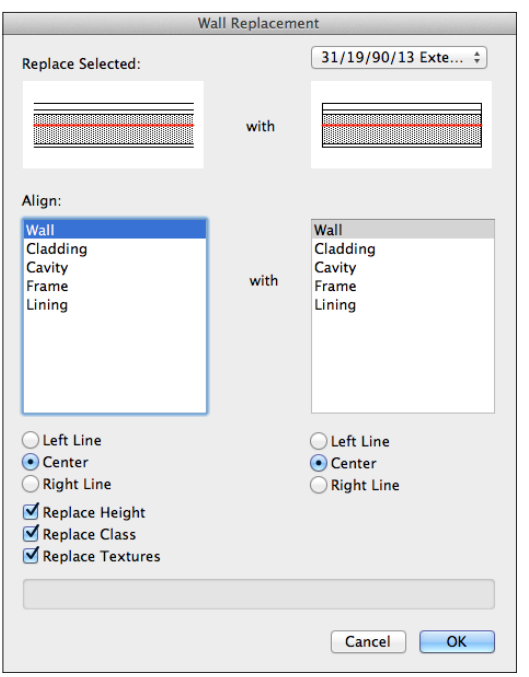


- Go to the **Object Info** palette.
- Click on the **Wall Style** pop-up menu.
- Choose **Replace...**



- Click on the pop-up menu to choose the new wall style.
- Choose the settings for replacing the wall.



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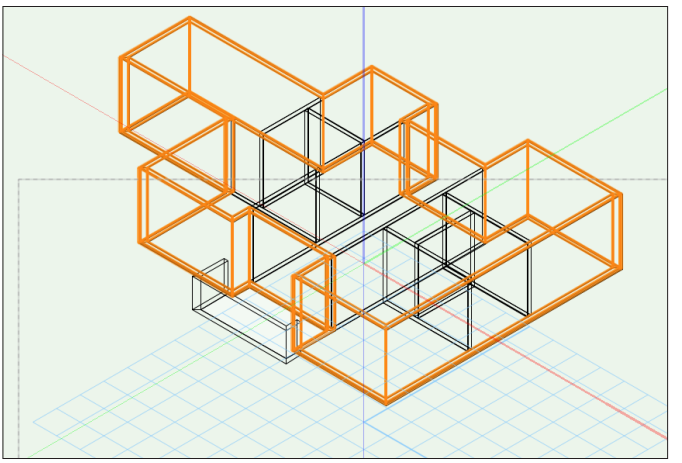
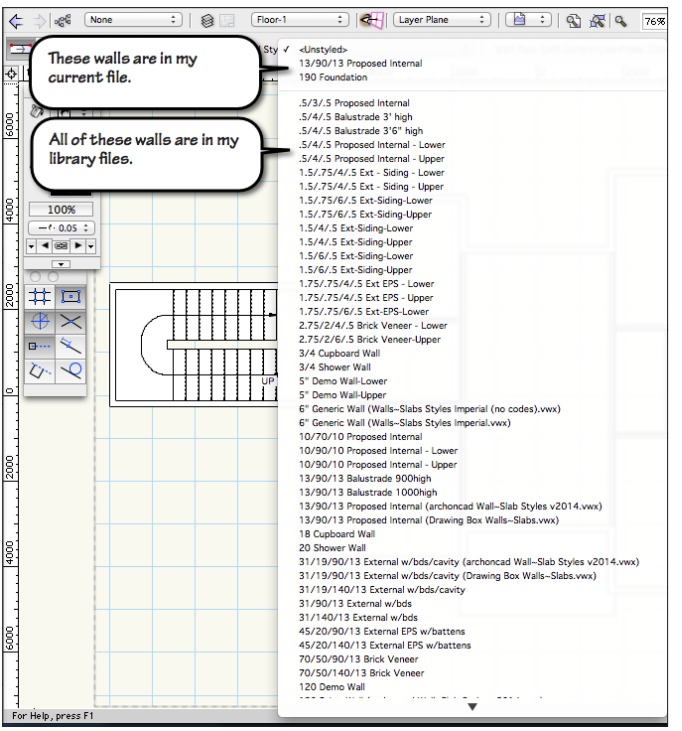
- Click on the **OK** button to complete the replacement.



Use Walls from Library

cadmovie1026

If you store your wall styles in your user folder or workgroup folder, they can be selected directly from the pop-up menu on the **Tool** bar.



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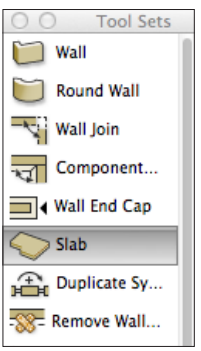
Slabs for Slabs and Ceilings

cadmovie1027

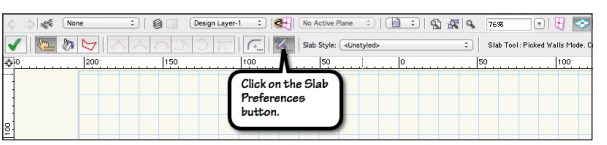
Like walls, slabs can have components, so you can make slabs and ceilings that have several components. The slabs can link to walls and slab components can link to the wall components. So it is really important that you create your walls and slabs in relation to each other.

It also means that you have to be careful about which layer you use for your slabs and which walls you bound to. A floor slab on grade could bound to the walls in the Floor-1 layer, or they could bound to the foundation walls in the Floor-0 layer.

- Go to the **Building Shell** tool set.
- Click on the **Slab** tool.



- Go to the **Tool** bar.
- Click on the **Slab Preference**s button, the last button on the tool bar.



This opens the **Slab Preferences** dialog box. This is where you set the slab thickness, slab components, and data.

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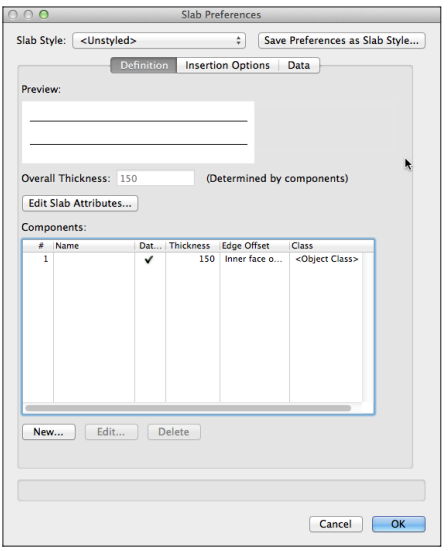
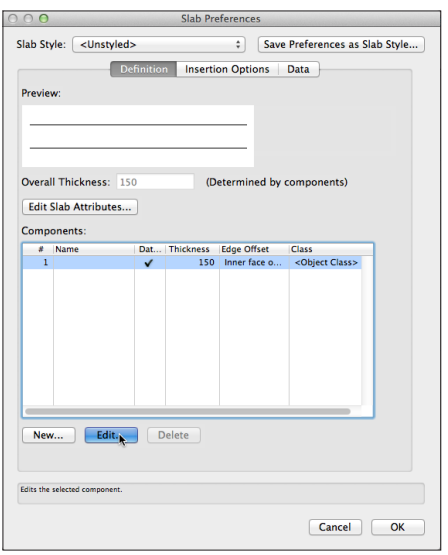


- If a component has already created, click once on it, then click on the **Edit...** button.
- If there is not a component already, click on the **New...** button.



- Name the component.
- Input the thickness for the component.
- Click on the pop-up menu to choose the bounding. The choice here really depends on the way you want this slab to relate to the walls. If you are bounding to the framed walls, you might choose to bound to the outside of the wall core. If you are bounding to the foundation walls, you could choose to bound to the outside of the outer face of the wall.

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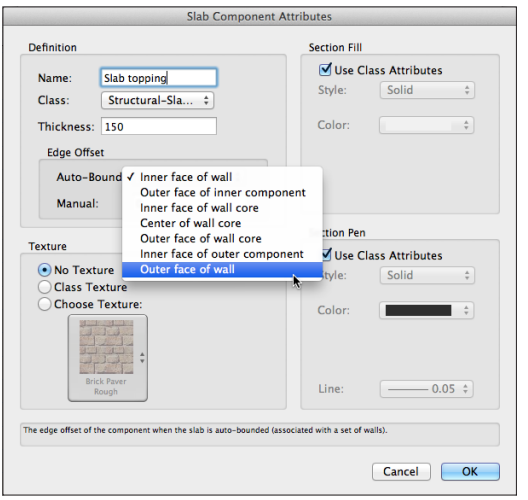
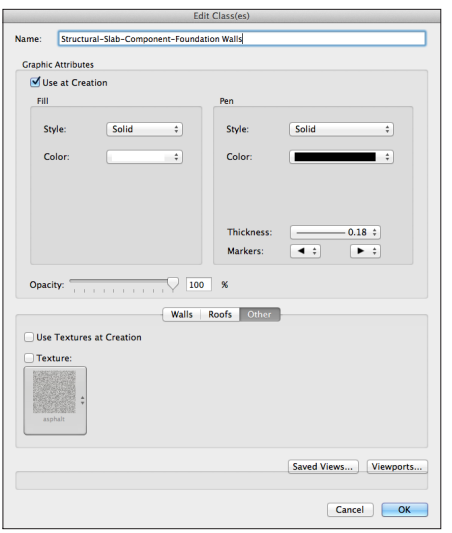
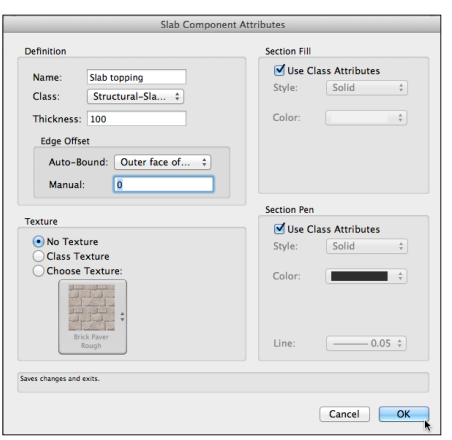


- Choose a suitable class for the component, or create one. If you create a new class, set the attributes to suit.



- Check your settings.
- Click on the **OK** button to finish editing the slab component.



- Click on the **Insertion Options** tab.

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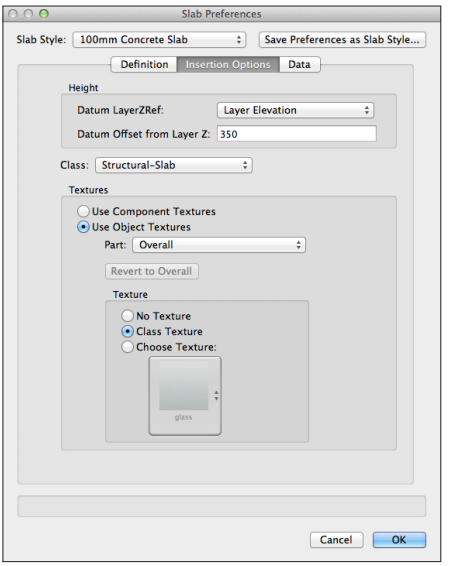
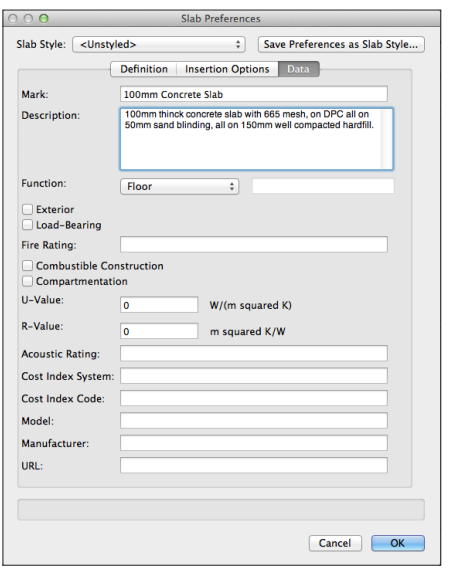
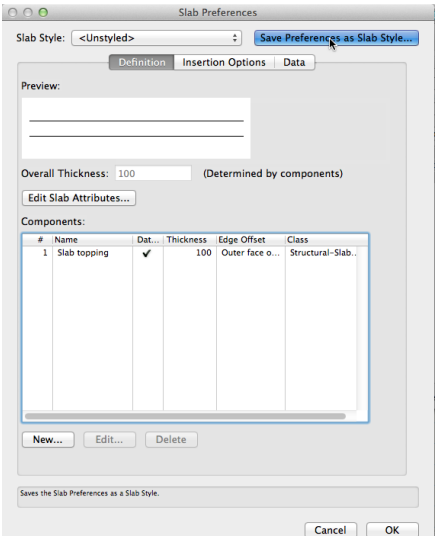
- Enter the required settings.
- Assign or create a class for the slab style.



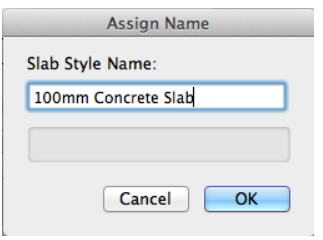
- Click on the **Data** tab.
- Enter the required data.



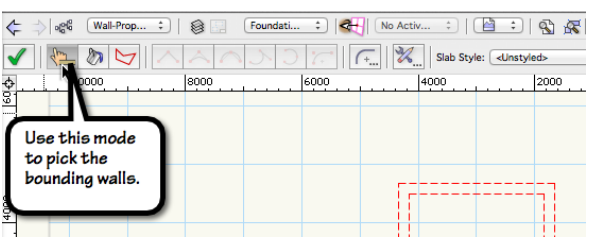
- Click on the button to **Save Preferences as Slab Style...**



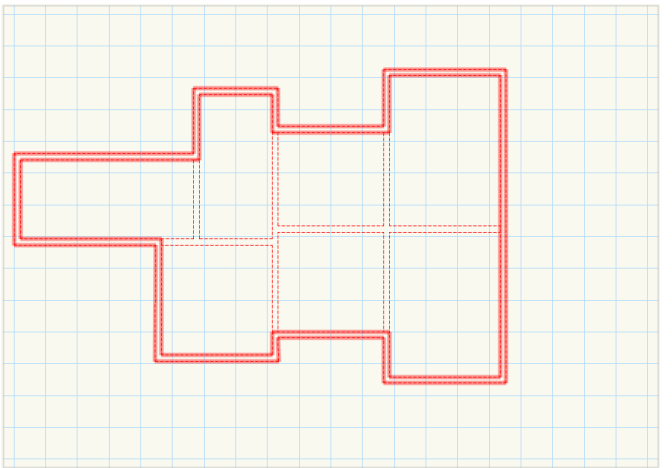
- Name the new **Slab Style**.



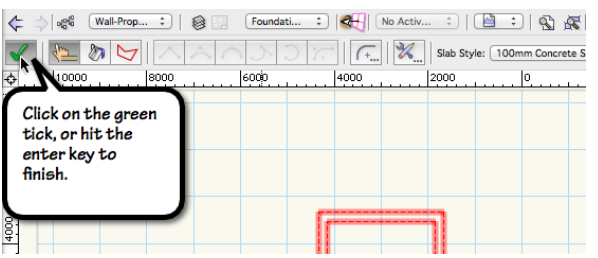
- Go to the **Tool** bar.
- Chose the required option.



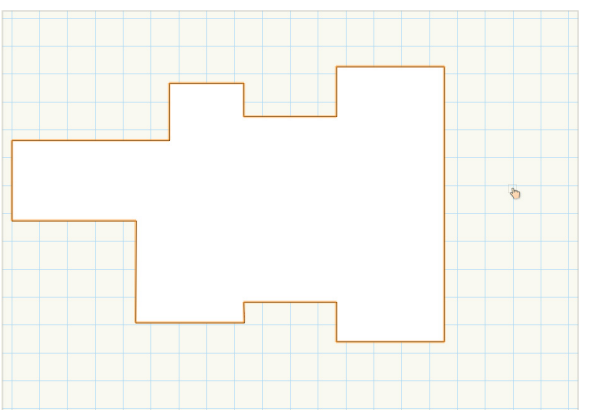
- In the **Pick Walls** mode, you click on each wall to indicate the extent of the slab. The picked walls have to form a closed shape.



- Go to the **Tool** bar.
- Click on the green tick to create the slab.



- Vectorworks creates the slab.



- Check the slab in 3D to make sure it is at the correct elevation.

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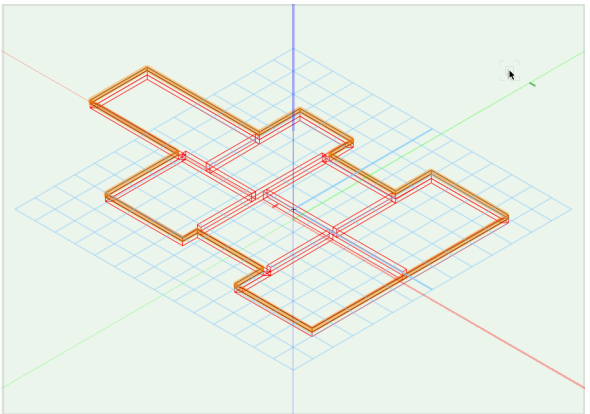

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Doors and Windows

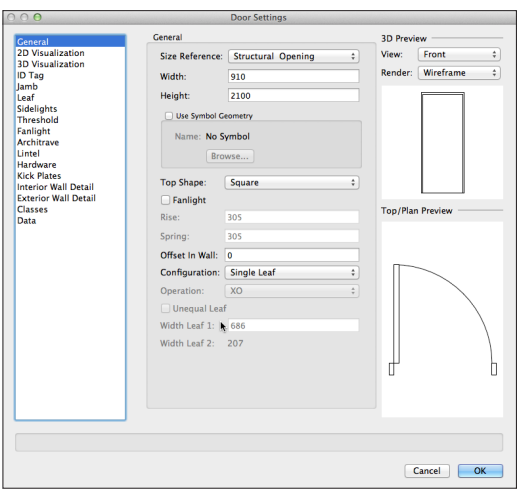
cadmovie1028

It is pretty standard to add doors and windows to your project. For a BIM project the doors and windows have to be inserted into the walls. If you place them correctly Vectorworks will insert them into the wall and edit the wall for you to remove the area of the door or window.

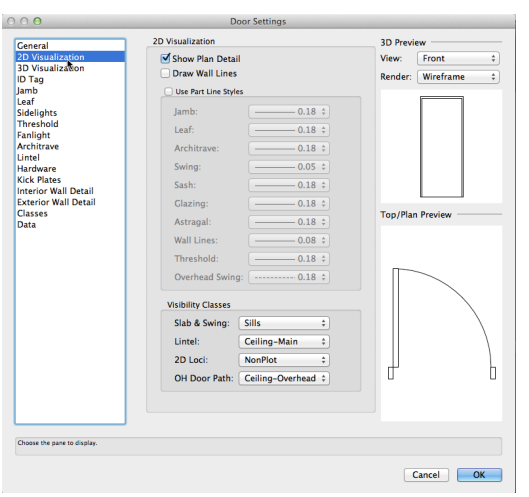
Door Settings

There are a lot of settings to help you get your doors as accurate as possible. We will not be looking at all the settings, that would take another manual.

General settings. This is where you set the Size Reference, Configuration, Width, Height, etc.



2D Visualization tab for setting door in plan view.



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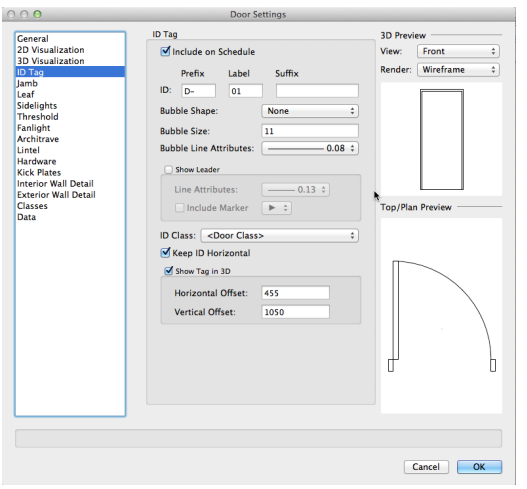
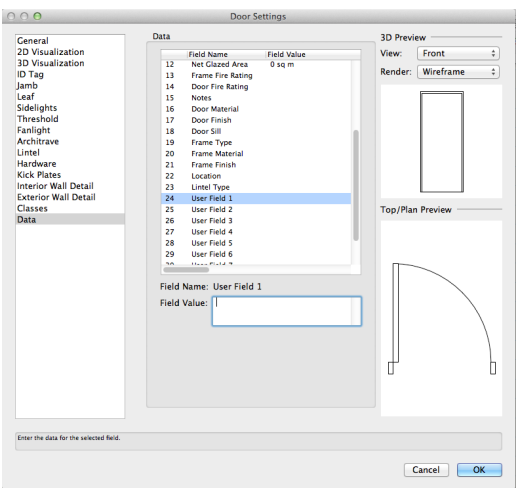
ID Tag settings. If you want the door to be included in the schedule you must select that option. Also use this area to set the door number and tag settings.



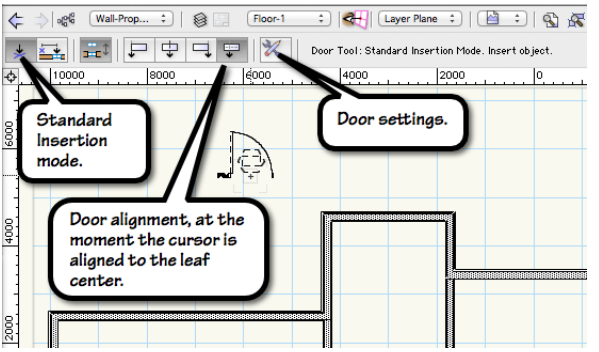
The **Data** tab allows you to edit the data attached to the door, including any additional data you want to add.



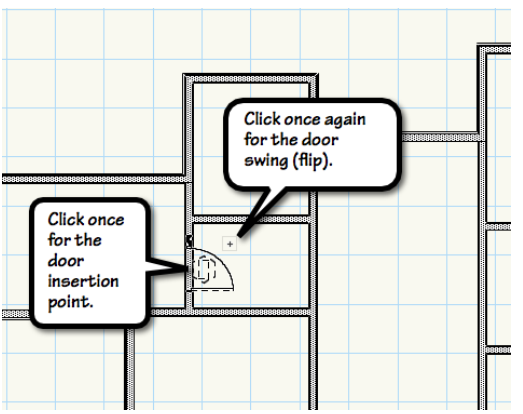
Inserting Doors and Windows in 3D - Standard Insertion

The instructions for inserting doors and windows are the same. I have shown the images for doors here, but inserting windows is the same.

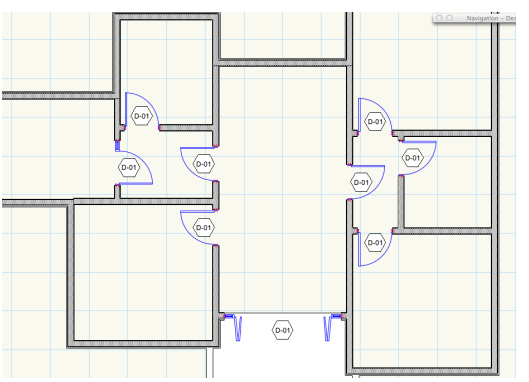
- Go to the **Tool** bar.
- Click on the **Insertion** mode you want to use.
- Click on the **Alignment** mode you want to use.



- Click once on the wall to insert the door.
- Click once again to set the flip, or swing, of the door.



Insert all the doors you need.



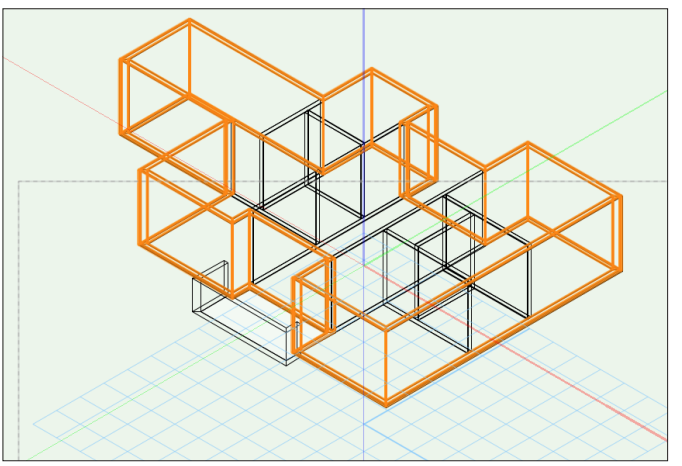
Do the same for all the windows.

Creating a Roof from Walls

cadmovie1029

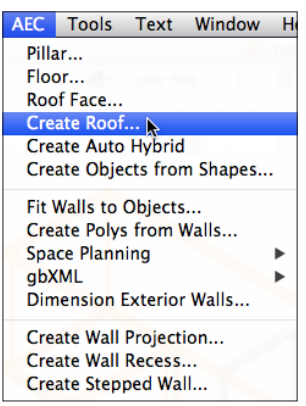
There is more than one way to create the roof, but an easy way to create the roof is to use the walls.

- Select the exterior walls.



Go to the **Menu** bar.

Choose **AEC > Create Roof...** If you are using Vectorworks Landmark, go to **Landmark > AEC > Create Roof...**



- Fill in the required settings for the roof.

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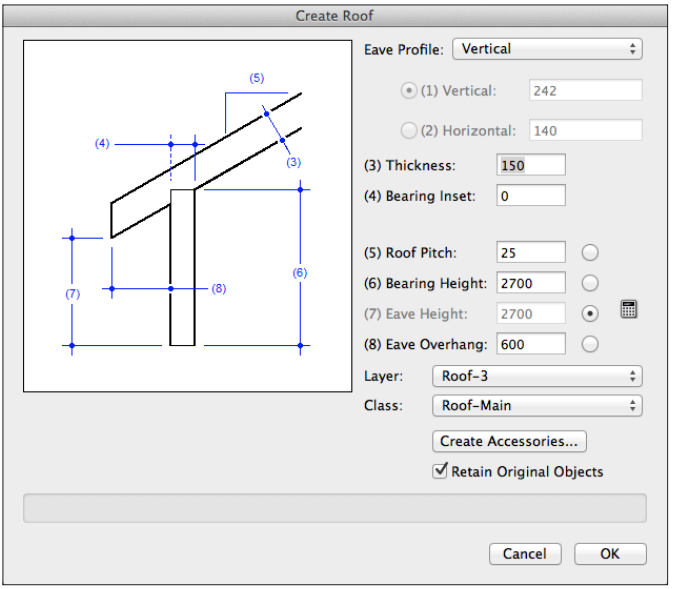


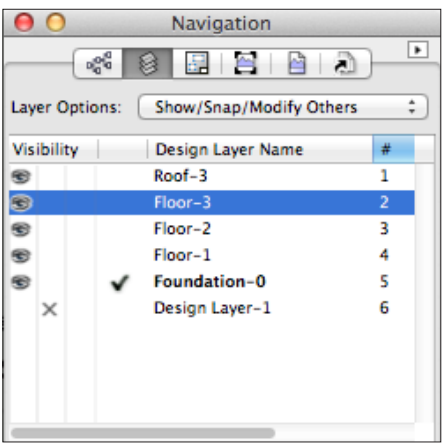
- Click on the **OK** button.

cadmovie1030

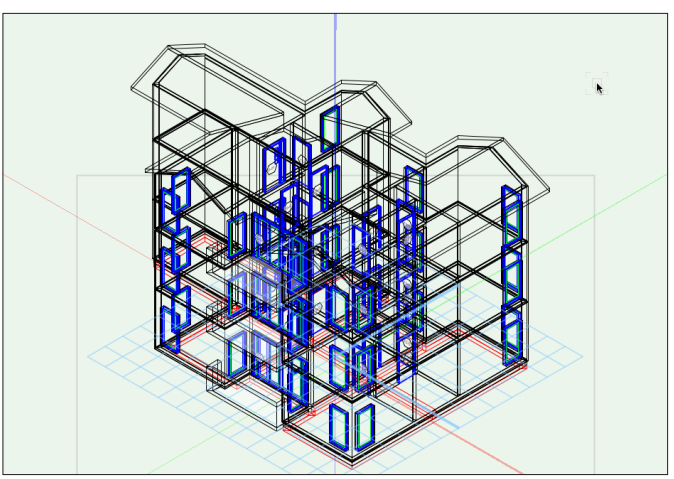
The core of BIM is that you can create most of your drawings directly from the live model. To do this you need to use **Sheet Layers** and **Viewports**. If you do not know anything about viewports, please have a look at the manual on setting up drawings for building projects. Using this strategy, plans, elevations, and sections can quickly be updated when you change the model.

I am going to use a really quick shortcut to create a plan and two elevations.

- Use the **Navigation** palette to turn on the required layers.



- Go to the **View** bar.
- Activate **Unified View**. This will allow you to see the entire project.



- Go to the **Menu** bar.
- Choose **View > Create Multiple Viewports...**

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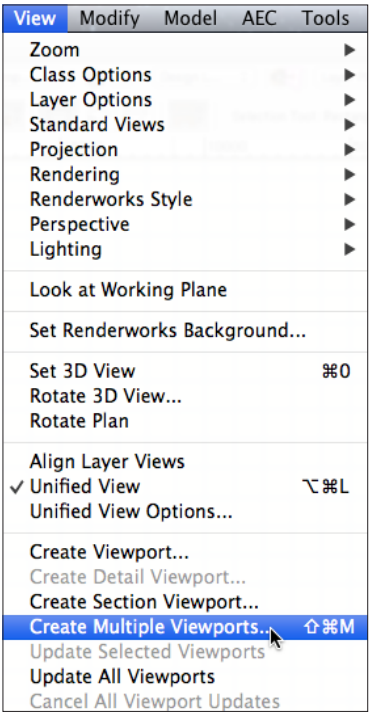
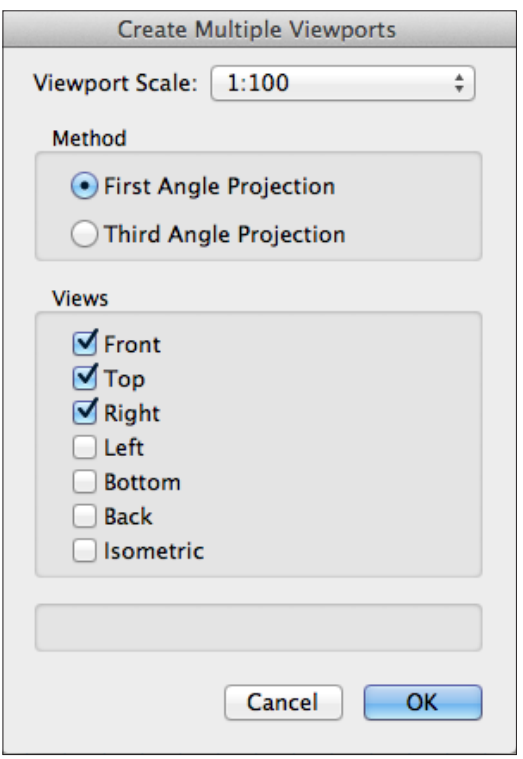


- Choose the required viewports.
- Set the required scale.



- Click on the **OK** button to create the viewports.

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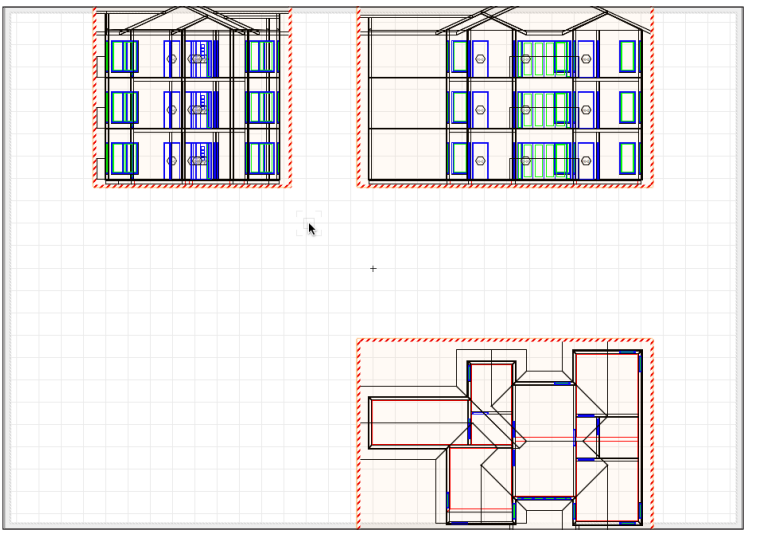
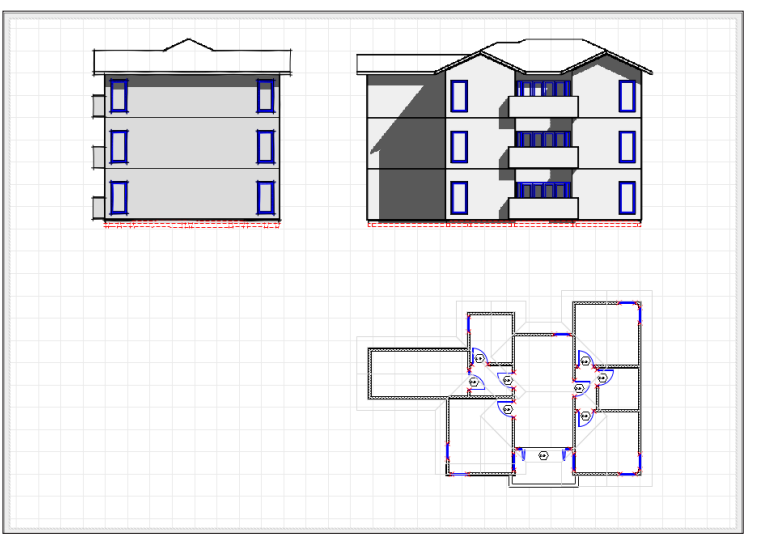


- Move the viewports if required, then use the **Object Info** palette to update the viewports, to add shading, and to edit the classes.



Creating Reports

cadmovie1031

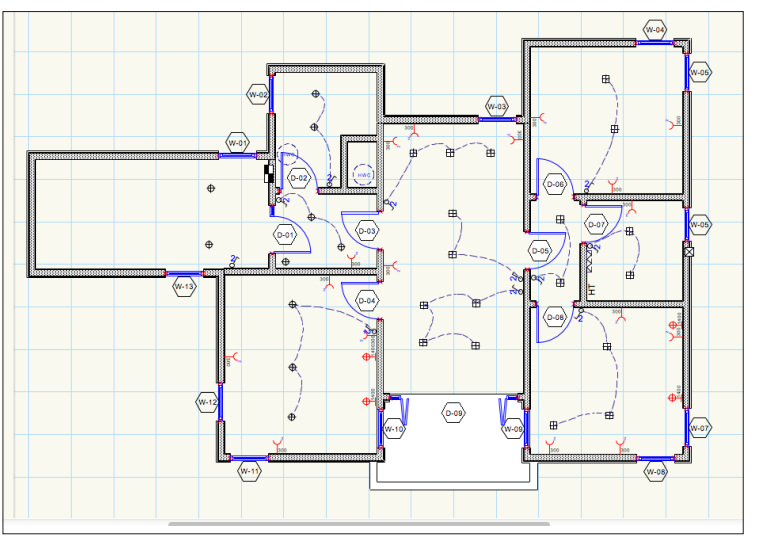
Another major benefit of BIM is the ability to create a multitude of reports, e.g. about objects, areas, and many other data. Vectorworks has a built-in worksheet system that you can use to create these reports. If you have never seen the Vectorworks worksheeets before, I recommend you have a look at the manual **Introduction to Worksheets**.

Electrical

If you want to create a report listing all of your electrical objects there a couple things you have to do.

You must create **Electrical Objects**. The easiest way to create these objects is to create them as symbols. This is also the most memory efficient way to create them.

The objects must also have a database attached to them. Vectorworks calls this database a **Record Format**. When the record format is attached to the symbols it can record information that you require.



To create the report go to the **Menu** bar.

Click on **Tools > Reports > Create Report...**

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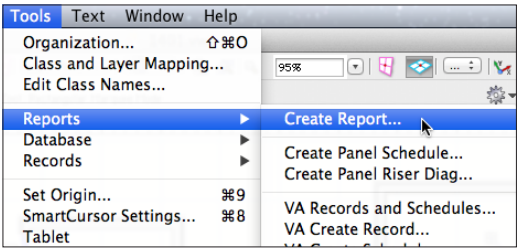
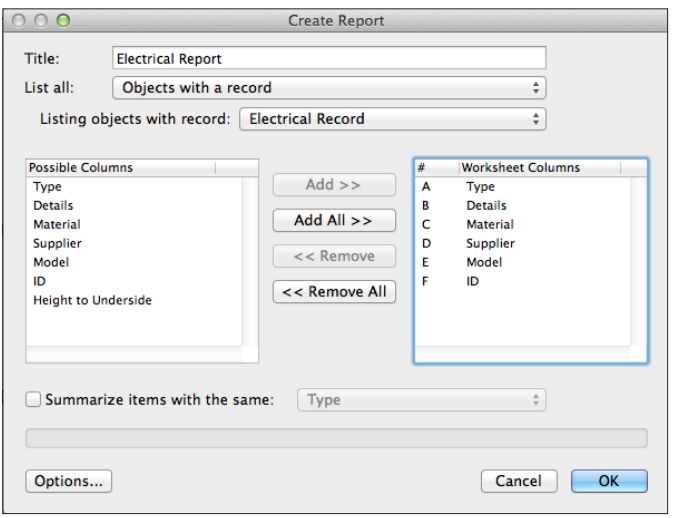
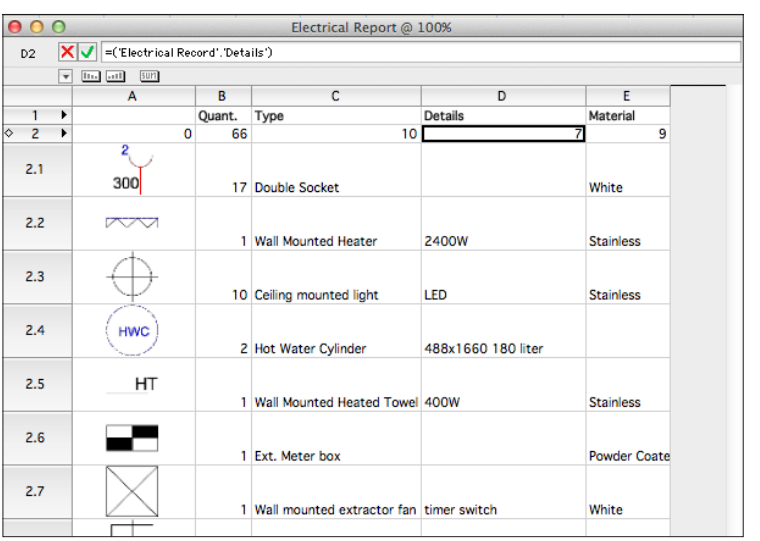


- Name the worksheet.
- Choose the required record format.
- Select the required columns.

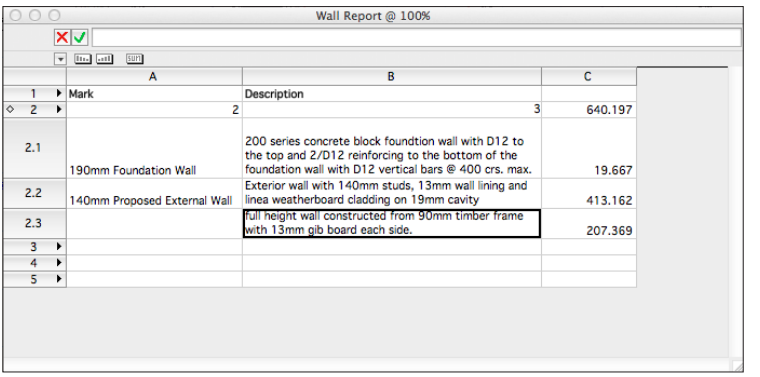


- Click on the **OK** button.
- In this image I have formatted the cells and added an image function to show the plan view of each electrical type.



Wall Report

You can use the same technique to create a report of all the walls.



	A	B	C
1	Mark	Description	
2	2	3	640.197
2.1	190mm Foundation Wall	200 series concrete block foundtion wall with D12 to the top and 2/D12 reinforcing to the bottom of the foundation wall with D12 vertical bars @ 400 crs. max.	19.667
2.2	140mm Proposed External Wall	Exterior wall with 140mm studs, 13mm wall lining and linea weatherboard cladding on 19mm cavity	413.162
2.3		full height wall constructed from 90mm timber frame with 13mm gib board each side.	207.369
3			
4			
5			

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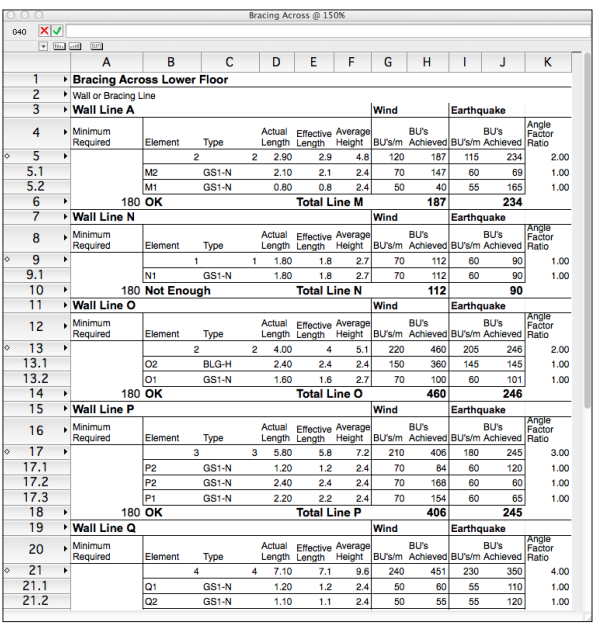
Bracing

A more advanced report would be a bracing report. This report picks up all the bracing objects in the file, uses the data attached to them, and then carries out calculations on the bracing objects.

There is also a bracing demand worksheet that is used to calculate the required bracing. This worksheet then feeds its information to each bracing worksheet to ensure that the required amount of bracing is being supplied.


Bracing Across @ 150%

040

	A	B	C	D	E	F	G	H	I	J	K
1	**Bracing Across Lower Floor**										
2	Wall or Bracing Line										
3	**Wall Line A**						Wind		Earthquake		
4	Minimum Required	Element	Type	Actual Length	Effective Length	Average Height	BU's/m	BU's Achieved	BU's/m	BU's Achieved	Angle Factor Ratio
5		2	2	2.90	2.9	4.8	120	187	115	234	2.00
5.1		M2	GS1-N	2.10	2.1	2.4	70	147	60	69	1.00
5.2		M1	GS1-N	0.80	0.8	2.4	50	40	55	165	1.00
6	180	**OK**			**Total Line M**			**187**		**234**	
7	**Wall Line N**						Wind		Earthquake		
8	Minimum Required	Element	Type	Actual Length	Effective Length	Average Height	BU's/m	BU's Achieved	BU's/m	BU's Achieved	Angle Factor Ratio
9		1	1	1.80	1.8	2.7	70	112	60	90	1.00
9.1		N1	GS1-N	1.80	1.8	2.7	70	112	60	90	1.00
10	180	**Not Enough**			**Total Line N**			**112**		**90**	
11	**Wall Line O**						Wind		Earthquake		
12	Minimum Required	Element	Type	Actual Length	Effective Length	Average Height	BU's/m	BU's Achieved	BU's/m	BU's Achieved	Angle Factor Ratio
13		2	2	4.00	4	5.1	220	460	205	246	2.00
13.1		O2	BLG-H	2.40	2.4	2.4	150	360	145	145	1.00
13.2		O1	GS1-N	1.60	1.6	2.7	70	100	60	101	1.00
14	180	**OK**			**Total Line O**			**460**		**246**	
15	**Wall Line P**						Wind		Earthquake		
16	Minimum Required	Element	Type	Actual Length	Effective Length	Average Height	BU's/m	BU's Achieved	BU's/m	BU's Achieved	Angle Factor Ratio
17		3	3	5.80	5.8	7.2	210	406	180	245	3.00
17.1		P2	GS1-N	1.20	1.2	2.4	70	84	60	120	1.00
17.2		P2	GS1-N	2.40	2.4	2.4	70	168	60	60	1.00
17.3		P1	GS1-N	2.20	2.2	2.4	70	154	60	65	1.00
18	180	**OK**			**Total Line P**			**406**		**245**	
19	**Wall Line Q**						Wind		Earthquake		
20	Minimum Required	Element	Type	Actual Length	Effective Length	Average Height	BU's/m	BU's Achieved	BU's/m	BU's Achieved	Angle Factor Ratio
21		4	4	7.10	7.1	9.6	240	451	230	350	4.00
21.1		Q1	GS1-N	1.20	1.2	2.4	50	60	55	110	1.00
21.2		Q2	GS1-N	1.10	1.1	2.4	50	55	55	120	1.00

There is almost no limit to the reports you can create. Anything that you draw can be reported, provided that you either attach information to it, or Vectorworks automatically attaches information to it.

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Thank you

We trust that you have enjoyed working through this manual and that it has been informative and constructive.

For more information, please visit: http://learn.archoncad.com/. If you just want someone to help you learn Vectorworks, to carry out some Vectorworks contract work, or you want someone to make Vectorworks easier, contact us, as this is a service that we also offer: jon@archoncad.com.

Thank you again,
Jonathan Pickup
January 2014