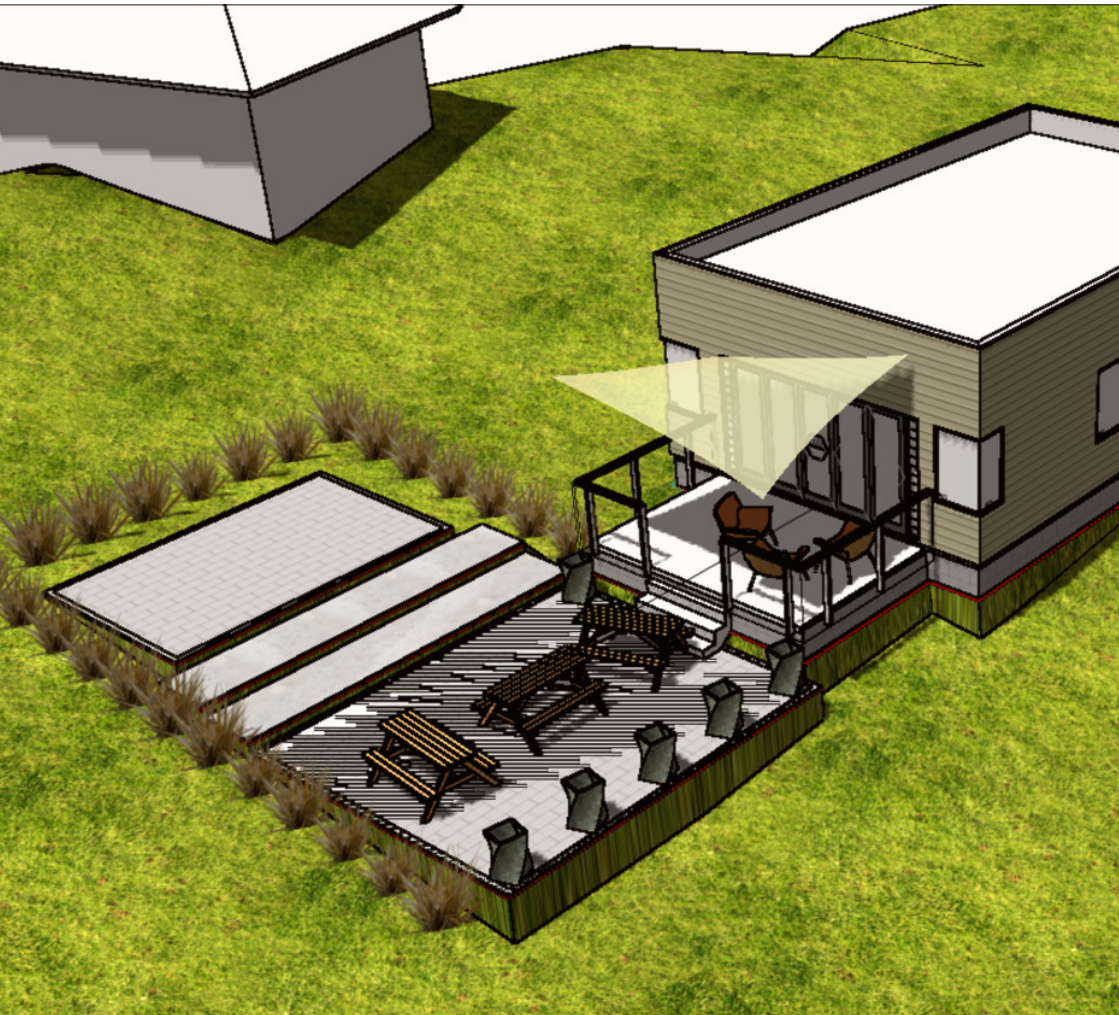


SHORT SHARP MANUALS
1503
BIM for
Landscape



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For more Vectorworks training information, or to purchase more copies of this book, please email jon@archoncad.com

Contents

Introduction	4
Basic Principles	5
Site Modeling	9
Making a Site Model	12
Site Modifiers	15
Pads and Grade Limits	15
Planting	21
What is a Plant?	21
Planting	22
Landscape Areas	29
Hardscape Areas	33
Symbols	35
Reporting	37
IFC Import and Export	39
Introduction.....	39
IFC Objects in Vectorworks	39
What is IFC Used For?	41
Exporting an IFC Project	42
IFC Model Viewer	46

Introduction

There is a lot of talk about Building Information Modelling (BIM) in relation to architecture, but not in relation to landscape design. The principles behind BIM can be used to speed up the production of your landscape projects and drawings.

One of the important aspects of BIM is that you can attach information to objects that may not be printed (non-graphic information). For example, a plant object will have not just its plan representation, it will also have a 3D representation, it can also have plant data attached to it, and you could also create your own data and attach that to the plant. One of the discussions I have had with landscape designers is the ability to attach to each plant the amount of water that it needs for irrigation or being able to attach the embedded energy for each square meter of concrete.

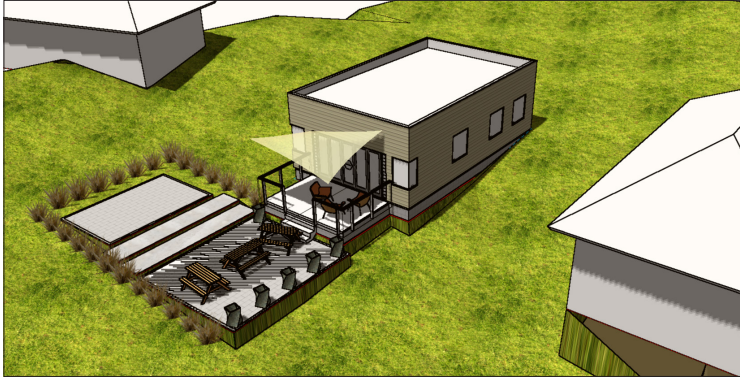
In its most simplest terms, Building Information Modeling allows you to create plans, sections, and details from the 3D model of your project, along with reports on the number of plants, the areas of landscape, the areas of hardscape, etc.

This manual is not a tutorial on site modeling, there are other manuals that cover it, nor is this manual about how to create plants, there are manuals for that as well. This manual is an overview of the concept of Building Information Modeling and how that could be applied to a landscape project.

Basic Principles

cadmove1503_001

The basic concept of BIM is that you are not creating basic 2D information, you are creating 3D objects that have information attached to them.



This has some major benefits:

- You can use the 3D model to create plans, sections and elevations. You might wonder if it isn't quicker to draw the plans without using any 3D components. Plans maybe, but sections and elevations can be a lot of work, and you have to carefully draw them in relation to the plan to make sure that it is accurate. The true power of BIM comes to the fore when you make changes to the plan. All amendments can be quickly updated in the respective sections and elevations. We often refer to the sections and elevations as being live to the 3D model.

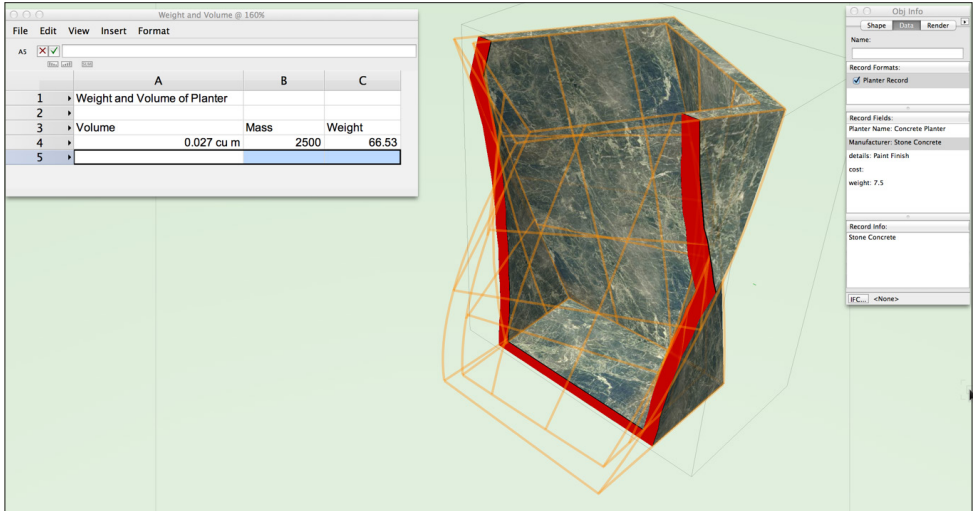
1 Long Section
001 Scale: 1/16" = 1'-0"

Landscape Concept			
		Price	Cost
Border Planting	963.449 sq ft	\$6.00	\$5,780.70
Shrubs	326.096 sq ft	\$4.00	\$1,304.38
Groundcover	302.312 sq ft	\$6.00	\$1,813.87
Mulch	499.298 sq ft	\$2.90	\$1,448.14
Hardscape	631.462 sq ft	\$12.50	\$7,893.25
Total			\$10,047.09

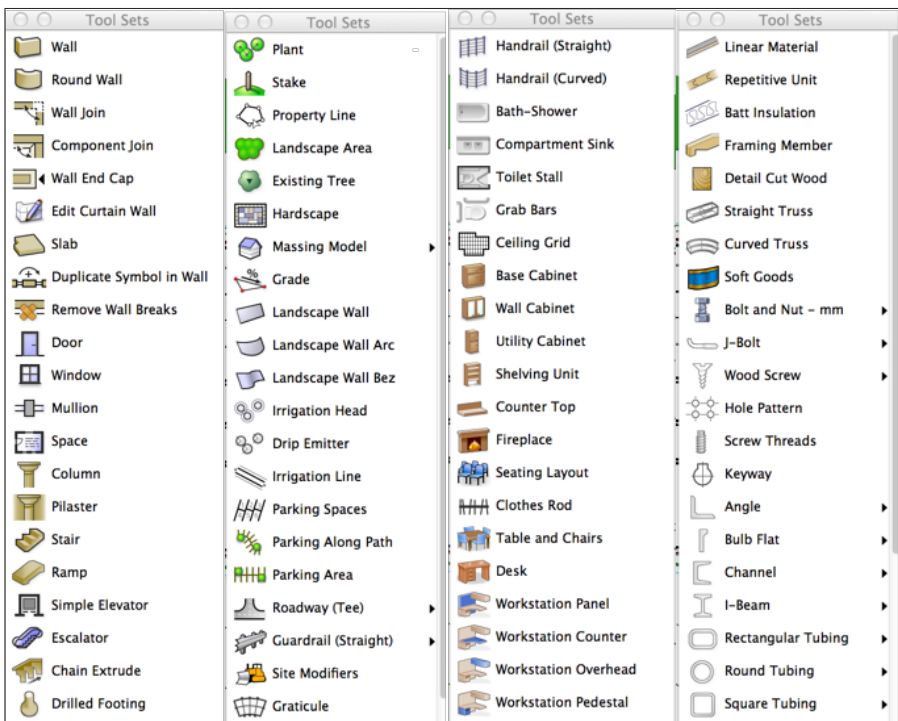
A 3D architectural rendering of the building from the first image, now with landscaping. The building is surrounded by a lawn, a wooden deck, and various plants and trees. The scene is shown from a different angle, highlighting the landscaping elements.

- 3D objects have real world sizes and volumes. As well as using the 3D objects for the sections and elevations, you can report these sizes and

volumes, and if you have the volumes, you can calculate the weight of them.

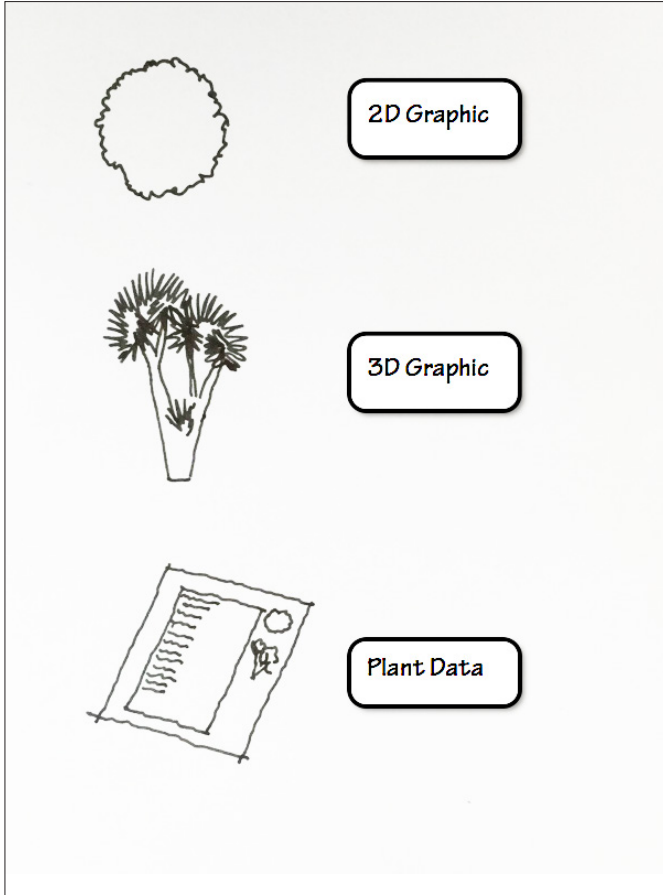


- Specialist tools. You could draw a plant using just a circle, but it is much easier to use the Plant tool. As you maybe aware, there are different modes for any particular tool chosen (site model, landscape areas, hardscapes, walls, handrails, etc.). The Plant Tool offers several modes that make it easy to place a single plant, several plants or whole areas. There are specialist tools for site models, plants, landscape areas, hardscapes, walls, handrails, etc.

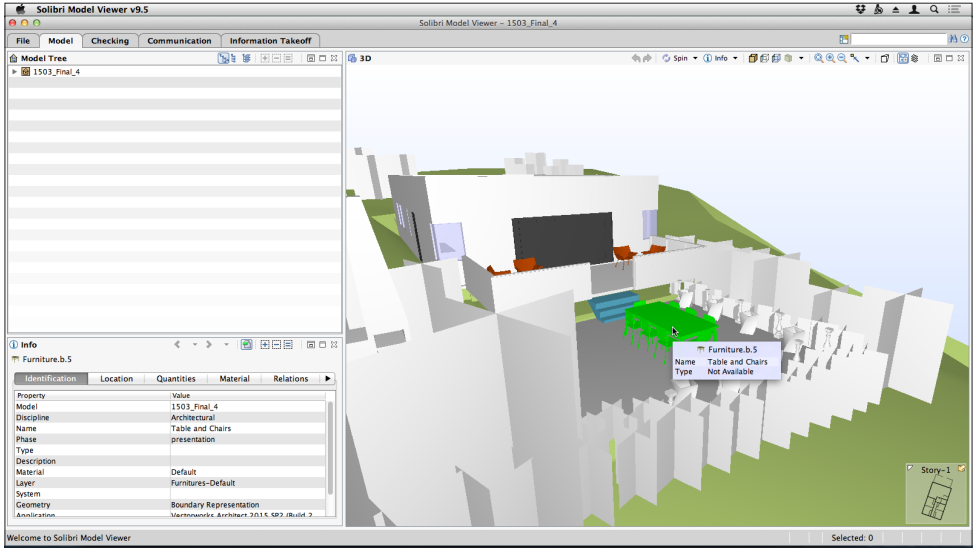


- Objects are not just 2D and 3D, they also have data attached to them. A good example is Plant object. As well as the plan view of the plant and

the 3D portion (simple model or photorealistic elevation), the plant object also has data. This data can be the common name, latin name, spread, height, spacing, etc., You can also record any other information that is required. You could record the size of the root ball, the amount of water the plant requires, when it was planted, who planted it, when it needs pruning, etc. You can record any information you require. This information is non-graphic, it is attached to the object but you can't see it on the drawing. All this additional information can easily be pulled together into a report when you need it.



- IFC allows you to easily share data (import / export) with other consultants. IFC stands for Industry Foundation Classes. The classes referred to in IFC have nothing to do with classes in Vectorworks. In fact the classes (in IFC) refer to a program language, which uses classes as part of its program structure. In simple terms, IFC is a computer language that allows CAD programs to transfer three-dimensional information (along with data about the object) from one program to another.



Site Modeling

cadmovie1503_002

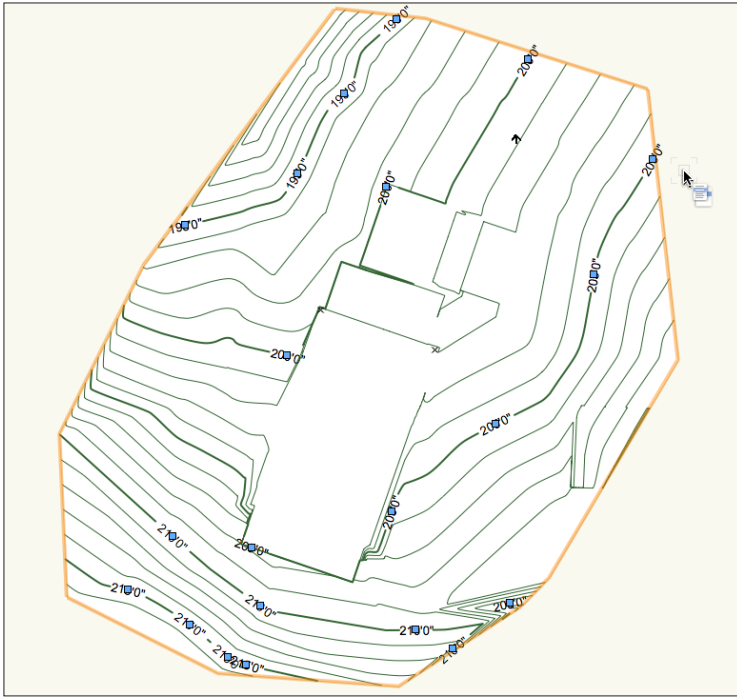
A site model shows 3D data (spot levels or contours) in a way that allows you to see complex 3D models and 2D representations. Vectorworks uses the 3D information to create the models based on the data to help you understand the 2D and 3D nature of your site.

First you have to put in 3D data, such as spot levels, contours or a surveyor's file. Then you ask Vectorworks to create a site model from this data. Vectorworks uses a set of algorithms to analyze the information and then creates the 2D and 3D representations. The algorithms can be thought of as a set of mathematical assumptions that are used to calculate the 2D contours and the 3D model. Because of these assumptions you may get some odd shaped contours, or 3D models that don't look as you expected. A site model is not reality, it's a mathematical model of the data you give Vectorworks. Better data - better site model.

When you create a site model Vectorworks will build an object that can show one type of information in a 2D view (2D contours) and a different type of information if you are in 3D view (3D contours or extruded contours, etc.). Using this hybrid object is a good way of combining the 2D contours and the 3D site model into one object. If you are used to earlier versions of Vectorworks then this will be a very different way of working. The Plug-In Object allows you to turn on or off the existing and proposed site models.

What Can You Use Site Modeling For?

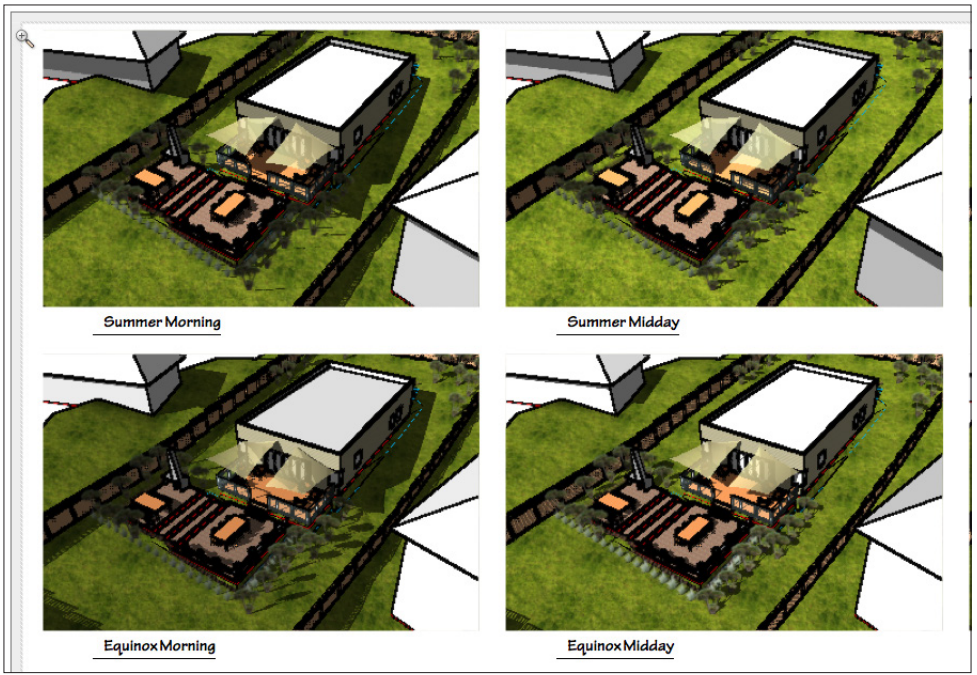
- **Contours.** If you put in a series of 3D spot levels, you can use your site model to show the contours, setting the height between the major and minor contours.



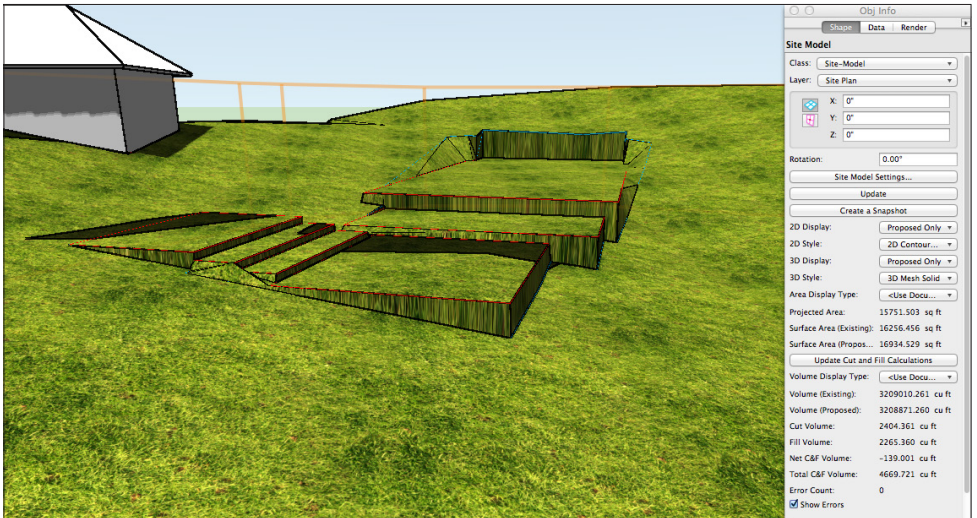
- **Visualization.** You can create a 3D model of the site to see how the building sits on the site. Then you can use this to place your building, trees and landscaping. Or you could use the model to show the client how the site looks from different angles.



- **Solar Studies.** When you are planning the layout for the project it can be useful to see how the adjoining buildings and landscape will affect the project.



- **Cut and Fill** calculations between an existing site model and a proposed site model. You can also create an overall report of the total cut and fill, or of individual areas only.



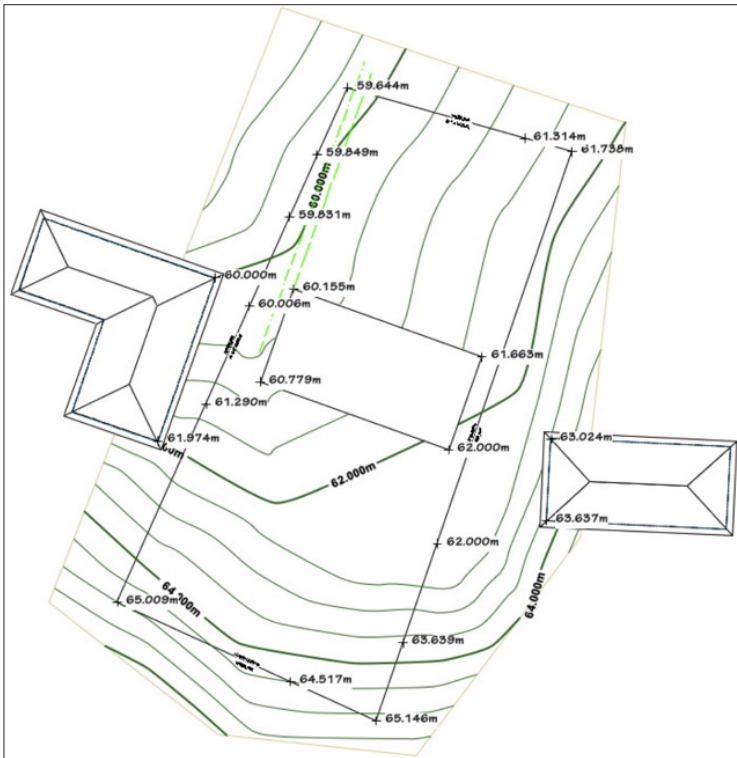
Making a Site Model

These are 4 main methods for creating a site model:

- From 3D points. You can place 3D Loci or Stake objects manually on an imported survey plan or scanned image.
- From an imported 3D survey file.
- Using a grid method. Where you have been to the site and have taken spot levels at grid positions.
- Importing a data file. You can get your surveyor to send you the spot levels in a simple text file that has the X, Y, and Z coordinates. Make sure that it is an ASCII text file, not a Word Document. You may have some trouble with the carriage returns (the thing that tells you it has reached the end of the line). PC's use one method, Mac's use another, and Unix uses a different method again. If you have trouble, open the text file with a simple text editor such as WordPad or BBEdit and check the file. Save As.. and save it as plain text.

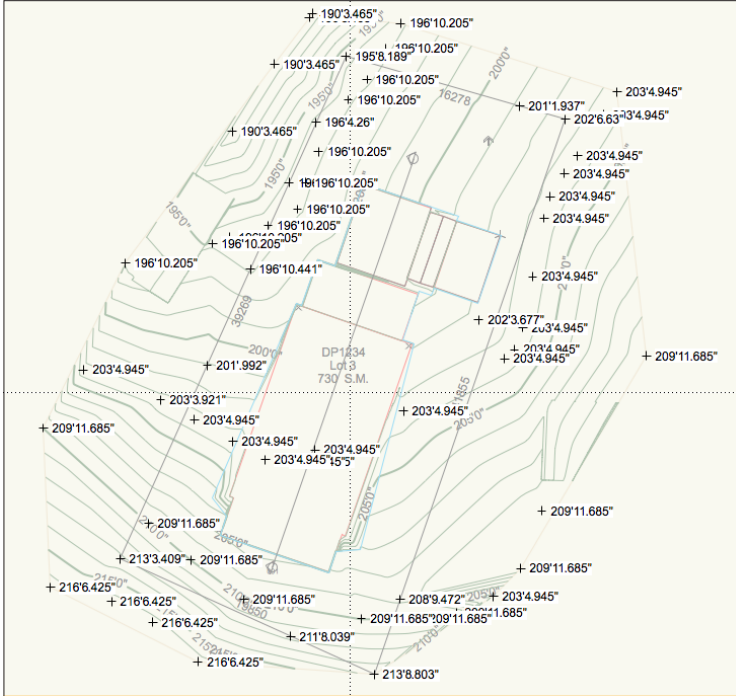
In this case I have a scanned image of the site. This can be used to help create your site model.

- You can trace over the contour lines using a stake object or a 3D locus.

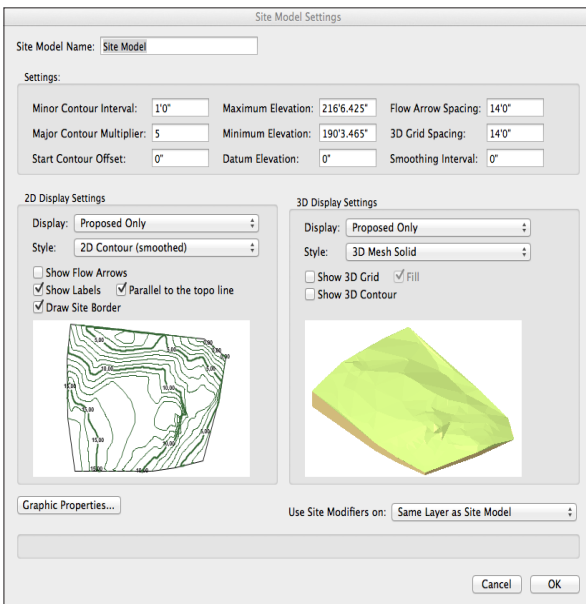


- When you have created the stake objects or the 3D loci, they can be used to create the site model. Vectorworks will then use a mathematical

algorithm to calculate the heights of the site between the points you have given. Where possible, include any survey points that are known.



- Select all the 3D information and use the **Create Site Model...** command.
- This dialog box allows you to control the heights of the contours, the number of minor contours between each major contours, the maximum and minimum elevations of the site model, all of the 2D display settings, and all of the 3D display settings.

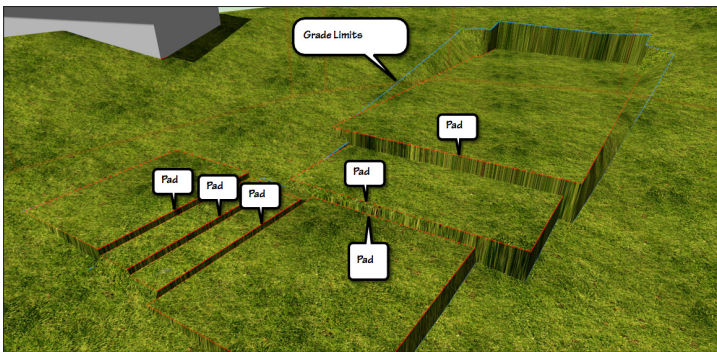


Site Modifiers

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After you have created your site model, it can be modified using site modifying tools. Site modifiers can be roads, hardscapes, landscape walls, pads, stake objects, or 3D polygons.

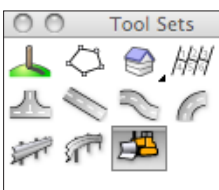
Each site modifier follows the same strategy. It has 2 parts: a 3D part that will change the site and something called Grade Limits. The Grade Limits is a planar shape that defines how much of the site model will be affected. The Grade Limits is flexible and it allows you to choose the extent of the site modification. If the Grade Limits is close to the site modifier, you will have a steep slope. If the Grade Limits is a long way from the site modifier, you will have a gentle slope.



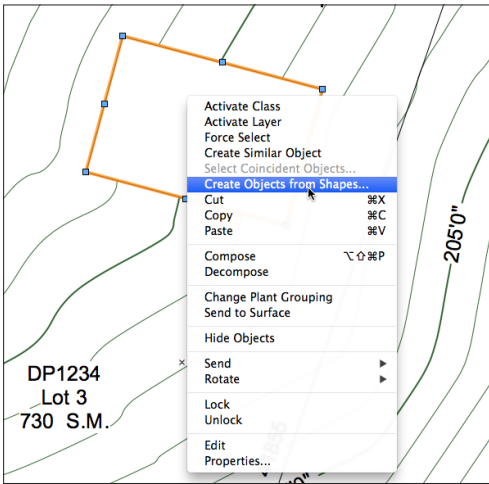
Pads and Grade Limits

Pads and Grade Limits are the main tools for site modifying. The pad creates the 3D site modifier and the grade limit tells Vectorworks how much of the site will be affected.

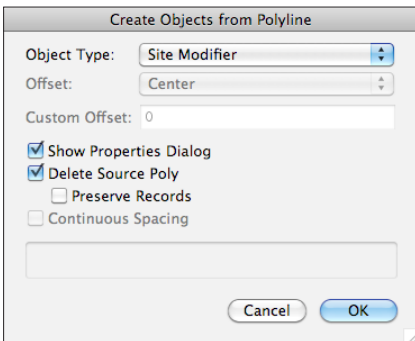
- You can use the **Site Modifier** tool from the **Site Planning** toolset, but it is often easier to use the command **Objects from Shapes...**



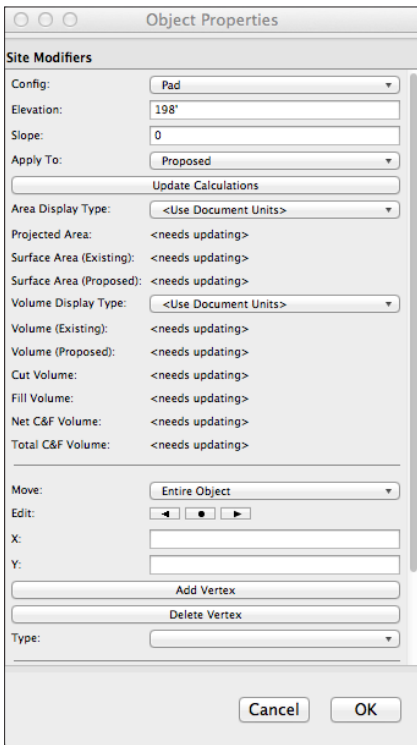
- Change to a **Top** or **Top/plan** view.
- Draw a shape for the pad.
- Right-click on the object.



- Choose **Create Objects From Shapes...**
- From the **Object Type** pop-up menu choose **Site Modifier**.
- **Tick Show Properties Dialog.**
- **Tick Delete Source Poly.**
- Click on the **OK** button.



- From the **Config** pop-up menu choose **Pad**.
- Set the **Elevation** at a suitable level.



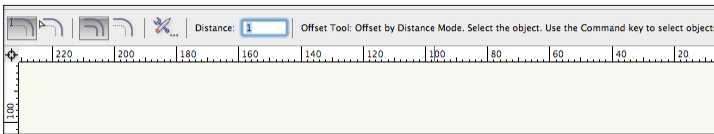
- Click on the **OK** button.
- The original object will be removed, and a copy is converted to a Site Modifier.



- This has created half of the required information. You can update the site model and it will use the new site modifier, but you should really create a **Grade Limits** to limit the extent of the site modification.
- An easy way to do this is to offset the current object, then change it to a **Grade Limits**.
- Go to the **Basic** tool set.
- Click on the **Offset** tool.



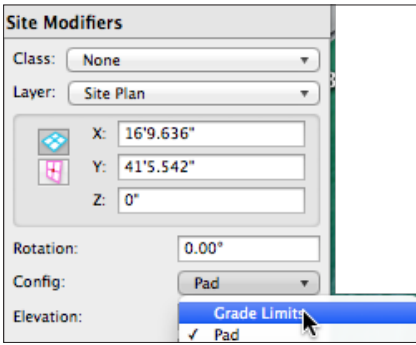
- Go to the **Tool** bar.
- Check the setting to ensure that you are using the **Duplicate and Offset** mode.
- Enter the required offset distance.



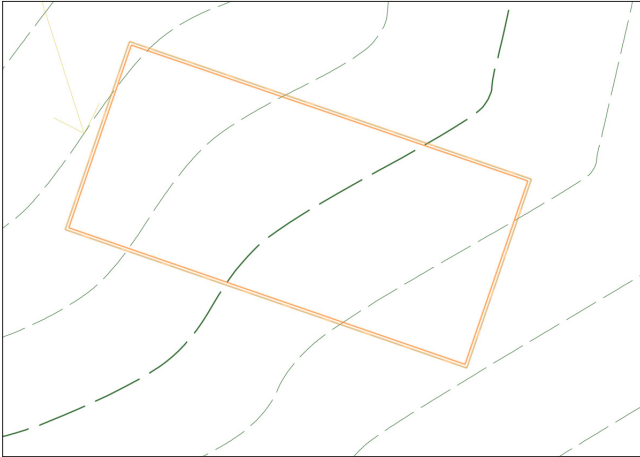
- Click outside the site modifier, so that the offset object is outside.



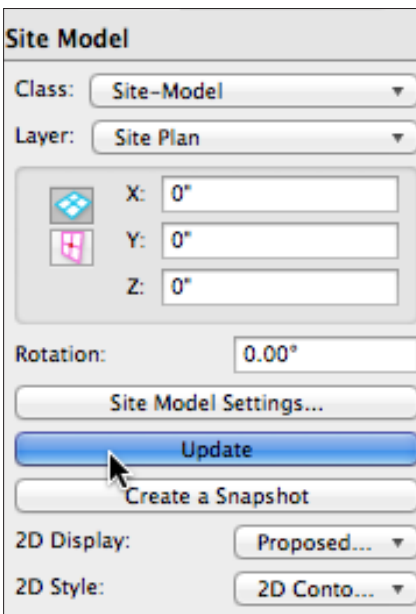
- Go to the **Object Info** palette.
- Click on the **Config:** pop-up menu.
- Choose **Grade Limits**.



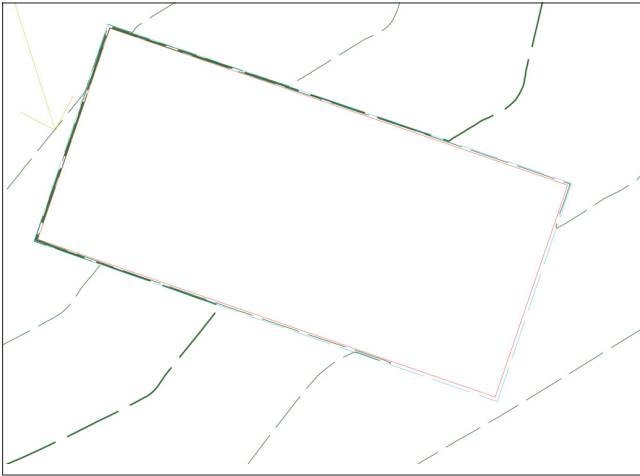
The site modifier will be converted to a Grade Limits.



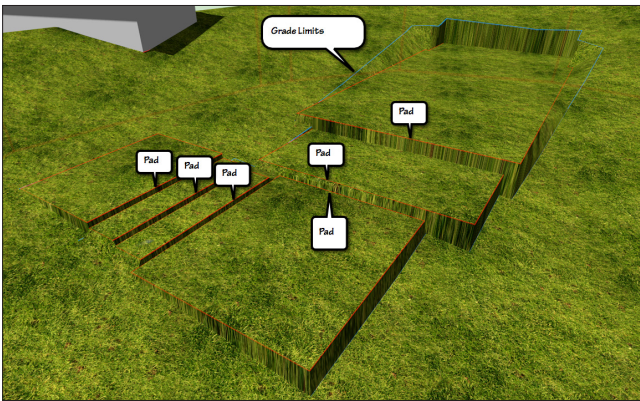
- Select the site model.
- Go to the **Object Info** palette.
- Click on the **Update** button.



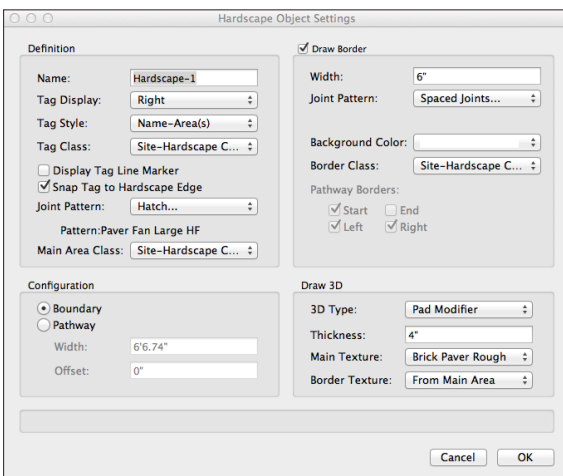
- The site model will update and show the effect of the site modifiers.



You can create several pads inside each grade limit. The only thing to look out for is to ensure that the pads do not touch or overlap.



Other tools can be site modifiers as well. Roads, massing models, 3D polygons, and hardscapes can be used as site modifiers.

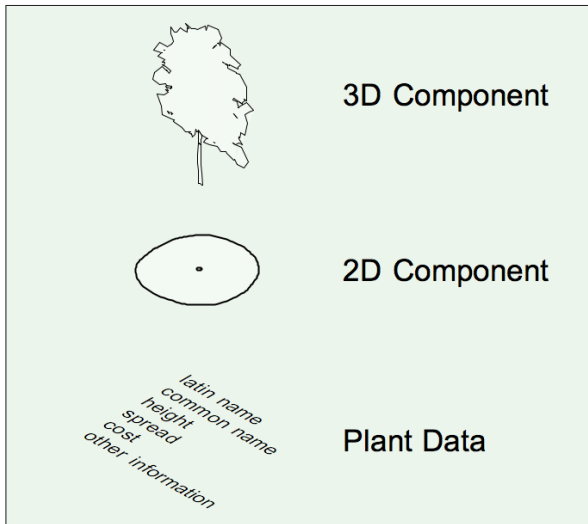


Planting

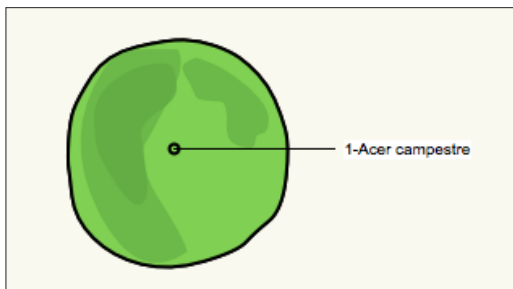
What is a Plant?

[cadmovie1503_004](#)

A plant in Vectorworks is a special object that has a plan representation, a model (or 3D) representation, and plant data. All these parts are bound together inside the object called a plant. When you place a plant, Vectorworks places all of these parts together in the drawing. This allows you to see the plan view, see the 3D, or create a report that shows the data.



When you draw the plan view of your plant you have several options to control the look of the plant. You can use colors, gradients, cropped images, etc.

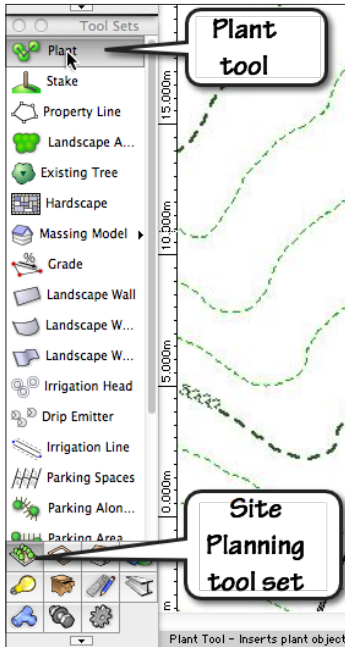


When you create the 3D information for your plant, you can use image props, 3D models, etc.

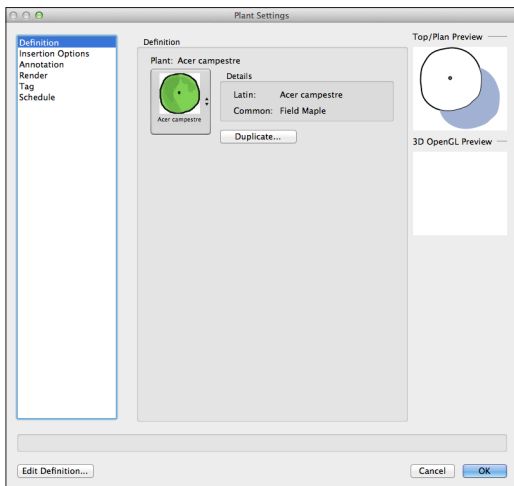
Planting

In this section we will look at the Plant tool. There are several ways to place plants, so make sure you choose the appropriate one.

- Go to the **Site Planning** tool Set.
- Click on the **Plant** tool.



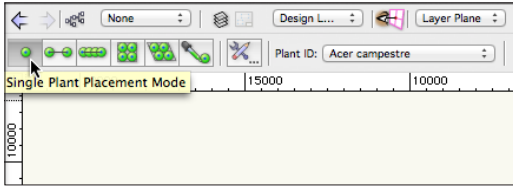
When you select the Plant tool for the first time, Vectorworks will open the Plant Settings. This allows you to define a plant. You have to define a plant before you can use the Plant tool.



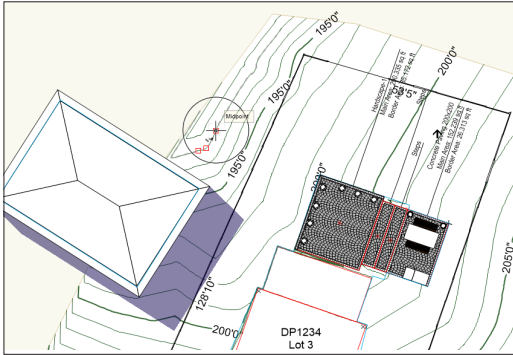
For your first plant, just click on the **OK** button, this will close the dialog box.

Placing Single Plants

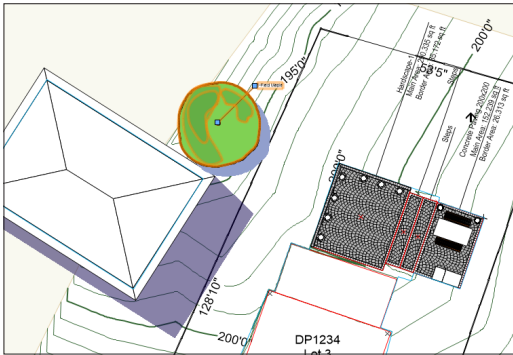
The first mode on the Tool bar is called the **Single Plant Placement Mode**. This mode is for placing a single plant. Each click will place a single plant and it will not connect any of the plants together.



- Move to the required location.



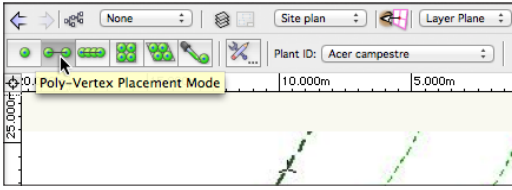
- Click once.
- The plant will be centered on your click.



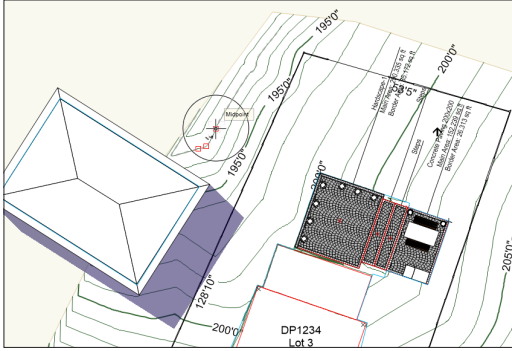
The plant tool is still active, so you can see a ghost image of the plant on the cursor. Do not click to try to get rid of this, it will only place more plants.

Placing Multiple Plants By Clicking

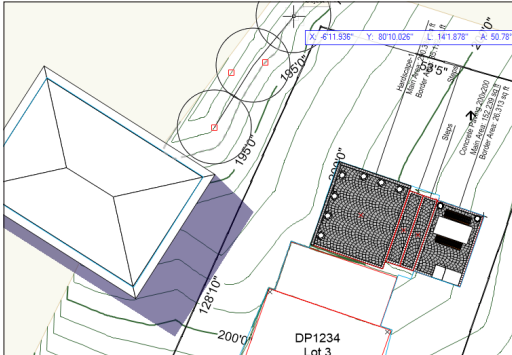
The second mode on the Tool bar is called the **Poly-Vertex Placement Mode**. This mode is for placing multiple plants based on where you click. Each click will place a plant and it will connect all of the plants together into a single plant object.



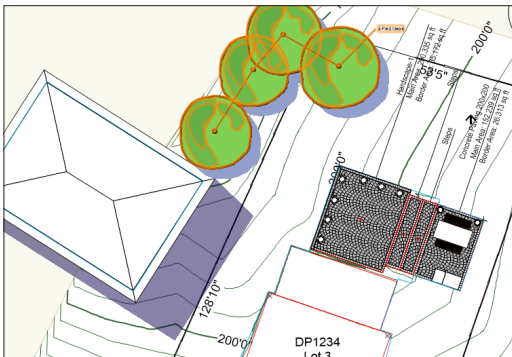
- Move to the required location for the first plant.



- Click once.
- Move to the required location for the next plant.
- Click once again.
- Move to the required location for the next plant.



- Double click to finish placing plants.

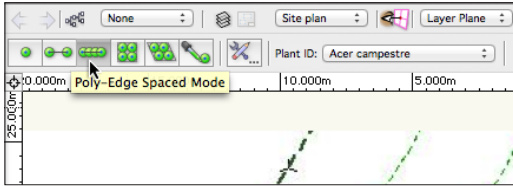


The plant tool is still active, so you can see a ghost image of the plant on

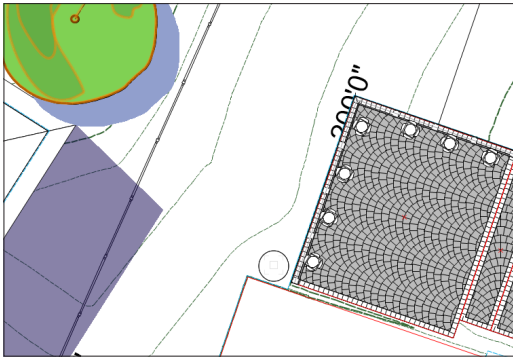
the cursor. Do not click to try to get rid of this, it will only place more plants.

Placing Multiple Plants By Spacing

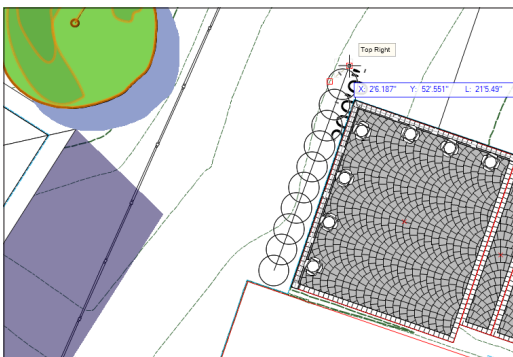
The third mode on the Tool bar is called the **Poly-Edge Spacing Mode**. This mode is for placing multiple plants based on where you click. Each click will place a plant and it will connect all of the plants together into a single plant object.



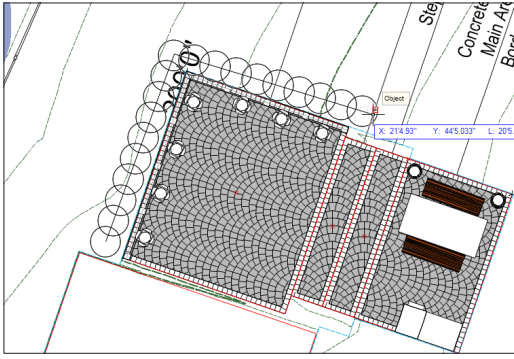
- Move to the required location for the first plant.



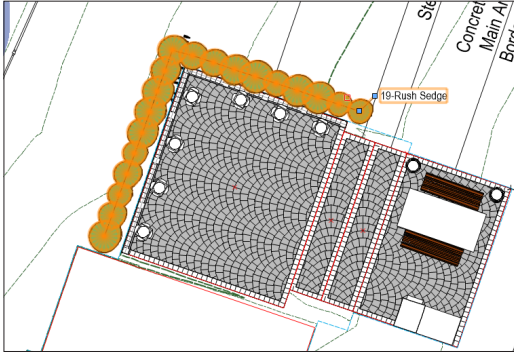
- Click once.
- Move the required location for the end of the planting run. Notice how Vectorworks is spacing the plants for you, in a straight line.



- Click once again.
- Move to the required location for the next change in direction.
- Click once more.
- Move to the required location for the end of the planing.



- Double click to finish placing plants.

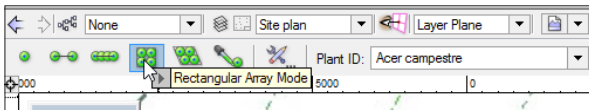


Placing Multiple Plants By Array

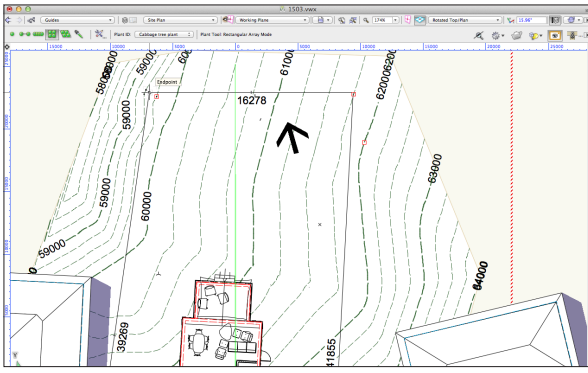
The last two modes for plant placement are similar, they both place multiple plant by array. When you place plants with these modes, the array is based on the screen rotation.

These modes are easier to use if you rotate the view first so that one of the boundaries is square on the screen.

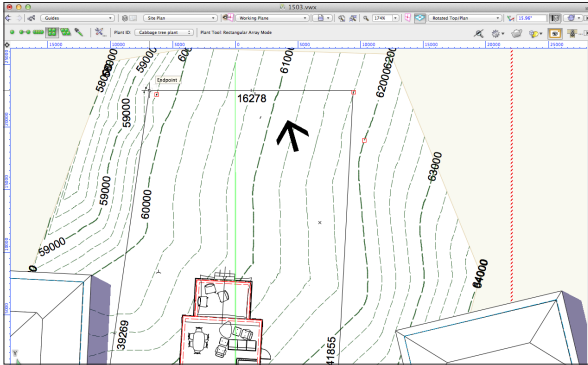
- Go to the **Tool** bar and click on the fourth mode, **Rectangular Array mode**.



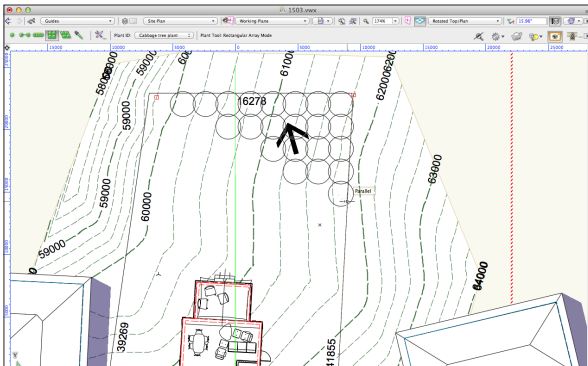
- Click once to start the outline of array.



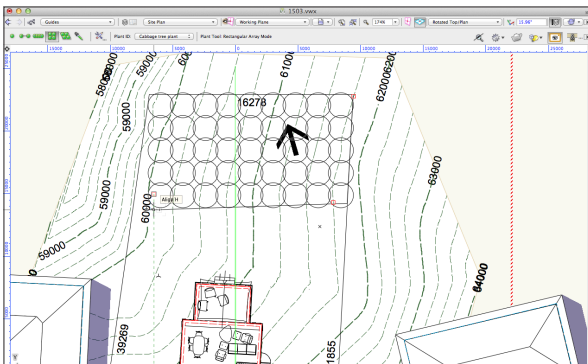
- Click once for the first corner.



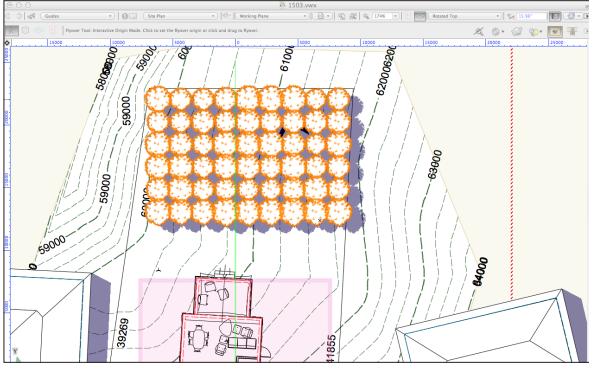
- Keep clicking for each corner of the planting area.



- Double click to finish. If using Vectorworks 2015 or later, use the **K** key to close the polygon instead of double clicking.

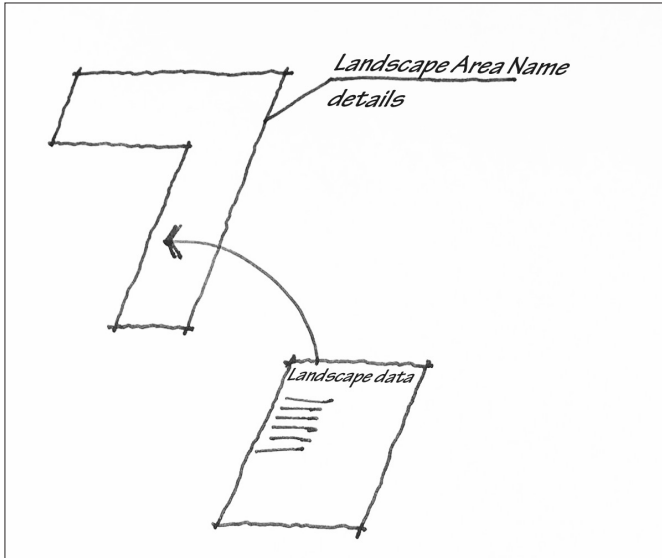


- Vectorworks will fill the area with plants.



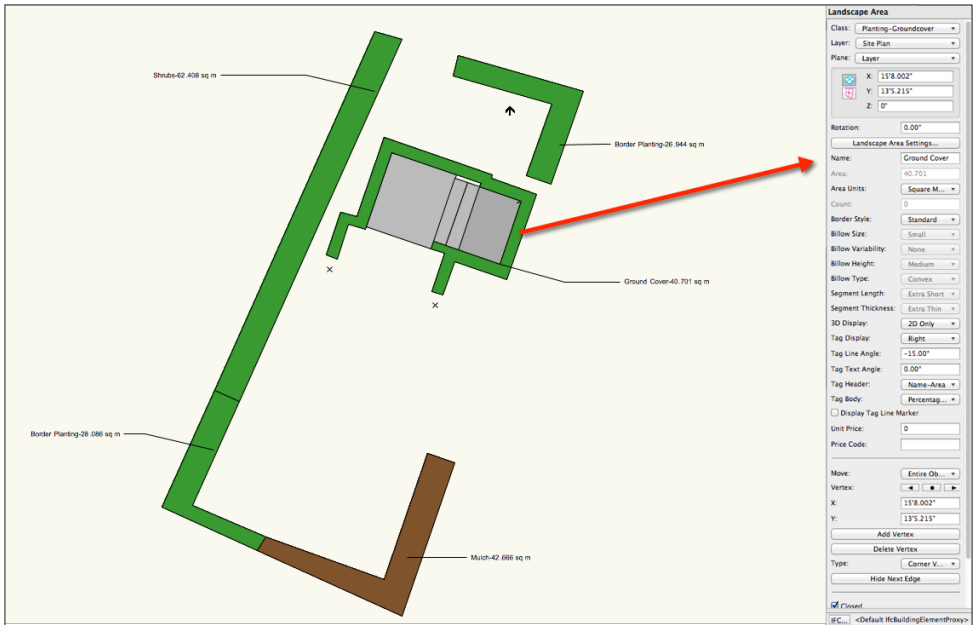
Landscape Areas

The **Landscape Area** tool will create a polygon shaped area that can represent an area of landscape. This area can include plants (with specific settings for spacing and species) or it can be used just to represent an area (lawn, planted areas, water, tracks, etc.). When you create a landscape area Vectorworks also attaches information to the object, which can be used in reports later.

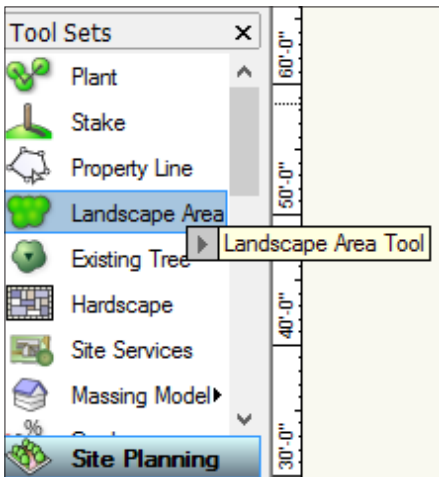


This makes the **Landscape Area** tool a very quick and efficient tool for planning and budgeting your landscapes. Initially you can use it to plan specific areas and report them. This would allow you to create quick budget calculations. As the design progresses you could add specific plants and spacings to the landscape areas, without needing to redraw these areas. Later on, when you report the number of plants, the plants inside the landscape areas will also be reported along with the individually placed plants.

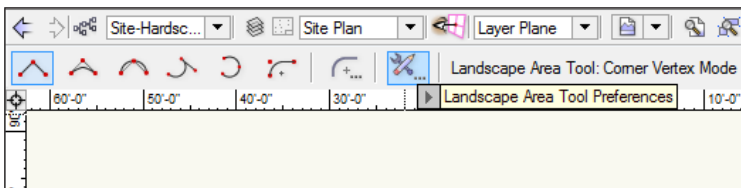
If you want to report additional information the existing landscape area does not already include, you can attach your own records to the landscape area.



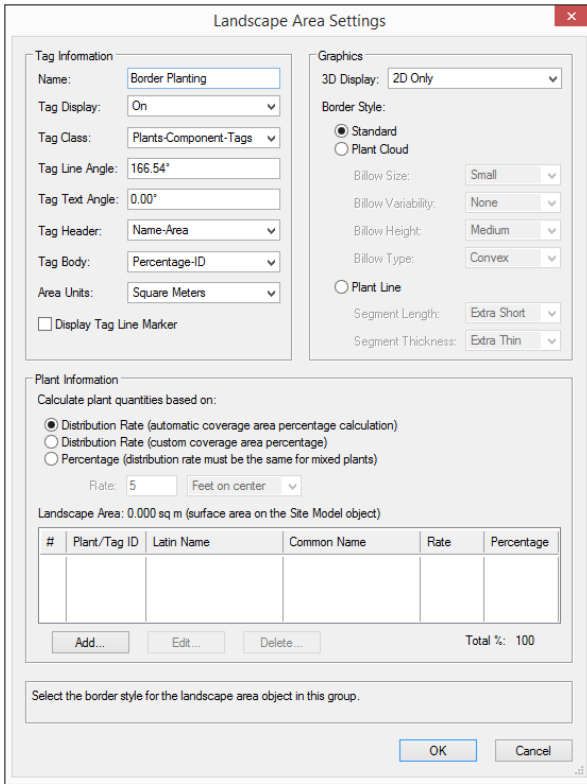
- Go to the **Site Planning** toolset.
- Click on the **Landscape Area** tool.



- Go to the **Tool** bar.
- Click on the **Landscape Area Tool Preferences**.



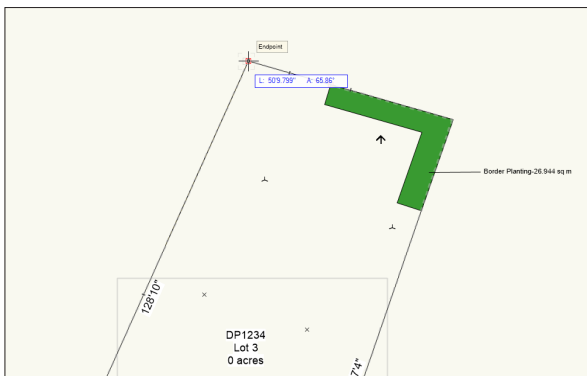
- Fill in the preferences to suit the project. You can add plants to the area, but for quick budget planning it is easier to leave the plants out.
- Ensure that you add the correct Name, Tag Display, Tag Class, etc.



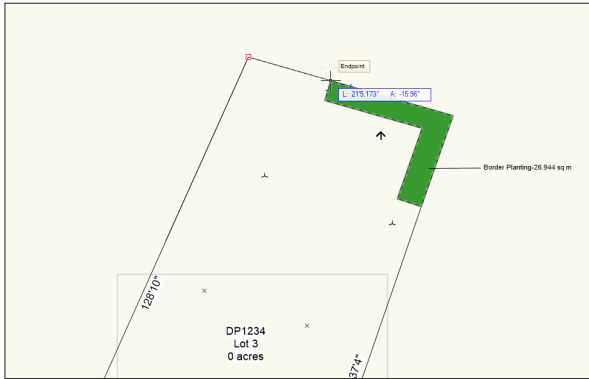
- Click once for the start of the Landscape Area.



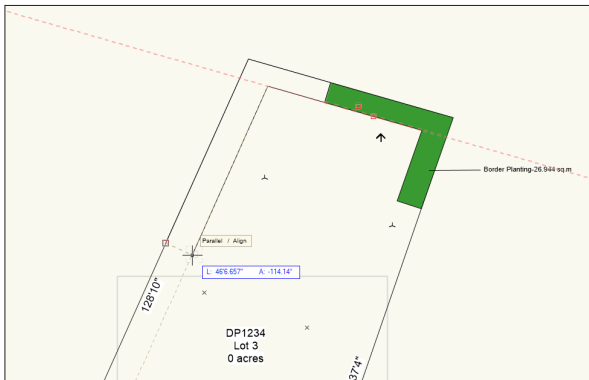
- Move to the first corner of the area.
- Click once.



- Move to the next corner.
- Click once again.



- Keep clicking at each corner.



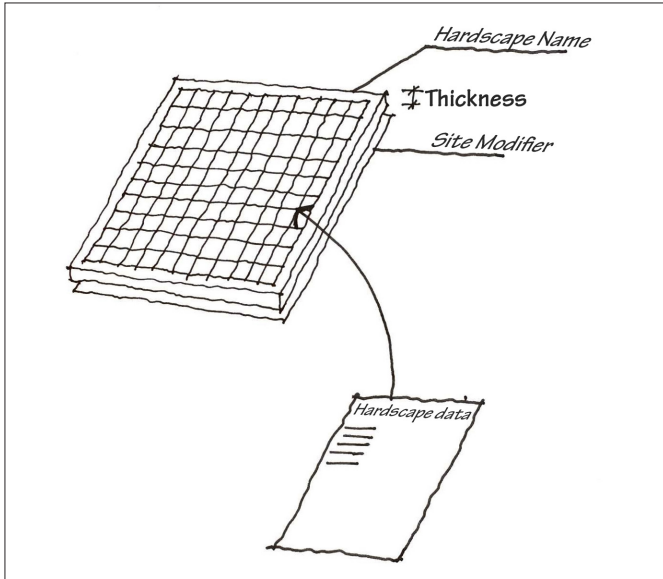
- Move to the start point.
- Click once. You can stop the area at any time by double clicking.



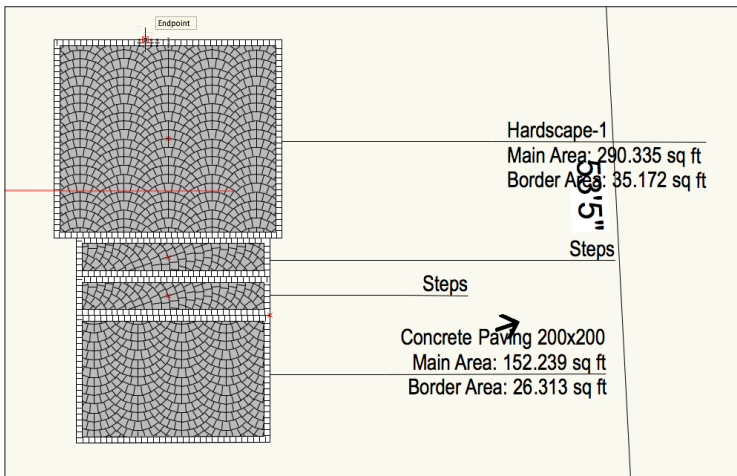
The landscape area can include 3D plants and it is created as an IFC object, which means that it will be exported if you need to share this project.

Hardscape Areas

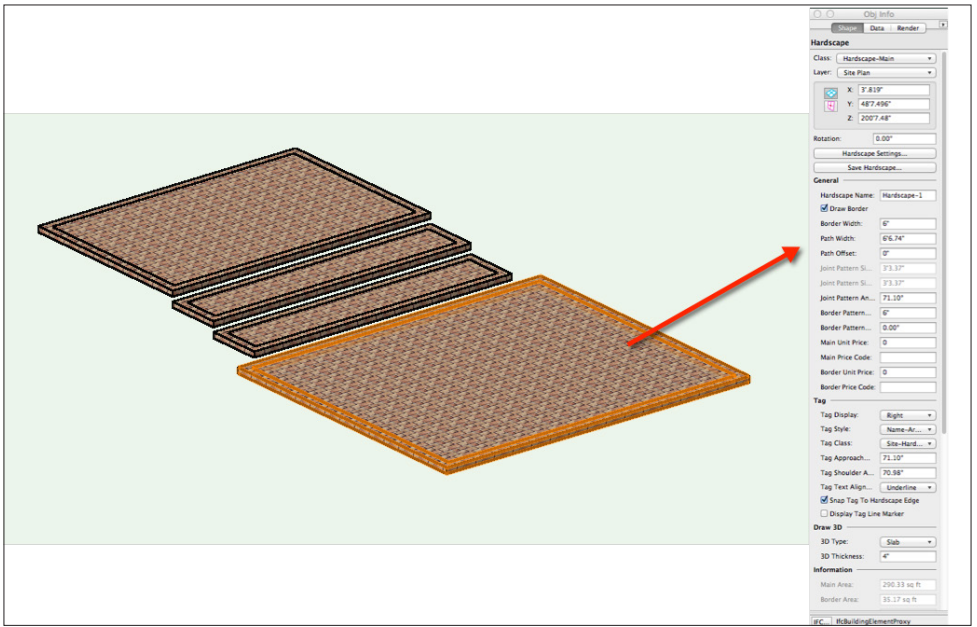
A hardscape object is a polygon-based object that is designed to represent hard landscaping. This object represents a flat area on the site and it can be used to create a three-dimensional object that has thickness, graphic representation, border areas, and it can also be used as a site modifier. The hardscape object has data attached to it, which means that you can create a report that will list the main area, the border area, the price code, thickness, elevation, etc.



You can set the 2D attributes to suit the design and you can activate the option to show the areas.

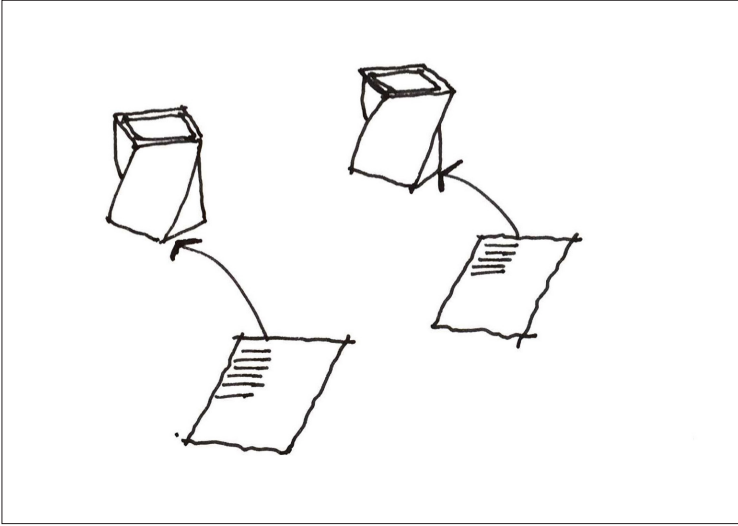


You can set the 3D options to suit the materials. The **Object Info** palette shows the options.

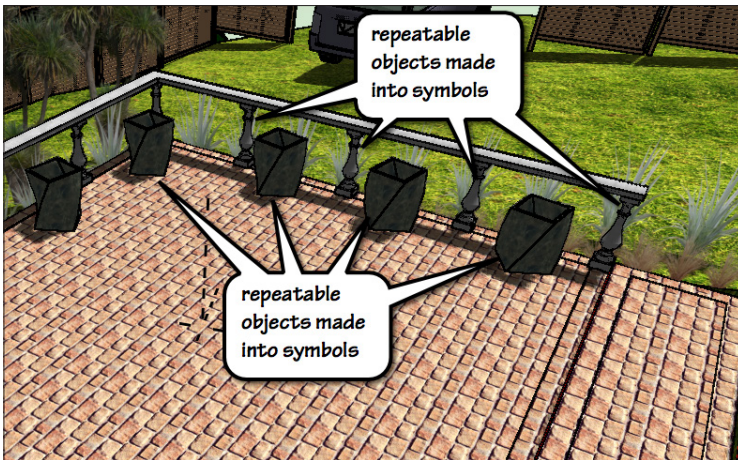


Symbols

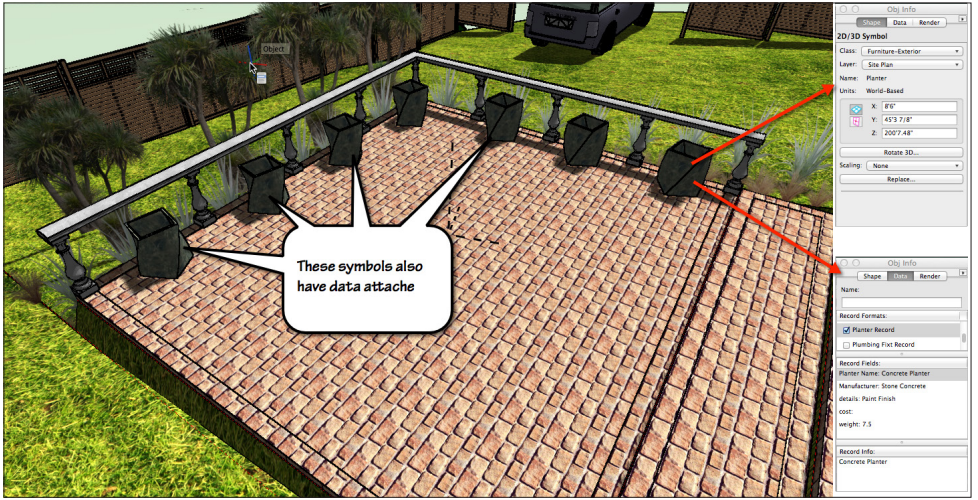
Symbols are small repeatable objects. They can show 2D and 3D parts, and you can attach information to them.



Making objects into symbols is an effective way of repeating objects.



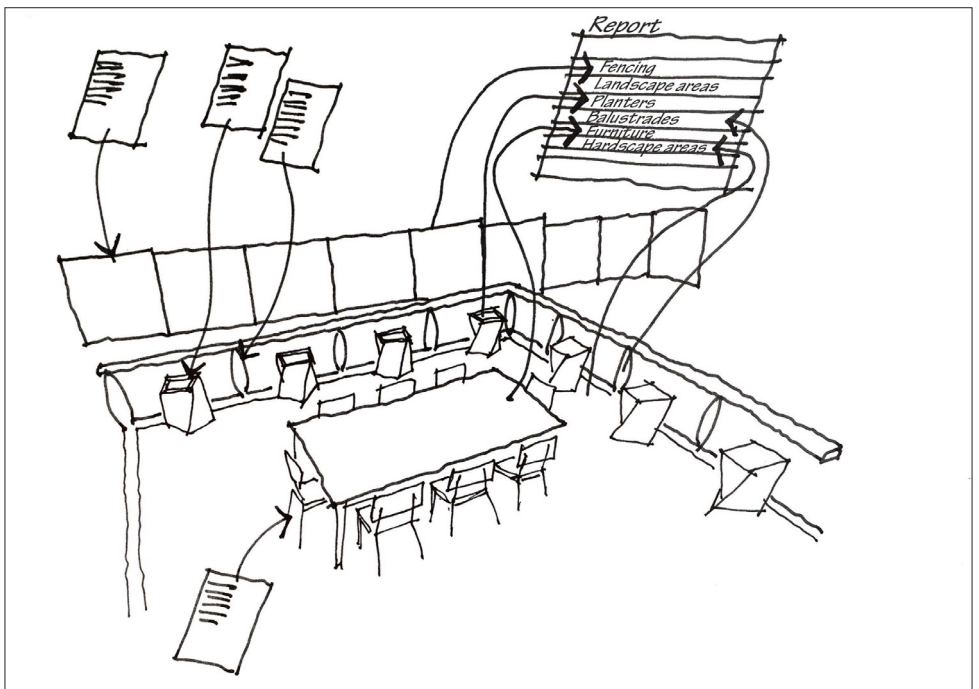
In this image you can see the symbol with the information shown on the **Object Info** palette.



Reporting

Reporting is an extremely useful part of Building Information Modeling. When your objects are created using the techniques we have described, they can be reported in a worksheet. The information in your report depends on the information you have attached to your objects.

In this image I am trying to show that you could attach information to the fences which might include the color, material, and the manufacturer. This information can be collected from all of the fence panels and put into a report that would count up the number of fence panels required to complete the project. I have also shown how you could attach information to a symbol, such as the concrete planter. This information could also be fed back into the report giving the number of planters, the weight of the planters, the cost of the planters, etc.



All information attached to objects can be reported. Some objects (landscape areas, hardscape areas, and plant objects) are created by Vectorworks so that they already have the information attached to them. This means that you do not have to do any additional work to get the information from those objects into your report.

This image shows a report from a large landscape project. This report counts up all of the plants, all of the landscape areas, and all of the hardscape areas. Costs can be assigned to the areas and the total price can be calculated from this.

Planting and Hardscape @ 160%							
File Edit View Insert Format							
	A	B	C	D	E	F	
1	Planting						
2	ID	Qty	Scheduled Size	Common Name	Remarks		
3	8	559	0		8	1	
3.1	AceCam	145		Field Maple			
3.2	AstBan	11		Small silver flax			
3.3	AstBan-1	3		Small silver flax			
3.4	CarGla	184		Blue Sedge			
3.5	Cor-Purpl	21		Purple Cabbage Tree			
3.6	He01	30		Hebe			
3.7	MeEx	132		Pohutukawa			<comments>
3.8	Palm	33		Palm			
4							
5	Hardscaping						
6	Hardscape Name			Main Area	Unit Price	Cost	
7	3			8702.28 sq m	\$6,300.00	\$515,855.80	
7.1	Stepping Stones			130.68 sq m	\$6,200.00	\$8,154.00	
7.2	Main Road			6981.16 sq m	\$65.00	\$453,775.40	
7.3				3.4 sq m	\$0.00	\$0.00	
7.4	Jogging Track			1587.04 sq m	\$35.00	\$55,546.40	
8							
9	Landscaping						
10	Name			Area	Unit Price	Cost	
11	3			111049.577 sq m	\$712.00	\$4,643,437.73	
11.1	Water			36279.399 sq m	\$600.00	\$3,627,939.93	
11.2	Grass			70546.761 sq m	\$72.00	\$846,561.13	
11.3	sand			4223.417 sq m	\$40.00	\$168,936.67	
12							
13							

The reporting concept can be extended by choosing to assign your own information to objects and having that reported as well. For example, I have created reports in the past that have shown individual plants, when they were gifted to the government, who planted them, and when they needed pruning or fertilizing.

You could extend this concept by adding a record format to your plants to report the amount of CO2 uptake or the amount of water each plant requires. When you create your report, it would allow you to calculate the total amount of water required for your entire landscape scheme. It could also report the total CO2 uptake by all of your plants. Maybe you could compare the CO2 uptake against the embedded energy of your hardscape areas to show the trade-off between the planting and hardscape areas.

IFC Import and Export

Introduction

When you create BIM projects, one of the major advantages is it that you can share information with other parties that not necessarily have the same software. There are different methods for sharing information.

Traditionally, DXF/DWG has been used to share computer files between different programs. The problem with this is that it shows drawn information only, often only in 2D.

IFC was intended as a way of sharing information (not just lines as in DXF/DWG) between computer programs, allowing Vectorworks to talk to Revit or Archicad, for example. Unfortunately, there is a lot of freedom when you implement IFC importing and exporting, so you might find that Vectorworks IFC files do not import properly into Revit, even if the files do import correctly into an IFC model viewer.

Some people would like IFC to be able to create Vectorworks objects that can be exported using IFC and when they are reimported, they will continue to be Vectorworks objects. This is not the case. When you import IFC objects into Vectorworks they do not convert into standard Vectorworks objects.

IFC is not intended to provide editable objects in other programmes, but to offer information only, for background purposes.

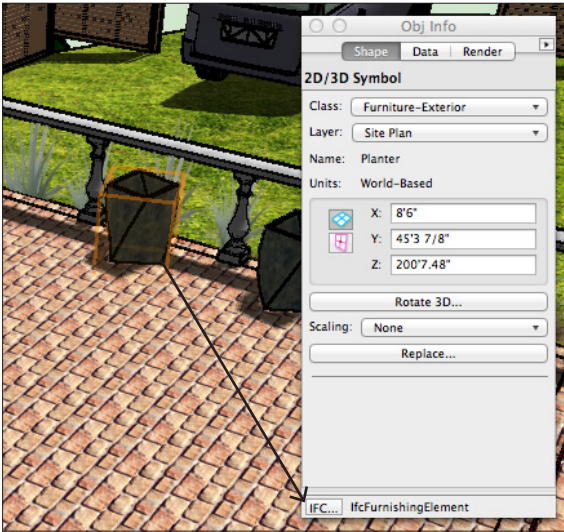
IFC stands for Industry Foundation Classes. The classes referred to in IFC have nothing to do with classes in Vectorworks. In fact the classes (in IFC) refer to a program language called C++ which uses classes as part of its program structure. In simple terms, IFC is a computer language that allows CAD programs to transfer three-dimensional information (along with the nongraphic information) from one program to another.

IFC Objects in Vectorworks

Many objects in Vectorworks are designed to easily export to IFC. For example, a door in Vectorworks is designed to export as a door object in IFC. When you use the export IFC command in Vectorworks, it knows that the object is a door and exports all the door information needed. The model viewer will import the object as an IFC door, with the correct height and width. Windows, doors, walls, columns, and most building objects work in the same way, making it easy to export your model to IFC.

The general rule is that if you have created the Building Information Model with standard Vectorworks objects, there is nothing more to do, just export the building using the **Export IFC Project...** command.

It is easy to see if the selected object has IFC data attached to it by looking at the **Object Info** palette. At the bottom of the palette is an area that shows the IFC information.



However, there are many objects that Vectorworks will not export automatically to IFC, e.g. extrusions, solid modeling, loft surface, and so on.

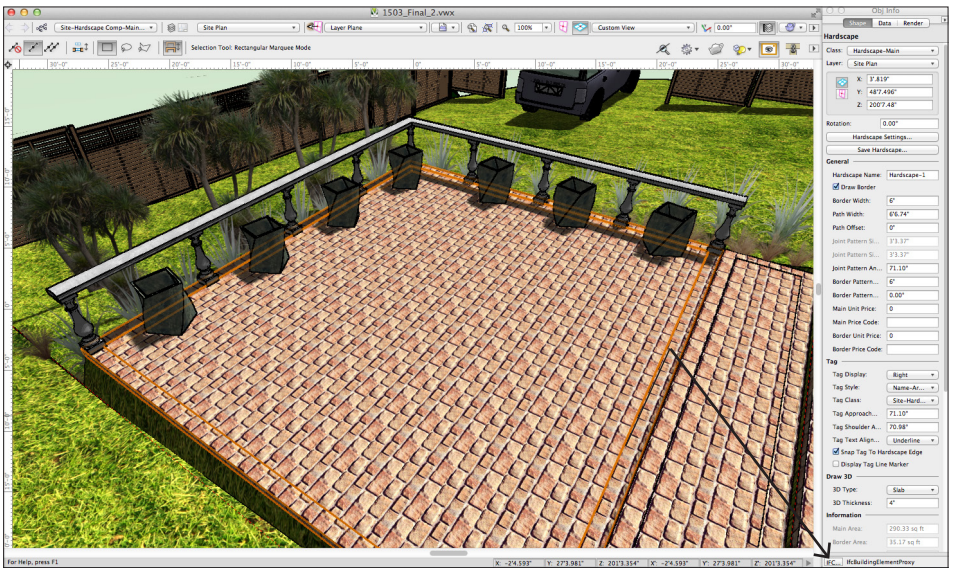
In this example, we have a symbol selected (fence). The **Object Info** palette shows the IFC information is missing.



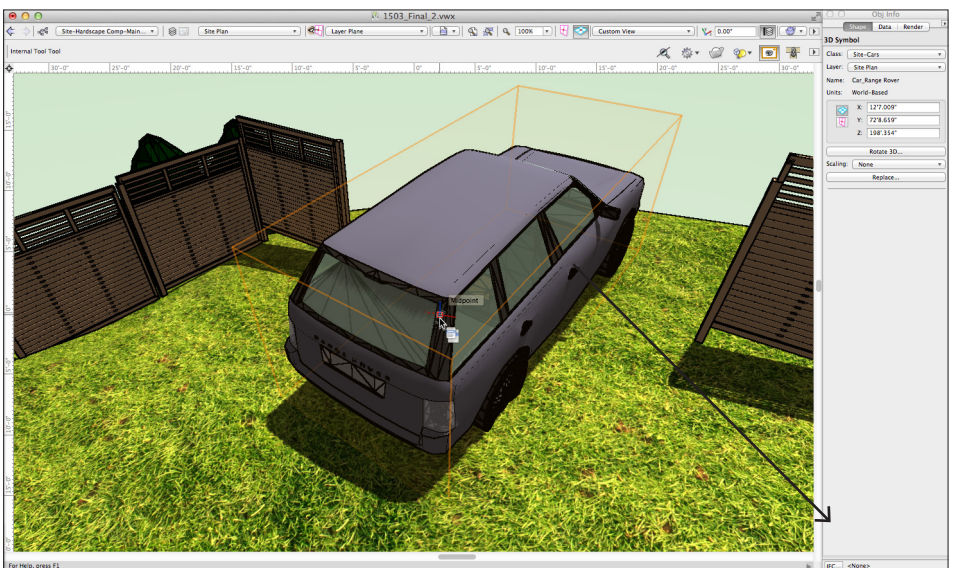
How can you tell if the objects will export to IFC?

When you select an object the **Object Info** palette will show you the IFC information at the very bottom of the palette.

In this case the object is IFCBuildingElementProxy. This object will export to IFC.



In this image the selected object has no IFC information attached, notice it shows IFC <None>. When you export this project as an IFC project, this object will not be exported.



What is IFC Used For?

IFC in essence allows you to exchange background information. There are two schools of thought about IFC. One believes that you should be able to export objects to IFC, and when you import them back into Vectorworks, they should go back to their original objects. This concept is known as round-trip.

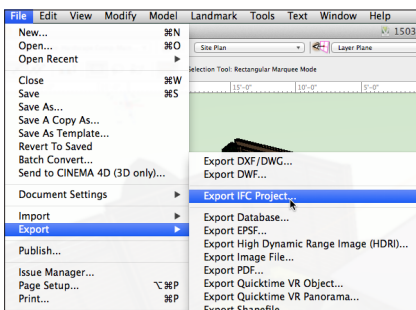
The other school of thought is that IFC should be used as background information only, a kind of three-dimensional DXF, with information

attached. The analogy is that when you import DXF/DWG information, you import them as background information. You do not expect to import DXF/DWG information and have objects turn into doors, windows, walls, and so on. This is the way how Vectorworks works.

Hence I treat IFC as background information only. An example of this would be that you export your IFC model to your engineer. The engineer can then use your model as background information to design the structural beams, columns, and slabs. The engineer could then export the structural information as IFC. When you import the IFC structural information, you can add it to your model for inclusion in your drawings, but you would not expect to be able to change the engineer's work. In this scenario, both you and the engineer are using the IFC data as background information, not as round-trip information.

Exporting an IFC Project

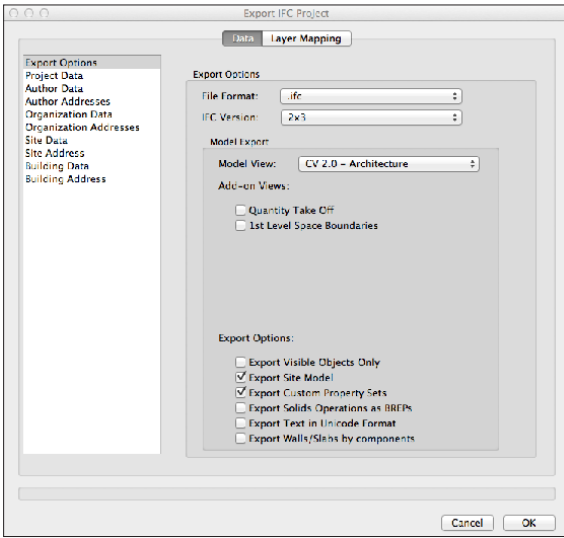
- Go to the **Menu** bar.
- Choose **File > Export > Export IFC Project...**



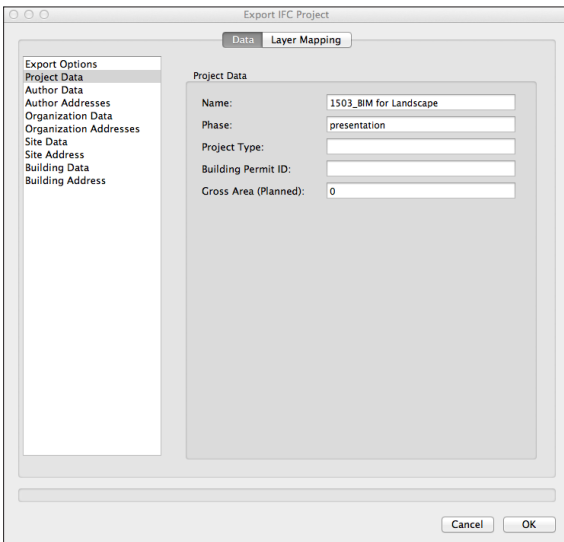
This dialog box is the core of your export. Choosing the correct options here will result in a correct export file. Choosing the wrong options will not give you the results you want.

On the **Data** tab, it is primarily the **Export Options** that you need to concern yourself with. The other options, **Project Data**, **Author Data**, and so on are only to record information about the project.

- Choose the file format: **.ifc**.
- Unless you are instructed otherwise by your consultant, choose the version **2x3**.

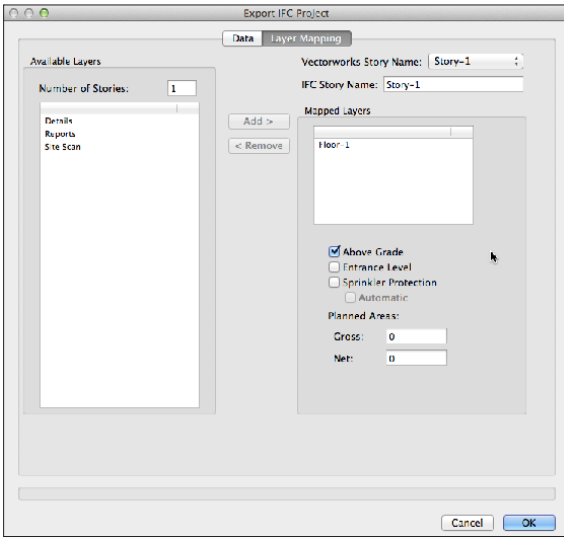


- Fill in the details you want. These details travel with your model, but they do not affect the translation.

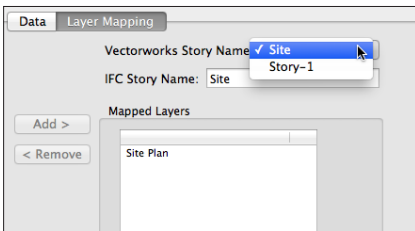


Ensure that you have the correct number of stories, as sometimes Vectorworks gets it wrong.

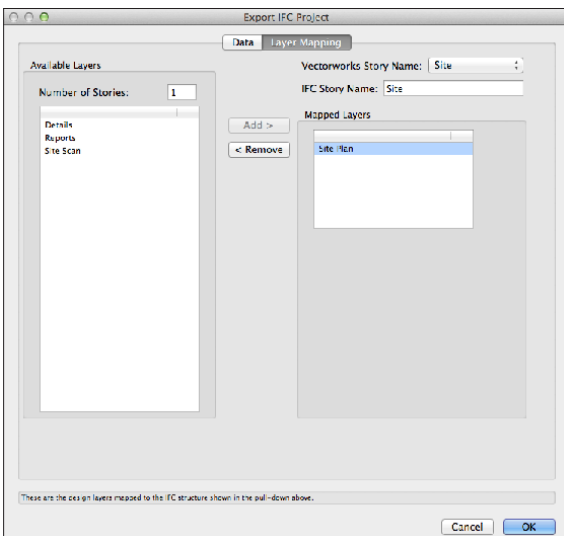
- Click on the **Layer Mapping** tab.
- Next, choose the story that you want to work on by clicking on the respective story pop-up menu.
- In this image I have chosen **Story-1**.
- On the left side of the dialog box, select the layers that you want to assign to the story.



- On the right side of the dialog box, click on the **Vectorworks Story Name** pop-up menu.
- Choose **Site**.



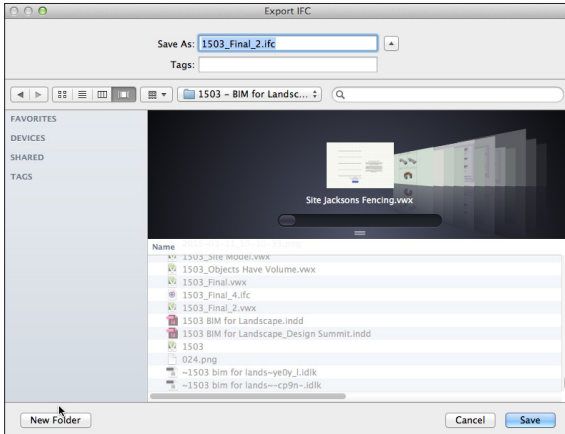
- Select the layers that you want to assign to **Site**
- Click on the **Add >** button.



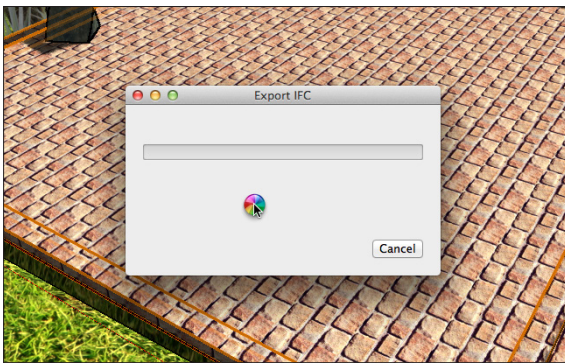
- When all the design layers are correctly assigned to the stories, click on the **OK** button.

Vectorworks now requires somewhere to store the file.

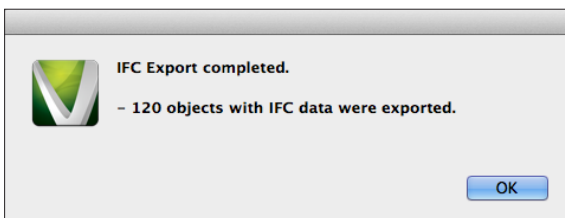
- Choose a suitable location, like the client's folder.
- Click on the **Save** button.



Vectorworks now renders your model in OpenGL while it calculates the IFC export. Vectorworks will also show you an IFC export dialog box that shows the progress on it.



When the export of the model is completed, Vectorworks will return to the rendering mode previously set.



IFC Model Viewer

Before you send your IFC project to your client or consultant, you should check your IFC model with an IFC model viewer. Some you have to pay for and some are freely available:

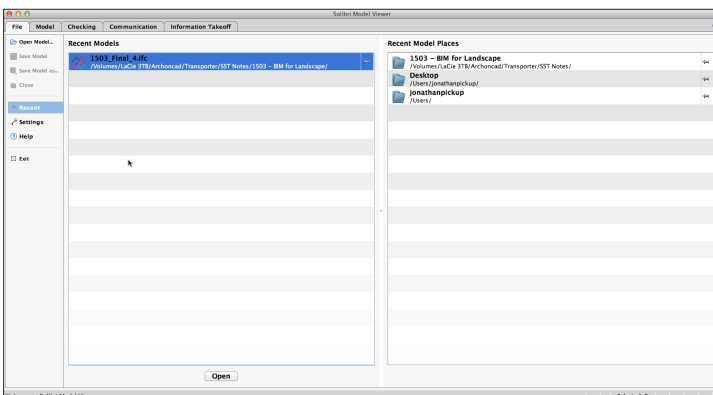
- http://www.ifcwiki.org/index.php/Free_Software
- ModelViewer from Solibri
<http://www.solibri.com/products/solibri-model-viewer/>
- DDS-CAD Open BIM Viewer from
<http://www.dds-cad.net/downloads/dds-cad-open-bim-viewer/>

To check your IFC project, you should import the project into an independent IFC viewer.

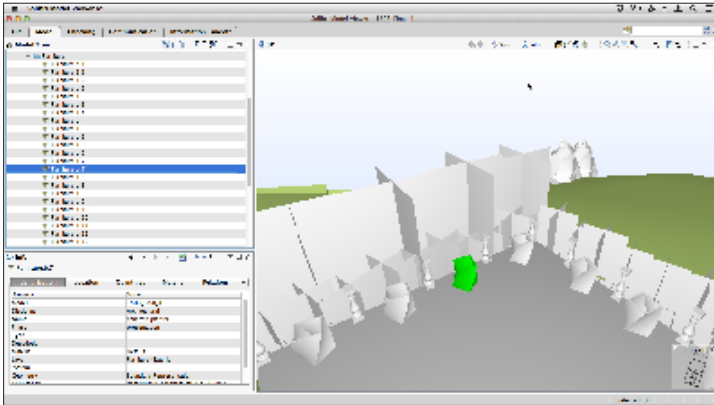
- If you want to use the Solibri viewer, go to <http://www.solibri.com/>.
- You will have to register to get the free model viewer.
- It can take several minutes to download and install.
- When your IFC model viewer is installed, open it.



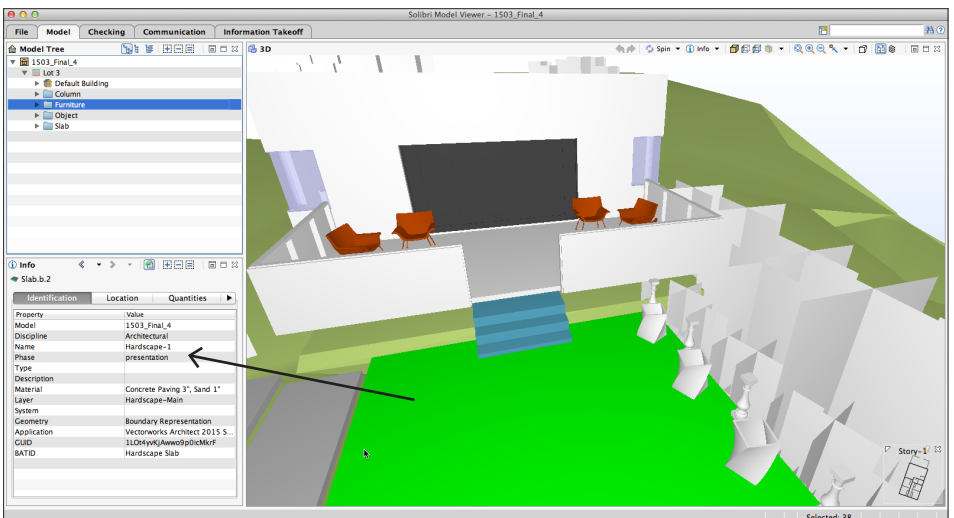
- Locate your IFC model.
- Click on the **Open** button.



- If the IFC project is large (like this site model), it will take some time to open the model.
- The model will render automatically when you open it.



- Navigation around your IFC model is like using the flyover tool in Vectorworks: click and hold your mouse button down, move your mouse and you will fly around your model.
- You can also choose standard views from the pull-down menu at the top right.
- Choosing a standard view is a quick way of getting the view you want, and it also centers the building in the viewing window.
- When you select an object, the **Info** panel will show the information about the object that you attached in Vectorworks.



I 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

March 2015