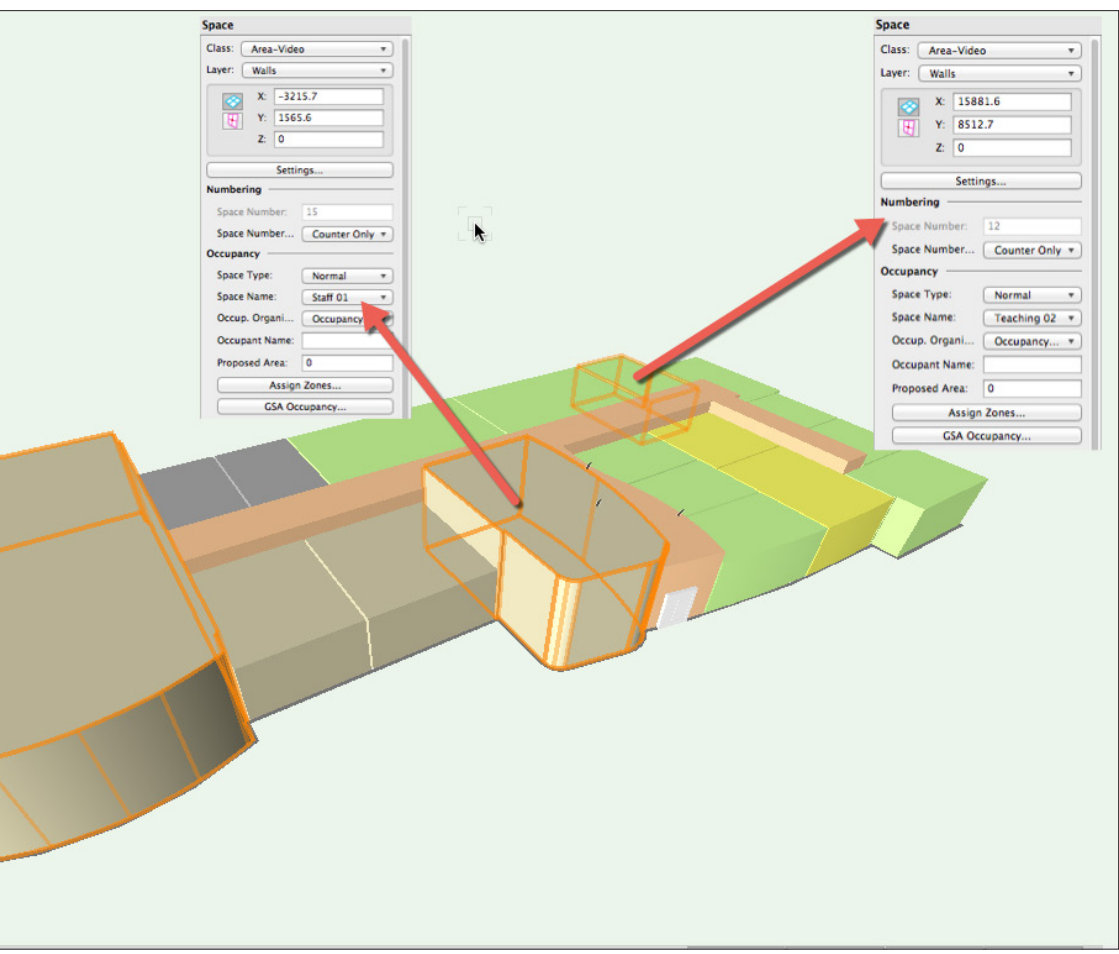
SHORT SHARP MANUALS

1404 Spaces



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Contents

Introduction

Space objects are a powerful part of Vectorworks and they are an important part of BIM (Building Information Modeling). The space objects are not just a 2D or 3D object, they also carry information about the room name, the required area, the volume, finishing information, etc.

Spaces in Vectorworks are classified as special objects and they are very useful. Unfortunately, they are only available if you have Vectorworks Architect or Designer. If you have Vectorworks Landmark, you will not be able to use spaces.

The space object can be used to create a quick conceptual model. When you do this, you can input the client's required room sizes and create a report showing these sizes along with the actual size from your conceptual model. This allows you to show that your desing complies with the client's requirements.

If you were creating a large-scale Office Park, you could use spaces to represent each building. The spaces would carry the area, height, and cost. This would allow you to create a report showing the information you wanted.

Spaces could be used to create a conceptual model that will be the basis of a 3D form study. This allows you to check the form of the building, how the building relates to its context, and it allows you to create solar studies. Several of my clients use the solar study to improve their designs.

The space object also carries the information for the Finishes Schedule. This allows you to assign finishes to the floor, ceiling, and walls. You can then create a report that lists the finishes for each space. When you update the space information, the finish schedule can be quickly updated as well.

We start this manual by looking at the basic concept of the space object. The space object has several settings so it is important to make sure that you get the spaces configured the way that suits you. There are several settings to consider. If you choose all the required settings before you start creating spaces, you will save yourself a lot of work later.

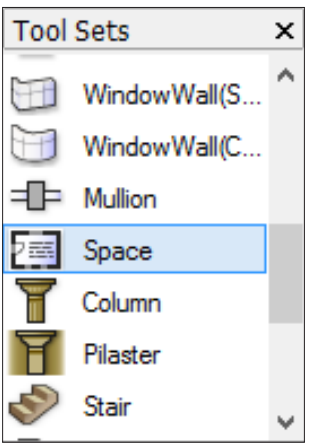
This manual has been updated to work with Vectorworks 2015.

Space Object Preferences

cadmovie1051

The most effective way of creating spaces is to go through the space object preferences first, and set these to suit your drawing style. If you don't do this, you will find that it is a lot of work to go back through your spaces to change the graphic style to suit your drawing style.

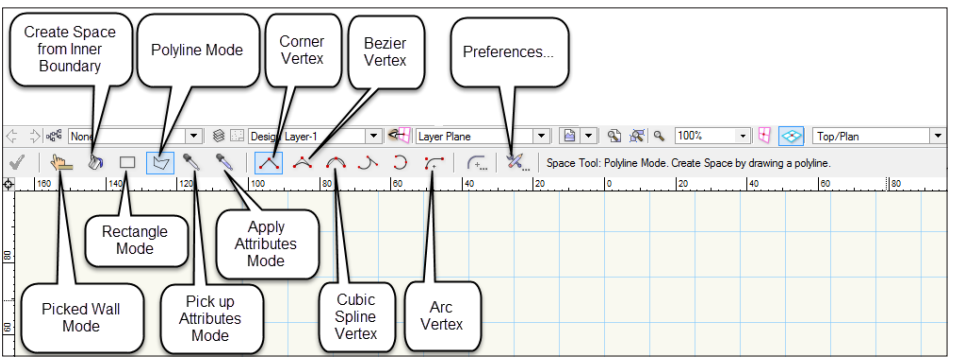
- Go to the **Building Shell** toolset.
- Select the **Space** tool.



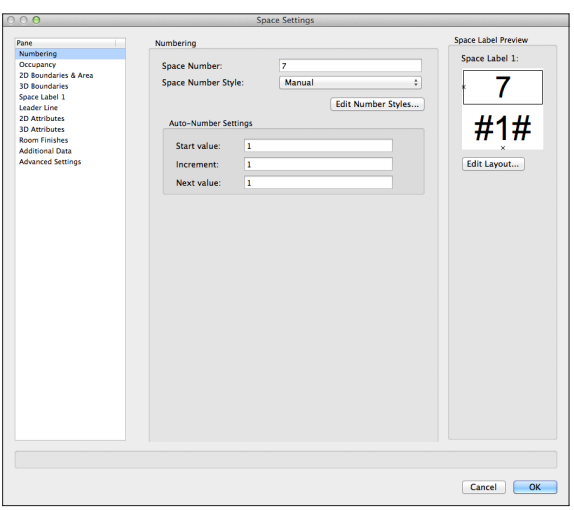
- Go to the **Tool** bar.
- The first mode is the **Picked Walls Mode**. With this mode, you pick the walls that bound the space. Like the Slab tool, it links the spaces to the walls, so that if you move the walls, the space will update automatically. This can work really well for closed spaces (spaces bounded totally by walls). This mode is not suitable for concept design work where you have not drawn the walls yet.
- The second mode is used to create spaces from an inner boundary of walls. This is a similar mode to the 2D Polygon tool **Inner Boundary Mode**. This mode can be useful when you have already drawn walls and you need to create spaces inside the walls you have created. This mode is not suitable for creating spaces for a concept model.
- The third mode is used to create spaces that are rectangular. This mode is suitable for creating spaces for a concept model. This mode is not suitable when your spaces are not rectangular.
- The fourth mode is used to create spaces that have irregular sides (polygonal). If you have a space that is polygon shaped, you can consider using this mode. Remember, if your walls form a closed shape, the second mode is much quicker. When you draw with the **Polyline** mode, you can use the next group of buttons to choose the type of corner

vertex. This allows you to create spaces that do not have corner vertices, allowing you to create flexible shapes.

- The last button on the Mode bar is used to access the Preferences. Before you create any spaces, it's very important to set the preferences. If you forget to set the preferences before you create several spaces, you will have to spend a lot of time going back through all the spaces correcting the preferences to suit.

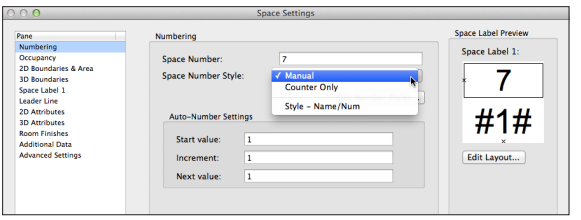


- Click on the **Preferences** button.
- The Preferences dialogue box has several parts to it. Each of the parts is listed on the left hand side of the dialogue box, instead of using tabs at the top.
- The first part to look at is **Numbering**.
- Here you set the style of the numbering, whether you will use automatic numbering, or manual numbering.
- In this picture you can see that the **Next value** has been set to 1. If a space already exists in this file it will show the next number required.

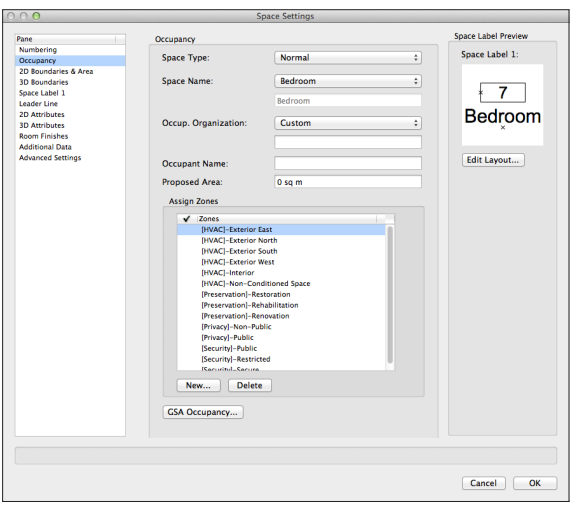


- If you want the automatic numbering to be reset to 1, edit the number in the **Next Value** input field.
- To change the **Space Number Style**, click on the pop-up menu.

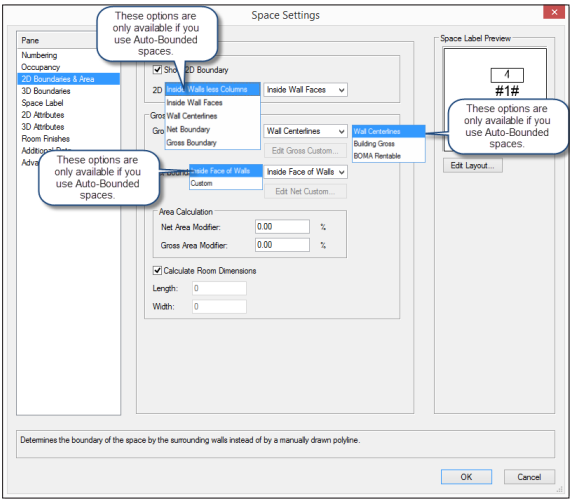
- Choose whether you want to have Manual, Counter Only, or a special custom style.



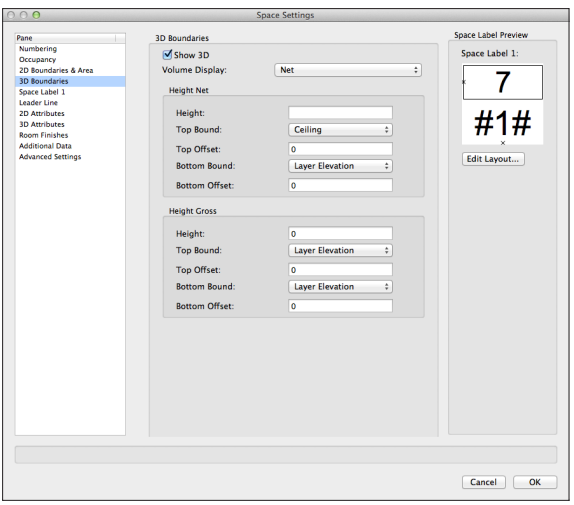
- If you just want a number on each space, choose **Counter Only**.
- Click on the **Occupancy** pane. This is where you set the space names, occupancy types, proposed areas, and zones.



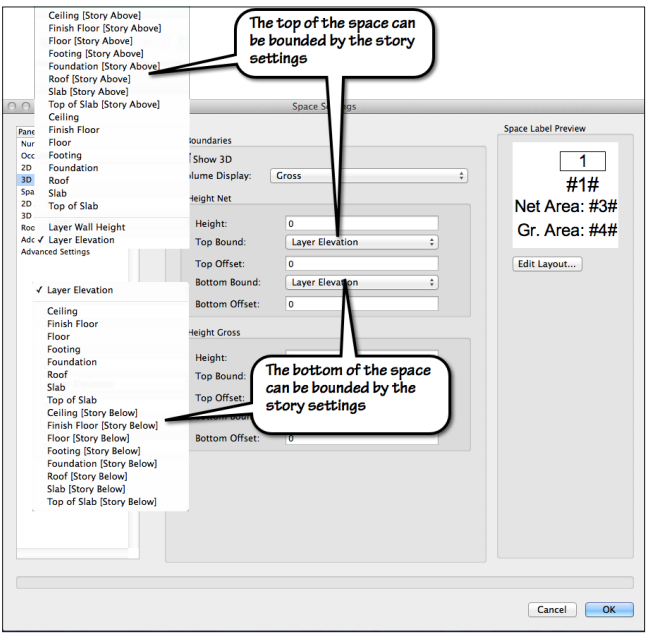
- If you are working on a conceptual model for a client that has specific space requirements, this is an ideal place to input the proposed areas. Once you have entered the proposed area for each space, you will be able to generate a report showing the relationship between the proposed area and the actual area.
- Click on the **2D Boundaries and Area** pane.
- The options you can see in the image below are only available if you have created the spaces to be **Auto-Bounded**. If you select a space that has already been created using one of the manual creation methods, you will find that all of the options in this part of the space settings are not able to be edited.



- Choose the required options.
- Click on the **3D Boundaries** pane.



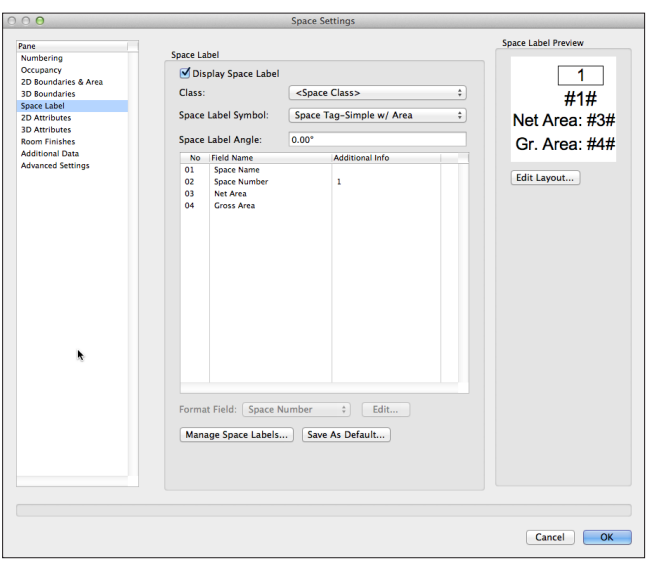
- In this area you choose your 3D settings. You can choose to have a specific height for each space, or you can choose the spaces to be bounded by the story settings.



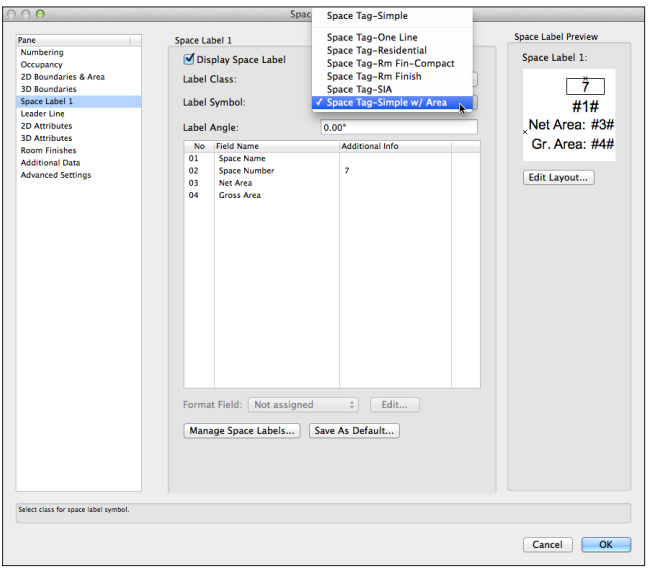
[cadmovie1052]

- Click on the **Space Label** pane. if you are using Vectorworks 2015 or later, you will have Space Label 1. Click on this pane. Later versions of Vectorworks have the ability to have multiple space labels.

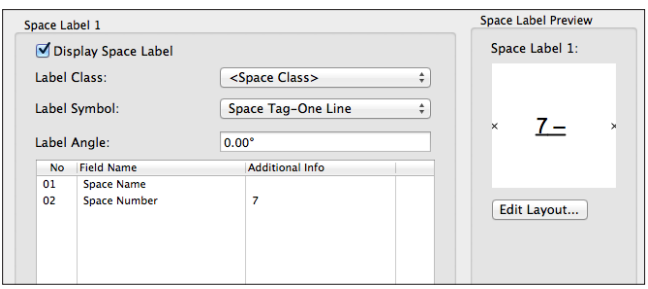
In this area you get to choose the required space label and its settings.



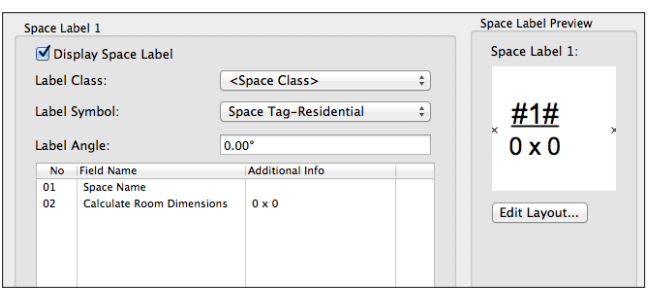
- Click on the pop-up menu to choose the most suitable space label. There are several to choose from, so you might have to choose each different label to see which one suits your project.



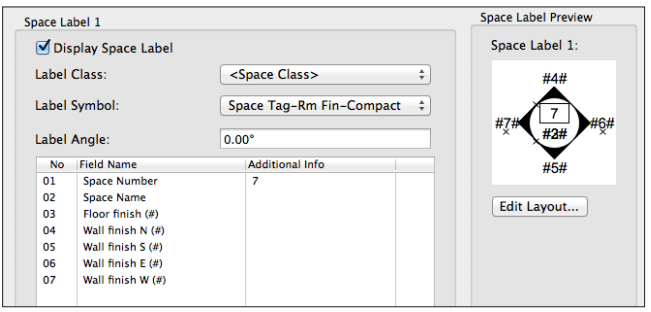
- This image shows the most simple label, **Space Tag-One Line**.



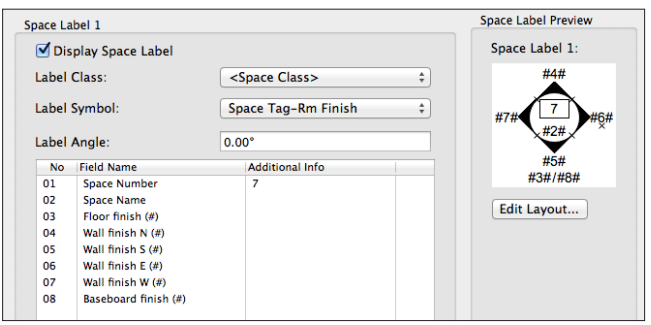
- This image shows the label that has more information, **Space Tag-Residential**



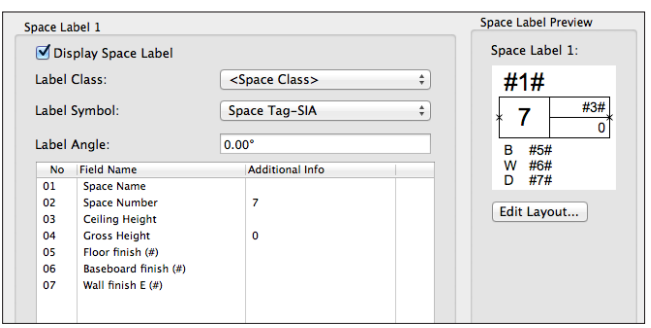
- This image shows a label with wall finish information, **Space Tag-Rm Fin-Compact**



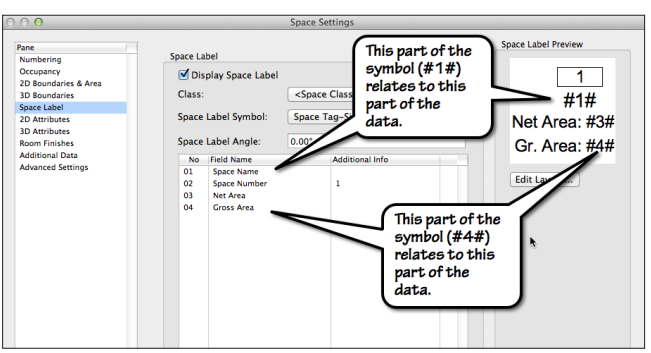
- This image shows a label with room finish information, **Space Tag-Rm Finish**



- This image shows a label with some room finish and ceiling height information, **Space Tag-SIA.**

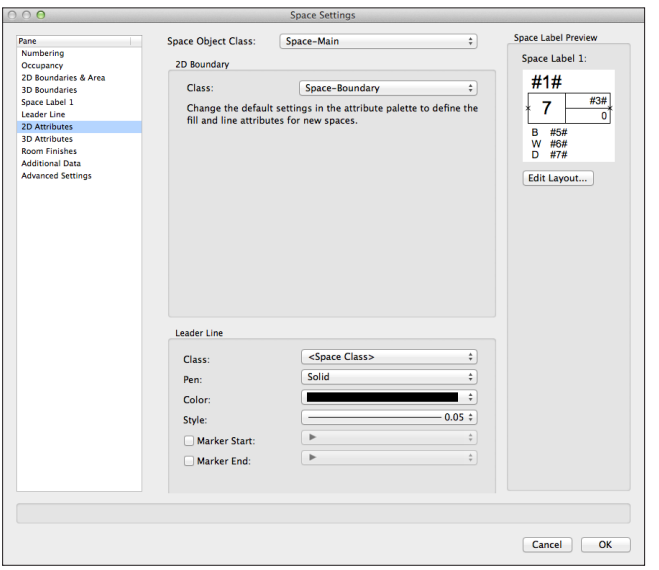


- All the labels follow a strategy; they use a symbol to control the geometry and they use a record format to connect information from the space object to the label.

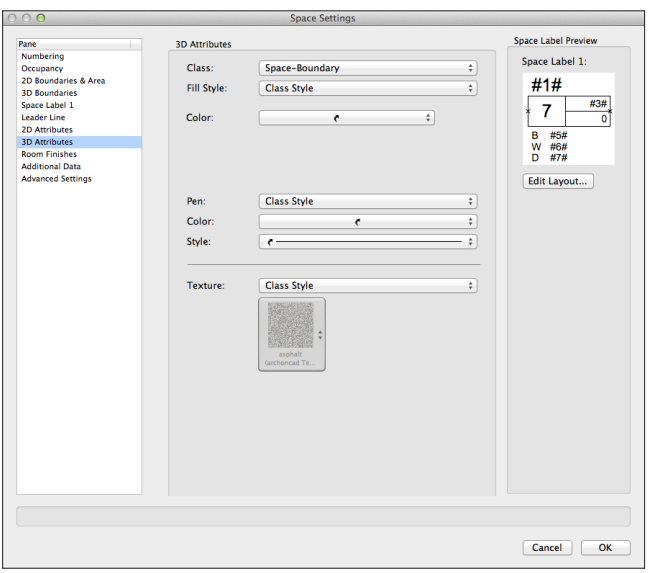


You can change the information that is attached to the symbol, see the chapter on Editing the Space Label.

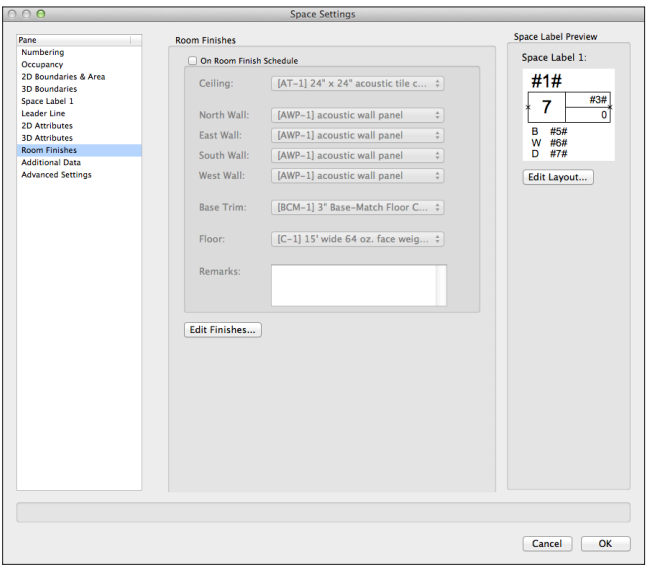
- Choose the required options.
- Click on the **2D Attributes** pane.



- Choose the required options.
- Click on the **3D Attributes** pane.

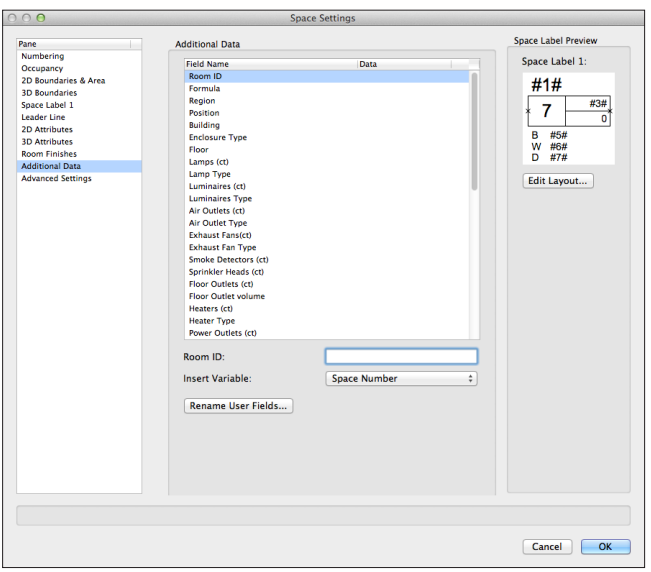


- Choose the required options.
- Click on the **Room Finishes** pane.

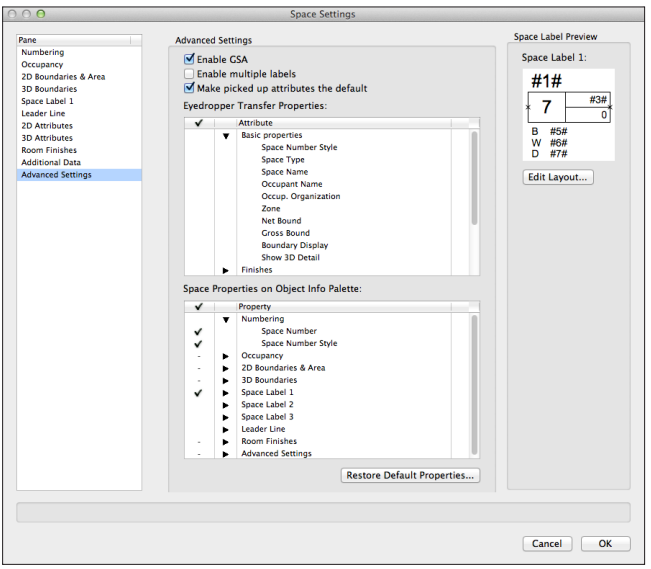


Room Finishes will be covered in detail in separate manual (SST_1406).

- Click on the **Additional Data** pane.

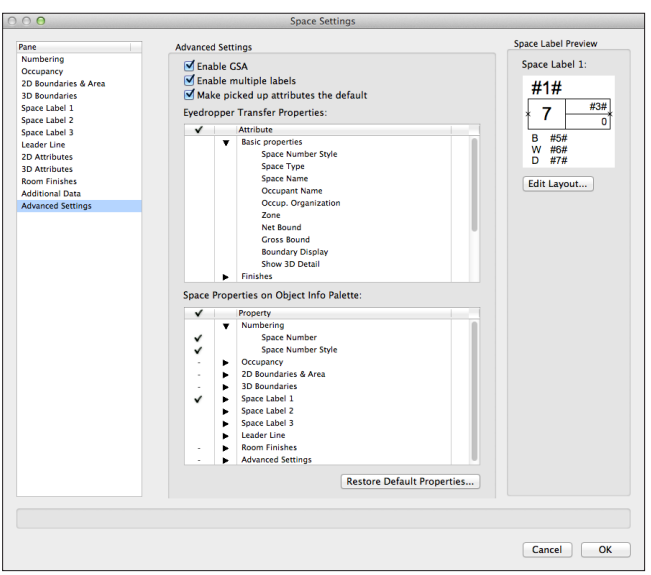


- This area allows you to choose the settings that the **Eyedropper** tool picks up and the parts of the Space object that will appear on the **Object Info** palette.



Vectorworks 2015 supports multiple space labels. The multiple labels allows you to create up to three different labels which can all be assigned to different classes, allowing you to create labels for specific drawings.

- In order to activate multiple labels, you must check the option **Enable Multiple Labels**. When you do this you will see **Space Label** 1, **Space Label** 2, and **Space Label 3** listed on the left-hand side of the dialog box.

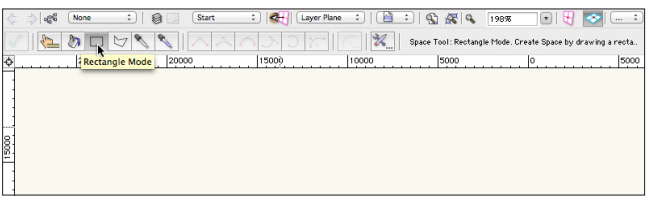


Creating Spaces Without Walls

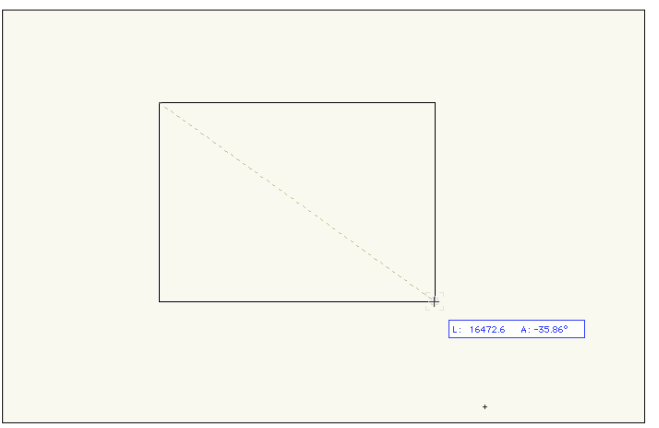
cadmovie1053

You can create spaces without walls by just drawing with the **Space** tool. This allows you to create a conceptual model quickly.

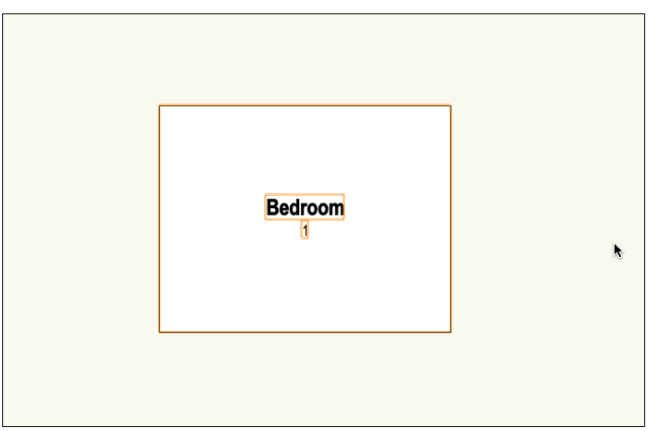
- Go to the **Building Shell** toolset.
- Click on the **Space** tool.
- Go to the **Tool** bar.
- Click on the **third** mode, the **Rectangle Mode**.



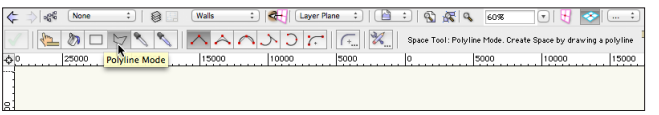
- Click once to start the space.



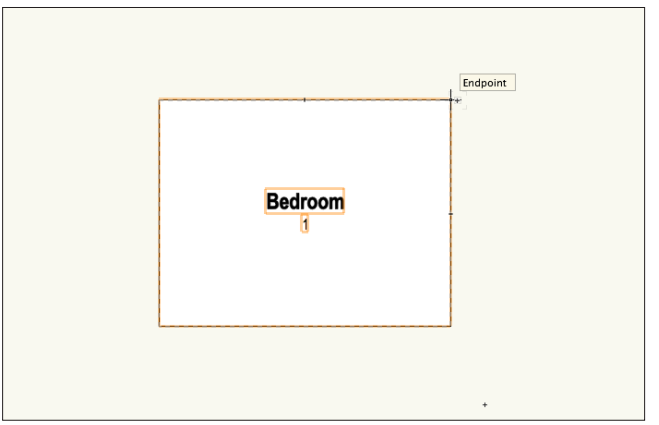
- Click once again to finish the space.



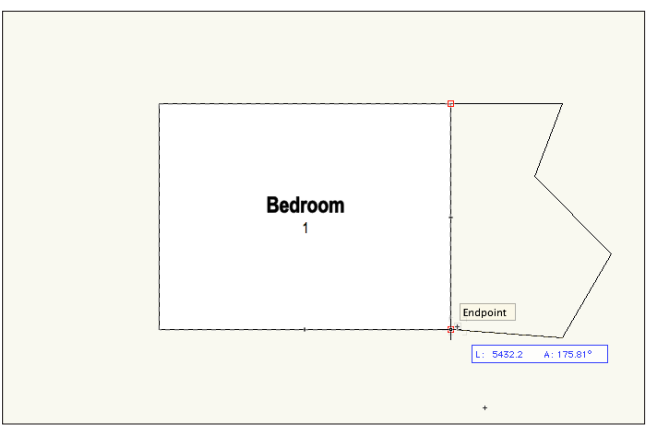
- Go to the **Building Shell** toolset.
- Click on the **Space** tool.
- Go to the **Tool** bar.
- Click on the **fourth** mode, the **Polyline Mode**.



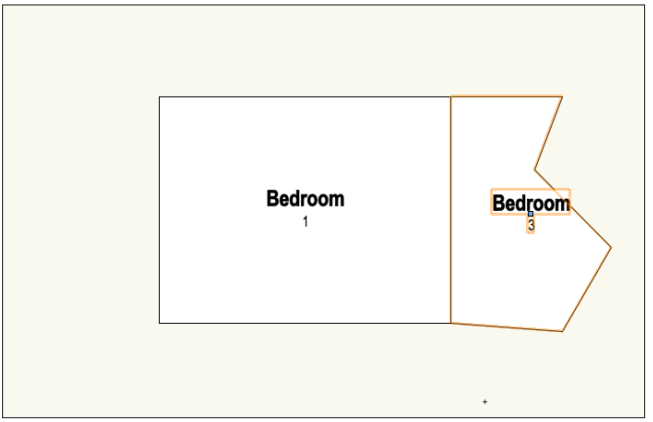
- Click once to start the space.



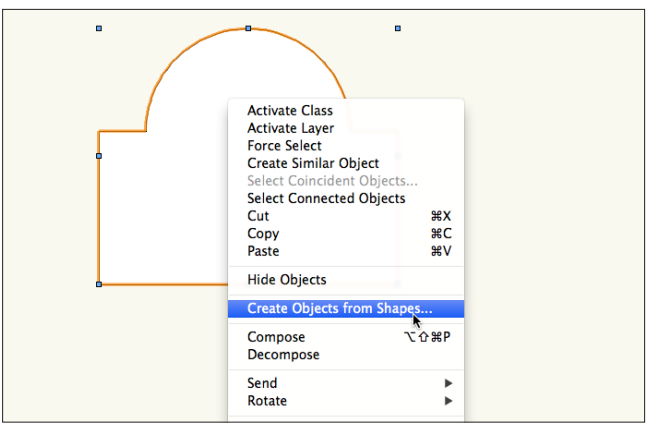
- Click once again for each point of the polyline.



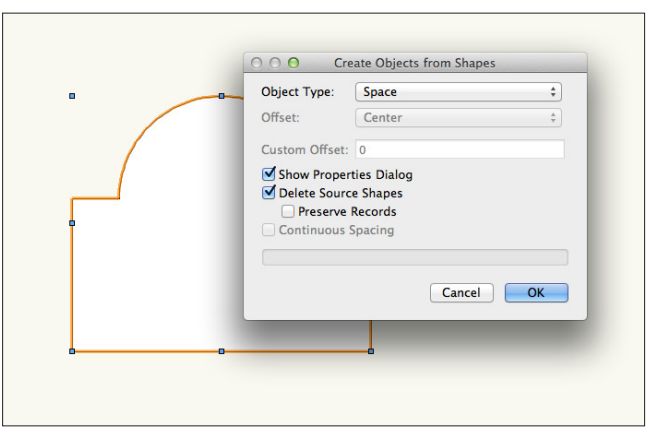
- Double click to finish the space.



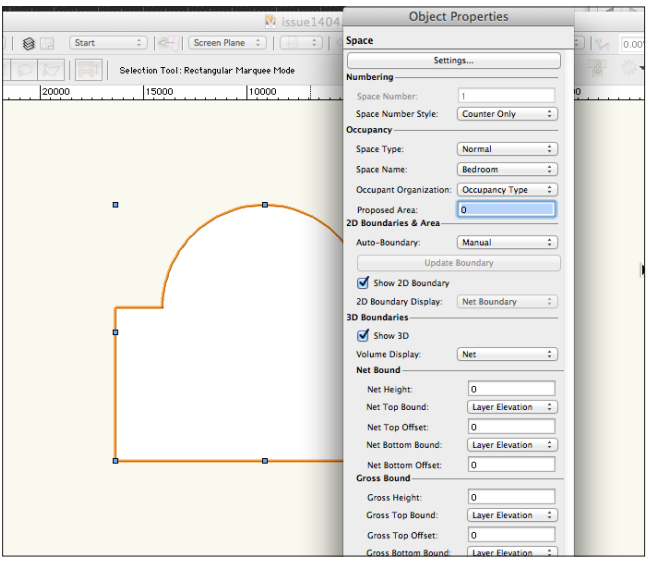
Another way to create spaces without walls is to create the required shape, then right-click on it and choose **Create Objects from Shapes...**



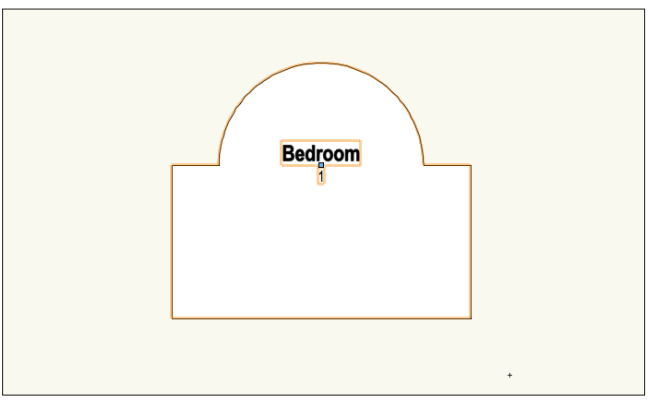
- Choose **Space** for the **Object Type**.



- Choose the required settings.



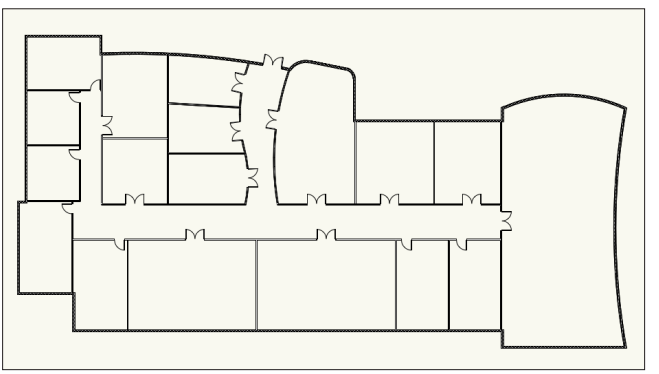
- Click on the **OK** button.



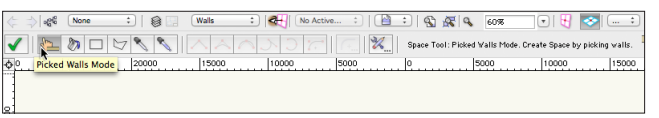
Creating Spaces From Walls

cadmovie1054

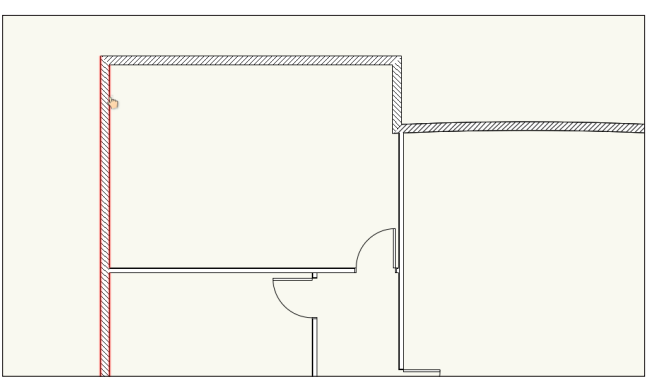
If the walls have already been drawn, you can use them to create spaces. There are two basic ways to create spaces from walls. The first way is to select the walls that create the boundary to the space and the other method creates a space from the inner boundary of the walls. In both cases the walls have to form a closed shape and the walls have to be correctly joined.



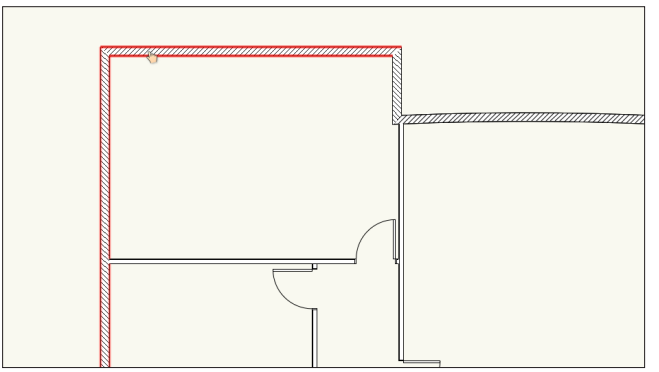
- Go to the **Building Shell** toolset.
- Click on the **Space** tool.
- Go to the **Tool** bar.
- Click on the **first** mode, the **Picked Walls Mode**.



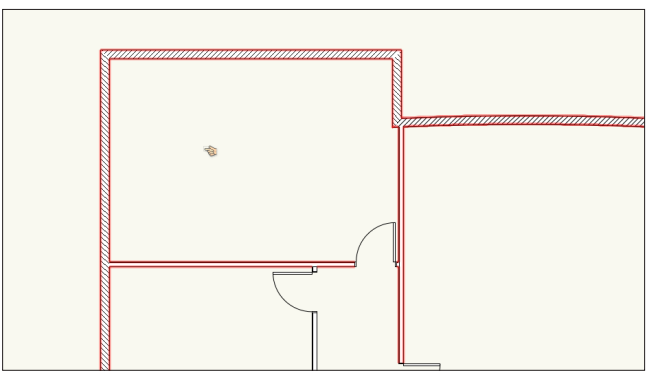
- Zoom into the required room.
- Click on the first wall that will bound this space.



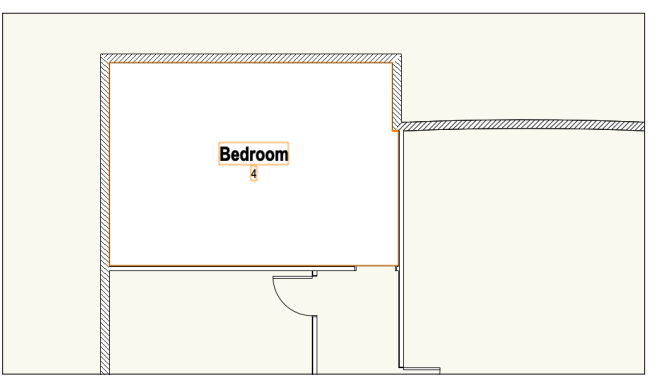
- Click on the next boundary wall.



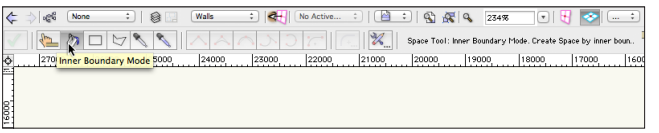
- Keep clicking on the required walls to completely enclose the space.



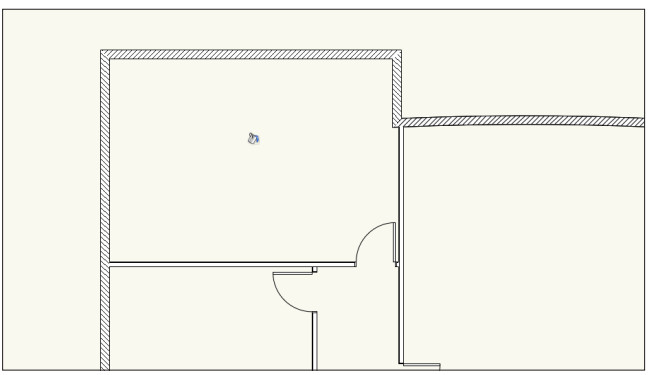
- Go to the **Tool** bar.
- Click on the green tick to complete the operation.
- The space has been created using the previously selected settings.



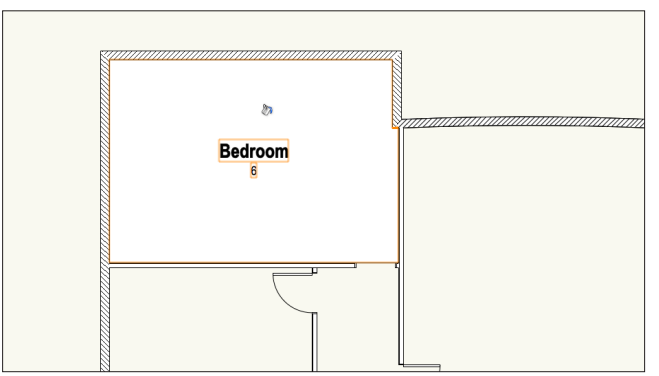
- The other method for creating spaces from walls is to use the second mode, **Inner Boundary Mode.** This mode will automatically look for the bounding walls and will use them to create the space. This method is much quicker as it only requires one click.
- Go to the **Tool** bar.
- Click on the **second** mode, the **Inner Boundary Mode**.



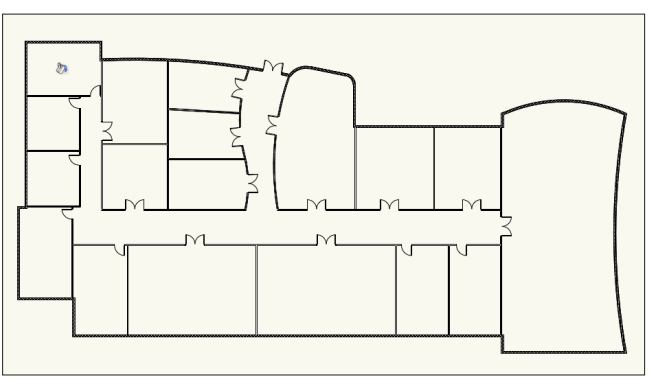
- Zoom into the required room.
- Click in the centre of the required room.



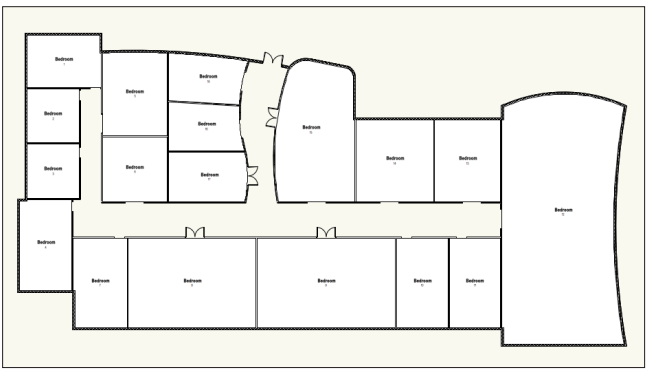
- If the walls form a closed shape, Vectorworks will create the space. This method is much quicker because it only requires one click and it doesn't require you to zoom in as much.



You can easily use this mode while you are zoomed out to see the whole plan.



- Click once in each room to create space object.



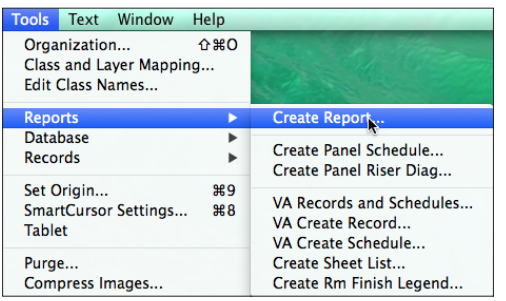
You will still have to go back to each space to edit the room name, but it is still a quick way to create all the required spaces.

Reporting Spaces

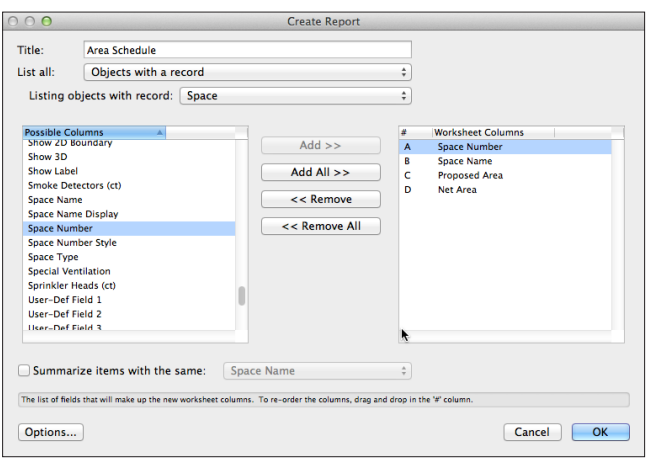
cadmovie1055

Spaces contain a lot of non-graphic information such as the required room size, the actual room size, the organizational group, the building zone, etc. This information can be reported in a worksheet.

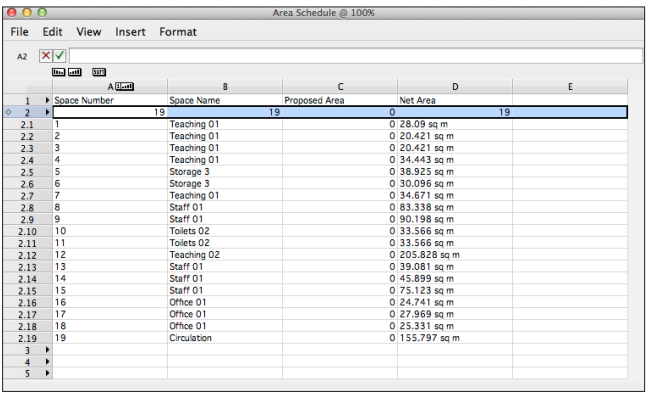
- Go to the **Menu** bar.
- Click on **Tools > Reports > Create Report...**



- Name the worksheet.
- Choose to list objects with a record, using the record **Space**.
- Scroll down the left-hand side choosing the possible columns that you require in your report.
- Click on the **Add>>** button to add these to the right hand side of the dialog box.



- When you have selected all of the required items click on the **OK** button.



	A	B	C	D	E
1	Space Number	Space Name	Proposed Area	Net Area	
2	19	19		0 19	
2.1	1	Teaching 01		0 28.09 sq m	
2.2	2	Teaching 01		0 20.421 sq m	
2.3	3	Teaching 01		0 20.421 sq m	
2.4	4	Teaching 01		0 34.443 sq m	
2.5	5	Storage 3		0 38.925 sq m	
2.6	6	Storage 3		0 30.096 sq m	
2.7	7	Teaching 01		0 34.671 sq m	
2.8	8	Staff 01		0 83.338 sq m	
2.9	9	Staff 01		0 90.198 sq m	
2.10	10	Toilets 02		0 33.566 sq m	
2.11	11	Toilets 02		0 33.566 sq m	
2.12	12	Teaching 02		0 205.828 sq m	
2.13	13	Staff 01		0 39.081 sq m	
2.14	14	Staff 01		0 45.899 sq m	
2.15	15	Staff 01		0 75.123 sq m	
2.16	16	Office 01		0 24.741 sq m	
2.17	17	Office 01		0 27.969 sq m	
2.18	18	Office 01		0 25.331 sq m	
2.19	19	Circulation		0 155.797 sq m	
3					
4					
5					

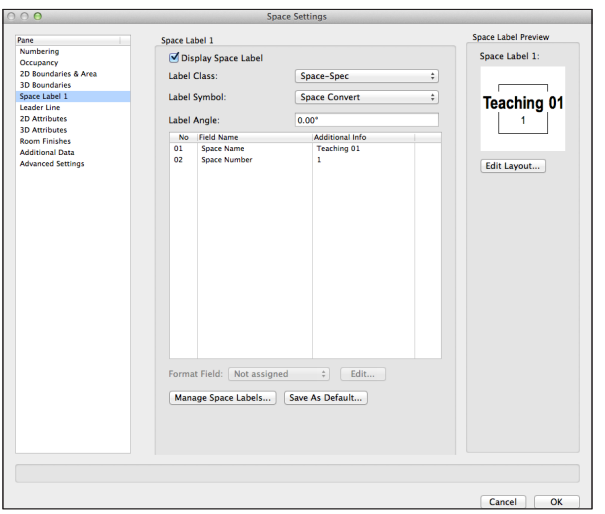
The report may need to be formatted to suit your requirements. For information on formatting, editing, and sorting the worksheet please refer to the manual 1405 - Back to Basics - Worksheets.

Editing Space Labels

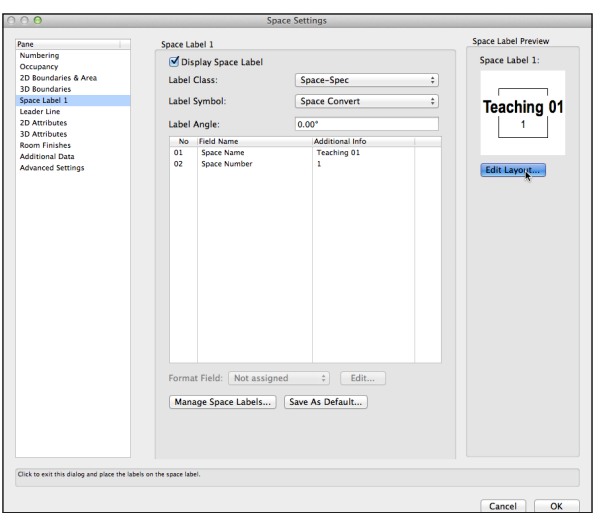
cadmovie1056

You do not have to accept the standard labels that come with Vectorworks. You can easily edit them.

- Go to the **Building Shell** toolset.
- Select the **Space** tool.
- Go to the **Tool** bar.
- Click on the **Preferences** button.
- Click on the **Space Label 1** pane.



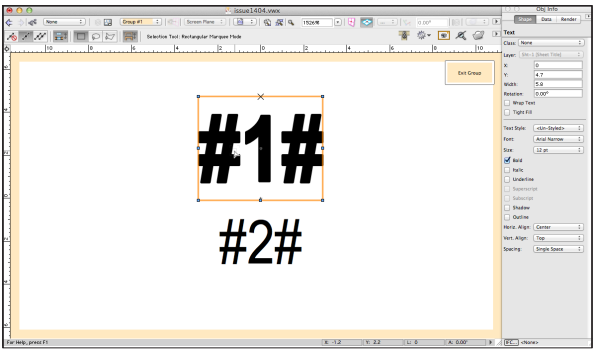
- Click on the **Edit Layout...** button.



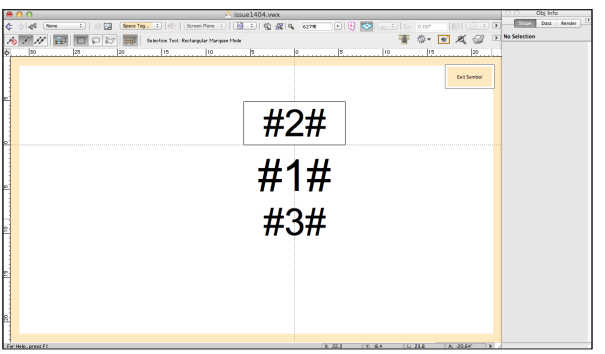
- Vectorworks takes you into the symbol editing area so you can edit the symbol that controls your space label. Space labels are created from

symbols, much like the sheet border.

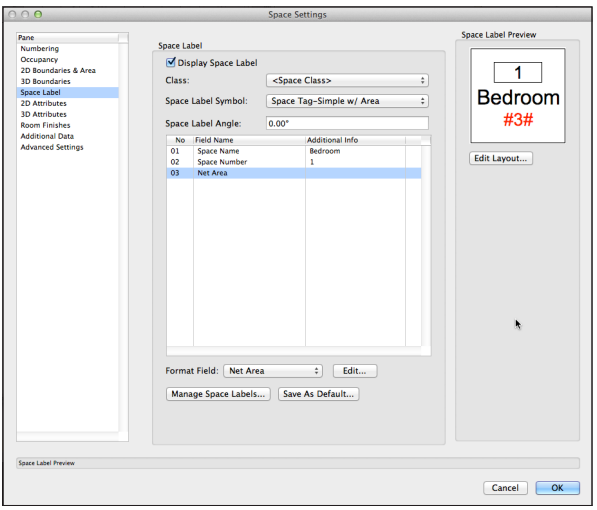
- Change the font, size, location, etc. as required.



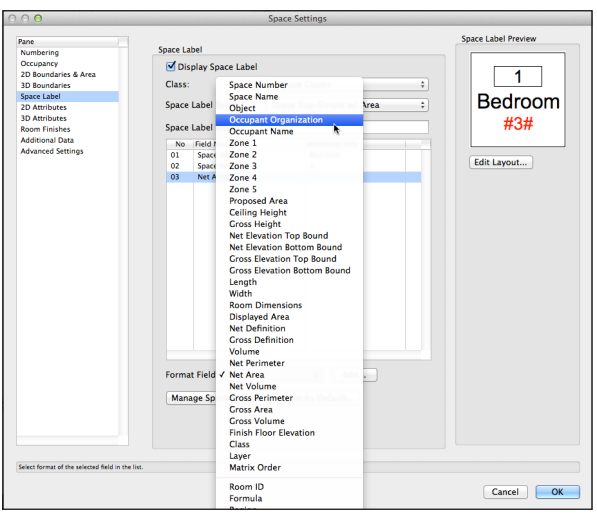
- Add a new block of text. Ensure that the text follows the formula shown in the image with a **#number#**. This is important because the space object uses this to find the text in the symbol.



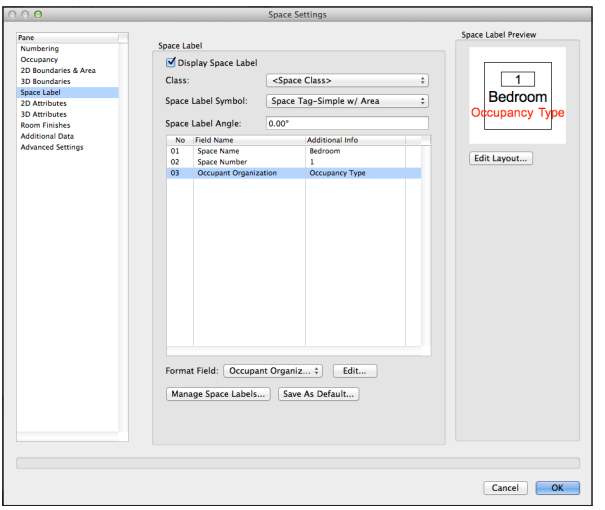
- When you have made all the required changes, click on the **Exit Symbol** button at the top right corner of the screen. You will be taken back to the design layer, not back to the space preferences.
- To get back to the space preferences, choose the **Space** tool, go to the **Tool** bar, and click on the **Preferences** button.
- Click on the **Space Label** pane.
- Ensure that you have the correct space label selected (your edited symbol). The new text that you have placed in the symbol should now appear in the preview, highlighted in red. It does not have a connection to data from your space object yet.



- There is a list of fields labeled 01 to 03. Click on 03, this is the one that you want to connect to your label. Near the bottom of the dialog box is a pop-up menu called **Format Field**. Click on the pop-up menu and choose the field that you want to connect to your new text field (03).



- When you have chosen the field you want, the information will appear in the preview on the right-hand side of the dialog box.



- Click on the **OK** button to return to the drawing.

You can use this technique to add as many record fields to your space label symbols as required. You might want to record information like the number of lights, network information, furniture information, etc. You are only limited by the fields that are currently available in the space object. If you cannot find the information you want, use one of the **Additional Info** fields (there are 10 of these) for the information you need to record.

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://www.archoncad.co.nz/. 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
April 2014