

SHORT SHARP TRAINING (monthly) issue 1201

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

Workshop Topic

Setting up Layers and Stories for Buildings

Setting up your layers correctly is essential if you want to use Vectorworks for BIM. Vectorworks 2012 has a new organizing concept called Stories which will require you to think carefully about how you organise your project into layers and stories.

[Extended Podcast 142 - Click here](#)

Beyond Beginner Session January 2012 – Rules for Classes

[Extended Podcast 143 - Click here](#)

Creating a Texture Bed site modifier.

[Beginners Corner 036 - Click here](#)

Layer Options

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Introduction

If you are using Vectorworks 2011 or prior, please refer to the earlier manual on setting up layers (issue 1002, February 2010).

Stories are a new organizing concept for Vectorworks 2012. It groups design layers to make it easier to adjust the different levels (stories) of a building. The stories also allow you to control building elements such as stairs, walls, and so on.

Stories

What Are Stories?

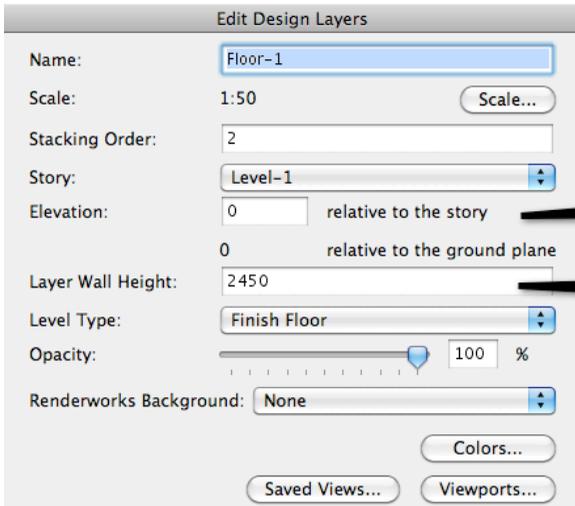
Stories is a way to control the layers that make up a building, grouping design layers together into levels of the building. They make it easy to adjust the elevations of all the levels of the building, because Vectorworks knows how the stories relate to each other.

You should use **Stories** to control the elevation heights, design layers for modeling, and classes to control the visibility and graphic style of an object. If you are not familiar with layers and classes, please refer to the [Vectorworks Essential Manual](#), which has a series of exercises to explain these.

Classes have not changed with the new Stories concept.

[cadmovie773](#)

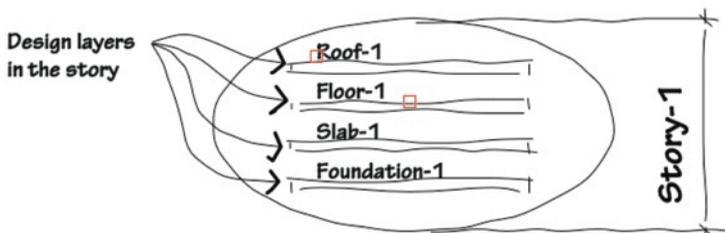
Design layers have new settings, and a name change for some of the old settings.



This is the old Layer Z

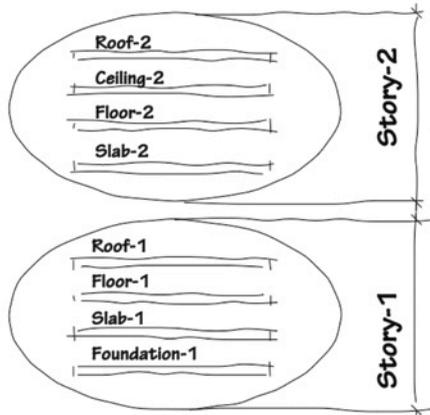
This is the old Delta (Δ or \pm) Z

A story is a collection of design layers (foundation, slab, walls, and ceiling, and so on) that make up an entire level or floor of a building. The story settings control the elevation of each story relative to the other stories.

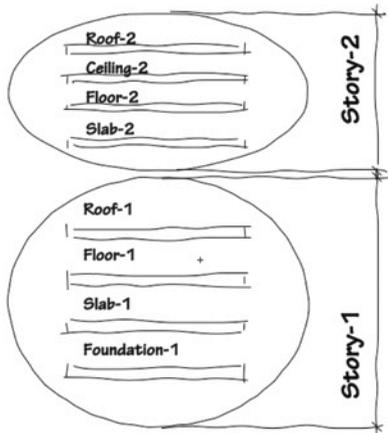


When you have two or more stories, you have two collections of design layers.

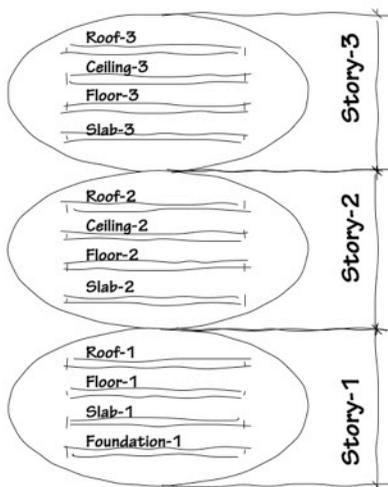
The story concept is flexible, and you can elect to use several design layers in one story.



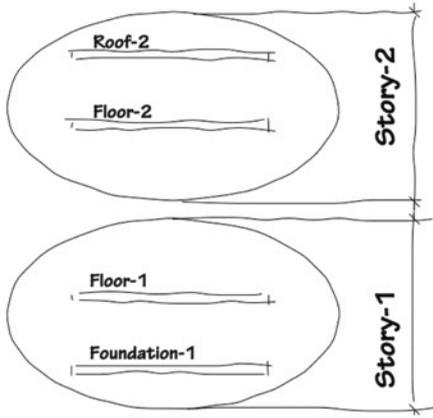
The settings of each story are relative to each other. When you change the elevation of one story, you can choose to adjust other stories above or below.



If you have a multi-story building, each story is a collection of design layers.



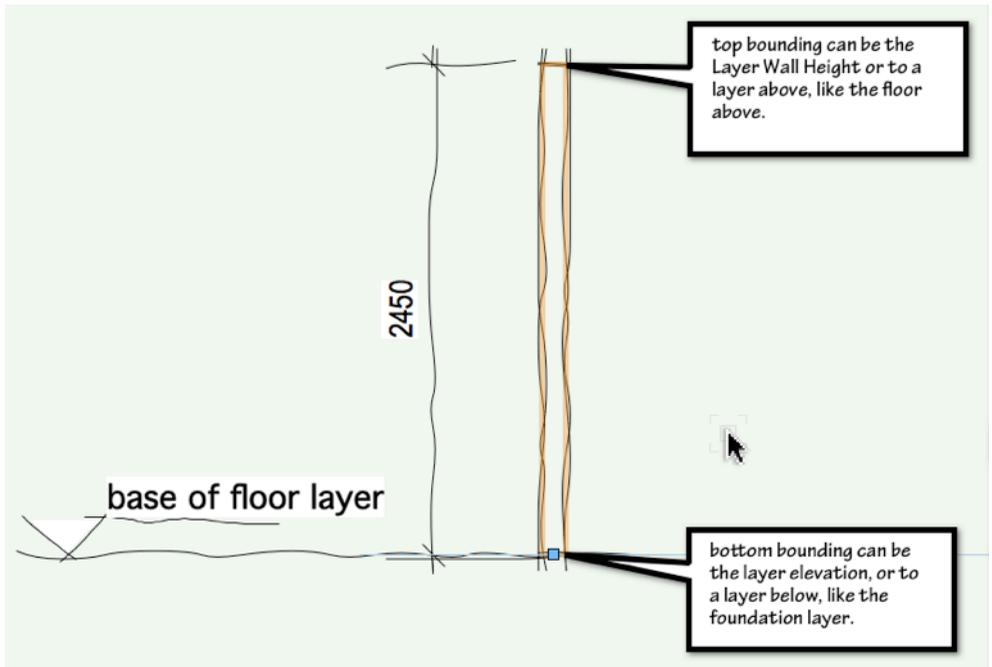
Only work with the absolute minimum of layers in a story.



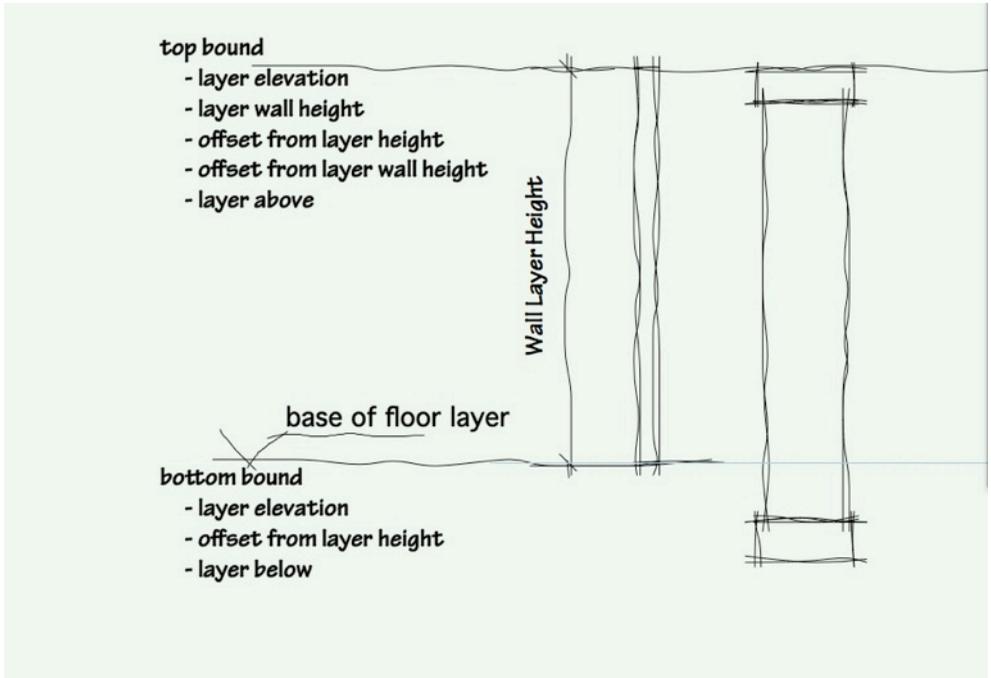
How Do Stories Work With Building Elements?

The real power of stories becomes obvious when you start using stories with building elements such as walls, stairs, and so on. You can link the top boundary to a layer floor above. You can link the bottom boundary to a layer below.

[cadmovie774](#)

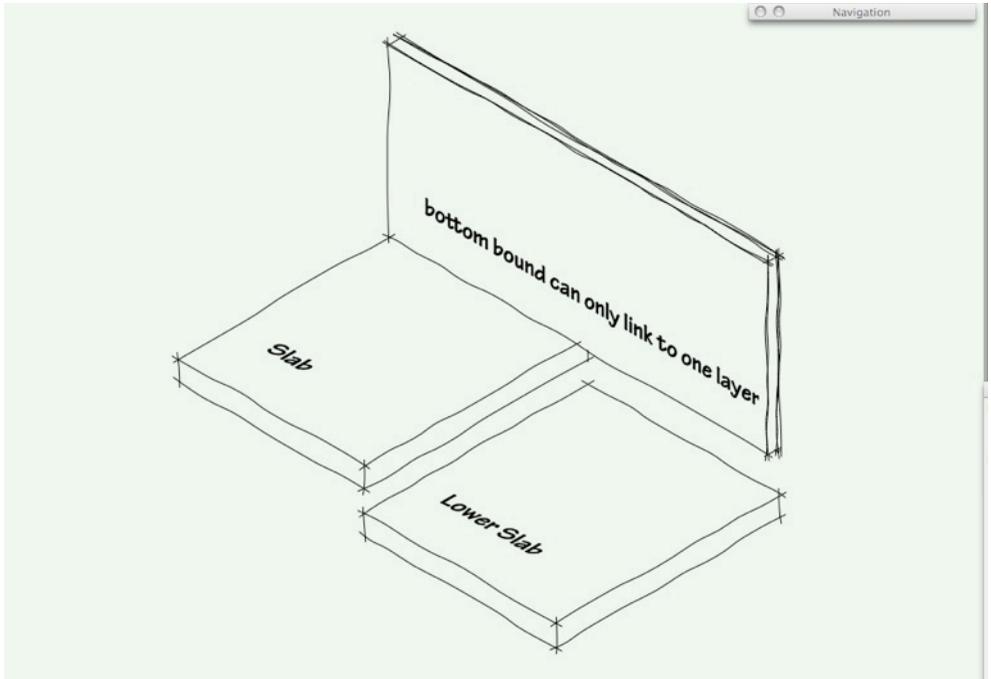


When you edit the stories, and move the floor above, the objects bounded to layers above will automatically adjust. You have several options for linking the top and bottom boundaries of building elements. Beware, objects on one story do not adjust to (changed) geometry on another story but to the (changed) settings of that story!



This is going to be very powerful when creating multi-story buildings. Instead of having to adjust individual layers you'll be able to adjust complete stories, knowing that the walls, stairs, columns, and other building elements will automatically adjust to your changes.

When you set up the top and bottom bounding of building elements, you will notice that you can only link building elements to one layer. For example, a wall can only have the bottom boundary linked to one layer, so in a situation where you want to have two slab levels, you can only set the bottom of the wall to one of the slabs, the other slab misses out.



One solution is to use the command **Fit Walls to Roof...** This command will move the bottom of the wall to meet the 3D geometry on the selected layer. This command will only fit to the geometry on one layer.

These two issues suggest that you need to keep the number of layers you use to a minimum, and use classes to control visibility of the objects.

So when you are setting out a new building project you will be thinking of stories first rather than layers, and the layers being part of the stories. Keep the number of layers to a minimum.

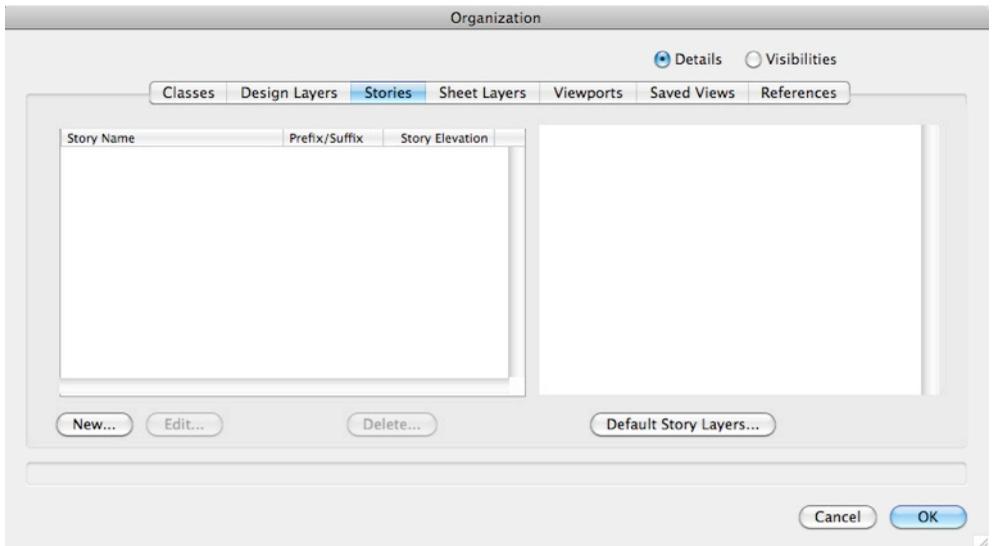
How Do You Control Stories?

This section will look at the general concept of setting up stories, later on we will look at a few examples in detail.

Open the **Organization** dialog box by clicking on the **Layer** button. The **Design Layers** tab should be active.

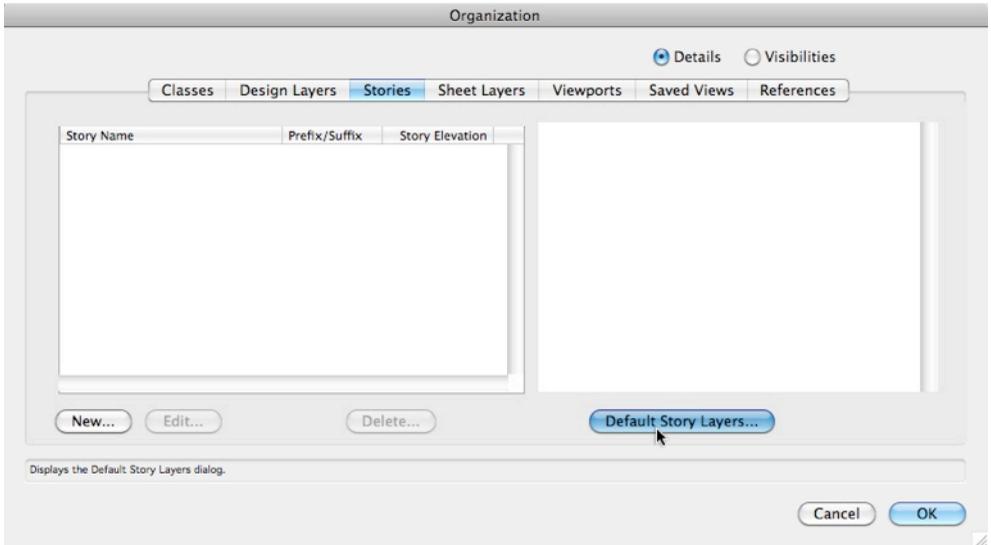
[cadmovie775](#)

Click on the **Stories** tab.

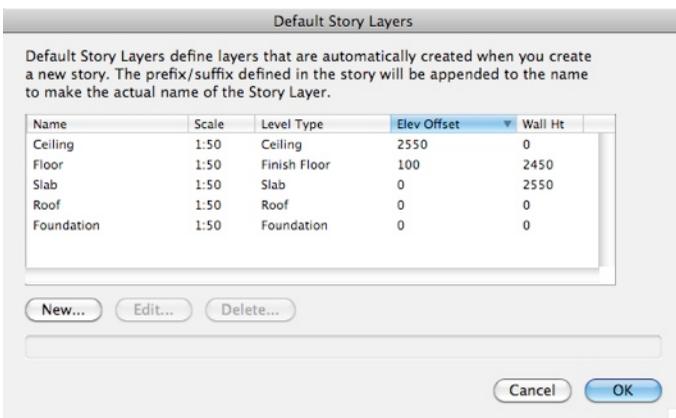


As you have not created a story yet, nothing will show in the dialog box.

You need to change the elevation offset and the wall height for the floor and the foundation. You can change these later on the **Design Layer** tab, or you can change them now by clicking on the **Default Story Layers...** button.



These are the default story layers, and Vectorworks has predetermined some of the names for the story layers. You do not have to accept these predefined names, you can create your own. You might notice that some of the heights do not suit your project either.

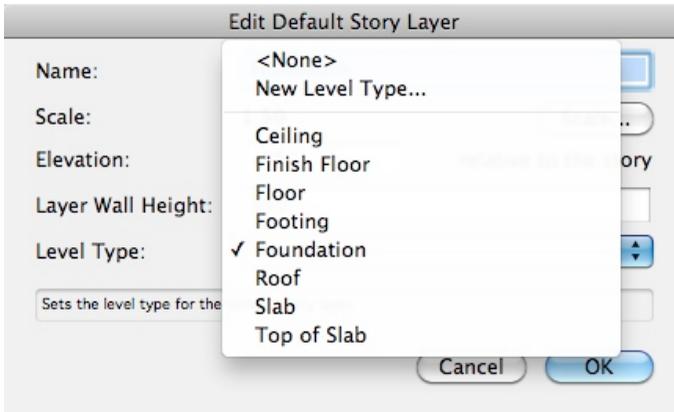


- Double-click on the **Foundation** layer.
- This will open the **Edit Default Story Layer** dialog box. You can change the name if you want, but this will affect all new story layers.
- Enter the desired **Elevation**. This is the elevation relative to the story. So for a foundation, the elevation may be a minus dimension.
- Enter the **Layer Wall Height**. This height is from the bottom of the story layer to the top of the wall.

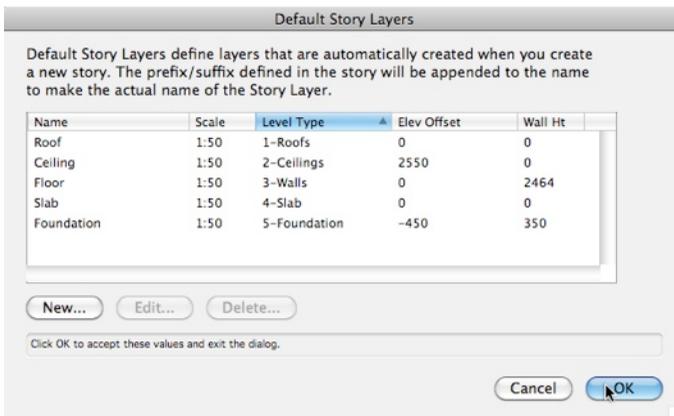
The image shows a dialog box titled "Edit Default Story Layer". It contains the following fields and controls:

- Name:** A text input field containing "Foundation".
- Scale:** A text input field containing "1:50" and a "Scale..." button.
- Elevation:** A text input field containing "-450" and the text "relative to the story".
- Layer Wall Height:** A text input field containing "350".
- Level Type:** A dropdown menu showing "Foundation".
- A note at the bottom: "Sets the layer wall height for the default story layer."
- Buttons for "Cancel" and "OK" at the bottom right.

- Click on the **Level Type** pop-up menu. By default, Vectorworks uses a **Finish Floor** level type for all the walls, cabinets, doors and so on. Select the correct level type.



- If you do not like the default names for the level types, you can create your own. Level Type names have to be unique, which means that you can not have two slab level types, but you could have lower –slab, mid–slab, and so on.

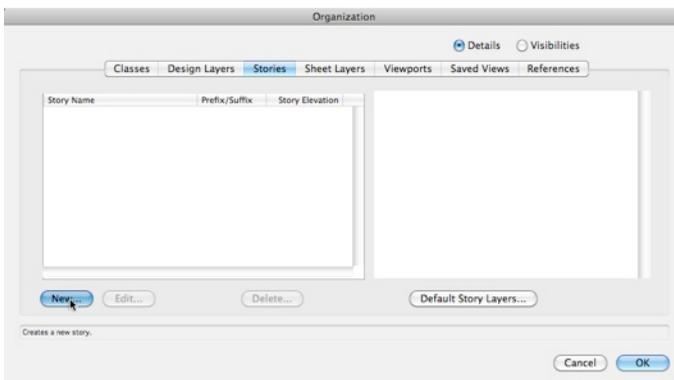


- Click on the **OK** button to close the **Default Story Layer** dialog box.
- Double-click on the **Floor** layer.

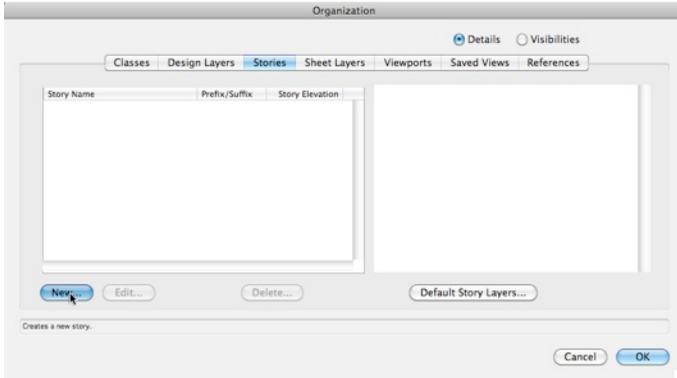
- Enter the desired **Elevation**. This is the elevation relative to the story.
- Enter the **Layer Wall Height**.



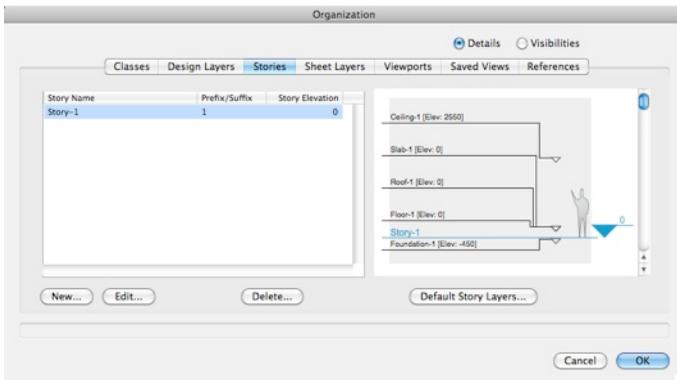
- Click on the **OK** button to close the **Default Story Layer** dialog box.
- This has changed the default values and it will affect every story layer you create from now on.
- Click on the **New...** button to create a new story.



- The **New Story** dialog box opens. This is where you select the design layers that will make up the story and you also set the elevation of the story.



- You can select several layers, in which case your dialog box will look like this.



- Or you can select just a few layers. The story concept is flexible and allows you to have several layers of the story or just a few. One strategy is to use as few layers as possible and to use classes inside that layer to control information.

In this example, for a single-story house, there is no slab layer for the slab information. The slab could easily be assigned to classes to control its visibility and graphic style.

Edit Story

Name: Story-1

Layer Name: Suffix 1

Story Elevation: 0

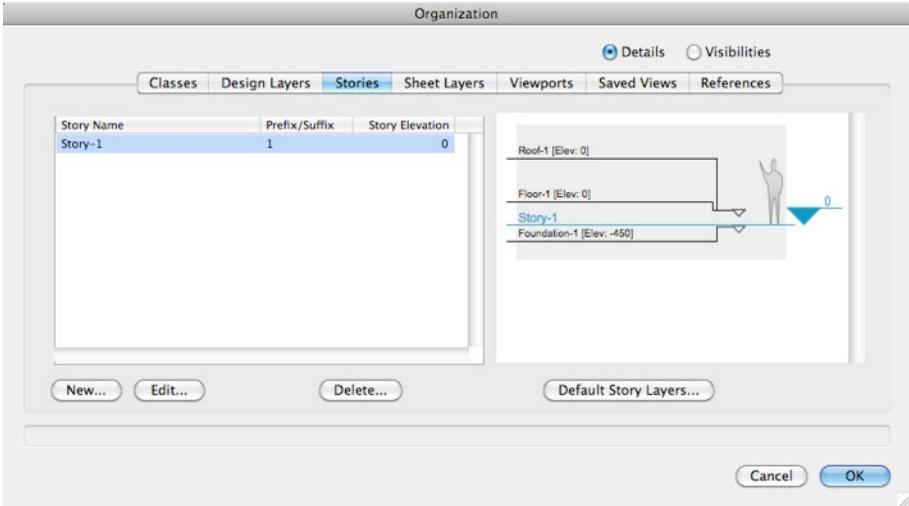
Create the following layers in this story:

Name	Level Type	Elev Offset
Ceiling-1	Ceiling	2550
✓ Floor-1	Finish Floor	0
✓ Roof-1	Roof	0
Slab-1	Slab	0
✓ Foundation-1	Foundation	-450

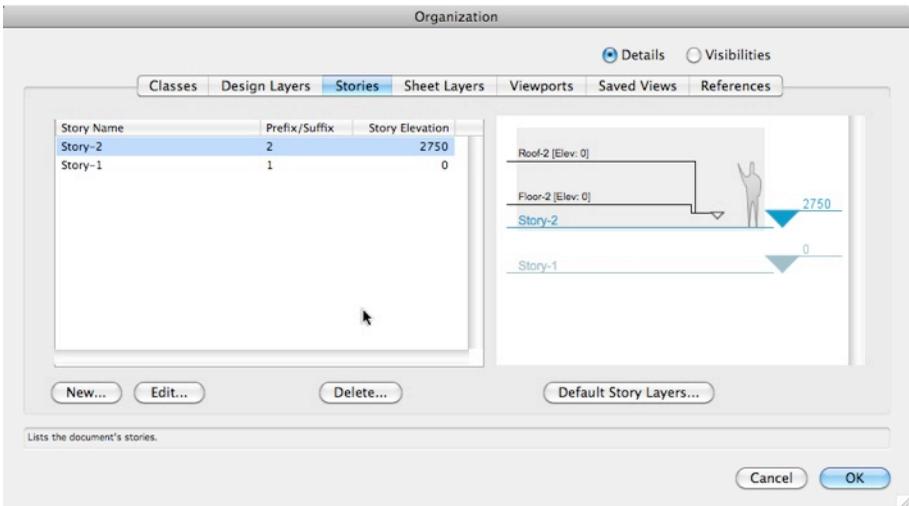
Edit Default Story Layers...

Cancel OK

- If you selected just a few layers your story dialog box could look like this.



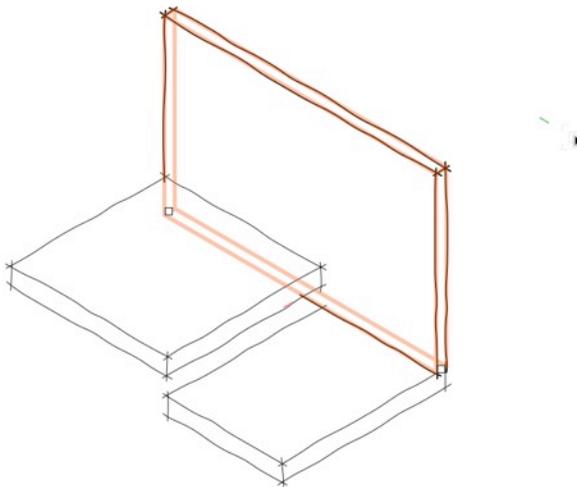
- If you wanted a two-story house, then you would add a new story above the first story. In the example below I have used one story for the walls and one story for the roof. This has created quite a simple layer structure for my file.



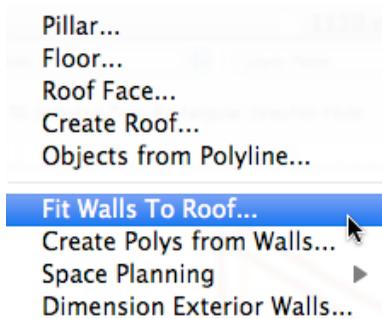
The story concept allows walls and other building elements to be automatically bounded to the adjoining story layers. This means that when the settings for those other layers change, the walls in this layer will automatically update to the new settings.

There are some situations where it is advisable to have a simple layout structure with few story layers. For example, if you have a floor with two different slab levels, you are unable to bound your walls automatically to these two levels.

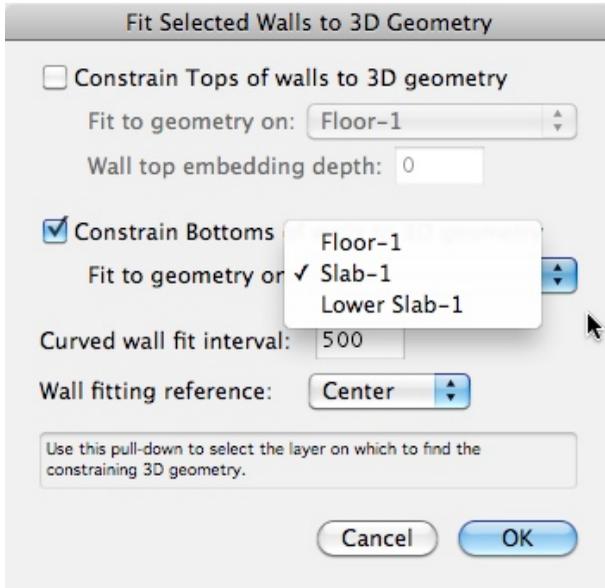
[cadmovie776](#)



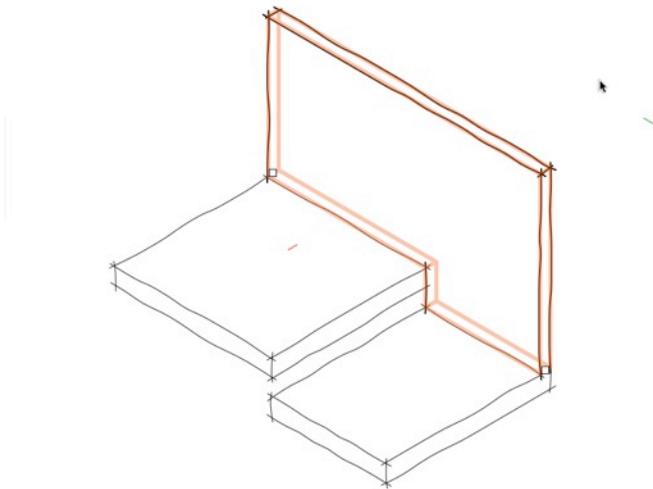
- The only way you can do this is to use the **Fit Walls To Roof...** command from the **AEC** menu.



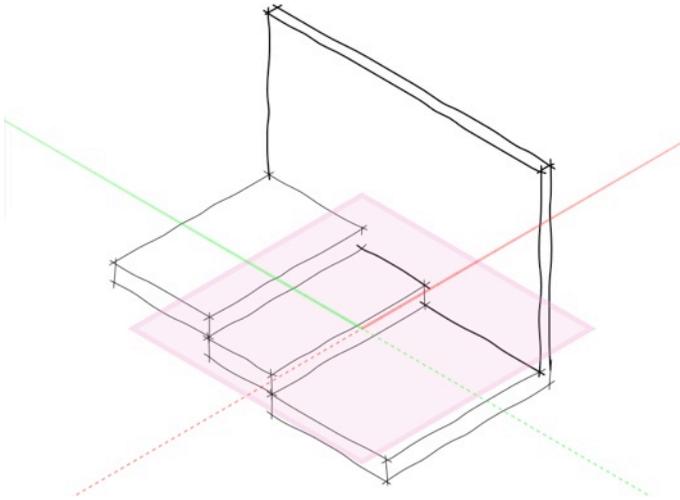
- When this dialog box opens you might notice that the dialogue box is actually called the **Fit Selected Walls To 3D Geometry**. So the **Fit Walls To Roof** command is actually used to fit walls to any 3-D geometry.
- If you want to constrain the bottom of a wall you can only constrain it to geometry in one layer. So if you have several slab layers (Slab-1, Lower Slab-1) you can only select one of these. This suggests that you should keep all of your slabs in the same layer.



Here is the wall, correctly fitted to the two slabs.

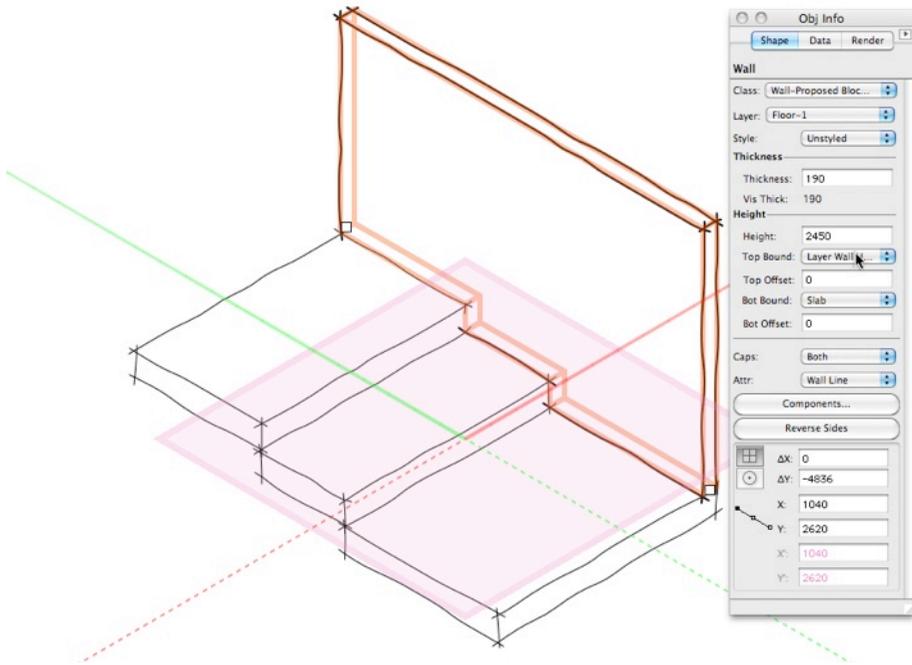


Using the **Fit Walls To Roof...** command, you can easily fit the wall to several different slabs, provided that the slabs are all in the same layer.



When you are using wall bounding to the top or the bottom, a single wall can only bound to a single layer. This means that if you used three design layers for the three slab levels, the wall bottom would not be able to bound to all three slab layers, it would only bound to one of them.

This requires you to use the **Fit Walls To Roof...** command and as we have seen, if you want to use this command, the slabs have to be in the same design layer.

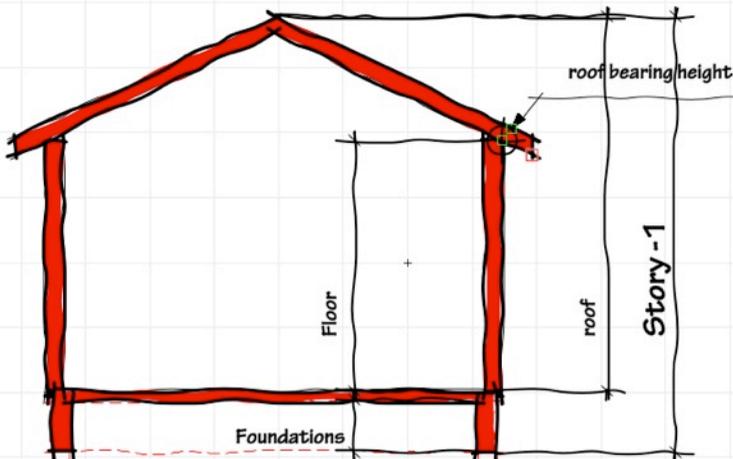


To summarize: when you are setting up your project with layers and stories, remember to keep it simple. Use classes to control the visibility of objects in these design layers.

Setting up Layers - 1 Floor 1 Roof

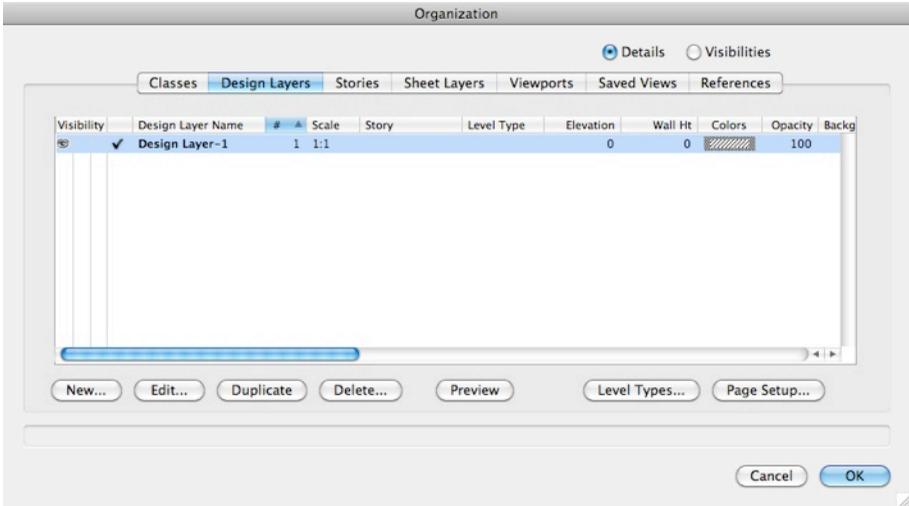
For a single level project, you might be wondering if you need to use stories at all. The answer is, you can easily manage without stories, but you can easily use them. Here is a simple project. One story of the building with a roof on it.

[cadmovie777](#)

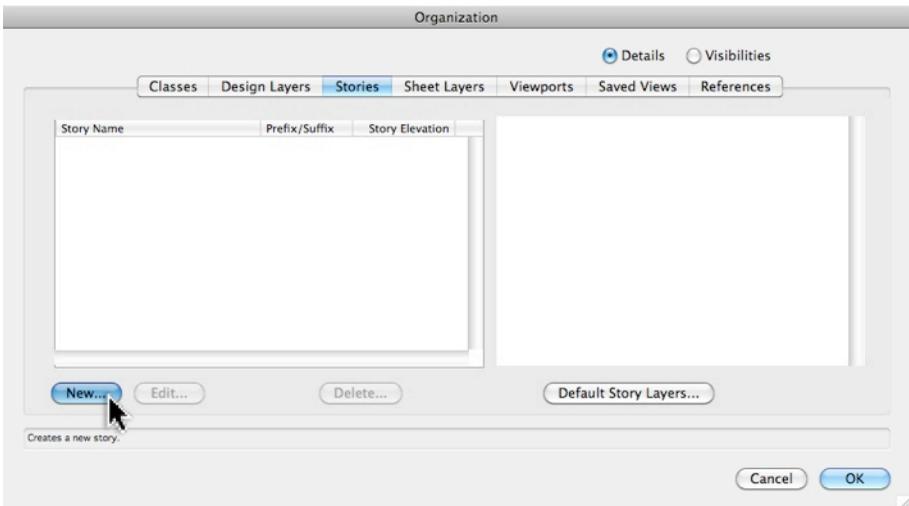


Single Story Building

- Open the **Organization** dialog box by clicking on the **Layer** button. The **Design Layers** tab should be active.

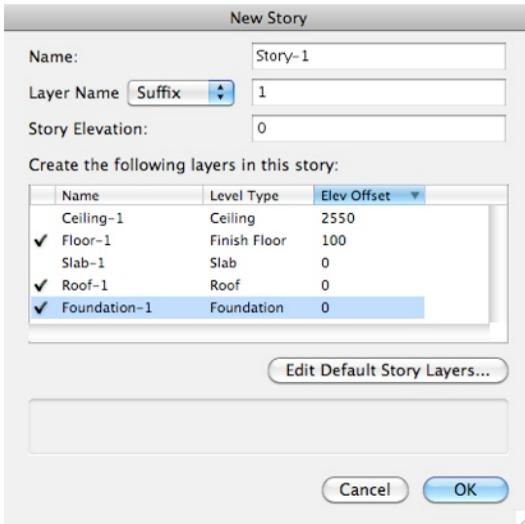


- Click on the **Stories** tab.
- Click on the **New...** button.

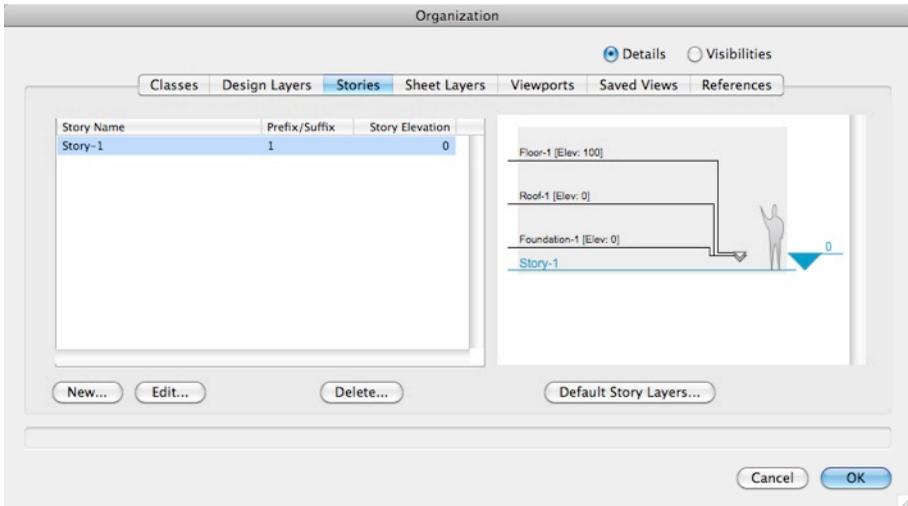


- Select the layers for the story. Remember to use the minimum number of layers.

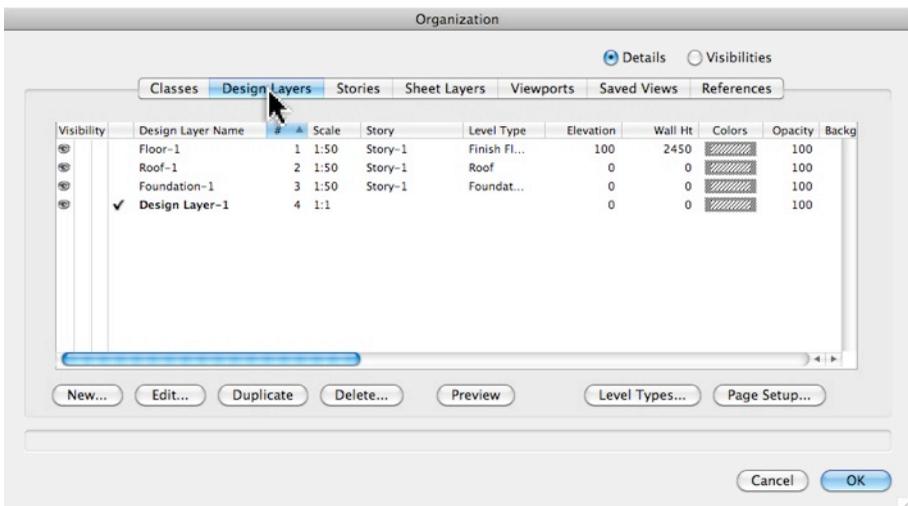
- Notice that the Floor Elevation has used the original Vectorworks default. If you edit the Layer Type names and Layer Elevations, you have to save the file as a default to use the changes on every new project.



- You will need to change the elevation offset and the wall height for the floor and the foundation, but you can edit these later.
- Click on the **OK** button.
- The results of your created story is shown in the dialog box.

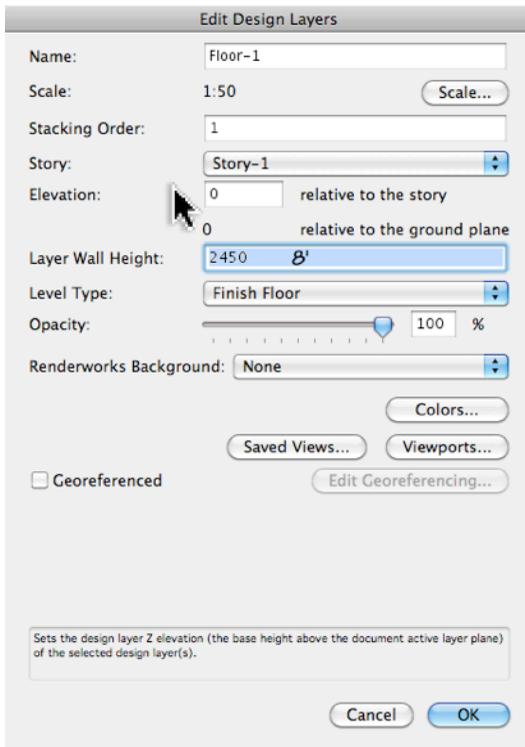


- Click on the **Design Layers** tab. This is where you can edit the layer.



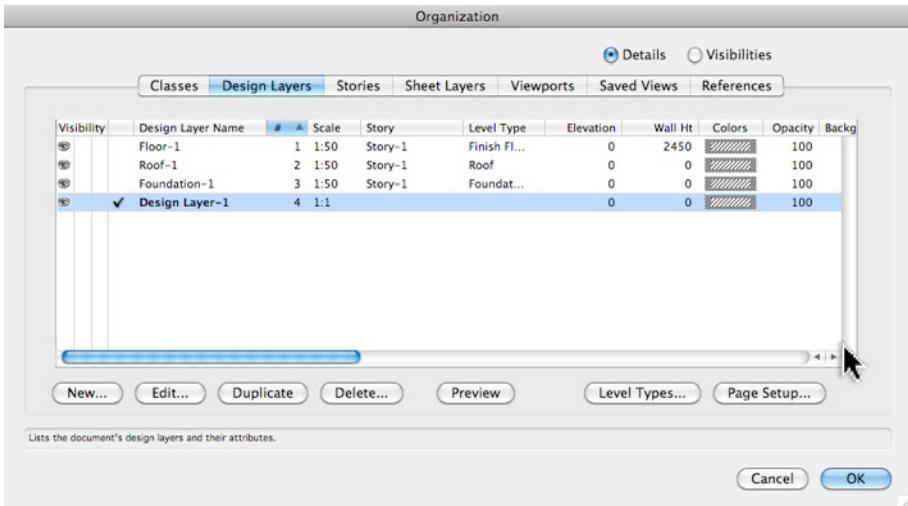
- Double click on **Floor-1** layer to edit the settings.

- Edit the Elevation, Layer Wall Height, and so on to suit your project.
- The Layer Wall Height for Floor-1 is the height from the slab to the bearing height of the roof.
- The Elevation for Floor-1 is the elevation of this layer above the story. Set this to **0**.

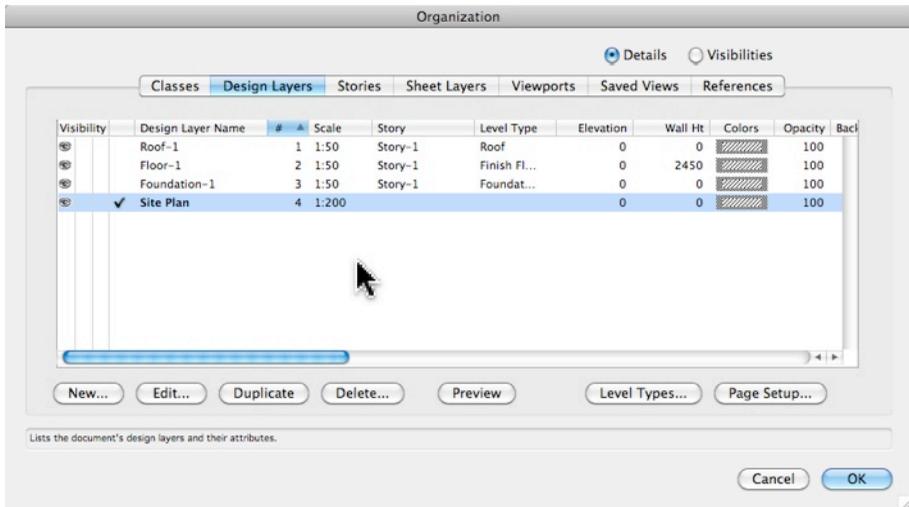


- Click on **OK** the button to return to the **Organization** dialog box.

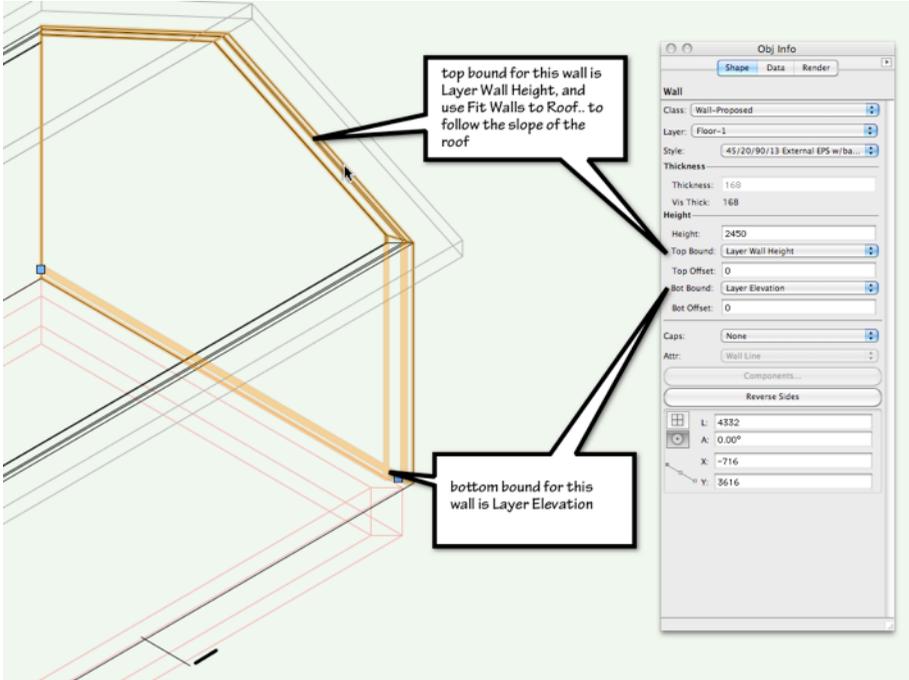
- The Elevation for the roof layer should be the same as the floor supporting the roof. In this case the Elevation for the roof is 0.
- Notice that the original design layer (Design Layer-1) is still in the Organization dialog box. You might also notice that Vectorworks has ignored the scale of this layer, and created the new story layers at a default scale.



- If you can use this design layer (the site plan, for example) then edit the settings to suit. If you do not need this design layer, then delete it.



- When you draw the walls, and create the walls styles set the walls to bound the Layer Wall Height for a single story project.
- Use the Fit Walls to Roof... command to fit the walls to the slope of the roof.

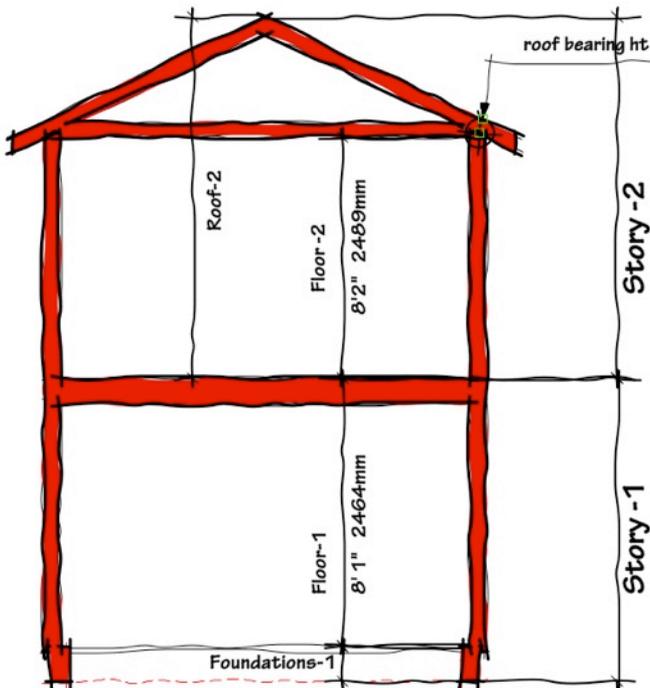


Setting up Layers - 2 Floors 1 Roof

For a 2 storey project, you should definitely use stories. Stories will make it easier to setup the layers of the project, they will also make it easier to control the walls and slabs. If there is a change to the heights of the building, stories will make it easy to change the project.

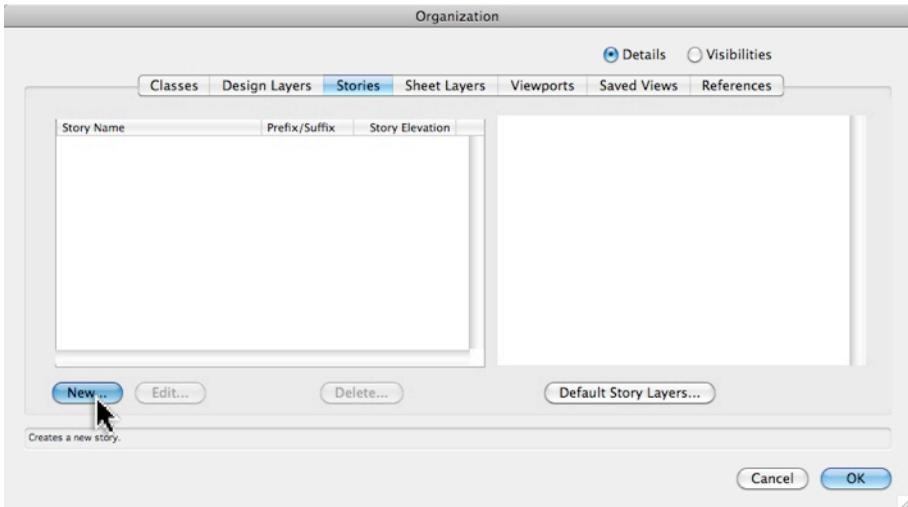
This is a simple project, 2 story building with one roof. This project needs a layer for the foundations, Floor-1, Floor-2, and the roof.

[cadmovie778](#)



Two Story Building

- Open the **Organization** dialog box by clicking on the **Layer** button. The **Design Layers** tab should be active.



- Click on the **Stories** tab.
- Click on the **New...** button.
- Select the layers for the lower story. Vectorworks assumes that you will start at the lower story and work your way up the building. Remember to use the minimum number of layers.
- Notice that the Floor Elevation is using the original Vectorworks default names. You will need to change the elevation offset and the wall height for the floor and the foundation, but you can edit these later.
- Click on the **OK** button.

New Story

Name:

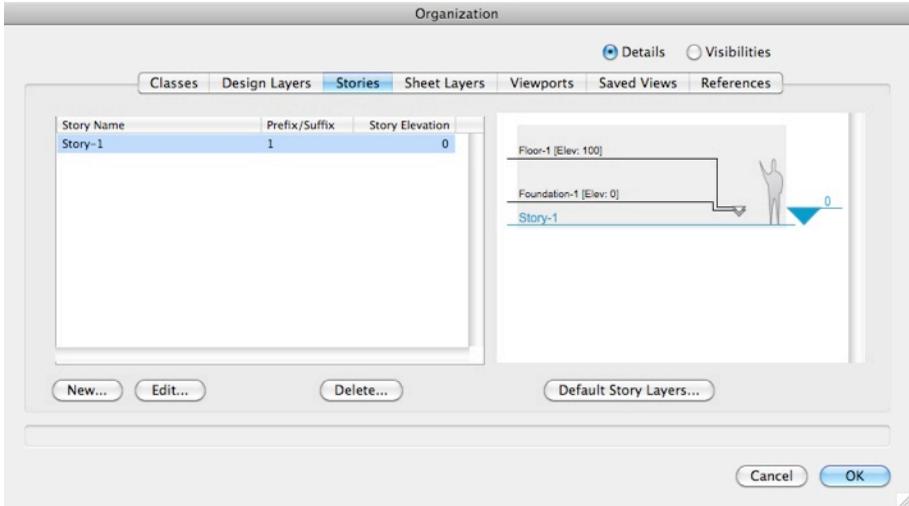
Layer Name

Story Elevation:

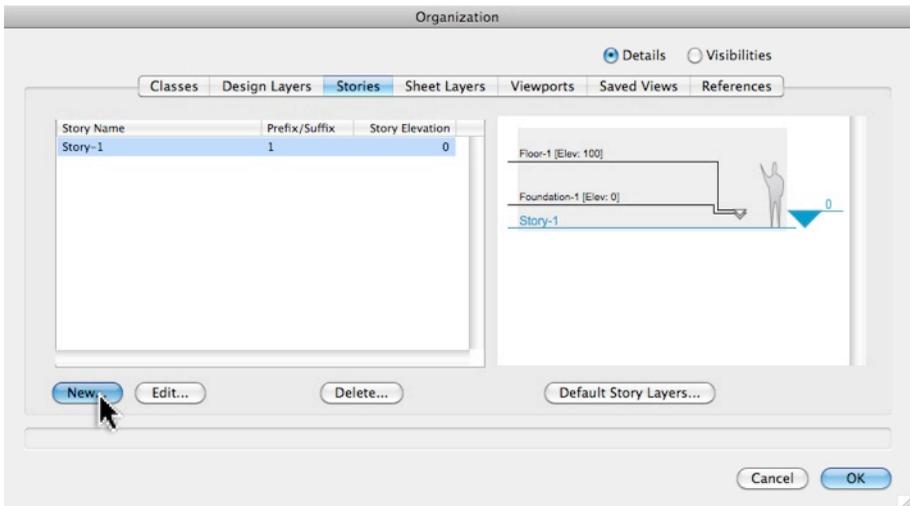
Create the following layers in this story:

Name	Level Type	Elev Offset
Ceiling-1	Ceiling	2550
✓ Floor-1	Finish Floor	100
Slab-1	Slab	0
Roof-1	Roof	0
✓ Foundation-1	Foundation	0

The first story is completed.



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



- Select the layers for the story. Remember to use the minimum number of layers.

- You will need to change the elevation offset and the wall height for the floor and the foundation, but you can edit these later.

The 'New Story' dialog box is shown with the following settings:

- Name: Story-2
- Layer Name: Suffix, 2
- Story Elevation: 2850

Under 'Create the following layers in this story:', a table lists the layers:

	Name	Level Type	Elev Offset
	Ceiling-2	Ceiling	2550
✓	Floor-2	Finish Floor	100
	Slab-2	Slab	0
✓	Roof-2	Roof	0
	Foundation-2	Foundation	0

Buttons: Edit Default Story Layers..., Cancel, OK

- Set the correct Story Elevation.

The 'New Story' dialog box is shown with the following settings:

- Name: Story-2
- Layer Name: Suffix, 2
- Story Elevation: 2464mm (8'1")

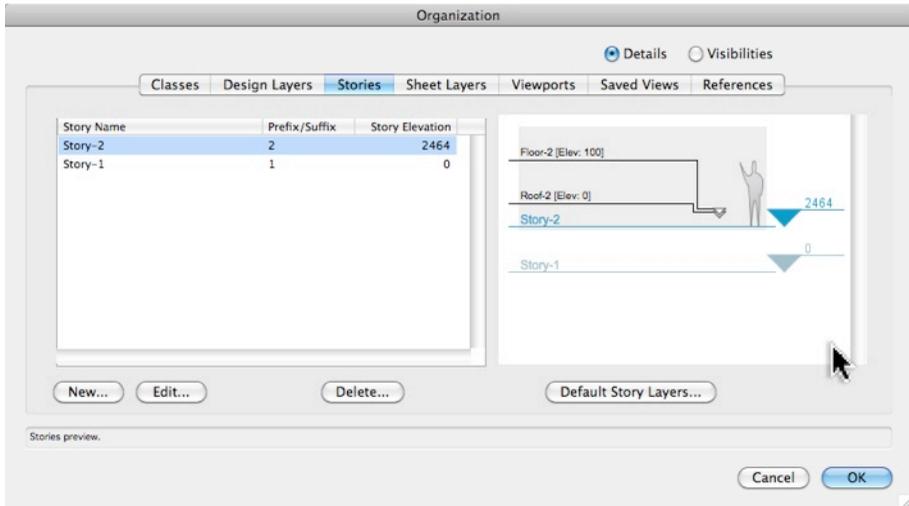
Under 'Create the following layers in this story:', a table lists the layers:

	Name	Level Type	Elev Offset
	Ceiling-2	Ceiling	2550
✓	Floor-2	Finish Floor	100
	Slab-2	Slab	0
✓	Roof-2	Roof	0
	Foundation-2	Foundation	0

Buttons: Edit Default Story Layers..., Cancel, OK

- Click on the **OK** button.

The results of your story is shown in the dialog box.



- Click on the **Design Layers** tab. This is where you can edit the layer.
- Double click to the **Foundation-1** layer to edit the settings.

Edit Design Layers

Name: Foundation-1

Scale: 1:50 [Scale...](#)

Stacking Order: 4

Story: Level-1

Elevation: (-18'') -450 relative to the story
-450 relative to the ground plane

Layer Wall Height: 350 (-14'')

Level Type: Foundation

Opacity: 100 %

Renderworks Background: None [Colors...](#)

[Saved Views...](#) [Viewports...](#)

Georeferenced [Edit Georeferencing...](#)

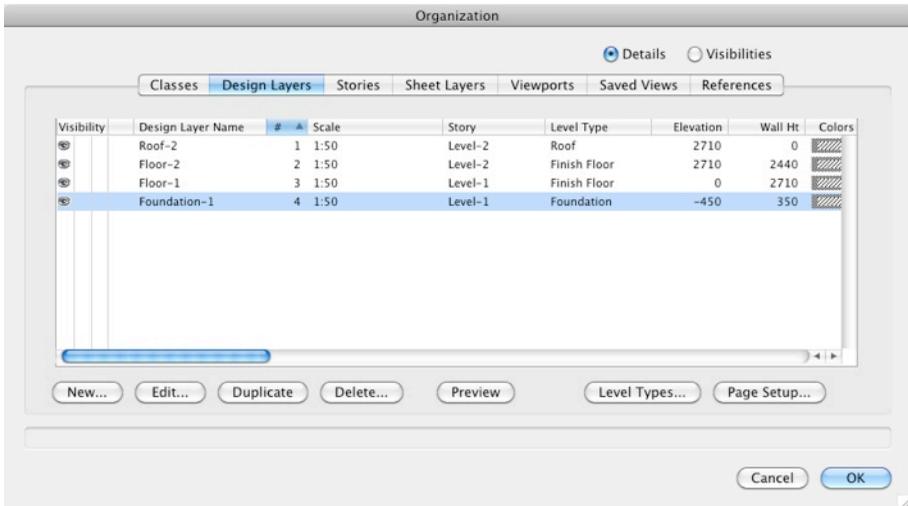
[Cancel](#) [OK](#)

- Edit the **Elevation**, **Layer Wall Height**, and so on to suit your project.

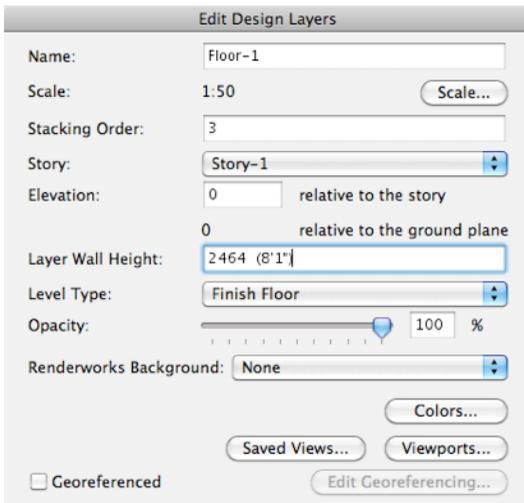
The Layer Wall Height for Foundation-1 is the height from the bottom of the foundations to the underside of the slab.

The Elevation for Foundation-1 is measured from the top of the slab on Floor-1.

- Click on the **OK** button.



- Double click to the **Floor-1** layer to edit the settings.

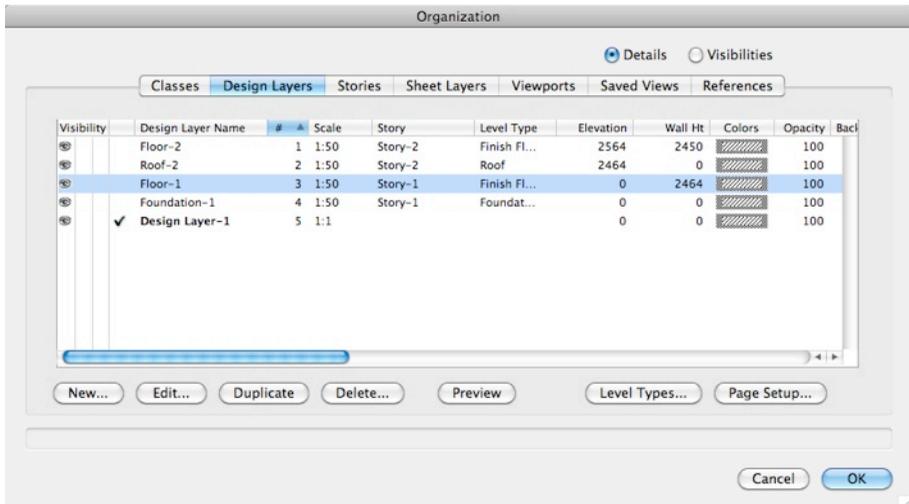


- Edit the **Elevation**, **Layer Wall Height**, and so on to suit your project.

The **Layer Wall Height** for **Floor-1** is the height from the slab to the start of Floor-2.

The **Elevation** for **Floor-1** is the project level for that story. I usually set this to 0 for this floor.

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



- Double click on **Floor-2** layer to edit the settings.

Edit Design Layers

Name: Floor-2

Scale: 1:50 Scale...

Stacking Order: 1

Story: Story-2

Elevation: 0 relative to the story

2464 relative to the ground plane

Layer Wall Height: 2489 (8'2")

Level Type: Finish Floor

Opacity: 100 %

Renderworks Background: None

Colors...

Saved Views... Viewports...

Georeferenced Edit Georeferencing...

- Edit the **Elevation**, **Layer Wall Height**, and so on to suit your project.

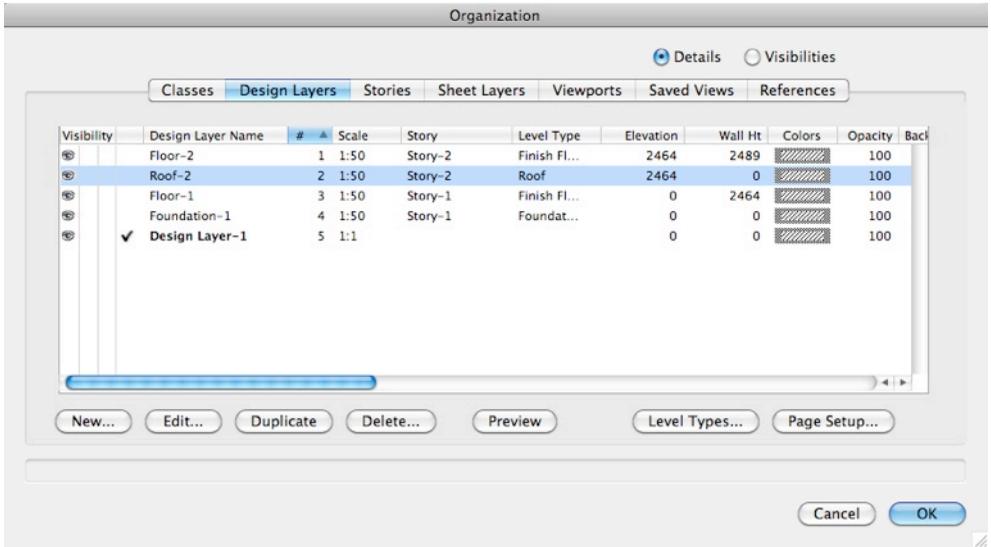
The **Layer Wall Height** for **Floor-2** is the height from the floor to the bearing height of the roof.

The **Elevation** for **Floor-2** is the elevation of this layer above the story height. Set this to 0.

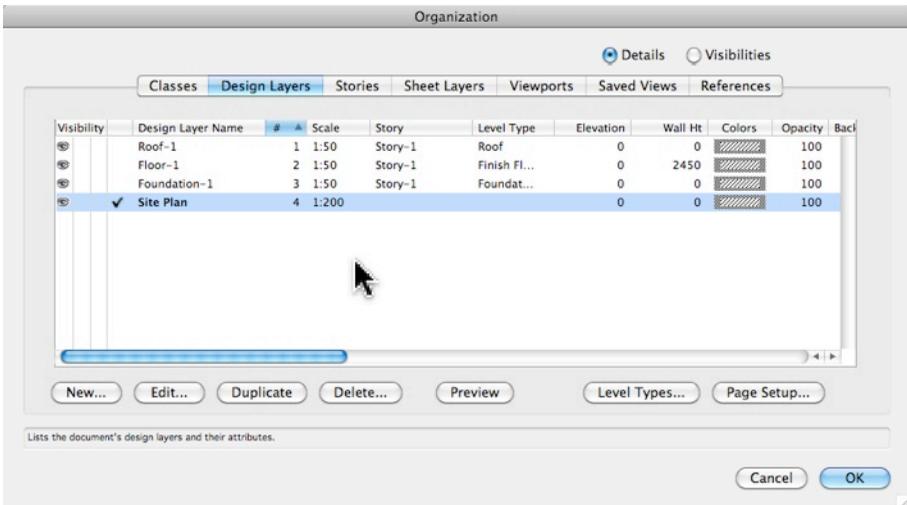
- Click on the **OK** button to return to the **Organization** dialog box.

The **Elevation** for the **Roof Layer** should be the same as the floor supporting the roof.

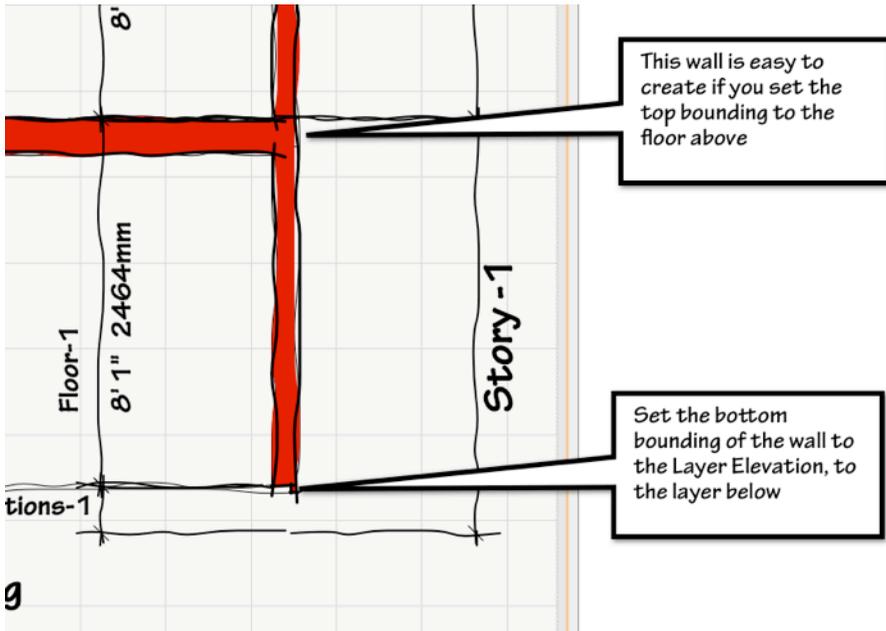
- Notice that the original design layer (**Design Layer-1**) is still in the **Organization** dialog box. You might also notice that Vectorworks has ignored the scale of this layer, and created the new story layers at a default scale (1:50).



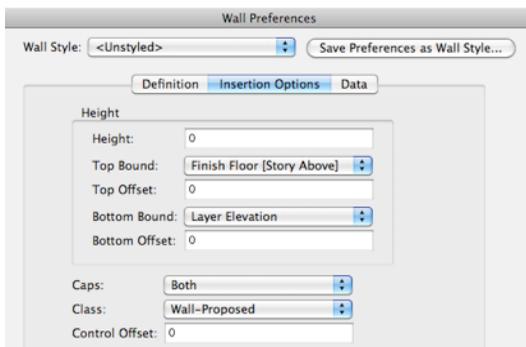
- If you can use this design layer (the site plan, for example) then edit the settings to suit. If you do not need this design layer, then delete it.



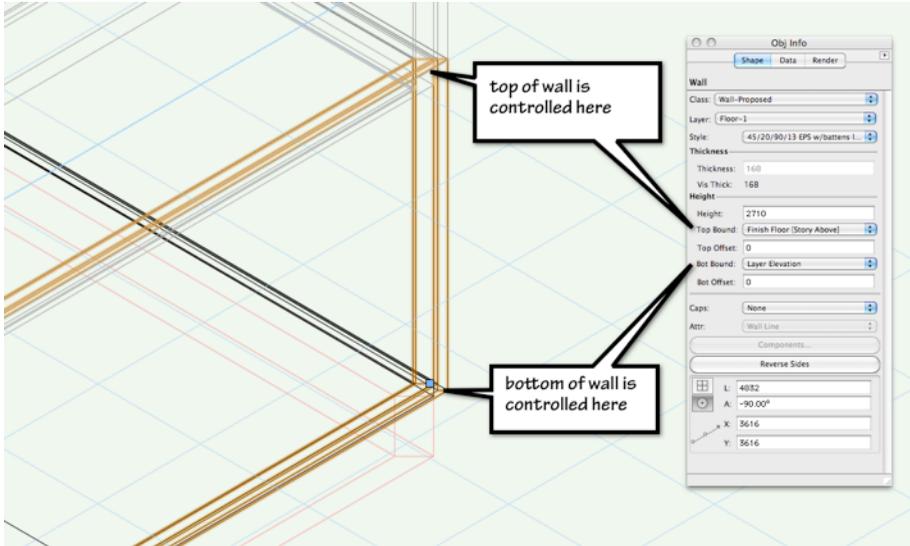
- When you draw the lower walls, create the walls styles to set the walls to bound the level above.



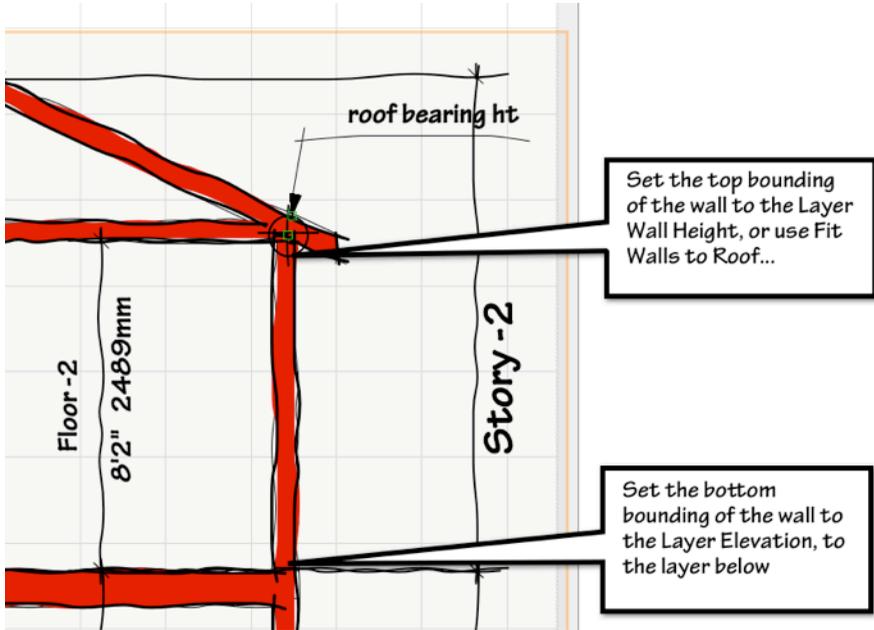
Here are the wall style settings.



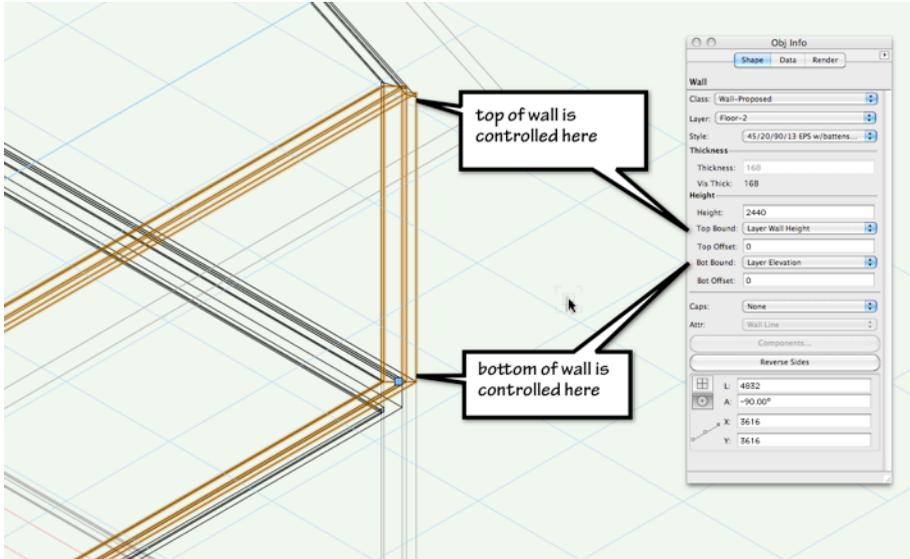
Here is the wall in the design layer.



- When you draw the upper walls, create the walls styles to set the walls to bound Layer Wall Height. This suggests that you will need a separate wall style for the walls on the lower floors and for the upper floors.
- Use the Fit Walls to Roof... command to fit the walls to the slope of the roof.



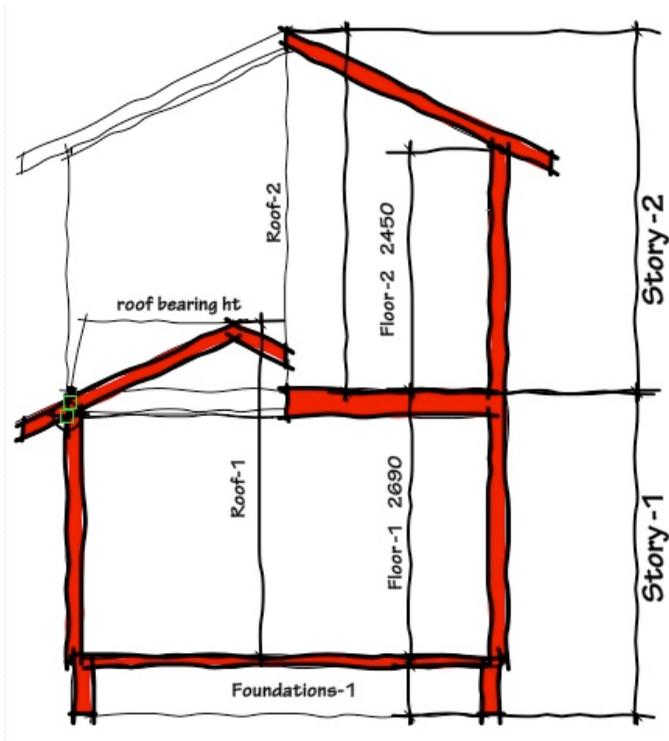
Here is a view of the wall in the design layer.



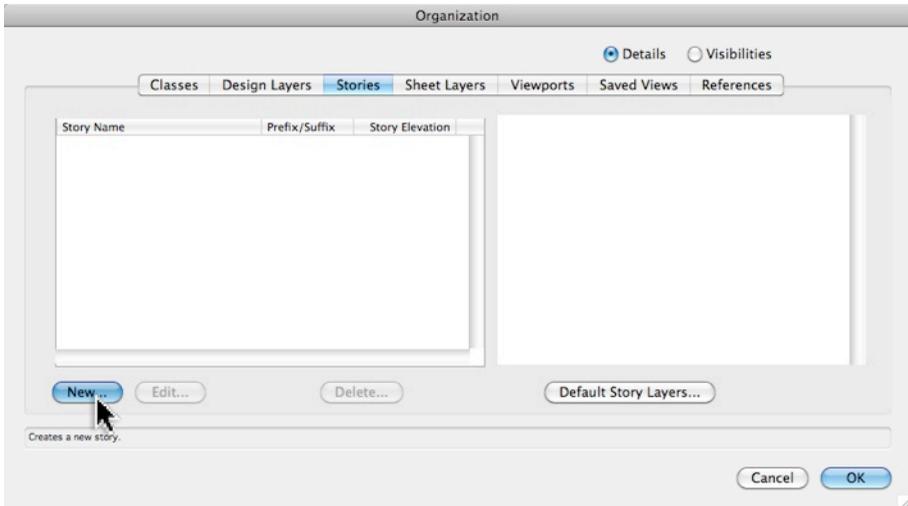
Setting up Layers - 2 Floors 2 Roofs

A 2 story building project with two roofs. The setting up for this project is almost the same as the previous project, with the addition of a roof layer to the lower story.

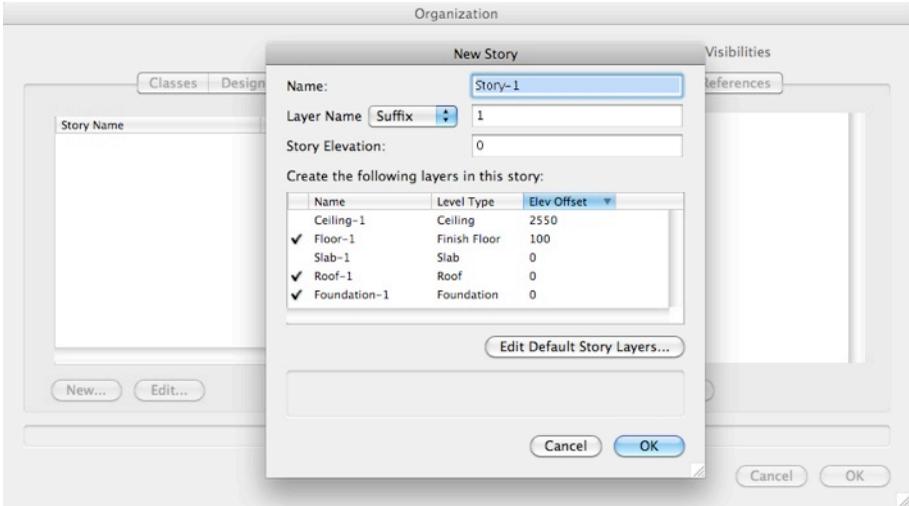
[cadmovie779](#)



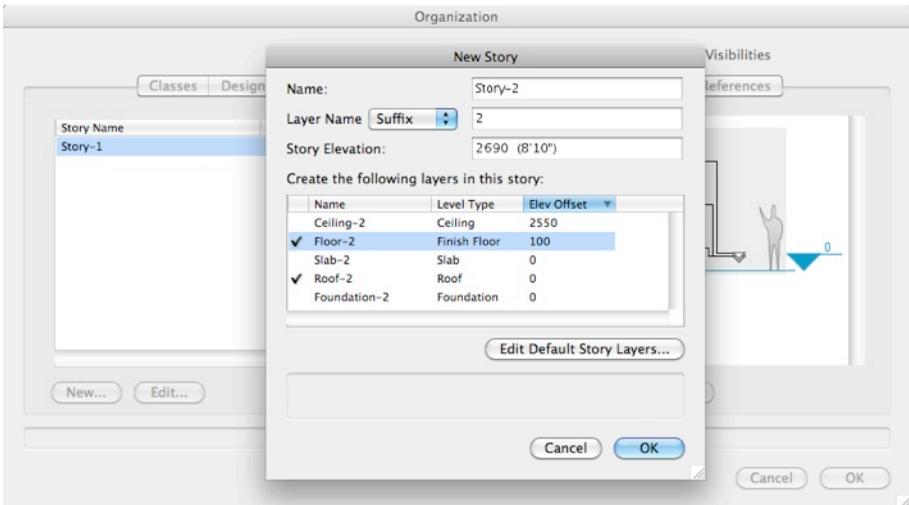
- Open the **Organization** dialog box by clicking on the **Layer** button. The **Design Layers** tab should be active.



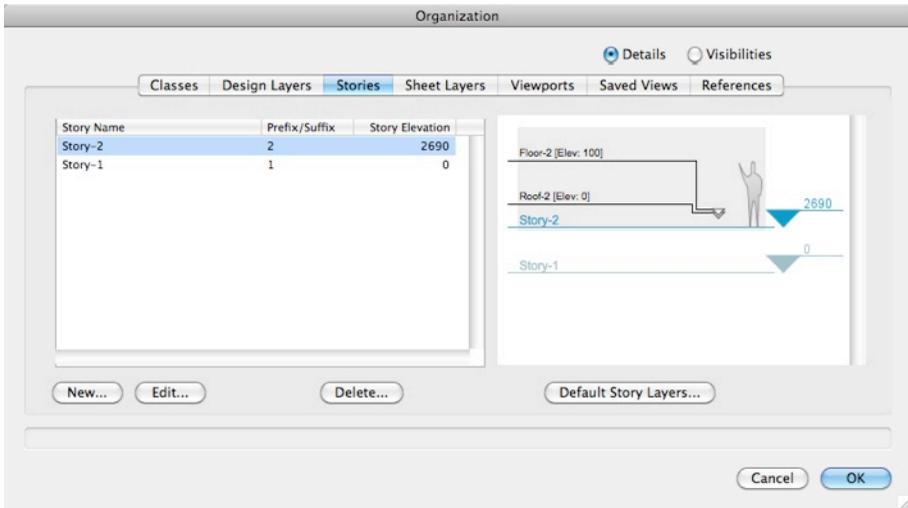
- Click on the **Stories** tab.
- Click on the **New...** button.
- Select the layers for the lower story. Vectorworks assumes that you will start at the lower story and work your way up the building. Remember to use the minimum number of layers, but remember to add a roof layer for the lower story.
- You need to change the elevation offset and the wall height for the floor and the foundation later.



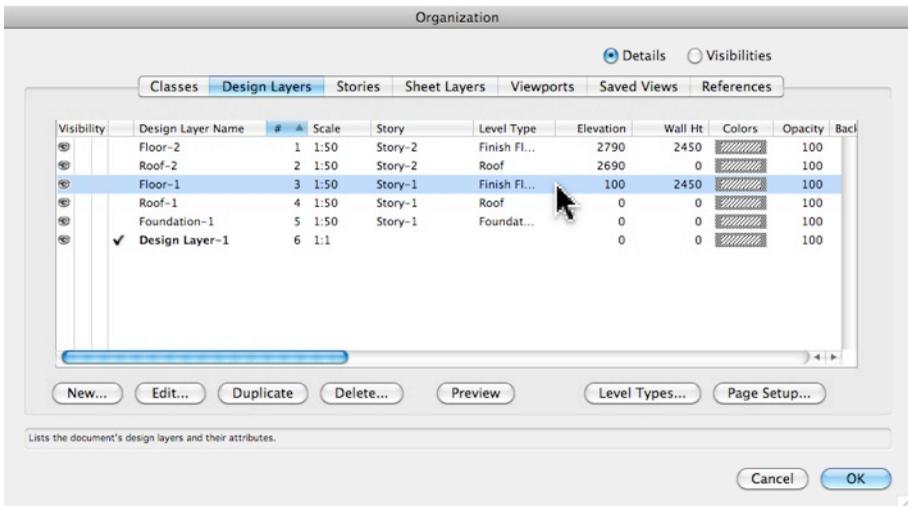
- Click on the **OK** button.
- Click on the **New...** button.
- Select the layers for the **Story-2**.



- Click on the **OK** button.



- Change to the **Design Layer** tab.



- Double click on **Floor-1** layer to edit the settings.

- Edit the **Elevation**, **Layer Wall Height**, and so on to suit your project.

The screenshot shows the 'Edit Design Layers' dialog box for 'Floor-1'. The settings are as follows:

Name:	Floor-1	
Scale:	1:50	Scale...
Stacking Order:	3	
Story:	Story-1	
Elevation:	0	relative to the story
	0	relative to the ground plane
Layer Wall Height:	2450	
Level Type:	Finish Floor	
Opacity:	100 %	
Renderworks Background:	None	

Buttons: Colors..., Saved Views..., Viewports..., Edit Georeferencing...
 Georeferenced

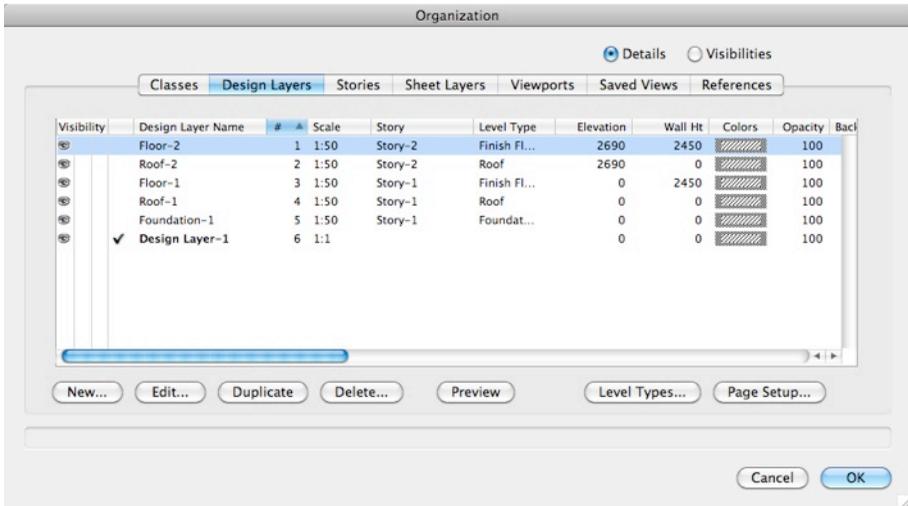
- Click on the **OK** button.
- Double click on **Floor-2** layer to edit the settings.

The screenshot shows the 'Edit Design Layers' dialog box for 'Floor-2'. The settings are as follows:

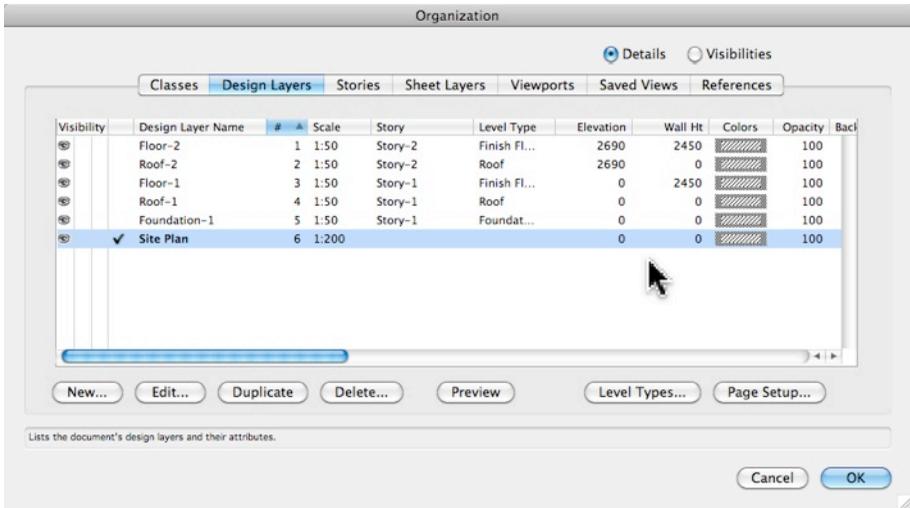
Name:	Floor-2	
Scale:	1:50	Scale...
Stacking Order:	1	
Story:	Story-2	
Elevation:	0	relative to the story
	2690	relative to the ground plane
Layer Wall Height:	2450	
Level Type:	Finish Floor	
Opacity:	100 %	
Renderworks Background:	None	

Buttons: Colors..., Saved Views..., Viewports..., Edit Georeferencing...
 Georeferenced

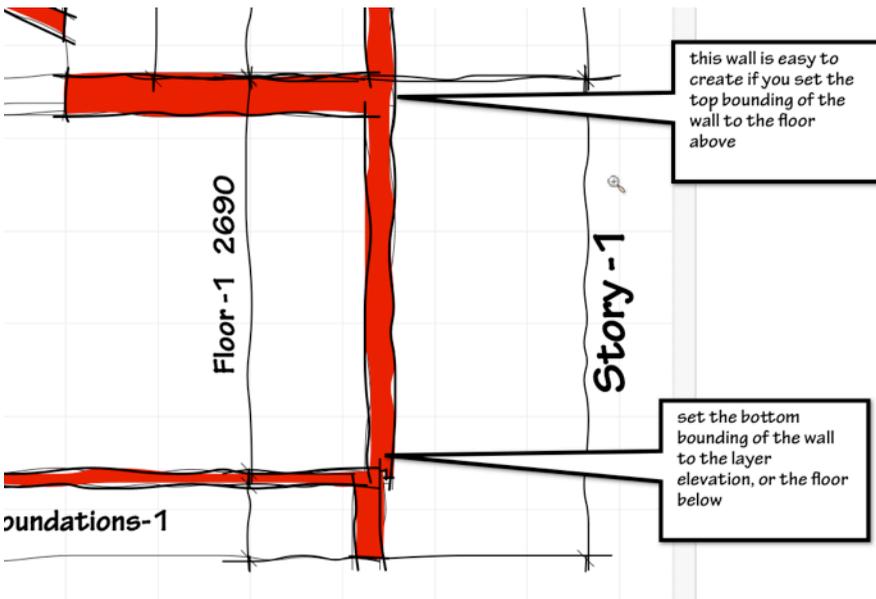
- Edit the **Elevation**, **Layer Wall Height**, and so on to suit your project.
- Click on the **OK** button.



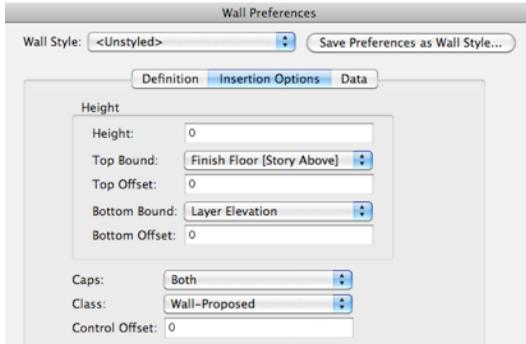
- Notice that the original design layer (**Design Layer-1**) is still in the **Organization** dialog box.
- If you can use this design layer (the site plan, for example) then edit the settings to suit. If you do not need this design layer, then delete it.



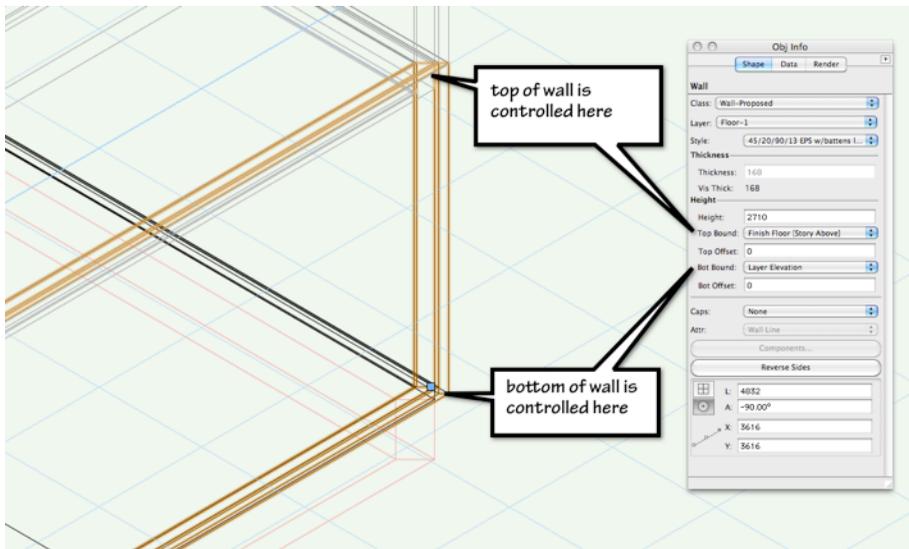
- When you draw the lower walls, create the walls styles to set the walls to bound the level above.



These are the wall style settings.

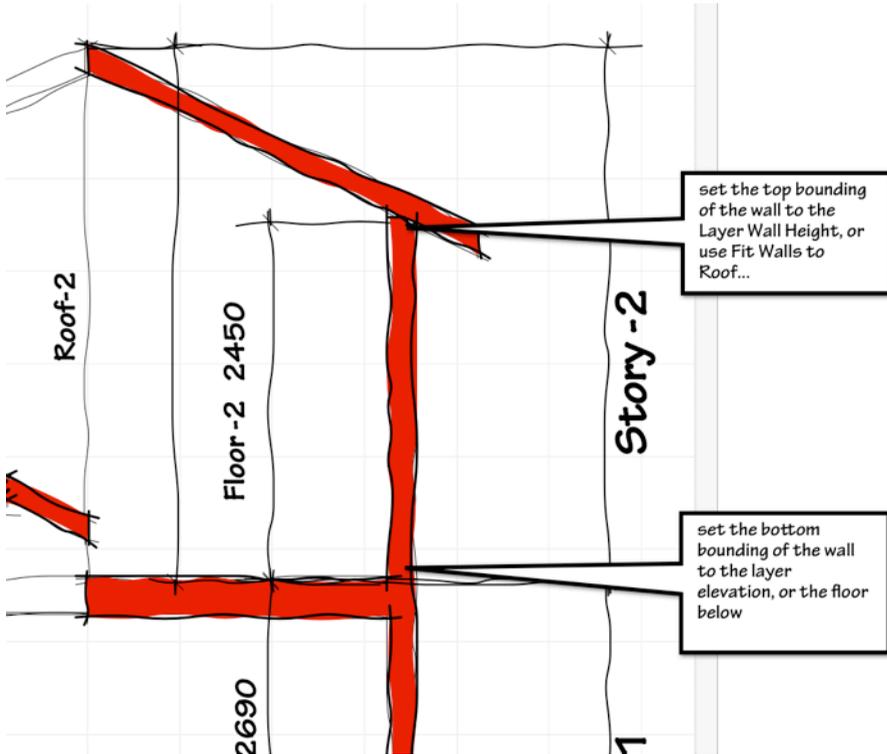


Here is the wall in the **Floor-1** design layer.

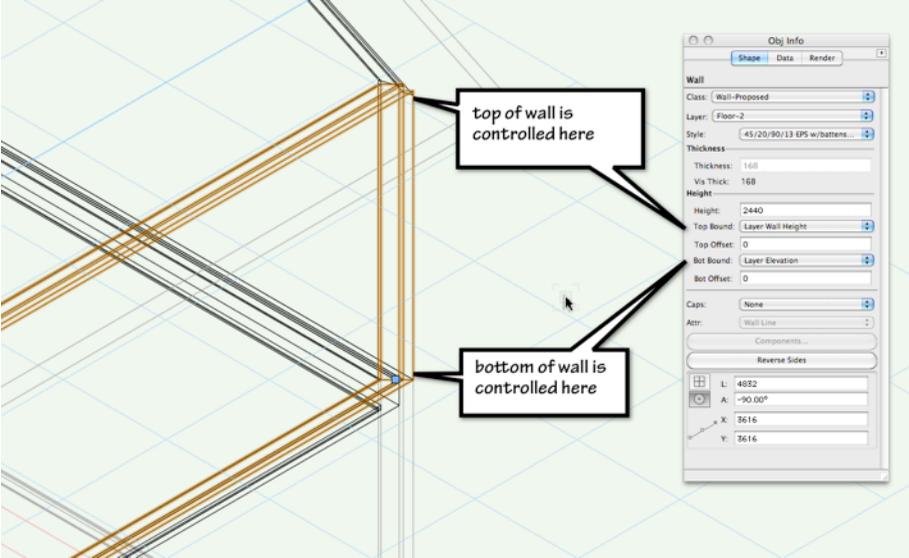


- When you draw the upper walls, create the walls styles wall style style so that the walls bind to **Layer Wall Height**. This suggests that you will need a separate wall style for the walls on the lower floors and for the upper floors.

- If you use the same wall style as the lower floors your walls will have zero height until you use the **Fit Walls to Roof...** command.
- For the walls on the upper floor, use the **Fit Walls to Roof...** command to fit the walls to the slope of the roof.



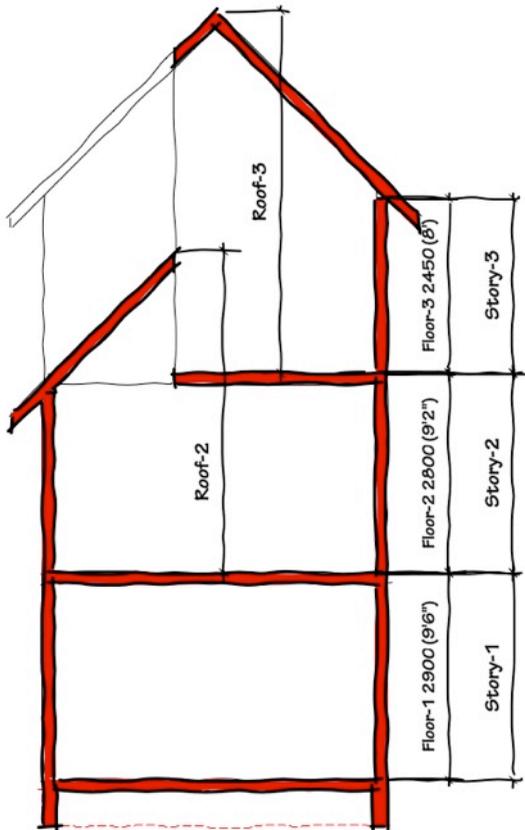
Here is a view of the wall in the **Floor-2** design layer.



Setting up Layers - 3 Floors 2 Roofs

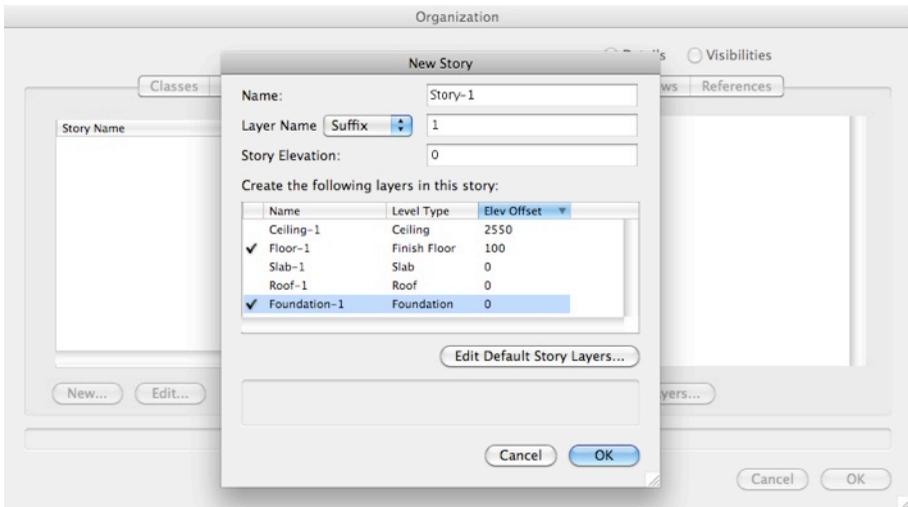
Setting up a project with 3 levels and 2 roofs is similar to the previous project with 2 roofs, you just need an extra story at the lower level .

[cadmovie780](#)

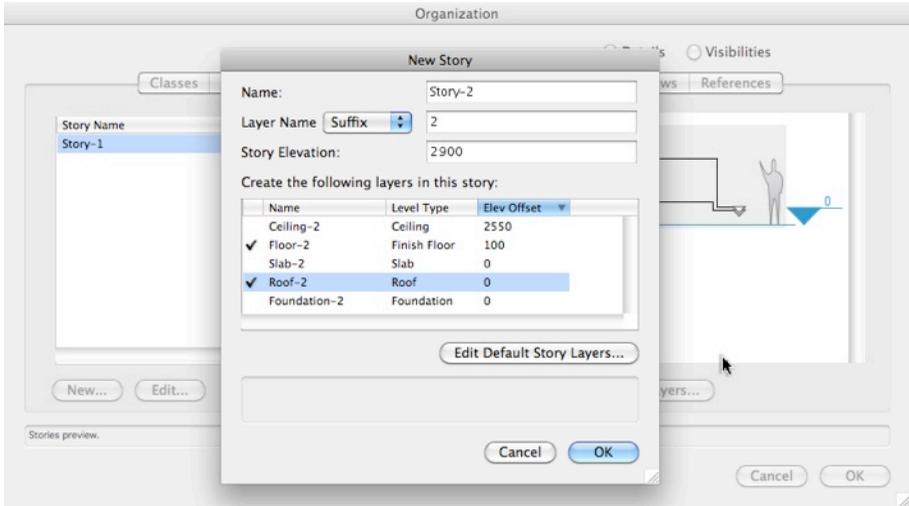


- Open the **Organization** dialog box by clicking on the **Layer** button. The **Design Layers** tab should be active.

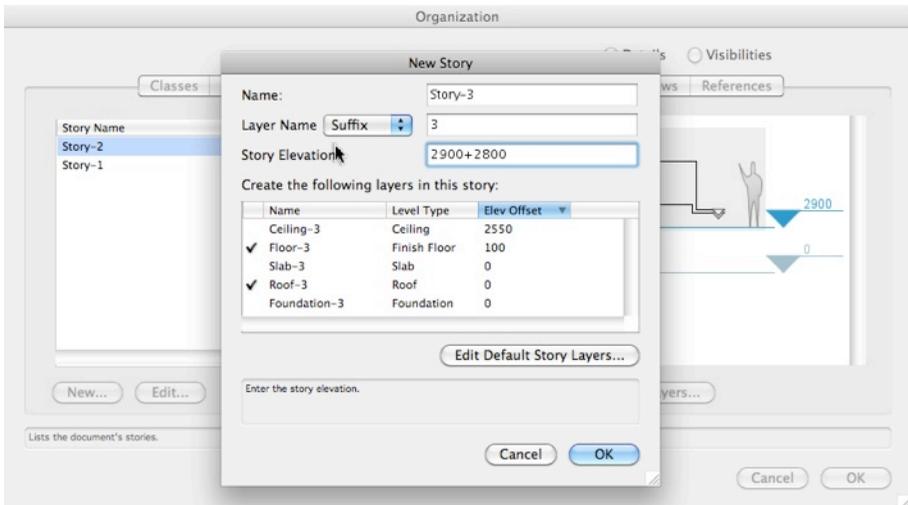
- Click on the **Stories** tab.
- Click on the **New...** button.
- Select the layers for the lower story. Vectorworks assumes that you will start at the lower story and work your way up the building. Remember to use the minimum number of layers, but remember to add a roof layer for the middle story.
- You need to change the elevation offset and the wall height for the floor and the foundation later.



- Click on the **New...** button.
- Select the layers for this story.

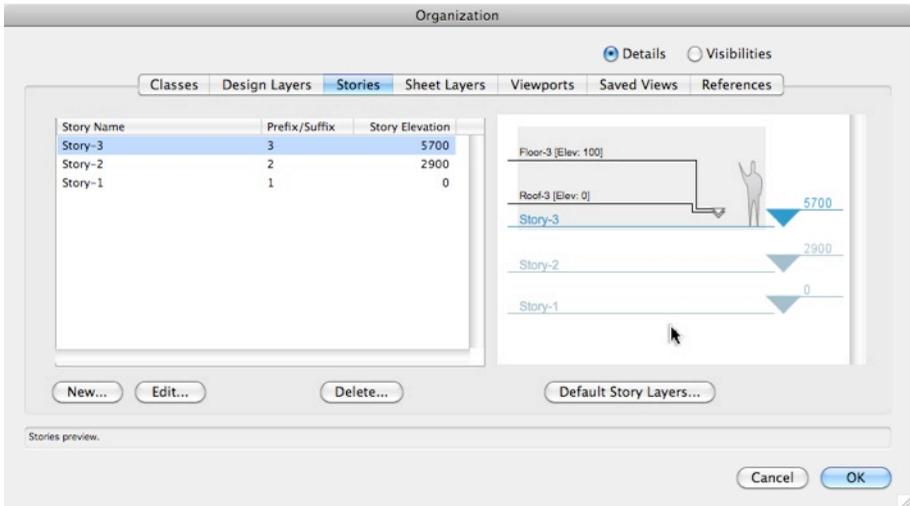


- Click on the **OK** button.
- Click on the **New...** button.
- Select the layers for this story.

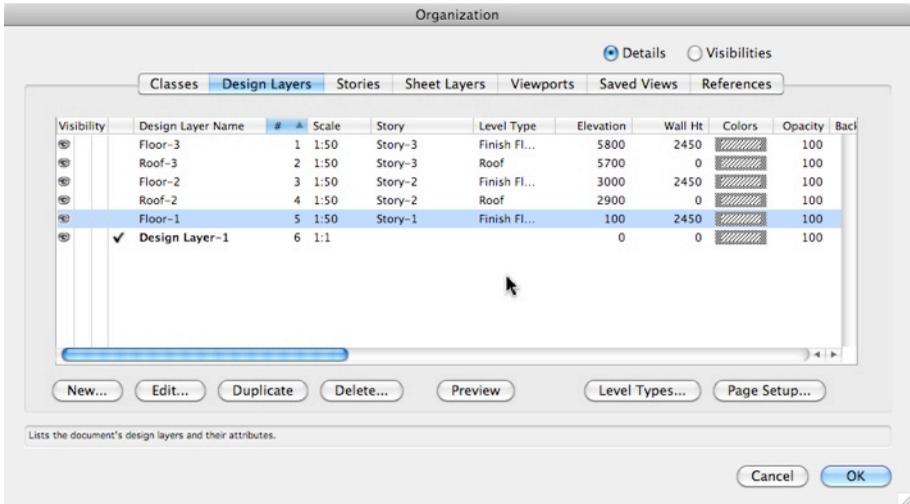


- Click on the **OK** button.

Here are the stories.



- Change to the **Design Layer** tab.



- Double click on **Floor-1** layer to edit the settings as required.
- Edit the **Elevation**, **Layer Wall Height**, and so on to suit your project.

Edit Design Layers

Name: Floor-1

Scale: 1:50 [Scale...](#)

Stacking Order: 5

Story: Story-1

Elevation: 0 relative to the story
0 relative to the ground plane

Layer Wall Height: 2900

Level Type: Finish Floor

Opacity: 100 %

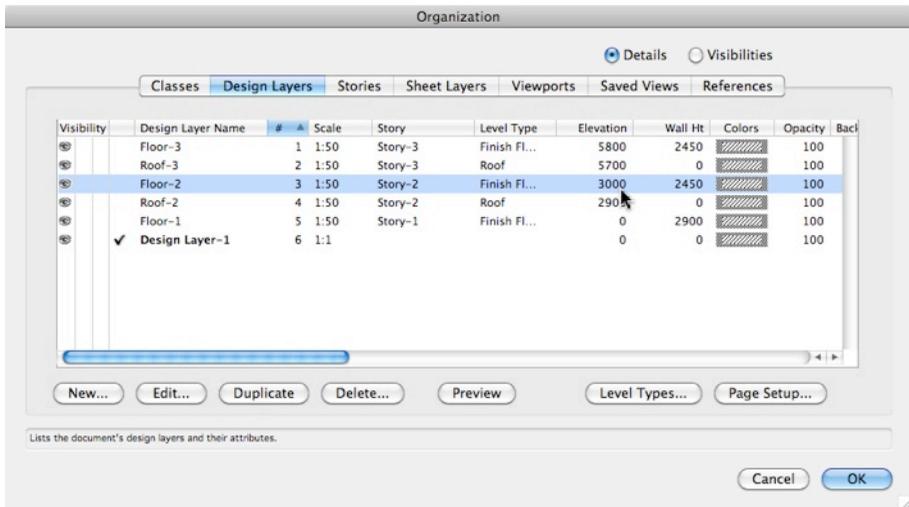
Renderworks Background: None

[Colors...](#)

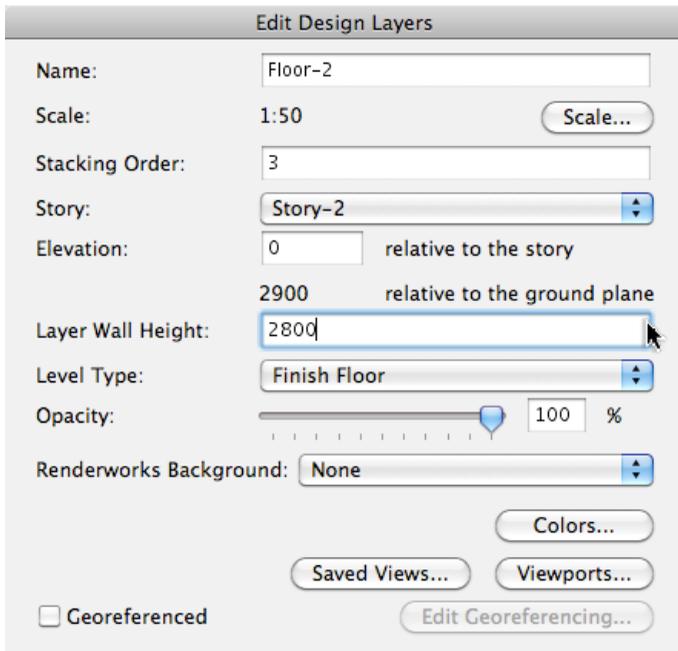
[Saved Views...](#) [Viewports...](#)

Georeferenced [Edit Georeferencing...](#)

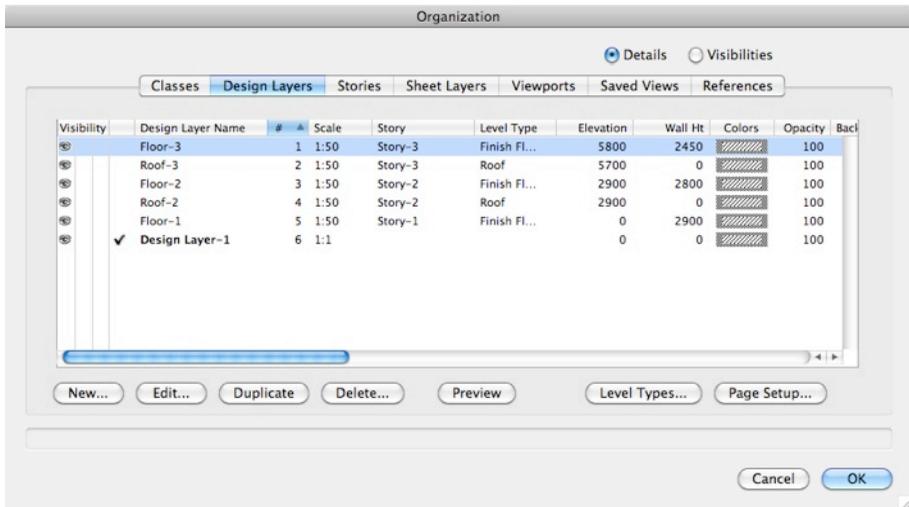
- Click on the **OK** button.



- Double click on **Floor-2** layer to edit the settings.



- Edit the **Elevation**, **Layer Wall Height**, and so on to suit your project.
- Click on the **OK** button.



- Double click to the **Floor-3** layer to edit the settings.

Edit Design Layers

Name:

Scale: 1:50

Stacking Order:

Story:

Elevation: relative to the story
 relative to the ground plane

Layer Wall Height:

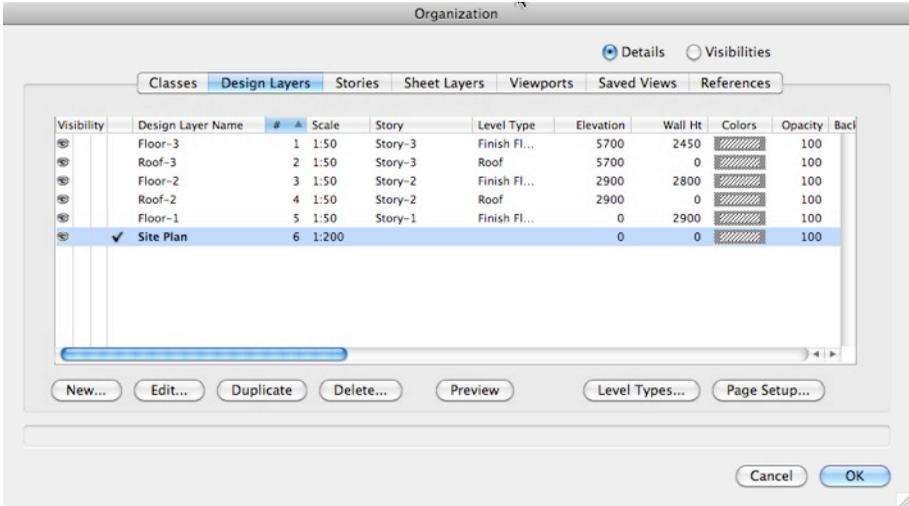
Level Type:

Opacity: 100 %

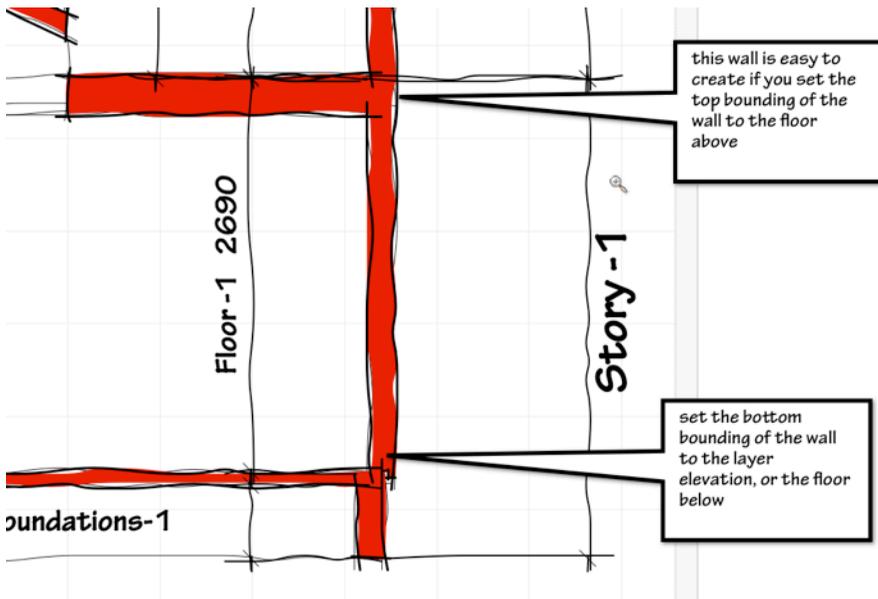
Renderworks Background:

Georeferenced

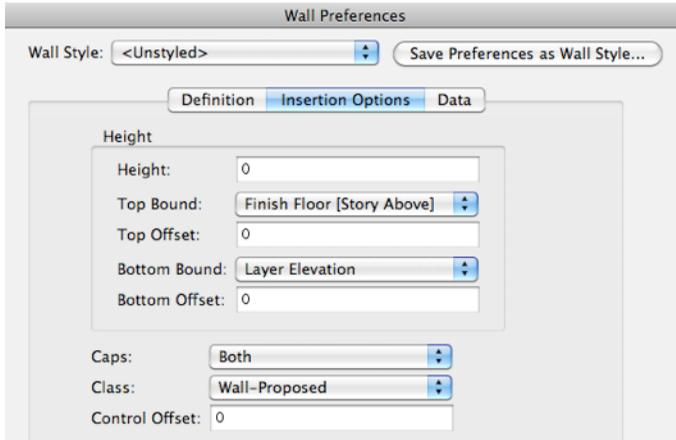
- Notice that the original design layer (Design Layer-1) is still in the Organization dialog box. If you can use this design layer (the site plan, for example) then edit the settings to suit. If you do not need this design layer, then delete it.



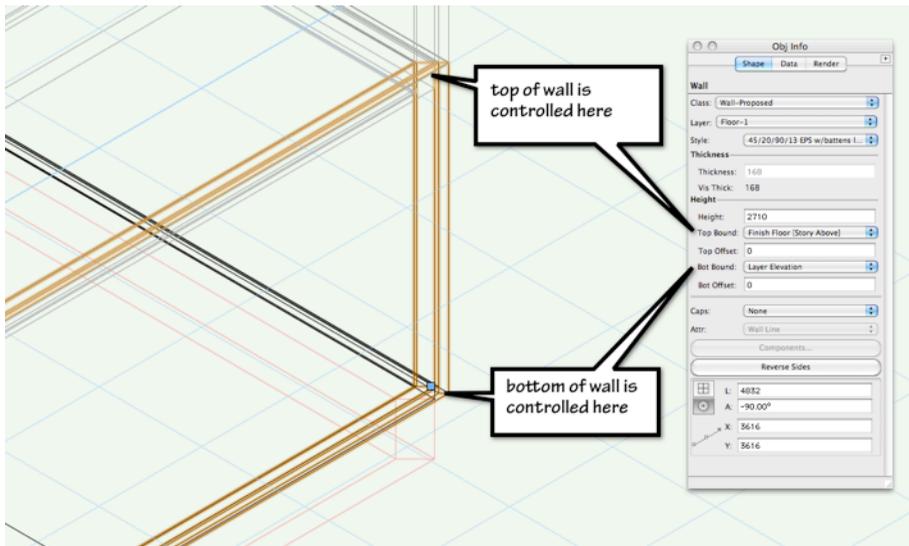
- When you draw the lower walls, create the walls styles to set the walls to bound the level above.



These are the wall style settings.



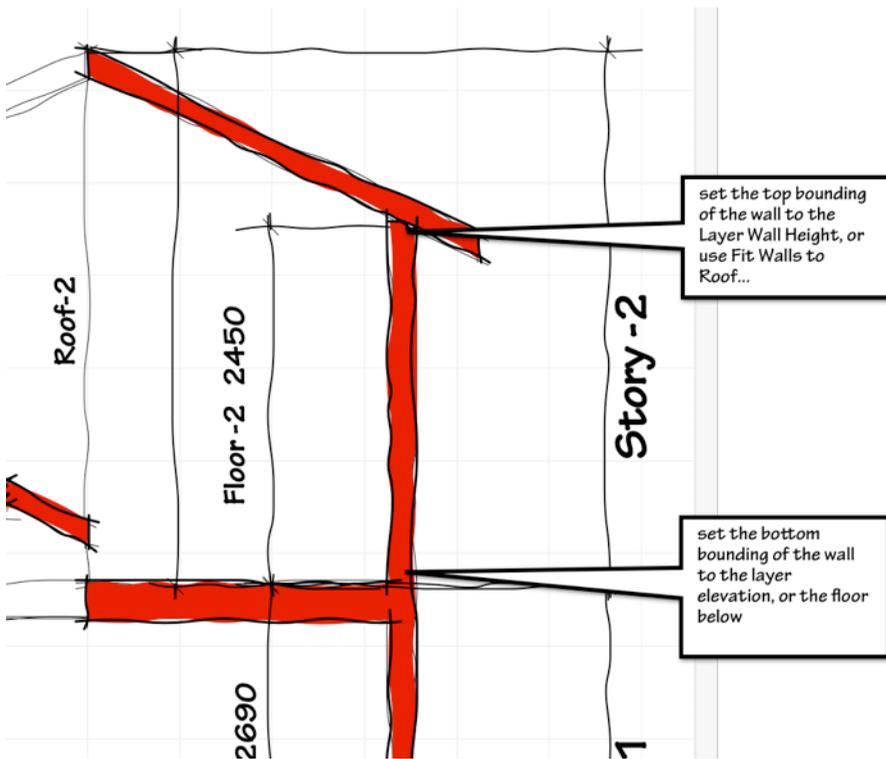
Here is the wall in the design layer.



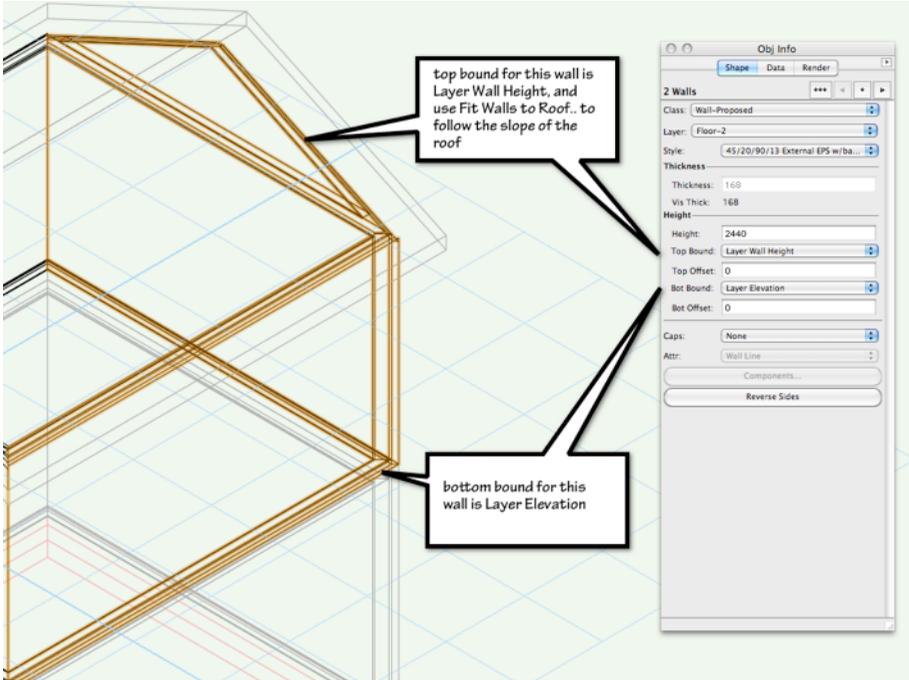
When you draw the upper walls, create the walls styles wall style style so that the walls bind to **Layer Wall Height**. This suggests that you will need a separate wall style for the walls on the lower floors and for the upper floors.

If you use the same wall style as the lower floors your walls will have zero height until you use the **Fit Walls to Roof...** command.

- Use the **Fit Walls to Roof...** command to fit the walls to the slope of the roof.



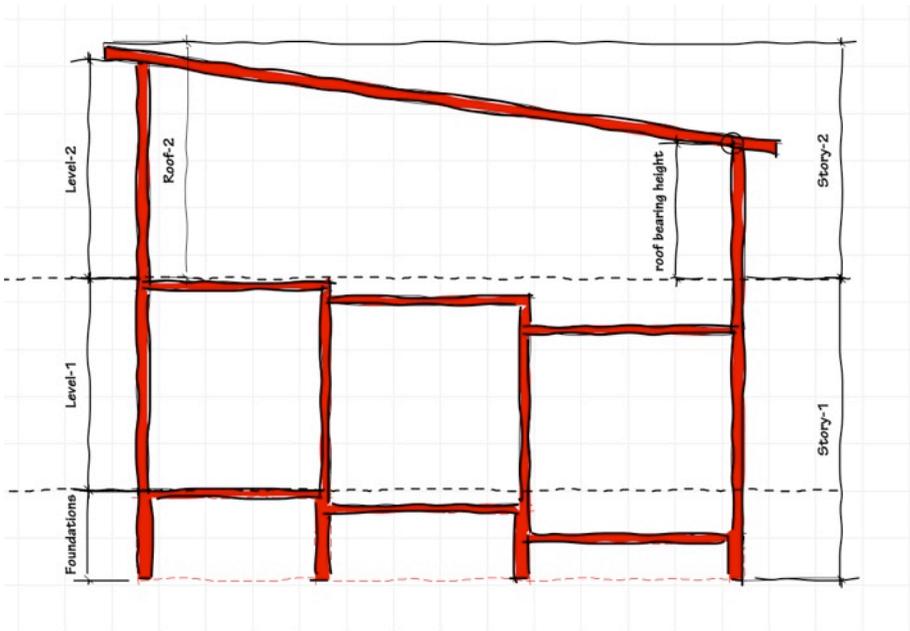
Here is a view of the wall in the design layer.



Setting up Layers - Multiple Levels

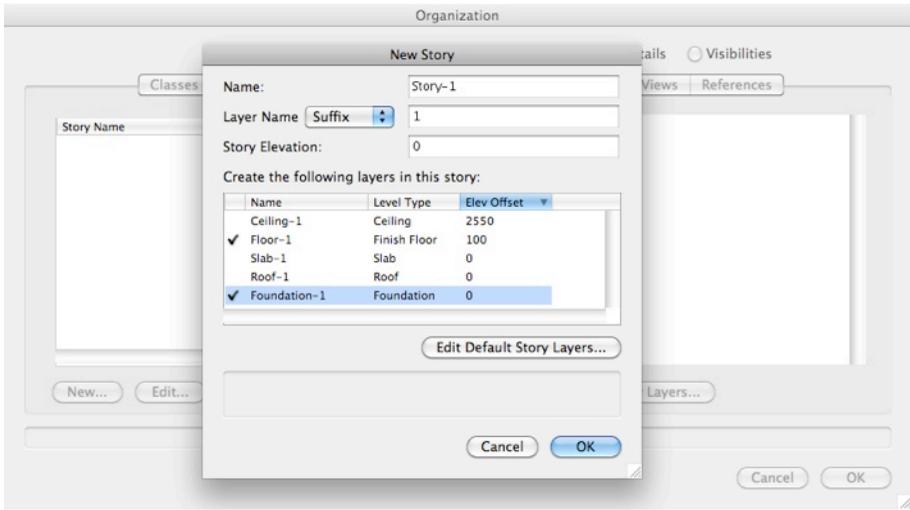
This is a two story building project, with multiple levels, but only one roof. The setting up of the layers is easy enough, but drawing the walls requires careful work. You can get Vectorworks to follow the slab above and below using **Fit Walls to Roof...**

[cadmovie781](#)



- Open the **Organization** dialog box by clicking on the **Layer** button. The **Design Layers** tab should be active.
- Click on the **Stories** tab.
- Click on the **New...** button.

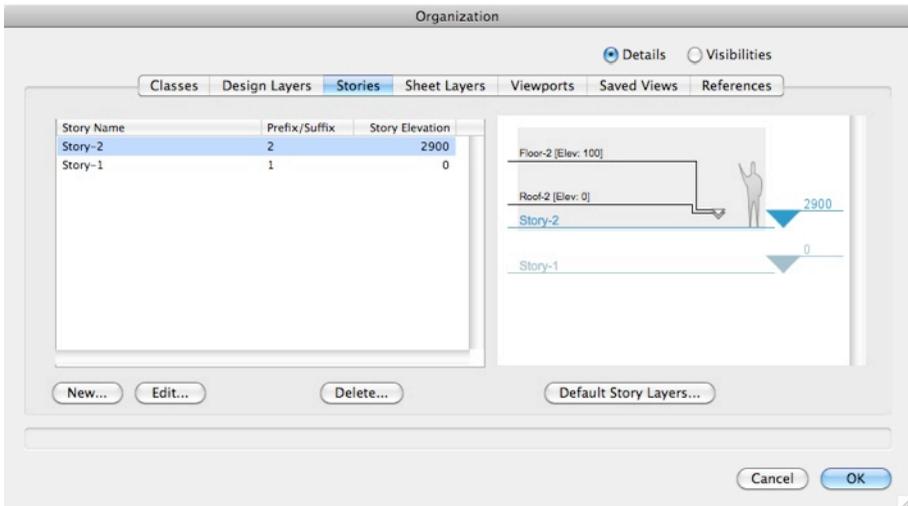
- Select the layers for **Story-1**. Vectorworks assumes that you will start at the lower story and work your way up the building. Remember to use the minimum number of layers.



- Create the next story.



- Click on the **OK** button.
- The results of your stories is shown in the dialog box.



- Change to the **Design Layer** tab.
- Double click to the **Floor-1** layer to edit the settings.
- Edit the **Elevation**, **Layer Wall Height**, and so on to suit the project.

Edit Design Layers

Name: Floor-1

Scale: 1:50 [Scale...](#)

Stacking Order: 3

Story: Story-1

Elevation: 0 relative to the story
0 relative to the ground plane

Layer Wall Height: 2900

Level Type: Finish Floor

Opacity: 100 %

Renderworks Background: None

[Colors...](#)

[Saved Views...](#) [Viewports...](#)

Georeferenced [Edit Georeferencing...](#)

- Click on the **OK** button.
- Change to the **Design Layer** tab.
- Double click to the **Floor-2** layer to edit the settings.
- Edit the **Elevation**, **Layer Wall Height**, and so on to suit the project.

Edit Design Layers

Name: Floor-2

Scale: 1:50 Scale...

Stacking Order: 1

Story: Story-2

Elevation: 0 relative to the story
2900 relative to the ground plane

Layer Wall Height: 2450

Level Type: Finish Floor

Opacity: 100 %

Renderworks Background: None

Colors...

Saved Views... Viewports...

Georeferenced Edit Georeferencing...

- Click on the **OK** button.

Organization

Details Visibilities

Classes **Design Layers** Stories Sheet Layers Viewports Saved Views References

Visibility	Design Layer Name	#	Scale	Story	Level Type	Elevation	Wall Ht	Colors	Opacity	Back
<input type="checkbox"/>	Floor-3	1	1:50	Story-3	Finish Fl...	5800	2450		100	
<input type="checkbox"/>	Roof-3	2	1:50	Story-3	Roof	5700	0		100	
<input checked="" type="checkbox"/>	Floor-2	3	1:50	Story-2	Finish Fl...	3000	2450		100	
<input type="checkbox"/>	Roof-2	4	1:50	Story-2	Roof	2900	0		100	
<input type="checkbox"/>	Floor-1	5	1:50	Story-1	Finish Fl...	0	2900		100	
<input checked="" type="checkbox"/>	Design Layer-1	6	1:1			0	0		100	

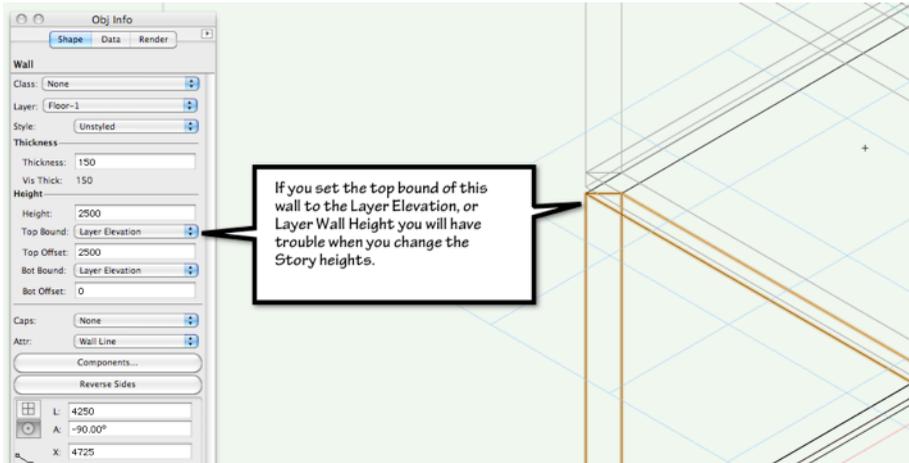
New... Edit... Duplicate Delete... Preview Level Types... Page Setup...

Lists the document's design layers and their attributes.

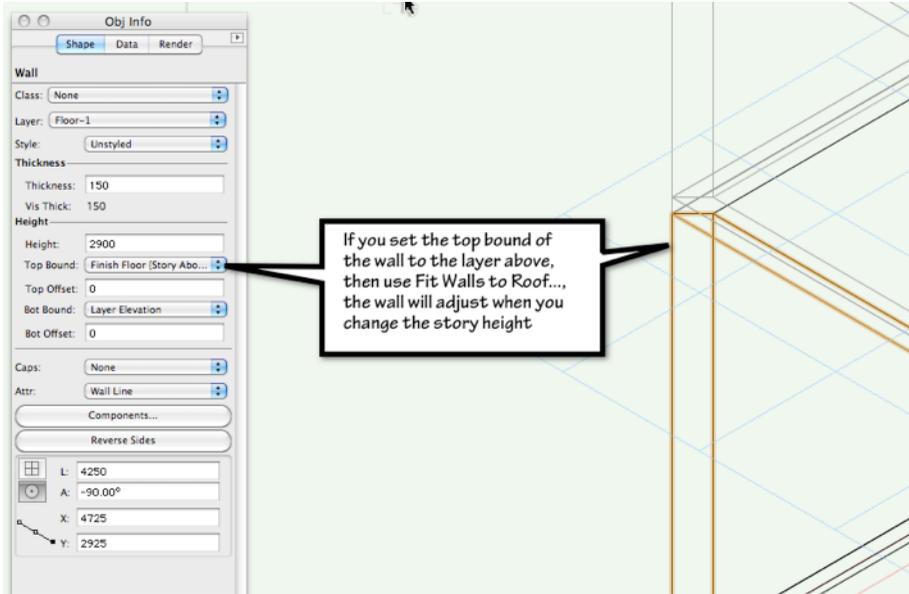
Cancel OK

- Edit the Elevation, Layer Wall Height, and so on to suit your project.
- Click on the **OK** button.

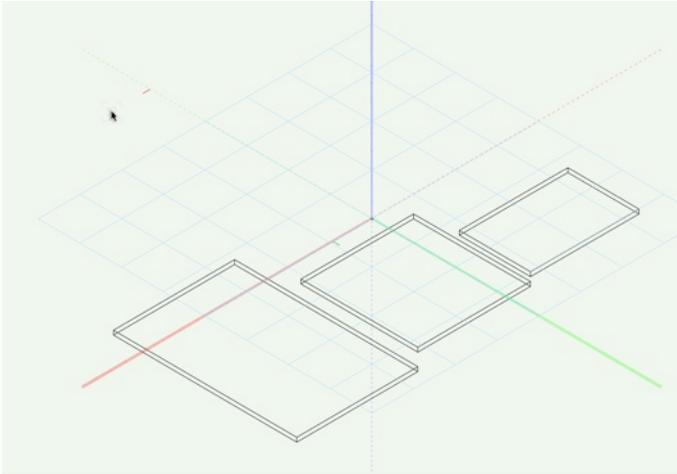
The most important issue is how you set the **Top Bound** for the walls in your lower stories.



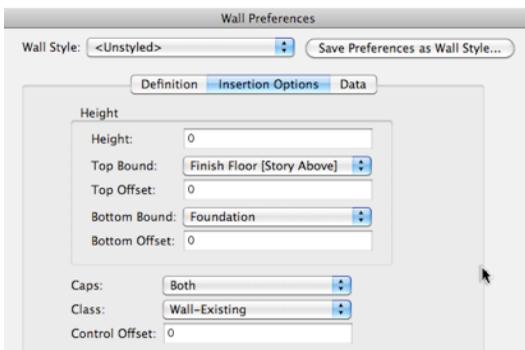
If you set the top bounding to the layer above and use **Fit Walls to Roof...**, the walls will change when you edit the story heights.



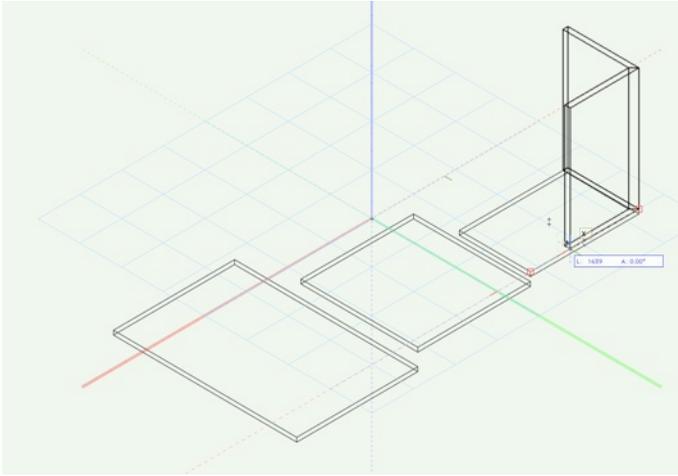
You can create the slab levels before or after the walls, but for this example, I have created the slabs first.



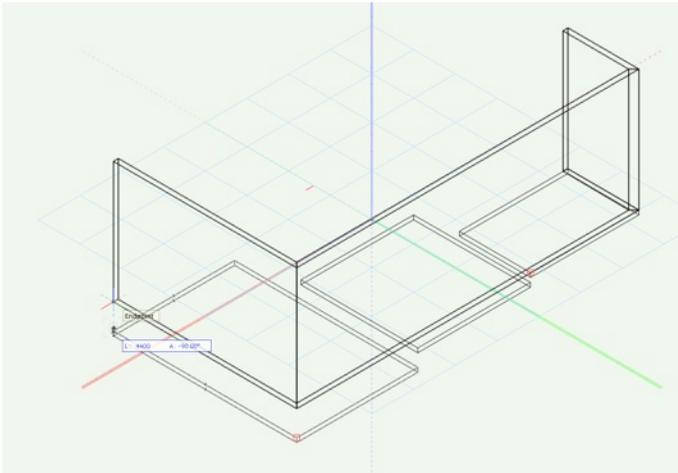
- The wall style should set the **Top Bound** to the wall layer above. This is important. If you do not set the wall to bound to the layer above, the walls will not change when you edit the story elevations.



The top of the highest of the three slabs is at elevation 0 for the floor level. The other two slabs are set down from there.

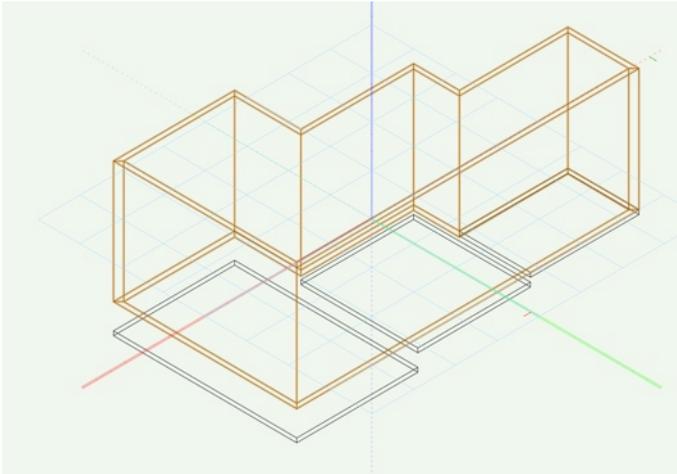


- Notice how the walls do not automatically follow the changes in slab level when you draw them.



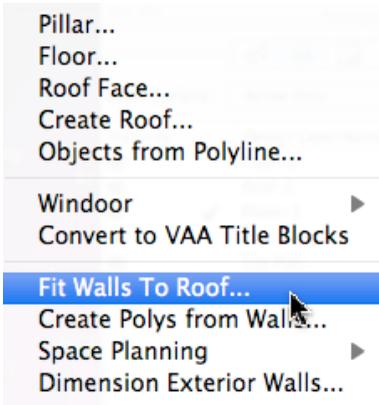
When the walls are completed, they do not follow the changes in slab level, nor the slab levels of the floor above. When you set the walls to bound to the level above, Vectorworks sets the

walls to the layer settings, not the 3D geometry of the objects in that layer.

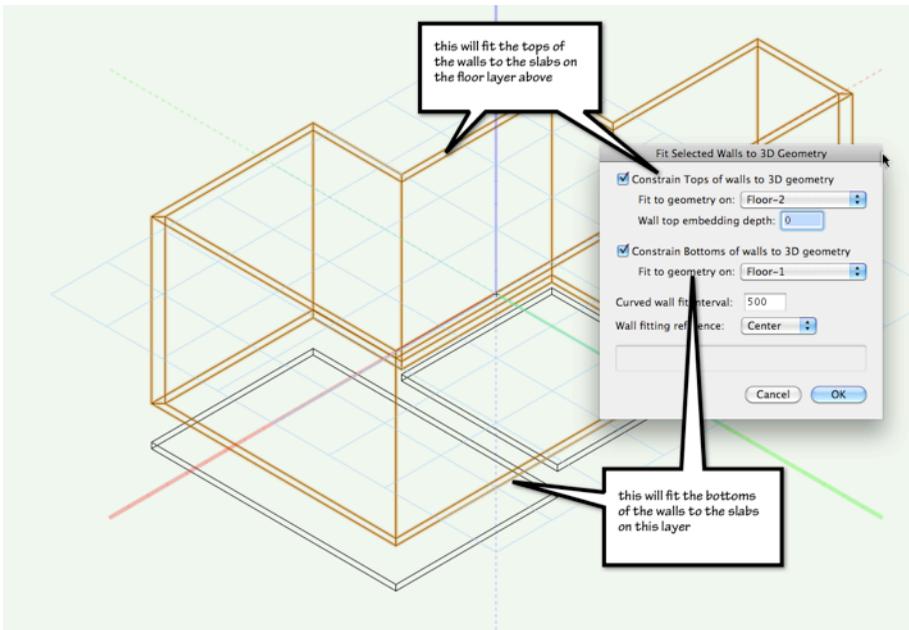


To get the walls to fit to the 3D geometry, use the **Fit Walls To Roof...** command.

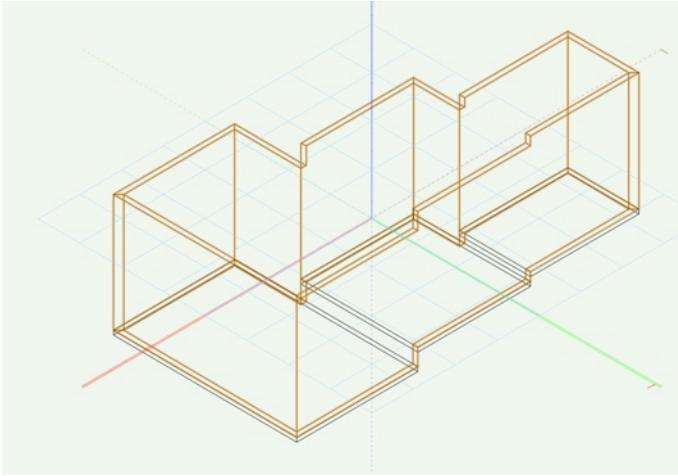
- Select the walls.
- Go to the **Menu** bar.
- Choose **AEC > Fit Walls To Roof...**



- Constrain the tops of the walls to the 3D geometry on the layer above, and constrain the bottoms of the walls to the 3D geometry on the layer with the slabs.



Here is the result.



Repeat this process for the upper floor. You need to have the roof and slabs in place before you use the **Fit Walls To Roof...** command.