



BEST PRACTICES COURSE – WEEK 18 – Complex Projects PART 3 - Split Levels

Welcome everyone. This is Eric Bobrow speaking to you from San Rafael, California. In today's session, we are going to be looking at split level construction. I will start out by giving you an overview of a topic that you should be very familiar with, but may help you to think about this in a different way. In buildings with multiple stories, the stories are separated vertically. In architectural plans, we conventionally will create a different representation for each story, even though those elements are stacked vertically. [0:00:45]

The plan is cut at a certain level, and the floor plan cut plan is the term used inside ArchiCAD for that. Now, when we have split level condition, then a single story, at least something you may conceive as a single story, is on multiple vertical elevations. Let's take a look at some of the issues that come up and some of the solutions that are easily available to you. I will draw a simple box of walls here, and we'll put a slab underneath it here. We'll take a look in 3D. There are no surprises there. Let's go ahead and split this. [0:01:35]

So I am going to go and select everything here and use the split option. This is the hatchet, and I will draw a line and cut things off to the side. What that did was it actually cut the walls and the slab. If I go to 3D, we won't see much change here because ArchiCAD heals the lines. In earlier versions of ArchiCAD, you might see some lines in the 3D view, but you would not see the line in the elevation because it's smart enough to heal that. [0:02:06]

Suppose that we put in some windows and doors. Let's start out with some basic windows across the front here. Now if we take this window and multiply it, it will make three copies. And I will distribute them. Now in versions of ArchiCAD before maybe version 12, it would have a problem if you took one of these copies into another wall. In other words, that wall over here, since this wall is a distinct wall element. But since maybe ArchiCAD 12 or 13, I can't remember, it became permissible to drag a copy or multiply doors or windows inside multiple walls, as long as the walls were exactly parallel. [0:03:03]

Now if we go to 3D, no big surprise there. But let's take the elements that are in this half of the building and raise them up a bit. A typical split level is to have one part of the building higher than another. It may be a single story building; it may be a multiple story building. So let's go and press down here and elevate this. In ArchiCAD 17 and recent versions, there is a single command for elevating in 3D or moving in 3D. In versions before maybe 15, there is a choice of either horizontal or vertical movement. With this one, I can actually snap to the vertical guideline that is available. You can see the letter "Z" is showing up in this area here. [0:03:54]



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Then I can type in an offset. Let's take it up 2', a small distance. We've now got something that at least is a plausible split-level condition. When I go back to the floor plan, it's no big deal. It looks like what we would expect. We can see the break between the floor levels; we are not seeing where the wall changes here. Now if I go and select these elements here on the plan, I can also go to the Edit menu, Move, Elevate. I could take them up further. Let's say that I take them up another 3'. [0:04:31]

That will take it up to a total of 5' here. There is an option in recent versions of ArchiCAD to set the home story by elevation. If I were to raise this up 10', then if I use this, it would actually put these on the second floor or the story above. I don't want to change the stories right now, so that is irrelevant. But if we were to move it a great distance, that would be a question we would have to ask. I will say OK and you notice that as I moved it up, now these walls start to appear in a different fashion. They are showing up with a light outline. If I go to 3D, it's not a whole lot different, although we do have a bit of an issue here with this window. [0:05:19]

Let's look at some of the things that we need to control and understand what options there are. So first of all, on the plan each of these walls is on this story on the first or ground floor. But if I open up the wall settings, it's being designated and drawn as an overhead line. You can see this line is a thin grey line to represent the fact that this wall is higher than the 4' cutting plane. In international use it would probably be 1m. So automatically, ArchiCAD said, "These are high enough that they above the cutting plane." Now do we want it like that? I would say perhaps in a simple split level case, you might not want it like that, because you would want to show that this is all one story, and you don't want to differentiate. [0:06:15]

If you wanted to change that, how would you manage it? So that would be one question. The other thing that you will notice is that window disappeared, even though it's actually still in the wall. And we have an issue that when I raised the wall up, the window stayed at the same height. Now windows and doors have options for anchoring. Right now, this window is set to anchor its header, meaning that the top of it is set at a certain height, and is anchored relative to the story. That's why it's at the same height as the other windows along that same face of the building. [0:06:56]

Now if we wanted to change this to being locked to the wall base - in other words, a certain distance above the bottom of the wall - we could do that. By doing it after we've made this change, it calculates the fact that it's now 2' above the bottom of the wall. Of course, we may want to take it up to 7', the same as the others. And now it's going to jump up to being a common height. For design purposes, there are different ways that you want to complete your building. Sometimes you will have windows get shorter, as you have a split level, so that they maintain the same head height if the difference is not as extreme as here. [0:07:39]

But for a conventional window in a room up here, we would want it higher, and this would be a legitimate choice. Now if I go back to the floor plan, we will see that the window does not appear. Why



is that? Because we are cutting through these walls at a level below the walls. In fact, we are not even cutting through the walls, they are overhead. Now how do we see the level of this? This is under the Document menu, Floor Plan Cut Plane. The floor plan cut plane can be manipulated manually, just like I am doing here, and it's also recorded in the view setting or view map. So we will take a look at that. [0:08:26]

Right now it says 4', let's change it to 6' and say OK. You can see these walls reappear, because they are now being cut through. They started at 5'. The window is actually above the cutting plane. The window starts 2' above that, so it's above the nominal cutting plane, yet it is showing the same as the other windows. Why is that? Because the default in the Graphisoft standard template - which is nice, many of the defaults do work well - is set for the floor plan display of the window to be symbolic. That means that regardless of the height of the window and the wall, if the window was shown at all, then it's going to be shown as a symbol. [0:09:28]

Another option would be to change it to 'projected' or 'projected with overhead'. So let's look at the differences here. If I say 'projected', and say OK, the window disappears because remember, my cutting plane is below the bottom of the window. So when you project the cut through the wall, the window is not there. I can go here and say that I would like to make this 'projected with overhead'. Now it's still not showing here. If this window had a sill, then we might see that. Let's go into the window settings and see if we were to put in a sill - this is a very simple default window. [0:10:22]

Let's go in and put in a sill and stool here with casings. Say OK. Now you can see it's displaying the sill and stool that is above the cutting plane here. So it's a rather odd look there. Commonly, you would want to work with the option here that is symbolic. The reason why these other ones exist is if the wall is tilted. In a more complex situation where the wall is tilted or canted, then it's nice to be able to show where the window is cut through in the floor plan cutting plane. That is why these options would be useful in that case. [0:11:11]

In a simple case, we will set it to symbolic, and now it's showing, even though it's above the cutting plane. This is one way that you can make a split level condition show up on the plan looking like a conventional drawing, where we are not actually noticing the height change except for the slab. Now sometimes that is the way you want it, and certainly we can save a view here. Remember that if I go to one of the other views such as the standard floor plan here, we are going to see this is set back at the lower cut plane, so we are not seeing this. [0:11:56]

We could actually go into the settings here by right clicking and choosing 'View Settings'. Go to Floor Plan Cut Plane Settings for this view and change it up to 6'. When I say OK, that view will display these elements in a different fashion. Now I am going to go back and set that again back to the 4' conventional setting, because there are times that this won't work properly. We may want to be able to show



different parts of the building in different ways and cut through them separately. So I am going to show you an option that can be very effective for split levels and placing them onto a sheet. [0:12:45]

If I go to the layout sheet for the first floor, you can see this is how it's showing, just like on the plan. But let's say that we wanted to show the two halves, but we wanted to have some other options to control it. This is something that I found quite useful, and that is to create another view. So if I go back to this floor plan view, I will say that I want to create another view. So let's save the current view, and call it "First Floor Upper". For this particular view, I am going to change the floor plan cut plane settings to 6' or actually, maybe we will take it up to 10'. [0:13:39]

This one is up at 5', so it would be 9' here. Let's take it up to 9'. This one now appears to be 9' when I say 'Create it'. You can see that it switched between the standard first floor plan and this upper one. Suppose that we had some clear story windows. Suppose that we wanted to have some upper windows. I will go to the Window tool, and we'll go in and pick a simple fixed window here, a ribboned window like that. We'll set that up to be quite high in the wall. Set the top to be 9'6", and we'll make it very thin, 1'6" here. So now we have some clear story glazing. [0:14:36]

I will pop this in up here. Now you can see that this window here, if I go to 3D, it will make sense. Maybe I will select it and stretch the side a bit so that it lines up for design relationships here. This is perfectly reasonable in terms of a design option. You have some lower glazing and some upper things, but on the floor plan, it's not at all clear what is going on. Remember here we are seeing two simple windows and then this new clear story all stacked. It's a mess. What we want to do is on the first floor plan here; we would want to change our view to create both a floor plan with the lower windows and a clear story plan separately. [0:15:31]

If I go in here to do the settings, we can go to the floor plan cut plane settings and say that for the lower version of this, I don't want it to go all the way up to the top of the story. On the current story, I only want it to go up to 7'3" or something like that. I can specifically say what height I want it to cut up to. It shouldn't show anything above that. So what did I say before, 9'6"? Let's leave it at this and say OK. Now you can see on this particular view, we are seeing only the lower windows, whereas when I go to the upper one, we are now seeing this one here. [0:16:24]

Now we are also seeing some confusion, because these two lower windows are up here. So we'd want to change the way this is drawn here and change the cut plane to go down to the current story. It will only go down to 7' or something like that. Let's try that, and say OK. Did that work? No. I will go to floor plan cut plane, show down to this - so we are going to do the cut plane 9' going down to 7'6". There we go. So now this upper one is showing the upper part of the wall here, and it's showing this clear story. It's not even showing the lower window. So this is certainly one way that we can differentiate between the lower plan and the upper plan. [0:17:41]



I have shown you how you can have multiple views of the same story with potentially different parts of the vertical structure showing by controlling the floor plan cutting plane. The conventional thing is to just cut through it at the nominal height of 1m or 4', and show the entire range from top to bottom of the story. But when you have a more complex situation, that doesn't work. Now it's possible that you may want to do this, but you may want to also have a combined lower section on this sheet here, so that we have the clear story upper window separate. Here is a strategy that I have used successfully. We can take this drawing and crop it. We can crop the frame to any part here. I will crop this to that point here. [0:18:45]

Now we have this drawing only showing the lower section. I will go here, take the upper one, and drag it onto the sheet. At first this is laid out and it's not overlapping, but I can go and drag - let's get this to where I can drag it from this. Go and select this and drag it down to here. Now we have two drawings overlaid. This one I will crop the other way here. Now we have what looks like a simple floor plan. I will hide the drawing frames using the onscreen view options, and we are seeing that it looks like just a simple floor plan. [0:19:45]

We do have the extra drawing labels, so if we didn't want to highlight these as two separate drawings, then we could select this and change the drawing title to Not Titled. Now you can see this drawing exists, but it doesn't have a title, so it looks like it's all one drawing. If you have something like this where you are combining two separate views to make one plan, it'll automatically update as the building changes. It's possible if the dividing line changes that you might need to tweak the cropping a little bit. If it wasn't just a straight crop here, you could do something - let's say that it was 3/4. Let's take this up. [0:20:39]

It is the front that we are talking about. Let's say the back went around here. What I could do is take this one and go and use the plus or minus to add to the polygons. I will take this plus here down and across, and use the Shift key. I am basically drawing a box, and I've changed the framing of it. Now of course, this is now showing as an overhead line, so in this case, it wouldn't make sense. But you get the idea that you can actually have two drawings fit like puzzle pieces around each other. I will back up a couple of steps so that it's clearer. [0:21:29]

Those are some of the key strategies for doing split level in a simple construction here, just a single story. Let's look at what happens when we cut a section and see things in section. I will go and cut a section through this and maybe we'll look down this way so we can see those windows here. I will open up a section. You can see that it's drawing this reasonably well. We would need to have some indication of how these walls are supported or a staircase going up or whatever the access is going to be. We can start talking about what if it's multiple stories here that we have. [0:22:24]

One option could be that this wall here actually is extended up. This next story, we'll snap it here, so this next story really starts up here. It isn't split up in the upper case. If we go to 3D, we'll see I've just



extended this one wall, and not the other ones. Let's take this case up here. I will select these two additional walls and stretch them up here. Now we are in a position where potentially if we were to stack another story up here, we would have a reasonable space in this raised area and a higher air volume for this side of the building. [0:23:20]

How would we create another story? One thing is that the stories, if I go back to this here and open the section, the story right now is set at 10'. If I wanted to raise it up here, let's do a measure with the "M" key. What height is this? It says the Y coordinate, which in this case would be the vertical position, is 15'. Okay. Now I could go into the story settings and go here and say I want to make it this 15', and that would work just fine. But what we might actually want to do is in this section; just say I would like to edit the story levels. This isn't something that is widely or frequently done, but it's very useful to know about. [0:24:09]

In this case, it may be even more convenient just for setting. So here I can say I want to adjust one story, all the stories plus the ones below, all the stories plus the ones above, or all levels. In this case, if I am moving this and I did have some stories above, I might want to affect them as well. This would affect - if I grab this and move it up to here - it would affect a third floor above that. I have now moved this up here and say OK. We don't see this number change until I say OK. And then it's changed up to here. That changed the reference for the story, but interestingly, in ArchiCAD 17, Graphisoft has introduced the concept of walls having an anchor or a link to not only the base but also the top. [0:25:15]

When I changed the height of the story, these walls were set to be in relationship to the story above at 5' above here. Let's go into the settings here. This is set to be 5' above the next story. Well of course, I have moved the next story up, so I want this to be zero. I say OK, and it's come down. I would want to do that for all of them, so I can select all of these walls that have adjusted. Now these walls that I have selected have different bases. This one is raised up here. Let's select this one as well. These two are raised up. [0:26:03]

These are starting at a lower level. I can adjust all of them by saying relating to the wall top, I want them to be right at the story level for the next floor, and that will adjust it. So this is something that was new in ArchiCAD 17. In previous versions, you would just set the height of the wall. In 17, this is a little bit different. Now you can see all of them have adjusted to this. Now I have something that I can actually on the second floor, if I go up to the second floor plan, and show the first floor plan as a trace reference, I can see this here. [0:26:53]

Let's just do a very simple case. I will draw these walls again like this and put in a slab underneath that. Now let's look at that section. Now we have a split level down below, but not a split level up above. So that certainly is one type of condition that we may have. In ArchiCAD 17, what I did was told the slab to go all the way out to here. You will notice how some parts came through and other parts did not. This is



the smart sections that ArchiCAD 17 will give you. Right now we don't have a whole lot of detail; this wall is a generic exterior wall, so it doesn't have interior drywall or anything. [0:27:48]

So it's not a totally clean section, but it is certainly more interesting. This should not go out to the edge, it should stop. If you select the correct wall types, it will do that. Because I cover that in some other lessons, I am not going to focus on that part. Now sometimes, people have asked me, "What if we were to put this lower level on story 1, and this one on story 2, and this upper one on story 3?" In other words, create a whole separate story for it? [0:28:35]

Now if you are outside of the U.S., this would be story 0, story 1, and this one up here would be story 2. Same idea, just with different numbering. The answer is you can do that, but I will tell you why I generally don't recommend it. When we are on a story here, we are always going to see elements that have their home on that story. These walls right now are set to show differently, but they do have their home on this story, so they are showing. Now you can tell ArchiCAD or tell elements in ArchiCAD that you want to show them, instead of just on the home story only, you can show them on all relevant stories. [0:29:24]

So in certain split level and multi-story wall types of construction, it is important to know that you can change the display to all relevant stories, then the wall that is extra high or straddles between a split level construction could be set to show on more than one story. You could break these up. This could be on a second or intermediate story in between. One reason why this is at least potentially problematic is say that we have a staircase. Let's go to the staircase. I am going to put in a very simple stair here. I will drag it down so it's within the building confines. [0:30:10]

This stair, when I go up to the story above, right now we aren't seeing it. We are seeing just the trace reference. If I were to turn off trace and reference, this is the floor plan. But if I go back down to the floor plan here and select the stair, we have the option to show the stair on the home story and one story up. You can also choose to show it on all stories or all relevant stories. These options have gotten more sophisticated over time, but these are the most common is to show it on the home story and the next story up. [0:30:51]

Now when you do that and go up to the story above, you can see it's showing. I'm on the upper story here, and it's showing in a particular way. It's showing the same way as if this is solid and this is hidden - this is overhead. I will go down, and you can see it hasn't changed the symbol. But commonly, you might want to say that you would like this. Where would it be? Story Sensitive. In general, it's good to pay attention to the stories. On the 2D above the home story, maybe you want a break line and don't want to show the lower part, but do want to show the upper part. [0:31:45]

So these are some differences. We have some options here. Nothing happened on the base story, but when I go to the upper story, it looks rather different. If I select this, there are other options. Perhaps we



would want to show on the upper story here, we would want to say the lower part is not off, the lower part is on. You can see now it's showing the lower part, but just with the break line to indicate that. When I go down to the lower story, you can see what this does. [0:32:24]

The reason why I took a minute to explain this - for those of you who maybe are less familiar with the stair tool, but for those of you who use the stair tool all the time and know this inside and out - is if there was an intermediate story between these, then this upper story would not be able to understand what was going on. So the story sensitive will work best when these stories are adjacent; when you don't have an intermediate story in between. [0:32:57]

This also is one reason why I in general do not recommend using an extra story for framing. Some people will create a story between one floor and another to put in framing information. It certainly can give you a framing plan in an easy way; you can draw all the stuff you need, and when you show that intermediate story, you see the framing information. But the issue with that again is generally when you have stairs; it will cause some limitations in terms of the way the stairs are represented. It's not that you can't do that, but that's one disadvantage is the stair tool is sensitive to home story. It has the option of showing from one floor above how the stair will be represented. [0:33:50]

I think in terms of split level construction that I have given you enough to get going with it, to understand the basics of it. I could show other variations and we could look at site information in 3D. Right now I just have it floating in space. One reason that we may have to do this split level is that the terrain is higher on this side than the other side. But I think in terms of the basic options for how walls get represented when they move vertically in space, how you can show a single plan like this upper one to show parts of it, or possibly combine one part of one plan and one part of the other plan on a layout sheet like this where this is actually two separate drawings, these are some of the key tricks and ideas that will help you as you are working in the split levels. [0:35:00]

Remember also the section that I created here, the story levels will show here. If you did want to show this intermediate level, one final thing then is this is useful for more than just split levels. But if you did want to have a reference off to the side, these story lines here can be mimicked by creating a specific type of dimension. If I go to the Dimension tool and say I would like to dimension to elevations as opposed to horizontally or along the plan, but I want an elevation one, I could do a single one like this. I will take this point here. This you can see is referencing right at that height. In fact, I snapped to the wrong point. [0:36:05]

Let me undo that. I will say I'd like to do multiple ones. Then I can click, and you can see how it puts in snap points. Maybe that point is not right, so I will hit Esc. Let's do it up to this point here, and maybe do it up over here. I will double click and drop this say in line with this here. Now the markers are now showing the same way as what we see here. We do have some options. If I go into this, I can say I want a



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different type of marker. Let's see, marker type, I am trying to remember where this is. Static dimension. I guess I have to select the line as a whole, then I can change the marker style. Where is it? [0:37:09]

Here is the choice. You can choose it over here. This potentially would be one option here. If we did this with the story lines - I don't want to have anything selected. I will go to the section settings, and let's say that we wanted to have the story levels represented with a marker head. You can see here is one of the options for the marker head, and say OK. Now this type of marker here can be mimicked by this one. If we select this five here, I can do things like add custom text. I can do a plus like that, and it's starting to look the same. It could be the same size, I'm not sure, let's make it a little bigger. Now you can see these look very similar. [0:38:38]

I could then put in some simple text that would be similar. By carefully adjusting the settings to match, you could end up with story lines and dimension references that look much the same. For the drawing output, you would end up with a good representation. One other thing that you cannot do is - and I think it's an omission in terms of ArchiCAD - this witness line here. There is no way to make the witness line a dashed line, and the story line here is dashed. So we may want to make this have no witness line. You can see it disappears. Or you could have it be a specific length. Then we can go to the line tool and pick a dashed line, perhaps something like this. So we would need to be sure we were using the same type of line settings. [0:39:52]

A little bit tedious, but once you figure it out, you can make these extra lines that might not be true story lines look like they are story lines. If there is no bullseye here, that becomes a little easier, you don't have to match that. So I think this is a good point to finish up my basic lesson. I want to thank you all for attending. I am going to switch gears to open it up for questions. But for those of you who are watching the recording, hopefully this has answered the main questions. Let's see if there are any questions that I have not covered or you are confused about. [0:40:40]

Ray S. says, "It has clarified many tools along the way that I have struggled with." Excellent. Scott N. writes, "Would you consider today's lesson to be week 18 part 3 as part of the overall Best Practices course?" Yes. That was my intention to make this the lesson that would fit in for week 18 part 3 on Split Levels. Of course, if there is anything that I left out because I did it on the fly, I will be happy to either answer it by email or if there are some questions here that you would like me to demonstrate, I am open to anything that you type in. [0:41:22]

We have a lot of people on the line right now. This is going to stay focused on split levels today. Don't ask me a question that is a coaching call question, because we actually have a coaching call in a couple of hours for any of you who have more general questions. But if it's something about split levels that you have been puzzled about or just I didn't demonstrate, please feel free to type it in. I am looking to see if there are any comments. I am also interested in your feedback. Was this generally pretty clear? Did you learn some new things? Was it worth your time to join me today? [0:42:01]



I see a note started by Craig V. saying, "Showing openings and doors on lower landings?" Okay, I will take a look at that. Joe A. asked, "I missed where the Split tool was." So let's look at the Split tool. Let's go back here. When we have any element selected, if I select a wall, there is an option here that is the Split command. If I click two points, it will give me the option to break up this wall into two pieces. I then get an eyeball. When I click on that, it will leave that part selected. Now you can see this is two walls. If I were to drag this wall out, the wall is square here; it's not cut on an angle. It was cut along this reference line at the point I intersected here. [0:43:03]

Now let me undo it. If I have multiple elements selected like this, and I go and do the split here, (this is what I did earlier), I was able to then have these selected here. Just to demonstrate, it's very sensitive. If I were to do the split along here, you can see only this one was split. I didn't split that one because my line did not extend to that. If I were to take these elements and split them in an odd way, now it split these two, but obviously not that. So the split hatchet will work that way. Now if you happen to have an element drawn there, let's say that it could even be a 2D element like this fill, now if I select these elements and use the split, I can actually go along the edge. [0:44:07]

You can see the Mercedes symbol. When I click, it will allow me to use that particular line in space as the splitting element. You don't have to draw the line, you can also hover over an edge and it will use that. That hopefully answers Joe's question there. Craig V. asked, "Getting stair openings that start on a lower level that continue into the level above." Okay. So let me take a look at that. Scott N. says, "Good tips here, as I just did a split level project and struggled a bit with what to put on separate stories. The use of relative floor plan ranges would have been clearer than what I did." [0:44:49]

Ken B. says, "Getting stairs to appear like normal U.S. conventions seems challenging. For example, getting the direction arrows up and down; getting directions correct is difficult." Okay. Ken A. says, "This is a better way to present the lessons." Thank you. Joe A. thanks me for explaining the split one. Steve N. says, "I have a situation where I have two splits, four levels, how would you handle the story assignments?" Okay. Well let's take some of these questions. This is exactly what I wanted is extending what I have done in the simple case to some other things that I have left out. [0:45:29]

First question that I will deal with is about the openings that start on a lower level that continue into the level above. So how would we demonstrate this? I am just going to draw a new construction here. Go to the first floor plan and draw a box here on the first floor. We'll take these elements and they go from zero to 15. They are the full height. Let's go up to the second floor and show this as a trace reference, and draw some more walls up here. Let's say that we had a stair. [0:46:29]

Let's take this and eyedrop it and place it and rotate this around. Actually, we don't want that, we want a u-shaped stair which would be a different situation. I will take u-shaped stair and drop that in here. Let's drag this here. I will take this marquee and look in 3D. I am looking at a different scenario here. Actually, because of the story structure, this is not going to give me the right solution here. Let's create a



new project for this. When you have elements that straddle two stories, there are options to make elements show on more than one story. [0:48:06]

We did that in the case of the wall of the staircase itself. If we have walls that go multiple stories, we can choose how they are going to be drawn as well. Now in general, that's not the issue we are going to focus on. The staircase can show up on both stories. But if we did have a window that was showing up on the landing and showing up part of this one story and also stuck into the story above, I will show you two different solutions for that, as soon as we get this other copy of ArchiCAD open here. [0:49:00]

Maybe I should have added another story above this, but it will be up in just a moment here. We are going to go and create a simple situation where I have a set of walls here. I will go to the second floor and show this as a trace reference and draw another set there. Then go to the stair tool here and take a u-shaped stair and pop that in and drag this into position. So now if I take that marquee like this, we will see that we have - oops, I put the stair on the wrong story. Cut this here and go down a story by using the shortcut Command+down arrow or Ctrl+down arrow. You can see I am now on the lower story. [0:50:16]

I will paste in here and get that marquee and show it. Let's take off these railings, because they are obviously not appropriate. So we will turn off the railings for now. I will go to the Window tool. Say I have a window here. We will go to 3D here, and that window is too low. Let's take this up, elevate it to some level here. You will notice that the window disappeared partly, because this is the lower wall and lives in that. But the upper wall does not have a hole for it. So here is the old way that I would use to fix it, and it still works, then I will show you a way that I think is simpler. [0:51:24]

If I take this window and eyedrop it here, and go up to the next story, I want to be able to place another window in exactly the same place. Notice that the trace and reference here is a little bit hard to read. First of all, it's grey. Let me make it red so we can see it better. Also, let's make the fills transparent by clicking on this button. Now I can see the window down below. I can put in a new window on this story here. When I do that, I now have two windows. I don't really want two windows; I just want this window to be dragged down into position. I will press down on this and say I want to drag it down until it snaps into position. [0:52:20]

So now you can see it looks like one window in the stairwell. If I go to the floor plan, we'll see on both the upper and the lower story, we have the window showing. They look the same. We do have a bit of an issue in the window schedule. If I turn off 'show uniform items as a single entry', we'll see that there are two different windows, because obviously one was placed on each story. How do we make sure that we don't have extra windows but still get it to show up properly in 3D and plan views? [0:53:06]

In the upper story, I will select this window. I am on the upper story here. I will go to the Edit menu, Reshape, Explode into Current View. What that does, if I say 'only keep the drawing primitives', in the



case of exploding a window, we have a very special way of dealing with it. When I say OK, it looks very similar. We have a slight different in the way the symbol is. But if I turn off the trace and reference, you will see it still looks like a window is there. If I select it, there is an opening. But what is it? It's a simple window opening. [0:53:51]

Let me show you in 3D, it still looks the same here, but this simple window opening, if I select it and drag it off to the side, you see that in 3D it's actually just a cutout. So I will undo that. So the cutout here, after undoing it, it went back into place, it's allowing the lower window to come out. It cut a hole, allowing that lower window to show. And on the floor plan, this is just linework. These are just individual pieces of line that were from the original window symbol. So it's a reasonably good solution. [0:54:39]

It means that in the window schedule, we actually have two windows here, but we can easily go and exclude. In terms of criteria, I will say, 'Library part is not...' and pick 'Simple window opening'. This is something that they changed the name of it. It used to be called 'Empty window', now it's called 'Simple window opening'. I say I want to exclude it, if it's just a simple cutout. Say OK. Now you can see here there is only one window, one cutout is listed. So that is a solution that works nicely in most ways. It's just a little bit complicated. [0:55:35]

You create a duplicate window in the upper story, drag it down into position in terms of 3D and explode it. You end up with an empty opening and the graphics. Now onto the simpler solution. If we were to take this wall off on the second floor. Let's remove the marquee and look in 3D. Say 'Show all in 3D'. Let's take this wall up to make sure the stretch one is working. Sometimes you have to click that pet palette again. Whoops, it looks like I had the window selected as well. Let's make sure I am only affecting the wall. [0:56:33]

Now this wall is showing here in 3D. If I go back to the floor plan, you'll notice it's not showing here. That is because this element, which is now very tall at 20', is set to be only showing on the home story. I will change that to show on all relevant stories. Now it's showing up there. If I go to the upper floor, it will show. Now I can go into the window on the lower story. I will eyedrop it and pop it in here. Now this window is showing the same in 3D. It's the same type of window we had on the other side. It's showing on the ground floor. If I got to the upper story, it's showing on the second floor. [0:57:28]

You can see what I did there. So this is a single window that is showing up on both stories, because this is one wall, and it's basically one window in one wall. So it works very nicely. Let's say that we had a doorway on the ground floor here. when I go up to the second floor, you'll notice it's not showing that doorway because the floor plan cut plane for whatever view we have - let's just go to this here - says that it should only go down to the base of the current story. So it's not going to show the door that is on the story below the one we are looking at. [0:58:18]



The floor plan cut plan in this case is showing only what's on this story, but of course the window in this case sticks up into that story. So it does work. That is the preferred way in general to have a single wall with a single window here. But another workable way that you can do it is to have an upper wall and a lower wall cut out. It looks like there is a slight difference here. Maybe this empty opening is not quite big enough. I may have to just stretch it out to allow the casing to go up. So there may be some issue there. [0:59:13]

If I select this, and go to Solid Element Operations and make it the target, and take the window and make it the operator - you cannot use the window as an operator. So let's select the wall as an operator and do subtraction and execute. It still didn't work. We may have to play around with that in terms of whatever this extra space is here for the casing. I am not quite sure what we are looking at next to his window here, but there is a little difference there that would have to be tweaked. [1:00:00]

If I select this here, can I select this window opening here? This is the same. This is the actual full window. I will look at that. Maybe if we did an elevation from the east, and look at that. This is the simple opening. What if I were to stretch this sideways to there, and stretch it sideways to here? Okay, now if we go to 3D, it's a little better. I am not quite sure what we might do there. It looks a bit odd. That is why I would recommend you using, where possible, the single wall with a single window. [1:01:07]

Let's see, I see another comment from Mark P., "Good presentation, I like this format. Do you typically cut holes in slabs for stairs?" Yes. Also, "Can you go more into depth with creating stairs at a later time?" Yes. I will definitely have a lesson on stairs. Steve N. asked, "Is the casing selected for the upper window?" Well, since it was just a cutout for the upper window, it probably doesn't have a casing option. Remember, I just exploded the upper window, so it's not two windows. Anyway, hopefully that answers the question from Craig, openings that start on a lower level that continue into the level above. So Craig, let me know if you have any further questions. [1:01:55]

I know Ken B. mentioned something about stairs being challenging, and I will do a lesson on stairs to go into some of those things. Steve N. you wrote, "I have a situation where I have two splits, four levels, how would you handle the story assignments?" I am not quite sure what you mean. So you have two stories each with a split, I am guessing that is what you mean. So I would handle the story assignments in a similar way. Basically, I will go back to the lower story here. This wall is on the ground floor. So is this one, it's on the ground floor. [1:02:54]

They are assigned to the same story. If we went up above and had a similar situation, then I would put them both there. So a key thing is that when you are putting elements on a particular story, you are essentially assigning them that as their home. In general, they will show up on that home story on a drawing. Having them on that story allows them to be manipulated and displayed in the same context.



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ArchiCAD has gotten more sophisticated, and things can be shown on multiple stories. You can even arbitrarily reassign an element from one story to another for different or complex purposes. [1:03:41]

Here is the bottom line. If you would like to have a floor plan that says first floor plan or ground floor plan, and it contains multiple levels on it, draw those elements on the same story in ArchiCAD. If you would like to have them show up on the same plan, draw them on the same story. On the other hand, if you are going to have a mezzanine story, some type of mezzanine plan as a separate drawing, then in some cases it might be justified to create a separate story for that. [1:04:19]

That mezzanine would never show the rest of the story that is partially above. So I think there are lots of ways that you can work it, but that would be my primary consideration. Do you want to show them on the same floor plan? If so, draw them on the same story in ArchiCAD. So let's see if there are any final questions. I think we are good to finish up. Thank you all for attending and for watching this. If you have any follow-up questions, please add them to the page down below. This has been Eric Bobrow. Thanks for watching.

[END OF AUDIO 1:05:06]