BEST PRACTICES COURSE – ArchiCAD 17 - Composite Slabs with Different Finishes in ArchiCAD 17

Hello, this is Eric Bobrow. In this ArchiCAD video tutorial, I will show you how to work with composite slabs in ArchiCAD 17 when you have multiple different finished floors in a building. I will start out by drawing a basic series of walls here. I'm creating a basic building outline with exterior walls. I will switch to interior walls and work with an interior shape. We'll put in a couple of rooms here and one division over on this side. [0:00:50]

We'll put in a couple of doors, and a third one over here, and take a look in 3D. So we have a basic building. I will put a slab for the floor underneath it. We'll work with one that has a carpet on top of a subfloor of plywood with 2x12 framing. In this case, it has gypsum board for a ceiling below. So I will work with that. I will use the magic wand, hold down the space bar, and click. You'll see how it automatically traces that entire outline for the building. [0:01:30]

Let's take a section through this and see what we've got. If we zoom in a little bit on this, we'll see that we have something just like the way we would have worked in ArchiCAD 16 or earlier, where the walls are sitting on top of the entire slab, even though the slab has a soft surface - in this case, carpet - on the top. So the walls are not coming down to the structural floor, which of course is not the way we would build it. We would take these walls and they would be supported on the structural floor. So there are two different ways that you can make this adjustment. [0:02:21]

One is you can actually move all the walls down to the core of that floor. So I will go into the Wall tool, select all the walls with Command+A or CTRL+A, and then Reshape, Adjust Elements to Slabs. This is a new command in ArchiCAD 17. It allows me to adjust above, below, or both to a certain part of the slab that these elements are sitting near. I will put it down to the core top. [0:02:51]

This is the top of the structural core of the slab. I will say OK, and it says that nine of nine elements were successfully adjusted. If I go back to that section, we'll see that the wall has adjusted. In fact, the settings say it is now down at -1 inch because these top surfaces were 1". If I zoom back out here, we will see the same thing happened with this one. That's an extra line here; it's a story level line. I will say 'Hide the story levels in the section', so it's a little easier to see what's going on. [0:03:31]

Now, let's go and look at another way that we could do this. I'm going to undo the change here. All of these walls are back where we had them. I will go into the section here, and you can see where they are. And let's hide that story line again, because I had undone that. Now let's select the slab. And instead of having the slab reference at zero, referring to the top of the slab - which was how it always was in ArchiCAD 16 and earlier - we now have a choice of referring to the top of the core or the bottom of the core. Let's switch it to the core top. [0:04:19]

You can see how that instantly adjusts the slab so that it's zero. In this case its reference plane is at the story line. The walls are actually still sitting now at zero, but they are protruding through the finished floor as we would hope. We were going to work on getting the wall down. In fact, we can take the actual exterior walls, and extend this or adjust this element to the slab. And we'll take it, instead of the core top, we will take it to the core bottom or the total bottom. [0:04:58]

The main thing is that it has to match whatever is coming up from below, whatever foundation wall or lower wall we have. Now here, you can see how it has extended the outside veneer and some of the structural components down, leaving this framing on top of the subfloor. So this is how we would adjust that to get a better result. Now what happens when we want to make the slab here have two or more different surfaces on the top of the finished floors? Let's go ahead and split it in two using the Split command here. [0:05:40]

I will click on a point and then click another point. This is a new option in ArchiCAD 17 where we see the cutting plane before we decide. You can see how I can move this around and I'm lining up on the Y axis and then choosing to leave this part selected. So we could have split it on the floor plan using the Split command, but it's fun to try this in 3D. Now I could change this element here to a different composite, which had a different composition. But as a shortcut, just to demonstrate one of the options here, I'm going to instead use the 'Override Surfaces'. [0:06:21]

So the surfaces right now are based on the building materials. Since this is made out of carpet on top of plywood, the top surface looks like carpet. I could say I'd like to override this and change it to something else. Perhaps we want to have some type of a flooring here, here's some maple floors. If I zoom in on it, we can see how that's done. So this is a perfectly legitimate way of working. If we go back to the floor plan, we are seeing the line of division, which may be appropriate or you may want to hide that on a partition plan. [0:07:01]

If we go back to that section, we'll see that there is no division between this. If I select it, you can see where it stops, but we're not actually seeing a division between these two pieces. ArchiCAD is blending them together. So this is one very legitimate way of doing it, but I've heard from many architects that they prefer to keep the structural floor intact and then work with finished floor slabs separately. So let's take a look at how we would do that. Let me just undo back. So now this is all back to a single structural slab. And let's go to a section and select it. We'll use a new command here in ArchiCAD 17, 'Edit Selected Composite'. [0:07:50]

When I do that, it takes whatever we have selected and opens up the composite dialogue and allows us to adjust it, or in this case, I'm going to duplicate it. I'm going to create a version that does not have carpet; it just starts with plywood subfloor going on down like this. I've just created it. I'm going to go ahead and remove the carpet and the rubber support for the carpet, leaving the structural floor with no finished floor. I'll say OK. Now this didn't change, because I just created a new definition, but I haven't

changed this particular one to use it. So now I will go ahead and say that I would like to change it to do this one. And you can see how instantly it adjusts. [0:08:35]

If we go back to 3D, we will see that we're looking at the subfloor. So now let's go and create a slab and do it just as a simple volume with the carpet. We'll make it a reasonable thickness here. In this case, we'll take, because I've got it as a single component, we have top or bottom as choices for the reference plane. I will choose bottom so that the zero that I'm drawing will be the base of it. It will go up from there. This is something we didn't have an option to do before ArchiCAD 17. I will draw an arbitrary rectangle here and then trim out the extra piece using this Boolean minus. We'll use the magic wand, and now you can see how it's trimmed out neatly. [0:09:23]

I'll go now and create another similar one with wood flooring. I'll go and take that. Now if we look in 3D, we're going to see that we have the carpet on one side and wood flooring on the other. If we were to take our section, we'll see this is looking good. We can see the change in the composition. I've done just a simple same thickness on both of them, and the wall is resting on the subfloor. Even though this is a single element, it's being cut through nicely. Now when I go to 3D, I see something a little bit odd. This is what brought the attention of an architect named Eric Gedne, and he asked me about this question. [0:10:13]

He says, "Why am I seeing the subfloor here?" It's a little subtle, because it's the same color. But look what's going on here, it's the same thing. This is the subfloor that's being exposed. And if I select this carpet here, you can see it's being trimmed all the way across, the carpet is not flowing the way it should. Now I looked at this and decided that maybe one of the issues is that this is a simple slab. It's not a composite. So let's create a composite that's just one component, just the carpet and see whether that fixes the problem. So I'll go to the Options, Element Attributes, Composites. I'll create a new composite, and we'll call it "Carpet". [0:10:58]

I will change this from air space here to the carpet. I'll make it the same thickness, the 1". We'll just select this and change it from the single component to the composite and choose the one that's just carpet. Now it looks similar here, but it did not solve the problem. So let's select this and make it not just a single element but a composite that had two elements. So let's insert a skin, another one of the carpet, and do them each at 1/2" so that they total the same thickness. What happens there? There's no change. [0:11:47]

I just changed the definition of this, and it didn't actually adjust it. Well, I didn't give up. This is core, where it should be finished. Carpet is a finished material. Let's go to this carpet and make it finished. It wouldn't let me change it. I'll try other. Wouldn't let me change it. ArchiCAD is insisting that at least one element be considered the core. So let's see what this does. I say OK, and look at that. Solved the problem. As long as there's a finished element, it will pass through this doorway. [0:12:26]

But I did look a little further and took a section through here. Then when I looked at it, I saw something a little bit odd. That is, here's a doorway and when I zoom in you can see that the top part of the carpet passes through, but the bottom part which was the core does not; it's being trimmed. And we are getting this extra line. Now if we were to do carpet on top of rubber, the line wouldn't matter so much. But I don't want this to have this funny gap. That's really odd. [0:12:56]

So I thought then, well what if I can trick it. So I'll go to 'Edit Selected Composite', and let's insert another skin here. This bottom skin, let's make it zero. I held my breath, and guess what, it didn't complain. It allowed it to be zero. So this could be carpet or I found out it didn't matter, you can make it air space or anything you want. It could be the core and then carpet on top. Let's make it, instead of carpet, let's do the rubber here, because that's actually what would be more appropriate. So now we have 1/2" of rubber, 1/2" of carpet on top of air space core. We could make this 'other' and this one 'finished'. [0:13:37]

We have one core that is at zero. Say OK, and now we have the rubber passing through, the carpet passing through, and it looks much better. So let's do that for the wood. If I go to the composites, let's create a new one. Let's just call this 'wood flooring' here. And let's make this 1" here. And we will add an extra skin, which I will make as air space and zero. We'll make this the core and make this the finish. So now we have the wood flooring. So we only have one active skin and one extra one. Let's see how that works. We'll select this and change it to instead of the single element wood flooring, let's change it to composite here. [0:14:45]

That has a similar name. It would probably be better for me not to use the same name just to avoid confusion. Now let's take a look in 3D, and you can see that is fixed here. It's looking beautiful there. Let's look at that section, section one here. We can see that the section one here is looking good. This is the wood flooring here. Let's actually now take a section through the doorway and see what we've got. The wood is passing through the doorway. We do have something a little odd here and that is that the door actually goes down to the subfloor. The door panel that swings is also going down. [0:15:39]

So in fact, this really has to be raised up. So what I'm going to do is take this and raise the base up 1". And you can see how this takes the door frame and the jam and the panel all the way up, and now we have a nice, clean result here. now let's just look at what's happening in relationship to this. You can see if I undo, it goes back down. If I redo, it comes back up. So we just raised it up an inch. Now we can potentially change the size here, but that would show up in the schedule. So this is something that you have to decide what the most appropriate thing is. Clearly what goes into the schedule is an important part of your door definition, so having this raised up this extra inch here may be the appropriate way to do it. [0:16:35]

At this point, we have the composition change between the floors outside of the rooms. Now a common thing to do would be to say, instead of running this all the way to the end and having ArchiCAD

trim it based on priorities, let's go and actually make this more accurate. So we'll go and use the pet palette and shrink this in to the face of the drywall. In this case, the carpet may go out to the drywall. Then we'll take this face here and we'll extend this to the face of the drywall. Now on the other hand, the wood perhaps we want to come in with the option here to the face of framing, and then have the drywall sitting on top of it. Then let's go ahead and take this to the face of framing on this side. [0:17:34]

So this one is coming to the face of framing and this one is coming to the drywall. You can choose how you want to model it, but that's what I'm going to do here. We'll take a look at the section. Here in the section, we are seeing the doorway. The door is sitting on top, and we have a gap here. We may actually have a little bit of an issue with needing a threshold, because after all, there is a transition, so we probably would want to have some sort of a threshold. Let's take a look in 3D, and yes, we are seeing this gap. The carpet stops and we have the wood floor stopping there. We might want to run the wood floor over, but let's just see how we would put in a threshold. [0:18:17]

The door is raised up that extra inch to be on top, and we can go in here and set up a threshold. In the threshold settings, we can then say that we want it to be whatever thickness, 1/2", 1/4", whatever we want. Actually let's just do it at the ½" so it's a strong enough piece to cover that. Say OK. And you can see it has a threshold. And you can choose what material you want it to be. It's now covering that up nicely. Go back to that section, and we have a nice threshold sitting here. [0:18:56]

Now one final tweak is that the wood here, even though we ran it to the framing, is being cut by the gypsum board, by the wallboard. In order to adjust that I'm going to select both of these elements and then go to the Options, Element Attributes, Building Materials. We will see that the building materials in use, in this case the flooring, the gypsum board, and the other ones that are for framing and sheathing of the wall, are highlighted. Now the wood flooring was stopping when it came to the gypsum board because it had a lower priority. [0:19:36]

I can drag this down. And now by doing that, it actually changed the priority here for the wood flooring up to a certain number, which is higher than the gypsum board. It matched it and it is considered higher here. So at this point, by adjusting that and saying OK, in this particular project, the wood flooring is now taking priority over the drywall. So I have control over that. If I scroll over to this other place, we'll see again that it's coming in. in fact, we might see this better with the first section that we drew where the wood flooring is now coming underneath the drywall. [0:20:24]

You have your choice if you want to possibly make the carpet sit under there, that's fine, or you can tell it that you want it to stop and have the drywall put in first and then put this in afterward. So at this point, I think we have a really good solution for having a single structural slab here, but separate finished slabs divided either by room or if we go up here in 3D, we can see that we've got the option to have an

entire area. For example this carpet can be filled in and neatly trimmed by the walls as they go down to sit on the subfloor. [0:21:17]

So there are other things that we might want to do here on the outside in terms of making these walls. Remember I was telling those walls to adjust down. I can do this again and select them with the structural slab and say Reshape, Adjust Elements to Slabs, and go to the bottom. And you'll see that they now extend down there. If we go to that section here and go to the other side, you can see the result of what I just did there. So whether you do that in 3D, in section, or in plan, you have that adjust command and it will give you the opportunity to move the wall base or top in conjunction or in connection with the slabs and give you a nice, clean result. [0:22:09]

The slab thinks of itself going out here, but it's being interrupted by the higher priority skins of that wall. So we get a nice, clean section and we get a nice 3D view, and we get a good floor plan representation as well. So I hope you enjoyed this lesson and that it answered some of the questions that you might have had about working with composite slabs and having different finished floors. This is been Eric Bobrow. Please add your comments and questions to the page down below. Thanks for watching.

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