BEST PRACTICES COACHING CALL – Overview of New Features and Interface of AC17 - July 10th, 2013

This is the ArchiCAD coaching program call for July 10, 2013. Eric Bobrow here in San Rafael, California; it's a beautiful summer day. We've already gone through the introductions. There are people on the call from as far away as Australia, where it's probably 6 a.m. or earlier, and also some in Europe, Iceland, Panama etc. And of course our usual collection of Americans and Canadians. [0:00:33]

So ArchiCAD 17 has been out for just a few weeks and I've started to explore it. Let me give you my take on it. First of all, I'll just give you an overall description of what I see is the most important things to know about. Then I will demonstrate a few of the things in the interface that are the most confusing or interesting. Then we'll look at sample project migration, so taking a project forward from the previous version of ArchiCAD. [0:01:03]

I do have a few questions that were sent in ahead of time by a handful of you, and I will be open to your questions during the session. If you haven't been on calls before, there is a little orange button with a white arrow that you can click on that will open and close your GoToWebinar control palette. You can type in questions or comments there; and I will certainly scan for questions and look at those as I'm able to during the session. [0:01:31]

So ArchiCAD 17, what's the big news about it? Well, when you first look at it, at first glance here in ArchiCAD 17, it looks the same. This is the U.S. template, so it has the U.S. elevation markers and symbols. If you were using it in another country, you might have different symbols for it. But basically you're going to see a blank screen with a few elevation markers and the standard tools. There are no new tools directly added in ArchiCAD 17. [0:02:02]

But as soon as you look at the info box, you will see that there are some changes here. For example, I'm in the wall tool. Instead of left, right or center controls, we now have outside, inside or center for the face or for the core. And that's assuming that we have a composite wall that has multiple skins and therefore a core and sheathing or finish. [0:02:29]

We'll also see that there's a change here where you can choose between simple walls, composite walls or complex profiles. This was rather different looking in previous versions and it can be confusing because right now with it set for composites, you can see that they are all composites, there are no simple walls available. But if I switch to the simple ones, then we are going to see something quite different. And in fact, this introduces the concept that is one of the key developments in ArchiCAD 17, the concept of building materials. [0:03:09]

Now as designers and architects, you are very familiar with the idea of building materials. Some things are structurally strong and other things are used for finish. Some things will have priority over others when you're drawing walls or other elements and they meet. You want the core typically to run from one

wall and connect to the core of another wall, but actually even higher than that in terms of priority would be waterproofing. And certain other structural relationships can take priority. [0:03:45]

So what Graphisoft has done here is they've introduced the concept of building materials. In previous versions of ArchiCAD up through 16, the name of the word "material" was used to describe the surface appearance of elements. So in other words, what material is it? It's a paint color. Or it looks like stone, or it looks like wood or something like that. It wasn't necessarily what it was made from. You could have something made of wood that was painted white or you could in theory have something that was not made of wood but had wood paneling, paint on it or wallpaper; things like that. [0:04:28]

Now we have the concept of building materials and separately we have the concept of surfaces. Now surfaces would be actually exactly the same as materials in previous versions. It's the surface appearance. And before, since a wall or a slab or an object - you were able to choose one or more materials or surfaces. (It's going to be painted white or blue or whatever on different parts). Now, because we have the concept of the building material, (is it made of concrete or is it made of drywall or gypsum board or something like that), there would be a native or natural surface color for each building material. [0:05:16]

And you can just rely on that in many cases. But you can also override the surface. So you can say that a wall, which in some cases let's say is a wood framed wall and it has gypsum board or plaster on both sides, you can say that on one side I want to override it and you can make it have a surface appearance. And you'll notice that when I press down here we have all of the various paint colors and things that look like stone or brick or things like that. So these surfaces here are actually the materials that you were used to in previous versions. [0:05:54]

If I uncheck this, then it will use the surface related to the building material. So essentially, what am I building this from? So this concept extends into a lot of different areas. It helps to make intersections between components, walls on the floor plan and walls meeting slabs or roofs in 3D or sections actually clean up to each other more precisely. You can get clean sections or much more detailed sections directly from the model because this is a fairly sophisticated system. It's not totally complete, but it's definitely a sophisticated system that handles a lot conditions very elegantly. [0:06:42]

So this is a key part of ArchiCAD 17, it means that some of these interface elements look quite different. Once you are introduced to them, it's not really hard to figure out what to do. But at first glance, I had one person say because ArchiCAD 17 opened up like this, he said, "I can't make walls out of simple materials anymore, they're only composites." And of course I looked at that and went, "Oh, here's what you have to do." [0:07:10]

Now in addition to having some different interface settings like that and the sections - which we'll take a look at, seeing how it cleans up - it also introduces the ability to more easily get energy analysis from the building. I have not reviewed energy analysis, the Eco Designer tools in 17. In fact, I haven't looked at it for quite a while. I did some initial study of it back when Eco Designer was first introduced maybe in ArchiCAD 13. And from what I can tell, it's developed further, but it's still the same concept which is you

have a model and you tell ArchiCAD information about how to calculate the different materials and it will then give you some information about energy. [0:07:59]

What's different now is that they actually, because they've introduced this whole concept of building materials, it's much easier to have an accurate analysis. They've also increased the sophistication. So for example, in the past they would ask you if a side of the building was shaded or partially shaded or exposed, and it would calculate based on some rules of thumb. Now it actually will look at neighboring buildings or even trees or foliage to see how much shading there is on any particular element like a window, which of course if you have a tree shading a window, less solar radiation or heat gain will occur than if you don't have a tree shading that particular window. [0:08:48]

So it's much more sophisticated and apparently it handles multiple thermal blocks. I don't really understand that, other than just the obvious implication which is that there are different properties for components related to their thermal performance. That would be both resistance of how insulated the wall is so it resists heat coming through as well as thermal - I'm not quite sure what the term is - a heatsink or elements that can potentially absorb heat and radiate it out or keep things cool because they are essentially becoming a negative heat sink. So I haven't really looked at this. I cannot talk in this call about those, but I did want to point this out. [0:09:44]

I will follow up in future sessions talking about Eco Designer and the things that you would probably want to know about to set up your project. The other thing that we have that I also have not explored so I won't be able to do much today with is BIMx. So if we go to the File menu and I say Save As, we are going to see from the floor plan that we have a variety of different file formats here just pretty much what we had before. That has not changed. But if we are in 3D, and of course I have nothing in the 3D model right now. But if I go to the File menu, Save As, we'll see that there is now BIMx is available. And this is included with all copies of ArchiCAD 17. [0:10:30]

So for those of you who don't know what BIMx is, BIM stands for building information modeling and X stands for explorer. And it is a way of sharing your 3D model for other people to explore. And that could be your clients, so you can send them something that shows them the design concept and they can walk through it and get a feel for it, give you some feedback based on what they see. It can also be for consultants, contractors, who then can understand perhaps the drawings and your concepts better than if they just had traditional DWG or other things. [0:11:08]

And you can also potentially make this available for prospective clients so that they can not only see images of your buildings, but they can actually walk through some of them in a way that otherwise would be hard. BIMx is now built into ArchiCAD 17. It used to be an add-on that you had to pay for. I think that they've also improved some of their performance things that it does. It is available in terms of a player for someone to view the BIMx file without any license. In other words, when you send it to a client, they don't have to have ArchiCAD. It's a self-contained file. It will play apparently on Mac and Windows. And also there are players for iOS, so for iPads and Android. So they have support now for all of the mobile devices that you would hope for. [0:12:07]

So BIMx, a very important improvement in ArchiCAD that it's included with every license and apparently some nice performance improvements as well. So those are I would say the key things that I think about when I think of ArchiCAD 17 improvements. The integration of building materials and the whole system of creating higher-quality construction documents; particularly sections that are generated automatically by the program. The Eco Designer much improved, and BIMx included with every license of ArchiCAD. [0:12:51]

Now let's take a look at the basic change here as we just start to build a project. So I will do it again, I will say new, and say that I'm going to use a template. Now by the way, in the U.S. there is a residential template and a commercial template. In the international version that I downloaded there was only one template, so they did not separate it. Now when I looked at it, there were some subtle differences in the residential vs. commercial in the view map and in the layout book. So essentially what I noticed was in the commercial template there were more views for consultants and some more types of drawings that you would typically do for larger buildings. [0:13:41]

And then the layout book also was more extensive. But other than that the layers are the same. It appeared that the building materials were the same. It was not a huge difference, but if you're in the U.S you will have both options here. In terms of templates, MasterTemplate, which I'm sure most or all of you know about and many of you do own, I've been working with Scott Boehmer, the architect that co-created the template with me back in 2007. And what we decided this year was to essentially rebuild MasterTemplate from scratch or essentially from the standard Graphisoft template. And that's been a lot of work. [0:14:30]

The reason we did that is twofold. One is the new building materials; really if we had taken the previous template forward would have required a lot of rework to make sure that they fit in properly. Rather than rework if, we decided to start from Graphisoft's template and essentially recreate our version of the template with it. So it's going to be a much cleaner version. And that is the other reason is that apparently here and there we've got some feedback from Graphisoft through clients saying that the fact that we migrated MasterTemplate just like any project from one version of ArchiCAD to another to another, that there might be some issues with it. [0:15:14]

Frankly I don't believe that there probably were any significant issues in performance, but just to be sure, this seems like the best opportunity to just rebuild it. So I'm in the process of doing that and hopefully next week we'll have a MasterTemplate out for the U.S. market. And the international version probably the week after. Of course that's my target. Okay, so the residential template here, I'm just going to say New and this will give us the same image that we had a minute ago. I will just start to draw right out of the box. Wall tool, pick a box of walls like this, go and say that I'd like to do some interior walls. And switch the wall type. [0:16:03]

Now you'll notice that the walls that I first drew out of the box say "Wall Extr Generic". So they're exterior walls, that is what is set up there. I haven't looked at the international version, but I'm sure there is obviously some setup in the template for whatever you draw when you first open it up. You'll

notice that there's a collection of composites. I'm going to pick one of the ones that is for interior - 2x4 wood frame wall here. And I will just draw a couple of walls across like that. [0:16:32]

When we zoom in on this, you'll see that the exterior wall, the generic one actually has only two skins, an exterior and a core. And the interior does have drywall or gypsum board on both sides. If we go to 3D we are going to see that this is showing in the same way. Now one thing you may notice right now is that we are seeing the skins here and 3D, just like we saw on the floor plan. In earlier versions of ArchiCAD, you would not see that. You would just see a single surface color there. [0:17:15]

And if we zoom in we will see the same sort of cleanup of the skins that we just had here. If I go and put a slab underneath this and use the default and click at the corner and go to 3D we will see that the slab comes in. And again, just like the wall, we're seeing the skins of the slab actually delineated at the outside face, which is a little bit odd, because in fact we're seeing the carpet sticking through here. If I zoom out you'll understand visually what's going on that there's carpet on here. [0:18:05]

Let me take a section through this. Actually, let's take a marquee through this and I will say show just the selection in 3D. And now when I'm looking like this we can't see the detail on the cutaway, but we can turn that on. And in fact, this is a pretty interesting option. Under the View menu, Elements in 3D View, there's a choice to filter and cut elements in 3D. And one of the cool things they've got now is the ability to have 3D cutting planes in a much more visual interactive and sophisticated fashion than ever before. [0:18:50]

When we do use the marquee like I did, it is using the same controls for cutting elements in terms of this surface. And for whatever reason Graphisoft set up in the standard template that it would use a black dark paint color here on the cut surfaces. It certainly highlights what is cut and what is natural. And of course we could pick red or something like that. And now you'll see that it becomes red. That can certainly be an attractive way to present a drawing. But an interesting one and particularly useful for when you are troubleshooting or trying to work out how the intersections work is to say use element attributes for the cut surface display. [0:19:40]

And as soon as I zoom in or out and redraw you can see we are getting the same type of skin definition for the walls. And if we zoom in here, you can see the carpet is sticking all the way over here. Now at first you may say, "Well, I thought ArchiCAD 17 was supposed to clean that up." Certainly you don't have the carpet running under the wall. But what you have to realize is that the wall needs to extend down to the core of the slab. Then ArchiCAD will do the cleanup. [0:20:16]

So how does that work? Well, you can do it in a variety of ways, but one very important one to know about is that you can select a wall like this, and you can use the Edit, Reshape, Adjust. Now many of you know that adjust is used on the floor plan to take one or more elements and extend or shorten them to meet another element. Now in 3D or section, this has now become available as an option in a very special way. When I take one or possibly multiple walls and say Adjust, and then I click on a slab, you will notice that the cursor as I am moving this around has sort of a rather odd appearance. [0:21:07]

It's showing that it's on a slab by indicating with the icon that it's going to try to adjust this wall to the slab. Now I will click, and as soon as I do that, it opens up a new dialog box that never existed before. And it says, "Adjust the selected elements to slabs." Now you can adjust above or below here. I'm not quite sure why we don't have access to the check boxes. It's going to do both of them in this case. There is nothing above, so it can't really do that but what is it going to adjust it to? [0:21:43]

Well, we could take the wall all the way down to the bottom of the slab. We could take it to the bottom of the core, the top of the core, or the top of the slab. It's currently sitting at the top of the slab, so that would do nothing. Let's try core top, where it will rest on top of the structural core of the slab. I click OK, and it then brings up a dialog box saying that in this case there is one element. I only had one wall selected, and it was successfully adjusted to the slabs. I say OK and you can see how it's moved down. And you can see how the wall now sticks down to the sheathing on top of the framing here, but it's cut through the surface material of the slab. [0:22:35]

Now let's take a section through this. We'll use the section tool here and I will do a similar section like this and we'll open that up. So we'll see when we look at this is that there at the wall is sitting as you would expect right there and the skins of the slab are doing the right thing. Now in this case, we could have done the same thing in previous versions if we actually had just used solid element operations because it basically just went down and cut through. But let's try this with this wall here. And let's say that we'd want to adjust it. [0:23:27]

By the way there's a keyboard shortcut for adjust. Its Command or Ctrl and a dash or minus. And I can then click on the slab and again do core top. And we can see how this can be done here in this view. Now in some cases, and we'll see this when we are doing wall to ceiling that the drywall can wrap around. In this case, the carpet might very well butt up against the drywall here, and so this is appropriate. But I want to point out that this is the basic way you are going to deal with it. Now you could take the wall and you could do the following: you could literally take this and use the option to stretch the top or bottom and move it down to the skin. [0:24:21]

And notice there's a sensitivity; you can see the black pencil to this skin. And that will actually give the same result in this case. However what's important to know, and I will sort of demonstrate this, I've just undone the one in the center. Let me put in a door in this here. So if I zoom in here and pop in a door like that, now we go back to the section. We can see the door; we are cutting through it here. If I take this wall and I stretch - actually let's take a look. If I select the door, the door as you all know it says basically it has a height reference, in this case "sill to story one". [0:25:21]

So basically the bottom of the door, its sill so to speak, is set at a certain height in relationship to the story reference line. Now it's possible that you may want to say sill to wall base. So basically that says that it's going to say associated with the bottom of the wall. So if you had it set there, this doesn't change its appearance here, but we now take the wall and actually select the wall as a whole. If I were to take this and use the stretch, if I take this down and snap this into position, what you'll see is that the door actually went down. [0:26:05]

You can see how the door has stuck down. So obviously the door wouldn't be able to open on top of the carpet. So I'm going to undo that. So instead I will go to the wall tool and select - oh, I see. We have to go perhaps to the outside face. You want to select the wall rather than the door. I will just select it from up here. [0:26:40]

If on the other hand I select this and I do the shortcut for adjust, so I did Command+dash, and I click on the slab and I say adjust this down to the core top, what you'll see is that the wall is down there. Now what we're going to see here is that the door stayed up and the carpet went through underneath the door in this case. If we go to the 3D view and we look, you can see that my adjusting of the wall, the wall went down but the door stayed up. You can see actually how it's raised up. So that is an important distinction here, and that is that when you use that adjust command it will make sure that the wall in this case is adjusted but the doors or windows are not. [0:27:51]

Now if the door or window was set to be - and by the way you can see it's now set to be 1 inch above the wall base. So it automatically just kept its position and changed this number. Now if we had left it at the default sill to story one, then it's going to be at zero because it's basically at that top of the finished floor which is the common way to designate the story reference height. So while this isn't an exhaustive study of all of this, it does give you some of the key components to how this cleans up. And I am going to show you a few other things about the cleanup in this simple context. And then I'll bring in and earlier project and migrate it and show how some of these things work in that context. [0:28:45]

Let me just see if there are any questions before I move on.

Q: Connor Moriarty in Ireland asks: Will you be doing a video on a step-by-step use of the Eco Designer and Eco Designer Star?

A: I am definitely planning on doing some coverage of the designer. I don't know about Eco Designer Star, which is the upgrade from Eco Designer that has not even been released yet. I think it's due out in the fall, and it will allow you to create reports that can be submitted for approval. In other words legally compliant reports on building energy analysis. And Graphisoft has apparently been working hard on that to allow you, if you were say in California which is the place that I know best, they have something called Title 24 which is regulations for energy efficiency and the need for buildings of certain types to submit a report basically saying that they comply. [0:29:58]

With Eco Designer Star, it is my understanding that an architect here in California would be able to create their own Title 24 report. Up to this point, you had to have someone who had special software to do that. And I'm sure that similar things are in different regions. I don't whether I'll cover Eco Designer Star since it is in an add-on or an extra cost purchase for ArchiCAD. As well as the fact that I'm just not as familiar with this area. So we'll see. But I will definitely show Eco Designer and teach how that works, the basic energy analysis that will is built into ArchiCAD 17. [0:30:41]

I have already mentioned that the ArchiCAD 17 template I'm hoping to get out maybe by next week for the U.S. version and the week after for the international.

Q: So Ken Brooks asked at one point: "Why are there two parallel materials shown?"

A: Actually, this is an interesting thing. Here is a wall that I've just selected. Remember this is an exterior wall. And you can see here are the materials in the little preview. Now one of the new commands that is really very useful is you can right click on this and say Edit selected composite. So what this does is it does the same thing. This is a bit oversized for our current screen. It does the same thing as going to the Options menu, Element Attributes and then picking composites and finding the one that matches that particular composite. [0:31:37]

So in other words, it's a shortcut for opening that dialog with the current one. Now if I make a change it will affect all ones. So for example, if I say insert - let me go down and expand this a little bit here. Let me go down here and say "Insert a skin". So that just added another one. And then let's change this from "generic interior material" to gypsum board. It's not going to be as thick as that. Let's make it maybe 5⁄8" or something, so just a little bit of cladding. I have now changed the definition of this particular wall. When I say OK, you're going to see this wall has now changed; it now has the extra piece. [0:32:37]

So that would affect all walls. In fact, if I zoom over, not the interior wall, but this other wall here you can see also has that added. So I've just changed the definition of the generic exterior wall that I started to draw with. [Looking at question panel] Okay, I already answered questions about MasterTemplate. There's a question from Pam Goode about migrating projects, the materials having some extra numbers at the end. I'm going to be showing that shortly. So hold on and I will get to that. So Chris Sparks asked, "When adjusting the slab to the core, does it stretch the wall or simply lower the full wall?" When I do the adjust, it's only affecting one side. In this case, the bottom and the top remained at the same height. [0:33:43]

So in that case, the wall was getting a little taller, but starting a little lower. Beverly says, "I noticed an adjust a slab choice in the pull down menu." That's interesting. So if I select this wall and connect - where is adjust to slab? I'm not seeing what you're seeing. Perhaps if you have this selected - let me go to the Edit menu, Reshape, Adjust. There's Adjust Elements to Slabs. Actually, this will do the same thing, it's just very specific to the walls and elements that can adjust to slabs. In fact, I believe if we had one or more walls and one or more slabs selected, that Reshape, Adjust Elements to Slabs basically won't ask which slabs to do it to, it will just take the slab that is in this group here. [0:343:48]

So Adjust or Adjust Elements to Slabs are quite similar. This one assumes that is what you're doing whereas adjust you could use on the floor plan. So if you're not familiar with adjust, if I were to say take this wall and use the Edit, Reshape, Adjust, it's basically saying, "Click on an arc or edge." You can see how it's pointing to the bottom. Or "Draw a line to adjust the selected elements to it." And if I go to the edge of this wall and click, then you can see it has adjusted this wall to meet the other wall. [0:35:22]

So adjust on the plan will give you that type of result. Let's see what happens when I zoom in here. For a minute this hadn't cleaned up, and now it's cleaned up very nicely in terms of the intersection as you'd expect. Okay, Beverly said she saw it in the Edit box. I'm not quite sure what you mean by the edit box. Okay, Adrienne Fedorivich says, "Would you be able to change the surface on the same slab from one

room to another, for example carpet in one room and hardwood in another room but on the same slab?" [0:35:57]

I don't believe that you can do that because the slab is a single element in this case. What you would need to do is create separate pieces of slab. So let's just take a look at that, because that is certainly an important thing. Let's say that this room was going to be a different surface than the rest. What I might do is - there may be different ways to do this, but I will do one. I am going to drag a copy of this right on top of itself. So basically I now have two slabs there. Actually, let's not do that, let's undo that. So there's only one element here. I'm going to go and say cut a hole using the Boolean subtraction. [0:36:51]

This is used for creating a polygon cutout of a polygon outline. So we have a closed shape, and I'm now going to cut out a piece of it. And you can either cut off a corner or a part of it or you can cut a hole in the middle. And if I have the rectangular creation and I zoom in, let's say it's going to be going to the wallboard here or to the drywall. So I'll just draw a box like this. And if I zoom out enough to do this here, now you can see how the element that I have selected is now missing that space. If I go back to 3D, we're going to see that that particular room now has nothing there. [0:37:40]

So let me go now and eyedrop this slab. Now I have the slab tool set up and what I'm going to do is change the top surface here. This says "by building material" so that slab actually had a carpet on top of a certain color. What going to do is say override this and make the top a different surface appearance. And let's say that we're going to put in some wood flooring or something like that. So there's a Pine Horizontal might be good. I don't know if they have some others for flooring specifically, but let's try this. And that means that the next element, because this is the element that I have not - this is the default settings, is going to have this setting. [0:38:38]

I'm just going to actually zoom in enough to make sure I do it cleanly, and we'll take this and zoom in here. Now if I go to 3D we're going to see that there's one slab that has a hole in it and there's another slab/fill in this room that has the wood here. Now when we cut through this, we are seeing the edge is the carpet, because I just overrode the top surface here. So we might actually want to define a different one. Of course this one here is floor carpet. So let's just change this. Let me select this one here. And what happens if we make it a wood floor 2x10? Well we do have a little bit of an issue and that is, yes it is a wood floor, but it doesn't match that. [0:39:40]

So what we would need to do is create another variation of it. So I'll just undo this. So I did the quick thing which was to change the color of it. In a section it would still look the same. So if I go back to that section here and we look at it, this still has the same fills. It's not particularly clear that it's carpet. It's just showing that there's a surface, there's an underlay, and then there's something on top. So if you did want this to be similar, then you would want to create a variation. And this is done pretty much the same as we would have in any case. [0:40:23]

Actually let me go and select this slab here. And I'm going to use that option that says to edit selected composite. Now remember this is the carpet. I'm going to duplicate it and we'll say floor wood plus ply, and I will take out the word "copy" here. And now I have another one. You can see there's the floor carpet and floor wood, the one that I just created here. And I guess "gyp board", this would be suitable if

the underside were going to be a ceiling of something here rather than slab on grade or something. So let's change this from carpet and let's do - by the way, you can add more of these materials. [0:41:20]

Let's see what they've got. Here's wood flooring. In this case, to make it simple, I'm just going to do the same rubber underlay and wood flooring here. Of course it may be different than that, but let's just say OK. Now I've just duplicated this one and created a new one. And now what I'll do is change this piece to be the new one that I just created. And you can see that it now actually has a little different fill here. [0:41:56]

And now let's look in 3D and you can see that now the cutaway shows the wood. So basically the approach that I know about is to create a separate piece for each area that has a different surface. But you can see how we don't see the edge change because it's the same framing space. And in section of course we also are seeing a clean result, even though this is a separate type from this, because they have the same skins. It's joining that. So hopefully that answers that question for Adrienne as well as for others. [0:42:41]

Jay Schumaker says, "I'm noticing that the thin floor storyline is to the top of the carpet." Well basically Jay, this line here - if we zoom out on it - this is the reference height of the story. So the reference height is whatever you say. If we go into the story settings, each story has a reference elevation that if you can choose whether or not you want to show these lines or not. That reference elevation, you can decide what it refers to. A very common one is "top of finished floor". But technically this could refer to top of the structural floor or any other reference height that you chose. [0:43:40]

Just whatever you have here, if you show a story line, it's going to be here. And right now we've got the carpet or the wood coming up to that, following the convention that top of finished floor is what this is referring to. So I hope that makes sense. Todd H says, "Wouldn't the core of the slab be at zero zero?" So that could be. If you chose to make the slabs have the top of their core be the reference line, you could so. So I seem to be outvoted here [by the viewers]. Ken Brooks says, "Usually the story heights are set to core slab not finish." [0:44:24]

So if you choose to make the story reference to be the top of the core and everything gets built on top of the core, that's fine. Let me show you how we would change this model. And this brings up another concept here that is very important. If I select these two slabs here, there's an option for its reference plane to be the top, the bottom, top of core, bottom of core. I guess these are the four choices. So we never had this before in terms of slabs. This now allows you to say that you would like to reference plane to actually be the top of the core. [0:45:20]

So what that means is that if I change the composition of the slab, the core top would stay the same. So if it got thinner or thicker, this would be fixed. So that we can lock in. now separately, this is saying that it's based on the first floor, ground floor. And it is saying what height this is. Now when I did that - in fact, I just changed this and guess what happened here? Let me undo, and you can see here's what happened. So when I changed this, so that the top of core is the zero, this moved up. So this would give you what you were asking for. [0:46:15]

Now the wall here, you can see to wall is still going down to the original point. So what we would need to do here is to adjust it. So again Edit, Reshape, Adjust. Click on the slab. You'll notice the icon changes when I'm up in empty space here. When I'm down here, it changes. I click on it and say "Core Top". And you can see these handles change. And you can see how it is has now adjusted here. So now the wall is going to the core top and that happens to be zero, or that has been set to be that reference. [0:46:58]

So ArchiCAD is flexible, it can handle whichever way you prefer to work. But now there is the option that if, for example, we were to change this to a different type of floor. Remember this was another wood floor that had, instead of a 2x12, a 2x10, so a thinner core, if I select that, notice what happened. And I'll zoom in on it. The top of a core, which is this line, stayed the same. Let me put it back now to the new one that I had created. And you can see how the core stayed the same. So it's essentially the concept of a reference line that we have for walls is now available for slabs. [0:47:49]

So it will make it easier to coordinate these types of structural changes. Let's just move on then to some other related questions. Okay so Todd expanded on that saying that carpeted zero zero doesn't make sense. Now the one reason why I find it a little convenient to have finished floor at zero is because if you are putting furniture in the room what is the base of the furniture? Should it be at zero or something else? So Graphisoft's standard setup in the template is to have the top of finished floor be the story heights, but you can make it the top of core if you prefer. [0:48:42]

So Dave Olafs writes, "Are the wall floor roof connections not automatic?" Good question. They're automatic if you extend elements into each other. If they collide or have a collision, then it will clean up that collision. If you do not extend it to meet each other, then it will not extend them. So that is why earlier in the session I drew the walls at zero, the slab went down from zero, so basically the walls were sitting on top of the carpet. They did not extend down to the core. So you have to adjust the walls or set them into the slab at the right distance. Now we're going to be looking at some more examples of this shortly. [0:49:34]

"External edges of slabs, how are the materials handled, such as siding, overlapping slabs?" So we will look at that. I am going to show you when we bring in another project how I think it will be easier to see this. Jay writes, "I prefer to dimension from story to story, from sheathing to sheathing, carpet comes much later." I understand that. Okay so Jaime Ingram writes, "In ArchiCAD 16, I experience when in 3D if you zoom all a lot of times it changes the perspective point of view. Is it still the same in ArchiCAD 17?" [0:50:13]

That's a question that is not new in 17, but I understand how it can be confusing. If I'm in a perspective, and we know that we're in a perspective here in this view because the walls are diverging from each other as opposed to if I switch to an axonometric view, then the walls are parallel. The elements that are parallel in the geometry are parallel on screen. So if we are in perspective, then of course we have foreshortening. Now when we are in perspective, we have a particular location that we're viewing it from. We can see this in a variety of ways. One way is to use the navigator preview, this little button down here. And this allows me to see I'm floating up above. Let me make this a little bigger so you can see it. [0:51:12]

I'm floating up above this room; you can see the section marker down here. And it says I'm actually looking way over here. So the center of my view is literally behind the building, and in fact, if I look from the side, you can see that I'm looking down of course. Let me put it from the top. Now if I move this a little bit out, you'll notice how the building gets smaller. If I move it in, the building gets bigger. Now look what happens when I roll the mouse. So if I zoom in, I zoomed in by rolling the mouse. And you'll notice how it moved me closer or move it out and it moved me further. [0:52:01]

So what's happening is, when you are in perspective, zooming in or out is actually moving where you are seeing it from. If you want it bigger, you come closer. If you want it smaller or you want to see the whole thing, you zoom out. So what happens is if I click on Fit in Window you'll notice that it moved my viewpoint position here. And therefore now I can see this whole model. And it zoomed out far enough to see the little XYZ mark as well as the building. And I'm not 100% whether or not you can turn this off. I know when you're working on GDL programming for objects; you can turn that on or off. I don't know if you can turn this reference point on or off, but you can move it. This is the origin point. [0:52:52]

I could move the origin to here, and you can see how this is now X and Z visible. If I say Fit in Window it still keeps the original one there. So in any event, that would explain hopefully for you Jaime how when you zoom out or zoom all in this case the technical term is Fit in Window here. In AutoCAD it might be zoom all or zoom to extense. But that will change your actually standing point position. It's different than - at some point maybe it was ArchiCAD 10 when that changed. Years and years ago, if you zoomed in or out it was just making the same perspective bigger or smaller on screen. At a certain point they changed it so it moves the camera. [0:53:46]

Okay, so a lot more comments and questions. Dave Olafs writes, "In your example, do the various material lines show in elevation, such as siding, plywood?" Okay. So let's look at some things in the context of a real project, because it will address some of these questions in a combined fashion rather than me trying to build a more sophisticated building. Okay, Adrienne commented on my earlier explanation of multiple slabs, saying, "We are currently using more than one slab for various floors. We will continue." Other comments like from Ken Brooks and Jay Schumacher saying that when I adjusted the slab to the top of the core as a reference it was perfect. [0:54:38]

So you can get what you want in this case. And now Rob Harrison has a question, "I wonder how changing the height reference for stories affects stair runs." Chris Sparks writes, "This is awesome, being able to pick the reference of the components is going to be so much faster." Okay, excellent. And there are other people agreeing that project zero should not be finished carpet. Okay, so thank you all for giving me your input on that. I will definitely keep it in mind. You know, it's funny. I learned architecture by teaching ArchiCAD. I am not an architect. Many people at first glance or when I talk to them assume that I am an architect, because I do speak the language pretty well, but I'm not a native speaker so to speak. [0:55:26]

I do have a brother who's a fellow of the AIA, he's 15 years older than me, so he's retired. So it's in my genes so to speak, and I love architecture, but there are some things that I only learn when you guys tell me that top of core is really where it should be. So I imagine there are different standards in different

parts of the world but I will keep that particular one more in mind as I talk about ArchiCAD 17 and just ArchiCAD in general. Steve Nichol points out, "Framers work in rough dimensions." Yes I understand that. Jaime comments in relationship to the perspective, "It totally changed the perspective in a very odd way." [0:56:18]

Okay, so here's the thing that you can do Jaime. Let's say that I'm zoomed in on a particular thing. Let me just go and say from the side I'm going to go and look horizontally. And then I will take this down. So I'm just actually using my mouse within this to either adjust the viewpoint or just literally moving it up or down. And you can see in the window how it adjusts. So now I am sort of roughly at eye level, but I'm not quite seeing the whole building. So one of the things that you can do here is change the cone of vision. So instead of using the Fit in Window here, you can make the cone of vision wider or narrower. [0:57:02]

Now look at what happens when I look at the top view here. If I make it wider, you can see how it's opening these little V's. And then make it narrower. And I can also adjust this position here. So I can rotate it around until I get it maybe seeing the view. And I can bring this in. Now bringing it in, basically this point has a certain height. And when I'm looking horizontally, it doesn't matter how far away it is, but if it's at a different height than my camera, then as you move in or out the tilt will subtly change. But this would perhaps be the control that you would want Jaime to be able to zoom out to fit in window. You can see how I can zoom out, but I'm still in the same location. [0:57:56]

So doing it that way, this degree here, this is also available if you are in the camera tool. So if I go and look at the view menu, let's say I want to see where I'm standing. I'm going to go to the 3D Navigation Extras. And there is an option to put a camera into the path. So this has been around in ArchiCAD for a long time. When I do that and go to the floor plan and zoom out, you can see that here is the camera position of where I was standing. Now of course I had a marquee so that's why we're seeing a cutaway of this, but I was standing here. [0:58:35]

Now this camera, if we open up the camera settings, has a view cone. Here is the 84°, which is what we had seen. So I can manually adjust this, I can say 70° and apply. And you can see how that took these side lines in a little bit. And then if I go back to 3D, I simply have the camera selected and go to 3D, hit F3, you can see how I'm now seeing a little less of the building because I'm not quite seeing out to the sides. So I think understanding this camera control here and understanding on the floor plan how a camera can be placed, either manually or using the View, 3D Navigation Extras; there was a control that said "Add camera into the path". Once you have a camera you can then adjust its view cone. [0:59:32]

And of course you can move this around. We can take a different location. Let me just create another camera. So I'll eyedrop this one and put in another one over here. And if I select this one and go to 3D, we're going to be in a similar but slightly different position on the plan. So hopefully that was a little diversion from ArchiCAD 17 stuff, but hopefully that explained not only for Jaime but for others who want to have more control over viewing positions. [1:00:10]

Tracy D'Alessio says, "Can you change to show core only and will the line weights change to a heavier weight?" Interesting. So let me close up the camera here. I'm in 3D; we can look at this in section as

well. If I go to the quick options - so that's this third button here as opposed to the navigator preview which is the second one - this is the second one. The third one is the quick options. Now I like putting the quick options underneath here, tucking them in so I have access to them most of the time it can also float around and be close to where your mouse is. But here in the quick options we can switch from the entire model to core only. This is a shortcut for going to the Document menu, Partial Structure Display, and choosing perhaps core only or one of the other options. [1:01:03]

So this is a separate dialog, whereas this is a pop up. Now as we zoom in on this, we can see that it's now turned off the carpet and the underlay for the carpet here. And the wall and the exterior wall in this case, the cladding has been turned off. So it does bring up the question of how does it look on the outside? We've been looking at sections, so how does it look on the outside? And if I put it back to entire model, we're going to see of course what happens here. [1:01:36]

Now this is a way that if we look at this right now, we are going to see that the outside looks rather odd, because we're seeing this carried over. Now in ArchiCAD - I'm just going to change my sun position so we can see it a little better here. Let me go to 3D Protection Settings and change my sun to be this way. So now we can see this little brighter. Now in ArchiCAD 16 and earlier, since we didn't see this outside, it was controlled by what is now called surfaces but it was called materials. And I can say that I want to override the edge, and look. Now it's a single color. And if I make this the same as the default walls exterior and click outside, now, we have what we had in ArchiCAD 16 or earlier. [1:02:36]

So it looks like one surface, but in section it doesn't look correct. So one of the things that Graphisoft did as part of this whole revamping was to say, "This was good up to a certain point, but let's make it better." So let me undo this here, so we're not relying on that. And let's look at taking this wall down even further. So I'm going to go to Adjust - so I'll do the shortcut Command or Ctrl+dash or hyphen, choose the slab, and take it and instead of a core top, I will take it to core bottom. [1:03:18]

Now in this case it isn't giving us a good result. Let's take a look at what we might want to do here to make it get the proper result. This slab here, if I go to the edge, I may want to basically take it into the face of framing. So now you can see I have actually drawn the slab not to the inside face, not to the outside face, but to the face of framing. So it is supporting the structural wall. And the cladding of the wall, because I told the wall to go down, is now going down to here. Now I could take this wall and take it all the way down to the underside here. Right now this is sort of floating in space. I don't know whether this is going to be a slab on grade or it's going to have a basement or whatever. [1:04:22]

It's sort of drawn as if there was a basement because there's drywall underneath here. So we're going to look in a project that I migrated from ArchiCAD 16 and look at some of these intersections. But I think you get the idea here that intersections are semiautomatic, but you have to, as a designer or architect, decide if you want this wall to go down further and just use these priorities to say the core stops here as it rests on top the sheathing for the floor. That certainly is a very legitimate way to construct it. How do you want this to be done? [1:05:07]

Before we do this, I'm going to look at one other thing, which is under the Options, Element Attributes. There is this concept of building materials, which of course I have been referring to, but I haven't shown

you. What is a building material? Now this is a brand new item in this list of attributes. Before, we had fill types, composites and materials with a little paintbrush. Now we have surfaces with a paintbrush and building materials is brand new. Now building materials are an attribute, but it's unlike other attributes. Well actually it's sort of another layer, because essentially if I say, "What does limestone look like?" [1:05:53]

Well it says limestone, when you cut through it, has a certain patch or fill pattern. When you see it exposed, it has a certain surface material or surface appearance. And it also has some thermal properties. If you're creating your own or you want to adjust this once it's there, you can use the material catalog. And you'll see that when we open this up there is stuff. And I'm not familiar with this, but let's say it's limestone, so it's probably a type of stone. You can see that here is limestone hard, medium and soft; then lime sandstone. So you might decide that it's limestone, but we are going to use a limestone medium here. [1:06:41]

And if we compare this, 98 and 137.34, they use the limestone medium here. If we said we're going to use line limestone hard, we can choose that and say OK. And you can see how that affects the thermal properties if you were to do an energy analysis. So I've just changed it for this project. This was created from the standard ArchiCAD template. It has some initial physical properties, but I can say in this file I want it to be different. And of course you can set it up in your template; common materials that you use that maybe aren't listed here. Or use Graphisoft's and then, only as you need to, change it in a project. [1:07:25]

In any event, each one of these has not only the fill surface appearance and physical properties but it also has intersection priority. And you can see this weak to strong; 435. If I drag this, you can see how the numbers change. I can also type in a number, and it goes up to 999. Notice this little icon here, or this little progress bar, as I move it down you can see it gives us a visual indication. If I click on priority, then you can see how it will sort. Elements that are stronger have a higher priority. It will cut elements that have a lower priority. So it's very intuitive. Gypsum board is stronger than sand, you are going to pile the sand or carpet up next to the gypsum board. [1:08:19]

Gypsum board itself is going to be less strong than concrete topping or stucco. And framing of course becomes more. Now I'm just going to cancel out of this. Graphisoft has done a good job of creating a set of building materials to start with. I haven't looked at the international version, but I'm sure that it's similar. Maybe there are some differences. I will show you one rather odd thing that I've noticed here. So let me just show you this. I think this is a mistake as far as I'm concerned. If we want to draw a very simple set of walls before we have decided what type of wall it is - let's switch to just simple walls. And let's switch to the one that's called "Generic Exterior Material". [1:09:08]

Let me draw a box here. Now if I draw some interior walls like this, it all looks correct; but these walls were set to be the same exterior because I didn't change my settings. Now let's take a look in 3D. I'm going to use the marquee tool here and we will go and look at just this new little box that I just drew. No problem, looks good. But if I designate these in terms of a material - now I can change their layer. I can change the later to interior, that's fine, no change there. But if I select these and I change them to

"Generic Interior Material" as opposed to saying that they're made of timber or insulation or something, if I just change it to generic interior material, look what happens. [1:10:14]

They actually stick through the exterior walls. And when I go to the floor plan, the same thing. It looks pretty odd. And when I noticed that, I went into Element Attributes, Building Materials, because after all the building material that we're talking about is - let me sort it by name. And we have - generic okay. It's actually sorted because of these zeros here. Generic exterior - 530, generic interior - 590. Oops. That means that the interior material has a higher priority and guess what? It sticks through that. So I would either reduce this down to 530 so it matches that or make it less, perhaps make it 500 or something like that. [1:11:16]

Now how do you know what numbers to use? Well, there's no hard and fast rule. You've got 999 to choose from. It's really priority-based, so the higher the number the stronger it is. But I will show you a little guide that I got from one of the Graphisoft staff. I will show you that in just a second. But if I change this interior to 500, then look, now the interior cuts off here. And if I go to 3D, we are going to see it does the same here. So just keep that in mind. If you draw the walls with the same generic material, then it doesn't matter. But if you do decide to use the generic exterior and generic interior preset that is in the standard template, it's odd. [1:12:02]

Now I received from a consultant who actually is on staff now with Graphisoft - some of you may have heard of him or know of him. His name is Ransom Radcliffe. Ransom is an architect, and I'm not sure where he's living now. He was based in the Washington, DC area. And he, years ago, worked for the reseller for ArchiCAD in the area named AEC Infosystems. And I got to know him when I was a reseller and he was working for that reseller company. Really great guy. He maybe about six or seven years ago, he got hired away from the reseller to work at a large architecture firm named CUH2A. Some of you may have heard of them. They are a large 300-person firm based in Atlanta or somewhere in the south east of the U.S. [1:13:01]

They do a lot of hospitals and large complex buildings. So they bought a huge number of licenses of ArchiCAD, it might have been a hundred licenses. And this was a huge success for Graphisoft, because they won the business over Autodesk's products. Well, Ransom was there for years, and at a certain point, CUH2A was purchased by another giant firm, I forget which one it's called. And that giant firm had standardized on Revit. So Ransom had to learn Revit, but they still had some projects in ArchiCAD. So he was going back and forth. And he has given over the years interesting reports saying, "Here is problems with Revit, here are some good things with Revit. Here is where ArchiCAD does better; here is where maybe ArchiCAD could learn. " [1:13:49]

Very interesting stuff. I don't know if they've downsized or what, but anyway, he was let go maybe last fall. And at some point a few months ago, he joined Graphisoft's head office in the U.S. He's a sharp guy; I really like him a lot. And he did a presentation for Graphisoft recently. There was a webinar on ArchiCAD 17 new features. I did not attend it, but I sent him an e-mail with a question and he sent me this that he used in his presentation. So he was talking about the priority-based connections. And apparently in the reference manual, page 1392, they're saying that walls meeting walls, that uses a

certain criteria; walls meeting roofs, that uses some different criteria. And so there are some things that only are done with solid element operations. Other things are done with collision detection and priority information here. [1:14:56]

And there are different factors including layer intersection groups. I'm not going to go through all of these, although I think it's a good reference. I am going to ask him if I can distribute it or make it available publicly. However, what I will show you is here is priority by building material type. So here are some numbers that I think are useful guides. I don't think anything is hard and fast. You can make your own system. But clearly by organizing them into ten different categories and saying that things that are partitioned core, wall partition cores should be in the 500-600. Load bearing cores should be 600-700, and thermal breaks higher. [1:15:48]

And here's something I actually hadn't even thought about, waterproof insulation clearly has to wrap in a way that makes a clean boundary on things, and therefore has to be seen as having a higher priority, even though it may be made out of something thinner, whether it's sheet metal or something. But basically it has to have a higher priority, so that it would penetrate and wrap around other things and not to get cut. You don't want to cut the waterproofing, things like that. But these are some guides here. Graphisoft clearly has used some system like this in the materials that we see in the Options, Element Attributes, Building Materials. These other ones that come with the U.S. template and are going to be there are going to be very similar ones in the international template. [1:16:43]

Let's now look at transitioning a project from ArchiCAD 16 into 17, and now all of this fits. And look a little bit more at some of the intersection stuff that that happens. So I see some other comments and questions. Roderick Anderson had a comment related to that perspective view, saying, "I would recommend for clarity showing the difference between scrolling with the mouse in perspective view and actually selecting the little man and walking along the project." I'm going to wait on that, I think what I showed with the little image of where the viewpoint was probably is enough for now. [1:17:32]

I could show some different things at another point. David Norman had a question about extending the cladding down over the edge of the slab. I think I have already shown the basics of that. Okay, so one thing Jaime points out - a new feature that you can copy and multiply elements in section and 3D view. Really, this is a nice thing, so let's go to a section here. It probably wouldn't take a wall and repeat it using this option but you certainly might take furniture or column or other elements that are free standing. And one of the things that we could not do before was go to the Move, Drag a Copy. And you could not do that with multiple copies either. [1:18:33]

So if I say drag a copy now, guess what? It created a copy of that. And if I go to the floor plan you'll see that I've now got a copy of that wall there. So dragging a copy in a section or elevation view is now possible. And I guess in 3D - I thought we could do it in 3D before, but in any event that is an interesting option added into ArchiCAD 17. A question, "What do the numbers in the building materials names mean?" Dorothy Howard asked that. Rob Harrison points out, "Ransom needs a proofreader, he had some typos." [1:19:26]

There are some more related questions. Let me show you how a file coming from ArchiCAD 16 will work. This is our MasterTemplate sample project, which is of course if you've been around the Best Practices course for any length of time you have seen this because I use it to demonstrate things. Now I'm in ArchiCAD 17 here. You can see the plan looks the same. Obviously we are just taking a quick glance at it. If I go to a 3D view, the model looks the same. And if I go to a section here, we're going to see that the section looks the same as before. [1:20:28]

I haven't looked at it in total detail. It's possible that there may be some slight changes, but basically opening the old file in 17, it just works. Now there are some things are generally a good idea when you are transitioning a project. One is that you go to the File menu, Libraries and Objects, Library Manager. And say instead of using the 16 library I want to use the latest version. One thing that I noticed here, and maybe was available earlier, I used to add the 17 library and then it would warn me that you shouldn't load two full libraries. ArchiCAD would ask if I want to consolidate the libraries. Now there's even a quicker way. Click this, "Consolidate libraries". [1:21:21]

By the way, if I don't have it - it doesn't matter what I've highlighted here. There's this button that says "Consolidate Libraries". When I click on it, it's giving me a message that I've loaded multiple ArchiCAD libraries or libraries that are out of date. So in this case obviously the 16 library is out of date. I'll click on consolidate. Very nice, because basically all I have to do is say consolidate libraries and it now loads the 17 library and the 16 migration library. For those of you have been around for while know that essentially the migration library is a small subset of the 16 library that contains elements that were superseded in 17. In other words, there are different versions of those elements in 17, so for compatibility they have those available separately. [1:22:16]

And when we switch to the 17 library, which I have just done, I said, "Load this." We're going to see when I select elements here - as soon as it finishes loading, you can see it's loading here in the background. If I now select this window it says - let me get my palettes. My work environment palette schemes - let me just apply the standard 17 palettes. Now I have the toolbar the simple way. But you'll notice this window says "Casement 17". If I select this cabinet and we open it up - it went over to this other screen here. It's a cabinet in the 17 library. So basically most of these elements were swapped automatically for their counterparts in ArchiCAD 17. [1:23:29]

If we open up the Object tool we are going to see that the 17 library has been loaded in its entirety and the 16 migration library has some things. But if we look at equipment, there are a few pieces of equipment here. In fact, in the object library, only a few folders exist, probably because let's say the coffee maker here is different than if I do a coffee maker here - here's coffee maker 17. You can see here there were two different objects, one and two. And this is one object with just two styles. So those are some of the things that they have tended to do. [1:24:19]

By the way, what they introduced into 16 is that you can search here not only in your local library but you can also find elements that have the same keyword online. You can see the little globe icon. And we can download them. So this was introduced in 16. If I highlight, saying I want a nice looking coffee table, I can download this and add it into my library for this project. These are free and you can see that there

are a number of different choices you might find useful. Let me cancel out of this. Alright so we have opened up an old project, it came through fine. I consolidated the libraries, and it looks good. [1:25:04]

Now let's zoom in on this intersection here where the wall and floor meet. You may look at it and say, "Well, that looks pretty good." Well, I can tell you that that's exactly the way it looked before, because we used a patch in this MasterTemplate sample project. So if I click on this, this thing here is an object that was created using the patch option. For those of you who have never used the patch, I will show you in 20 seconds. You draw a marquee around the area, go to the Document menu, Document Extras and say Create a Patch. You give it a name and it will create a copy of the current line work and fills that are there. [1:25:52]

And then you can edit that to make it look like what you want. So if I select this and drag it off to the side, you can see this is a 2D graphic that cleans up things. It added a rim joist here and added some other framing. You'll notice that there are still some framing things, where did those come from? Well these are actually 2D objects. I'm going to drag these out of the way. These are in the U.S. library. There may be similar ones in the international library. But these are - if we open it up - in part of the library that is called the detailer library. That is included within the ArchiCAD U.S. distribution. [1:26:43]

So this is just 2D. If I go to 3D you can see there is no 3D element. It's just a 2D element here. So basically in the earlier version, we had some overlays. It looks like we didn't actually need these as well as that. We could have just worked with one of them. In fact, I think these were put in and then the patch was made. But let's look. If I select this, you will notice that the slab is going out to the face of framing. This wall is going down to the bottom of the core. And this wall is going up to the bottom of the core here. And this is not very clean. Okay, so why is that not improving? This stuff is on top of it. We're in ArchiCAD 17. [1:27:33]

It's because under the Options, Project Preferences, Construction Elements, there is an option that says, "Do you want to use legacy intersection methods for model elements as in ArchiCAD 16 and before?" Why is this checked? Graphisoft decided that when you open an older project in ArchiCAD 17 it would check this automatically. That means that when you open it up, you get the results that you used to get. Now I will leave this alone and show you a couple other things, and then I will turn this off so we can see what it's going to do. [1:28:15]

So again it's still showing the legacy stuff, let me zoom over here. And you can see this is just a detailer lumber part, so it's basically just 2D. And here is a slab, here is a wall passing through each other. We're getting lines passing through each other, no wrapping of this stuff. So this is actually a ceiling, it's enclosed here so there is no top surface there. If we look at the section, I'm going to right click on it and say select section marker on the home story and zoom to it. So what does this do? If you haven't used it before, if you highlight a section or I believe it will work with a detail in the view map as well that has a source marker, basically where is this created? Where was this called out? [1:29:17]

So if I right click on it, it allows me to do that. You can see here is the actual section marker. Right now we have the layers with all of the 3D stuff turned on, so it's a little hard to see what's going on. But let me just say that I'm going to create a marquee that is very similar to this. So I will just draw this across

the building. So it will be a little sliver and one side and it will essentially - actually let me do it as a whole building. So it's looking like what that section is looking at. Now if I go and say show the marquee in 3D and we zoom around, we're going to see here is that first intersection here. And here is the other one. So we're looking at these. [1:30:10]

Now remember this is showing the cutaway in a certain color, in this case a rather dark one, perhaps black. I'm going to go to the View menu and I will say Elements in 3D View, Filter and Cut Elements in 3D. And I'm going to say use element attributes. So instead of giving it just a custom color, I will say use element attributes. Remember in ArchiCAD 17 when I did that all of the sudden I saw the components of those elements. When I zoom in or out you can see now it's looking somewhat different, but it's not cleaning up. It's because this slab is sticking into this wall. And of course there's the upper wall, so these two walls. Basically everything is overlapping. [1:30:57]

So if we move over we can see the same thing. These are sticking into each other. Well all we have to do is go to the Options menu, Project Preferences, Construction Elements and tell ArchiCAD we're ready to use the new intersection methods rather than the legacy ones. By the way, if you hit "i" button here it will tell you what this does. It's saying when that's turned on these will not intersect, it's simplified. So anyway, I'm going to do this and say OK. So now as I zoom in on this, we're going to see that this is cutting into the other. It's a little hard to tell because of the color. Let me move the light around and maybe if I move the light around here it will help to be able to see it better. [1:31:53]

So by moving the sun around you can now see the colors better. So you can see it is doing some intersections differently there and if I move over here it's also cutting out the shape. And in fact if we look at this slab here, you can see that the slab does have a surface and a core, and surface is stopping at the core of the wall. In this case it's going underneath the drywall as opposed to stopping at it. So let's take a look at that in section and see what that does. So if we go to the section here and we select this - this is a rebuild. Let's see what's going on here, this wall is coming up. When I was looking at this before in my earlier experimentation, that started to clean up better then it is right now. [1:32:59]

Let's see if we need to rebuild from model. There we go. Okay, so I just used the View, Refresh, Rebuild from Model. So I needed to do that in order to get the cleaner results. So it's not necessarily correct, but it is a lot more sophisticated. You can see this top surface is stopping at the core. These surfaces are stopping here. It's definitely doing more work to understand it. Now let's look at the materials that this has. So if I select this wall and right click on it, remember there's this new command that says that says "Edit Selected Composite", that basically allows me to see the definition of it. [1:33:50]

And here we start to see some of what ArchiCAD has done when you transition a project and why they first gave you the legacy method and then, when you are ready, you can look at this. Notice that it says there's, stucco, sheathing, wood frame and gypsum board, but all of these have numbers after it. What do those numbers mean? I don't think there's a code that they've explained, that 328 means this, etc. But basically each use of a certain material in the model will get a 10-digit code. Now if you have a bunch of walls that are all the same and have exactly the same settings, then the composites will be identical. [1:34:34]

If you have some subtle differences like if you overrode the materials, the surface appearance in one case or some other settings for the pens, then it will actually create some other settings. So you may have quite a few extras of this. Now let me just show you in the building materials here what ArchiCAD did. So you'll notice that there are a whole bunch of apparently similar things. Concrete lightweight has several different numbers next to it; and structural. So each time it encountered this, it looked at some other settings such as what surface appearance it was. And let's see if all these are general. You'll notice here is concrete structural, and this was given a stucco white color. And this one was given something different. [1:35:26]

So clearly these had some differences, and so it said, "Even though I'm going to assume that it's made with the same material, because it used the same cut fill, I have to give it a different appearance or different entry here." Now we can combine these things. First off, what I'm going to do is edit this one to show you what we can do with the composite. And then I will show you how you can start to clean up these attributes. So if I right-click on this again and say Edit Selection Composite - by the way, I've created a keyboard shortcut using the keyboard shortcuts. This is not built in, but I just created one; Shift+Ctrl+C. You can create whatever one you wanted. [1:36:19]

What I'm going to do is say this gypsum board, instead of using one of these funky ones; I'd like to use one of the standard ones. But all of the things in this file have these 10-digit numbers. So there's no standards. Why? Because this is a migrated project, so this came in with whatever was in use. So I'm going to go to the Options, Element Attributes, Attribute Manager, and I'm going to go bring in the standard material. So if following my demonstration here, if this is going a little too fast for you, know that I've got this recorded and you can watch it later. And I will be creating some specific lessons on this. [1:37:05]

But let's go and open in the Attribute Manager - I had created in a folder we're working on for MasterTemplate, I created a copy of the U.S. residential template. I created a new file based on the residential template and I immediately saved it so I've got a copy convenient to that. When I open this, you can see here are the layers which are quite different because we're in a MasterTemplate file. But let's look at the building materials; that's what I care about right now. Here are the standard building materials. Remember, we've been looking at this and they don't have the 10-digit numbers and there's a lot of different materials. [1:37:49]

What I'm going to do is select all of them and append them. Now, there are some things that you can do to be more efficient; we don't have to bring in all of these. But for a quick demonstration, I'm going to simply say Append. And now you can see all of these get added to the end. And when I click OK, it will say that it's creating all of these. It's actually creating fills as well as surfaces as well as building materials. So each one of these came in with certain things. This is going to make it a rather messy project, so I'm doing this in a quick fashion just to teach you some principles. In general, Graphisoft recommends first of all that you reduce the number that you've got in your migrated project to only the ones you need. [1:38:41]

Then potentially just bring in only the ones you need from the standard template. It would take a little time to think about. You can always bring in more later, but basically I'm just wanting to show, you once you've brought in the standard materials how you can redefine some of the composites. So it's now done here. I'm going to select this and use my keyboard shortcut to open up the Edit Composite. And now I can say that I'd like to give it, instead of this gypsum board here, I'm going to use this 22-gypsum board. So this is a standard one from the new template. I'm going to pick this 2x wood framing and use the standard one is wood framing. So this is not insulated. I'm not worrying about that right now. I'll take this exterior sheathing and building paper and use the one that is for wood sheathing here. [1:39:57]

And then the stucco, I am going to use the one standard one that is under - now this confused both Scott and I at first - Portland Cement Stucco. So now I have redefined this particular wall type to use standard materials. We do see a change. You can see now the fill pattern for the skin has changed. Let's now do the same thing with this slab. I will just pick the composite here and change it from the plywood that was imported to the one that is plywood siding. But here's plywood - and I will pick the 2x wood framing. And I'm going to use standard one. I know I'm moving very quickly, but notice that the migrated have 10-digit numbers and the standard ones do not. [1:41:03]

Also the standard ones seem to have a different numbering system. In the international version they may not use these numbers at all. I think this is based on U.S. standard CSI or construction specification standards. This is 2x wood framing, so I want wood framing here. And again I'm just going to pick the standard gypsum board. I think it was up here. Now these are using standard things. I'm not going to worry about pens here, but these definitely should be looked at as well, because right now this is making all of them pen 1. Let me just say OK. [1:41:38]

And guess what, as soon as I did that, now the drywall is wrapping. Now is it exactly what you want? I don't know. Should you show a line saying a piece of drywall runs up, because it's not going to be poured, it's actually two separate pieces. But certainly is a much more respectable thing. Now, if we look at the wall here, this wall is going down to the bottom of the framing. This wall is going up to the bottom of the framing. As long as these two match, you're going to get a good result. And at least in my experimentation, it can be at the bottom of the framing, the top of the framing, and even potentially the top of finish or bottom of finish. As long as these two elements connect to each other it will work. [1:42:32]

So there may be some other subtle things, but that's what I noticed. Now let's look at the other one over here and we'll see that actually this wall has been reconfigured, because it's using that same wall type. So you notice the fill has changed. And this one, if we look at it here, let's change this gypsum board to the new gypsum board here. And we'll change this 2x wood framing to the wood framing - and by the way, you get used to where these are. You will start knowing where to look here. And you can see now this is wrapping, because it's that. Now this wall in this case is going down to the bottom of the framing. And this slab here you can see is going all the way out to the edge. [1:43:25]

If we look in the 3D view, remember I had 3D cutaway. So we're looking at this and we can see now how this is home you can see now how this is cleanly showing the intersection. We've got the sheathing;

we've got the stucco there. If I go to the other side, we'll see a similar wrapping. Now we have a slight issue here. Let me just move the sun position around. So we go to View, 3D Protection Settings and move the sun to there. You can see that this edge of drywall and that edge of the wall do not match, and in fact, this is a wall type that I changed whereas this is a slab. So we would need coordinate some things there. [1:44:16]

But basically this wall, this being exterior and this being interior - so what is this? This is gypsum board here. And if I look at this slab here, remember this is the composite there. Right now, the side of it has various overrides. If I select this and turn off the overrides, now it's using the surfaces by building materials. So it looks slightly different there. Let's only override this face here. So if I say the edge here is going to have ceiling white, or is it going to have something let's say the interior wall color. [1:45:39]

And now you can see that it matches the interior wall color and this blends. So of course I want to make sure that shows. In the case of the underside, if I go underneath this, let's see if I can take rotate my view and look underneath it. You will notice that the main ceiling here is bright whereas this piece of slab that I was just working on is dark. That's because the underside of it is set to use the default material for gypsum here. But the underside of a ceiling often it does better when it's given a special material that has extra brightness added, ceiling white. And now when I do that here, you can see how it's now matching color wise. [1:46:34]

I'm not quite sure why we're seeing this extra line there, but clearly it's now matching in certain areas. So we would need to look at what's going on. In any event that's getting us a long way toward having a clean result. We've now approached the two hour mark. In the last 20 minutes or so I just demonstrated and talked without stopping. Jaime talks about, "Was multiplying in section or elevation, copy to clipboard function work in 3D view." I don't think that you can copy and paste in 3D. I think you can drag a copy but I don't think that you can select something, copy and paste. At least I haven't tested that. [1:47:22]

Connor says, "Edit Selected Composite is not available in the menu unless you suspend groups." So let's see if that's true in my case. So if I select this wall and groups are active - well, in this sample project all of this stuff is grouped. In fact it's referenced - this sample project has some things that you wouldn't do in a normal project. The bulk of the elements are being referenced as modules from outside in order to demonstrate some of the ways demo and remodel and new stuff was handled before ArchiCAD 15. It reminds that this actually could be reworked. But you are right, if you have multiple elements selected, then that Edit Selected Composite may not work. And if you have a group, like if I click on this and it selects all this stuff, then Edit Selected Composite is not available. [1:48:33]

So in this case if I am only selecting one element then we have Edit Selected Composite. So good point. Rob Harrison says, "Can you purge unused materials and surfaces in an ArchiCAD 16 file before migrating?" Yes, absolutely. So let's take a look at two things before we finish up. And obviously there's more to ArchiCAD 17 then I can demonstrate in just this two hour session. But let's just look at a couple things that will simplify the migration. One is that if you go to the Options menu, Element Attributes,

Attribute Manager, in a file, you can delete individual elements. So you can see that in the building materials this material is not currently in use. You can see there's no checkmark. [1:49:33]

So he could actually go and delete this or we could use to purge unused, which for the particular tab I am in which in this case is the building materials, it will slate it for deletion. This will set up to be deleted all the ones that are not in use generally not a good idea for routine stuff in a project. Because for example, we may have layers like for furniture or for other site work or things that we haven't used yet. And if we delete unused layers maybe we'll need them later. So you don't want to do that routinely. But I would say before you bring projects from 16 or an earlier version into 17, save a copy so you have your original one. But then in the copy use that deletion. Now of course building materials won't exist, but you would want to delete fills that were unused, composites that were unused, possibly profiles that were unused, surfaces that have the paintbrush may not matter so much. But you definitely want to pair it down. [1:50:45]

One of the things that is brand new in ArchiCAD 17 as far as management of stuff - I will just switch back to the standard one that I've got. So if I go to the Options, Element Attributes, Fill Types and we pick a fill. Let's just say here is "foreground fill international". And you may say what the heck is that? Why do I need that? One thing you can do is now you can say that you want to delete a fill that you don't want to use, that you feel is redundant. Hit the delete button and there's now a new option that says when you delete, instead of leaving elements that refer to it to point to missing - perhaps you have seen this at times where an element has a popup indicating a fill or material and it says "missing". Well, instead of having it like that, you can say "Delete and Replace With". [1:51:49]

And let's just foreground fill. By the way you'll notice that is one that I'm deleting his gray, so it makes it a little bit easier to see in this case. And I'd like to replace. And when I replace this, you can see now the list doesn't have that. Now I wouldn't necessarily say "Go ahead and delete these ones that say international, whatever," because it is nice to sometimes have multiple ones that are blank so that you can actually have multiple fills that will be considered distinct. Even though they look the same, they will draw a line when two elements have these similar fills next to each other. But this is a new option. And when you're migrating a project - for example, let's go back to the other migrated project here. [1:52:43]

And let's go to Options, Element Attributes, Fill Types. And another way that we can work with this - so you can see that because I imported stuff, there are these plywood, two of them. I can literally go here and say that I'd like to delete this one and replace it with this one. And so everything that refers to this will be replaced with that. Now in this case it's probably not that. Let me go to Composites. You can by the way use the delete, and again, you can replace a composite with another composite. So you can use this for any of the element attributes if you wanted to. And here's one, Layer Settings, just our usual layers. This is really very useful. And if you say, "You know, I don't know why we have this layer." [1:53:53]

Well, that this one doesn't have any extra ones, but let's say that somehow when you were working, stuff came in on extra layers. You can say, "I don't need this column structural because I really want to put everything on the columns architectural. I'm not working with the structural column separately." So here I can say delete and I can say move elements onto the columns architectural. So instead of deleting

elements, it's going to move them. So that is something that we can do. So I haven't given you a perfect example there, but definitely if we go to those fill types, we're going to see a lot of - where did I see it? [1:54:46]

I know we have the building materials with the numbers. Actually here is where we find it most useful. Go to building materials. Remember all of these ones with the numbers? Here is Concrete Lightweight. I can get rid of all of these concrete lightweight ones. Let me use the delete, and replace them with, and let's find one that's concrete lightweight - in fact there's structural concrete, precast concrete, concrete topping. I don't think there's one called concrete lightweight in materials. So I am just going to put concrete topping here. So that means that anything that refers to these will now refer to this new one. [1:55:34]

And these were all migrated; they have the 10-digit numbers. And this is going to be a standard one. So in fact we could go and say take all of the gypsum boards and delete them and replace them with the gypsum board here. I can go through this and say, here's concrete structural, and I can delete these and replaced them with concrete structural. So this would be a way that you could relatively quickly swap out the old migrated materials. Remember some of these may have different colors, so you would need to do this with that in consideration that after you replace it maybe the construction details or sections will clean up better, but you may have to go through and look at materials or surfaces and again reassign wherever necessary a special surface color to concrete that is maybe a different type. [1:56:42]

So I am just going to replace this. So you can see how it's now gotten simpler. And I can go through this and do that. So I will say OK. And there were a couple of changes that I noticed visually there. Alright, so Beverly Kendall writes, "I have to go; this has been great, learned a lot." You're welcome. David Norman asked about, "Aside from library consolidation are there any tips for migrating from an older version such as 12 to 17? What about templates?" So that is an interesting question, I know David sent that in ahead of time and I also got something similar from Ken Andrews asking about migrating templates. So I don't have a definitive answer on that. What I will say is that with MasterTemplate we decided that it was important to essentially rebuild the template from scratch using the Graphisoft standard components and redefining things. [1:57:57]

And that's been a huge effort. If you're moving your own template forward you may find that it is still a good idea - and particularly if your template had only modest changes to the setup. So for example, here is a little starter project. If we look at the sheets here, obviously this is just a standard Graphisoft template sheet. One thing I can do is import from another file, a template or just another project file masters. So instead of using this master I can import something else. So how do we do that? If we go to the organizer here using this button called "Project Chooser". And in that same button here I would say that I would like to look at another project. Now I happen to have another project open that is perfect for this case. But I could browse for a project and select something on my hard drive. [1:59:10]

Let me just take this one and you'll notice that it now has a whole bunch of views, because this is the other project that I am looking at. But if I switch to the layout book, here are all the layouts from that sample project. Guess what, here are the masters. And I can literally import my standard sheet or several

things. And it's now bringing this in. And now there is a copy of it. So now if I double click on this, in my new project - and let's bring it down where we can see it better - you can see here is the MasterTemplate layout master. So basically you can open up another project here in the organizer and import one or more masters. [2:00:05]

I can literally go and select a bunch of these and drag them in. Now you do need to be aware that if the old project uses some attributes like fills or materials, if you are bringing in stuff that has attributes, those will come in as well. And you may end up with your new file having some of the old stuff. And you will want to go through and makes sense about it. You don't want to carelessly add a bunch of stuff. After all, if we look at the sample project, I brought things in quickly. And if we look at those building materials, we now have a mess. We have all this old stuff with all these numbers that were migrated and we have the new stuff and we would want to clean that up. [2:00:55]

And if we look at fills here, it wasn't as bad, but there were some duplicates brought in and we have to be very careful about anything that is a duplicate or similar. And if we go to surfaces, then we're going to see that these rock patterns, this is duplicated, this is duplicated. Now by the way here the simplest thing to do is just to select this duplicate and again delete it and say that you want to replace it with the one that doesn't have the two, things like that. So now there's only one of those instead of two. [2:01:44]

So when you are bringing stuff in, you can easily bring in layout masters. That would be a typical thing. You can also bring in actual layouts, but be aware that the layouts not only will bring in the title block but they will also bring in references to the drawings from the other projects. So obviously this has a plan that is being referenced from that other file. And if I were to bring this layout in it would actually be referencing that. [2:02:21]

Now in terms of other things for migrating templates, we could have a whole call focused on that. I will mention that if we go to a schedule - so let me just close this up. So I'm in my sample project and I have a bunch of schedules here. Let me go to the electric schedule. So here is an electric schedule in that project. It's in MasterTemplate things that we have setup. If I go to the scheme settings you'll notice that there is an Export button. I can literally export each one of these electric schedules here, and you'll see that actually I've done that here for our transition. [2:03:18]

I literally exported each one of the schedules here. And then in my file that I was working on, I clicked on Import and I picked each one. So basically I was able to bring in copies of the schedules. They may require some tweaking but it is a very easy way to get all the fields in there and formatting. For the most part it's going to work pretty quickly. So what makes up a template includes of course your masters, your title block, the structure of your layout book, the schedules that you have, and then other attributes such as the layers you prefer to use and layer combinations. For attributes in general, if you want to add into a standard Graphisoft template or from one file into another, Attribute Manager is going to help you. And I demonstrated that a little bit today. [2:04:20]

So when you are taking something from an older version like ArchiCAD 12 to 17, my suggestion frankly when you're jumping that big amount is that you might do better to start with the Graphisoft template and just bring in your title block and your schedules and then perhaps adjust or play around with the

layers. And maybe add wall types or others later after you get familiar with how the materials work with composites. So that's the short answer about that. You can use the ArchiCAD 12 library in conjunction with the 17, if you use the Consolidate button it will load all the migration libraries needed to support 12 parts all the way up to 17. But in general, you will probably want to find the old parts and replace them with modern ones or current ones just so that you have a simple setup. [2:05:21]

Dave Olafs writes, "Would you show again in Attribute Manager how I merge the ArchiCAD 17 materials?" Okay, so Attribute Manager, if I'm in the Options, Element Attributes, Attribute Manager, Attribute Manager allows you to see on the left side of your screen all the attributes in your current file for a particular category, whether its surface materials or building materials or composites. Now you can open up another file to get access to it; it could be another project file. I saved a copy of the U.S. template, these two here. I just basically created a new file and saved it just for the descriptive name. But if you want to get the original ArchiCAD one, basically if I go to Find, ArchiCAD 17, here is my ArchiCAD 17 folder. Within the standard ArchiCAD folder there is a folder called Default. So if you open up Default, and ArchiCAD, you will see here are the templates. So we can literally go directly there. I just made a copy essentially of these files in another location for convenience. [2:06:37]

But if I open that up, I now see all of the ones that are here and I can select one or more and either append or overwrite. If you overwrite, then basically 18 goes into 18 and gives that. If you do append, then whenever you choose will go to the end or perhaps the first available blank spot. I'm not quite sure which it will do. So this is a very brief description of attribute manager. And I definitely intend to create a little bit longer course lesson on attribute manager, because I use it all the time for a lot of different things. [2:07:25]

So a lot of thank you's from people saying that they had to leave, but thank you. Connor asks, "Will you be creating more international construction buildups for composite materials in the new MasterTemplate?" We are going to be taking all of the composites - we had a lot of composite materials, different wall types and floors that we added into the international version because we did some study of conventions in the U.K. and South Africa and Australia. So we're going to be bringing those up to date at least using the construction materials, the building materials that Graphisoft provides. Those will be updated in the new MasterTemplate. [2:08:17]

So Rob Harrison asks, "How do I embed those new master layouts rather than having the project refer to the originals?" Actually, the new masters are copies. The layout exists in the new one. But only if you have drawings, in other words, like a floor plan or a detail drawing will it refer to another file. And you can relink those to drawings within the same file using the link option. Todd Hotchkiss says, "Curious to know if the look and feel of your MasterTemplate will be more similar to version 16 MasterTemplate or the Graphisoft template? Is it worth learning MasterTemplate if I only use it for a week?" [2:09:01]

MasterTemplate will have the same layers and same view map that it has had for years. We're going to be tweaking it a little bit. What will change in terms of the environment is simply - if I go back to the floor plan and go to the wall tool - there all these changes to the way this works. So yes, in terms of MasterTemplate, feel free to get started working or looking at MasterTemplate the way it is. The real

main difference, the most important one, is these interface differences that ArchiCAD has changed but the actual - if I open this up wider - will have all of the schedules in there, will have all of these different types of drawings, clone folders, everything here will still looks the same. I'm probably to going to add a little bit more stuff to it, but Scott and I discussed it and it doesn't seem to be a reason to remove any of the stuff, it's all very useful. [2:10:13]

"In attribute manager what does revert mean?" Interesting, I didn't know there was a revert option in element attributes. I'm guessing that revert might mean if you overwrote something, if you changed it and said, "Oops, I made a mistake," let's say open, let's get another file here. And take this and overwrite that was number nine. If I highlight this - revert. If I highlight something else, revert must mean just saying forget what I just changed. So that changed the name. It changed slightly. If I highlight this, by some weird coincidence, when I overwrite it, it changed the name a little bit. So that's a very interesting change there. [2:11:15]

I've noticed that Graphisoft went through and cleaned up a lot of their stuff. They had a lot of duplicate things that were removed in terms of fills and surface materials. So I think they used it as a good occasion to "clean house" so to speak. Alright, so I think that probably is it for all the questions that have been typed in. I apologize if I missed anything and I certainly will be following up with additional training related to ArchiCAD 17 with Eco Designer and Bim Explorer. Probably not this month, because it will take me a little bit more time to get my arms around it. But certainly I will be spending time both with ArchiCAD in general in future calls as well as specific changes or questions that come up with 17. [2:12:10]

I think 17 is great overall, maybe there are a few things that I could imagine being done differently, but overall I'm very excited about this new version and I hope you are too. So thank you all for attending. I'll post this call on the website. Please add your comments and questions to the page down below. This has been Eric Bobrow, thanks for watching.

[END OF AUDIO 2:12:40]