



## BEST PRACTICES COURSE – ArchiCAD 17 - AC 17 Project Migration

Hello, this is Eric Bobrow. In this ArchiCAD video training, I will show you how you can migrate older projects into ArchiCAD 17 and integrate the building materials from the standard template in a coherent way to provide clean sections as well as the opportunity to do energy analysis on these migrating projects. Here you can see in ArchiCAD 17, when I go to the Options, Element Attributes, that there is this new attribute called "Building Materials". And you'll see that there is a very extensive set of building materials organized in terms of priority here. [0:00:44]

We can also sort it by name or number. These building materials represent a good sampling of all the components you might need in typical project. If we go to the Options, Element Attributes, Composites, we'll see that walls like a brick wall here, refers to these building materials. So they are referring to other elements: foam board or concrete masonry unit. Instead of referring to the old fills, these are referring to the building materials that in turn refer to the fills. So remember in the building materials themselves, they are each giving us - say for the concrete fill that is seen in section or when you cut through it on the plan as well as a surface or what used to be called the material appearance for the element. [0:01:45]

Composites refer to these building materials and also if we go to the Complex Profiles in the Profile Manager and select something like this brick wall and say edit the profile, you will see that each of these fills here that represents a physical component is actually now set up to use the building materials rather than just a simple section fill like we had before. So it's a material rather than just a fill. And here we go to something else. And this is set to use a stucco in this particular case. So let's take a look at what happens when we bring forward an old project into ArchiCAD 17. To start out with the cleanest, simplest base for study, instead of bringing in an actual project, let's bring in the ArchiCAD 16 template. [0:02:42]

So the ArchiCAD 16 standard template would be found within the ArchiCAD 16 folder in a folder called "Defaults". Here we see the ArchiCAD 16 template. So this is a blank project, it has no actual building in it, and we'll see what happens when we do that. In this case, it's not sure where to find "Library 16", so I am going to remove it and instead I will add in - in ArchiCAD 17 - the 17 library. I will also add in the 16 migration library. That will allow anything that refers to library components that are not in the 17 library and will find them. So this is a good combination for moving older projects forward is the current labor plus one more migration libraries reaching back to the version that you are actually importing. [0:03:38]

So at this point we now have the ArchiCAD 16 template opened in 17. And let's take a look at the building materials. Guess what? Looks rather different. We are seeing many duplicate building materials like a bunch of them that say concrete structural and a number that say background fill and things. Yet the list is much shorter than it was before because ArchiCAD did not create or import the building



materials that are in the standard template. It just created them based on the fills that were in use. So concrete structural was a fill that was referred to in some of the composites. So here you can see these composites, say brick face or air space, they are all referring to building materials that were created during this migration process and they all have 10-digit extensions. [0:04:38]

So that's why we can have a number that might refer to something similar (concrete structural), with a different 10-digit extension. Now this is a bit of a mess. It means that if we were to start with this template, we would not have the opportunity to work with a very coherent set of building materials for our sections or energy analysis. Now this is a template, and there would be no point in opening the old template. You might as well open up or start a project with the 17 template because it's nicely set up for that purpose. But when you have an older project, you're going to have a similar situation. Let's take a look by opening up a sample project from the ArchiCAD 16. [0:05:31]

This is actually something that is from MasterTemplate. It's a sample project that has a lot of components in it and it will be a good example for a study. I'm going to open up the sample project here as read only because I have it open in ArchiCAD 16 as well. So I'm opening up this older project and let's see what it looks like. I will skip some of the things that might need to be updated, and let's just take a look at what happens. You can see the floor plan looks pretty good, in fact I can tell you that this is exactly the way it normally looks. And if I go to a 3D view like this, we'll see the 3D view, and it looks just fine. So we've opened the older project in 17 and it looks just fine. [0:06:23]

We'll even take an elevation here, and you can see that looks good. We're going to turn off the trace and reference so you can see how the elevation looks; nice, clean result. So this is a migrated project coming through instantly without any issues. Now we won't be able to do some of the fancy stuff in ArchiCAD 17 because the building materials are a mess. You can see there's a whole bunch of 25% and 50% concrete lightweight, concrete structural, a whole bunch of duplicates. Even though this list is fairly extensive, a lot of them are duplicates and empty fills. Look at that. Now there is a nice feature here in ArchiCAD 17 where we can say, "I really want to get rid of most of these empty fills." I will select all of these here and delete them. [0:07:21]

But instead of leaving the attribute empty or unused or missing, I am going to replace it. So all of these empty fills are gray, and I'm going to replace it with this. So everything that referred to the empty fill in a section is going to refer now to this empty fill. And we could go here and say empty fill here and get rid of the number at the end, like this, to make it look clean. But it still doesn't have any information about the physical properties of the element. And the priority, in terms of how it would fit into that whole system of cleaning up sections, we don't have any idea what to do with it. And in fact, these ones here vary all over the place. Concrete structural, we have ones with all different numbers and priorities. [0:08:20]



So we need to have more coherent way to clean this up. The first thing we need to do is reduce how many of these come in when we migrate the project. To do that, we want to reduce the number of composites that refer to all of these fills which then become building materials. In MasterTemplate we have a lot of different composites that are defined that makes it easy to select different wall assemblies. But we aren't actually using them all in this project. In any given project, you may only need a handful of composites. [0:09:04]

So what we need to do is open this up in ArchiCAD 16. And I'll go to ArchiCAD 16 where I have the same project open. Let's go to the Options, Element Attributes, Attribute Manager and see if we can get rid of some of the composites that we don't need. When I open up the attribute manager, you'll see the option to study composites or profiles or materials which now are called surfaces. Let's go to the composites. And you'll see there's a long list here. Some of them have check marks. A check indicates that they are in use in this project. You'll see there are a lot of them in use. That's because this is a product based on MasterTemplate, and MasterTemplate has a whole extensive area called interactive legends that are intended to be used for eyedropping. [0:10:03]

They are sample components that you can eyedrop. So if you want a roof or floor of a certain type you can go over there and eyedrop them. These are in use, but not for the actual project. So in order to clean this up efficiently, we need to get rid of the interactive legends. So the interactive legends are available when you turn on and unlock all layers. We're now seeing that the project has a bunch of stuff. We have roofs and fills and notes and things like there. But if I say fit in window we'll see that the actual project information is in the upper left, but there's this whole area here of the interactive legends. [0:10:49]

This is not typical of a migrated project, but it is typical of projects that have multiple files linked in. If you hotlink files into the base project, to migrate it cleanly you will want to work on each one of them separately. Clean it up in the way that I'm going to teach you, and then in 17 relink them back in. That's going to give you the cleanest result in the fastest possible time. In this case what I want to do is make sure that groups are active, so they're not suspended, and I can select all of the elements over here. You can see how they all have these square handles because they're hotlinked in. And I'll hit the Delete key. It then warns me that there are some things that are not visible because the renovation status is different. But it will delete everything if I tell it to continue. [0:11:49]

So when I do that, you can see how it all goes away. When I say fit in window we will see the project back on the site there. If I go back to the first floor plan or any 3D view, the project is still intact. Let me go back to the first floor plan and we'll clean up those attributes. So we'll go to the Options, Element Attributes, Attribute Manager, and let's check out the composites and see what's left after we've deleted all of those other components. In the composites, there are a few with checkmarks, but all of those ones at the end that have checkmarks are no longer in use. So I can click "Purge Unused" and get it down to just the wall composites that are actually in use. [0:12:44]



You don't want to use "Purge Unused" as an option in a project that you are in the middle of working on because you might need to use a wall assembly or composite on a future project and it's no longer on the list. It was, but it had never been used. In the same way, complex profiles, we can purge the unused ones. But if we were running a project we wouldn't want to do that arbitrarily, because we might need some of those ones that weren't defined or had not been used. In this case I can just say OK. I don't have to worry about the other elements because it's only the composites and complex profiles that are going to affect the building materials. [0:13:27]

I will delete all of these. And at this point we now have a simpler version but it's still a fully functional project. I'll go and "Save As" and give it a distinct name, "Purged Attributes". So I have saved that with a new name. That is important when you're migrating; don't overwrite your original one. Make changes and save it under a new name. I'm going to go to ArchiCAD 17 and close the file that I was looking at which was the version that had all of that junk in it. I will go and open this one with the purged attributes. It's going to tell me that it's in use. I will open it as "Read Only", because I want to start with this and save it as the new version that has been cleaned up. I will skip some of these updates that I don't need to worry about. [0:14:36]

We may need to look at the library. Let's just go here and there are some missing parts. All three of these are a zone stamp, so it's just a single zone stamp that we need to find somewhere. I won't worry about that but I will again say we don't need to use Library 16, let's use this little yellow icon here to consolidate libraries. It will automatically say that we are using an old library and it will consolidate it by loading the 17 and the 16 migration library. It's a very fast way to migrate the libraries in the standard use where you are taking it from an older standard library to the new standard library. At some point we will want to go back and figure out the zone stamp that we're missing, but for now I will leave that alone. [0:15:30]

Let's take a look at the building materials. The building materials now are a pretty short list. We don't have to clean up nearly as many things. I can take these two concrete lightweight ones and merge them using that new option where we can say I'd like to replace the concrete lightweight ones with this one. So now all three of them, or anything that referred to concrete lightweight, will use this one here. But we still don't have all of the standard building materials. And if we want to do an energy analysis or section cleanup we really should import all of those building materials. So I'm going to go to the Options, Element Attributes, Attribute Manager. I will open the standard ArchiCAD 17 template on the right side by clicking the Open button and navigate to the ArchiCAD 17 folder. In the default here I will see there are two templates in the U.S., residential and commercial. They actually have the same attributes. [0:16:40]

They have some slight differences in the layout book and views, but both of them have the same attributes so I can use either one for this purpose. You'll see that there is similar but slightly different profiles, and there are some more composites. But what I really care about are the building materials.



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and you can see here there is an extensive list of building materials. I'm going to select all of them and bring them in. But I want to be careful. If I used "Overwrite", #2 air space would replace #2 wood frame. #5 gypsum board would replace #5 stucco which actually would change the way in this building was drawn up. So I wouldn't want to overwrite, I'll use Append which will add them to the end. They all have unique names, so they are going to be added to the end of the list. Say OK and it's going to tell me that I'm adding a bunch of these things. [0:17:45]

It's actually going to be adding in some fills at the same time. This is something that we'll want to clean up later. These building materials use certain fills, and ArchiCAD is being careful to bring in the fills that were in use, because they might be somewhat different than fills with the same name. So this is something that we will need to clean up, but let's not worry about that now. So we're creating these building materials. And now let's look at the composites. The composite here, you can see there's only a short list that has to be cleaned up. The first thing I am going to do is go and delete these ones that are extra that have the 10-digit ending. So simply delete it and pick the one right above the gray that is matching. [0:18:39]

I will go to the next one with the zero and delete this and replace it with the corresponding one. Be careful that you matching it to the right one. Basically this will clean up this list so we have a smaller number to work with. This has some dashed lines here. We are not going to worry about that now; we are going to combine it in so that it has the simple representation. We'll delete this. So now we actually have a very short list. You'll notice where this say stucco is a building material and it's one of the older migrated ones. And I can go pick this "Portland Cement Stucco". I can go to this one that says "Sheathing and Building Paper" and perhaps use wood sheathing. I will change the "2x Wood Frame" to what would be the equivalent - "Wood Framing". [0:19:44]

I will take this "Gypsum Board" and replace it with "Gypsum Board". We're seeing now this is cleaned up and has kept the same dimensions and size for all the elements, but it's now using the new system of building materials. We can go through all of these and clean them up, but instead of going through it that way, I've found a great shortcut. I can go into the Options, Element Attributes, Building Materials. And anywhere where the building material clearly has a correspondence to the ones in the main system, I can say I would like to delete the concrete structural with this 10 digit extension and replace everywhere that it's referred to in any composite or complex profile. I can say I want to replace it with structural concrete. [0:20:35]

So now anything that refers to this is going to end up referring to the new one. So I don't have to go one by one through all of the composites that are referred to them. I can clean up these extraneous ones. Block masonry I will delete and replace it with concrete masonry unit. Sometimes it may take you a little while to figure out which one is the best. For example, there is no "Brick Face" here, so I am going to have to pick "Brick". Possibly I might want to create another material that is slightly different than "Brick" to be used for brick face. "Concrete Lightweight", if I delete this, you'll see that there is no





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"Concrete Lightweight", but there's "Concrete Topping". So that would be the closest that I think would match lightweight concrete here. Here is a plywood; and we are going to delete that and replace it with this plywood right here. And here's another stucco. We'll replace this with the equivalent stucco. You get used to pretty quickly finding these. In the international version, it's going to be slightly different ordering, but you'll have a similar thing where you basically are going to pick it. [0:21:54]

Sometimes you'll see "Wood Grain End" and that's because this was using a particular fill, and there's nothing that says "Wood Grain End". But "Heavy Timber" is probably the best representative; it's an actual piece of lumber or timber as opposed to a framing where we have studs or joists that are spaced in between. This is a single piece of wood. So I am going to delete the wood grain end and replace it with one that is called heavy timber. So basically go through here, there is a "Sheathing 1" and we'll replace it with the "Sheathing". Later on if I've made a mistake I can always go into the composite and redefine it. So you can clean that up later. We are going to end up with a coherent set of the building materials. [0:22:57]

There's a wood frame down here, and block masonry with this number, it's going to be concrete masonry unit. Gypsum board we will replace it with the gypsum board. We have these two woods; I am going to replace them with that timber here. So you can do more than one at a time. These two empty fills, I'll replace them. I'm not sure, they may be framing space, but I'm going to put in air space for now because that will be empty. Here is a wood; we will replace this one also with that heavy timber. Some things we really don't know what they are. They are 25% or 50%, so they are just some graphic fills. We could deal with them later and not worry about it. [0:24:02]

So let's look at that later. Maybe we find out in a composite that it's referencing that and then we will actually put it into a different material after we see what it's referring to. So I have just cleaned up most of that. At this point the plan really hasn't changed. If we zoomed in on it, I guarantee you would not see a difference. I have basically replaced the building materials with their corresponding ones in the new system. If I go to a section or an elevation here we're also going to see that it still looks much the same. So we've now migrated an older project in, it already looked OK in the plan sections and 3D view. But we are now almost to the point where we can start having automatic cleanup of these things. [0:24:55]

There is one more thing that we actually haven't looked at which are the fill types. This is another thing that we want to go through and say, it brought in an extra copy of plywood, let's just delete that and replace it with a similar plywood. You can see the gray one. So I would want to replace that. So we would have to go through the fills if we want to have this really clean. Here is an "Air Space 2"; we can replace this with the "Air Space". This takes about 5 minutes to go through all of these fills here. It's a little bit tedious, but it certainly isn't something that would prevent you from economically migrating a project. Here's the "Wood Siding 2". Let me delete this and replace it with the "Wood Siding". Look for the gray one just above that. [0:25:58]



Another thing that we'll find is that if we go to certain tools like the Wall tool and go to put in a generic wall, we may find we may find that the default is pointing at something that is missing. So then we would draw something with "Generic Exterior" or whatever material you want. If we go to the Morph tool, you can see this is set at 50%. Well, the Morph tool, let's just make that a generic material. In the international version there are different versions of material systems, so there are different generic materials that you can use. And certainly when you're creating a morph you may want to pick something specific that has been constructed with something like concrete. [0:26:48]

In this case I'll just put it into a generic one. And we go to the mesh tool or the shell tool; I think that's one that we may find sometimes that is set for an unknown composite here. So we would need to pick the composite. That's interesting; it's not letting us choose a composite there. Probably because none of the composites are set to be used with the shell tool. So actually if we were going to do the shell and have it with multiple components we would want to go into the composite settings and adjust that. So at this point, we now have a fairly clean set of attributes. This intersection here is not going to clean up the way that ArchiCAD 17 could clean up. [0:27:52]

If you have been working with 17 at all, let's just turn off groups here, you will know that if we select a wall and stretch this up, this should start to do some cleanup. You can see that it's not. It's sort of bumping into each other and looking rather odd. And another thing is that if I go and let's just take a marquee around an area like this, and say "Show Selection in 3D", we're going to see that the edges are not showing the new detail that's possible in 17. Right now it's showing black wherever that marquee was cut. If I go to the View menu, Elements in 3D View, Filter and Cut Elements in 3D, the marquee cuts the elements. Let's change this to a red. [0:28:46]

You can see that now all of the cut elements are showing red. The new feature that we have when we do this allows us to say, "Show the element attributes here". And now you'll see the edge shows a color, but this is not the way that it could be in ArchiCAD 17. In ArchiCAD 17 it could show multiple skins for the wall. How do we get it to show that and how do we get it to cleanup in a section the way it's supposed to? We go to the Options menu, Project Preferences, Construction Elements. And there we turn off this check box "Use legacy intersection methods for model elements as in ArchiCAD 16 and before." This is turned on automatically by ArchiCAD when you open an older project. When I turn this off, you can see how now we are seeing the face of the wall with all of the skins. [0:29:50]

And if we go back to that section and we tell it to rebuild from the model, we're going to see how this has cleaned up. It's now wrapping the drywall around and the framing is connecting together. Now one of the things that we want to check out is this framing, perhaps there should be a line. This is supported on top of that framing. So maybe we will want to go here and select this and edit the selected composite and change this from wood framing to something else. Maybe wood framing plus insulation or something different. And you can see now there is a line that went across because this is now a different component than the one below it. [0:30:36]



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So this concludes our lesson on migrating projects from earlier versions into ArchiCAD 17 and cleaning up the building materials and other attributes so we have a nice coherent set of the building materials that will give us clean intersections as well as the options here for having energy analysis, because all of these standard building materials all have information that allows you to get reasonable calculations for energy usage. When you're migrating something complex, like a template which refers to other components, for example MasterTemplate, we have an additional step. I'll be showing it in a separate video. You relink in the interactive legends hotlinks that are part of the template. So I'll do that in a separate video. [0:31:38]

The same general steps would be necessary if you have a project with multiple files. For example, the site model that has multiple building PLNs hotlinked in. You would want to clean up each one of them in turn to have the best result in the site model. So again, when you bring in an older project into 17, at first it will look just fine and you can create your construction documents in the way that you are used to with very little fuss. But if you want to be able to have this type of clean up here in terms of the sections or energy analysis, then you will need to clean up your attributes. And if you are migrating a template file then you need to be very clear to have a good foundation with that complete set of building materials to work with. This has been Eric Bobrow; please add your comments and questions to the page down below. Thanks for watching.

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