TOM TOBIN: OK. Well I want to tell you a little bit about what this class is about, so that you know. This is really more of an introduction class. It's a beginner's class. They listed it as an intermediate class because you're supposed to understand AutoCAD Architecture, but not necessarily Revit. Would that apply to most of you in here? Good.

So how many of you are running AutoCAD Architecture? How many of you are running it like AutoCAD Architecture and not AutoCAD? OK, there's a couple of hands stayed up. I'm glad to see that. I like that I like the person in back is kind of waving at me with that. Yeah, sometimes. It depends.

All right so what we're going to be talking about is switching from AutoCAD Architecture to Revit Architecture. And really this is so you're not going to be afraid. All right, we're going to go over some things here. So if this isn't really what you were thinking it was, you know, go hit another class while you still have time. Or go down to the open bar early. I'm all for that.

This is an AIA class. Guess what? You get points just for sitting here and falling asleep if that's what it's going to be before your flight. Are most of you leaving tomorrow or tonight? OK, so you can have one last Vegas night.

You know all about this. I just heard somebody say phone go off. Please vibrate that thing down.

So here's what we're going to be talking about. Why are we going to get a Revit in the first place? Are we going to Revit because our job deliverable requires it? OK, there's a few hands. All right, we're going to Revit because it's just time. Would we say that's pretty much the-- cool.

So we're going to talk about why you even want to consider going to Revit. We're going to talk about what holds most firms going to Revit. What holds them back. You know, what makes this tough. How do we introduce this to our firm?

So how many of you are already running Revit? OK, so you're doing kind of a mixed environment transition sort of thing right now? Sure. How's that going? How's that going for you? It's kind of slow isn't it? You've got some people who are fighting it, some people who aren't. We're going to talk about those things. We're going to talk about how we introduced this to a firm and what are some of the challenges, and then how to get over that hump. So we'll

go through this.

So just a quick bio of me. My name's Tom Tobin. I am the BIM Administrator or Manager of Design Technology at Acock Associates in Columbus, Ohio. We are a design firm that [INAUDIBLE] office buildings, high end custom homes, distribution. So pretty diverse product line. I've been in the business about 26, 27 years. I actually started on ink and Mylar [INAUDIBLE] drafting. Cool. I've been on several different platforms. I spent some time in the reseller chain-- not really the reseller chain-- the consulting chain, where I helped transition in from AutoCAD to AutoCAD Architecture. And then I drank the Kool-Aid now I'm trying to convince you to move on down the road. All right? So that's a little bit about who I am.

And for those of you-- I see a few faces that I saw in a class I did earlier, so some of these slides may look the same because I put this in every presentation I give. It's all about the attitude. Right? It's the attitude. It's the attitude that you guys have. It's the attitude your firm has.

How many of you have actually tried to go on vacation with your family? Whether it's your kids or your brothers and sisters, the long drive in a car. Does that work? You know, this is a great thing. We're going on vacation. We're going to this fantastic destination. When do we get there? Are we there? I'm tired. I'm hungry. You know, and all of a sudden your attitude is just shot. Everybody's-- even though the destination is going to be good, but while we're getting there--

So what my parents did, you know, they'd make sure I was loaded up with comic books. This is way before you know handheld devices and things like that. So we could have a good attitude in the car so we could enjoy this experience. Same way in the office.

How many of you are the end users? The guys who are doing the day to day drafting. Right? You are the boots on the ground. The guys who actually are having to deal with this. How many are BIM managers, CAD managers. A lot of those same hands went up. How many of you are the architects? Let's see, the same hands. OK not quite as many. How about owners of firms? We got any owners?

OK, this comes all the way down from the owners to the end users and backwards, because if the owner doesn't have a good attitude about trying to make this, he's not going to support it. OK, if the end user doesn't have a good attitude, he's going to run up to the owner and say,

hey, I got I had this done an hour ago in AutoCAD, right? That you're making me do this, this is killing me. So, your attitude. You have to have the right attitude to get there. So enough preaching about your attitude.

You transitioned out of AutoCAD right? When you went to % Architecture you used AutoCAD before? Did you get a bang for the buck with objects? Did you feel that you're getting a little bit more productivity when you went to walls, doors, and windows versus lines, circles, and arcs? Right. So now what? We're trying to continue down the BIM road.

And one of the things I'm going to tell you right now-- and don't let anybody tell you it's not-- AutoCAD Architecture Is BIM. Right? It's as much BIM as Revit is, but for some reason when people say BIM they just think Revit. It's a drawing that contains more than just lines, circles, and arcs. It's an intelligent drawing that has information. So you're already working in BIM, and so that in itself should help you feel better about this transition.

How many of you actually downloaded the handouts? OK. How many of you brought them? How many of you need one? All right. I'm going to say I'm going to set these up here. Same thing I did in class yesterday. Take and out if you need it, put it in your bag because I'm not following it. All right.

The handout is for you, but really what the handout is, is it really shows you the comparison, the one to one comparison, of what this looks like in AutoCAD Architecture and what does it look like in Revit. And that's all I have. Sorry, man. You can download it, though. So I don't want you to be afraid. So if you already understand objects and how they work, then a lot about this already. OK?

I kind of call this good things come to those who wait. And essentially what that means is that when I get a new piece of software I'm the type of guy who wants to immediately load it, play with it, and do that. Anybody feel that same way? OK, that's me personally.

Professionally though, I don't do that. Firm I'm working for right now, we're just now starting to implement 2017, and 2018 comes out when? In April. OK? I like to wait for the next point release or patch, or being able to talk to other people. Say, whether they had a good experience with it or not. What they've done.

But when I say good things come to those who wait, I told you I actually taught a class from AutoCAD to AutoCAD Architecture. That is a great transition from AutoCAD Architecture, then

into Revit. I'll give you a real world example. I was doing an implementation with a firm down south. They had two offices. I went to their corporate office. So both these offices are running on a AutoCAD Architecture. Tell me if this sounds familiar to you guys at all.

All right, they're both running AutoCAD Architecture. I go the corporate office. They're using AutoCAD Architecture the way some of you who raised your hands like AutoCAD Architecture. They're using walls, doors, windows, objects. When we started doing the training for Revit, they were the ones going, hey this is just like making a wall style. Oh hey, this is similar to-- they had this one to one comparison. They related to it. I went 50 miles down the road to their branch office. Running AutoCAD Architecture.

Like those of you who waved to me in the back, they were really using it as AutoCAD. OK? The only time they use the AutoCAD Architecture part was when they were asked to help out on a job from the corporate office. Now, they transitioned. They made it, but it was a lot more difficult.

So those of you who already understand AutoCAD Architecture, you're going to make this a lot easier. Because everything that you know pretty much goes with you. I said that I've been a lot of different platforms have been on Intergraph. I've been on MicroStation. I've been on Arris, BuildersCAD. AutoCAD 10 was the first version I touched. Went into AutoCAD Architecture, Revit Architecture.

And my point in talking about that is that I think all CAD systems are the same. I truly believe that. Have you guys had that experience or no? Or has AutoCAD only been the only platform? Anybody else been on anything other than AutoCAD?

OK, so those people who raised your hands, this is somewhat true, right? Revit is the same way. Revit's environment used to be substantially different. It was scary to the AutoCAD user. Part of why I gave you the handout is because it's not anymore. Not as much any. The scariest thing about Revit to most AutoCAD Architecture users, or AutoCAD in general, is the fact that it is what? One file. Thank you. You guys can-- this is the last class. We had music. Let's have a good time, all right? You guys can shout out.

But we still need to have the right attitude. As I'm trying to talk about this, OK, the scary part is it's all in one file. But we're going to see that that's really a plus, not a negative. So objects work the same. Just about how we place was components buildings, everything's pretty much the same. There are some differences because it is in one file basically.

I can also tell you that having gone down the road, doing our wall styles, as in AutoCAD Architecture-- wall pipes in Revit Architecture. Revit actually handles this a lot easier. How many of you may display configurations and all that fun stuff in an AutoCAD Architecture? Yeah. That is great when it's set up, but man making that happen is a chore. All right? Would you agree? Yeah, pretty much that's a chore. It's not that much of a chore in Revit. It really isn't. And it's surprising how easy it became.

But there are some differences, so we'll work through that. The biggest difference is the fact that it is, as I keep mentioning, in one database. But what that allows us to do is to have more versatility in how we produce our drawings. I mean really. And we can still file share. So it's still not a only one person can open the file, we can still have multiple people work on these files.

So you guys have already asked yourself a series of questions. Whether you wanted to or not you've asked yourself these questions. Why do I want to move from AutoCAD architecture in the first place? Well is it because it's time, my firm wants to stay cutting edge, or because the deliverables are making me do this? All right. What's the gain in changing? Why wouldn't I want to stay with AutoCAD and an AutoCAD environment?

When I was teaching AutoCAD and AutoCAD Architecture the thing I said the most was, hey guys this is not scary. It's AutoCAD. You open it up and it looks exactly like AutoCAD. All your tools still work when you open up AutoCAD Architecture The line tool still works, all your audio lists still work. You just have the greater opportunity, so why would I ever want to leave that to go to Revit?

They both make models, right? How many of you are actually using the model aspect in AutoCAD Architecture? Wow, that's not many. OK. Is it because it's just kind of cumbersome? Right. OK. So we're going to talk about what the difference in these models are. So here's your answers. Why am I moving? What's my gain? And I'm going to use the word opportunity. Revit can give us more opportunities. And I'll elaborate on exactly what I'm considering an opportunity by using the software.

Why don't I want to stay with an AutoCAD environment? I just told you that that's comfortable. All my legacy product works. Right? How many of you have been on AutoCAD or an AutoCAD product, you know, CAD drafting package, for more than two years? OK. More than five years? More than 10 years? This is the majority of the room.

So you guys have developed all kinds of great ways to reduce your drawings, right? You've streamlined everything. You made it all down. You sit down you know exactly what you're doing because you've got a habit. Or maybe I should say some bad habits, because everybody doesn't follow the rules. Whether it is the rules set up from the software itself, or the rules set up in your office, right?

Somebody decides quickly they don't care what layer they're on. They just start drawing. We ever had that happen? Once or twice, right? Have we ever done it? No, none of us have ever done that. Somebody else's file that we've always had to deal with. All right?

Think of Revit, as we're moving to Revit, as this fantastic opportunity-- because I'm talking about opportunities-- to develop all new bad habits. Isn't that exciting? That's exciting. How are the models different? Bidirectional and parametric modeling relationships. There you go. Done. Clear? Clear as mud. Makes perfect sense. We're going to get into that.

What this really means is because it's one file, which is really a database, right? Revit is technically a database. I can make a change wherever the change makes sense. How many of you use the elevation tool in AutoCAD Architecture? Yeah, because sometimes it's easy, sometimes not so easy, right? It depends on what it is. So when you make a change in AutoCAD Architecture to your floor plan, that change isn't immediately reflected into the elevation, is it? Is it? No, it's not. I can't really go and change that elevation and have that reflect on my floor plan, can I? No. That's what this does. Parametric, bidirectional parametric modeling. And I'm going to show you an example of this.

So let's get into what I am going to call opportunities that I hope you think are opportunities as well. And the first one is improved quality. How many of you have ever spent time tracking down callouts and details on different sheets? Have we ever done that? Have we ever looked at a callout and flipped to that sheet, and go, well, where is the detail? That's never-- that never-- because we're-- I know everybody in this room has never done that, has ever had that problem, but other people have. OK? They've run into that problem quite a bit.

This is one of the things that Revit handles beautifully for us. Can AutoCAD Architecture handle that for us? It can. It can. But I'm going to tell you right now you have to do a few things to make that work right in AutoCAD Architecture. So I'm not telling you anything that you can't do today, of but I'm trying to tell you that ultimately this is going to be easier for you. I mean, way easier. All right? And unless as architects, designers, owners, BIM managers, you like

doing this. You like chasing down callouts and going, that detail-- do we like doing that? Heavens no. Heavens no.

So let me give you an example. Oops. Jumped, hit too many buttons. So here's an example of this. I've got a floor plan here. There is my callout. Looks pretty much like what we're used to seeing, right? It's referring back to this sheet. For whatever reason I don't want that wall detail, that wall section, on this unit anymore. I want to put it up on this sheet. Now in a CAD package, we've got to get into that other DWG, we've got to move it, we've got a delete things, and we got to go back and change the text. I delete it off this sheet, that view, and immediately the callout is empty.

I just go to my project browser. I drag that same view-- when I deleted it off the sheet I didn't delete the view. I drag it on, and immediately it knows what sheet I put it on and it's position. Do we like that? I love that. I love that more than anything. I just think that is one of the most powerful things that this does.

The other nice thing, and I don't know if you guys are aware of this, but when we deleted that view the call out became empty, right? Now those of you who've been playing around in Revit, raise your hands again. You've been playing around somewhat? Do you realize that when the callout is empty it doesn't print? You guys know that? OK, in the print dialog box there is a place where you can tell it to not print unreferenced callouts. So if you want to see an empty callout then you have to uncheck that.

But if while you're doing this and you're kind of creating sections and things like that for-- because I want to see a particular view, but it's never going to go on a sheet. So you just, you don't want that to print, it won't. OK, that's another thing that we can't do without AutoCAD architecture as easily as that. It can be sitting there, we can see it. I see it on view, but it won't print.

OK, so that's what I would call my first opportunity for improved quality. And then we'll talk about the opportunity for greater productivity, but I pretty much just covered that in improved quality, didn't I? Yeah. Because that task alone can save you hours. I mean it can just save you hours. But let's go ahead and look at this greater productivity. And Is going to be an example of the parametric, bi-directional parametric relationships that I was talking about. Because this-- there's my job again.

I opened up three different views, and now because everything is connected in one file I can

work in whatever view makes the most sense for me. So I'm going to come over here to my planned view. I'm going to select this window and immediately it highlights in every other view. This is also highlighting in building sections, and in the wall sections, anything else. So I'm going to right click-- I could just hit the delete key. I'm going to right click and I'm going to delete this out. And immediately, like that, it gives me a warning. Right?

In this case, it says I have another view that has dimensions on it. Those dimensions just got adjusted. Go look at that. So it's already telling me that I may need a little bit more work. It's trying to help me do my job. But we can see that it went away out of my elevation. And this is a true elevation. It went away out of my model. If I want-- if I'm using my model. And in Revit the model is everything, OK?

I don't know if you noticed, but I also have window tags. I've tagged the window. I created a schedule with that. My schedule is now updated. In one move, I now know I need to change another view that has my dimensions because I have a different dimension plan. It updated my elevations. It updated my wall sections. Updated my building sections. That's greater productivity.

I'll give you another real world example. I was in an architectural firm back when I was doing consulting, and a older designer, older gentleman, from the era of hand drafting-- fantastic artist. He could pull a napkin out, sketch an elevation, and you could drop a scale on that. It's a lost art. I mean, we've been losing that. He could not transition to CAD to save his life. Class, after class, after class, after class, and now he's a Revit expert. No, he's not a Revit expert, OK?

We all wish that could happen. That didn't happen. He can't create a Revit file. I'm not going to say that, oh that Revit's so great. He can do all this stuff. No. He still can't create this file. He can't create the types. He can't do any of that stuff.

But what we did teach him to do was to open up the project, work the browser, print sheets-- that's very important for your project architects, all right? But he could open views. And then he could come and do what he does as a designer. And we may have different program windows, right? That part of the job says, hey, we're going to use these types of windows, and he's going to say, hey, I need a different window in there.

We taught him how to select that, and he could pull off the list and replace that window. He could nudge that window over. When you nudge the window over you won't get a warning

about dimensions. The dimensions will just update. OK? If you delete it then it tries to delete-- because you've referenced those points. So it says, hey, there's nothing here for me to reference to.

But now all of a sudden, without him knowing it, he's actually helping me do production work. I mean, that's incredible, because it's all in one database.

It's also got a lower cost. Right? You guys nobody's complaining about the cost of the software, right? Hardware? No. Actually that's not what I'm talking about. I'm talking about the cost of efficiency. I'm talking about what we can get done. I just showed you two examples that back in the day, using straight CAD, and I'll even go back to the hand-drawn. Boy, this was time consuming. This is just time consuming stuff. So this is going to allow us to get more done with fewer resources.

And believe me, I'm not saying that, oh now you get to go chop some heads because they don't want to join the Revit team. That's not at all what I'm saying. What I'm talking about is that today, depending on the size of your project, you may need three to four people, minimum, working on a job, right? And in many cases, depending on the scope, many more, right? Would you guys say yes to that? Yeah.

And we have multiple jobs in our firm, right? No? You guys are only working on one job? OK. Must be nice. All right. Your fees must be incredible.

So we have many projects going. And once again, I know nobody in this room would ever do this, but sometimes firms have a tendency to put all their resources into one project. And this other one sitting back here waiting until it becomes a fire before we start throwing people at that, right? I mean, you've heard of this, right? Yeah, you haven't experienced that yourself. What I'm trying to tell you is that now, once Revit is fully implemented-- big caveat. Air quotes. OK? Once it is implemented you should be able to use fewer people to run that job, which allows those other people that you would have been using to be working on the jobs down the pipe. That way we can try to manage our workflow a little better. OK, that's what I mean by a lower cost.

The other thing that it really does do, as you've seen in the example, if you're a small firm you can get a lot done by yourself. And if you're a large firm it can really make you a much more efficient in how you use your resources and your time.

Visualization. How many of you do visualization? I'm talking about renderings and bells and whistles. How many of you do them electronically? OK, there's a few of you. All right? Once again when I was the guy who would come and demo to your office AutoCAD Architecture, there was this big section that the salespeople said, hey you got to show them the bells and whistles. You got to show them the-- look at what you can get, what you can do.

And hardly any firm really ever got there. I mean, you really had to do some work. I'm not saying you can't, or you couldn't, but you had to really allocate some time to do that. All right? Visualization really is very simple in Revit.

Have you guys played with this at all in Revit? A little bit? And would you say it's fairly simple? Yes? No? Maybe? Come on, let's-- OK.

So I'm going to give you a real example here. This is a project in Revit that I was asked to work on. We had a job come in that was an addition to a school, a high school. They wanted this addition to be kind of like a coffee house environment for kids that weren't really making it in a traditional classroom. It was still teacher lead, but they wanted it to be a more relaxed space. They drew all this up in AutoCAD. We shipped it out to a renderer that we had-- beautiful rendering. Oh my God. I still love guys who can render by hand. I mean it is an incredible art form in itself.

They go to the meeting, show them the floor plans, show them the rendering-- Yeah, I can't quite see it. So they came back and said, hey Tom. Can you put this into Revit for us? I reference in the floor plan, I trace it. OK? With Revit walls, and I go to the manufacturer and I download some of the stuff. So I didn't create all those chairs and all that stuff. I actually just got it from the manufacturer's website. And I didn't add anything that wasn't out of the box here. I didn't do anything special. If you ever worked with-- you see the curve ceilings and things like that. Anybody place ceilings in Revit yet?

OK. It's a sketch tool. You can curve, all that, do what you want. So I did this. I then took a camera shot perspective. We did others. That's why we put it in Revit because we wanted to show them multiple views so they'd get a real sense of this. But I just want to show you how in the design process it's working.

So we did a wireframe. We add a little color to it. Then they actually liked what they were starting to see, and they gave us a list of materials. So I actually went out to the manufacturer, put in the real carpeting, did the whole stuff. Just mapped it, OK? It's no no big brainer. This

was-- you know, I didn't have to spend hours trying to figure this stuff out. And I rendered this in Revit. OK? I didn't put this into Photoshop, I didn't put it into Max. I didn't do anything. This is just out of Revit, nothing special.

By this time now, we got the job. OK, we got the job, and now they're critiquing and go, you know, that's too open. So I made some changes. Views already exist, take it back. The client goes Hey, yeah. That's about what we're looking for. And I'm still doing construction documents, because I'm still using these views. Everything is working together because it is one database.

I'm going to just show you this other picture. This was another view looking the other way, and there's a reason why show this other view. Because you can see, as they were working this, they says, nah, I don't want those colors. We want to change it. We want to change the floor types. So we're just doing that, and so this was the final rendering out of Revit I had done. Architect went out, and that's what was built.

Oh my gosh. I mean, I think that's incredible. I mean, how often does the customer actually get what they're going to get? I mean, they okayed a design from what we did and it's essentially exactly what they expected. This helped us get the job.

Within the same office we did another thing where we were doing a county courthouse, and they wanted a new bench for the judge. And the carpenters came in and made it, and he says, hey, I can't see the jury box. So they brought that to us and we just started pumping it into Revit. We took camera shots from where he would be looking, and then we figured out how high everything needed to be. And because they could see the space in Revit and it was still doing our construction documents at the same time.

Have you done this in AutoCAD Architecture? Can you do this in AutoCAD Architecture? Well, yeah, you could. You can do this. How many of you do this opportunity? Facilities management? Anybody here do this at all? Yeah? OK. That's cool.

I say this every time I've given a talk like this. Facilities management is really one of the up and coming money making ventures, I think, if you start getting into it. Because we have all this data. As I said, Revit is a database. There's all kinds of data inside here. AutoCAD Architecture is a database too, of sorts. I mean, there's a lot of information associated with spaces and whatnot. Excuse me.

But you don't want to do data management through Revit itself. There's a lot of other packages out there. ARCHIBUS is one of them. This is an example. Is that what you use? ARCHIBUS? And are you using Revit yet? OK. If you're using Revit-- or, I'm sorry, ARCHIBUS-- definitely start using Revit. It's backwards compatible. It'll bring in a Revit model into ARCHIBUS, and you can do all your facilities management stuff, and you can push it back out. And those changes will go with the model into the Revit environment.

And then you can make some different changes in Revit and push it back up, and it works really well. I mean I've seen it work. I haven't done it myself but it's been demo-ed to me. OK? And I know some people over there who have told me a lot of this and that's why I include them. I get no kickback for this, so you know, it's OK. It's a good product.

We have FM systems as well. You know, so AutoCAD does. So there'sa lot of packages out there that are trying to look into tying into Maximo. Are you guys familiar with Maximo? That's like one of the biggest facilities package out there. But anyways, owners are kind of starting to realize this too, themselves. It's no longer the days of where we draw a plan, print it out, it's built, then we do what? We used to shove it into a flat file, hope the owner would come back-- and many times they did if we had a good relationship-- and they would want a change.

Now, once again I'm going to date myself, and I want to see how many people know what I'm talking about. When the owner would come back, we would pull that old job out, and what would we do to that floor plan? We'd probably burn a sepia. Right? Does anybody know what I'm talking about? Right. There you go. There's a lot of people who have no I have not had the joys of working with sepias, or to smell like ammonia coming out of a blueprint room.

The sepia basically sort of burns an image on. You'd flip it over, you'd erase this part of it, and then you would redraft the new design. OK? Now we have-- and I'm sure you've heard this in just about every Revit class, any BIM class you've been in-- a building lifecycle.

OK, the owners want these things. They're not entirely sure why they want them, but they know that they can be used for more than just this piece of paper. One of the arguments that I have with the people in my office who are transitioning-- by the way, we're not transitioning out of AutoCAD to Revit. We're transitioning out of Microstation to Revit.

So one of the arguments I had. I had an architect. I'm building this model for him, and he's going, all you care about is the model. All you care about is the model. And I'm like, yeah, I care about is the model because the model is what creates all the data. All he cared about

what was printed on the piece of paper.

How many of you are only concerned about what's on the paper so I can go to a meeting? Come on, be honest. OK. I'm surprised. Either you don't want to really tell me, because that's what most users, most people-- it's the deliverable, you know? What can you put out in the field? What can I get this done? But the whole industry here is changing somewhat.

So I've already been saying that you probably do all of this. And I've already mentioned, I think Revit can do this better. I mean I was the guy who didn't want to move Revit. I really didn't. You Know I was very happy where I was. And I didn't move into Revit for very long before I did not want to go back. If you take me back, I can still do it, but I don't like it now. And so I talk about a good attitude. I don't have one of those when you ask me to draft in something other than Revit. but that's another topic. All right? Because Revit really can do it a little better for us.

And I kept talking about the bidirectional parametric relationships. AutoCAD Architecture, AutoCAD in itself, by its nature is what? It's a fragmented file system. You have a different drawing for everything, right? For the most part? You have first floor DWG, second floor DWG, foundation DWG. Depending on how you're doing it, elevation DWG, details DWG, so on and so forth. So that means, as I've mentioned already, every change you make you may have to chase down and do in all these different places. I've already shown you how the parametric aspect of that works. This is really what's different.

How many of you use your project navigators? Do you love them? Once again, once you set it up right, it works very well and it can assemble a model for you. And once I got through the hoop, I did like it, but that was a lot of work. And it's a lot of work making sure everybody follows the rules right, right? We don't have that problem with Revit. And it still comes down to PMA, positive mental attitude in how we're doing this.

Now one of the biggest things I used to talk about in transitioning to AutoCAD Architecture was phasing in the stuff. Because AutoCAD Architectures-- what a big package, right? Yeah. OK. So I would always say, hey start doing walls, doors, and windows and get that immediate bang. Then maybe do schedules, then maybe do the elevations, then maybe do this. And before you know it you're doing all that, but usually you only get about this far and you go, yeah this is pretty good.

I say the same thing with Revit. You want to phase this in. You don't want to bite off more than

you can chew. But I will tell you the minute you start doing Revit, one thing quickly leads to another. And before long you're using more things because it's that database. OK, I'm still going to hand do a schedule. That's fine. I mean, you know, draft it up and fill this in. But you're quickly going to realize that when I have a window type, and I can assign a size to that and other information, and I can hit a button and throw some fields and I got a schedule, oh man, I'll phase that in now. You know, why not?

But you can be successful without using every tool that's available, right? Because in the end of the day we were talking about deliverables. Is it buildable? So you don't have to use everything. You don't have to do that visualization part that I was talking about. It's pretty cool, but you don't have to do that. One of the things that I talked about is phasing in-- you know, maybe you don't do your details right away.

I did a class yesterday about how to bring in your CAD details into your Revit environment. I know there is a couple of people who were in that class, so just relax you're going to see some of the same things at this point. All right? But well but you can still use your AutoCAD details within the Revit environment without having to create them yet. And so we're going to look at an example of that right here.

So here I'm back in my job again. And we are going to add a detail to this sheet. And in this case it's going to be-- I'm going to switch to AutoCAD so you can see it. It's going to be a typical floor detail control joint. So if you're in my class yesterday the same exact same example I gave. So here is my AutoCAD. Do you guys have details in AutoCAD? Everybody? Yeah, of course. You have them in Revit yet? Not too many. And you wouldn't if you're transitioning.

Part of what you want to do is you want to build in time to build those too, OK? So what I'm going to do is I'm going to go to views. I'm going to create a drafting view. Do you know what a drafting view is in Revit yet? Good. So you create a drafting view. The important aspect about creating and drafting view and bringing it in from AutoCAD is setting the scale, because we need to have that scale be correct. See, I feel like I should have when going and the whole bit.

So we've got a blank sheet right now. And what's going to happen here is that I'm then going to go-- well, there, it exists right there. And I'm going to go to my insert tool. You guys know how to use an insert? Do you know the difference between linking and importing? OK. Good. Well, then maybe I should skip this part too.

Well, so here here's my DWG. We're going to link this in. And the reason why we want to link it in is because when we import it-- do you guys know that if you import it brings in information behind it? It brings in line types, fonts, patterns, all kinds of things that could slow down your Revit environment and maybe cause warnings and errors. I go through and I preserve the colors. I make the layers visible so I can quickly see what I brought in from AutoCAD.

And if I do a double click here, we might actually see a detail at some point. So there my detail. And essentially this is what in AutoCAD terms? So like a block reference, right? We've just brought this bad boy in. So now I could phase in and still continue to use my AutoCAD as I'm transitioning. As I told my class yesterday though, you want to start migrating these over into Revit if your goal is to be a full Revit house. I'm going to look at that example next.

But how do we add that fantastic opportunity of coordination to this? So I'm going to put a callout in, and this callout is going to be a plan detail callout. And so before I place this detail-- now this is an older version. This is actually changed. It's up on the ribbon now, but it used to be on the option bar. You have to tell it to reference another view. And I'm going to tell it to reference that CAD view that I created.

When you do the dropdown it gives you every single view that's in your project. This is an active project, you'll have lots of views. That's another thing that kind of scares people going in to Revit. You're like, I've got to create a view for this? Wait, another view for that? Why can't I just turn layers off and on? Well, we don't have layers. We create views. And you're going to see that working in one view to the other is actually pretty cool, becaus the changes you make one view reflect into the other views. All right?

So I am going to place this callout in my drawing, and granted this is not where you would put a floor control joint, but this is just to show you that now is going to work like any other Revit view call out. I hit the head and it takes me right to my Revit detail, or my AutoCAD detail. Now, if I place that onto a sheet, which is a simple drag and drop method, that callout head will get filled in and I will then be utilizing the opportunity of coordination while phasing in my AutoCAD aspect of this. So I put it on a sheet, it fills out the callout, and now if I delete it, the callout is cleared out. I've now got an intelligent Revit piece of AutoCAD Architecture. Any questions? Kind of cool? Kind of not?

AUDIENCE: If you do intergrate all your detail library, [INAUDIBLE]--

TOM TOBIN: Yeah.

AUDIENCE: --do you start adjusting the details [INAUDIBLE]?

TOM TOBIN: No. Did everybody hear the question? What the question was is that he was saying that once you start integrating your details, you're making them Revit details, right? He wanted to know if that's going to then affect the walls, and all that other kind of stuff, and I told him no.

Now the real answer to that is that if we're doing drafting views, or detailed views-- OK? A drafting view is just a 2D thing. It does not come from the model. So it would not affect our walls, anything. OK? At its simplest state this is line work. It's just 2D line work. You guys use your Detail Component Managers? I want to see heads shaking from everybody, because you should all be using your Detail Component Managers in AutoCAD Architecture. OK? It's the same in Revit. I have a Detail Component Manager there. So that's how you create these.

Now the other part is what's called a detail view, and you would put a callout around the chunk of the model. And then it-- like when you cut a wall section, that's really a detail view. And it shows you the outline of those walls, all that kind of stuff, and then you've got to add maybe the brick coursing and all that other kind of stuff to it. That's a different animal.

So here we can phase this in and do that. Now let's take a look at the next step that you just asked about, though, that we want to integrate this information. And let's see if this actually works. So using the exact same AutoCAD detail, what we're going to do is what I referred to and others refer to, as Revitize. We're going to Revitize, industrialize, utilize. Right? We're going to make this good. It's going to be the Revitization of our AutoCAD.

Now, there's basically three different ways to do it. One is you just redraw it in Revit, and you go about it. The other is that you do what we just showed you. You reference it in. That should only be a short term solution. You don't want to continue to do that. You also want to make sure that if you reference in an AutoCAD detail, or anything from AutoCAD into Revit, that you've copied that into a project directory so that it goes with the project. Right? Because all of a sudden you don't want it not finding it.

So in this case, the important thing to how to Revitize a detail is never do it in the active project. Why did I say never do it an active project? Because I already told you that when you import something from AutoCAD it brings in all kinds of garbage with it. We have to import to do this method because we cannot do what most all AutoCAD users love to do. We cannot

explode a linked AutoCAD drawing. We can an imported one. That's the difference.

So we've created the view just like we did before. Scale really doesn't matter because it's going to be Revit, and I can change the scale in Revit at any time. Another thing I love about it. OK?

So now I'm going to import. The drawing it's going to be exactly like how we did it before. All my settings should still be set. And it should work a little quicker. I can bring in DWGs. Is anybody actually running Microstation? OK. If you ever come across Microstation even though you can bring it in, never bring it in in a Microstation format. It just bogs Revit down like you would not believe. Save it as a DWG in Microstation because you can do that.

So here it is. I select it. I get to go to explode. I love to do that whenever I can. So I explode it. And then it is exactly like any other thing. It's just lines, circles and arcs. It's actually telling me, though, that I didn't have a closed area, so it couldn't create a field region for me. Revit tries to help us. I'm going to delete some of this because I just want to get through it. You know, to show you how to do this. I don't even know how we're doing on time. We're doing OK.

OK, and I want you guys to be here on your last class. I could keep you late. We can turn the music back on. We could have we could have a good time.

So what we want to do here is we want to change everything to Revit. We don't want anything to be AutoCAD in any way. So I go to my properties palette. Now, you see right here? It's got the name of the drawing in front of it. That's how I know it's Revit-- or, it's AutoCAD. I want it to be a Revit type. You should have a template set up in Revit.

How many people have templates in Revit already? OK. Next year if you come back, I want every hand up. So I have Revit types in there, and so all I'm doing is I'm just Revitizing this stuff. The nice thing about doing it this way like with the text I don't have to rekey this in. Another way of handling this is you could have just traced over it. You could have used the pick tool and done that. But you also should use a filter. I'll show the filter command in a minute, but it's just like in AutoCAD. You select it all and then filter down to what you want.

So I'm just going through, and I'm changing everything to Revit types. So now all my fonts are done, but what I need to do is the dimensions. Because I did a full explode, that's just lines, circles, and arcs. We want this to really have dimensions. So as I as I told you, I'm just going to delete these dimensions. So there's a little cleanup that's involved here, but depending on the

complexity of your detail, this could take anywhere from 30 minutes to 2 and 1/2 hours. And the more somebody does this the quicker they get.

Right now we're just putting this into lines, circles, and arcs, but we should be-- if it was more complex we could be adding the detailed components of studs and channels and everything else that's in here.

Now I told you, you need to make sure that you have a template so that your things read correctly. I obviously didn't do that right, so I'm just going to change my rules into how my dimensions are supposed to look, because obviously I didn't use the right template. So you want to create a template just to do this.

So now I've changed the fonts, everything's cool. I've got real dimensions. Now all I have left is line work. You'll also notice that as I'm doing this, they're turning black. Color means nothing to Revit. Nothing. Except for if you just want to see it differently. So it wants to default to changing it to black, and that's another way that we know.

So I'm going to change the fill pattern. Once again, when I selected it the fill pattern had the name of the DWG. Now I'm going to use my filter tool. And the line types actually have the layers behind them. That's how I know which ones are AutoCAD or AutoCAD Architecture. It doesn't matter. And I'm going to change them all to a Revit line.

So there. Everything's black. If I select it all I should see nothing with file name or layer names and that's how I know that this detail has been completely Revitized. OK, so that's really not terrible, is it? Would you say? It's not terrible.

So we can select that. We could do a Control-C and paste it into our active project now, because it's clean, because you don't want to bring in any junk. We can also right click-- and this is the better way to do it-- right click on our project browser and tell it to just copy the whole name to the clipboard, then go back to our project and paste it in that way. We do it where we select it. We have to recreate the drafting view and then paste it into that. So you have to do more steps. And at this point it becomes exactly like the other one. This is now-- but it's a Revit detail.

So let's move on. OK. So we can also-- I've been asked this in the past so I included this. That once you start Revitizing your details what do you do with them? Right? So you create a Revit drawing, project itself, on your server that has just the details in it.

How many of you guys have a common location on your server for your AutoCAD architectural details right now? OK. Most of you should. Most of you are probably copying from job to job to job, though. What drive did I do that on? Let me go grab that. OK? This is the same idea though.

So we create a whole Revit project here. Let's open this up. And it's just full of details. In this case, I put them on 8 1/2 by 11 sheets so they could be organized. Now the only reason why I'm showing you this is at is because this is where you want to build this as your CAD administrator's, or whomever is sort of in charge of your systems, -- and I'm not talking about your IT guy. I'm talking about who actually knows how to do your Revit and things like that.

You start building this, and then you can insert them from File. And you can insert multiple versions of them. Instead of having to come in and right click and copy and paste and all that kind of stuff.

So just as you're doing it, do yourself a favor, and start building your library as you're doing it. So once again, not a terrible thing to phase in. How we're trying to transition from AutoCAD Architecture into Revit Architecture, right? I mean we shouldn't be too afraid of this. Because the reality of that, that's Drafting 101, wasn't it? Go ahead.

AUDIENCE: So, I work for a wholesale company. We do basically the same building variations. Would you recommend we still create the detail library, or just full details [INAUDIBLE] from job to job [INAUDIBLE]?

TOM TOBIN: Well are you-- you're talking about in Revit right?

AUDIENCE: Not there yet, but we're still deciding if we go that direction. .

TOM TOBIN: Right. The reality is if you want to do that in Revit you should create the details in Revit. Once they're in Revit I would suggest you create a detailed library like that, but you have the ability to pull them from job to job.

AUDIENCE: Because we're going to introduce our prototype [INAUDIBLE].

TOM TOBIN: Yeah. So what you may do is as a prototype, with the most common things that are always in there, you could create that as a template itself. And then when you start a new job, all that stuff is already in there with it.

You usually want to keep your templates as thin as possible. You know, so you don't want a whole bunch of stuff in there. But you want-- if you're constantly, always doing the same thing over and over-- some of the best production people are the laziest. Because they don't want to do something more than twice. All right? So if you're always bringing in the same details every single job, put it in your template and then they're just already there.

So we've talked about change and changing from one platform to another, right? The challenges that go along with that. You know, that we shouldn't be too afraid of it. And there are some discomforts in doing that. I mean when you guys went from AutoCAD to AutoCAD Architecture it was perfect, right? Perfect in every way. No, you had a lot of challenges. Those of you who told me you're working on display configurations and using project navigator, oh my gosh you're probably ready to pull your hair out at one time or another. So there's always drawbacks.

So let's talk about that. Let's talk about some of the challenges. And this is once again, now what we're talking about is some of the things we're going to face as an office, as a firm. Things that you need to think about for not just for yourself, but for your team and for where you're heading down.

And one of those has to do with knowledge. And for a while there, people were worried about finding Revit qualified people. You had really good knowledge in how AutoCAD worked. You understood all this stuff, and so you're kind of afraid of losing that. But as I was trying to point out, you actually already know a lot of this. So most of what you're going to do in Revit is going to translate from AutoCAD Architecture. So you shouldn't be afraid of not knowing what you don't know.

Next one is a resource pool. Now, the pool's getting bigger and bigger and bigger all the time. How many of you guys learned Revit in school? I kind of had a feeling it was only going to be the two of you. But it's going that way. Colleges, it's even starting to filter down into secondary schools. All right? But the resource pool still is small.

You may actually be best off bringing in another AutoCAD Architecture guy who understands how our AutoCAD Architecture works and then just training him on the interface. OK? But it's getting bigger all the time. And the guys coming out-- I've worked with some guys who just graduated college-- they're excited. They want to do it this way. Am I putting words in your mouth? OK, there you go. So you get that energy kick coming from these guys.

Working with others. And I'm not talking about the person in the cube next to you that has his headphones on and is singing along with the songs under his breath, and he has no idea that he's doing it. Or the person who's talking really loud on the phone all the time. I'm talking about our consultants. Once you kind of drink the Revit waters, swim in the pool, and you get your consultants doing this too, a lot of consultants are moving to structure and MEP. And when you link these models together, oh my God, the things you see, the information that's passed along.

We're working on a job, brought in the MEP model into our model-- this was for Ohio State University. Took a building section, our project architect, he couldn't run Revit yet. Working on it still. We take a building section and he could see in an instant, oh, the mechanicals are going right through the ceiling there. Now we can have a conversation. A conversation that, looking on a plan, we never got before. So you want to try to encourage if you have the juice for the project to say, hey, we're doing this in Revit. If you want to be on our team you need to do it in Revit too.

That's the way you want to do this. Otherwise there may be a little communication hassles going on here. Because you're giving them a model, or you have to give them it to them in the DWG form or they're giving you the and we have to figure out how to communicate. So there are some challenges.

Now this is budget. We've got to talk about the cost of the software, cost of your hardware. Maybe you need to update your network. Revit it is a little bit more of a pig when it comes to how it works your data, or have you not noticed that? You haven't been using it long enough to notice that yet. You need better machines. You may need to update your server. Those are real costs.

As far as the software goes, the model that Autodesk is using and is moving to more and more, is they want to sell you suites, which means you already own it. OK? So even if you want AutoCAD Architecture you're paying for Revit. Or you're going to start doing it on a needs-based subscription where you're just sort of paying a fee for when you use it, right? So the costs are what they are. You're going to have to have the software pretty much regardless. The other real cost may be in hardware. And there's a real number that you have to put in for the transition time and also training.

So how do we migrate with success? I talked about you owners, the management.

Management has to buy into this, right? You owners are you still here? A couple of you? Yeah. OK. So let's say as an owner, you're kind of on the fence. The user is definitely on the fence because he knows how he's doing his AutoCAD Architecture. And he goes back to the owner and says, I could have this done. And the owner is saying, oh, wait. That's money out of my pocket then? OK. You know he has just run up the back of all you CAD administrators and everything else, and now the whole project just sort of falls apart.

So if as an owner, you're not on board with this, understanding that there's a transition time, cutting that off by saying, look, either you're part of the team or you're not you're going to have a very difficult time getting the transition to happen. So owners have to understand this. And I think you're the only one still in the room, so I'm telling you, you have to buy into this.

We already talked about phasing in. What your firm-- is it really ready to make the change? A lot of firms have tried. Have you guys already tried to make change and not made it? Keep falling back? Yeah. A lot of it is lack of standards controls, creating those templates. You guys didn't raise your hand when I said do you add templates, which means you have no standards. You're just sort of leaving your people out there. You got to do some upfront work, unfortunately. You have to do some work.

What components are really needed? You can't just match CAD standards because there's no layers. There's no colors. There's nothing like that. It's a different animal. It's object based. It's not really that difficult, though.

So let's talk about success. Let's create a transition plan. What do we need in that? We need to take an objective look at our firm. Right? Have you guys actually looked at yourselves? Have you looked in the mirror, says, I'm good enough, and gosh darn it, people like me. No. You got to look at your firm and see what you can do, what your resources are, and you have to clearly define a goal.

You've all clearly defined a goal, right? That's why you're here. We're going to use Revit. That's pretty clear. That's not a clearly defined goal. OK? That is a goal, to use Revit, but it clearly defined goal is that within the next quarter-- for those of you who didn't read raise your hands with the template-- I'm going to have a template made. That's a clearly defined goal. The quarter after that, I'm going to start looking into how we do this. We start transitioning this. OK. What kind of training am I going to get in here? Those are clearly defined and achievable goals. Saying we're going to start using Revit, that's not clearly defined. OK? So as a firm we

have to look at that a little bit.

We have to put together the right transition team. How many of you are on a transition team? OK. How many of you are the transition team? Pretty much the same. OK. We have internal leaders, and probably most of you in this room are those people. Some people in the office kind of get it. They sort of gravitate towards it. We went to school to become architects and engineers or whatever that may be. But for some reason we kind of got the software and we liked it, too.

OK? You're what you would call the internal leader here. You kind of bootstrap this. You go to YouTube. You look at the stuff. You go to blogs. You do all that stuff. So you want to identify those people as part of your team, and you have to look out for the resistance. It sounds like I'm talking about the underground. OK? But the resistance, it really is important.

I mean, once again I'm dating myself, but you know, one bad apple can spoil the whole bunch. [INAUDIBLE] right? OK? Because it takes a whole bunch of attaboys to get rid of negative things.

So I was telling you that you get it you get a person with a bad attitude, they run right over your back to the owner. Owner doesn't want to lose money once keep the customer happy. The project's dead, or a lot more difficult. So you don't really want to have resistant people as part of a team if you can help it. You may not have a choice. You need to choose the right pilot or test project.

Anybody know the difference between a pilot and a test project? Has anybody even heard of a pilot and a test project? OK. The difference is, is that a pilot project is a simple, billable design. I'm not talking about your next-- you don't necessarily sit and go, the next job we get in we're going to do in Revit. Well, it might not really be the best choice depending on the size and scope of the project, right? Have we had that experience yet? Sure.

We want something simple, something we can kind of work through, kind of figure this out. That's a pilot project. A test project is when I talked about-- we have return customers sometimes, right? All of you have some clients that come back? Take one of those, redraw it. OK? Now, all you had to think about was how the software works. You didn't even have to think about the design because it's already been done, and when that customer comes back, you're ready to use it in Revit.

Not everybody has that time. But if you do, this is a great opportunity to find what's needed now, what you need to do today. When I'm talking about defining your goals, what can we do now versus what can we do later. Maybe later we put in a new network, but we need new workstations today. Or what we need now is a template, OK? And we need some families created. And you guys already know how to create them, you just don't know that you know this, because you are creating them in AutoCAD Architecture.

Get the right mix of training and education. I already talked about your internal leaders. They're usually the self motivated education. You take them out to blogs and everything else. How many of you spend time on YouTube or anything like that looking up stuff? Fantastic resource, more than I used to used to be. But you still need, for the most part, some sort of packaged learning.

One of the things I've always talked about what was great about AU-- and most of you are first timers here, right? First time I came to AU, man, I thought I had it all. And I sat in a class and went, what? I never thought of that. That's incredible. There's that, I don't know what I don't know, quotient.

One of the nice things about package learning is that it gives you the whole broad spectrum of all the pics and clicks and what the software can do. Now you might not use all of that initially when you do it, but now you know what its capabilities are. Kind of helps with that I don't know what I don't know part. And then there's also-- and I don't think I put it up there-- but there is custom training. You can go to the consultant, they'll come in and talk to you about how you work, and then they'll train you on how XYZ company works. OK? And only the tools that maybe are actually applicable to you.

Provide ongoing support and monitoring. That's both internal and external. Those of you who are in charge, you know everything, right? All the answers to all the questions all the time. No. Nobody does. But what you need to know is where to go to get that answer. You need to have an external source, as well. And you can't leave your users without somebody internal to come to. You may have wanted to be an architect, but you're now the BIM guy, but you know, you're now that internal source. But you can't just go, hey weren't you at training? Well that just doesn't-- that doesn't work. You have to have ongoing support and mentoring.

You need to constantly-- I don't even know why I put this up here-- constantly evaluate and adjust. I mean, when you guys brought in AutoCAD Architecture it was perfect. You knew

exactly what your expectations were. When you implemented it all those years ago, you're doing it the exact same way today, right? Didn't change a thing. Not one little thing. Same way with Revit. It will be perfect when you do this.

Now, the reality is, is that we constantly have to look for ways to improve what we're doing. We have a concept-- and this is part of that defined goal-- what we need now versus what we need later.

We think this is how we're going to use the software, but when we start using it, we're going to realize that maybe those templates weren't right. Maybe that's not the way I should have laid out my sheets. Maybe the project browser, the way I'm using it, isn't the most efficient way. OK? Don't be afraid to admit that, well, I made a wrong assumption. Let's change it. Let's evaluate it. Let's always look out for ways for improvement. And this also means the staff.

Now I said before that, I didn't want you to eliminate staff in any way, shape, or form with the lower cost aspect, because we could do more with less people. It's the same thing I'm saying here, too. You put people on your transition team. You start rolling it out to your office, right? You're all jazzed about it. You've given them some training. You've done all of this, and they're not getting it. Why aren't you-- why aren't you getting this? You know? It doesn't mean that, you don't get it, you're out.

That's not what we're talking about. We're talking about why aren't you getting it? What aren't we doing to help you make it down this road? Where do we need to improve the training, or the way we're laying this out, so that you can transition here and we can get out of AutoCAD Architecture and into Revit? Right? Hallelujah? OK.

So, recap. Create a transition plan. Put together the right team. Choose the right pilot or test project to find what is needed now. versus later. Right mix of training. Provide mentoring and support. And constantly, constantly, constantly, change. So we all know the only constant in the world is change. Thank you. You guys are still out here. OK. Positive mental attitude. Say it with me. PMA.

AUDIENCE: PMA.

TOM TOBIN: Thank you. Positive mental attitude. You really already know this stuff. You just needed somebody to tell you that you already know this stuff. And don't be afraid to try to make this transition. You'll be shocked. The more you get into it, the more you actually know and

understand.

Now this goes full circle. You got to allow yourself time to do that, though. And sometimes that means overhead and not billable hours. But once you started looking in it, you are going to find that it's really not that tough. And if we phase aspects of it in, it's going to be even easier.

I used the example yesterday of, how do you get across the room. It's one step at a time. I heard somebody else tell me, how do you eat an elephant. One bite at a time. It's the same concept. Revit is pretty big package, too, but if you just sort of chunk it down, you're going to get there.

The time is now, right attitude is everything. Thank you very much.

Please fill out your evals. I'd like to come back and do this again, so fives are good, ones are bad. Fives, I think, are the only thing you should look at it. It's all good.

No, if you have any questions, feel free to come up after class. It's all loose here. Enjoy the rest of-- if you have any other class, go down to the open happy hour that they're having. Have safe travels home.

Thank you very much.