TOM TOBIN: Hope you enjoyed that-- something a little better than just staring up at the screen. So day two-- hey you, right? How are you guys doing?

AUDIENCE: Good.

TOM TOBIN: Good? Good. Good. Tomorrow will be your tough day. Because by the time you hit the end of today, you've got all that information overload, and you're going to go to the AUGI beer bash right, and maybe bash a little more than you should. So, enjoy this, so you guys are all getting stuff out of it.

How many of you are first timers? Well, that's a lot of you. OK.

Are you really enjoying it? Everybody who's been here before-- they know what they can get out of this. Is this about what you expected? Good. Good.

Well, this session is going to be-- the time is now. What are we waiting for? Why have we been procrastinating so long in moving to Revit? And really, what it comes down to is our right attitude.

So, just to give you a quick overview of what this class is going to be about, how it's going to be structured, is that it's listed as an intermediate class. But it's really sort of like a beginner/intermediate class, depending on how you want to look at it. So, what would that be a beginnerate class? I don't know.

It assumes that you have knowledge of AutoCAD Architecture. So that's where the intermediate aspect of this-- so you're suppose to have a very good understanding of AutoCAD Architecture. But maybe not so much in Revit. So that's where the fundamental aspect is.

We're going to be looking at a 30,000 foot view of why we should transition, how we can get there, some of the things we're going to run into. This is not a class on how to take my AutoCAD architectural models, my AutoCAD Architecture models into Revit, and have all the intelligence be there. Is that what you were expecting? Good. Because you can't do it.

So I'm just throwing that out there so if this isn't what you thought it was going to be, it won't hurt my feelings if you want to hit another session. I will take names of those of you who leave,

though.

[LAUGHTER]

So, let's see if we can get this thing to work. Apparently-- OK. I know I tested that before, but let's try this.

Congratulations, this is an AA accredited class. So those of you who want to get learning credits, you're on board. You should get an email from Autodesk, if you haven't already. That will help you get your credits.

So, here's what we're going to go over today-- why Revit? And not simply-- I know a lot of you, the answer is why Revit? Well, because we have to. There's more to it than that.

It's going to be what holds us back, how do we introduce it to our firm, what are the problems that happen when we do that? We're not expecting any problems, all right? Smooth sailing.

How to migrate, we'll look at a checklist. And of course, this is going to be good. Let's put that back.

So you guys should have already seen some of these types of slides. Please just be kind. I'll curtail from swearing, because Autodesk is recording.

So, let's get into this. Just a quick background is the who I am and why I'm actually going to be telling you this class. I've been in the industry for about 26 years. I actually started on ink-on-Mylar pin bar drafting. How many of you know what that is? Wow, that's the biggest amount of people I've ever had who actually even know what Mylar is. Let alone pin bar drafting.

OK, so that means I started out hand drafting. First CAD package I was ever on. Those of you who are familiar with hand drafting probably remember ammonia blueprint machines. Bruening, basically.

Well, you may not have known that they came out with a CAD system in the early '80s. So that's the first CAD system I was ever on. Then I moved into Intergraph MicroStation, ARRIS-- anybody familiar with ARRIS?-- 1990, '89-'90 Revit is really what it is. Not related at all, but it's that type of system.

BuildersCAD, the first version of AutoCAD I touched, I think it was 10. Then AutoCAD

Architecture, Revit Architecture. Now, the reason why I sort of give you that background of different platforms is because it really plays into what you're doing. Although this is still an AutoDesk product-- you've looked at it-- it's kind of like a platform change, isn't it? That's the way you do it. And I believe that once you know one CAD package-- really, you do know them all. And that's what we're going to talk about here.

We're not really going to follow the handouts in this class, so if you've opened handouts or downloaded them, those are really free to take home. Those have a lot of the comparisons between the two packages. The information that I'm going to hit, some of that's in the handout, but there's more information in the handout than what we're going to go over here.

So the time's now, and what's most important is this-- PMA. My dad drilled this into my head as a kid. Positive mental attitude.

You can do anything if you put your mind to it. And that's not just an individual statement, but that's where you refer them to-- your users. The attitude starts with you guys.

How many of you are users? I don't want to make it sound like just users. But you're the production people. The guys who are in the trenches, using it every day. Great.

How many of you are CAD/BIM managers? OK. And owners, architects, designers? Because we got a pretty nice mix here. And your attitude reflects to your users, reflects up to your owners, your owners, it reflects down to your managers. So if you do this, then you're going to be able to move to the next level of BIM.

So you've been working in AutoCAD Architecture for a while, right? How many of you are using AutoCAD Architecture? How many of you have been using it for more than a year? More than five years? So we've got some people who are pretty familiar with the product.

Now let me ask you the million dollar question. Those of you who actually have it installed and are using it-- are you using it like AutoCAD Architecture? OK, very few hands at that point. So really, what you're doing is you're using it as sort of an enhanced AutoCAD platform, right? OK.

There's really nothing wrong with that. It gives you more opportunities, because it should have taken you a lot further than just plain AutoCAD. When you transitioned from AutoCAD, or any CAD package, to the CAD package, you should have gotten a bang for your buck. You should've sort of moved forward in the BIM road, and in your production, by using object-

based information. Did you feel that all, or?

OK, yeah. So you're not doing line, offset, break, trim, block, insert, rotate-- all this other fun stuff that became second nature. Or you wrote scripts to help you do that. So, AutoCAD Architecture has really taken us a lot further, getting us down to BIM. But Revit really can get us there in a more efficient way. It's going to give us a lot more opportunities, it's going to enhance our experience once we truly make this transition.

How many of you-- before I get too far into this-- how many of you are actually using Revit? OK, full production? No. So, using bits and pieces, maybe mainly as a design tool?

OK, so you're kind of just doing mass things, because you don't think that it can actually do CDs very well? Because you think it looks like cartoons when it comes out, or something like that? How many of you-- yeah, there's a few of you. All right.

Well, I kind of named this part "Good things come to those who wait." You know, I'm the type of guy who once a new release comes out, I really want to install it. But I know that it makes more sense not to. Got to wait a little bit. Maybe wait for that first patch, or whatever, to the forums where they're telling me what all the problems are.

One of the things I neglected to talk about when I was giving my little bio is that I had spent some time in the reseller chain, as a senior consultant working for Avatech Solutions, which is now part of IMAGINiT. So I was going around the country. I was doing training in AutoCAD Architecture and Revit Architecture, and I was helping firms do implementations of such, and whatnot.

And an example of where we're going here with this is that one firm, two offices. I went to their home office, they're using AutoCAD Architecture. They transitioned from AutoCAD into AutoCAD Architecture, which I think is the best way to get to Revit, to be perfectly honest. I used to teach a class here, actually teaching NAT.

So when I went in, taught them how to go to Revit, they could draw on what they've learned in AutoCAD Architecture. They would go, oh, that's just like how we did this. Oh, when we did that [INAUDIBLE]-- OK, that makes sense.

Same firm, office 50 miles away, running AutoCAD Architecture. They decided to use it like some of you guys raised your hands, as AutoCAD. They had a much more difficult job

transitioning.

Did they transition? Yes. It is possible to transition? Absolutely. But the concepts from AutoCAD Architecture are pretty much the same in Revit. Have many of you already found that out, somewhat? Right.

So what are we waiting for? Are we waiting for the right job? Maybe.

Or waiting for-- this job's too big. No, this job's too small. No, these standards aren't-- no, this-- we keep coming up with excuses. Our deadlines are too much.

I mentioned the different platforms I've been on, simply because it doesn't matter. You can figure out-- you already understand how buildings go together. You already understand how objects work. Go ahead.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Well, what they've really done-- he was asking a question about the cost of the software itself. And if you've noticed that the model that they're giving, AutoDesk is giving now, is basically suites. So for the most part, if you want any CAD package, you're getting Revit.

I don't know what their pricing is going to be. I do know that they are starting to roll some new things out about online leasing. You know, if you need another [INAUDIBLE], you can kind of do a monthly payment. So there's different options that Autodesk is going to be putting out. I can't really answer that question.

But we still need to have the right attitude. Objects in Revit are the same as they are in AutoCAD Architecture. Placing the objects are about the same. The components are about the same. When you look at the handouts, you're going to see that I've got some side by side comparisons. Actually, building the wall components is easier in Revit than it is in AutoCAD Architecture, because you have to kind of jump through a few more hoops to get the display configurations to work the way you want them to work, and all this other stuff. A lot of that's more intuitive within Revit.

When I was with Avatech, there was a lot of the-- oh, I'm AutoCAD Architecture guy, you're the Revit guy. Well, I can do this in AutoCAD Architecture, but you can't do that in Revit. And I can do this in Revit, and you can't do that in AutoCAD Architecture. It took me a little while, I drank

the Kool-Aid, and I'm a convert. So, it was just easier in Revit, once you kind of got into it.

So there are differences. There's always differences. It's not a one to one comparison. But you're going to find that because you understand how packages work, that you're going to get through it.

So there's questions you need to ask. This is the crux of why you're here at AU. You're probably taking every Revit class that you can.

Why are we going to move to Revit in the first place? What am I going to gain by moving to Revit? Why shouldn't I stay with an AutoCAD Architecture-- AutoCAD environment?

I told you I used to teach the class transitioning from AutoCAD to AutoCAD Architecture. And one of the first things I would say is, the most powerful aspect of switching from AutoCAD to AutoCAD Architecture is, it's AutoCAD! It's this same! Everything you know in AutoCAD still works in AutoCAD Architecture. A line is a line is a line, will be a line.

You just have a greater opportunity to use objects. And all your legacy data works. So why do I want to leave that thing that I was just saying was fantastic?

And they both produce models. How many of you are using, in AutoCAD Architecture, truly producing 3D models? OK, there's a few of you. It's actually more than I anticipated, that's nice. But still not even half of the room.

So we're going to talk about what's the difference, and how does that benefit us? So the answers to this-- why? Well, Revit can give us more opportunities-- more opportunities to be productive, more opportunities in our coordination-- we'll get into some specifics here of the opportunities it's going to give us.

Why don't I want to stay with AutoCAD? I just said that that was one of the power, right? I know it. All my legacy product work in it. Why wouldn't I want to stay with that?

Well, over the years-- now, I know each and every one of you, you haven't developed any bad habits. Your users may have developed some bad habits, but you guys, you know exactly how you want this to be done.

Now, one of the worst things about AutoCAD-- and any package, really-- is that we've created our own shortcuts, we've put things out to the side. Or I don't need to change layers, I'm just

kind of working it out right now. And then somehow, it never gets put to the right layers.

And which one of these views is the right view? I don't know. I get into trouble.

What's the first thing I do if you're an AutoCAD user, and something's not working out? You go, explode. You explode everything.

So these are some habits that you really can't do in AutoCAD Architecture, or you shouldn't do in AutoCAD Architecture. You can look at Revit as an opportunity to develop all new, great bad habits.

So, how are these models different? Bi-directional parametric relationships-- say it with me! Bidirectional parametric relations-- whatever that means, right? We'll get into that more in a moment. But really what that means is that the way Revit works, is that I can make the change anywhere, in any of my views, that make sense for me to do it.

In AutoCAD Architecture, how many of you are using it to generate elevations? OK, wow. Why aren't you? Because you have to regenerate the elevation, right? It doesn't just happen when you make the change to the floor plan, correct? I can't make changes to the elevation and have them reflect back into the floor plan. I can in Revit. And that's where this parametric relationships happen, and we'll show you that in a moment.

So let's get into these opportunities a little bit more. We're going to have improved quality. What does that really mean?

You're putting out a nice set of contract documents now, right? How many of you have ever run into the situation, where you put a detail on a sheet, you put a call out on the plans, it gets printed out. You're out in the field-- let's look at this detail. Oh, it's not on this sheet.

As a matter of fact, it's on a different-- wait, it's not even on a different sheet. It's not even part of this set anymore! There's a real coordination issue.

Can you add some intelligence with our coordination and AutoCAD Architecture? Yeah. Is it kind of a pain in the butt? Yeah, reasonably.

This is one of the most time-consuming aspects of producing our contract documents. Revit really can handle this well for us. As a matter of fact, this is one of the most powerful things I think it can do. And why you're just using it for mass design studies, and not taking it all the

way to contract documents just surprises me. Because contract documents-- this sort of happened in Revit.

So, I'm going to give you a real world example here, so you can see how everything's been working well for me. So I went ahead and I videoed these. So please bear with me, that it's not live. We're going to try a little bit of that.

So this is a real world example. What I have here is a wall section callout. I've got three different views up. Here's the sheet that my wall section actually exists on. And then above is the sheet that I want to move it to.

Now, quite often if I do this, things can go wrong. So I'm just going to select this view. When I delete it, the callout is emptied. And I don't have to go back and edit text, or anything like that. I come back over to my browser, drag it on to my new sheet-- because when I deleted it off the sheet, I didn't delete it out of the system. The view's still there. As soon as I drop it on, my callout, and every place that callout is being seen, is correct. I'm just going to scoot it over a little bit, so that it reads better. Automatically handles the numbering for me. I can edit that. I can change it if I need to.

But now the whole concept of making sure that the details, my sections, are all coordinated properly, is handled very easily, very simply. I mean I know that you guys-- how many designers do we have, architects do we have? Project architects. Yeah, a lot of you. And I know that the thing you love best is looking through the set, and marking up change this number to that because you-- I mean, you don't want to be designing, right? You want to be editing this stuff for people to make changes. Yeah, this is how you want to spend your day.

So here's something you don't really have to worry about so much. Does it still need to be looked at, reviewed? Yeah, OK, you still need to look at it. But 9 times out of 10, you're not going to have a problem.

Greater productivity is another opportunity. Of course, I said you could get greater productivity just by moving from lines, circles and arcs to objects in AutoCAD, right? To AutoCAD Architecture.

We're going to show how this is going to help us even more in Revit. Now basically, I just show greater productivity with the coordination, right? Right there, you're being more productive. This is tying back into the model type, that bi-directional parametric modeling, where can

change it wherever I want to.

Going back to the same building here. Three different views. So, I'm looking at this window, in my 3D model, my elevation, and my floor plan. I could select this anywhere. But I'm going to select it in plan, and we're going to see, as soon as I do, it highlights in all the other views. It's the same window. The window is the window is the window.

So if I go ahead and right click and hit delete-- now, I can just hit the Delete key, and all this other kind of stuff. But I'm going to delete it. As soon as I do that-- in this particular case, I actually have another view that we don't see, that has dimensions to it.

And it's telling me that, hey, you have some dimension to this. Revit's taking care of that for me, too. It's deleting that dimension string, or changing that dimension string. So we may have to go back and look at it, just to make sure it's still reading the way we want.

But it's telling me, I need to look elsewhere. We see immediately without any other regenning-- my elevation is updated. My model itself is updated.

If you notice here, I tagged the window. The window tag is gone. So if I'm using schedules-- which I am in this particular job-- my schedule is updated. That's a whole lot of productivity, done with one simple move.

Let me give you another example. When I was going in and out of different firms, I was working with the company, had a gentleman-- fantastic-- older gentleman who could take a napkin, and could freehand interior elevations. And you could drop a scale on it. I mean, he's been in the business a long time, knows what he's doing, knows what he wants. Couldn't ever grasp CAD.

Took classes, kept trying, wanted to be involved in it-- couldn't do it. Can he create a Revit model? Heavens, no. He still can't create a Revit model.

But what he can do, is he can open up this model that has been created. He can look at it. He can go to what view makes the most sense for him for what he's trying to get with his design content. And he can go, you know what, I don't want 3 million windows.

He can select that, and he can change that window family, as long as we've made different windows for him to change into. Or he can delete it, he can scoot it up, he can move it.

Now, he's being productive. Man, a designer? Actually doing production work? And unless you're like a one man firm, one person firm, you're probably not doing that.

So, it has its advantages there too. So as long as you kind of know how to get in and out, and he knows how to print, that's important.

So, we have greater productivity. Lower costs. A gentleman in the back asked about the cost. This is not about that cost. This is not about the cost of the software. This is about the cost of your time producing the drawings.

And I'm also not saying that this is an opportunity for us to downsize our firms. That's not at all what I'm getting at here either. What I'm getting at is that if normally we might have four people working on a project in AutoCAD, AutoCAD Architecture, maybe we only need two people working on it in Revit.

Once again, it does not mean that I get to take two people off my books. What that means, is that that job that I keep pushing back on the back burner until it becomes a fire, and I have to deal with it, I can have two people working on that. Or I could have more projects in my firm. than what I can currently handle today, because of a lot of these production opportunities, and coordination issues that are taken care of.

So you can be a lot more efficient if you're a bigger firm, and you can seem like a much bigger firm if you're not. And that's how it's going to lower your production costs. We'll get into those other costs in a bit.

Visualization. All right, the bells and whistles, the candy shots. The ones that, when we moved to AutoCAD Architecture in the first place, they're saying, hey, look what you can have. Aren't these beautiful? How many of you use 3-D visualization in AutoCAD Architecture? OK, just a few of you. Is it simple to do? If you know how, reasonable. If you know how. Got to put a little investment into that. You have to put a little investment into Revit, but not as big of an investment.

Once again, here's an example. You can take shots-- interior, exterior views-- at any point during the design process, which is invaluable. It's working in a project that was originally done in AutoCAD.

It was a renovation to a school, where they decided that they wanted to create what looked like a coffee shop for students who weren't really making it in the traditional classroom setting.

It was still going to be teacher-led, but it was going to be more of an independent pace learning. So they originally laid it out in AutoCAD, had a beautiful hand-rendering done. I love the way those look-- I still do today. I love the way the hand-renderings look.

But the school board didn't get it. They couldn't quite visualize how this is supposed to look. How many times you had a problem with your client being able to visualize what your end goal is? Yeah, just once or twice, right?

So they asked me to put this in, in Revit. So what I did was I referenced the AutoCAD in, and this is how you're going to have to do it if it's an existing drawing. I referenced the AutoCAD in, and I traced it with Revit objects, so that I got the layout proper. Once I did that, I was able to create an interior space.

Basically what I did, was-- potato potato-- families. So the families are same as blocks. Fortunately for me, the manufacturer what they wanted had created 3-D objects. Not Revit families, not AutoCAD blocks, but 3D objects. So I was able to bring those into my Revit environment. And then I took some quick interior camera shots to show them where we were at, and what the design process was.

So once they kind of saw that, they said, hey, let's add a little color to it. All I had to do was change my display configuration, one button in my Revit interface, to shaded colors. A little bit more information. They liked this, they said, hey. Why don't we really paint the walls, put some floor pattern on the actual stuff now.

Can you do this in AutoCAD Architecture? Yeah, if you know what you're doing. But it was simple. I'm just basically using a tool.

I can either do it at the wall style level, I can create the wall style that has the paint color on it, or I can do what? I could actually paint it. It really works well. So I got the real colors, and I did a rendering right inside of Revit, a quick rendering. That's Revit. I didn't take that anywhere else, that's not Max or anything.

I put some lights. This is all-- other than the furniture, this is all out of the box. There's nothing special here.

So now we went in front of the school board. Now they're actually starting to understand something.

AUDIENCE: Could you back it up one slide again?

TOM TOBIN: Maybe. Yeah.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Yes. Yeah. You're talking about-- yeah. And actually, that's a TV. So I put some sports on there.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: I just used canned Revit lights that had lighting properties to them. Now, really, is that really the foot candles you're probably going to get? Probably not. No, we're just trying to get a concept.

So we go in front of the school board with this. Now they're going, hey, I'm starting to understand but that's way too open you can you change that? Boom. There's some walls for you. Just came back, put some walls in.

Now, one of the reasons why they wanted me to do this was because, once this model is built, I can take shots from any different direction, and we did that. So after this, they decided they wanted to paint some things different colors again, and move on with the project. And I'm going to show you a different angle, simply enough-- you'll see why I did that.

So here was the last version of this that I did. Look in the other direction, but we painted the walls. Once again, once I built the architecture, this stuff was very simple to do. It's just taking shots, running it through the rendering.

So my project manager, he went out and took this real picture. He just tried to match up with one of the other views. Now, who would have thought that you'd actually build what they thought it was going to look like?

This was huge for the school board. They loved it. Very easy to do in Revit. Now, can you take this into Max and other stuff, make it better, do all kinds-- sure you can. But this was just a proof of concept, proof of design.

So we won the job by putting it into Revit, showing them different views, then showing them the renderings of what it could look like. The worst part of the whole process-- and seeing how I'm supposed to be encouraging you to transfer over-- was actually the rendering time. The

rendering time in Revit-- Revit is not a great rendering image machine. So it takes longer to do that.

But once again, with nothing extra, I could put that out. As long as I rendered it at night, and it's a one, two shot thing, it's not too bad.

So, real opportunities. All done in-house-- I didn't have to send it out to anybody. I didn't have to get that hand-drawn sketch at one particular angle with an artist's representation of what it's going to be.

Facilities management. How many of you dabble in that at all? OK, there's a couple of you.

Everybody keeps talking about building a life cycle. This is the future. Facilities management. If you're not doing it, you should look into it. It can be a revenue stream.

And there's a whole bunch of things that these models can do. We're way past thinking of our digital designs as 2D printed out flat pieces of paper that we then stick in a drawer and hope that they come back for renovation, right?

I mean, I mentioned pin bar drafting. We would stick these in the drawer, and then we would do what if the customer came back? We would create a sepia. How many of you know what sepias are? I love being able to talk to people who know what I'm talking about! So you basically burn the image, and then you can erase part of it, and you can redesign on it.

Those days are gone. Now what we want to do is, we want to have this building go on maybe into the construction phase. And once it's in the construction phase, we can use it to maintain the building. We've got spaces in. How many of you use spaces in AutoCAD architecture?

Those of you who are using Revit, have you put spaces in? Fairly similar, right? It's pretty simple. Really, you just kind of drop it in and there it is. So you can track anything.

Revit links out to other third party packages. Can Revit do facilities management? Sure. Is it designed for facilities management? Not even a little bit.

Well, OK, maybe just a little bit, because you can add costs and numbers, but those numbers change, and once you put them in the model, they're kind of static, right? And you always have to go back and change it. Well, you can link these out to a product like Arquebus or something.

How many guys are familiar with Arquebus? It's a nice product. Nice thing about Arquebus is you can link the model in.

You can make changes in Arquebus. And it will go backwards into your model. You can make changes in the model, and the information will go out to your reports in Arquebus. So we can still continue to use the model to get other information, like people, carpeting, paint, maintenance, equipment. Whatever it is that you want to track, you can do that.

There's other packages besides Arquebus. It works with FM systems, which is an AutoCAD package, or there's other packages out there too. So this is kind of like part of the frontier of our building lifecycle.

We can continue-- all our owners want these models, right? Basically, that's part of your contract, now you have to turn the models over. This is what they're thinking. They don't quite know how to do it. But this is what they want to do with it.

So we have these opportunities that are available to us in Revit. And I'm sure that you're sitting there going, well, when I switched to AutoCAD Architecture, they said that I would get to do all this in there too, right? Sure. And those of you who are using AutoCAD Architecture fully, as AutoCAD Architecture-- you may be achieving some of this. There's the guy.

Revit can actually do it a little better. It's just a little easier. Once you drink the Kool-Aid, once you get into the environment, you're going to find that all those things that you had to do to get these results in AutoCAD Architecture-- you're getting them almost immediately in Revit. I know you may not believe that, but it's true.

We talked about this bi-directional parametric modeling. I've mentioned it a few times now. Well, when we're working in AutoCAD, we basically have a separate DWG for everything, don't we? Yes, no? Yes. Thank you. That creates a fragmented file system. That means if I want to put the whole model together, I basically have to stack them on top of each other, or use my project navigator. How many of you are using your project navigator? OK. I hated using the project navigator. I have to admit, I didn't like it. But it was effective. It worked well. If you did it properly, everything worked well.

Then there's those who are the Renegades script, and we're going to do all of it in one DWG, which leads to a whole bunch of other headaches and scripting and customisations. Because Revit is all in one database, it just works. It's a database-driven system. And we can share it

out. We can still share out and have multiple people work on these projects.

That's why, in those examples I gave you, it didn't matter where I made the change. It affected it everywhere. If I was in AutoCAD, AutoCAD architecture, I had to make that change in my floor plan, gone to my view, or my drawing to have my elevations in it. Regenerate the elevations, put those over, and so on and so forth. So, this is power.

Remember, it's your attitude. It's your attitude! OK, it was in a Kinks song. As you saw from the videos, I'm still sort of thrown back in the '60s a little bit. But your attitude is everything.

So how do we really implement this into our firm? One of the things that I used to talk about specifically in going from AutoCAD to AutoCAD Architecture was a phased approach. Because AutoCAD Architecture, those of you who are using it-- it's a monster, right? You can't go back and throw a light switch and say, hey, guess what, we're doing everything this way. You won't be able to do it.

So I'd say, start with walls, doors, and windows. And maybe add elevations, roof plans, schedules. And before long, you're using this much of the package.

Revit's pretty much the same way. We don't have to use all the aspects of the product today. We can phase things in. Now, the timeline for phasing things in, when we're in AutoCAD Architecture, could kind of go out. It could be elongated, and we can be very productive without having to phase a whole bunch of things in right away.

We're actually going to find that in Revit, we're just going to phase them in sooner, because it just makes sense. It's just easier. I'm going to give some examples of how we can do that.

Nice little quote I'd like to put up is that the first step towards change is awareness. The second step is acceptance. You guys are all aware. You've been aware for a while now. How many of you haven't moved to Revit-- because you're waiting to see if this thing was really going to catch on.

Well, it's caught on. You're aware of this. Now you just have to decide to do it, to move forward with it. You already understand it, more than you think you do. So, let's go ahead and get into it.

Now, one of the things I wanted to show you, when we were talking about looking at the software, and I said, let's phase things in. Back to my building here. One of the things that we

can do that I like to phase in-- how many of you actually have a fantastic, detailed library? OK, a good detailed library?

So, you have a lot of pre-made AutoCAD details. That's what I'm getting at. Maybe they're already placed on a sheet. Do they have a lot of that?

And you put the sheet in just about every job. Sometimes you x out what isn't supposed to be there, or whatnot. Why can't I leverage that? Why do I have to do all my details in Revit, when I'm making this transition? I've got a really good AutoCAD Architecture library.

I'm with you. Let's leverage it. Let's use it. Let's phase in doing details in Revit later.

So the example I'm going to give you is actually how to leverage that. How to use an AutoCAD detail in my Revit environment. Now, what some people do-- how many of you have actually created CDs in Revit? OK, a couple of you. Do you use the indexing tool? It's actually pretty nice, for your cover sheets and whatnot, set that up.

And so what some people would do, they would create dummy sheets so they would show up in their index of what their AutoCAD sheets are that they're going to insert. To me, that's just a pain. And also, you don't have to create dummy sheets to make your index show up right.

But then what happens if you do that? You're right back into that thing that I told you we can eliminate in Revit, which was that coordination issue. Because now you've got all these details already numbered on a sheet, so now when I put a callout in, I have to actually manually add text, and then I have to coordinate that and make sure it's right.

Well, how can I use my AutoCAD information, and still have the intelligence of Revit? Anybody already do this? OK. So we got one or two people-- you guys will like this.

All right, so here's my project. I'm going to bring an AutoCAD detail into here. We're going to place it on my sheet. So, just showing you where I want to put this, I've got a spot there after 9. This detail isn't really architectural where I'm going to put the callout. This is just an example.

So the first thing I'm going to do-- I'm going to go to AutoCAD, AutoCAD architecture-- here it is. I'm going to put a floor construction joint in. Detail already exists. You may have these already in AutoCAD in your world.

So what I'm going to do is I'm going to go up to my ribbon, and I'm going to create a new view. What type of view am I going to create? I'm going to create a drafting view.

So I give it a name-- I'm just going to leave it this name right now, but you can call it what it's going to be. Now, this may seem like we're going through a few hoops, but this is how we keep everything smart. Most important thing was, I made sure that the scale was the same as the detail I'm bringing in.

So, now it's just basically a blank view. It creates the view in my project browser for me. There it is, drafting view. There's still nothing there. So now I need to bring in my AutoCAD detail. This actually works best if I have my details in separate drawings. But I can do it the other way if I want, but it works best.

So I'm going to import a CAD file. Here's the ones that I have. My DWG. I can pick different-- I can pick DGNs, DXFs, even SketchUp. Let me make few changes, I want to keep the colors. Do I want all the layers that are in that drawing, or just the ones that are visible? Just a few clicks. How do I want to place it? Just have it come in. I'm going to place it because it's a detail manually in my environment. I'm going to say OK.

And then, just like real world, I'm going to sit here and wait. OK, my connections weren't the greatest when I was doing this. So this actually doesn't take as long as it's showing here, and it's not too bad as it is. But there it is. For all intents and purposes, for AutoCADism nomenclature, it's a block reference. Essentially, that's what this is.

So I brought this in. I put it in this drafting view. I didn't have to redraw it. I did have to do a couple things, I had to create the view space for it.

Now I'm going to put a callout in. This is where I am now going to use AutoCAD and Revit, and it's going to be smart. So I'm going to go back up to my views. I'm going to do a callout. What type of callout? We'll just put a rectangular one. The sketch one is if I want an odd shape.

I'm going to switch to my properties. I can do a few different types of callouts. I want to make sure this is a detail.

And as soon as I create that, you're going to see that my option bar changed. And it's referenced to another view. I created that view already. I brought the AutoCAD reference in. It's listing every view that's in my database, in my project.

So everything is listed here. I can see it, and I can reference this callout to it. What I really want though, is I don't care about the reflective ceiling views, or the floor plan views. I care about the detail views. Yes, the list can get long. Organization is a key.

So I'm looking for that detail-- I believed I called it detail one, or drafting one, or something like that. I think that's it. But just in case I'm not sure, I can go back to my browser, double check the name. I think when I did this, I couldn't remember what I called it. This is what you wouldn't call your real slick canned demo. I just did it as I would do it.

So there's my callout. You can see that it's still empty. Why is it empty?

AUDIENCE: [INAUDIBLE]

TOM TOBIN: It's not on a sheet. That's right. So now I'm going to take that out of the view, and I'm going to place it in this sheet. I don't know why I felt the need to stretch all those up and down.

So, we're going to see, as soon as I put this, drag it on, is going to fill in my callout. It's going to make it number 10. It's going to give it the name, I can change the name.

But once again, now I'm phasing in what I'm doing in Revit. I'm leveraging information that I already have existing in my office. And I'm making it more productive, because I have now taken care of the coordination issue. So if I move this AutoCAD detail to a different sheet, the callout updates. So that's pretty nice.

Now ideally, what you would do-- which was something I was struggling with in this particular company-- is you can see that the fonts and everything aren't the same. Ideally, you'd have all these matching between platforms.

So, that's pretty powerful. Would you agree? And you don't have to know anything about how to create details in Revit. Right?

Well, let's just take this to the next step.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Was it imported? Why? Why do you ask? Because a linked file-- OK, I can make changes to it in AutoCAD, and then I try to update that. As you know, oftentimes when we're doing details, they become job-specific. And you want to have that sort of be part of the job. I don't want somebody to accidentally edit that, and then it update and change my file. So importing it kind

of brings it into the Revit environment, as opposed to linking it into the Revit environment.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: It does. Absolutely.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Fantastic point, how do we handle that? Let's take that to the next step here. It's almost like I paid you to bring up that question.

So the next step really would be, let's take my AutoCAD information, and let's just Revitize it. You like that word? Revitization?

So we can take that, we can Revitize this detail. So we don't have to recreate it from scratch. We're going to eliminate all of that extraneous information that comes with it.

So how do we go about doing that? Essentially, we want to do the same thing, except where we want this to be a Revit detail. So, let's see if I can get this to work again. Going to go back to AutoCAD. Here's my detail, same detail, nothing new here. Once again, I don't know what I was thinking.

Here's the difference. Before we created a drafting view inside our project, and we imported it, what we're going to do here is we're going to start a new project. This is where we wash it. This is why we do this. We wash it through.

We're going to pick-- you can use out-of-the-box templates. If your office has a template, use that. It really doesn't matter, because we're not going to keep this. We're just doing it to get the AutoCAD information out, and turn it into Revit information. Then we're going to pump it back into our project.

So, once I've got the new project created-- I wanted you to see that you actually have to wait. So once I've got the new project created, I do exactly the same steps. I go to View. I create the drafting view.

I'm going to give it the name this time. Just because I wanted to. You can name it later, however you want to do that.

Got to make sure that the scale is still appropriate, and I'm going to bring it in. Creates the

view. We're going to import it again, after this is created. Boy, I got to change these. So we're going to go up to Insert. And we're going to import it.

All right, so there's my list. I can change it if I want. However I want to do this, you can see once again the different setups. And everything's cool. Should've remembered it from my last session-- I mean, when I imported last. I'm going to say OK. And that's how quick it should come in.

So I said before, it's a block reference, essentially. I also said that what you don't want to do in Revit is explode. Well, when you get it, you actually get a toolbar that says, explode. Now we know what we're talking about, right?

So I'm going to-- I can partially explode it, or I can do a full explosion. Let's nuke that whole thing. It's just going to tell me that it's got some little issues as it explodes, which really isn't a problem.

And then for expediency, I'm only going to Revitize one of these details. So you can see it all lives as objects in my view. I'm just going to blow those away.

And I'm going to show you how quick you can do this. Now, this is a very simple detail, but the process is exactly the same. Something you're familiar with-- select all instances. That's the same.

So, I'm now going to take that from my AutoCAD text, and I'm going to make it my Revit TrueType font. Now, had I coordinated this better, and these were placed in the TrueType font, and I was using all the same stuff, I wouldn't have to do this.

So I'm going to take care of that. I'm going to adjust my size a little bit. As you can see, they're not all just single lined text, either.

I'm going to just one click, Add leaders-- which I like, as opposed to having to add leaders. Put those in. Now, for whatever reason, certain objects-- it won't do the select all instances. I just have to go through the pain here a little bit.

So, I'm going to individually select these objects, get rid of them. I'm also going to change the title. I want that to be a little different than my note. Once again, Revit font that I have.

Now, you saw that big long list. Some of those are because of all that stuff that came in with

AutoCAD. Some of it's because I have it existing in my template for other views that I've created. So now, I'm going to get rid of the dimensions because when I exploded it, it all went down to its base elements. I want real Revit dimensions here, so I'm just going to pick them, blow them away, and had Revit dimensions.

Now, I realize that you're thinking, well, I could recreate this by now, but you don't have to worry about thinking about how to create it. Everything's there, we're just sort of editing what it is. So once again, I feel as though I'm getting more bang for my buck, leveraging what I already have from AutoCAD. I didn't actually set my units correct, so-- yes, that's right. Sometimes I forget how to set this stuff up right too. Easily fixed.

Change my units, get the display I want, put my Revit textile, or dimension style in. It's there somewhere. There we go.

And now I'm just about done. I only have a few more objects that are AutoCAD. I've got a crosshatch pattern, that's still AutoCAD. I want to change that to be a fill pattern in Revit. So I'm just going to select it. I'm going to pick a fill pattern that I already have in my system.

Now, one of the other things I can do is I can select it all and use a filter. This tells me what's AutoCAD and what isn't. Very handy tool. So in this case, I'm just going to select all those AutoCAD lines, and I'm going to just change it to a Revit line, because this is just one. You can make in different weights and whatnot if you want to, but just so you see what's going on.

So now I'm going to do that again, and I shouldn't see anything in my filter that remotely looks like Revit. I'm sorry? That remotely looks like AutoCAD.

[LAUGHTER]

Sorry, I wanted to see if you guys were paying attention. All right. So now this is--

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Yeah, in the parentheses, it would have the AutoCAD name behind it.

AUDIENCE: OK.

TOM TOBIN: So now this is truly a Revit detail. I can go to my browser, I can right click on the name, I can tell it to copy to the clipboard. I could have also selected it and done a control C and then a control V. I have a little more control over it this way, though, because I don't have to insert it.

So I go back to my project. And what I do is I'm just adjusting, so I'll see where the detail will show up. I go to Modify, and I just paste it in. Once I've pasted it in, it's-- one of the nice things, and you can say whether it's good or bad, but if that particular detail object exists in my project, it will always use the one that's in the project. It won't overwrite it. So you may have to do some adjusting, if you wanted it to look the other way.

But you see that it put it right into my browser. There it is. The detail. If I go ahead and-- what am I showing you next? Oh, I'm going back to the new project I had created.

Blow it away. You don't need it. So all that AutoCAD information-- gone. Doesn't matter.

And that's why we did it. Then just for the fun, I selected it, make sure that it was all what I wanted it to be. Now I can do the callout, and I can drag it onto the sheet, and do all that kind of stuff, and it's truly a Revit detail.

So once again, I'm sort of phasing in. I now am learning how to do details without really having to learn how to do details, right? Because the information was there for me.

The next question I usually get after this is, once I have created this Revit detail, and you have these AutoCAD libraries of all these details, how do I do that in Revit? Can I do that in Revit? The answer is yes. So what you do, or what I did in this particular case, is that-- how many of you have a standards folder on your server? I should see every hand go up.

So you have a standards folder. Let me navigate to mine. Where am I going?

So I have what's called a support folder on my server. Under my support folder, I have a standards folder. And inside the standards folder, all these levels down, I have Revit. So these are my details, my standards I have for Revit. I created one that just called Details-- a Revit project that is just nothing but details.

So if we open that bad boy up-- let's see, are you going to open up for me? Yes, thank you. We're going to see that if we look at my browser, I have all these details I've created. In my particular case, I placed them on 8 1/2 by 11 sheets so I could create a PDF library of them, so that people could look at them and see what they are.

And I do this as I'm creating in my projects. Whether it's taking the existing AutoCAD ones and Revitizing them and putting them in, or I'm doing project-specific ones, I'm trying to build my

library. So once I've got this library built, I can go through, and I can pick out the ones I need, or what I want to use. And I can select them on the screen, and do Control-C, and paste them into my project. Or I can do it the other way that I had done it, which was right clicking in a project browser, copying it to the clipboard. Those are all good methods. There is another way to do it. Is anybody else familiar with the third way?

AUDIENCE: Import view.

TOM TOBIN: Import view? OK. What--

AUDIENCE: [INAUDIBLE]

TOM TOBIN: OK, so insert from another file, right. I didn't actually do so well-- I'm going to show you that one real quick, if this plays well with me.

So let's go to our Revit environment here. And this is just the sample Revit drawing that comes with the package. And all I want to show you is the other option of how to bring in these details from another file.

So I'm going to go into insert. And right here, I have this insert from file. So I'm going to pick it, I'm going to say insert the views from a file. And in this case, it's going to be that detail file that I already created.

So I'm going to go to support standards Revit. And there is the details folder I had made. I had upgraded it to 15 so that we wouldn't have to wait. And I get the full list here of every view that's in that drawing, that Revit file. I only want to look at the drafting views only.

And then I can just start picking out the ones that I want. I can look at it, click it, and I can check as many as I need. And just pick a few different ones. I'm going to say, OK.

And once again, it's that thing about, hey, I already got these patterns in here, but we're going to use the ones that are part of the project so that if you want them to be different, you'll have to change those. And now they are all in this project. Easy, easy, easy.

I try to create subfolders. There's a little routine for doing that that helps you organize it a little better. I'm going to go to discipline, I'm going to edit that. This is just looking at my browser, how I grouped this. And I'm going to do subdiscipline.

And now, those drafting views should be coordinated under headings. So that I can easily find

them and adjust them. Pretty cool? Pretty useful?

I can still kind of have a mixed environment. I can take that information, and not have to fully recreate it. I can just Revitize it. I think that is pretty useful stuff. OK, so we just looked at the software. And let's get out of all that.

OK, so I've been talking about what are we waiting for? Change is always good, right? It's always good, good.

The only thing we can count on in life is what? Change. That's right.

But even good changes have what? Drawbacks and challenges. I hate bringing it up because I want to be all positive and optimistic and pie in the sky. Now, we are going to hit some challenges.

So when we want to try to get our team, our firm, to get over into Revit, we have to realize that we're going to have some headaches, and we need to think about them ahead of time. So what are some of those challenges? Well, knowledge. One the reasons why you've been waiting so long is you keep looking at it and you're going, oh, man, I know AutoCAD so well, I know AutoCAD Architecture so well, I've created all these LISP routines, and all this other stuff. And I don't understand how Revit works. I can't write those in Revit. Where's my command line?

[LAUGHTER]

Don't worry about it. You actually already understand the concepts, right? You really do. You'd be shocked at how much of this information you know.

So, quit coming up with excuses. This is something else, the challenges you're going to have to look at. Everybody says they know Revit. But not everybody knows Revit. I don't know if that makes sense to you.

Autodesk has done a really good job now, getting it into the universities, even all the way down into the high school levels. That's great, because at least now they understand what you're talking about when you ask the question. But knowing picks and clicks, or conceptually what it can do, or they're pushing really in the universities as the design tool.

It's really cool. Look at this. It's neat.

They may not translate that really well into a production environment. So just be aware that really, if you're trying to make a transition, and you're looking at adding people to your team to do this, try to get people who have been using it in the workplace. Or get some AutoCAD Architecture guys who know that really well, and then give them a class in Revit, and you will be surprised at how quickly they'll be up to speed.

Working well with others. It's always a challenge, isn't it? Of course, I'm not talking about the person in the cube next to you who has their headphones on and is always singing, but doesn't realize that they're singing. Or the person three cubes down who's talking on the phone like they're the only person in the office. Those are challenges, but they're not the kind we're talking about.

Really talking about our consultants. How many of our consultants are using Revit? Just a few. That's right. So we're using the excuse-- well, our consultants aren't using it! It will be a nightmare to exchange information. No, it won't be.

First off, very easy tool for translating a Revit model into a 2D AutoCAD file to give them as a background. We've already shown that we can import or link CAD files. So we can do that and use their information.

They may be using Revit. Great. I found that structural engineers are very open to Revit. They seem to embrace it fairly well. Besides that, that package works really well.

But how do we handle the coordination issues of that? Well, if they're using Revit and I'm using Revit, we want to share information, we want our stuff to be the same. So we still have to figure out how to work with them. Does it come down to fonts, title blocks, whatever. We want to make this stuff have a cohesive package when we're done, right?

So that's one of the challenges. And you know what the real answer to this challenge is? What's that?

AUDIENCE: [INAUDIBLE]

TOM TOBIN: BIMEPs. And how do we-- he said, BIM Execution Plan. Absolutely. And what's the first step in executing that?

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Hello? Are you available for a meeting? I can set up a Go To Meeting or a WebEx. I want us all to be on the same page. Communication. Talking. I realized that half the people here should be like this. Hello? OK.

Budget. I was talking about the budget before that was going to lower our costs, right? Well, this is the dollar part of the budget. For the most part, you guys are buying AutoCAD and you're getting Revit, right? How many of you are getting the suites? Pretty much everybody. That's really the model that it's going to. So, we can almost take Revit out of the software purchase aspect, because you're paying for it anyways. But where is the real dollar amount that you have to think about? Training? Training, training, training. Where else?

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Project standards, yeah. Because there's going to be a real cost in that. Anybody else?

AUDIENCE: [INAUDIBLE]

TOM TOBIN: OK, absolutely. I mean, that's all part of it. That's part of our phasing in, or can be part of our phasing in.

What about hardware? Revit needs a little bit more kick in the hardware than AutoCAD Architecture did. What about our network? What about our servers? OK.

Those are some real costs that we have to talk about, that we have to look at. Maybe we're fine there. Maybe you live in one of those firms that has a nice budget every year for that, and you can stay up on it. But if not, that's a real cost.

You guys talked about training-- that's a real cost. So there's a real overhead cost to creating your standards. And how and when do we implement this? Those are real costs.

We have to think about that before we throw the switch, and go-- hey, we're Revit. Wait, why isn't this working? We haven't thought about these things.

We already talked about the first thing to get there is phasing this in, right? And I'm going to mention that again. But where this conversation has to start is the holy of holies. The people who say yes or no when you ask for money, when you ask to do something.

It's management. Management buy-in is mandatory. They have to realize those challenges. They have to realize those dollar challenges. And they have to be committed to trying to make

the change themselves.

Because you know what's going to happen if they're not?

AUDIENCE: It will fail.

TOM TOBIN: It will fail. The other thing that will happen is that as you're trying to do it, you're going to have tire tracks up your back so fast to management, because they're going to say hey, I've got a deadline here, man. I could have this done already if you had just left me alone. And let me use all my bad habits in AutoCAD the way that I'd like to use them.

And managers are going to say, what? This is taking longer? You get the job out! We need to invoice this!

Well, is that a reality? Yeah, we got to invoice, we got to get the jobs out. But if management understands that there's going to be some time, they're going to shut that down. So when they try to put those tire tracks up your back, and management says, hey, we are making a commitment here. And what you're doing is, you're holding us back.

Once again, not a reason to try to get rid of people. I'm very sensitive about that. I don't want to see people lose their employment.

What it means is, get on board. We want to have the right attitude. We want to do this together as a team.

We've already-- I keep talking about it. Phase in, phase in, phase in. Maybe in Revit, we're going to start-- we're not going to think about the model so much. We're still going to think about the prints. But we're going to have greater productivity tools where we're doing that.

So we can phase in those aspects. You need to decide if your firm's really ready to make the change, honestly. And I keep saying, what are you waiting for? What are you waiting for? Maybe there's a very good, compelling reason.

What do we really need? We were talking about-- what do we need now? What do we need later? I mentioned hardware, we mentioned standards, we mentioned things like that. It's not let's just update our layer book. Wait a second, there's no layers in Revit, how am I supposed to work?

Once again, AutoCAD Architecture-- it was object-based. Did it put things on layers? Yes. But

did it do that for you? Yes, it did. Don't shake your head.

No, that's what was great, is because it was the first step in trying to take layer management out of your hands, because this is an object based system. A wall is a wall is a wall. If it's a wall, it's a wall. I don't need to put it on a particular layer that says it's a wall. So we can't just update our CAD standards.

So what we need to do is we need to create this transition plan. First step, objective look at our firm. I'm to the point though-- there's really no more excuses anymore. I kind of bought into it when, hey, the product's new, not many people are using it. Who knows if it's going to be around? It's going to be around. It is what it is now.

We need to clearly define our goals and understand them. It's going to go back Monday. You know my goal is? I'm going to use Revit. There you go. There's your goal.

That's a goal, to get our firm to Revit, right? But is that a clearly defined goal? Maybe, but it's not going to help you achieve that goal.

Maybe you go back and say, first quarter what I'm going to do. So I'm going to look at my hardware first. Going to look at my personnel. Going to look at my budget when to start creating templates, I'm going to start creating families.

Maybe I do a pilot or test project in the first quarter. That's a defined goal. That's a realistic goal. If I say, I'm just going to use Revit, you're going to be using AutoCAD Architecture again by Thursday.

Put together the right team. Internal leaders, right? Probably that's what you guys are. You just sort of-- when you got into the business, whether you started out like I did, with a pen or a pencil in your hand, you sort of gravitated toward the digital. And you grew in that. You will always have internal leaders. They're just going to surface. They're the ones that are interested and excited about it. Doesn't mean that they still don't want to be architects or designers. It just means that they're grasping this.

You're also going to have resistance. Every time. Negative Neds, Negative Nellies. Once again, throw out the Osmonds, one bad apple. How many of you can get that reference? Wow, there's only like, four of you. It was a song.

But one bad apple can spoil the whole bunch. It takes a whole bunch of atta boys to get rid of

that negative, as Dr. Phil would say. Got to take a whole bunch of them atta boys to get rid of that one negative comment.

And that's true, and this is another reason why we had to have management buy into this. Because they will sabotage you every inch of the way, unless you do what? Talk to your users. Talk to your people. You don't force this on them. Well, maybe you do, but you do it in a nice way.

Choose the right pilot or test project. You guys know the difference, right? OK, a pilot project is maybe something simple that we get paid to do. A test project is ideal if we can do it. It's taking an existing design that we already have, and we redraw it. In Revit, so all we're thinking about is learning Revit.

I was talking to a gentleman, Rodney. They have a fantastic library of CAD files of a whole installation, and they're constantly doing remodeling to this facility. They're doing the remodeling in Revit, but all the existing stuff is in AutoCAD. This would be an ideal situation to redraw that facility in Revit, because this is something you're going to keep using. So it's going to get more bang for the buck after it's in there. So if you guys can, I would definitely try looking at doing that.

Define what's needed now. We already talked about this, too. There are things, because we're phasing in, that we don't need to do today. But there are some things that we need to start.

And I will go back to the hardware. You need the hardware today. You need a template today. How many of you guys have set up templates? How many of you have more than one template?

OK, not as many hands. It is essential that you have multiple templates for your project types. One template does not fit all. You can base them off of each other, because you want to have consistency between them.

But a remodel template can be different than a new build template. A commercial office building template can be different than a hospital template. Different needs, different templates.

Same name and nomenclature as we go through, but don't keep trying to fit round balls into square holes. You can make more than one template. Define what you need now.

The right mix of training, we talked about that. Self-motivators. You guys love YouTube, for other than cat videos? OK,

YouTube is essential. Whenever I actually have a problem, I will often go there. And most people, through the kindness of their own hearts-- or ego, I don't know what it is-- no, it's great. It's a great resource, because you usually get this narrated video telling you exactly how to do something that you know you can do, but you just can't quite remember what the steps are, because I haven't done it in a while. So, that's part of the self-motivated education.

Package learning. Picks and clicks, right? Got to learn picks and clicks.

But you can take that to another step. You can actually go to firms-- many of them are here-- that can give you solution training. OK, we're going to come in, we're going to evaluate your firm. How do you work? What type of designs do you mostly do? What's your end goal?

We'll train you how to use Revit for you. OK, that's not me training you, that's them training you. But whatever.

Provide ongoing support and mentoring. Essential. Hey, I sent you to a class! Why aren't you being productive?

Internal and external. You don't have to know everything. These guys who are using AutoCAD, AutoCAD Architecture-- do you know everything? Really, you don't know everything? Wow. And you're in charge?

No, you can't know it all. You can't. But you need to know where to go to get help. Whether that's through your subscription portal; whether it's your reseller chain; user group, user group, user group; colleagues; YouTube; whatever it is, you can't just do the training and then walk away. And you can't do that to your users.

I don't know why I put this up here. Constantly evaluate and adjust. When you guys rolled AutoCAD Architecture out, it was perfect, right? Same thing with Revit-- you won't need to change anything. It'll be beautiful.

You have to search out the ways the changes. When I first rolled out AutoCAD Architecture in a firm I was working at, I had just thought of exactly-- I knew exactly how this was going to work. Exactly how I wanted to implement it. I did that. Implemented it perfectly.

I had to change that whole approach. Because the reality of when you're doing it-- you start coming across situations that you didn't take into account in the planning stage. Reality gets in our way. Reality makes it better. Because we adjust it, we change it, then we have a really good system.

And you guys are smart people. You already know how to do this. You really do. And you know how to look things up. You know how to work. So search out ways for improvement.

I keep mentioning staff. This is to help your staff, evaluate them. We've been rolling this out. We gave you training, we did all this stuff. What isn't working for you?

Once again, not a reason to get rid of you. It's a reason to-- what do we have to do in our training, or in our rollout, to do this? What assumptions are we missing? So that circles right back up to the mentoring.

How many of you guys have brown bag lunches? For your CAD? OK. If you don't, I highly advise you to do, monthly. Maybe you can convince the firm to buy pizzas.

One day a month, you come into the conference room, and you listen to your users. The only thing you have to worry about is, you want to make sure that it doesn't turn into a real degenerated conversation about the software. Autodesk is recording.

No, but what you want to do is you want to help everybody be successful. Your users are successful, you're successful, your firm's successful. So I would suggest that you do this. One of the things I used to do in user groups-- how many of you belong to user groups?

Sign up. Find one. Start one.

One of the things I used to do in user groups is that we would have these discussions. And somebody would ask about a particular thing. And maybe we had the answer, maybe we didn't.

But-- this will make you guys not want to do this-- I would say, hey, Bill, that was a great idea. Why don't next month you come back and research that, and present that to us? And Bill gets all upset because he didn't get the answer he wanted, he's got deadlines, when is he going to have time to do this. I don't know why I joined this stupid user group to begin with.

Bill goes back, he actually researches it, gives a 10 minute presentation. Smartest man in the

room, for that point in time, on this particular subject. He feels good, he's learned something, he's contributed to everybody else. Everybody else goes, hey, if Bill can get it, I can get it too.

So don't always just be the person up front telling everybody else how to do it. Get the users involved. They're the ones using it. Oddly enough, they really know where the problems are.

So there's your checklist. Create the Revit Transition Plan. Put together the right team, pilot test projects, define what is needed, education, support.

It will be perfect. Don't worry about it. Adjust. What are we waiting for? Revit, Revit, Revit. Yay, Revit.

I know that's really what you here all the time at this conference, isn't it? Especially in the architectural side. But really, what are we waiting for? It's time--

AUDIENCE: [INAUDIBLE]

TOM ROBIN: Go ahead.

AUDIENCE: [INAUDIBLE]

TOM ROBIN: Yeah, he's going to need to take small bites. And to be perfectly honest, as you're trying to become a full Revit house, there's going to be that transition period where you still have product that needs to be done in AutoCAD. Maybe he's the last person that you put in the transition team. He was talking about the resistance of a person who's been using AutoCAD for so long that they don't even want to think about using something else.

AUDIENCE: [INAUDIBLE]

TOM ROBIN: And actually, ultimately, you would want him to go over into Revit, because he can't shortcut that. He's going to have to embrace it.

So you guys know what you know. And you actually know more than you think you know. That's kind of the key here.

Phased approach is the best way. The time is now. It's what we want to do. This really concludes-- and I'm not going to do Porky Pig. This really concludes our presentation, my presentation.

We're going to do questions here in a minute. If you don't want to stick around for questions, I wanted to make sure that we added this slide.

Please fill out your evals. For every eval you fill out, I guess you get a chance to win a conference pass. And for every glowing recommendation you give me, is a chance for me to come back and do this again, and I really like coming here. Remember, ones are low, fives are good. So please be kind.

So do I have any questions? Go ahead.

AUDIENCE: Are you going to put the slide, [INAUDIBLE] PDF version?

TOM TOBIN: Yeah. I will upload that so that you can download the whole presentation off the AU website.

AUDIENCE: [INAUDIBLE] every single software that you can imagine. There's a huge, creative [INAUDIBLE] and transitioning from [INAUDIBLE] to Revit [INAUDIBLE] You have SketchUp, you have Maya, you have Max, you have [INAUDIBLE] Do you see this [INAUDIBLE] as replacing those [INAUDIBLE]

TOM TOBIN: Do I see a Revit replacing those other packages--

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Yeah. It's interesting. And the question was ultimately, where do you create your model for presentations, right?

AUDIENCE: [INAUDIBLE] in Maya.

TOM TOBIN: OK.

AUDIENCE: If you look at the Maya model. It has to be exactly [INAUDIBLE]

TOM TOBIN: Right.

AUDIENCE: Can you do that in Revit? Or is a way of bringing that in?

TOM TOBIN: Well, there's not really a way to bring the Maya in so much. There are links back and forth within the software that allows you to use these packages within the suite. They link much better through Macs, back and forth. Today, you'd probably have to rebuild that, more in Revit, if that's what they want.

I'm usually the other way. I like to build it in Revit and then take it into Macs and leverage the tools that are in there to make my presentations look better. The graphics are just so much better. And Macs and Maya, and those other ones, they are much better rendering engines. They cut down the time significantly in rendering, and you can create render farms with them. I'm not sure that really answers your question.

AUDIENCE: No.

TOM TOBIN: Yeah. Thank you. Yeah.

AUDIENCE: If I could tell you I have a tree, a theme tree--

TOM TOBIN: Right.

AUDIENCE: Would you build that in Revit?

TOM TOBIN: No.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: No, I wouldn't. An object like that, no. That works much better in Maya to build that there. There's also a lot of add-ins, you know, like you were talking about with SketchUp. I steal stuff from SketchUp constantly to try to bring into my--

AUDIENCE: And you find SketchUp plays well [INAUDIBLE]

TOM TOBIN: Most of the time, not all of the time. Most of the time. Any other?

AUDIENCE: You went from not using Revit to using Revit and also collaborations for Revit and [INAUDIBLE] and there's been a lot of struggles, apparently, in our team uses of Revit, except for the Civil. They They're using Civil 3D and communicating between Civil 3D and Revit. It's not very easy? Do you see any progress [INAUDIBLE]

TOM TOBIN: No. Not within the next year or so. He's talking about Civil 3D and Revit and how those are going to collaborate and get better. They're working on stuff that's out there. It's just not--

AUDIENCE: There are options [INAUDIBLE]

TOM TOBIN: Third party stuff, right.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: There's sort of a lot of mid-level stuff that aren't Autodesk solutions that kind of patch between things.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Yeah.

AUDIENCE: Carl hasn't bought it yet.

TOM TOBIN: What's that?

AUDIENCE: I said, Carl hasn't bought it yet. That's how they got Revit. [INAUDIBLE]

TOM TOBIN: She's right. You know, once they start becoming a competitor, Carl will buy it, and it will be an Autodesk product. Wait. Did I say that? Did that get recorded?

[LAUGHTER]

Go ahead.

AUDIENCE: I have a lot of experienced AutoCAD users-- probably around 10 years of experience [INAUDIBLE]. How much time do we expect for them to start investing into learning Revit before they start feeling a little bit more comfortable, to when they start seeing the value of having [INAUDIBLE]?

TOM TOBIN: To be honest, it depends on the user. But usually six months. If they're using it on a daily basis--

AUDIENCE: [INAUDIBLE]

TOM TOBIN: --they'll start to feel much more comfortable. Are they still going to miss AutoCAD at that point? Yes. But they should start to feel more comfortable in the interface within six months. There are a few firms that I went to. There's one that I actually consulted, went to their office in a daily basis. They didn't know Revit, so I was teaching them in-house as we were doing the project.

And that's kind of where this number is coming off of-- that it took them about six months before the questions died down, and they were really being productive. And then the questions

you started getting after that were much more sophisticated. I mean, they were better questions, if that makes any sense.

AUDIENCE: At what point did they start becoming like [INAUDIBLE]. More in short term, how much time do they have to invest before they start getting excited and motivated to where they see [INAUDIBLE]

TOM TOBIN: Honestly, that goes back to the user. This gentleman was talking about that he's got people in his firm for 14 years using AutoCAD, and there is zero excitement level on his part to move. Most of the people, though, can see the writing on the wall, and they want to move forward and embrace this.

And that comes back to the whole PMA attitude type of thing making the transition team. Because as I mentioned before, you don't want this to be a light switch. You don't want to walk back in Monday and go-- hey, I've just taken AutoCAD off of everybody's machine, and we're using Revit. Congratulations. No. You don't want to do that. They have to be excited about it. You have to transition it in.

And I don't know-- sometimes this comes to the size of the firm. I mean, if you're a small firm, then it's a little harder to leave them off of the transition team. If you've got a good number of people, they're just not the first ones to go. And you get everybody else excited, and then they're going to feel like, hey, you know, I should be doing this, too.

AUDIENCE: [INAUDIBLE] When you implement them, you have to make sure that you put in Revit just a little bit. If you switch them back to 100% AutoCAD, it's a big struggle.

TOM TOBIN: No.

AUDIENCE: Actually, for people that are hesitant [INAUDIBLE] and it's going to take them longer to get used to Revit in the first place, they will forget [INAUDIBLE]

TOM TOBIN: Yeah. No, she's absolutely right. When you're part of that transition team, and I said six months-- that's six months of Revit. That's not, ah, I'm going to finish up this job in AutoCAD, and maybe I'll do a little bit over here in Revit, and, you know.

AUDIENCE: That's where I was hoping [INAUDIBLE]

TOM TOBIN: Absolutely.

AUDIENCE: As part of that, training the management up front, with the expectation as a part of that. And we say, six projects. They say six projects over three years, that's still not going to happen. In six months, if he's only done one project, he's still not [INAUDIBLE].

TOM TOBIN: No. You're right.

AUDIENCE: How many projects [INAUDIBLE]

TOM TOBIN: And part of that-- and this goes back to what are we waiting for? You keep coming up with excuses-- you know, that job's too small to do in Revit, no, that job's too big to do in Revit. This job's just right-- we'll do this job. We'll do it for six months. And then we'll wait for the next just-right job.

And by that time, you're starting all over again. There's really no job that's too big or too small for Revit, really. I mean, honestly, it's a package like any other package. Even simple-- you know that one renovation I showed of the coffeehouse? You know, that was a very small project. There was no reason not to do it in Revit, especially after we started.

AUDIENCE: You mentioned earlier-- I think I heard you mention it-- construction job [INAUDIBLE] just, sort of, happen.

TOM TOBIN: Yeah.

AUDIENCE: [INAUDIBLE]

TOM TOBIN: Yeah. What I mean by that is that if we are building the model, and we're creating the different views the way-- And so once we start placing those views on sheets and doing the call-outs, the CDs just sort of fall out of this. As we're doing the model-- I mean, I'm not creating a whole bunch of other things to make the CDs happen.

If I'm building the building like a building-- and this is another key point. You want to build the building like a building. A case in point is in AutoCAD, and probably even how you're doing it in AutoCAD Architecture, let's just say we have a corridor, and you come to the intersection of the corridor, you're just cutting and trimming your lines, and boom, there looks like your corridor in plan.

But really what's happening there is that there is some header. Maybe the block is still going across there. You know, it's a cut opening in this corridor system, right-- I mean, how it's going

to be built. You should model it that way. And I'm not saying you model everything in Revit, because that would be ridiculous. I mean, there are some things you should model and some things you shouldn't.

But this wall is going through. And really, what this is is just an opening in the block. And the reason why I'm saying to do this is does it change the way it looks in plan? No, I could turn those walls and put it on a sheet, and it would have read right. If I cut this opening in, it still looks like I just trimmed these walls and put them in.

Where it changes, and this is part of leveraging the productivity, is now I can do a building section or an interior view. And now I see that opening, and I see what's above it, and I see everything that's there. And if I do it correctly as I'm constructing it, this falls out of it. Now I can cut my building section, and oh, there it is.

And there is maybe the acoustical ceiling, and I can see where that's transitioning, and the blocks going above that. And so I can really see this, and this just sort of happens. If I want to do animations, which are simple in Revit to do, they are not nearly as good as using Maya and Max and all those other things.

But if I want to do a walk-through of a Revit model, I can do that. But if I didn't build the interior right, I'm going to see all the mistakes as I'm walking through it. So once again, you want to leverage that. You want to build it a certain way, so that you get all the benefits as you're doing it.

I want to do interior elevations. I don't want to recreate the interior elevations. I want Revit to create them for me. All I have to do is put down a marker, and it'll do that. But if I didn't construct the model right, I'm not necessarily going to get the interior elevation view that I was looking for.

Well it's lunchtime. I'm making you guys all late for lunch. Thank you. You guys enjoy the rest of your AU. Thank you. Be kind in your evaluations.