RALPH SCHOCH: OK. OK, everyone. We're going to get going. We've got a lot to cover in an hour. No, it's on.

OK. Is everyone ready? So I'm Ralph Schoch. I'm from Victaulic Company. And I don't know if anybody doesn't know but we're a manufacturer of groove pipe fittings and accessories. But really I'm not here as a manufacturer. I'm here as someone that uses the software.

So a lot of people don't realize but we have a detailing team. We have a 70 person detailing team that does work for contractors and engineers all over the world.

And what we did is we changed out from our Academy P to Revit slowly. We started back in 2014. And we've been doing fabrication spooling out of Revit since then. So we've been following the fabrication parts a lot, following their development. And we've built a set of tools that work with Revit and knows fabrication with fabrication parts. And we're now an Autodesk partner as well.

So part of the class, what I'm going to do is I'm going to show you what's required to spool out of Revit without using any add in. And then I'll show you our tools and things. And then I'm going to show you some tricks and tips on how to work with the Academy P content and how to deal with Revit.

So it's going to be quite a few different things we'll go over. So it's sort of funny. 4:30 or 4:45 and we have to get spools out. Right? So isn't that the case? How many people here use Revit Fab Parts now?

OK. Pretty good. So did anybody spool out of it yet? A little bit. OK. This will help out a lot. We were spooling out of families using Revit assemblies for quite a while. And we're using that same workflow with Fab Parts. We basically mirrored a workflow whether we're using families or Fab Parts. It doesn't matter.

So basically the deal is we're going to go over spooling and we're going to talk about how to modify or how to take a design model and bring it in and change it. If you don't have a design model, what do you do? You make one. Right?

OK. So here's what we got. I modeled up a little pump room here. I actually modeled it up in Design. And then I came in and I flipped it to family. So if this would be like a 2014 project, this is how we would do it. We'd use Revit Families. But then I also came down here and I modeled

it up in Fab Parts.

So whether you're modeling with families, Fab Parts, whatever, I don't really look at the modeling being too big of a deal because this is a very small layout. But it really only took me a little over an hour to draw all three. So the productivity in Revit really can be pretty amazing once you learn how to use the software.

I have a pretty good experience with it. I've been working with Revit since 2009. So I have a pretty good understanding. But having the productivity and the way the software works is pretty amazing.

So inside Revit, basically when you want to use fab parts, a lot of people realize that if I come up under Manage, I can come in here and go to MEP settings. And they added this Fabrication Settings option. And that came in 2016.

But is anyone using 16 Fab Parts? Yeah. They're brutal.

I will tell you. I will say be careful because obviously they created a lot of different categories for them in 17. So if you take that 16 project and you convert it to 17 and you can have annotation, it's bye bye.

[LAUGHTER]

It's going to be a little tricky. But you do have to be careful with that.

But basically you come in here. You can type FS or Fabrication Settings. And I can bring in any Academy P or fabrication database inside the software.

So does anybody know how to get rid of the fabrication database out of the Revit project? Once you apply it?

AUDIENCE: Don't you just screw up the configuration?

RALPH SCHOCH: No, that won't get rid of it. So here was my first thing, I want to make a template. Well, first thing I need Fab Parts in my template. Because how am I going to set up my view, get everything, make sure I know it's right? So I've got to get this out.

So the trick is to delete all the pipe and anything that's a Fab Part in your model. And then you send these services, these loaded services back. And then you can go up to the top and set

that to none. And now you have the ability to change the service.

So that's a little trick if you want to come in here and make a template that way. So you'll have to do that when you do it, when you want to use and create your template.

So does anybody know what a shared parameter file is? OK. Everybody should shake their head. So first thing you do before you even start using Revit is you create one and you make sure it has a safe place that everybody can access but nobody can change except for one person that knows what they're doing.

Because if you don't do that, then life is going to be very difficult for you throughout Revit because you won't be able to get at the data side of things. That's what that shared parameter file is for.

So here's the fabrication settings. When I want to bring in the ribbon toolbar here, the Fabrication Parts tab, how do I bring that up?

So there's a keyboard shortcut. And it's called PB. Does anybody know what PB stands for? Plumbing?

AUDIENCE: Plum Bum?

RALPH SCHOCH: Yeah. There you go.

AUDIENCE: [INAUDIBLE].

RALPH SCHOCH: So we thought it stood for Peanut Butter. We didn't really know. But then we found out later on. So if you type PB in the tool bar, it goes away. Or if you type PB, it comes back. And that's how it comes up.

So 2017.1 had a really awesome feature for fabrication parts. And it has the ability to exclude from fill. So that to me really starts setting this thing apart and actually makes it useful because I was getting parts that would fill that I wouldn't necessarily want to fill.

And now what I can do is I can build intelligent services that are more configured for Revit so I have the ability to put multiple tabs in and just exclude the whole tab as well. Inside Revit, they're called a group. Inside Academy P, I guess I always called them tabs. And you can exclude that whole tab. So that's a big change.

So that gets you going. You bring in your configuration. You're ready to go.

So one of the things is when you're in Revit and you get your design model, it's basically going to span multiple floors. So this is a little mockup I created here.

Now the thing is, what I recommend really is, you want to stay in Families as long as you can because you should really know how to route with system families and just route in generic for a little while and get your design to a point where you're sizing is all figured out and your general spatial constraints are figured out. Right?

Because by doing that and having that all set up in here, you don't have to worry about with the Fab Parts, it's a little harder to change size. It's a little harder to change service. So if I want to go from welded to victolic on a system, I can't. I'd have to redraw that whole system.

So you end up getting into these workflows that become very problematic. So in a CAD workflow, we've always gone piece by piece by piece right through the building, right? You detail something up.

When you're using Revit, it really pays for you to come at it a different way, more like a level of development. I don't know if I want to say that word. But what you really want to do is circuit up your system. Get things connected point A to point B. And by doing that, you do all that spatial relationship, get things lined up, get your headers in the right location. Then you come back later on and put your valves and accessories and all those different components in that you need.

If you do it that way, we have found that that way works a lot better for you. Because now you can flesh out your design really quickly. And to be honest with you, most of the time you have to get preliminary models or something modeled up so you have the ability to coordinate against it. And Shape is pretty much going to do it for you.

Is that the way people work? Is that the way you work? Or you try to convert it as soon as possible?

AUDIENCE: Keep it in design as long as [INAUDIBLE].

RALPH SCHOCH: Yeah. So that's a good tip.

So the other aspect too to Revit that is inherent in the software is that, if I come over here and

I tab Select on this system, risers and cat are always a little tricky because you know you have all the different levels and floors. Well, if I come in here and select this whole system, I can come in and go Design to Fabrication, set my service, and it'll change all that stuff out.

So now it changed out our butterfly valve which was a family to a Fab Part. A couple of tricks there. What I do is I have specific families that are created that are completely parametric on the sizing.

So if anybody is familiar with Revit and the way accessories typically work, there is a valve name, the family name. And then usually you list the type as the size. So you have a different type for every size.

What you want to do is make a family that's all instance based, that it automatically sizes based on either parameters or a lookup table. If you do that when you create your button codes and your button mapping, you only have one for the valve. You don't have one for every size.

AUDIENCE: So button mapping will go back from the Fab to Revit and not just from Revit to Fab?

RALPH SCHOCH: Yeah.

AUDIENCE: OK.

RALPH SCHOCH: So what you can do is, I can take-- and what I have to do, though, is I have to put the family name in my button code. And then I have to put an underscore and then the type. So the valve I created here, I actually created a specific valve to do this. If I come over here and it's selected, you'll see it's SOV. I just took one of our Vic 300 butterfly valves and I renamed the family to SOV.

And then when I went into my button codes, I typed in SOV underscore Standard. And by doing that, I mapped that to SOV which most people use in the button. That way I can just hit my project, switch out all the valves no matter what their size, and I just have one button code that I have to map to.

It's a pretty neat little trick. It can save you a lot of time and aggravation.

The other thing you can do that's also neat is I could go in the project files and rename the families that are in there. So I can rename, let's say, the valve that's in there to SOV. Just drag

and drop this valve into the project and it will update the project one swipe.

So if you get smart about this, you could really change out a project really quickly if it has a lot of accessories in.

I'll upload this latest project. I put this riser in here. But it's in part of the downloads, everything I'm showing here. So if I go to design the fabrication on that second group, I'll go through and change those out.

Now one of the things here is you can see obviously there's pipe in here. You wouldn't do that, right? So I would probably want to make this fitting to fitting. Right?

So another thing that I do is keep the design loose a little bit here that there is a pipe in there. And then what we did is we built some tools that allow you to pull that stuff fitting to fitting really quickly. So if I go into our tool bar, I can come in here and delete pipe.

And now if I come over and just select that, it comes in and pulls this stuff fitting to fitting for me. Well, there they are. So it makes it a lot faster to get back to a real easy workflow and being able to just come in, drop in the components, and then pull the stuff back together.

So that's how we've always routed in families. We would route way out past what we were doing and then just delete the pipe and pull it together to create our fitting to fitting arrangements. Go ahead.

AUDIENCE: How [INAUDIBLE] the change in elevation [INAUDIBLE] before the [INAUDIBLE]?

RALPH SCHOCH: Yeah. So what we do there is a lot of times with Fab Parts, you can leave it as generic so you'll have a little bit of space. Before you flip it, you can select all your headers, change them all at the same time, they'll move up. flip it, move them, and then delete pipe, and bring them back down.

Yeah. You have to decide when you go from design to fabrication. And you've got to make that your decision yourself. And you can decide, OK. In this area of the project, I'm going to switch. And the others I'll just leave as design elements still. Or as family routing.

The other aspect to this too is that in a CAD workflow obviously when you have risers like this, I have a lot of ways I can edit things in Revit that you may or may not know about. So if I come in and go to the top view in 3D, I just rotate this around just so I don't get messed up.

But I can come in here. You see how this valve isn't adjusted right? So if I want, I'm just going to-- I'm still in that command. I can just come in here and select these valves through the whole entire project and just move those over if I want. You just have to make sure you get them. And as I move them over, I can just do a move command MV and move them a distance.

But there's also another way to do this. If I come back into the project browser, there's a lot of times where I'm trying to line stuff up between multiple floors in Revit. So let's say I go into my level one or level two floor. If I come in here, what I can do is I can create what they call-- I'll actually delete that.

I'll come in. And in any one of these tabs, I can go to System and I can create a reference plane. And what we do is we use reference planes. If I draw that in, I have the ability to see that now through my entire project. That's a plane that I can align things to.

So if I want to align these valves everywhere on the project, I can come in here and align it on this floor. I also see some other floors in here because I have an under-- well, it's set to none. Now let's check it out, what I have going here.

So I'm going to go to the south elevation. So you see right here is that reference plane. That's a 3D element. It blows right through the whole entire project. So reference planes in Revit help you out a lot for lining up components. I always put reference plane on my origin.

Did anybody ever lose their origin inside Revit if you use it a lot? Or I should say what origin survey point project-based point I put one at? And it helps you find it. But I can just come in here and align to that. You come over here and select Multiple and you align to these points. And you can align up, make sure that every valve in your project is lined up perfectly to that scenario wherever you want it. Or whatever it is.

So I made it pretty quick. Well, what happens if you come in and you know there's a decision that's been made that OK, instead of being on this side of this little bump out, what happens if I want to move these lines to the other side? If I just grab two pipes and I take and I move these things over, I just changed every view, every sheet, every document for these risers.

So I mean there's some aspects of Revit that really can help you out just going at it when you even do the conversions more on a project basis instead of just floor by floor. Because I know a lot of times you may think about it as a floor by floor. But going at it as a project really can

speed up time.

Another aspect to it, does anybody ever have problems with grids? Yeah?

So inside Revit, grids are really neat in that they're actually 3D elements. So I can drag a grid right up through a building.

So if I come in and go to the first floor, you come over here. You see I have two grids. I have C and Three. But if I go to the fifth level, I don't have that. So I want to bring in C.

If I go to the west, you can see here my grids don't go all the way up. But if I come in and pin it, I can drag that up. And now it goes up through the building. So now when I'm on every floor, I see both of my grids going one way or the other. So it makes it really easy to coordinate these things and make sure you're lined up.

So what we want to do is I'm going to get into doing the spooling so I talk a little bit about what the benefits are of converting and how you convert. But if I go into the spooling view, now what I do inside my template, I create a spooling view. And inside here under Need Visibility and Graphics, I create filters.

So for us, what we do is we break down our field material, our field cuts. Does anybody do field cut to suit? Or you have? Everybody does field cut the suit. OK. Maybe you don't call it field cut the suit.

Does anybody have a piece of pipe in a project that you have to do a field cut?

AUDIENCE: You mean like a [INAUDIBLE]?

RALPH SCHOCH: Yeah.

AUDIENCE: [INAUDIBLE]

RALPH SCHOCH: Yeah. But isn't there some fudge factor ever or no? Perfect OK.

AUDIENCE: [LAUGHTER]

RALPH SCHOCH: Huh? What?

AUDIENCE: [INAUDIBLE]

RALPH SCHOCH: Yeah. Well, I mean we're not perfect. I know that. I figured maybe you were. I was giving you

the benefit of the doubt. It's like, hey, I'm not going to say you're not perfect.

But so in real life, you don't maybe know how high your equipment is. So what we do is we have check boxes and things in our project. And if it's a field cut, I actually change the way it looks. Right? And then when I do my spooling, the last digit of the assembly is what controls the color. So in Academy P, it cycled colors when we did spools.

Well, this will do the same thing. If I come in and just edit one of these things, you'll see here basically all I did was I have spool one and I have type name ends with one. And you can go into the template. I provided you this template so you can take a look and reverse engineer these things. Or you can save this out as a View Template and just dump it right into your project. There's a couple of things you can do.

AUDIENCE: [INAUDIBLE]

RALPH SCHOCH: Oh yeah. You've got to do the category too, Assemblies. So what we do for spools is we create assemblies. Does anybody know what an assembly is? We've got some.

OK. There's two things in Revit. There's a group and an assembly. A group is like an AutoCAD block. An assembly is really designed for detailing. It was designed I guess for structural walls originally. But we're utilizing it to do the spool drawings.

So it really allows you to select a bunch of components and put them under this assembly. Now the act is one component.

So if I come over here and let's say I select this piece of pipe and I can select a bunch of them-- I can select this one, come in, grab that one-- and let's say those are going to be field cuts because I'm not sure. And we are going to leave the top piece as our adjustable piece. Right

And let's say I wanted to spool this off, though. I was going to come down from here to here. And inside Revit right here is your Create Assembly button. So if I click on that, this is the native Revit way. You'll see here I can specify a name and a sequential number. So I'm going to say zero one and it's going to be an MEP Fabrication Pipework naming category which is fine.

So now you can see some of the components change color based on that filtering. And then the field cuts I can see is dark red like that. If I decided I didn't want that as a field cut, you can

see I have a little bit of a problem right now, right? I select that assembly and the whole piece is selected.

So there is a little trick. You've got to come over here and just hover over it and hit Tab. And then click. And then you can edit the component within the assembly. That's huge.

When we first started working with assemblies, we didn't know you could do that. So we were dissembling everything or editing the assembly and going in and making changes. Later on, we found out we pretty much can make any change to the model even though it's been broken up into assemblies and update our spool drawings.

So it's pretty neat. So I can come in here and uncheck field cut if I want. And now that that representation changes.

But what happened is, when I created that assembly inside Revit, it's down here at the bottom of our project browser. So what's even cooler or more awesome about assemblies is that they actually have their own space in the project browser. And I'm buried up in my views and everywhere else. So for us, that really helps organize our project.

So if I come in here now, if I want to create the views and sheets, I have to go over here and right click on it. Create Assembly in Views. Or I can select it and create views up here as well.

But when you click that in 2017, they made an update here. And this is a big deal. There's a couple of really big deals that happen for 17 for us that really help out.

One of them is, if you're doing this manually, now you have the ability to set a View Template. If you don't know what a View Template is, you'd better go out and research it and find out. Because you going to want to use them. But basically what they do is they make your view look the way you want. OK?

So inside Revit, there's like a million different ways to make things display. Because it's an architectural software at heart. So you spend time and you get things to display correctly. And you save out a View Template.

But you can see what I can do here is I was in here the last time. And I set up some things. I created the different views I was going to spool off or create the views for my sheet. And you can see down here, this is even the bigger deal.

MEP Pipework Schedule. MEP Fabrication Pipework Schedule. View Template. In 2017, they added View Templates to Schedules. We never had those before. So the Schedules in Assemblies in 16 are almost worthless. Because you have to create them from scratch every time.

So what we were doing then is we would create a standard assembly and drag it in. But then it was a little more work. So that's what you have to do if you're in 16. But what I did inside that template that's up on the dataset, you can see in this I have a couple of different schedules.

I have one for MEP fabrication fitting schedules and one for MEP fabrication pipework schedules. What I'm doing is I create two different schedules. I create one for pipe and then one for fittings because I'm bringing in different columns, different data points.

And I'm just going to click OK. And then what happens here if I expand this out, it created all these views and the sheet. Unfortunately, the sheet number here for whatever reason created A010. So I want to come in here and name that the same name as the assembly or my spool.

And then what I have to do is I just come over here and grab these views and drag and drop them on the sheet. And you see things start to look pretty good. Well, maybe. It depends. Let's see.

All right. Let's see what happens. You think this schedule is going to look good? Look at that. It even came in right. I didn't have to stretch the columns around and resize it and do all kinds of stupid things.

So the trick here is when you set these up, this is critical. And I'll show you how to do this. You double click. You go Edit the Schedule. You want to come in here. And I have it set to a template. There's a View Template set over here. Let me just click back out.

You'll see it's set to a View Template. I'm going to click none right there. Now you see if I select this, I can come up here and get at these sizes and things. But you want to come in and you want to resize all your columns manually and get that to look right and then drag the schedule back out and see if you get it the way you want.

Because once you get everything dialed in here, it'll come in right in your sheet. And then when it comes in right in your sheet, what you do is you just come up-- and this is what they added for 16-- you come up here to view. View Templates. Create Template from Current View.

So when you get the view to finally look the way you want, this is how you save it out.

And then by doing that, I just name it whatever I want. And now next time I can call that back in when I create the assembly. OK?

So that created the views. Another trick that I do, you see there's numbers on these views? Well, I don't really need them all. I just need these. Let's say, I need this one. And I don't want that one. But I do want this one. Well, now I have views that are labeled One and Three.

So I could manually go through and renumber them. But what I do is I come in here and change the view title, I selected both of the views. Change the view title and change it to without a number. I have a different type, different family for that view. And now I don't have to go around there and screw around and renumber these things because who cares?

So if you don't know that you can do that, that will save you hours. I mean it does.

So tagging and annotations. This is standard. But the real problem we have now is the mark numbers. That's going to be your biggest problem, I would say. Because what happens is, to edit these mark numbers, I can't just go into the schedule and put numbers in. Assemblies are a little fussy that way.

So if I hit Control Tab, I'll jump back. But what you end up having to do is you have to select or activate this view. Go in here, edit the assembly. Once you're in the assembly here, you can come in and you can populate those tags.

And I think I'm just using our Vic mark. And actually I'm tagging the fitting. So if I come in here and I add a tag on there, you'll see it shows up here on the schedule immediately.

Now Fabrication Parts have the location to put the tag and it's down in here under Item Number. You should really be using that. Our tool populates this field as well. And the neat thing about this Item Number field is that it will populate inside these Fabrication Parts. And then if you send out an MAJ, that item number data will be in there. So that's good to know.

So that's how we can populate these numbers. I mean you can go out in the project and I can set all the couplings to one number, all the valves to one number, all the check valves to one number. That's one workflow. But what we did is we made a tool to automate the numbering of it.

So if I come in here and I just select that assembly, I don't have to edit the assembly. I just need to select it. I can run our tool on this. And we have a tool called the procurement tool. But what it does is it does build materials based off selection. And here it brought up all those pieces and parts.

So I can come in here and I can reorganize my bill if I want. And I can auto tag the components. And what it does is it puts the numbers in for me. So everything's tag based on how I had that set up in there.

If I want, I can come back in here. I set it up for-- what's that?

AUDIENCE: Can I do it for the whole project?

RALPH SCHOCH: You can, too. Yeah. You can create a build material in the project or you can create a build material in the spool.

So we basically used to do this fairly manually. I'm going to show you we're now down to basically what we're calling one click spooling, which is just about ready to be released. But basically we can do this whole process of a spool in about 20 seconds maybe, something like that.

But there is a little work afterwards but not a whole lot. So that's how we basically create those. And you can see the pipe has one. We have the ability-- if I want, I can just come in here and number a few of them. Let's say I want to start those off at 10. Whatever I selected up here, it'll renumber and I can mess around with my numbering and sequencing and things.

I can also come in here and edit these numbers. So if I want this to say 3A, I can do that as well. So this tool really allows you to dial in and really get the build material you want. And now there's a 3A up here.

So the fact that this is all parametric and you see this stuff changing like this is going to be huge. Because when you make changes in the model, this stuff's automatically updating as well. So if I come in, I'm going to deactivate the view.

Now you'll see here, well, actually I don't have pipe on here. I'll run another spool using our tool just to show you how that works now.

So let's say I want to do this one over here. I can select here down to here, hit Tab. And I can

go to our toolbar. And what we did is we mirrored out what Revit has. So we have Create Assembly, Create Assembly and Views, and then we have settings for it. That's what we did.

And what we do is sort of like Academy P. We can come in and spool off the drawing or create our assemblies and then run them all at one time.

So what I do is, inside Revit, there's a thing you can set up, Keyboard Shortcuts. Does anybody have Keyboard Shortcuts set up? Everyone should say they have Keyboard Shortcuts set up. Because they will make Revit as fast as AutoCAD.

I will tell you right now, the first time I started using Revit, I'm like, oh man. This thing does suck and I really love it. And when I went in and set up Keyboard Shortcuts, I felt productive again. Because now I'm not going to the ribbon for commands. If I'm not clicking, I don't feel like I'm getting anything done. That's just the way it is.

So what I'm going to do is, you can see here, if I type CA, it's going to create the assembly. So I'm just going to select those. I'm going to come over here. And I just type CA. And right now it brings up my tool.

I can say, well, I want, let's say, level one. Area zero two, right? And let's say this is Chill Water Supply. And I want to make that zero two for my sequential number. So it did that one. If I come here and select this back to here, type CA, this one, back to here, let's say. CA.

So I can get pretty quick. I can come in to Annotate, hit Close, tag by category which is our standard tagging. Now I can just come in here and I have a tag set up for assemblies.

So you can see here this one's a little different of a tag. So I can fix that though. Now these are just standard Revit tags. There's nothing special here.

But what I can do is just select these. And what I did is I created different types based on how many characters I have. So now if I change out the length of the tags update, I also created different types for my mark numbers. If I want typical, I have a different type. I just change the type. I don't have to type in typical.

So there is a lot of optimization you can do in the template to set things up and make it efficient. But now watch this. If I don't have anything selected and I go back up here, I can create Assembly in Views. And I can check all that's not checked, check all that's not detailed. I can uncheck or check everything. And I'm just going to check these first two off.

I'm going to click OK. And it's going to run those two assemblies. It does that every time. Hold on. PowerPoint's a challenge sometimes.

So what it did is, if I come in here, you see I have pluses over here. And here's my sheet. So what it did is it put a static build material that I can drag over here. I can use a static build material if I want or I can use the schedules which update automatically based on the data.

But I can use a static one to at least track what my material was at one point. So if I make changes now I know what those changes were. So that's important.

And you'll also notice that, over here, you probably can see it up here End Preps Plane. And I'll show you how we fix that. But here you can see what I did is I had my length. And then on those ones that I'm doing field cuts, I'm saying, hey, plus six inches field cut to suit. That's what we call it. FCS, field cut to suit. You can call it field fit.

Or what you can do inside Revit is you can put formulas in for these columns. So if I come in and I set this to the Template Set to None, you can see in here under my fields, there's a pipe note. And inside here if I edit that, you can see here you can write formulas in. So based on parameters inside the project, I can specify different fields and get fields to populate based on what those data points need to be.

So fabrication parts don't always have the data that you need in them. But you can populate that data. You can populate it with Dynamo or you can just populate it with Schedule or manually. Or even our tool populates some of the data.

So some of the things we are going to have to do, or at least what we did, End Prep is something that you really can't get at. Or I haven't found a way. Does anybody know how to get at End Prep for Fab Parts yet?

You can get at it through the API. But you can't get it through the user interface. So we're working on a tool that's going to populate that. We'll probably have that hopefully before next year.

But basically what I did for End Prep is I created a project parameter. And inside the project parameter, I applied a parameter. So what I want to do is get out of this spool just to show. I go back into the spooling view.

If I go under Manage Project Parameters, you can see I have a pipe End Prep. And if I modify

that under a project parameter, you can see in here it's a shared parameter and the groups are over here. So if I check this, you can see I have it set to-- well, right now, it's at the flex pipes, pipes, and MEP pipework. So that's probably about all I need it set to.

So if I want to populate any data, so basically project parameters will, like I said, allow you to put any data onto the Fab Parts. So if you want to know if something has been shipped to the site or ordered or spooled or any of that data, you can put that either on the assemblies or Fab Parts or any other element inside Revit, no matter what type of component it is. Family or Fab Part. So you do have that ability.

But what we do is, to set the End Prep, we just come in here, select all instances. In this case, I can just pick in View and that'll grab all my pipes. And I can come over here and set my End Prep. So if I type VG by VG in here, I just populated that for the whole project.

So I could do intelligent selections and make sure I get the End Prep correct. But if I go in, let's say, this spool number two and I come down here to my assemblies, now you see that Schedule is automatically updated with that data. So that's a big deal.

The other thing that I can do is, if I go back to that spooling view, I'll show you some tricks about editing assemblies. So let's say I created this assembly or I have this assembly here. You know how I said if I tab over a component, I can select it and change the elevation of it or change the size and it'll move up or down? Spool will update automatically.

But what I can also do is Create Similar. And I can place a valve in that assembly without editing the assembly. This is important. You should take notes.

AUDIENCE: [INAUDIBLE]

RALPH SCHOCH: Well, I'll show you in a second. You've got to wait. You've got to wait for it.

[LAUGHTER]

So what you have to do is you have to come over here and just hover over this thing and hit Tab. Or actually you have to first come up to Insert Part. I'm still learning. Sorry.

You have to come up here to Insert Part. And you see how I get the assembly. And you think, ah, crap. It's not going to work. Tab is your buddy.

And this is something that families do not do. And this is why fabrication parts are better in a lot of ways. A little controversial. But I can rotate that around. I mean families, I can't do that before placement. And I can actually flip it to go down the other way. And I can place that in.

So let's take a look at what happened there. So I just selected the assembly and I'm missing some components.

So let's take a look. So this is two. I'm going to close all my views. And what I'm going to do is go open Sheet Two up, my spool. And I'm going to type WT. So now I have the assembly or the 3D view over here. And this is the assembly view.

So you can see my schedule. You can see the view. If I come over here and I select the assembly and I'm going to edit the assembly, I have the ability to add and remove components from the assembly. So I'm going to come in and add. And I'm just going to put those pieces and parts on there.

And as I do that, it updates over here automatically. And the pipe has been added to the schedule as well.

How cool is that? Is that better? Is anybody still using Academy P?

[LAUGHTER]

Can you do that in Academy P?

[LAUGHTER]

AUDIENCE: No.

AUDIENCE: No.

RALPH SCHOCH: Yeah. We used Academy P for a long time. But when we switched over to Revit, now nobody wants to touch it. So I guess apparently we have one person, one hold out who wants to use it. But OK, there's nobody else.

AUDIENCE: [INAUDIBLE]

RALPH SCHOCH: OK. But no. This changes our world as detailers. Because now we can start breaking our spools down before our design has been finalized. It doesn't hurt. You can start getting those out to the field, have them coordinate where the breaks are, or at least verify it. And then you

can run through and run them. And if you have changes or they have something that comes up, you can just move that and fix it and move it around.

It's sort of interesting in that we had a project just last week. We did all the detailing. We had all the shop drawings done. We had all the plans and sections done. And the contractor called up and said, hey, guess what? The chiller needs to move over 36 inches.

So our guy moved the chiller over 36 inches. And he went through and it was like he didn't really have to do anything. It was 3:30. He went home at 4:30. He just had to reprint the drawings for the most part.

AUDIENCE: Does it [INAUDIBLE] making changes?

RALPH SCHOCH: That's still manual. That's something that really-- Yeah, we look at that, too. That would be pretty sweet. You can apply revision. So Revit handles revisions really well. There's tons of stuff in this software. Once you start to learn it and you understand the power of it, it is unbelievable. It will change your world, I'm telling you.

I know for lot of people it's hard learning new software. But when you go and you change over to it and you get past that hate stage, you know? Because I will say, you're going to hate life. There's going to be a period of, our team, I think they say there's a period of a few weeks. But I will say here's what happens.

In a few weeks, you think you know how it works. And then a month later, you'll find out you didn't really know how it worked. But what will happen is you'll do your first project and you'll be so glad it's done because the next one, you're going to really do all these things right that you didn't do right the first time.

The neat thing about Revit too is that, if you do make a mistake, you can go back and fix it and a lot of things do update. Did you have a question?

AUDIENCE: I was going to ask you about that schedule. Is that up [INAUDIBLE]?

RALPH SCHOCH: Yeah. Yep. No problem. So this same workflow works for families, too. Right here is the cut length. Yeah.

And basically schedules? That's Revit. You can put any data that Autodesk allows you to put in there, that they give you. So End Prep is not given. But you can get it through API. If you're

good with Dynamo, you can get it through Dynamo too.

AUDIENCE: Have you been [INAUDIBLE] any Fabrication data in [INAUDIBLE]?

RALPH SCHOCH: I believe you can. I have to double check. You can get it through the API. And actually, to be honest with you, we didn't know that. I had to ask Andy Robbins. And he's like, oh yeah. Here's the file. Oh yeah, thanks. That would have been awesome.

And then also you can get at ancillaries too through the API. So we're working on that as well.

So right now that build material does not include ancillaries. So that's a good question. What does everyone do with ancillaries? Nothing?

[LAUGHTER]

AUDIENCE: Just dump my AutoCAD.

RALPH SCHOCH: You could dump it out to AutoCAD? Yeah. So what we want, what we're going to do is build it so that I can have the ancillaries show up in Revit. Since we can get at them, we can build a table. At least it will be static. But you'll be able to get at it.

AUDIENCE: Will that work the same? Is it pretty much the same [INAUDIBLE]?

RALPH SCHOCH: Yeah. So with duct, you can definitely do a spool like this. So yeah. Try it out. It does work. I've done it.

The thing obviously is, if you're going to go out to your tables and things, you're going to export out an MAJ. And then you're going to go that route.

AUDIENCE: [INAUDIBLE] our shop takeoff sheets, too.

RALPH SCHOCH: Yeah.

AUDIENCE: And [INAUDIBLE]

RALPH SCHOCH: Yeah. So what you'd have to do with that is, if I go back to that spooling view, I'm in the spooling view. Duh.

[LAUGHTER]

But if I come in here, let's say I throw in underneath I actually have some duct in here. I'll give

it a go. Supply here. That's popular, right?

AUDIENCE: Yeah.

RALPH SCHOCH: So if I have the piece, let's say, let's give it a go. It might get shy. I hope not. Create Assembly in Views. Fabrication. I'm sure the schedules won't work correctly. But it will create the drawing.

And what's cool here, I'll show you this too. So I just used the last settings I had. And it did populate schedules. But the data is different on a piece of duct. So you'd have to recreate the schedules using different templates and stuff. Not that hard but totally doable,

AUDIENCE: [INAUDIBLE] special instructions or anything?

RALPH SCHOCH: Yeah. So here's the deal. You see this is a legend inside Revit. Is that what you're talking about? Maybe notes or specific--

AUDIENCE: Yeah. Yeah. Does Revit have special instructions?

RALPH SCHOCH: Yeah. So let me--

AUDIENCE: [INAUDIBLE]

RALPH SCHOCH: Yeah. Yeah. So I would handle that with a legend. So let me show you the settings. I didn't go over the settings because we've got plenty of time to do it.

But what we did is, when you have Create Assembly in Views, I have this option down here for Settings. And this is where we took the Autodesk set up and we really went crazy.

I have the ability to specify all the views I want or don't want. But even above that, I have the ability to set up different spool templates. So I can create one for families, one for duct, one for pipe, one for fabrication parts, whatever I want. So however you want to do it, you just come over here and you can create a new one.

Do a Save As. I would create a Save As because if you click New, it's going to be all blank. And that's going to be a bummer. But you just do a Save As. But you had the ability to specify all the views, the different templates from the project. And then these buttons here allow you to specify what View Tag-- I think it's called a View Tag.

On the viewports, there's tags. It lets you specify what tag. So I have it specified to put the tag

in without the number because I don't want that number.

And then you see Enable Tagging? That's an option in there. So on that 3D view, I don't know if you noticed, it was already tagged. You still have to move them around a little bit. But they're tagged. That saves you a lot of time.

And we have a couple of different options for tagging. There's one in here for scatter. Bottom, top, right, left. So it's pretty cool.

And Scatter works the best. That one sort of tries to do the best thing for you, get it to work.

And then we have the ability to bring in three different schedules, which in Revit you just get one. And you have the ability to bring in two legends. A legend is just something like notes, text, like you're seeing.

You can really put anything you want in there. You can even put a north arrow in if you wanted to populate it or you can make the north arrow part of the title block.

And then you have the ability down here to set up your sorting, different columns, categories. You can filter out different categories you want. You can set up your columns if you're doing that static build material. And our static build material that I showed you? There's something even better.

We have some columns down here called custom column one, two, three, and four. Does anybody ever try to get data out of the engineer's model and they want to get maybe the angle of the elbow? You can type in angle here and you can pull reports really quick from an engineer's model.

The name of the parameter just has to match. It doesn't matter if it's shared or not. Because the API doesn't care if it's a shared program. Just a user interface does that we see. That will mean something to you for sure. It may not now. But that was a pretty huge thing we added.

And in advance, this is where I set whether I want to renumber all the marks. And I can set what type of build material I want to place.

But basically what happens is, let's say I come back in and I go to this other view, let's say I go to spool two.

So let's say I decide I really want my notes over here. Let's say I want my top over here. I can

move these all around. Obviously I don't want this down here but this is going to make it really obvious.

All I have to do is go back up to my settings for the Create Assembly in Views. And up here, I just update my layout. That's how I save where all this stuff comes in. So it's really easy to configure. I click Update layout. Close. Just click OK.

Now what I'm going to do is I'm just going to delete these out and I'll just rerun two to show you what that looks like.

So two. I want to rerun that. So I go to Create Assembly in Views. I see it's not detailed anymore because I deleted them all. Fabrication Template. And I better have them all in the right spot. Now it will.

Boom. That's pretty easy, right? So that's how we set it up. And that's how it works. So yeah. That's the deal.

Is that good? Does that work? Does that help?

[APPLAUSE]

Yeah. So what's neat about it is we're actually Autodesk partners. I'm not here selling this thing to you. But we're working with Autodesk to build it. So if you need to use it and you need to spool out of Revit, this really is going to be an economical solution for you.

So check out our booth. I know a lot of you have been over. We have a couple of minutes. I can take any questions. Yeah?

AUDIENCE: So if you move something in the models, say you had to move that assembly over 30 inches, do you have to recreate those views?

RALPH SCHOCH: No. They will move a little bit on you. Sometimes you've got to move them back. So I'll show you that.

So if I come back into this project, they actually stayed. It sometimes-- if you move them really far, 36 inches apparently isn't far enough. But yeah. They will--

But you can see how quick that change was. Right? I mean, that's incredible. I mean--

AUDIENCE: The actual [INAUDIBLE] technical [INAUDIBLE].

RALPH SCHOCH: It automatically sizes based on the elements. You also have the ability to rotate the views. I didn't go over that too. But if I come in here and I want to rotate that view, we have a tool that allows you to rotate it too.

And also if you have anybody deal with a building that's like shaped like a pork chop, it will automatically rotate them, square them up to the views and stuff. So try it out. Let us know what you think. It comes with a 30 day trial.