

Autodesk University | Inviting FormIt 360 to the Revit Party!

KIMBERLY FUHRMAN: We've still got about three minutes. We're going to let some-- give some time for people to get up here. In the meantime, while we get started, I have a little creative exercise to wake up those juices this morning. I need three somewhat awake volunteers. Nobody's awake this morning. One, two, and three. Come on up.

[APPLAUSE]

OK guys, so--

AUDIENCE: You should have picked a better time.

KIMBERLY FUHRMAN: Yeah.

AUDIENCE:

Eight o'clock this morning after a party--

KIMBERLY FUHRMAN: I know right?

AUDIENCE:

Not good.

KIMBERLY FUHRMAN: OK so come on over here. I'm going to have you stand here. And like I said this is creative.

AUDIENCE:

Hi, welcome to the FormIt to Revit party. Now, I have play-doh. Let me tell you what, TSA this is not like play-doh in a suitcase apparently.

[LAUGHTER]

I no-- I no longer have a lock on my suitcase. OK.

[INTERPOSING VOICES]

This is going to be worth it right? Yeah. This is totally going to be worth it. What you're going to do with your play-doh is I'm going to give you the first five minutes while I run through all the overhead stuff, and all the classroom stuff, to have you come up with your best creative piece of architecture.

The only thing I ask is that please do not do any tall skinny skyscrapers because we need to keep it G rated. OK? So anything else you can do. Ready, set, go.

AUDIENCE: This is a trick, isn't it?

[LAUGHTER]

KIMBERLY FUHRMAN: OK. So while they're-- it may have. While they're working on getting their play-doh out, this is inviting FormIt 360 to the Revit party. Good morning. I am so glad you're here this morning, could make it out after that wonderful party last night. It was a lot of fun. And I did leave a little early so I would be well-rested for this morning.

My name is Kimberly Furhman, and this is the obligatory narcissistic slide. Way too much fun. He still didn't get it out of the bag.

[LAUGHS]

AUDIENCE: [INAUDIBLE] seal.

KIMBERLY FUHRMAN: RK do you have your knife? Can you help the guy out?

AUDIENCE: OK it's not just me that's dumb.

KIMBERLY FUHRMAN: So, like I said, this is the obligatory slide. We will get more serious about FormIt and Revit in a few minutes. But I wanted to point out some of the things that I do, not really to highlight myself, but I did want to point out that I am of an AUGIWorld world content manager. I'm a huge fan of AUGI. How many AUGI members do we have in here? Fantastic.

So were you at the meeting last night?

AUDIENCE: Excuse me.

KIMBERLY FUHRMAN: OK so you heard the big news. The elections have been open. I've been nominated to the board of AUGI. And so I would just encourage you to go out and look at all of the candidates. There's some fantastic people running. And just go ahead and make your voice heard. OK.

[APPLAUSE]

Thank you. This is the class description. I am not going to make you read that this morning. The learning objectives-- I will give you a disclaimer. This is not an in-depth, analytical-- we're not going to get into charts and graphs and how this thing works and yadda yadda.

This is an overview over of Revit-- or an overview of FormIt 360 and how it relates to Revit-- how you can go back and forth between the two. OK? So it's a very general, very basic class. I'm not one of those really nerdy people but I like to be able to just teach and show you how things work. And if you feel that this is too basic for you and you know that there's another class out there that you would rather sit-in on, feel free. I'm not going to be offended. You can go to that class.

So how are you guys doing over there?

AUDIENCE: Working it out.

KIMBERLY FUHRMAN: Working it out? All right. I'll give you another few minutes. We're going to talk about design process. How many of you use some type of-- how many architects do we have in the room, first of all? Or architectural field? OK quite a few.

Mechanical? Anybody? OK. Just here for the party. Right? OK. Gotcha. Other-- I know we've got some civil guys.

My background is mostly architecture and civil, and a crazy mix of both. So I now work for a multi-discipline firm. We do architecture, civil, and structural engineering. And what I learned coming from my last firm-- it was strictly an architectural firm-- and we kind of grew into Revit at that firm. So we were working in AutoCAD architecture and then when Revit came out we made that transition over to Revit.

And really that was the way our firm worked. We did everything in it from design through construction. So then I moved to this position as a BIM manager in a larger firm and all of a sudden I'm working with more architects more designers. And they have a completely different workflow process. And I was introduced to software such a SketchUP and Rhino and you name it. OK.

And I'm thinking now, how does this work? Because why why can't you just do everything in Revit? And it was really kind of a-- it was eye opening for me to say OK, OK, this is all right.

You guys can use your little-- cute little things over there, but when it gets to the down and dirty, to the construction documents and so forth we're going to go to Revit.

The kicker came in because you can't really-- you can, but it's kind of a beast to go from those programs to Revit and have something that's usable for the construction process, right? OK, so about a year ago I was introduced to this program called FormIt 360. And I thought oh, this is pretty cool.

And with the improvements that they've made over the year, now, we can take our FormIt-- which is our nice, our fun, kind of creative modeling program-- and we can take that into Revit. And we can use those elements in our Revit model and then, oh my goodness, we can take it back from Revit back into FormIt if we need to do something else within FormIt. So I'm going to give you, like I said, an overview of FormIt 360.

I'm not going to go into any great details because there's a lot of other classes out there that do that for you. Carl Storms, hiding over here in the corner, he had a fantastic lab yesterday using FormIt 360 and Revit and Dynamo. So I would encourage you, when you get back, to look up that class and those handouts as well.

So we talked about the design process, design software versus BIM software, or Revit software and now we're going to take a look at FormIt 360. Are you-- you're done? That looks like a recognizable building there. Let me tell you.

AUDIENCE: [INAUDIBLE]

KIMBERLY FUHRMAN: Yeah. OK. So why don't we take a minute before I get in-- are you guys guys finishing up? Doing good? OK. So why don't we take a look at these creations that we have and we will award winner.

[LAUGHTER]

Can you pick them up? OK. Can you get up I think is the other question. There you go. OK, so what do we have?

OK, Jeff, yours looks like the Sydney Opera House.

AUDIENCE: That's what it is.

KIMBERLY Oh yes. Very good, very good. OK.

FUHRMAN:

AUDIENCE: Mine's just a creation.

KIMBERLY Just a creation. That's great.

FUHRMAN:

[LAUGHTER]

AUDIENCE: [INAUDIBLE]

KIMBERLY Marco, I think he used a 3-D printer for that thing. I don't know. It's pretty good.

FUHRMAN:

AUDIENCE: That's what it's inspired by.

KIMBERLY Very good. So I have to say that it is my dream to someday visit Australia. I'm sure I can go
FUHRMAN: with-- visit Bill. So I'm going to award the FormIt crown-- maybe your head's a little triangular--
but I'm going to award the FormIt crown to Jeff.

[LAUGHTER]

[APPLAUSE]

Oh it's not going to fit. It came apart.

AUDIENCE: My lady. That's pretty cool.

KIMBERLY I love it. There you go. It's not going to stay on. You're just going to have to hold it. Thank you.

FUHRMAN: Thanks guys. Another round of applause.

And you can keep the play-doh.

So FormIt 360, this application is a very mobile, very user friendly application. There are several ways to access it. The best part about it is that the basic version is free. So you can access it online anytime at FormIt360.Autodesk.com. You can access the-- there is a desktop application that you can download to your computer.

And there are also mobile apps. So if you're out somewhere and the muse strikes you, you can get creative on your iPhone or Android phone anytime-- or on your tablet. There are pro versions-- or there is a pro version of FormIt 360 and I'll go over some of those features a little bit later. So the FormIt 360 interface, again, very clean, very easy to use.

At the very top is what we call the action bar. Pretty sure there was a couple of those at the party last night. But this is where all of your creative tools are, all of your building tools, your sketch tools-- the energy analysis is up here in the middle-- and then your collaboration tools. And those are both in the pro version.

To the very right of the drawing window, over here, this is your palette. And this is all of your kind of applications such as materials. You can-- in the pro version you have Dynamo. Your groups, your levels-- which your levels from FormIt 360 will transfer right into it, which is fantastic. You don't have to worry about setting up levels in FormIt and then levels and Revit. Your FormIt levels will transfer right over-- visual styles, groups, and so forth.

And then just to the right of the drawing window are your navigation tools. And those are very similar to other graphics programs. You have your 3-D views, your cameras, and your zooms. So it's all about location. The first thing you want to do when you go into FormIt is set your location.

And this will allow you, when you get into-- if you have the pro version and you're using the energy analysis tools and the solar tools-- it will give you accurate information for the location of your site. Once you have the location you can import a satellite image directly into FormIt and build you're building on top of it. On the action bar, like I said, the sketch tools-- your basic line, arc, spline, rectangle, circle, so forth-- your primitives, and then your modified tools. And what I'm going to do is going to go through these slides and then I'll switch over to a live demo.

You know how those go so we hope everything works well. But I'll show you how some of these tools work. And then in the upper right corner, if you click on any object or double click on an object and then right click, you'll get a contextual menu that you can apply different commands to that object. So you wondered why I did the play-doh command. When I first started working with FormIt this is what I thought of.

I thought of the play-doh because you're pushing, you're pulling, maybe twisting a little bit. But that's kind of how FormIt works. So you're creating a sketch.

You're pulling it up. Maybe you're pushing a piece of it down. You're pushing a piece of it out. And that was that's kind of my tie-in with the play-doh. So I hope that kind of works for you.

And then levels-- like I said, the levels, you can set as many levels as you need. You can adjust the height as you need them. You can modify those. And then those levels will transfer directly into Revit.

Materials-- FormIt 360, in itself, comes with its own set of sample materials. With the pro version you also get the Autodesk material library. So these are the materials that you're familiar with from other programs such as AutoCAD and Revit. And then those you can apply to your mass objects and you'll get the realistic look and rendering presentation quality there.

OK. So how does all this work? Once you get your building created, how do we go from FormIt to Revit and back again? For this-- for FormIt 360 to work, obviously, it's a, it's kind of a Cloud based-- or maybe not so obviously-- it's a Cloud based application. And so you're Revit files are created when you save your FormIt 360 sketch it will automatically create an AXM file, which is your FormIt 360 file.

And if you save it to the A360 Drive, it will it will also save the Revit file. So you don't have to do anything. It does it automatically for you. Now if you save your file locally, it only creates the AXM, but then there's a converter within Revit that you can use to bring that AXM into Revit. And I'll show you how this stuff works a little bit later.

Revit families-- it is possible to take certain Revit families, those listed, and bring them into FormIt 360. So if you're doing maybe space planning, some furniture layouts, some site layouts, things like that, you can bring Revit families-- you can export them out of Revit to a file that FormIt 360 will recognize and then bring those right into FormIt. It saves you-- it saves to your A360 Drive. It also saves them locally so then you can add that content to your FormIt 360 library.

And then Revit models-- taking your building model from Revit back out to FormIt 360. We would export it as an SAT file, which is a kind of a CAD standard file. And then once we're back in the FormIt application menu, we can import that SAT file. It brings it in as a mass object. So if you have walls, and roofs, floors, and so forth, in your model, it brings them into FormIt 360 as a mass object as a group.

But if you can edit that object you. Can push, pull, whatever you need to do to that. OK. I'm

going to switch over now, before we get into the energy analysis, I'm going to try and switch over here to FormIt. If I can find my mouse. Move this out of the way.

So for this session, I'm actually using the FormIt 360 desktop application. So this is not the web version. I just didn't trust the internet here. So I'm using the desktop version.

And the action bar here at the top has all of my drawing tools. I have my palette bar to the right and my navigation tools. So the first thing I'm going to do is actually I'm going to check and make sure that my units are set to imperial. You can switch them to metric, but you just want to make sure that you're in the correct units before you start. I'm going to make sure that Snap to Grid is off.

And then I'm going to set the location for my project. Hopefully this will work. So I'm just going to type in Las Vegas.

And just using a generic location I'm going to switch to satellite, possibly. And I found this earlier. It's just a smaller building with a parking lot. We're going to take over the parking lot. You know how architects like to do. So I'm going to import a satellite image and it goes back to my original location. So I'm just going to get this a little bit centered and then just finish importing image.

Now, you can also just set your location if you don't want to import an image. And that way you still have that setting for the energy analysis later on. So there's my image. And go to a plan view and it zooms way in. And you can see that I have my sight and my grid isn't really perpendicular, right? It's kind of grid goes up, my site's kind of crooked.

To me, that would drive me nuts. Instead of rotating the image, we're going to rotate the axis so that our grid aligns with our site. So I right click, just right click on the open area and click to set my access. You will learn in FormIt that the red dot is your friend. So if you can find a red dot, you can pick that red dot to move or edit the object.

So I'm going to click the red dot to set it on the work plane. I'm going to come over to this red dot and I'm going to click and drag. And I don't have my glasses on so this is going to be pretty darn close. And then once I have that set I can hit Escape and now my grid is aligned with my site. Pretty cool stuff.

So I'm ready to draw. I could, actually, turn the axis off if I want to. I'm just going to leave them on for now. But I'm just going to start drawing my layout. Typically what I would do is stay in

my plan view, draw my outline sketch, and then extrude that, or pull that up to the correct height.

So I'm just going to draw a shape here. You'll notice, I don't know if you can see it very well there, but there's a red line that shows me that I'm parallel to my axis. And then when I pull I get the magenta line that shows me that I'm perpendicular to my last line so that I know that I'm on that axis. We're not going to do anything real crazy here, but just to give you an idea, once you have a closed loop then you can hit the Escape button to finish the command. And now you can see that I have a surface for a building.

Very, very, very easy, easy interface. From here out I'm going to switch to my orthographic view and kind of look around here. If I right click and drag I can orbit around. And now I'm going to click on the surface and you'll see that I get a diamond with arrows. This tells me that I can take this highlighted face and I can drag it up or down.

So once you start dragging then you get a dimension. And if you hit the Tab key it will take you into a dialog box where you can set a fixed dimension. So I'm going to go with 60 feet. And now I have a solid object. Here's your building.

You can go through and if you're doing kind of a site analysis, you can create your proposed building and you can also-- if you know the heights of the buildings around-- you can create simple masses just to show how those relate to each other. So it is useful for civil sometimes. OK. Then once I have the building set I'm actually going to add levels now.

And you can create levels at any time. You can do that at the very beginning. But I'm going to go create my levels. And you can add one level to time, or, since we have a multi-story building here, I'm going to add several levels. And I'm going to create, actually, six of them at 12 feet apart because I know that I had a 60 foot building. Now I've got levels from ground up to the top.

But where are the levels? Why aren't they showing up, right? So I have to double click my building to select all of it. If you single click you're only selecting a face, or an edge, or a point. So I'm going to double click the building, go back to the properties-- which is at the top of the properties palette-- and I'm going to say use levels. And now I can decide to either use one level, three levels, or all levels.

So I'm going to apply all levels. Now you can see that my levels are applied to my building. OK,

materials, which is kind of fun. I'm going to use the Autodesk material library since I have the pro version. You can also add your own materials. You can create your own materials. But I'm going to use what Autodesk has worked so hard to provide me with.

And from the east coast we do everything in masonry-- CMU, you know what I mean? So that's what I'm familiar with. Let's see. Let's pick one. Any ideas? Pick one.

AUDIENCE: Herringbone.

KIMBERLY FUHRMAN: Herringbone. That's a fun one. Let's go light brown because I think that will show up better on the screen. So we click OK. And now for-- I would right click on paint with material, or I can simply go up to the paint brush and click the paintbrush, and then select the face that I want to paint with that material. I'll see if I can zoom in. I don't know if you're going to get the resolution up there but it's a pretty dense herringbone and you can start to see it there.

So you can do that with all of your faces. You can create a new material for your roof and so forth. I'm not going to go through that entire exercise today. So we're about halfway through. That's good, very good. OK.

Once I have the building the way I want it-- I have my levels set. Now I'm going to save this to my A360 Drive. So I would go into the file, save sketch as to A360. And I'm just going to call it FormIt Party. And it gives me this nice little dialogue that says, hey, I saved your file to A360. You can go get it now.

From here, I can go back to the menu and I can say, OK, view my files and A360 Drive. So clicking on the A360 Drive takes you to the 360 web site. And this is where I wasn't going to rely on the internet, but it seems to be working-- knock on wood. So then in FormIt I can scroll down. And here I have my FormIt Party AXM. And I'm not seeing the RVT file, are you?

OK, let me try this. I need to give it a minute. Sometimes it throws it elsewhere. This is one of those live demo things.

Let me go back. I can do this. All right, I'm going to save it again. Whoops, let me do--

AUDIENCE: [INAUDIBLE]

KIMBERLY FUHRMAN: Thanks Tom. OK, Tom Valero up here, boosting my confidence. He is with the FormIt team at Autodesk. No pressure, right?

All right. Let me go back to--

AUDIENCE: Did you say it could be emailed too?

KIMBERLY FUHRMAN: If you run insight in Revit it goes to email. But it will it does not do that in insight. OK, so let's try this again. Still waiting, still waiting.

OK, so the magic of technology-- I have already done this. OK, I know that it works, but I now have my AXM here that I can download. And, eventually, I will have my Revit file that I can download as well. So, like I said, magic of technology. I'm going to go into Revit and I'm going to go to my add-ins-- if I've started a new project I'm going to go to my add-ins and import FormIt 360 to Revit.

So this is with the AXM file. Obviously if I have the RVT file I can just open that like you would any project in Revit. There's no translation needed there.

So I have a few FormIt models here. I'm just going to open this one. It may not match what we're working on, but that's OK. And you may get an upgrade notice, but then, once it comes in-- like I said, this is a different model but it's still an AXM file.

You can see that we have our mass objects. We have our levels. And we also have mass floors. So once we apply that level to that mass object, it automatically creates mass floors.

So now what do you think the next step is in Revit?

AUDIENCE: [INAUDIBLE] create walls.

KIMBERLY FUHRMAN: Create walls. Right. Right. So you can create walls from faces. You can create your roof, your floor. Paul.

AUDIENCE: I don't see five levels in that [INAUDIBLE].

KIMBERLY FUHRMAN: This is a different file. So I only applied-- for the other one. Sorry. Oh, and you're wondering why they're not showing up here?

AUDIENCE: Yeah.

KIMBERLY FUHRMAN: It's because they did not create floor plans with the levels. So I would have to go to each level and say, create a plan. Then they'll show up in here.

AUDIENCE: [INAUDIBLE]

KIMBERLY Excuse me?

FUHRMAN:

AUDIENCE: In an elevation you can view the levels [INAUDIBLE]

KIMBERLY Correct. Right. So if I got to an elevation-- OK, there are all my levels, now I just need to turn
FUHRMAN: on my mass objects. Spelling much-- and try it- there it is. That's kind of a weird elevation, but-
- that's better. OK.

So there are all my levels that came in with my FormIt mass. So now I can go back to my 3D view just because-- I personally like working in 3D. Not everybody likes to work that way. But I can create a wall by face and then set the style that I want and then just click on the FormIt face or the mass face and create even that funky wall. Graphically it's going to look a little weird, but you can do that also with your walls, your floors, and so forth.

Yeah, way in the back.

AUDIENCE: [INAUDIBLE] perhaps you go back and you study 10 different versions of these things and as you process you [INAUDIBLE] because if I process a house while it would change these masses and walls, we need to remember that those are the faces that you've been changing in order to [INAUDIBLE] come back and reapply all the systems that [INAUDIBLE] communicate and scale and what not [INAUDIBLE]?

KIMBERLY Right. So depending on-- the question is if you go back to your mass and you make changes
FUHRMAN: to your mass and then bring it into your Revit model-- if I'm understanding your question correctly-- then you know how do you update that Revit model to match the new masses. And there is an update to surface command that when you create the walls from the mass-- and Tobias, you can correct me if I'm going down the wrong path-- but when you create walls from a face or from the mass, it knows that that wall came from this mass object.

So then when you bring that mass back in and that surface has moved or has changed, you can click on the wall and you can say, I think it's-- what is the command-- match surface and it pops that wall right to where that mass surface is.

AUDIENCE: So that's changing it in FormIt.

KIMBERLY In FormIt. Correct. Right.

FUHRMAN:

AUDIENCE: [INAUDIBLE]

KIMBERLY Yes. Yeah, just like any Revit mass object. OK? Cool.

FUHRMAN:

And then once I have my changes made here, now I can take this Revit file and I can say export as an SAT file. I can take this Revit file back out and then import the SAT into FormIt. So we'll just do that for fun. Say next.

AUDIENCE: What's my advantage on doing more?

KIMBERLY Coordination, really. If you have, maybe, some things in FormIt that you did not bring into
FUHRMAN: Revit, and vice versa, that you need to compare, personally I'm of the opinion that once you go from FormIt to Revit and you start that construction document process, you're probably not going to go back to FormIt. Really it's a presentation, kind of initial conceptual, design tool for sure.

Yeah. Yeah. OK, yeah.

So we're going to take a break thank you, RK. I'm going to send this little bag around and if you would like to put your business card into the bag, we're going to do a drawing for some gift cards. So I'm going to start it here and you guys can just wing it around the group.

So I've saved this building actually to the desk / I'm going to start a new sketch and I'm going to import this 3D model. Go import 3D model, saved it to my desktop, find my SAT File, and hopefully I have my mass.

AUDIENCE: You could have brought that back into the one you started before though, right?

KIMBERLY I could have sure.

FUHRMAN:

AUDIENCE: That had the picture of the co-pilot on it.

KIMBERLY Right. Yeah, yeah. You can bring it back into any FormIt sketch. You're right.

FUHRMAN:

AUDIENCE: And do the coordinates line up with it?

KIMBERLY FUHRMAN: The coordinates line up with the original-- so--

AUDIENCE: If you brought it into Revit, is that coordinate system-- if you export the SAT and bring it back is it the exact same?

KIMBERLY FUHRMAN: Yeah. It goes off of your location. Remember the location that we set? So those coordinates are--

AUDIENCE: [INAUDIBLE]

KIMBERLY FUHRMAN: Transfer right into Revit. Right, right. OK.

AUDIENCE: Can you do this much [INAUDIBLE] as well in the desktop?

KIMBERLY FUHRMAN: Can you do this in the web version as well as was the desktop? Absolutely. Yeah, absolutely. OK.

So the other thing I want to show you is how to take Revit families from Revit into a FormIt. I'm going to say no. I've already created-- now, Revit will take a folder of families. So you don't want to take your entire Revit family library and export it to FormIt. You want to select the pieces that you need, put them into a folder, and then you can take that from FormIt to Revit.

So I've already done that, of course. And I want to go to my add-ins tab. And from FormIt I go to the convert RFA to FormIt 360. So if you remember on the one previous slide, there was a list of certain families that this will work with. So it will not work-- of course you really-- it won't work with Windows, things like that, but it will work with mass objects and with casework and things like that. Casework, furniture work fine.

So I'm going to convert RFA to FormIt and now I'm looking for my FormIt content-- or, I'm sorry-- my RFA file. And I'm going to actually upload that to my A360 and I'm also going to save it locally. I'm going to save it actually to my desktop.

Click OK. It's going to go through, I think I have maybe three or four Revit families in there. It's

going to think about it, process it.

And still think about it.

And you're going to wonder what it's doing. But now it's going to tell you, hey, I successfully converted all of your FormIt content-- or all of your Revit families into FormIt content. Click OK. I can go back to FormIt now. And I can go to my content, which is over here on the right.

And these are the samples that come with FormIt, but I can add to that by creating my local file. We're going to my local file and clicking OK, and then switching to that content. That's the right one.

Let's try this one. Here we go. So now I've got a conference table. I've got some case work. And I can click on one of these, let's take this conference table-- and of course in scale to my building it's pretty small-- but I can zoom in and now I can place that table.

Whoops, that disappeared. Try again. OK. Click.

AUDIENCE: Are you dragging and dropping or--

KIMBERLY FUHRMAN: I'm actually single clicking on the table and then single clicking to place but it kind of disappeared. Let's try a different one. There we go. So just single click on the content over here and then just click to place there. And again it comes in as group object.

AUDIENCE: Will it not show the preview of the object like the other things in FormIt.

KIMBERLY FUHRMAN: It does not. I'm sure our fabulous FormIt team is working on that. Right Tom?

TOM: What was the question?

KIMBERLY FUHRMAN: Are they-- we do not have the preview of the Revit content or the families.

TOM: Yeah, if you open it and then save [INAUDIBLE]. But you can if [INAUDIBLE].

KIMBERLY FUHRMAN: OK.

TOM: They'll show up.

KIMBERLY FUHRMAN: OK. So once you open it-- is that correct? And then save and then open it again it will show up.
OK.

So this is helpful if you're doing space planning, if you're doing furniture layouts, things like that. You can do some great visualization with that. Any other questions before I jump into energy analysis?

AUDIENCE: In Revit we have a screencast add on. Do they have one for FormIt?

KIMBERLY FUHRMAN: I believe-- I believe you do screencast it will record your current window. Is that correct?

AUDIENCE: Yes. People do it [INAUDIBLE].

KIMBERLY FUHRMAN: I think you can do-- yeah. Yeah.

AUDIENCE: Just know that it's an add on.

KIMBERLY FUHRMAN: Right. Right. Steven.

AUDIENCE: Will Revit and FormIt ever become [INAUDIBLE] or both real time live rather than having to worry about [INAUDIBLE] having to update and replace?

KIMBERLY FUHRMAN: Yeah, Steven-- so the question is will all Revit and FormIt ever become live linked so there's not the back and forth. And all I can tell you is Tobias is kind of--

AUDIENCE: It's an ideal world.

KIMBERLY FUHRMAN: Yeah, yeah. Tom's going are you kidding me.

AUDIENCE: Is there a way you wanted to start off your project with, let's say, an existing CAD file of a remodeled project, is there a way to underlay [INAUDIBLE]?

KIMBERLY FUHRMAN: Absolutely. Yeah, yeah, you can bring that in, actually, as an image just like we did with the-- you would create your surface for the size of your CAD plan-- make sure-- the funky thing with

that is getting the scale correctly. But you create a surface and then create a material and then with the material used the image of your floor plan to apply to that surface. And then you can draw right over top of it.

AUDIENCE: [INAUDIBLE]

KIMBERLY FUHRMAN: You would have to use some type of image file. Am I right?

FUHRMAN:

AUDIENCE: [INAUDIBLE]

KIMBERLY FUHRMAN: Correct.

FUHRMAN:

TOM: [INAUDIBLE]

KIMBERLY FUHRMAN: Right.

FUHRMAN:

TOM: That is something I will say we are working on.

KIMBERLY FUHRMAN: OK. OK. So Tom said that's something they're working on but right now you cannot bring a DWG directly into FormIt. OK. Good questions. Thank you.

Cameras-- got to love it. Should I pose?

[LAUGHTER]

That's great. Thank you. Oh, where's the distraction-- shoo.

AUDIENCE: [INTERPOSING VOICES]

KIMBERLY FUHRMAN: I just lost them. I lost them completely. That's awful. All right, where we? Energy analysis. Oh, yeah, sure.

AUDIENCE: You're doing it perspective view the whole time, [INAUDIBLE]?

KIMBERLY FUHRMAN: Sure. Yeah. You can switch back to plan view. That's on your navigation. So it's-- when you're working with the 3-D solids though, if you're working it on plan view, it's hard to select the correct point because you may need the point on the ground plane versus the top. And when

you're in the plan view it's probably-- it's going to pull the top most point.

AUDIENCE: OK.

KIMBERLY OK. OK. How we doing on time? Good, good, good. Perfect.

FUHRMAN:

All right. So-- let's see. How do I start it from here.

All right. Energy analysis. Actually on Tuesday I did a class on insight 360 so you can check that one out as well. I'm going to go just a real brief overview of insight There are again, there are a lot of classes out there that cover insight 360 in more detail. But this is kind of an overview of how it works within FormIt.

Within FormIt 360-- again, this is a pro version-- we have solar analysis, which is a lot of fun. I'm from Pennsylvania so we get seasons, summer, winter. I hear we're coming back to snow this weekend, which I'm not ready for at all. This location in Las Vegas, you can see that our BTUs per square foot are pretty high on this building. So we're probably going to think about putting some sunshades on this building.

And then once we get into the energy analysis with insight, that actually takes you to an external website for insight 360. And there, it will give you your analytical model, which you can fully navigate. You can take sections. You can rotate. It gives you your energy costs mean up here in the upper left corner. And a benchmark comparison.

And these are dollar figures that are tied to that location that we have set for your site. So it's just a general cost mean. It's not saying you're going to save exactly \$4.52 a year if you do this to your building. But it's just to give you a comparison. The levels here, we have the Ashrae 90.1. So we're trying to get our building to at least me Ashrae 90.1.

And then we also have the architecture 2030. Ultimately our goal would be to get this number and this benchmark to green. And that would give us the most energy efficient scenario for our building. Whoops. Laser pointer it doesn't work to move it.

In addition to the boxes that I just showed you, you also get these cool widgets. And just saying the name widgets is kind of fun. So you'll have just a whole list of all these different boxes with different pieces that you can change to your building. Now it only changes within the Insight 360 analysis. It does nothing to your model within FormIt or within Revit.

And then, if you click on the arrow in the upper right corner, it gives you a range comparison of the different factors that you can apply to your energy analysis. Now the steeper this graph, the more opportunity there is for increased savings-- so the lower cost-- and, or you can set a range. So if you don't know what the exact amount is-- say this one's set for plug load efficiency set for 6.46.

You could set a range maybe from what's modeled down and it will still adjust that energy cost mean. So taking that range from the default, which is the average for everything, down to a specific value will help to lower that energy cost mean and help eventually get your building to green.

OK, so before we wrap it up-- how are we with time? 15? 13. OK. I'm going to switch back over to FormIt.

I'm going to get rid of my table here just for fun purposes. And I'm going to click on my solar analysis. I'm going to tell it to display shadows. So now I can see the shadows of the building. And if I click on the day of the year, or the time of day, now you can see that those shadows start to change. And you can see where they fall.

Now if I click solar analysis-- I didn't set a location for this particular one, so let's just do the same thing. I'm going to set location only just for the sake of time. And I'm going to say, OK, I want a month peak and I want to see the solar analysis in February. I have to have the object-- or the building selected, or a face-- you can just analyze one face of the building if you like-- and click Analyze.

And now I can see what those effects are. You can see a little bit of a shaded area back here. This is probably my north side, south side. It's pretty glaring. And it's hard to see the difference in the colors up there.

That's kind of disappointing. But you can see a little bit of a blue shade back here in the corner. And then if you hover over a face it will give you a value for that specific phase.

So that's just the solar analysis. Now if I click on the Insight 360 and I say generate insight-- this is going to take a few minutes to run. One-- what is it saying? One visible object with levels applied. All right, let's try another file.

Where did my content go? All right. So this is a different building but we're going to run the

insight on this one. Actually, I've already run this one so this should be easy. But you would click Generate Insight, it would take a few minutes. [INAUDIBLE]

AUDIENCE: [INAUDIBLE]

KIMBERLY FUHRMAN: I win, yay. All right, we're going to generate insight. Give it a few minutes to run. But I can actually take you to the Insight 360 site. I can go to my insights. I bet I can find one here to show you. There we go.

AUDIENCE: Can you get to Insight directly through Revit too, or do you have to go through FormIt?

KIMBERLY FUHRMAN: You can get to it from Revit also. Yep. So this is-- looks familiar. I knew I could get to it. You can go directly to your insights if you have a 360 account or if you have Autodesk account and get to your insights that way as well. So now I'm looking at this is very red here. So I'm going to start flipping these widgets.

And you can see how flat this one is so maybe rotating my building isn't going to make a big difference here. OK, my southern walls reducing my glazing probably isn't going to do a whole lot. But possibly adding shades-- let's see. I know some of the larger ones are-- you change your wall construction so you can see how that would affect it.

Lighting efficiency, there's a big one. So I can take a look at the lighting efficiency. The triangle is what we have modeled. And then the range is just the average of the options. So I can take this and I can bump this down.

This is probably too low but you can certainly set maybe just a range and go with that. Plug load's always a big one. You know you can bring that down a little bit. And you don't--

AUDIENCE: What does the range do?

KIMBERLY FUHRMAN: I'm sorry?

FUHRMAN:

AUDIENCE: What does the range do?

KIMBERLY FUHRMAN: What does the range do? It narrows down the options. So if you go back to the widgets-- so for lighting efficiency for the building the cost, takes it from a range of, in this case, 20.45 watts per meter squared, all the way down to 3.23.

From an architectural standpoint, I'm not probably going to know exactly what that figure is. Maybe things like this shading, the glazing, and things like that, I can and just to make a bigger difference. Another one is like the operating schedule. So if I can take the operating schedule and maybe I know that it's a 24/7 building-- that's going to be your worst case scenario.

So it's really trying to find what that best case scenario would be for your building. This might not be something that you would have a choice to deal with, but this would be like a 12/5 building. So you can see as I go through and I started adjusting these my energy costs mean now is in the yellow versus red. So I'm getting closer to that green.

And the purpose of this really is not an energy modeling software-- we're not getting into MEP territory-- we're really just kind of evaluating our options to see what we can do to our building to make it more energy efficient. Question.

AUDIENCE: How does the insight factor into the surrounding building?

KIMBERLY I'm sorry.

FUHRMAN:

AUDIENCE: How does it factor into the surrounding building?

KIMBERLY How does it factor in the surrounding buildings? I don't believe--

FUHRMAN:

AUDIENCE: Do you have to mass all those buildings to get the proper [INAUDIBLE]?

KIMBERLY You-- if you have the mass object or the mass buildings, I believe as for the solar analysis it will take those into account because of the shading. And-- go ahead.

FUHRMAN:

AUDIENCE: For energy analysis, it only applies these rules to the building that has the [INAUDIBLE] to it.

KIMBERLY Right.

FUHRMAN:

AUDIENCE: So your surrounding context will be factored in, but only as context unless it has the level of [INAUDIBLE].

KIMBERLY There you go. Thank you. Yes.

FUHRMAN:

AUDIENCE: What about comparing different design options for a building? Would you have to have the majority [INAUDIBLE] set up if your FormIt, which has used different models [INAUDIBLE] separately, or?

KIMBERLY FUHRMAN: No. You can use the same model and they have what's called-- what are called scenarios. So you can save a scenario. You can save like your initial building scenario. You can make changes to the widgets and save that scenario. You can make more changes and save that scenario. And then you can bring them all up and compare those different scenarios.

AUDIENCE: [INAUDIBLE] the widgets, but what if I had a significant change of building like different mass and forms?

KIMBERLY FUHRMAN: In that case, you would run different you would run Insight separately on each model because you are talking about different buildings. Right. Yeah. Yep.

AUDIENCE: For that lighting efficiency, is it all or nothing or can I go into FormIt and assign different cells without being too detailed? Like if I could say on the south side I have a lot more opportunity for daylight versus the north side. Can you do that in FormIt or do I have to take it into Revit to do something like that?

KIMBERLY FUHRMAN: Correct. So you're looking at different zones for different, say different faces, or different areas of the building. Is that correct?

AUDIENCE: Correct.

KIMBERLY FUHRMAN: Yeah. See you Steven, thank you.

AUDIENCE: I know that's sort of borderline [INAUDIBLE].

KIMBERLY FUHRMAN: Yeah. You're kind of starting the line. I know in Revit, when you take the Revit properties, it will give you that zone, that thermal zone that you can add to the building and the thermal areas.

AUDIENCE: [INAUDIBLE]

KIMBERLY FUHRMAN: Yeah. Right. Yeah. I don't know that you can do that within FormIt.

AUDIENCE: OK.

**KIMBERLY
FUHRMAN:**

OK. Any other questions? OK. Four minutes. Let's do a drawing. OK.

All right. So I'm going to switch this back and we're going to wrap up this party. Right. OK. Let's go back into presenter.

All right, so, I'm going to have you draw three names. Don't look.

One-- Charles Salter. All right. Kevin, can you hand that back to Charles. He's two people behind you.

[APPLAUSE]

And Jamie-- is it Whitefield? All right. There you go. Very good.

[APPLAUSE]

Next one. Matt Jackson. That's you. I actually went to high school with a Matt Jackson. I had to look twice at that. There you go. Congratulations.

[APPLAUSE]

So I know we went through a lot in this last hour and I appreciate your questions and your attention. And I hope that you have found something or learned something that maybe you can take back to your office and get excited about FormIt 360. Is that the case? All right. Very good. Then I've done my job. Thank you.