PETER MARCHESE:

So for the most part, we're going to be going through the different steps. Live is very user-friendly and it's meant to be that way. So by the end of this, you'll definitely understand how to use Live and what you need to actually take advantage of it.

Stingray. Don't expect to be an expert by the end of this. If you've never used a game engine before, it is something that's going to be very complex compared to what you're used to using. But at the very least, what it is going to do is show you how to actually get from A to B. And show you that it's really not as complex as it's going to seem at first. So we're actually going to be going through a few things.

And I'm not going to do death by PowerPoint. Slight bruising by PowerPoint. But we are going to spend a lot of time in the software. Cool.

And main goal here is to help you actually take your presentations and make them better than they have been. So before we get rolling, I just have a couple of questions. How many people here have actually used Stingray or Live? Handful. OK, cool.

How many people here are familiar with Navisworks? Perfect. That will help because the Stingray interface is going to be very similar to what Navisworks does.

Of those that use Navisworks, how many of you have ever done an animation in Navisworks? Perfect. So you're going to be set up already.

And how many people here are comfortable with Dynamo? Awesome. So that's all going to help you.

Last little piece of housekeeping, definitely-- don't be that guy. Actually, make sure I'm not that guy, too. Yeah, good. Awesome.

So first thing is, what's the problem? Why are we actually looking at this as a solution?

The first thing is not everybody can actually read a set of plans. And I've also met people that are designers that still can't read plans and infer what's going on. So we're looking at something that can make it a lot easier for people to navigate and understand what our design intent is.

So when you look at a floor plan, I don't necessarily get an idea of maybe materials. I don't get an idea of depth, or size, or anything. And because most of the stuff that we do now is in 3D, that helps out a lot. But it doesn't always read everything.

And most of the tools that we use-- whether it's Revit, Navis, or Max, we can very easily create walkthroughs.

The problem that you run into if you're doing an actual walkthrough is that you typically are on Rails. So if I'm doing this, I'm going where somebody else told me to go. I'm phasing through doors unless I'm doing it in Max or maybe Navisworks.

I see something interesting like the red doors and I want to go through that, but I can't because I'm going through this. And then I'll see something like floating in space and I have no idea what that is. And I want to go back and click on it and get the information, but I can't. I'm kind of trapped into whatever the path or flow is that somebody else determined.

So the benefit of looking at these kind of tools is that it's free. If you want to actually create a walkthrough, you can do that.

But if I want to go where I want to go, if I want to actually interact with the space at my pace and the way that I'd like to do so, that's one of the really beneficial pieces of these tools. It allows me to go where I feel I want to go. Cool.

So now in terms of solutions to this, there's already a bunch of them out there. And they all have different pros and cons, like anything would do.

If the goal is to just go from Revit into something that is going to give me 3D views that I can navigate, these are some that are really good. And I've used all of them. And I do like all of them.

The problem with that is if I want to take it further. So I go from Revit. I go in there. I can navigate. It's great either as a designer or just to show somebody something. But if I want to embellish that, if I want to add to that, I want to create animations that start moving things or phasing from maybe option A to option B, I can't. But if that's what I really want, then I can start looking at different game engines.

And the game engines are great because they really allow me to do just about anything I want. The problem with most of them that are out there is that if I'm trying to go from Revit into the

game engine, I export to FBX. I bring it in. And I end up with a big white model.

So for some things, it's not that big of a deal. If I'm really comfortable with Max, I can send from Revit to Max and start baking stuff. I can then try to bring that in and hope everything goes in OK. Or I can spend a lot of time sitting here and applying the materials over and over again inside the game engine. It works.

The only problem with that is now I'm actually doing this over and over again. Projects aren't static. I'm consistently making changes. I'm consistently updating things. So the workflow can be a little bit problematic.

Most people here that actually use Revit probably have seen this many times. It's why we're moving away from CAD. We're trying to get away from that sawtooth. At every different phase of the project, I don't want to have to rebuild all my work. I just want to continuously go with that. That's part of the beneficial-- sorry, part of the benefit of actually moving to something like Live or Stingray. So the workflow is actually going to be a lot more comfortable and a lot smoother.

Because rather than saying, OK, if I want to do this, I'm over here. But if I want to do something like that, I got to back up and then start over again and go that way. So it's a little bit more cyclical.

So far so good? No one's asleep yet? Awesome. Cool.

So big idea is, how do we bring our creations to life? So after conferring with the Frankenstein architects, we tried a few things that voided a few warranties. Nothing actually worked on that. But the big thing is the Live Design Workflow. So most people have probably seen that logo swirling around.

What we're starting with here is Revit. So if you wanted to use other programs, those will work fine in getting it to Stingray. Currently, Live only works with Revit.

Now from there, if I want to actually take advantage of Live, I'm going to be setting my Revit model to the cloud. Inside the cloud, it's going to be running different scripts. It's going to be processing it. It's going to be baking all the materials as well as including the information inside the object. And then there, it will automatically download it back to my computer.

Now from this point, I've got my Live model. And I can either view it in Live. Or what I can end

up doing-- make sure the clicker works. There we go-- is actually then send it to either a mobile device. Currently, the main one is going to be the iPad. I'm not sure what they're showing down on the show floor this time. But last year, they were showing a little bit on Android as well.

And I can also use that to go right into VR. So currently on the desktop application, I can take it into the Oculus as well as the Vive. So if I just want to go from A to B, walk around and everything, no problem. Does that natively.

Now, the other option is if I want to go to Stingray. Same thing from Revit. I've got my intermediary as Max. Take it from Max into Stingray. And then, just like Live, Stingray can then go into mobile devices. Unlike Live though, it can also go into Android as well as iOS, if I'm comfortable with that and I can develop for it. And it also goes right into VR. Both, again, Oculus as well as Vive.

The really nice part about this, though, is that's not really where it starts. Because otherwise, I'd be in the same problem as before. I'm either going this direction or I'm going that direction.

The benefit of this is that I can actually take it from Live and then send it into Stingray to embellish that. And then from Stingray, I can send it back into Live.

Come on. There we go.

So it's not like I'm stuck into one side or the other side. This can actually become cyclical.

So if I decide that I wanted to start walking through it, I'd like something that's kind of pretty, perfect. Now, this is great. But I want to add more to this. I want to take more advantage of it. I want to push the envelope of what I've been doing. I can then take that and continue to work off of that. So I have a pipeline that can actually go one direction or the other or start to come back around the other way. Cool.

So for Autodesk Live-- It actually helps if I remember where I am in the PowerPoint. So workflow there is going to be Revit to the cloud into Live. And it's actually pretty easy.

To use Live, you're going to be downloading and installing a plugin. And that's going to end up being right there. So easy to find. It's going to be on your add-ins.

When you click on that, a dialog window is going to pop up. And it's going to show you a

handful of things that will allow you to make sure that your file is ready. So if you have something like a section box, it's going to say, are you sure you want this? Do you mean to cut the building in half or do you want me to actually include everything? And most of the things that are on here are going to allow you to fix it without having to cancel out and make some changes.

If it finds that you have materials that it can't find, like you've got-- like you have one material that is assigned like a JPEG for the texture, but it can't find it on the folder, it'll give you a warning. And at that point, if you want to fix that, you'll have to go back out.

But if you want to change the detail level to fine, I can hit the Fix button there. If I want to actually fix the section box, I can do that as well.

It will also look and see if you have any linked files that are the wrong version. So when I am exporting this out, it's similar to going out to Navisworks. It's what you see is what you get.

If I've got a bunch of links on in the background, it's going to export those, too. So if there's things that I don't necessarily need to see or want to see, because I don't really need this to be huge in terms of the file size or the load that I'm looking at, I can actually hide those in the view.

And in the bottom bit there, the extend terrain to horizon. If you actually have topography visible inside your model, what it's going to do is then give you the option here to do one of two things.

If that's unchecked, I see my model sort of floating in space, kind of like it looks right there in the background. Or it can take that topography and then extend that out to the horizon. Sort of make it look like my building is in the middle of a nice field with some mountains in the background. So don't have a lot of options on that right now. You can't suddenly put it in the city. But it at least helps it give it some context.

So from there when I'm ready, I just say Go. It's going to save my file. The saving bit is kind of important because if you're currently working on collaboration for Revit, I am going to have-- or Revit server, I am going to have to open detached before I do this.

So if you are doing that, one little caveat. But once I then hit Go, it'll save the file. It will start to publish this or upload it to the cloud. Once it starts uploading, I can actually close out of the file. Once it's finished uploading, I can close my computer.

So if I have a huge file, I don't have to be sitting here for three hours and not working. I can close the file, open up another one, do other stuff, let this work in the background. Or, turn off my computer and go home, and then pick this up later on.

The only thing that'll happen is if this is actually going through the processing and hits the last one, if it finishes while I'm gone or my computer is off, I'll get an email telling me the processing is done. And then I can use the link in there to download it.

Or if I leave this open and I just put my computer to sleep, when I open it back up again, it'll ping the cloud. Say, hey, it's finished. And download it for me.

And once it's finished, I'll get a little Open button there. And that will actually take me right to Live.

So far, so good? Any questions on anything? Awesome.

Everyone is an expert or you're already asleep. Cool.

So where I am now is I'm in the Autodesk Live Editor. I mentioned the Editor specifically because there are two versions of Live. So easy way to look at this is like you've got Navisworks Manage and Simulate, and then you have Navisworks Freedom. Same kind of idea.

If you've purchased Live, you're going to be doing your work in the Editor, cleaning up a few things here and there. And if I want to send it to a client, I can publish it and they can look at it in the Viewer. So they don't have to pay anything for that and they can view whatever files have been sent for that.

Now inside here, I'm going to pick one of the LVMD files. Basically, a Live model file. It'll open this up. And it's going to give me a couple of different things that I can do with it. Again, Live is meant to be very simple, very user-friendly.

When I hop in here, zoom out a little bit. You can see how this kind of goes off into the distance. That's that extend terrain to the horizon. So if I didn't have that, I'd have sort of like this little box around the building, and then it would be on sort of a field of sort of a white or gray for a background.

Now within this, I can use the orbit to sort of make a turntable. And if I let go while I'm dragging

my mouse, I can talk over this while it's continuing to spin. So if I just want to have somebody sit here and watch that, I can do that.

If you're used to using the Xbox app on Windows 10, I can actually record the screen on this and make little GIFs or videos. So that way, I can post it on a website or send it to somebody.

Now, the other thing about this is that even though I can orbit and that's nice, the navigation is actually really easy. So the other option I have here is tap and go. That brings me down to the earth. And you'll see a little x here on the ground. Wherever that x is, it's actually going to walk over towards that.

And one of the other things about this-- I mentioned where it's publishing it to the cloud and Autodesk is running a bunch of scripts. Part of that is that this knows that certain elements are set up as a category of Revit because it's coming from a Revit file. So when I click inside the building, it's actually going to do way finding to get in. There. And the doors are going to open up for me.

If I click on the upstairs area, it's actually going to walk up the stairs. And if I don't want to sit here and try to figure out where I'm going or even look around the building, what I can always do is open up my views-- come on. There we go. And I can navigate through the project using these.

Now, when you export from Revit, this is going to take every single 3D view that's there. So at the moment you don't have the ability to say, only choose the 3D views that are of this category. Don't take these. Just take these few.

If you've only got 20 or 30 views, no big deal. I can bring them in here and I can cull them. So you see the little x on the side there? I can delete those. So that way, they're not part of this. And if you're going to be using this on Live here or sending it to somebody, especially if you're going to send it to the mobile device, you don't want to have an excess number of these.

So if you have a project with like 100 3D views, I'm going to want to clean that up. Easy thing for that sometimes is just to open up detached, delete all the 3D views you don't care about or want to come in here, and then publish it.

Now, if there's a view that you want someone to be able to see but you don't actually have created yet, I can always come in here and create a new point of view as well. So just go

where I feel it's important, where it's beneficial to actually explain something to somebody. And I can do that.

Now, one of the other things I can do in here is I can modify the lighting. So in this case, I can bring up my sun. There we go. I can modify the time of day.

And it's understanding what the time of day is and how it affects the sun based on the location and the True North that you set inside of Revit. So for sticklers of astronomy, I have no idea if the stars are in the right spot, but the rest of it is, actually, at least accurate. So I can change the time of the year. And I can change the time of the day.

And also, you notice how some of the artificial lights are on there? If I hit the L key, that will actually turn those off when I don't have 15 things running at the same time. Come on. There we go.

Now, the big thing here is that I'm making a model that is now able to be navigated. I'm making something that's essentially pretty for someone to walkthrough. But it's not losing the information or the data. The big thing here is that I don't want to just make something that's nice looking. I want to make something that's still useful.

So what I can actually do is click on Info. And rather than getting information on the project, I'm getting information on the object. So I'm able to actually click on the elements. And whatever information is in the properties of that element, I'm able to still get.

If I'm looking at the lights, I click on one of those, and I can get the information on that light fixture. So all the data is still inherent to what I'm clicking on.

If I want to clean things up, I want to actually show this to somebody, I can go to my Settings here. Come on.

I normally can go to my Settings here. [? Here we ?] go.

And what you're able to do is a couple of things. Again, program's meant to be very simple. I'm not trying to have 3,000 things going on that only an expert knows how to use. So I can either turn on or off those pins. So those pins are basically all the viewpoints.

So if I don't want to bring out the views and actually click on which one I want to go to, I can look at that model and say, oh, there's one over there. Let me go to that. And it will bring me

straight to that. So again, if you're used to Navisworks and you have the links visible, same kind of idea.

Yeah, there are [INAUDIBLE] here. You can modify the travel speed and the field of view. So that little x that I did, I can make that move a little faster or a little slower.

The really nice one though is the set height. So what this allows me to do is, as a designer, either I can look at my project from the height of my clients or I can allow my client to interact with this model from what they're comfortable. If I'm doing something like a children's hospital, I might want to set this to the height of a toddler, so I can see how they are actually going to interact with the space. How are they going to navigate this? Are the signage that I want for them visible in their height?

Same thing for ADA [? height. ?] So I'm able to very easily choose that, set that up, and then I can start navigating that space. And that's also available in the Viewer one as well. It's not just the Editor. Main difference in the Viewer is that I can't save or modify the actual saved views.

Now from here, I've also got a handful of styles that I can pick from. Again, this is going to grow as they continue to develop it . You can either look at it as I have been, where all the materials are baked on the surface. I can look at it as the model is just sort of a solid white with the topography and the trees RPCs still having the color. Or, I can make the whole thing sort of a monotone/halftone with the topo and the building all white. It just depends on how you want to actually showcase it.

And then, the last thing here is in the hamburger menu. I can actually publish this.

Now, in this case, you've got a couple of options. The Publish to Windows is if I want to save this file out as a .live file. So that's the one that I can open up in the Viewer. So if I'm trying to send this to somebody, I can do that.

The files are not going to be tiny, so you're probably not going to be emailing them unless they're small residences. So this file here is I think around 70 megs. So if you put them on something like A360, or Docs, or Dropbox, it'll be fine.

The other option is there for Publish to iPad. Same thing. You're going to create a file that's going to be relatively big. And I can push that onto the iPad, either by putting it on an online service and then saying open with, and then pointing to the iPad app. Or what I can end up doing is just, again, connecting it and using iTunes to drag it into the app.

Any questions so far with Live? Yep.

AUDIENCE: [INAUDIBLE].

PETER MARCHESE: Yeah. Like if I want to, I can actually use the Settings and modify the field of view. So if I feel it's a little bit too close or a little bit too far, I can tweak that. Yep.

AUDIENCE: When you're changing [INAUDIBLE].

PETER MARCHESE: No. Unfortunately, it doesn't. That that's still like the one thing I miss from like Revit version 7 with the old [INAUDIBLE] render. It's just going to make it look pretty and change the time. That's about it. Yep.

AUDIENCE: [INAUDIBLE].

PETER MARCHESE: Yeah. If it's in Revit, it's going to upload it. It's not going to say-- he's got [? brick ?] and it's just pink with a hash pattern, so I'm going to put this on it. If I have really just solid colors in there, that's exactly what I'm going to get back out of it.

AUDIENCE: [INAUDIBLE].

PETER MARCHESE: You're not going to be able to edit it here. You're going to go back to Revit, and then republish it.

AUDIENCE: Republish [INAUDIBLE].

PETER MARCHESE: Yeah. Right now, the editing aspect of this is more editing my views and setting it up before I send it out. It's not actually going to be changing the model or the materials.

Now, the last bit here that I'm not going be able to do because I don't have it plugged into anything is the VR beta. So essentially what that means is that if I do actually have-- so that will be in the bottom corner down there.

If you have an Oculus Rift or an HTC Vive plugged in, I can hit that button and it'll actually send it to there. So if you're using the Rift-- yep.

AUDIENCE: She had a question [INAUDIBLE].

PETER Oh, sorry.

MARCHESE:

AUDIENCE: I didn't know if there was an ability to use design options [INAUDIBLE]?

PETER MARCHESE: Oh. Not at the moment. So if I'm going to be doing that, what I'd end up doing is I would go to Stingray. So I still might use this, and I'll go over why. But to actually say, I'm going to hit a button and it's going to flip from this to that, that would be Stingray. So the VR one is going to allow me to just hop in there and start navigating. The navigation is going to be more of the teleportation model. So that a lot of people who are not gamers, and even some of them, using sort of first-person control where you're walking through a space, it can get really weird. So if the frame rate's off or your inner ear's not liking it, you can get nauseous. So the teleportation basically means I point where I'm looking at, and then it'll fade out and fade back in and I'm in that spot. So it makes it easy to move around without having to get kind of like wobbly. So if you try some of the stuff that's in the expo floor, most of those are set up for the teleportation model.

So what I'm actually going to do is switch over here. See if this is still working fine. There we go.

So this is on the iPad. So I've got a handful of the files that I was working on before. I can click on this. And the nice thing again, it's meant to be very user-friendly. So the UI that you would see in the desktop is pretty much the exact same UI that you're going to end up seeing here.

And this is also an example of what happens if I don't tell it to extend the topography out to the distance. So I can see something floating in space. So you still have the orbit. You still have to tap and go. I can still on the iPad click on the sun. Modify that. If I can click where I want to go. Let me Actually Back up here. I can navigate to where I want.

And just like on the desktop, it's actually going to do way finding. So if there's things in the way, it's going to try to walk around it. It also helps if I pick in the right spot. Let me hop back up there. So they can move around wherever you need to.

The other nice thing is that let's say I have no idea where I'm going on this project. If you see in the very top, there's sort of these two arrows. That actually allows me to navigate back and forth between all the saved views.

So if I'm sending this to somebody and I'd like them to look at this, then this, then this, then this, in the Editor I can take the saved views, move those up and down to get them in the order

that I want, sort of to tell the story of the project or of my design. Yes.

AUDIENCE: [INAUDIBLE].

PETER MARCHESE: Depending on the version that you've created it in. So right now, I think the version is 1.104, or something. If it was an older one, it's either going to say this is too old. You have to rerun it, like essentially republish it from the cloud. Or it'll actually redo that.

The first time you open up one of the files, it's going to take longer. So one of the things I usually tell people is if you're going to show this to a client, make sure you've opened it once inside of Live before it's there. So that way, you're not sitting there trying to make small talk while it runs away in the background. But that should work fine on the iPad as well as on that.

AUDIENCE: I tried to export [INAUDIBLE] Revit and it would not.

PETER MARCHESE: Oh. More than likely, my guess would be if you opened it up from the samples file-- Samples folder, that folder is set for read only. And part of Live, it has to save the file before uploading it.

So if you open up that file, do a Save As outside of the Samples folder, you should be fine.

AUDIENCE: [INAUDIBLE].

PETER MARCHESE: Within here, I still have the ability to set the height. So if I'm navigating this and I want to show somebody what the different heights might be for kids or ADA, I can do that. And I still have the ability to click on elements and bring up the information. So it doesn't matter if it's going to be the mobile or the desktop, I still can pull back all that information.

How am I doing with time? Good. So let's switch back over here. All right. Good. Cool. That was my backup in case everything broke. Cool. So Stingray.

So where Live is basically a very simple tool. I get into it. I can navigate. I can look at things, but I'm not changing anything. Stingray's a game engine.

How many people here have ever used a game engine? Perfect. So for those of you who haven't, that's not what a game engine is.

Game engine for me, I usually explain it as don't look at the name. Don't think about what that name says. It's kind of like saying with Revit, just because a tool is called something that

doesn't mean that that's the only thing you can do with it. A game engine is more like a sandbox.

So if you put somebody in there, they're going to make a couple of pails, really basic forms, and that's the end of it. Other people are going to see that and they're going to go nuts and just-- yeah, that's just not normal. But essentially, it's what you make out of it. A game engine is basically a tool for you to add interactivity or designs or ideas to something.

So if you work in civil engineering or infrastructure, if I want to be able to drive vehicles through my design, show people what you can actually see, no problem. If I want to actually have an interiors, where I can walk through and I can see different colors or swatches on a wall. And I can physically click on those swatches and it changes the material, you can do that, too. How far you go with a game engine really is dependent on how much you know and how much you want to do.

So just because it's a game engine doesn't mean that it's just a toy. It just means that it's what you want it to be. Makes sense so far? Awesome. Cool.

So to get the work to Stingray-- again, we have Revit into Max into Stingray. But we also have the other option where we're going from Revit into Live, and then down into Stingray. Both ways will get our content in there. It just depends on how we want to do it and what we want out of that.

Also, the reason why we go from Revit into Max is similar if I was using Unity or Unreal. If I just went from the FBX from Revit into Stingray, it's not going to bring the materials. So I need to go through Max to do that. Cool.

Now for Max, if I've installed Stingray, Stingray has a thing called the DCC plug-in. So that ends up doing is it gives me this toolbar. A lot of the times when you install this, you're going to hit the toolbar. It's there. And you're going to wonder why nothing actually works. The whole thing is [? half-toned. ?]

Typically when this happens, it means one of two things. Either it can't find the plug-in or you have to reload it. So this is all in the handout by the way, so don't worry about having to write everything down. So essentially, what you'd end up doing is going to your plugin manager, and then actually having to reload that. And after that, you'll notice that the rest of the buttons are all available.

So the other thing is you can also copy the plug-in DLL into the main folder with all the standard plug-ins. And then you don't have to deal with that too often.

But the main thing here is that, see where there is connect? If I have Stingray and Max open on the same machine, I can make a connection between the two. This enables me to actually send materials, send objects that I've selected or the entire file that I have open back and forth between it.

And when I say "back and forth," I do mean that. If you're in Stingray, you can connect that to Max or Maya. So that way, if I have an object and it's not too bad, but I need to make it taller. And I don't want to scale it because it kind of warps it a bit. So I can say send to. It takes the file, opens it up inside of either Max or Maya. I can make the modification, and then send it back. So the workflow is actually pretty nice.

The other thing I can actually do is connect the camera tracking. See where it says live camera? That allows me to be in Max and orbit an object. And that modifies my camera view inside of Stingray. So I can see things in context. That's also really good if you have no idea how to navigate inside of Stingray. I can do it inside of a program I'm probably more comfortable with.

The other thing with this is that if you are used to going from Revit into Max, that workflow is probably going to be similar to what you want to keep. Meaning I don't want to export maybe the whole file all at once. I want to break it up. Make it a little bit easier to manage in terms of materials, in terms of updates. So I might have one view that has my furniture, another view that has my walls. Export them separately.

Now in addition to that, there was a class yesterday morning. So the workflow for non-gamers. I mention that because one of the data sets actually has a script for Max that can take everything and break it up. I don't want to sit there and have to manually compartmentalize my file. That can actually speed up that process for you.

Now the other option here is using the Live workflow. Now, once I've sent my file to Live from Revit, that's going to download a file. And that file is going to be an LVMD.

Now with that file, if I want to take it-- and it's a little bit, I won't say convoluted, but it's a little bit messy at the moment. This is going to get a lot easier, I think, as they continue to develop them. But where we are at the moment is I would take that file. And if you'd have 7-Zip

installed on your computer, you can open it up directly. If you don't have 7-Zip, just make a copy of it and rename the extension. So it's going to become not an LVMD, but it's going to become a .zip. At that point, I can extract all the information from that. So that ends up looking like-- here we go-- that.

So I have a handful of files in here, and then I can actually open that up directly into Stingray. Now, a couple of reasons that you might end up doing this.

If I'm using standard materials in Revit, those will go from Revit to Max, and then into Stingray fine. If I have materials that have parent-child relationships or are not standard. A lot of the times if you do the default topography-- that grass? It's not standard. So you'll still end up having a building that looks nice, but you'll have sort of a white field that the building's on.

When I go to Live, that bakes everything in. So I don't have to worry about that. The other benefit is it also bakes in the parameters of those elements.

So if I want access to those in Stingray, that helps me get that. So this point, I can go from there to there. I'm going to still want to go through a couple of extra things. So I want to rename that and get rid of any of the periods. So Stingray does not like that. So I just modify the folder so that way, that's gone.

And then if what I want to do is not start a whole new project. So let's say you've been using Stingray for a little bit. I've got a template. I've got things all set up. I just want to bring the geometry and content from here in. I'm just going to be copying those two elements into a project that already exists inside of Stingray.

And don't worry, all of this is in the handout. I'm seeing a few worried faces, like I'm never going to remember this. So in this case, you can just copy the data over wholesale. And either you're going to overwrite the old global physics properties. Or if you're paranoid like me, rename it and then just merge the two. So that way, you're getting all the information so it knows how to treat that.

So far, so good? Cool. Now we're going to hop into Stingray.

Now when you install Stingray, you're not actually going to typically open up Stingray directly. Most of the time, what's going to happen is you're going to actually open up the launcher.

Now, the reason for this is simple. Just like when you use Revit, I can always move forward. I

can't move backwards in terms of the actual projects.

And what's going to happen is whenever I upload or install a new version, it doesn't overwrite the old one. It's actually going to install a new version on top of the old one.

So if I've got a project that I'm currently working on that is a little while-- I don't want to update it. I don't want to tweak anything. I can choose which version of this I want to open up.

This also becomes very important when you're using Live. Again, I mentioned they're still working on the connections between the two.

If I take the model from Live and I want to modify it in Stingray, essentially to embellish that. You're asking me about the design options. If I just want to go from Live to Stingray and I'm fine there, I'm not going to worry too much about it. But if I want to modify it and then bring it back to Live, I have to stay in the 1.2 versions. So that's kind of a key thing right now. Won't be that way forever, this thing. But at the moment, that's where it's at.

So once I'm here, I choose which one I want to launch. That'll open up Stingray. And this isn't even going to open up the program either.

What's going to happen is this is going to open up my loader. And I can choose from the different projects that I currently have in there. So in this case, I can see all the different things that I have. It's a little fuzzy on the top there. But I can see all the different projects. I can say add existing or remove.

So again, if I went from Live, I mentioned that 7-Zip and I extracted that. I would say open existing-- sorry, add existing and point to that one that I extracted. And then, that would create it as a whole new project. And you can see the two there that actually have Live in the icon.

The other thing here is that when I select an item there-- so you can see the basic project is selected-- it's going to tell me where that file is. Because if you're like me who doesn't always pay attention and names them all the same thing, it helps. It'll also tell me what version that is.

So again, if I wasn't paying attention, I just decided to open up Stingray. I bypassed the version. This is going to say, OK. You know that one that you're opening? It's not the same one.

Because essentially, if I pick one of the other ones, it's going to let you know that if you decide

to open this, that's going to require migration. You're going to have to upgrade that. So it makes it a little bit easier to deal with.

And if you really don't want to deal with this whole screen, I can always check that box in the upper corner there and say, you know what? Every time I open it, just automatically go to whatever the last project was.

Now, a couple of things here. You have templates that you can pick in the very beginning. You almost never want to use empty unless you actually know how to program and you want to go to town on starting completely from scratch.

Typically, if you're starting you're going to pick something that actually has some basics there. So if you know you're going to be going into a virtual reality setup, pick one of the VRs there. Whether you're going to Oculus Rift if you're doing something like infrastructure and I want to drive around I'll start with the vehicle otherwise most of the time I want to start with basic, and then I can modify it from there. But that gives me a main menu to start with. And it gives me some controls to start with as well.

And then from there-- for you guys, I'd definitely recommend the first time you start playing around with this, look at your online examples. All of these are from Autodesk. They're ones that you can download and start walking through. They explain how certain things work. Kind of like any file. Like you mentioned you tried the sample Revit file.

For someone who's never used Revit before, it's good to go in there and try to see how things work. Take it apart. These are great for that, for example. Especially if you're not used to, say, programming, or code, or how is the light working on this. So you can sort of take those apart and break them without worrying about messing up your project.

So from here, I'm going to pick one of my projects. I'm going to pick which level I want to start with. And I want to open that up.

Now, normally what's going to happen, you're going get the little tutorial here. If you don't want this to ever show up again, you're going to uncheck to show this. And then if you want to bring that back, you have a learning in the upper right-hand corner. That'll bring that back.

The great thing about this is even though Stingray is still relatively new, it doesn't have the same size of community that something like Unreal or Unity has. It still has a very good learning setup. So if you look at the Autodesk YouTube pages, there's a lot of tutorials that go

through a lot of different things. There's also a pretty good forum that has a lot of good questions in there that have all been answered. Well, most of them have been answered. So it's not like you're completely on your own. There are a lot of good learning exercises there. And I have links to a handful of them in the back of the handout.

So now, once I go in here, I'm in my world. This is just the basic setup here. I'm using one that's pretty lightweight, so that way I have less chance of this hanging on me.

And the interface is going to be very similar to what you might be used to inside of Navisworks. If I go to the Window pull-down, I can see all the different things that I can open up.

And one thing I want to call out, you notice how it has a reset layout near the top? If you are using the 1.2 version, because you're going to be going back and forth with Live, a lot of the time when you open this up, everything is going to be gray. It's a known bug. They fixed it in the later ones. But just do the reset layout. You don't have to sit there and close each one, one at a time. I know this because I did that more than enough times before I realized that button was there. So the later versions, you're fine. But in the old one, just keep that in mind.

But if I open up a tool here. So let's say I say explore. Similar to Navisworks, I can have windows that are on their own. I can also click on this and you're going to see the same graphics that you would in a lot of the other programs. I can actually put that there and put it on the top. I can say that I want this to be on the bottom, left-hand side. So modifying your interface is going to be pretty easy. And if you have multiple monitors, I can always grab little pieces off and put them elsewhere.

Now, your level viewport is going to be your main one. You've got a handful of tools on the side of that that allow me to do testing as well as some navigation.

There was a question earlier if I wanted to make changes on something. That I can definitely do inside of Stingray. I just have to realize that that's not going to go back and change the Revit model. So you've got the level viewport. The level flow is going to be where I can actually go to set up rules. I'm going to hop into that and go over it a little bit more in a bit. But that's the part where I mentioned if you know Dynamo, that will become more comfortable.

Because one of the great things about this is I'm not a full-on programmer. I can kind of read it and make sense of something that's already there. But to start from scratch, I don't have that ability. However, I can actually put boxes together and say when I hit this, I want that to do

this. So you have about 80% of the software at your disposal . using a Dynamo-like node setup. So you can actually take advantage of a lot of different things.

Now from here, you've got your explorer. This is going to show you all the elements that you have inside the level.

Now, what I mean by level is think of this as a Revit project. If I've loaded in a whole bunch of families, but I haven't used them yet, those families are just assets that exist in the project. So they would be in the Asset Browser.

Once I take those families and I put them in the project, so they're actually in use, then they're in the Explorer. So if I see something in here and I click on it, that actually is in the model. So I'm using this. So that floor there is that element there.

Now, you'll also notice how it's grouping things there. I've got entities. I've got units. If I scroll down, I'll have things like lights and cameras. That's by default. It's going to organize things based on-- think of it like Revit-- the category of the object. If this is this, it's going to group it with other things.

Now, that doesn't mean that I have to keep it that way. So what I mean by that is I have the ability to organize this in layers. So I can create whatever kind of grouping I want to make life easier for me. So I can just right click on an object and say, I want to add this to a layer. And then I can compartmentalize it. I can turn it on. I can turn it off. And it makes it easier for me to work with.

Then, you have your ability to create. The create is where I'm going to be using primitives. So essentially, things that already exist. So these would not be where I would go if I want to bring in something from Revit, or Max, or anything else.

If I want to use placeholders, like I just want to put an object here and see how that works or I want to practice, they're great. If I also want to add different things. So let's say I have a project and I want to put a sound over in that corner. Maybe I have a large-scale project and I want to allow my client to walk through at their own leisure. But kind of like with the museum-guided tour, when they walk into this room, I want to have an audio clip that explains. Now when you walk in here, this is what we were thinking of. This is why we made these decisions, where you're using this as more of a marketing piece, less of a design. Same kind of an idea. You can create all those different elements. And all of those are going to be under here under

the create.

Then, from there, we've got our property editor. Now, this is not an object that came from Revit, so it's only going to have some basic information. But notice how there's a script data at the very bottom.

If this was one of the models that went through Live, that would actually have all the properties. Excuse me, under the script data. So in Live, I clicked on an object. It shows me it's a wall. It's this tall. These are the materials. I'll have that information in there that I can then start to try to connect to or show or print on the screen.

From here, again I've got my asset browser. And I can start modifying things. Again, the tool itself is going to be pretty organized. It's nice and clean. You can or you will be able to save layouts and move them around.

Currently, the Help file says that you can do that, but it's actually not turned on. So the next version is going to be coming out in I think a few weeks. That will finally be turned on in the next version. So if you do want to have different layouts like you can in Navisworks, that will be there. Cool.

So what I'm going to do is I'm just going to go through a couple of different things. So I'm going to make what's called a story. So stories in Stingray are animations. So I'm going to do one that's pretty basic using a camera. Again, I know we're going into this with the idea of, I don't have to do a guided walkthrough. But it's easy to show that.

So if I wanted to animate something where I'm fading out this option and I'm bringing up that option. Or I'm going to have a door do this. Or, I want to actually hit a button and that'll do other things, like it'll modify the model. I would still do that with a story. So I'm just using a camera because it's easy to see visually.

The first thing I'm going to do, I'm going to come over to my Create, click on Camera. And I can actually place that object there.

Once that's placed, I can select [? that. ?] And you'll notice that if I'm looking at this in the explorer, here's my camera unit.

Now over here in the level viewport, I have a couple of the tools. I can move. I can rotate.

So if I want to lift this up and move this somewhere, I can do that pretty easily. I might want to actually know what this camera can see, though. And that's actually pretty easy.

This button up here in the upper right-hand corner of the view, that allows me to sort of tile my views. So I can now actually see this from a couple of different viewpoints. So I'm going to take this one over here and change that from perspective and tell it that I want to look at it from the perspective of that camera. So now as I move that camera around, I can make sure that exactly what I want to be in that view is actually framed correctly.

The other thing with this is that sometimes working in Stingray, especially the first few times you try to navigate, it can be really weird. I'm orbiting and I'm not really seeing what I want. I'm zooming in and it takes forever, or then it moves too much.

If you select an object, you can hit F. And that essentially is Zoom Extents on the selection. So if you hit A, it's Zoom All, basically. So sometimes, I'll just angle the view where I need, hit F, and that'll bring me back around. So that tends to make your life very easy after a while, so that I'm not having to mess around too much.

So from here, if I go into that view, I can orbit it that way. And that actually moves my camera.

Now, what I'm going to do then is open up my storyboard. And this is going to be a lot like creating a story or an animation in either Navisworks or instead of Max. Essentially, what I do is I want to say New. There we go.

And if I have an object selected, it automatically adds it here. I wasn't paying attention and added in the floor. Going to remove that. There we go. So now I've got my camera unit. And pretty much, just set it out how you want.

So I hit a key frame here. Move the key frame out. And then I change where I want this to be. So I can shift this down that way. Make a new key frame. Pan that out. Shift that over that way. And make another key frame.

And if I'm tempted to see what this actually looks like-- come on. Here we go. I can go back to the beginning, hit Play, and actually watch this move.

Now, this is going to be kind of jagged at first. It goes there, stops, and then it will actually move to another location. Let me actually fix that.

So what I can do here is I tell it I want to actually see what's happening. So all these weird, sort of splines are showing me how it's moving in the x, y, and z. And right, now it's kind of going here, and then turning. And then going there.

I can smooth this out by either grabbing all the points and telling it that I want it to do it automatically. Or I can manually grab it and just move it this way.

So if I put this in the middle here, you can see as I change this, that modifies that. So now if I actually look at this, the navigation is going to be a lot smoother. It's not going to hit there and be jagged. It's going to sort of pan around. And again, this is going to be the same regardless of what I'm trying to create the story for.

If I want to do a camera, it's really easy to see that. If I want to do a story for a door opening and closing. So when I get to a certain point, I want this to happen.

If I'm driving a car. I was talking to somebody earlier and they wanted to do it for a site. So when I come up against a certain point, I want the light to go from green to red. At that point, I want it to wait for a minute, and then I want the light to change back. All of that can be done inside of here just by using a story to not animate objects moving, but to animate objects changing their color.

So far, so good? Awesome.

Now, one thing you might run into is that you come in here and you try to make changes and it tells you it can't. If you ever noticed the Live button here is gray, it's not going to let you do anything. It's going to try to lock it down. You just have to hit that and make it active. And now you can start modifying your stories.

So got my story, now I want to modify it. So what I'm going to do is hop into my level. Flow This is that bit that is essentially like Dynamo. So I've got a bunch of them premade in here.

Now, that story that we have is really just a handful of things. I say I want to put in a Keyboard button, and I type in the button that I want to assign to that.

When I hit this button, I want it to actually play the name of the story that I have in there. That's about it. There's not much more to it.

If you just want to do something really simple, you're done.

What I've got here is a couple of different things where I wanted to actually do this and then go back to the original camera. So I'm going to actually test my level, and then I'm going to come back here and explain how some of the things that the level is doing actually work.

So I'm just going to hit the F8 button. That essentially runs a test of the space that I've been creating. It thinks for a minute. You can see the status when it was running on the bottom there. And now I can navigate the space.

So I can see some objects. If I hit F2, that kind of turns on gravity and you fall. That's not something you usually want to do when you're wearing VR. So I've got a handful of things animated in here. So I can see a couple of little cylinders. And I've got two steps over on the side.

So at the moment, what I've got is I've got the letter T keyed to a handful of materials on that object. So every time I hit T, It's going to cycle through just a handful of colors and change that. I've also got G set to that element there. That turns it on and off.

So let's say I have a model and my focus here is to start showing mechanical systems. So I can walk through the space, hit a button, and that'll actually change the walls or the ceiling to be translucent. So I can start to showcase and explain, this is what's happening with our pipes. This is what's happening with our ducts. So I can actually go through things like that.

The other option that I mentioned before is sort of a stoplight. In that case, I might want to have a trigger. So if you remember when we were in that space, there was sort of that yellow bar or that yellow wall. That essentially was a trigger zone. So whenever I walk through that-- if I can walk through it. There we go.

So as I go back and forth in that, that's doing the same thing that I did before with the key. So rather than me having to physically touch something, it knows that once my character, the camera that I've got, walks into that space, it should do something. In this case, I told it to modify the visibility of an object.

And then the other thing we have is a really bad video that I did earlier. But it's set to actually play the video. And then once the video is finished, to go back to the saved view from before. So just a couple of things. Yep.

AUDIENCE: Just to clarify, that's an actual movie file that's playing?

PETER MARCHESE: Not a movie file, no. That story that I created, I created another one earlier just so I had something pre-canned.

AUDIENCE: Right. So why'd you call it a video?

PETER MARCHESE: Force of habit, sorry.

AUDIENCE: Just checking.

PETER MARCHESE: No. Good question. Sorry. I have to be careful about what I say.

AUDIENCE: I have a question.

PETER MARCHESE: Yes.

AUDIENCE: So is there a player or some sort of [INAUDIBLE]

PETER MARCHESE: Kind of. The question for everybody is, do you need a player to actually show this? The thing for that is unlike Live, where I'm just running sort of a file, this is going to be creating an actual game engine. So once I get to that point where I'm sort of ready for it, I'm going to deploy that. And I'm going to get to that in probably about five minutes.

So from here, I've got my level stories. So that one that I did before where I walked back and forth, all that is is saying that once that level is loaded, I started things up. I want you to create that trigger and turn it on. And then as I walk through this, I'm going to toggle this. So it's true or false. And that's telling that the visibility of the object is a true or false.

The keyboard button on there is just for me to test it to make sure things are working. So that's not necessary, but I like to do that to at least see that the visibility works before I start walking around. So again, that one's pretty simple. I'm just walking back and forth. And it's doing something based on those.

If I come up a little bit, that's the visibility toggle. Basically, the same thing as before with the trigger. But now rather than the trigger, it only has either a button on the Xbox controller or the keyboard. Where things start to get-- I don't want to say messy-- just more complex is when I come over here and I start looking at the material toggle. So this one does a couple of things.

Number one, it's actually going to be saying that every time I hit this button, I want to cycle through a number. And whichever number that is, I want you to use this material.

Now, the cool thing about this is that there's a lot of nodes here that I can work from. So I can say add node. And I can pick from these.

More than likely, you're not going to know where to find stuff at first. So there is actually a tab function, so I can say like unit. And that'll show me all of the nodes that has that name. This is important to know because most people, including myself, think that that Search button in the upper corner is actually searching the nodes. What it's searching is the layout that you've built so far.

So if you have a bunch of these things and you're trying to find-- I know I did one of these that used a button for button. Where's the button? I can search in there and it'll find which node is already placed. Tab searches from the available nodes to actually utilize.

The other thing that's helpful is if I click on this, notice how these have different colors? Once I click on the background, it's only going to show me the nodes that are applicable and can connect to it.

So if I'm trying to figure out, OK, well, I'm starting to learn this and I'm getting somewhat comfortable. But I don't know why it won't let me use certain pieces. I'm not sure what the logic is.

In that case, sometimes it's easier just to click on that and come up. And that'll show me the specific ones that can work with it.

Now, this thing here is not a normal node. But the nice thing about this is that the coding in here is pretty basic. So this is actually something that's custom that's brought in here. And it's really just a couple of lines of text. All of that's in the handout, so don't worry.

And then the other thing that's nice is that once I've got this working-- this is one project. I want to use this in other projects. There is no export for the level flow. However, all I need to do is select it, copy that to the clipboard, and open up a text editor. Whether it's Notepad, Notepad++, it doesn't matter. I can paste it into that. And that will actually save all of the code of this flow. And then at that point, I can go to another project, now or anytime later, copy and paste the text from that text file into the level flow of that new project. And it'll replace all of it

for me. Not everything might work. Because sometimes, things are calling specific objects. So I might have to do-- similar to Dynamo, select the appropriate one in this project. But that way, I don't have to sit there and have a printout and say, OK, I need this one. Where was that again? I can just sort of make templates of all the typical level flows that I might be utilizing, and then I can save those and grab the ones that I need when I need them. Cool.

Now from there, one last thing here. You've got create and you've got lights. And there's a handful of different kind of lights that you can actually work with. There we go.

If I can actually-- there we go. So you've got a bunch of different lights that you can work with.

Now if you're bringing a file in from Revit, there's a few things to keep in mind. If I have the lights in the file, the active file that I export, those will come across.

If I have a linked file, like if I'm in the [? arc ?] and all my lights are really in the electrical file, it's going to bring in the geometry. It will not bring in an actual light-emitting element, though. So copy those into the main one or export out from the electrical.

The other thing is if all my lights have actual light values, they're not sort of a standard light. Those aren't going to work. But again, there's some scripts available. I have a link to a forum post that has it there, that can translate all the lights.

So if you have a real project with like 300 lights and you're kind of like, OK. I'm not even going to try this. That script can automate that process of converting from one to the other. So it speeds up the process. But I can modify my lights. I can place my lights. I can turn them on and off. And I can actually set things up so that my view looks correct. So you'd have a lot of different things that you could modify in here.

And outside of just the lights, you also have the overall space that you can change how things look. So I can turn on my shadows and say, how far away are those shadows going to turn on? I don't need a shadow that's 400 feet away. So that way, it'll make it run a little bit faster. It's trying to draw less objects. This allows me to modify the overall space and the overall view. So

If I'm trying to modify and say, you know what? I want this to have a dusk look. I want it to be a little bit orange. I might come in here and start to modify what the tints are. And that will give it an overall light value.

And then once I've dialed everything in, if I want to do a last test, I hit this button here.

Now, the one that looks like the green play, that's what I hit with the F8 before. That allows me to test my project.

If I click on the one that looks like a controller, that actually runs the project. Essentially, builds it.

What that means is that it's going to actually build all the pieces. So if I actually have an overview or a menu that's been created, I can actually see how everything's going to work. I can hit Start, and then I can navigate through everything else there.

Now, Stingray comes with another program, Scaleform, that allows you to build overviews or interfaces. So what I'd like to do is when I send this to somebody-- so the question before was, how does somebody actually view this as their viewer? No. What I'm actually going to do is create an executable file. They'll double click on that and it will open it up.

And if I want something that's branded. You know, this is my company name. This is what we've done. Maybe I've got different options, option A or option B. Or I want to say, where in the building do I want to start? Or maybe what I'm doing is I'm sending this as almost a portfolio. Rather than levels or start and quit, I could have multiple projects in here as different levels.

And I can say, OK. Well, this is one of our offices we've done. This is a hospital. And I can have the buttons there that will load the requisite one to show off the kind of work that I've done. So this is sort of like one of the main last tests to make sure everything actually works.

And then from there, I'm going to go to my Deployer and choose, what am I actually deploying this to? So at the moment, I've got Windows-based. That's going to create an EXE file. It's actually quite easy. I basically tell it what folder I'm going to. So what folder I'm going to.

The configuration is going to be typically release. You don't really need to know too much about that. If you're doing debugging, things aren't quite working. I'll change it and it gets me more data to find out why it might not be working.

If you're going to be publishing this to an iOS device though, whether it's a Mac or to an iPad, you will actually have to have a Mac available to run things on. Otherwise for the Android setup, you're just going to have to have the SDK installed and you can do that. But you can

actually connect directly to your PC and push it to that to test it and see how it works.

But when I'm getting ready to send it out, I do that. Give it a folder. Have it go out. It creates the folder, copies all the information in there, and creates an EXE. And for the most part, all you ever need to do is maybe zip that up, give it to somebody, and that's it.

Most computers are going to have the DirectX necessary to play it. If you are worried about someone not having that, then you can start to say, I'm going to make a package that will install it for somebody, and include all that.

So far, so good? Cool. [INAUDIBLE].

Awesome. OK. Well, I knew something had to go wrong at some point, right? There we go. There we go. Cool. Couldn't be too easy.

So essentially, what did we do? So we talked about how we can go from a Revit model into something that was very simple, very stress-free, and very easy to navigate. We also talked how we can go from that same Revit model into something that's going to be a little bit more stressful, but will offer a lot more flexibility and a lot more freedom. So it just depends on what you're trying to do.

So the nice thing is Stingray you can get on its own. When you do get that, it is going to come with Maya LT. Otherwise you can actually just utilize that on its own and connect to something like Max or any other tool. But if you do have Stingray and Live, you have that opportunity to go through that workflow. And it will streamline all the content and deliver it that way.

So last thing, Autodesk does want your feedback. I definitely want your feedback, especially if it's the top one. So more people that put that in, I definitely appreciate it. Definitely looking for any kind of comments, suggestions, ideas, things like that. But otherwise, thank you very, very much for your time. And if there's questions, glad to take them.

[APPLAUSE]

Thank you very much. You had a question though. Yep.

AUDIENCE: [INAUDIBLE].

PETER   I'm sorry, one more time.
MARCHESE:

AUDIENCE:	[INAUDIBLE].
PETER MARCHESE:	The question was if I've exported from Live and opened it up into Stingray, do all the animations from Live come across? Yes, but you're not going to see them in the level flow.
	So that way, I can take it from Live. That's part of the global properties that I'm bringing across. So as long as I take that, bring it over, and make some modifications in Stingray, I can push that back. Again, make sure you're staying in 1.2 to do that.
	Also not everything from Stingray can go back into Live at the moment. There's a handful of things that it currently doesn't support. So you're not going to be creating like a whole nother UI on top of it. It's not going to allow you to create-- like if I hit a button, certain things to happen. So you're calling things based on the level open.
	So if you want to embellish things by having animations on a billboard or on a TV, or people moving around the space, they're just automatically doing that. You can do that. But you're not able to at the moment have like a button press to embellish or add more.
	Any other questions? Yep.
AUDIENCE:	[INAUDIBLE].
PETER MARCHESE:	Honestly, I'm not sure. I thought everything was available for education.
AUDIENCE:	[INAUDIBLE].
PETER MARCHESE:	OK. I believe the Live guys do have a booth downstairs. I would definitely bring that up with them. If anything else, you can ask-- ask that question on the AU page for that. I'm having a meeting with some of the guys for Live tomorrow and that'll remind me to ask that, and then I can publish the answer.
AUDIENCE:	Great. thank you.
PETER MARCHESE:	No problem. Yep.
AUDIENCE:	So you indicated there was some [INAUDIBLE].

PETER	The bidirectionality is-- there's two of them in this workflow. So one of them is Stingray to Max.
MARCHESE:	So I can take my models-- I actually closed it.
	So if you right click on an object in the Asset Browser in Stingray, one of the options you get is to send to Max or to send to Maya, depending on which one you choose to work with.
AUDIENCE:	[INAUDIBLE] Revit?
PETER	It doesn't go back to Revit, no. So if I'm in Max, then I can send it back to Stingray. The other
MARCHESE:	bidirectional would be if I'm going from Live to Stingray, and then Stingray back to Live. But none of it's going to go back and modify your Revit file. At least as yet.
AUDIENCE:	[INAUDIBLE].
PETER	No problem. Yes.
MARCHESE:	
AUDIENCE:	[INAUDIBLE]
PETER	Right now, it's only recognizing standard materials. So going through the cloud process for
MARCHESE:	Live bakes pretty much everything onto it. So it doesn't have to worry if you have, like multiple layers or setups.
AUDIENCE:	[INAUDIBLE] Stingray?
PETER	Yeah. You can bake it into there. Or you can actually send it back and forth or tweak it.
MARCHESE:	There's a few different kinds of materials I know it has problems with. And honestly, I'm not sure if those two are one of them. The standard materials are the safest, though.
	From what the guys on the Stingray team keep saying is that right now, it's optimized for-- not collaboration, but for the ability to go back and forth as opposed to performance. So they are basically going for the lowest common denominator at the moment as they get everything built up. Yep.
AUDIENCE:	What happens with the doors you export to Stingray from Revit?
PETER	If I'm going from Revit to Max to Stingray, it's just an object. If I want it to animate, I have to
MARCHESE:	build that in there. But if I go from--
AUDIENCE:	One by one? Or, do I have [INAUDIBLE].

PETER MARCHESE:	That depends on how you export it. So if I go from Revit to Max, and then from Max to Stingray as one big FBX, it's one huge object. So it's going to be kind of-- honestly, a pain in the ass to set up. You can do that, but it's not fun.
	I'd rather either export from Revit as-- OK, groups. Or export from Revit into Max, and then send to as those groups. That script that I mentioned from the class yesterday, that actually automated the process similar to what Live would do in that it exports everything out as its own unit. So that way, if I grab a door in Stingray, it's just that door. As opposed to-- boom, it's one big group or block. So understanding what you want it to do and how you export it is going to be helpful.
AUDIENCE:	[INAUDIBLE].
PETER MARCHESE:	Honestly, I don't know. I haven't tried that yet. Most of the stuff has been just from Revit and there, and then me scurrying around and setting everything that I need to happen inside of Stingray. So I haven't tried that to be honest. Yep.
AUDIENCE:	[INAUDIBLE].
PETER MARCHESE:	That model that I was using, it uploaded it in about maybe two minutes. I have had some times where the processing is longer. It's kind of like if you're doing the cloud render. Sometimes, it's light and not everyone's on it. Other times, it seems like everybody in the world has a project that's due now. But most of the time, it's pretty easy.
	I have more trouble with the internet speed in terms of downloading it or uploading it than I usually do on their end. But the more complex the project is, the longer it will take to process.
AUDIENCE:	[INAUDIBLE].
PETER MARCHESE:	I haven't run into it yet. There's definitely a maximum file size on the iPad. Anything over 100 megs is kind of flaky on that. But I've uploaded-- the largest one I've done as a single file was 400 megs. And again, it took a while, but it finished it. It didn't like it on my laptop. But on my desktop, it was OK. It does depend on what you're running on.
AUDIENCE:	So when you update [INAUDIBLE].
PETER MARCHESE:	Sorry?

AUDIENCE: If you have to update a model-- [INAUDIBLE]. Does it come all the way through and all that stuff is just attached [INAUDIBLE]?

PETER MARCHESE: I would say it depends on how you've exported it. If I'm going from Revit to Max and I'm divvying things up. So I'm upping groups. It's going to update the same file. So the element that is inside of Stingray-- it's essentially an FBX usually.

So like your question, if I'm exporting all my doors as individual pieces, I'm still updating that specific one. So anything that I've assigned to that one to happen before will continue to happen on the newer version of it.

But if I'm keeping, like it's one huge file, that individual instance that I've had to dig through to get to, then I might have problems.

AUDIENCE: What if you go from Revit to [INAUDIBLE]?

PETER MARCHESE: It's going to actually break everything up because of that process as individual pieces. It's a lot easier to deal with. Then, you have to worry about the versioning and then updating the file.

AUDIENCE: Do [INAUDIBLE]?

PETER MARCHESE: If you've got it, yeah. It's going to make it a lot easier on the materials and breaking up the file. So you have to be using Revit for it, though.

I know you were in the class yesterday. For the one with InfoWorks? Yeah. So if you're using InfoWorks, then, OK. You're going be going from FBX out of there and then into Max. But if you have the Revit file, yeah. I'd use Live.

AUDIENCE: [INAUDIBLE].

PETER MARCHESE: It's baking everything in the cloud. You're basically just going to get one big LVMD file. But if you open that up in 7-Zip or in a zip editor, it's going to have all the materials and maps inside of there. So all of the textures as well.

AUDIENCE: [INAUDIBLE].

PETER MARCHESE: Oh, the light map? Sorry. Yes. But they're not going to be automatically big but you can bake it in Stingray and then send it back into Live. Yes.

AUDIENCE: If you have a 3D panorama image, how do you import that into-- [INAUDIBLE] Stingray?

PETER MARCHESE: What do you want to use it for?

AUDIENCE: As a background.

PETER MARCHESE: I know you can do it. I have a link to where you can do in the handout, but I haven't gotten around to doing it yet myself. But that last bit that I clicked on where I showed you, you can do the tinting and modifying, you can create your own sort of geospace.

So if you do have that 360 view, you can use that for it. Honestly, I haven't gotten around to doing it yet. I've just been sticking and happy with the basics. But there should be a link in the handout for that. And then, that will explain how to do it. It's not that complex.

Any other questions, guys?

AUDIENCE: [INAUDIBLE] Navisworks yet?

PETER MARCHESE: Not directly, no. From Navisworks, I would export out as an FBX, and then bring that through either Max or Maya. Max or just directly.

When I was using Unity, if I just wanted to get really quick into the game engine and maintain materials, if I had shaded materials in Revit, the FBX export from Navis would bake those in at least. So it wouldn't look pretty. It's not going to have textures or bump maps. But at least the brick would be red as opposed to everything being a big wash of white. So Navis can export out as FBX at least, so that gets you partway there.

AUDIENCE: [INAUDIBLE].

PETER MARCHESE: Yeah. And I remember seeing a plug-in. I haven't tried it myself yet, but there's an OBJ plug-in for Max not too long ago. I think it was mostly for 3D printing, but you can probably use that to start editing some of the stuff, too.