PHILIPPE BONNEAU: Welcome everyone. Good afternoon. Welcome to this class, Be Connected With Steel Connections. My name is Philippe Bonneau. I am a Technical or Marketing Manager for Structural Fabrication. I joined Autodesk here three years ago, and I'm based out of Paris in France.

So today, I would like to talk about our steel structures, but not only about steel members but also about steel connections. And I would like to walk through the way to exchange the model containing this street structure from the structural engineer to the steel detailer thanks to great tools that we have now in the 2017 release of Revit and 2017 release of Advance Steel.

So at the end of this class, you should understand and be able to insert steel automatic connections in your Revit model in the Revit environment. You should be able to export this Revit model to Advance Steel and vice versa and even synchronize the differences between the two models, between the two software.

Then you should be able to use Advance Steel for creating the documentation, everything which is about shop drawings, [INAUDIBLE] drawings, but also [? beautiful tiles ?] and NC files. And you should be able to communicate your designs-- your 3D models containing steel members and steel connections with your source.

So I'm going to start with how you can insert steel connections in your Revit model. So the first thing is ability to insert generic connection in your Revit model. We have some tools to insert such a connection to give it some information to assign it some documentation. It can be a PDF file. You can assign it or so a picture, which shows a [INAUDIBLE] of the connection. And this information can be shared from the structural engineer to the steel detailer within the Revit environment.

The good thing also is that you can see the symbols being displayed on Revit sheets. So they appear on the drawing so it's easier for you to communicate this information out of the 3D Revit model. So let me show you. So today I'm going to use this PowerPoint and to make some live presentations.

So let's go to Revit. I am going to open this project. OK. This is a medium size structure made of columns and beams. I'm going to display it in 3D. So you see I have structural columns, which are already in place. I have already some structural beams. I can access their

properties if I check them like that. And this is, for example, a W8x10, and I can use the central structural column for sure. I have access to all this information.

And what I want to show you as generic connection is a possibility to select, for example, two members like that. And if you go to the ribbon, to structure ribbon, you will find this connection icon. So just press this icon, and automatically it's going to insert a symbol which is a symbol of this generic connection within the Revit model. So you may see it here. And this symbol has two circles.

You see, you have a circle which is there, and you have another one, which is here. And it's easy to switch between them. And the filled circle represents the main member of the connection. So I may say in this case that the main member of my connection will be the column, and the secondary member will be this beam.

Now if you go here on the left, you can enter some information. So you can enter some information about the [INAUDIBLE]. You can attach also an image. So just go there and, for example, browse. You can add a picture. I go, for example, to my documents. I don't know where I placed my pictures. Maybe libraries picture. I can take, for example, this one.

And this is, for example, a [INAUDIBLE] of the connection. So this is what the structural engineer would like to deliver as information attached to this generic connection. So just press OK. Now this image is attached to the generic connection. You may enter some comments or so. Maybe the structural engineer would like to use a clip angle connection. So you can enter a comment here. You can have marks or so. So there is different information you can enter here.

You see, if I don't have the symbol being displayed, it's not that easy to make it display again like that. So what you have to do, you have to go to the dialog box where you can control what you want to display in this view. And if you scroll down here in this visibility graphic dialog box, you will find a specific branch which is structural connections. And inside you may ask for, for example, reference and symbol, Apply, OK. And it gets displayed again, and you can select it, modify it. You can even delete it. OK?

Something which is quite new is Revit 2017, is a certified family. We have certified families, which are delivered out of the box, different families for different countries. We have sections for the US. We have both imperial and metric sections. But we have also sections for Canada

and for some countries in Europe such as Germany, Italy, India-- yes, please.

AUDIENCE: Have you made some [INAUDIBLE]

PHILIPPE BONNEAU: The [INAUDIBLE] connection? Yeah.

AUDIENCE: [INAUDIBLE]

PHILIPPE BONNEAU: You can get it as a target. Yeah, you can get it as a target in the sheet here. So here you see on the right, you have the list of the certified families. And what is important here is that it brings-- so of course, they are calling to the standard, to the local standards. And they contain a specific parameter in the Revit properties. And this parameter is a section named Key. So as an example here, you see for this section from the US, you have the section named Key Parameter, which appears here.

So let me show how is it works. So first of all, if you click on one of the sections, if you go to its properties with the Edit type button, you have access to all its properties like the weight, the [INAUDIBLE], the French thickness and so on. And if you scroll down, this is where you find this new parameter, the section named K. So it has this information, the same information as the section M. And because the parameter is there with this information, it means it's a certified family. Certified family will be used for inserting steel connection. So this is why I wanted to mention the certified families here in Revit 2017.

If you want to have access to the complete list of certified families, you may go to the Revit Help, and if you enter, for example, certified families here, you will find this article where you have-- so, again, the list of families. You have the exact location as well.

You have, for example, from the US section, it is in the subfolder named AISC14.1 because it is, again, these latest standards. And you will find different folders if you want to insert structural columns or structural framing. OK. So you have a long list of families. You have the explanation about the parameter. And if you scroll down a little bit, countries by countries, you have the exact Revit family which are certified families.

So as an example, for the US market, you have M shelves, you have WT shelves, you have C shelves, and so on. And you have the same for Canada and for the next countries. So you can easily access this online help article and have more information about certified families.

Now, I would like to show you how you can access the Steel Connections in the Revit 2017 environments. So out of the box, when you install Revit 2017, you don't have access to Steel Connections. This is something new, and this is something you need to download and install from your Autodesk account.

Once it will be installed, you will have access with this small arrow here on the bottom right to a library of automatic and parametric steel connections. So we have 22 of them, which are available. Some of them are for baseplates. Some of the ones are for connections specific between column and beams, for example.

So there are some ways to filter them, and you can select the one you would like to use in your Revit environment with this tool switch here on the dialog box, and they are everywhere in this project. And it gives a possibility to the Revit user to insert the steel connections and to model them with a higher level of detail. So you have access to a lot of options. You can modify them. You can really configure them as you want. I will explain that later.

The good thing also is that with these steel connections, you can check them against AISC for the US market and against EC3, Eurocode for the European markets. So you get a report which is generated automatically, and it's going to tell you if the joint failed or passed. So let me show you how to access that.

So once you have downloaded and installed the Steel Connections for Revit, if you go here to this small arrow, you have access to this dialog box where you find the connections. So you see you have many of them which are here. You can use some tools here to filter them if you would like to see only the beam end-to-end connection, if you would like to see only connections that you can apply between a beam and a column, or you can go to the bracing connection. So you see, you have a long list of connections.

And what you can do, you can select them. You can say I would like to have in my project here somethings to create baseplate but also I note clip angle, shear plates. And you can pick any one you would like to add to your project. So I'm going to close this dialog box. Press OK. And these steel connections are now available in my project.

So to insert the steel connections, this is really easy. You just need to select the members you would like to connect together. And in the dropdown list, you just pick the connection you would like to apply. And it's automatically applied between the selected members. So you get connections like that, clip angle connection. It may be haunch connection. It may be baseplate

connection. And you have access to a lot of options to modify them.

So let me show how to insert a steel connection. So you know I have two possibilities. Because I have already a [? German ?] connection, I can convert it to an automatic connection. And there's a possibility it will be to delete it and insert an automatic connection in place of this one.

So what I'm going to do is to select it, an arrow in the list you see. I have access now to specific connection for connecting two members. OK. I don't have access, for example, to the base plates because the baseplate is not useful in this situation. So I can choose between a clip angle connection or shear plate, for example. And let's go for clip angle, and the clip angle connection is going to be inserted automatically.

So it does not appear, because I need to go to my graphic dialog. I need to go to my structural connections branch, and I need to ask for the display of, for example, bolts, we're in a concourse. So you can select everything and all these elements are going to become available now and visible in my Revit environment.

So now you see I have my connection. Clip angle has been created. I have some bolts also, and this beam has been shortened with a specific value. So this is really easy to insert a steel connection. What I want to show you also is that if you go to its Properties dialog box, you can press this button, Modify Parameters, and you can change anything.

You can say I would like, for example, a clip angle on one side or I would like the clip angle on the other side or I want to have both of them. And you see, you just select the right option. There is no need to press an Apply button or Modify button. It's done immediately.

What I would like to show you is the code checking. Right now, it's not calculated, you see? And I have two possibilities. I can check it against Eurocode or I can check it against AISC. If you press this button, you have access to additional settings. You may want to use [INAUDIBLE] design code or the ASD1. You may want to have the report in [? HTML ?] format or HTML5 format. So you have access to additional settings here.

Now I would like to check it. So either I'm going to use automatic values, which are coming from the properties of the steel members, but I can also enter values myself. I can enter some values myself. For example, I'm going to enter a small value, and now I have two possibilities. Either I check it, I want to verify that this connection failed or passed according to the AIC or I can pre-size it and Steel Connections for Revit is going to optimize the steel connection. So I'm

going to choose the first one, check, and automatically I get a result, you see, which is not what I was expecting.

The checking failed. I have some issues, maybe some issues with the bolt or maybe some issues with some other member. So what I can do, I can say I want to pre-size. And the steel connection is going to pre-size automatically the connection. So I see that I have a few issues. I may, for example, change some of the values like that, you see, and check it again. So it's up to you to check pre-size as many times as you would like to do it.

And you get a report. So if I press this report returns, this is what I get automatically. So you get some description of the connection. You get all the elements which are connected together. You get the values, and you see here what is the reason what is failed. And it seems this is a minimum [? bolt ?] edge distance, which looks like-- which seems to be too small-- too short. But for each verification, you have the formulas, you have the values from the connection, and you can see if it's OK or if it failed. So you have a long report which is like that. So you can save it. You can print it. It's done automatically.

So what we can do is see maybe the distance here is too small, so I shall go to clip angle, and maybe I should use some bigger clip angle, something like that. And maybe I should go code check and check it again. Oh, it still failed. I'm sorry. I'm missing something. Anyway, let's keep it like that. And this is a result of my steel connection.

What I can do as well, I can go back here to this small arrow, and here I can go to parameters. And you have the possibility to add appropriate statuses. So we can press a button Add, and it can be, for example, something like comment. On You want to add some comments. You can also add, and it may be, for example, approved. You can add another thing and say it has been, for example, revised. And when you press OK, if you select the connection here, and if you go here, you can see that these parameters, these upper [INAUDIBLE] are available here

So you may ask for something like a comment. You have a comment because of the checking failed or you may approve it or you may revise it. It's up to you to assign it an appropriate status. Just remember that we have this upper [INAUDIBLE], which is available here for the steel connection. And when I will transfer it to Advance Steel, it will be available as well.

So let me show you quickly another connection. I would like to insert between this column and this beam another type of connection. So I go back to Structure, to Connection, and here I would like to add something like a shear plate connection. And this is created automatically

between the columns. So you see the beam has been extended, and the clip-- the shear plate has been added. And I have bolts also.

So the connections themselves are parametric, and you can modify them as much as you want. But now if I want to change the size of this column, for example, I would like to change from a 1033 to a 12 by 40, look at the model. Everything is readjusted automatically. So we really have some parametric steel connections. Everything adjusts automatically in case you make modifications. So let's go back to the 10 by 33, and let's keep it like that.

What I wanted to show you also concerning the display, you have the possibility, for example, to create some filters. Here I may ask a filter containing my structural connections. So let's give it a name. I can here choose some categories. I may choose, for example, structural connections and just display that, Apply, OK. And I may add this here as a filter. And you have the possibility also to assign some specific colors.

So for example, for my steel connections, I would like to have something which is orange, something like that. I may want to have something with solid fill. OK. And press Apply, OK. And you get something like that. You can do the same also for structural columns. You can do the same for structural framing. Just go here. Say you want to add a new criteria, for example, structural framing. Press OK.

You may select it here from the categories, structural framing, which is there. Press Apply, OK. OK. Make it available, and you may change, for example, or the color. Choose something like a blue color, something like that. Ask also for solid fill, and you get something which is maybe a little bit nicer.

So as I said, if you want to modify a steel connection, you just pick one of the connection components and either you press Modify Parameters, which is there, either Edit Parameters, which is in the Properties panel.

Now I would like to copy these connections. And in the Revit environment, we have the copy tools. So it's easy to use the copy tools and copy these connections anywhere. So I'm going to show you how it works. So I would like to, for example, I'm going to display a top view. I'm going to display, for example, the top of the columns like that.

And you see, by the way, I don't see my beams, and I don't see my connections. And there is another way also to control the display. This is the detail level. So if you go there, right now

this is Coarse. But you may ask for Medium and you see the beams. I'm going to make it zoom so that you better see.

But if you ask for Fine, you-- did I ask for Fine? Yes? Oh, you have to go to the branch, and you may ask also in this view, because you can have different settings depending on the views. You may ask also for the display of this element [INAUDIBLE] of this object. And now you get the clip angle, which is there. And you get also the shear plate, which is here.

So now what I can do, I'm going to, for example, to select the clip angle and to select the shear plates, and I want to copy them. So maybe I want to copy them on the other side. So I'm going to use this tool [INAUDIBLE] draw axis. And I just need to draw an axis. OK, something like that. And automatically Revit is going to copy the clip angle here on this side and the shear plate as well on the other side. So just use the copy, choose from Revit to copy connections from a location to another one. I will show you later that you can also use copy and the multiple option if you want to make multiple copies.

So let's display that again. Just wanted to highlight the fact that the display of the steel connection is up to you. So two possibilities, either-- find two possibilities you have to control. With the detail level, you have to choose Fine to have everything which is available in your model. And you have to go to this dialog box to change the display of all components from the structural connections.

Let me add some more examples-- some more connections. For example, here I would like to insert a baseplate. So I just need to pick the column, go to Structural Connection, and from the dropdown list I can choose something like a baseplate. And automatically I get a baseplate which is inserted. So I may go to its properties and change anything. For example, I would like to change the angles. I can change from [? normal ?] angles to [INAUDIBLE] angles, for example. Or you may not see it well.

So I'm going to display in wire frame, and now you see better I think. And again, you can go back to the properties, and if you want to change anything from inside the dialog box, you can say instead of [INAUDIBLE], I would like to use something like that, you see. You can define the length also. You can choose something which is again different, like [? hooked ?] angles, something like that. Different possibilities of [INAUDIBLE] cross, which are available within the baseplate connection. If you adjust to have all, just select All and [INAUDIBLE] cross gets removed and your just keep the baseplate with some holes.

So now we would like to have this baseplate connection everywhere at the bottom of the baseplates. So what I can do, I can go to this view. And, again, you see I don't see elements, so I need to change that to Fine. I need to go to the graphical representation dialog box in this branch, select what I want to see, and I will have the angles, the plate, and the symbol which are displayed now in my 3D model.

So if I want to copy, again, just pick one of the components from the connection, use a Copy tool, and what I can do here in my example, I can select the Multiple option. I want to copy this baseplate to different locations. So I want to copy it from there to here, here, and here. So as you can see, the baseplate has been copied to a different location and because the column is rotated of 90 degrees, the baseplate has been as well rotated of 90 degrees. So that takes automatically the column on rotation.

Now what I want to do, I want to select all these baseplate connections. So just pick them like that. And I would like to copy them to the top. So we use again the Copy tool. We can keep multiple options being selected. And I can say I want to copy them from here to here. So you see they get copied automatically to here. And I get a warning message. Why? Because elements here have not been copied, because I don't have a column here. And I can copy them also to this axis and, again, baseplates get copied everywhere.

So if I look at the 3D view, you see I get baseplates, which are everywhere in my model. So there is no real link between them. I mean, you can modify only one of them. If you want to access this one and modify parameters, you like to change a bit the dimensions for the endplates, for the baseplates, just go here in the dialog and, for example, I can enter one like that. And you see just a little bit bigger. I can change only one of them.

I would like just to show you an additional connection here. For example, I have the column I would like to insert a gusset plate between the column as a bracing. So I can select the column. I can select the bracing. I can go here and press Connection, and in the dropdown list, I can choose among different possibilities. And I don't have the gusset bracing. You see, I forgot to add it here. So anyway, just go back here with the small arrow. You go back to the Library of Connection. You may pick this one and make it everybody in your project.

So now if I select the column and the bracing and says that I would like to insert a connection-- oh, it seems I inserted different connection at the same location. Sorry. So I'm going to delete this one. OK. So I take the column and the bracing, press the button, which is there. And now I

should have the gusset plate as one diagonal connection which is available.

So you see, it's going to create a gusset plate and some bolts between the column and the bracing. And I may adjust again this connection by going into the dialog box. If you want to change the bolt quantity to three, for example, as you can see, automatically the gusset gets bigger. If you want to change as well the shape of the gusset plate, you may want to have only one chamfer, but you have also possibilities to ask for two chamfers. And you may get something like that, which is modified automatically.

So let's stop here for the in-session of steel connections. I think you understand how it works. So what I would like now-- yes, please.

AUDIENCE: [INAUDIBLE] for everything to work fine, you have to keep [INAUDIBLE] in your [INAUDIBLE].

PHILIPPE BONNEAU: No. Because the connection is going to external shot on the beam. So even if beams are not touching each other, if the analytical model is not so much accurate, you can insert steel connections.

So now for the second part, I would like to show you how you can export this model-- this Revit model-- to Advance Steel, how you can make a few modifications if needed in Advance Steel, and how you can synchronize back changes to the Revit environment.

So you need to have the Advance Steel extension for Revit being installed on your computer. It's not installed by default. So you need to go to the Autodesk App Store. You need to look after the Advance Steel extension. You need to download and install it.

And as a result, you will find it available here in your ribbon-- Add-Ins ribbon. It's available there, and it offers different possibilities. You will have the possibility to export the Revit model. You will have the possibility to import an Advance Steel model. And you have the possibility to synchronize models between the two software.

Just to show you how to find it, so right now it's installed on my laptop, so this is available here under Add-Ins Advance Steel extension. But if it's not the case on your side, just go here to the Autodesk App Store. OK. You may answer here Advance Steel extension. It's going to provide the list of Advance Steel extensions for the previous release, but this is the 2017 release we would like to have a look at, and this is the page.

So you have some explanations. You have also a video explaining how you can install it and

use it. You have some screenshots. You have some reviews as well. And you just need to press this Download button, download and install it. And once it is installed, you will get it here available under Add-Ins ribbon. Oop, sorry.

So different options which are available with Advance Steel extension, we can import, export, and synchronize. We have access also to a Settings dialog box, which offers different options. So different options, which help you decide which elements you would like to exchange between the software. There is an option, for example, for importing plates. In case you create some plates, some [? polygonal ?] plates in Advance Steel, you may want to import them in Revit.

We have also a few new options, which are new with the 2017 release, like this one. You can export your Revit model based on the current view settings. We have also options to export the grid. You can now export the ready grid to the Advance Steel model. And you have access also to an online help. If you want to know more about the Advance Steel extension, just move the cursor onto top of one of the icons, press F1, and you have access to the online app.

So let's go here. If you go-- with this small arrow, you have access to export, import, synchronization, settings. So this is here where you will find the options. So it's easy. You can select them or not. On my site, I select not to add. I recommend not to select the export beam shortenings, because if you don't have shortening here, they will be created by connections in the Advance Steel Environment. So I think it's best not to export them. So you can choose among different options. You just press OK, and these settings are going to be saved. So let's press OK. And it should be saved.

What you can do as well, as I said, you can press F1. For example, just move the cursor on the top of one of the buttons, press F1, and you see you have a direct access to the online app. So if you want to know more about this Advance Steel extension, for example, you would like to know more about options in the Settings dialog, you have a corporate app which is available.

So now I would like to show you how you can explore the Revit model to Advance Steel. So basically, you need to go to the Advanced Steel extension, press the Explore button. And it's going to create automatically an SMLX file containing the model and, not only the steel members but steel connections and grid as well.

So let's have a look how it works. So first of all, I may save my file-- my Revit file-- somewhere.

So I'm going to use a name, for example, AU2016, Save. It's always good to save. And if you go there, you can press this button, Export button. You have different options, but you can keep the current one. Press OK. And on the desktop, it's going to generate an SMLX file with the same name as the name of Revit model. You can change the file name if you want, but you can just say Save, and it's going to create the SMLX file automatically.

So the next step is to import the Revit model in Advance Steel. So in the Advance Steel environment, you have some choose to import, export, and synchronize the model between Advance Steel and Revit. So in my case, right now I'm going to import the SMLX file. And we have a mapping. We have a mapping which is done automatically for certified families. There is no need to map individually and choose say, for example, the W 8 by 10 correspond to the W 8 by 10 in Advance Steel. It's done automatically.

It's the same for materials. If you are using some materials from the AEC Materials Library in Revit, it's done automatically. You may have some key areas where you need to do a manual mapping. If you are using a section which is not mapped automatically between the two software, you will have a dialog where you have to map and say these section names correspond to these section names in the other software. And then it will be saved. And next time you import the same section, the mapping will be done automatically.

Also I want to mention that there are some parts we don't transfer as [INAUDIBLE] object between Revit and Advance Steel. I am going to transfer those to the software. But if you try to transfer some equipment or a door or window or a light, for example, they are going to be inserted-- they are going to be imported as special parts in Advance Steel. So I get them, the downloads, structural members, obviously.

So let's import the file in Advance Steel. So this is Advance Steel. This is working on the top of AutoCAD. For people who don't know it, you have a ribbon. You have different tools which are available. We have the possibility to display also tool palettes to have access to additional commands. I will explain you a little bit later on, right after.

So right now, what I want to do is to import. So just go to Export and Import ribbon and press this button, Import. And now I'm going to select the SMLX file that I created from my Revit model, which is this one. And I'm going to open it. It's going to take a few seconds. Just two seconds. But you see. So I get the grid, because in my Revit model I had the grid, and I did not pay attention to that anyway. And I have my model, you see?

So I have all the navigation tools which are available in Advance Steel. Because it's based on AutoCAD, I can use also the AutoCAD visual styles. I may want to display in [INAUDIBLE] mode. Maybe it's a little bit darker. So I'm going to change-- you see, members are placed automatically on layers. Beams are placed on beams layer. Bolts are placed on bolts layer. And by the way, with the Tool Tip, I can have access to all the information about each element. You can customize your Tool Tips, and you can ask specific information in these Tool Tips.

So if I want to change a layer, just go to the Layer Manager. Just tap Layer. So you see we have a full list of layers which are originally available in the template. And where Advance Steel is assigning the right objects to the right layer. And I may want to change here the color for the beams. So maybe I'm going to display something which is a little bit lighter, something like that, just for the beam layers. And now it should be a little bit lighter. You see, you can control all of that.

So as a result, if I double-click on the beam, you see I get a W8x10, which was exactly the same in Revit. If I double-click on the column, I get, you remember, A W10x33, which was the case in Revit. So object, steel members, steel columns, and steel framings get automatically transferred as [INAUDIBLE] object in Advance Steel environment.

What about the connections? If I take this connection, and if I make a right-click and go to Advanced Drawing Properties, I get access to the dialog box, which looks very, very similar to the one we have in the Revit environment. And by the way, you remember how your signs are [INAUDIBLE] status approved in my Revit environment, this information is available here also. So the [INAUDIBLE] status and information get transferred between Revit and Advance Steel.

Now, if I go in the dialog, you see it looks similar. It looks the same as in Revit. You can make modification if you want again to have only one on the right, only one the left, they still remain [INAUDIBLE] parametric steel connections in the Advance Steel environment.

So now I just would like to show you a little bit of modifications. I may want to copy this connection, for example. I may want to display the Advance Steel tool palettes. And for example, I would like to copy this connection. So no need to select all the components. You can select just the cube [? reader ?] which is a sample of the connection, and copy it in different locations.

So if you go there, you have access to different tools. You may want to create it in different location. For example, between the column and between this beam, between this column and between this beam. So you see, this is easy to assign the same connection in different locations.

What you may do as well is to insert some additional steel members. So I can take, for example, this beam and with a right-click make a copy of it. So I'm going to copy with a value of three, maybe six, why not nine. So I have three-- I see I have two at same location now. No. That was good Anyway, let's keep it like that. No. Let's copy one more. I have two beams like that.

You have also some choose, where if you want to apply the same clip angle at different locations, there is a tool a insert the steel connection in a multiple way. So just press this icon, and you say on these two beams, I want to connect this one and this one. And Advance Steel is going to insert automatically the right connection at the right location.

What's good is that you can modify the member and you can move it as well. So if you want to move it, for example, you would like to move it in this direction for two, you see, the member gets moved, but the connections also are moved. And also the beam as well, for sure. So you can make modifications like that.

Another thing is, for example here, if I go back to this gusset, I would like to change, for example, some of the bolts. Instead of three, just for safety reasons, I would like to insert another one. So you can make a modification to this one. I may want also to delete some elements. I may not have to create the stairs, so I may have to delete here the platform, maybe this beam, maybe this one. So I'm just deleting, adding, modify-- oh, my beam is there. I'm going to delete it.

So I may add-- what I did, as a summary, I added some elements, I added some connections, I deleted some elements, I modified some elements, I modified some steel connections. Let's save the file. Let's save the file as a name. I'm going to save on my Desktop. This is my Advance Steel model, for example. And I'm going to save it.

So just to review what we did. We imported the Revit model in Advance Steel. We did a few modifications, and now I want to synchronize what I did with the Revit model. So in Advance Steel I'm going to export this Advance Steel model to an SMLX file, and in Revit I'm going to use the Synchronization button.

As you know, I will get a dialog box like that, where I can see the differences between the two models, with different colors. You can see in green what has been added, what's new. You can see in blue what has been modified. And you can see in red what has been deleted. And you have a full control on that. You can even use some filter tools, and you can apply these modifications to your Revit model. So let's do it together.

Let's go back to the Revit model. Let's use the Advanced Steel extension, and I'm going to Synchronization. So I get this dialog box, which is empty, and I need to load. So I'm going to load the file which was-- where did I save it? Sorry, I don't remember where I saved. Maybe I did not export it. I forgot to export it, I think. So let's export it first. It will be better.

I'm back to the Advance Steel model. I'm going to export it. I can save it here on my Desktop. I can give it the same name or I can change the name if I want. Let's save as an SMLX file. It tells me I have two saves of model. Yeah. And the SMLX file is done. So if I go back to Revit, now-- yes, now the SMLX file is there.

So I can open it. Now it's going to fill the dialog box automatically. Or maybe I did not pay attention to material anyway, so I have different lines, you, see, with different colors. So you see explanation for the [? clause ?] here. And you can use a filter. So you may want to display, for example, to clear all, and you may want to display everything about connections, connections which have been added, modified, or deleted.

Apply the filter, and you see everything which is about connections. So you can apply them. You can also select all, and you may not want to apply, for example, columns. So many apply. OK. So you remember, I deleted some elements as well. So they appear in red color.

So what you can do from now, you can select the lines you would like to apply to the model. But even better, you can select everything. So just select this column, and now I'm going to move it a little bit so that you can see what happens. Apply all of this to the Revit model.

And you see it's updating the Revit model. You see some additional steel members on the right. You see also some additional steel connections. You see also-- what did I do? I think I did this gusset, so you see all of these things. I just want to check if I did everything. Yeah.

So you can close this dialog box. And as a result, you see, I have the connection. I have the bracing sets. And the good thing is that everything is still an automatic connection. If I select

the clip angle and go to Modify Parameters, it's still an automatic connection. So this is really very useful.

So I may do again a few modifications just to show you how I can synchronize back in the other way. Maybe I'm going to insert here quickly a connection like a gusset plate, something like that. I can change again the size, [INAUDIBLE] the quantity. I can change also the gusset size or something like that to make them identical.

AUDIENCE: Can you mirror that connection? Mirror that--

PHILIPPE BONNEAU: Yes. Yeah, yeah. You can select it, and you can use some tools like Mirror-- like I did at the beginning for the clip angle. You can mirror connections here. Yeah, sure. So this is something that I did, and [INAUDIBLE] I see I'm going to stop here. So let's save the Revit model.

And let's see where we are in the PowerPoints. So I did a few modifications in Revit, and now I'm going to create a another SMLX file. I'm going to synchronize it in Advance Steel, and you will see that we get again a synchronization dialog box with different colors. And you can use filters also here to filter what you want to display or what you want to apply to your Advance Steel model. So let's do it together.

Let's go to the Advance Steel extension. I'm going to export the model. Press OK. Give it a name. So it can the same name, but it can be another name. So maybe this is version 2. Version 2 of my SMLX file. Save. And I'm going to save it. OK. It should be done.

So now let's go to Advance Steel, and what I want to do in my Advance Steel model is synchronizing. So I go here to Synchronize. I'm going to load. So you see the synchronization dialog between Revit and Advance Steel is the same. So it's easy to use and easy to understand.

Let's select this file, and I should have some differences. Again, the material for the [INAUDIBLE]. So let's say that I'm going to select this connection, and I want to apply it. It's going to update my Revit model-- my Advance Steel model, sorry. And now if I have a look here on the top corner, you see I have the gusset plates which have been inserted in my Advance Steel model. And again, if I go back to the Drawing Properties, I can see that it remains an automatic and parametric connection. So if you want to change anything like changing again as a bolt quantity from four to three or vice versa, it's up to you.

I just would like to mention some special cases, because what I'm showing you right now is

how you can import, export, and synchronize a model containing steel connections. And you can do that with steel connection and they remain automatic parametric steel connections if you are using one of the 22 connections which are available in Revit. But Advance Steel is providing much more steel connections.

We have the connection vault, which contains different categories containing different types of steel connections. And if you are using one of them, they are not being imported as an automatic connection in Revit. So if it's an imitation, it's imported, you have the plate. If you have some plates in the connection, it's going to be imported as a plate. But things like bolts, anchor bolts with shear stud will not be imported in the Revit model. So there is a list here on the right. We have the metrics which explain what is imported from Advance Steel to Revit and what is not imported at the moment between the two software.

So now I would like to show you a little bit of Advance Steel, how we can create some documentation out of the 3D model such as shop drawings, NC files, [INAUDIBLE], and how we can create erection drawings with some elevation views, [INAUDIBLE] plan views, and things like that.

So the first thing to do in Advance Steel before starting creating the documentation is to run the numbering. It's done automatically, but you have to ask for it. So you get a dialog box which contains different options depending on your preferences. You can have different stock number.

You can assign prefixes as well. For example, if you like to have C4 column, to have C1, C2, C3, you can insert such information. So you can really control the way the numbering is done in Advance Steel. And we have some tools to find which path has which pattern mark, and we can display only this part as well. So different tools to run the numbering and different tools to display the results.

So this is Advance Steel model. I am going to save it again. And to run the numbering, you have to go to Output and then Numbering. And you get this dialog box. And you have possibilities to get preliminary maps if you want. So you may select this option or not. You have the possibility also to number the single parts.

So you can choose also among different methods. I'm going to take this one. You can run the numbering also for assemblies. And you may choose among different methods. I'm going to

take this one. And as I said, you have also access to different options, depending if you want to number bolts or not, anchors or not. So different sets of parameters which are available to you.

Also I would like to mention the fact that you may have some standard part. Maybe it is a baseplate, the part itself. The plate itself is a standard part in your company, and it had a standard part mark. And you may have a file containing all the standard parts with the standard part mark. And when you run the numbering, if you select this option, it's going to compare the file. And if Advance Steel finds the same parts, it's going to use the standard part number. So it may be useful for some companies.

So now let's go for some numbering. We should just apply. OK. And Advance Steel is going to run the numbering automatically. So you have a history here for the assemblies, and you have a history here for the single part. And you see all of them get automatically or prefix. Something I can control, and I can modify at any time.

So just to show you a little bit of results, if I click, for example, if I double-click on this gusset. Oop, sorry, I wanted to-- if I double-click on this gusset, if I go to Naming, you see, it does this part mark which has been given automatically. This gusset is a P1000. And this gusset belongs to this column, and the column itself is a C3. So now if I double-click on the column itself, if I go to naming, this is a C3, and the main member of this column is this number. So everything has been done automatically. And you can track the numbering at any time.

What you can do also, you can display a complete part. For example, I want to see the entire column. So what you can do, you can use some tools which are available here in the Advanced Steel Tool Palettes. You can use, for example, this icon. I would like to show only selected assemblies.

So I place the anchor, I select the column, press Enter, and I see only the column and its attached parts. So it's a way for you to control yourself to see that part of this column has a gusset plate, and I have the baseplate, and all together are either shop welded of shop bolted or both. And if you want to display everything again, just press this icon and everything is back.

So first of all, I would like to show you in Advance Steel how we can create shop drawings automatically. So in Advance Steel, we have access to ready-to-use templates that we use drawing styles or drawing processes. And by using these tools, you automatically get single part drawings and assembly drawings. And the good thing is that parts get automatically

labored and dimensioned on the drawings. And you can choose if you want to have single sheets, I mean one part, one drawing, or you may ask also for multi-drawings. So it's up to you to choose what you want to get.

You can add a bit of [INAUDIBLE] on the drawing or not. It's up to you. And there are also some settings that we call defaults in Advance Steel, which are available through the Management Tools, where you can control, for example, if you like to have the single part drawing, first [INAUDIBLE] parts or not. So it's easy. You just control that with a combo box, and you choose the best method for you to get shop drawings being created.

So just to show you how it works. Let's start, for example, with some shop drawings for the plates. I would like to select the plates. So in Advance Steel, you have some tools which are here. You may select beams. You may select curved elements, and you may select plates. So if I press this button, you see I have 18 objects which are selected. And if I rotate, you see them. You see they are selected. These are the plates I would like to create the shop drawings.

Plates are selected. I can use now a drawing process. So you can display these two palettes. And by the way, you have access to drawing styles from several countries. I'm using the US drawing size here, but I can click here. I can change then and use the UK ones. We have also a drawing style from Australia, from some countries in Europe as well. And you can even customize the drawing styles and have them accessible here under User [INAUDIBLE].

So let's use the US drawing processes. We have different categories. You see [? camera, ?] single parts for all or single parts only for my selection. And same thing for assemblies, for all or for just my selection. So right now I would like to show you, for example, this one. I would like to create the drawings for the plates on NCA file format. So just press the button, press OK. And Advance Steel is going to generate shop drawings automatically. It's fast.

So as a result, I get [INAUDIBLE] files, which are the shop drawings. I can access them if I go to the Document Manager. In the Document Manager, you have Branch, which tells you that these documents are up to date. And you see this is a [INAUDIBLE] file. And you can select it, and you can open it. But if you don't want to open them, all of them, you can just preview the [? result. ?] And this is how it looks like, you see?

So here I have one baseplate, which has these dimensions. I think this is the one from the corner. Here is the other one. And the quantity is one. And this one is a little bit different for its

dimensions and the quantity 30. So you see, Advance Steel is able to distinguish between different parts. You can also view these drawings. You see, you have the gusset plates shop drawings where everything has been labeled and dimensioned automatically.

So what I would like to show you is a modification. Let's do a modification, for example, on this baseplate. So I want to go back to the Steel Connection properties, and I want to change something like the dimensions of the baseplate.

Maybe instead of that, I would like to have something a little bit bigger. Let's go for that. You know what? I'm going to change only in one direction. I'm going to change only the value 1 and 2. So here, instead of 1, I want 2. And here, instead of 1, I want 2. You see, the baseplate is just a little bit bigger.

So what we do, we save the model. We have to run the [INAUDIBLE] again just to be sure it's up to date. I can keep the same options. Press OK. And what happens? If I go back to the Document Manager, I can see that I have some drawings which are up to date, and I can see that I have some drawings which need an update. And this is probably the baseplate.

So the baseplate needs an update. So I can either update it, but even better I can update it with a revision number. So I can go to the dialog, I can say I want to add, I want to add a new revision. It will be revision A. I can enter the author name. I'm going to enter my name. OK. And I can enter a description as well. What I did. Maybe the baseplate has been changed for [INAUDIBLE], let's say.

So I just enter some information about the revision. Now I press OK, and I press OK. Now it's going to update the drawing. So you see, it's very quick. And as a result, you see the A, which is part of the file now. You see the result, and if you want to open the drawing, this is what you get.

So the good thing is that you have origin clouds. So dimensions are not the same anymore. So this is why you have origin cloud here. I change also this dimension and this dimension. So you have the origin cloud. And this was revision A.

So you have all the information here. And it's up to you. If you don't want to keep this one, for example, just go here and unselect that. And you may want to keep only this version cloud. So you have a lot of flexibility. You may also want, for example, choose your labor, and dimensions, things like that. It's up to you.

And the good thing also is that on the bottom right of my drawing, I get the origin table, which has been filled automatically. And here on the bottom right, this is now the revision index A, which is on the bottom corner of my drawing. So this is very powerful in creation, but this is also very powerful in automatically updating shop drawings and also the [? connotations ?] if needed in case of modification in your 3D model.

I have so much to show you, I'm late. I want to show you also quickly how you can create NC files from the 3D model. Two possibilities in Advance Steel. You can generate DSTV files or DSTV, it's a norm, it's a standard, which is used worldwide by CNC machines providers. And you can also just generate DXF files if you have a machine able just to rejig the files, we can do it in Advance Steel.

You can control also the way you want to create these files. You can control the [? fineness. ?] You can control the way you want to observe the lines. For example, in the DXF files, we have the NC settings dialog which is available. And as I said, this NC file can be read at the show by CNC machines, but you can also send them to MIS software if needed, OK, for [INAUDIBLE] and document management and things like that.

So how does it work? I want to select again, for example, my plates. Oh, you know what? I wanted to show you also an assembly drawing, because it's important to show you how it works. So I'm going to pick this column, because it has a gusset and a baseplate. And if I go here, I may select a specific presentation for assembly drawing, something like that, for example. I'm going to press this button. OK.

So it's going to create the shop drawing for this column. As a result, you may say I set the column and with a right-click, you can say show me the assembly drawing. There is a shortcut with a [? context ?] to our menu. And this is-- oh, it's a little be too high. So you may want to move it a little bit down like that. Sorry, I did a copy. So I want to take this green frame, and you may say I want to move it like that. And what I wanted to show you here, this is assembly drawing of the column. So you have different views.

Everything has been dimensioned automatically. You see from all to the edge of the beam, you have also the section then which appears into dimension. You have the elevation values. You have some section cuts which have been created automatically. You have the title block. So all of that can be customized now. You can replace the logo by your logo. And you have a bill of material as well. You see, you can see every component which are part of this C3

column. You have the length. You have the weight. You have all the information, as these drawings are ready to be given to the shop.

So now I want to show you the NC files. So let me select the plates, for example. And what I can do, I can press this button. It's going to create automatically the DSTV files. So just press this button, and it says that the NC files are being created automatically.

What I wanted to show you also is that we have this NC Settings dialog where you can control different things. You can change the file name. And for the DXF file, you may want to remove this small extension, because the dot DXF is going to be added automatically. So you see, you can control the color for the outer contour, the color for the all, which player, which line type. You can control all of that. Let's press OK.

Now let's go here, and I'm going to generate the DXF file for these plates. So just press this button. And as a result, if you go to the Document Manager, you remember we have the drawings, and we have now the DXF files. And this here how it looks like, you see?

So you get scribing also, which is done automatically. You see, this is a baseplate, this is a hole. And you have the scribing to know exactly the shape of the column. So this is an example. This is another one, a third one. You see the gusset as well at scale one-to-one. So you have the DXF files.

Now if I go to this branch, if I go to the DSTV files, this is a fight extension, you see? And you can preview the result. So it may not easy to understand, but it's done according to the DSTV standouts. So basically, you have an editor which defines the plate. You see, for example, the thickness. And you have different blocks to define the shape, external shape, internal shape, [INAUDIBLE] if needed. All information is in these files. So this is done automatically.

Now I would like to show you a little bit about what we call general arrangement drawings or erection drawings. I always [INAUDIBLE] you can use some ready-to-use templates-- drawing styles-- and generate drawings containing, for example, elevation views, [INAUDIBLE] views, switch views, 2D details, anything you like to have on your general arrangement drawings. And these drawings may contain a bill of material if you'd like to have one.

So I would like to show you, for example, an encore plan. So just let me remove some elements from display. I may want to hide that. And you know what? The grid is not at the right level. So I'm going to move it to have it on the same level as the baseplate. And the reason is,

in my Revit model, I have this grid at level 0 and my building was a little bit higher. This is why it's not at the same level.

So I may use a tool which is available here, which offers you the possibility to copy [INAUDIBLE] or line and also just move. And I'm using this tool. I'm going to show you why. So you just need to pick graphically. I want to move it from this point, for example, to the bottom of my baseplates. And you see, because it was not fully vertical, it gets some values along x and along y. But I don't need these values. So I'm going to remove this line and just keep this value.

And let me zoom out a little bit to show you. And what you can do, you can press OK, and it's going to be moved now. But if you are not sure, you can also press Preview, and you have a preview of the result. And if you find it good, you press OK, and it's moved. So we have some tools like that to give you more control on what you want to copy and what you want to move.

So I would like to show you an encore plan. So let me place the UCS at the right location. I may want to have it here, you see like with the XY in the plane of my encores. And now I'm going to use a drawing style. So just display your drawing styles to palettes. And, again, here you have different categories. You have some specific templates when you want to create engineering drawings. You have some specific templates when you want to create 3D views, templates for encore detail, grids, things like that, you see? So different drawing styles which are available.

And by the way, when you move over one of them, you have a small preview you see of the possible results you get, and you have also a description text which appears here, which helps you understand what you can get as a result when using these templates. So I'm going to use, for example, this one. I want an encore plan with a grid being dimensioned. So you get a dialog where you can specify some settings.

You may specify, for example, the name of the drawing. You can give it a name. You may specify the scale, the scale of the view. You can say I would like-- I can stretch this dialog a little bit-- you can select also a drawing size, what we call a prototype in Advance Steel. It's going to contain a frame and a title block. So just like all of that.

And now I need to pick what I want to display on my drawing. So let's make a window selection, and the drawing is created. So as a result, if I go to the Document Manager, if I go to my drawing, if I go-- I was this one. You can see it in the preview. But if you open the

drawing, you see it full screen, you see?

So I have the encore plan view. I have the columns, you see? I have the labor, [? by the way. ?] So I know this is a C1. I know the section. I know the bracing also. I have the top of the baseplate, and everything is dimensioned automatically, you see? So this is really great, because you get automatically an encore plan drawing from your 3D model. So this is an example.

Another example will be, for example, a 3D view. I would like to have a drawing with a 3D view, because I know it's going to [INAUDIBLE] at site. So what I'm going to do is to place the UCS on my view. And I can use another drawing style, something which is specific, for example, for model view, for 3D view, containing labels or containing no labels. I can go for this one.

Again, I can assign a specific file name here like GA2. Keep the same scale. Press OK. And it's going to create the drawing that I can find in my Document Manager This is a GA2, or it looks big. Ah, because I have the grid, OK. So what I can do, I can delete the grid, and then I can update the drawing. It's going to update the drawing and remove the grid from the view. It does not mean I deleted the grid from the model, it's just from the drawing.

You see, the green frame is still too big. So you know what I'm going to do? I'm going to close this drawing, save it. And, in fact, I'm going to delete this grid, because I don't really need it. So I set my model. I can go back to my Document Manager. And it tells me that it needs an update, you see? It needs an update, so I can update with origin or without origin. So let's go without origin.

And now if I open the drawing, you see, it looks smaller because it does not contain any more grid. And I can put this view exactly where I want to have it. So you see, you have this 3D view, you have the beams, you have some connections. Everything is detailed very, very precisely.

So I may want to add another view to this drawing. So what I'm going to do is to maybe close and save this drawing and go back to my model. And what I want to show you now is how I can create, for example, an elevation view. I would like to have an elevation view from the side of my building. So I'm going to place back my UCS [INAUDIBLE], and I'm going to move it on the axis, which is there, something like that. And I'm going to have the XY in the plane of my view.

And right now, I'm going to use another drawing style. And you see you have different types of

drawing size for elevation. You may want to see only the lines. You may want to see exact representation of the beam. So it's up to you to decide. And if I go for this one, I can go back to the dialog box. And what is interesting is that I can add this view to an existing drawing. So I may want to have this elevation view on the GA2.

So you pick the drawing, say OK, and you-- oh, sorry, you need to also make a window selection, and as a result, if you go back to the Document Manager GA2 and open the drawing, you see you have the elevation view which appears here. And so you get dimensions, you get lines, you get section, you get this elevation view, displaying beams as lines. So let's save this file. And let's go to the next topic.

Bill of materials. I wanted you to show you bill of material, how you can create bill of material automatically from the 3D model. So to get bill of materials, you have another palette, which is a variable here, and which contains different templates. And you can create your own templates. So you have different things.

You can ask, for example, for a material summary. I'm going to ask for this one and show you the results. But you see you can ask for beam [? leads, ?] for bolt [? leads, ?] for material, for cutting [? leads. ?] You have different templates which are available. And this is what I get automatically. So it's quick and accurate, and this is coming from my 3D model. So I get everything about the columns, like the W8x10. Those are grouped together, you see, and you have the information on the lengths, you have the information on the material, on the weight, and it's multiplied by the quantity. So you have the total weight.

I have three pages like that, so I can go to the next one. You see, I have W10x33. I have angles. I have plates. And if I go to the last one, I may-- or it's part of the part page 2 and page 3-- I have the bolts also. I have information on the bolts. And I have the total weight, which is available.

So from here, you can print it. You can save it. I can say I want to save it. It's going to be available in my Document Manager. And what you can do, you can export it. So if you want to export it as a PDF file format or if you want to export it to Excel, it's up to you to do it here.

Just to show you another example, I would like to show you what we can get as a bolt list, bolt on-site list. And this is what I get automatically. So you have the quantity. You see, you get the exact quantity. It's not 25 or 30, this is 28. And you get the length, which is calculated automatically, and you have to weight as well. And again, you can save it, export it, print it,

whatever.

So different templates, which are available. And as I said, you can customize them. So if you want to go to the Bill of Material editor, just press this button. And if I take, for example, another one, I may take, for example, this one. And you see you can change the logo. You have access to properties. It's made of tokens which are filled automatically with some information coming from the 3D model. So you can create your own bill of material template as well.

Last part. I would like to explain what we can do now we have this model with stell members and steel connections, how we can share it with other people. The other thing I would like to mention here is about the drawings. As I said, with Advance Steel, you get DWG drawings. Until recently, you had to export them if you wanted to see them in plain AutoCAD.

Now we have an object enabler, and we have the one for AutoCAD 2017. This is Advance Steel 2017 Object Enabler. So you can download it from AKN, Autodesk Knowledge Network, and start it on your computer where you have only AutoCAD. And it gives you the possibility to open native DWG file from Advance Steel.

So in AutoCAD 2017 or even AutoCAD LT 2017, you can now open native Advance Steel drawings. So you get the information, and you can add dimensions, you can add edging, for example. So you can use also AutoCAD tools to continue working on your drawings, if needed.

Something I would like to mention is how to export your Advance Steel model to Navisworks for collaboration, for example. Well, it's easy. In Advance Steel, there is a specific icon for exporting the Advance Steel model to Navisworks. So it's going to create a 3D DWF file. But if you have Navisworks, it's going to open Navisworks automatically, and you get the Advance Steel model in Navisworks.

The good thing is that once you have the model in Navisworks, you can pick any elements, any Advance Steel object, and you have access to its properties. So the properties get transferred as well from Advance Steel to Navisworks. Also in Navisworks, you may know Navisworks, you have some tools for review, markup. You can also simulate the construction. You can add 4D. So those are different possibilities which are available in Navisworks that you may know.

So how does it work? I'm going to export to Navisworks, but first of all, I may-- it's just a

question of display. You see, I have the connection boxes. I may want to eye them. There is no need to see them in the Navisworks environment. Remotes I'm going to set the file. And what you can do, you can go here to this ribbon, and this is where you will find this icon to create the file for Navisworks. So just press the icon. And it's going to create the file. And if you have Navisworks on the same computer, it's going to start Navisworks.

What I wanted to show you here is that it's everyone working with Navisworks freedom. So you may have freedom, [INAUDIBLE], main edge. This is the same result. You get the Advance Steel model in your Navisworks environment. So in Navisworks, you have also tools if you want to navigate. You see, you can view it. So it's very free, don't you see? And you can navigate. You have access to steel members. You recognize steel connections as well.

And as I said, the good thing is that if you pick one of members, like this one, and if you ask for its properties, you have this dialog which appears. And you can see, oh, this is a [? recurral. ?] This section is a W10x33. So you have access to all this information. You know its source of part mark. This is a column C3. And so single part mark is this one. So you see, you have all this information which is available.

Now, if you want to pick one of the components of the steel connection, because it was the target of this class, you can pick the clip angle, and again you have access to all components from the steel collections. And if you want to pick just bolts, press Properties and again you have information about the bolts, what it is, which is created by the bolts. You have access to all this information.

What I wanted to mention here is just a viewer, which is a free online viewer. It's the A360 viewer. You can upload different file formats. And you can upload the DWG file of an active Advance Steel model. So it's an easy way for you to share a model through a viewer with some other people. So you have the URL link, which is there.

That is our own page, how it looks like. You just press a button, upload your designs, and as a result, you get the 3D model. And you have different tools. You can get measure, like [INAUDIBLE] by the way. You can add markups, you can create some exploded views as well. And you can access the properties. So if you pick one element, liking how this works, you have access to the properties which might be very useful.

So the thing is I wanted to mention here is how you can share an Advance Steel model on BIM 360 Team. So as you may know, is a cloud-based platform for communication, sharing files,

design reviews. You can upload models in 50 file formats. This is the URL link if you want to have access to it. You can have it installed on your laptop. And you can have it installed on a tablet or so like an iPad, for example.

So you have different tools. You can views them on there. You can add comments. You can add markups as well. And this is a very useful tool, also where you can upload the native files of Advance Steel model.

I'm going to show you with a quick video. So this is how it looks like. You see, you have different projects. So you may create a new project. And you have this Upload button. So you can go and say I want to upload this file, which is a [INAUDIBLE] file of the native Advance Steel model. Once it's there, just click on the file, and you get it open in the BIM 360 environment.

And again, you see if you pick one of the steel members, if you go to the Properties, you have access to this long list of properties, which came from the Advance Steel model. So this is really useful, and in BIM 360 Team, you have different nice tools for the navigation. You see you can display just some layers. You can stretch it to the right or to the left. And this is how you can display and navigate through your 3D model.

So as I said, you can upload the native file of an Advance Steel model, and you can also upload native files of advanced drawings. So you may share with some of your project members, only the model but also the drawings. This is something new. And something which is great and which is very new is a Compare tool. So I wanted to mention that. You can upload different versions of the same model. So it works with Revit model, with Advance Steel models.

And once these different versions of the same model are uploaded on BIM 360 Team, you have access to a Compare tool. It's going to show you the differences between the two models. And there are some tools to show these differences. If you want to see what has been added, what has been modified, what has been deleted, and you may have some additional information or so, what has been changed concerning these elements?

So I'm going to show you through a video. So again, this is BIM 360 Team. I'm going to take, as an example, this Revit model. And if you go here on the top, you see I have three versions of this same model. And you have the compare version. So you can say I want to compare between two versions. I want to compare versions three and, for example, the version one of

this model.

You say Compare, and BIM 360 Team is going to display the model, obviously, with different colors and with this dialog box. And with everything which is green has been added, everything which is red has being deleted, and everything which is orange has been modified. So you see, you can display. You can choose to display what you want to see on screen. And you have access to some information.

So you have the list of objects on the right, and if you pick one of them, you have some more information. If you want to see what has been added like this connection here, you see some more information about it. If you want to see what ways are the differences concerning this beam, you have this dialog box. And you can go, you see, through the branch, and you have access to more information. This is a much higher before and after, I would say.

So now let's change, and let's ask for comparing version two, two, and there's a version which will be, for example, for version two. So I want to compare version three and version two. And in this case, the difference is about the beam and about the connection. Now, remember also, this class is about connection. So I wanted to finish with that. Here, again, you see that the modification has been done on the connection. And you see this is like a switch. What is the difference between version two and version three? And graphically, you can see that the orange is longer or shorter, and it contains [? stiffness on it. ?]

So this is really a pretty cool feature, which is now available in BIM 360 Team, which helps you comparing Advance Steel models, but not on EOC or so Revit models [INAUDIBLE] coming from other software. And I think that's all I wanted to tell you today. So don't forget to fill out the survey. It should be online in the next minutes, I think. So give your feedback. If you enjoyed, say it. And thank you for your attention.

[APPLAUSE]