SHAUN BRYANT: Can you all hear me OK? Good. I'm not shouting. I've escaped from the party and went and jammed with my band in [INAUDIBLE] outside of Vegas. So my voice ain't so good this morning. Ended up doing things like, *A Whole Lot Of Love* by Zepplin and things so it all got a bit loud. My voice is telling me about that this morning.

AUDIENCE: What's your band's name?

SHAUN BRYANT: We don't actually have a name, weirdly enough. It's just a bunch of musical CAD people. We always get together every AU. And you'll see on the next slide why I have a musical slant. But there's a bunch of us that-- I mean, I sing and I song write. Got a couple of guys that play guitar. Couple of people from [INAUDIBLE]. One guy plays bass, one guy plays drums.

And we just rent a space. It's called MDV Entertainment, and it's literally just a box on an industrial complex outside of the city. I did about an hour at the party. Enjoyed the band at the party, actually. What were they called? The Spasmatics or something? They were quite good fun. Playing lots of stuff that I used to dance to [AUDIO OUT] But yeah, I escaped, and went and had some more fun. OK. See if we've got any extras, and then we'll get going.

How does that sound for you? Is that all right? Yeah? OK. Good morning guys. Welcome. On UK time, it is 6:30 in the evening. So I'm still working that one out. OK, I'm Shaun.

As you can see, I've been running my own business now for, let me think, 16 years. So I'm the owner and lead consultant of CADFMconsultants. Primarily providing facilities management consultancy, but also provide a lot of what I call platform technology consultancy around AutoCAD. I've been working with AutoCAD 28 years now for my sins. So that probably gives away my age, if I say I started on AutoCAD release 10 for DOS. For those of you that actually know what DOS is.

No, seriously, I did a class at an ATC in the UK recently, and they were all under 20. And I mentioned DOS, and it was like, huh? Had to explain to them how Bill Gates became Bill Gates, and it all just went completely off on a tangent for a while. I have my blog, *Not Just CAD!* You can find that, it's on Twitter as well and so on. Haven't blogged as prolifically as I should have. I've had a few personal things to deal with recently, bereavements and things. So just, things have to kind of take a back seat sometimes.

I've written for AUGIWorld, Cadalyst, Redshift. You all aware of what redshift is? Redshift is what used to be lineshapespace.com. It's an Autodesk website. But it's a blog site with lots of articles for small-medium enterprises, and I'm a small-medium enterprise. So I quite often contribute there.

My main line of work actually at the moment is, I'm a content or for LinkedIn Learning. Which used to be Lynda.com. Lynda.com got purchased by LinkedIn about 18 months ago. AutoCAD and Revit consultant and trainer. Certified professional in both, as well. And funnily enough, also a singer/songwriter. And I released my first album June 2012 on iTunes and Spotify and everything else. And we're working on the second one at the moment. Again, it's one of those things that I kind of fit in when I'm not working. So unless someone like Universe will come along and give me half a million to get the album finished, and then I might actually make it a priority. But I can't see that happening some time this century.

So that's me. You know I'm standing there looking a bit wistful and pretty with my Hofner acoustic. I managed to get a guitar endorsement which is quite nice. They asked for some promo shots to be done, so that's Leadenhall Market in London. One of the oldest market squares in London, right in the center near the Royal Bank-- near the Bank of England.

So I'm not going to read the Class Summary to you. I'll let you read that on the app. I am not going to do Death by PowerPoint and read every word there. Basically what we're going-- it's in essence plotting and publishing one [INAUDIBLE]. And I'm going to show you some little tips and tricks on how to make it work, how to make it happen, using all the tools.

Now it does actually say AutoCAD 2016 software, and I am running 2017 on my laptop now. There's no difference. Seriously, there is no difference at all to the dialog boxes or anything like that. And basically at the end of the class, you'll learn about printing and plotting. And the fact that they are no different. It's just a word.

Basically what you're doing is you are outputting your design and your content and so on. We'll also learn about working in model space and paper space. How many of you plot from model space, just out of curiosity? There will be some of you. It's OK, you can admit it. It's fine. It's not a problem.

And how many of you plot from paper space? Yes. So basically, the standard method is do all your design in model space, scale view ports in the layout tabs in the paper space, and so on. What we'll also look at is page set ups, all the little tweaks and tricks that you can work with

page set ups, and the Page Setup Manager. And we'll look at plotting, electronically obviously, to things like DWF, the good old dwif. And the DWFx, and also PDF.

Just as a-- this is purely out of curiosity for me, how many of you plot to DWF into the PDF? And then how many of you plot to PDF? Boom. Yeah, there you go. It's funny actually, of what's in lots of different companies. And PDF is the norm. And yet DWF is a lot more sophisticated, and has a lot more technical use to it. And it's a great file format, and it's very underrated. So hopefully at the end of this, you'll kind of understand some of the little tools on why DWF can be used well.

So, introduction to plotting and publishing. Let's have a little look at printing and plotting and scaling, more importantly. So I'm going to jump back into one of my AutoCAD drawings here. And for some weird reason by the way, my AutoCAD window keeps coming in small. Don't know why. So, apologies for that. It should just jump in like that straight away.

So I'm going to jump straight into the output tab here. And that's the main tab we're concerned with during this particular class. But what I want to talk about is the scaling. So, it's just a standard floor lay out there of a building. You've got your dimensions, your grid lines, standard sort of what I call architectural type drawing. There's nothing special there.

And just so you know, this class follows along with my LinkedIn Learning course on LinkedIn Learning as well. So the content you've got here, if you want to go and learn more and in more detail, it's actually online as well. And I do have a 30 day trial, so you can spend 30 days on LinkedIn Learning for nothing. So you can go and learn even more stuff as well.

So I'm going to jump into the model here, like so. And I'm just going to zoom out. And you can see here, yep, that's definitely not feet and inches. It's millimeters, guys, OK, sorry. Apologies for that, but hey. I come from a metric country. I can't help it. I can't help it.

So you've got the dimensions on there, and obviously the dimensions give you the context of the drawing. And you realize that there's no way that sort of like 1,830 feet for a doorway, for example, yeah? So, the idea being, is it's just a drawing. It's just a regular box standard AutoCAD drawing. But how do you fit a distance of 1.83 meters onto a sheet this big?

Well, the simple solution is, you use your scaled viewports. Now, it may be that somebody might want a title block around that in the model space, and plot it to scale instead. So within the model here, within the model tab, we can go into Plot or Page Setup Manager, and just do

a one off plot like so. I can go in there, usual way of plotting. Standard dialog box, you select the output you want to go to. It's quite scary how many outputs you have now, actually, as well.

I mean, I can just set it to A4 and send it to a fax on my HP printer at home, if I wanted to. But there's all these little different settings and things. But more importantly, there's all these different ways of plotting. And I'm not going to try and force any particular method on you, because the idea being is, I'm sure all of you work for different companies, or for yourselves, and have different ways of doing things. And the standard way, as I said, do everything in model, scale viewports, obviously, in the Layout tab.

So this drawing is set up to use that traditional method. So everything here is full size. So if I zoom in there, you can see that that particular restroom there is 2 and 1/2 meters wide, and so on and so forth. So if I come into my GA tab now, my layouts tab, you can see that we have a nice pretty blue viewport there. And if I click on that viewport, it tells me that it's at a scale of 1 to 100 just there, down on the status bar. That's how you print-- traditional-- print, plot, whichever word you want to use. It doesn't matter anymore.

Are you all aware of why the differentiation between those two words? Printing and plotting. Because I come from a background where we had to screw all the little rotating pens into the plotter head. Hit the button, 45 minutes later you got one drawing. And if you had forgotten to fill one of the ink reservoirs, you had another 45 minutes to wait. But now it's literally hit the button, done. And literally within seconds you have a plot.

Now, what I'll do here though, is just quickly jump into the GA tab. And if I go to plot, the nice thing about AutoCAD is you can preview stuff. So there's my preview, and it's all set nice, monochrome, ready to go. And I can now just right click and I can hit the Block button. If I want to. I'm not going to. Not going to bore you with that little bubble at the bottom right hand corner where it plots.

But I'll just exit that, and it takes me back into the dialogue box again. So that's the standard traditional method of plotting. Now what I want to take you through is just some of the little variances on that. Some of the little sort of tweaks that you can do. Now how many of you use the Publish dialogue box? There's a few of you. That's good.

Now, the publishing dollar box saves a huge amount of time. If you've got 15 layout tabs, you can plot them all at once. And the best bit about that, there's a little tick box where you can plot

them in the background. So they all crank out slowly in the background, and then a little bubble comes up and says, hey, we're done. So this tool's in there, so let me just jump into the Death by PowerPoint again.

That's basically printing and plotting and scaling. So what I'm going to go through now is the model tab, the layout tab. And I'm going to start-- the drawings are already there. I'm not going to start from scratch and draw an entire layout for you and then draw that the dimensions, details, and everything else. We look at the model tab and the layout tab, and setting our limits.

How many of you use the limits command? There's a few of you. How many of you know that model space is infinite? That it goes on forever, and ever, and ever? Yeah? How many drawings have you had into your office where there's something down there, and then there's something over there near Mars? Yeah? When you do a Zoom All or a Zoom Extent. Yeah?

That's what setting your limits is all about. And trust me, it-- When you do Zoom All, it zooms to the extent of those limits. So you have a finite space in an infinite space, that just makes your life that little bit easier. So we'll look at that. And we'll look at working with model space and paper space a little bit first.

So I'll just jump back into my drawing here. Now obviously you set your limits in the model. Like so. So there's my plan. And the nice thing is, is I can do a thing called an ID point. All aware of the ID command? Just type ID, Enter, and it asks you to specify a point. So if I go over here to an end point snap on a grid or something, I can click there, and it gives me the coordinates of that. So, roughly speaking, x is about 9,200. y is about 4,000 ish. So I know that that corner there is roughly 9,000 comma 4,000 when you look at x and y coordinates.

So what I'll do there is, I'll type the word, limits, and press Enter. It's that quick and easy. And it asks me for a lower left corner. Now the lovely thing about this is, I don't physically have to type in a value. I can literally just click there, and then it asks me for the upper right corner, which at the moment is trying to go to 12,9, because I haven't actually set my limits in this drawing yet.

So if I take this up here, how do I check where the coordinates are, roughly speaking, up there? Well I come down here, click on the little three bars there, and right at the top of that list I've got coordinates. Switch it on, hit the three bars again, and there's my coordinate read out there on the status bar. So if I come up here now, it's giving me roughly-- what's that? I don't

know, about 60,000 by 32,000. So my upper right corner, 60,000 comma 32,000. Because I'm in millimeters, so there's lots of thousands.

So if I do that now, I've set those limits. So those limits now, if I do a Zoom All, over here on the Navbar-- can you see? It zooms me to that space I've set in the infinite model space. And it just gives you that little bit of control. Because you'll always get that drawing where there's something there, and there's something near Mars. It's going to happen. But the idea being, is you fix that drawing by making sure that those two objects are brought together, and then you set the limits so that every time you do Zoom All, you're in the right space.

Now if I did a Zoom Extents, I'll just double click on the wheel there, it's pretty close to Zoom Extents. But Extent zooms to the extent of the visible drawn objects in the drawing. So everything that's on a layer that is either on, or thought out, it will zoom to the extent of those. So Zoom Extents doesn't help you in the infinite space, so to speak. It does help you if you do this, where you zoom in really, really, really, really close like that, and then you think, where the hell am I? Just double click on wheel, Zoom Extents brings you back that way.

But, also now, you've got the ability with the Zoom All-- he says clicking on the wrong button-- do a Zoom All there, and that zooms you. But more importantly, if you set those limits, you might be working to a prescribed grid. So in the UK, we have Ordnance Survey. Ordnance Survey [AUDIO OUT] a grid of what they call north things and east things on a map. We can specify those physical coordinates in the same way that we specify those limits.

So it may be that we've got a fixed place where this building is, and we need to put the Ordnance Survey gridding instead. Instead of just what I call a temporary grid. So once you've got all of those limits set up, we then need to start looking at working within the model space and the paper space. Now we obviously know that this is all in millimeters, and I'm working in millimeters because I'm English. Again, sorry.

And-- actually. no, why should I apologize? You stole feet and inches from us. And then we went metric, and you decided to keep it. That's the way it works. I'm not even going to mention Donald Trump either, because I will get into so much trouble. So, we've got our millimeters all set up there in the model space. Our limits are all set up. We're ready to go now and start thinking about scaling.

Now, when we're working with the model space and the paper space, if I go into the GA that I

mentioned, that's all nicely set out at 1:100. And I've got a staircase, A, which is another viewport here. Just looking at that particular staircase, and it's the top left stair case here in the model. It's this one, here. Now you'll notice, I've got one single dimension that looks a bit different there. Yeah, can you see that? I've got to dim there, and I've got to dim there like that. Now, why are they different sizes? Can anybody tell me? You get a LinkedIn pen if you tell me.

AUDIENCE: [INAUDIBLE]

SHAUN BRYANT: That's just [GIBBERISH]. Louder.

AUDIENCE: Annotation.

SHAUN BRYANT: Somebody said annotation. Would you like a pen?

AUDIENCE: Sure.

SHAUN BRYANT: Now you stay there. You've got something on your leg, that's fine. You're welcome. Now, yeah, annotation. Now annotation and annotation scaling we will cover in a little while. But the idea being, is that annotation has to be communicated effectively with the right scales. Now I know all of you have set up a viewport, and the scale of your dimension has been so tiny that it just looks like a little line. I've done it as well. Annotative scaling allows you to avoid that. So when I go into stair A, here, you can see that dim is consistent.

If I go to GA, funnily enough they all look the same size. Regardless of scale in the viewports. And that's all to do with your annotation scale, and annotative scaling. Which we will cover it in a little while. What I'm going to do is, I'm just going to move my viewport Over.

Just drop that into that corner there like that. So there you go. And I'm going to create a new viewport, so usual thing. Home tab, layers here, so I'm going to quickly show you all the layers I've got in the drawings. There's all my layers there. Drop down, and there's my viewports there, so I'll just make that current.

Now obviously, when you're plotting, there is a little rule with viewports. What do you do with viewports in the Layout Properties Manager?

AUDIENCE: Turn them off, [INAUDIBLE].

SHAUN BRYANT: No, don't turn them off. Don't freeze them.

AUDIENCE: [INAUDIBLE].

SHAUN BRYANT: That's the one. Don't not plot. So that's-- funnily enough, right over here for me. It's that little one there. So always set your viewports not to plot. Otherwise you end up with lots of pretty boxes all over your layout tab when you plot it. So just make sure it's set not to plot. Always do that little sanity check.

So that's my viewports there. What happens now with the later versions of AutoCAD is, when you're in your-- this, from a training perspective, this is just so damn confusing for a trainer. Because you've got your Layout Tab's bottom left. You've also got your Layout Tab on the ribbon. So when I'm training in a classroom, it's click on your Layout tab. And they go, huh? Because there's two. There's that Layout there, and there's that lay-- well, there those Layouts down there.

So just be aware that they've got the same name. And when you are talking to somebody in the office and you tell them to click on your Layout tab, just make sure you obviously tell them which one, left or right. So in the Layout tab here, I can now jump in and create what is called a Layout viewport. So I'm going to pick a rectangular one, just to save time. So that's a click, and a drag, and a click. So there's my viewport there.

Now, what you'll find is, as soon as you create a new viewport in AutoCAD, it automatically defaults to a Zoom Extents view in that viewport. So I've no clue what scale that viewport is. I need to double click inside it. And this is the scaling thing I was talking about. So I'm now a scale of 0.0044730. Possibly an unrecognized scale, maybe. However, what I can do is, I can zoom in and out, and pan, and so on.

But the problem I've got is, my dimensions now. Because it's an unrecognized scale, my dimensions aren't consistent. So I'm going to zoom in on, let's say, this rest room here. I'm not going to worry too much about switching layers on and off in the viewport as such. I'm going to get it to there like that. And then you'll notice I'm now 0.03. So I could probably get away with something like 1:30 there maybe. Let's try that. That's pretty close.

So it's now a recognized scale. But you'll notice those dimensions are way, way, too big. Way too big indeed. So I'm going to leave that viewport as it is, double clicking outside the viewport to deactivate it and go back to my model tab. So these dims here, you'll notice, are not annotative. So they're just plotting, scaled to whatever size they are in the model space. If I

want that to be an annotative dimension, I have to change the dim style. So I'm going to jump into Properties. If I click down here, he says, OK, I can just about see the names of them here. I'm going to find the anno one. There we go. There's my annotative one, and I'm going to give that an annotative scale now of 1:20. Just to confuse the issue. But you'll notice-- can you see, as soon as I do that, it changes size. Now, if I go back now to that stair A, can you see that dim has disappeared? Can anybody tell me why?

AUDIENCE: [INAUDIBLE]

SHAUN BRYANT: Pardon me?

AUDIENCE: [INAUDIBLE]

SHAUN BRYANT: Yes. Because the annotative scale there, doesn't match the viewport scale. That's exactly what's going on there. So what I need to do is, I need to make sure, back here in the model, that I select this. And what I do is, Annotative Object Scale, Add Delete Scales. Again, my dialog boxes are doing some very weird things on this projector. So if I go in there, there's my 1:30. I'll OK that and add it. 1:20 I don't need any more, so I'll delete it. And I'll OK that.

Slightly different size, but when I jumped back here into stair A, can you see that? It's now consistent with that. So that's the scaling thing that I'm talking about. So as long as your annotative scale, in your model, on that dimension is 1:30, and as long as your viewport scale remains at 1:30, it works. And you make your-- you would make your dimension style annotative.

So if I jump into the Home tab, Annotation flyout, and come in here. You can see-- I'm not sure if you can see that. Can you see there's a little symbol there, next to that style? That's telling you that its an annotative dimension style. And the way that you set that up, if I jump into Modify, is if I go into Fit here, its Annotative there. Just a tick box.

So that's setting your limits, and working with your model space and paper space. Now, we've kind of leapt ahead a little bit there, with the annotative scaling. So what we need to think about-- I'm going to jump back a step-- is when you're setting up all of your plotting, how many of you use Page Setup? Or do you just Plot Preview and Plot? See not many of you [INAUDIBLE] page setups.

Page setups are a wonderful, wonderful time saver. Huge time saver in fact. And you can set them up in the Model tab. You can set them up in the Layout tab. Modify them, and if you've

got other drawings with ones that you want to use, you can import them across as well. And they're a really, really useful little tool. So let's just have a little look at those.

So I go to the Model tab, and I right click on the Model tab, and I go, Page Setup Manager. Good thing is, it's a nice big dialogue box that I hope you guys will be able to read. There we go. Let's make that nice and big. Now, it's very simple.

At the moment, in the Model tab, I don't have any page setups. There are none at all. Because if I look at this-- I now feel really short. Can you see where it says model, with the asterisks? That's telling you the layout.

So the default for the layout, in this case the Model tab-- and I'm not using it is a Layout tab, by the way. I'm saying the layout of the Model tab. The Device Name is none, Plot It is none, and it's plotting to a 210 by 297 millimeter sheet. Which is an A4 sheet in UK measurements. So if I wanted to set my up to plot to a particular thing, what I could do there is, click on New, and give say an A4-PDF, like so.

And I could OK that. And I can set that to plot to PDF like so. And there's the A4 there. I'll center the plot as well. And as you can see, it's jumped over to one side.

I'll set that to monochrome, and assign that to those. And I'll OK that. And there it is there. Double click it, and that now applies to anything I plot out with that particular Model tab. And that's how I just set up a simple page set up like that.

And I can use that over and over again. Now, I can do that in the GA, as well. If I right click here, Page Setup Manager, I've already got some set up. Now, you'll just have to excuse me one second. I'm going to have to go to the bathroom. I won't be a moment. I do apologize profusely.

All good? That's better. And I've got an A1 sheet size there. And I've got an A4 Scale to Fit there. So, as you can see, the stair A is using the A1 landscape. And the GA is also using in the A1 landscape. So when you select one of these, and you double click-- so if I selected A4, watch the GA here at the top of the list. If I double click, it adopts a different page setup. So it's now plotting to a much smaller sheet, an A4 Scale to Fit.

What I've done with each of these is the A4 Scale to Fit is a much smaller sheet. And it's literally just fitting the sheet. So you can completely ignore the scale on the drawing. So how

many of you plot like that sometimes, to a smaller sheet and ignore the scale? And you might put it on a clipboard, or put it in your portfolio to take with you on site, or whatever. You can do that, and set it up so that all these different page setups are in place.

Now one of the benefits that this allows you to do, if you're a CAD manager and you've got two or three different plotters around the building, different areas where people work with CAD. These page setups allow you to plot to different devices as well. Not just sheet size. So the reason I set those up, is I've got an A1 plotter. And I've also got an A4 printer that somebody might use. So an engineer that's going out on site all the time, he'd be sitting next to the A4, plot an A4 out of a part of the drawing that he needs to take with him. And off he goes.

Now I'm talking about this is if we use paper all the time. How many of you use paper? Still a few of you. Still a few of you. It's quite funny. I'll give you a slightly anecdotal story.

I went to a conference about six years ago now. And it might have been a bit longer, actually. It's when Carol Bartz was still the chief exec at AutoDesk. And the actual conference was sponsored by HP. And Carol Bartz basically stood up on stage and said, we're now in a paperless industry environment. You can imagine all the guys at HP going, hmm. OK. Just paid for the conference and you're telling us not to use our products. Anyway, it's just one of those funny little moments where three or four of us just looks at each other and went, should she really have said that?

But we are moving to that environment. We are moving to that environment. So for example, my A1 landscape, if I go in to modify that, it's actually going to a DWF. But I can use or something like design review, or perhaps, anything else maybe. So the idea being, is I can set up any sheet, any device, any size, any plot style as well. Do any of you guys create your own plot styles? Do you use CTB or STB?

[INTERPOSING VOICES].

SHAUN BRYANT: Yeah. So, again, there's a variance there as well. Because you've got color dependant plot styles, and you've got named plot styles. Which we will cover in a little while. So the whole idea is, is this Page Setup Manager allows you to go in and basically set things up to work for you. So use those page setups. They're very quick and easy to use.

So you can see that I've left that at the A4. So I can come back there, Page Setup Manager, and go OK. I want to change that. So I select A1 landscape, double click on it. The A1

landscape page set up now applies to the GA tab. And I close that out. It's set up like so.

Now that particular title block is actually drawn in-- well, it's not drawn in the Layout tab. I correct it in the Model tab and then copy it across. But it's set up for an A1 sheet. Which is 841 millimeters by 594 millimeters. So, about so big, like that. Whereas the other one, the A4, is about that. So the whole idea is that you're scaling something to fit onto a different sheet size, and perhaps plot on a different device.

So that's why those page setups are there. Now last but not least, importing a page setup. So if I've got two or three different drawings open at any one time, I can import a page setup from one drawing to another. Now sometimes, your page setup might not be the same as a third party's page setup that is sending you drawings. So you can import their page setup into your settings, into your Page Setup Manager as well.

And it's very quick and easy to do. I've got a couple of drawings opening. So I've got a CTB file, and an STB file there. So I'll just quickly jump into the Page Setup Manager, and I want to import one. So I import like so. I'm going to jump in here. As usual it's gone back to my root folder, but don't worry. We'll soon find those. There we are.

So there's my class there. So if I pick, say, the CTB drawing like that, and I Open, there's the page setups there in that drawing. And strangely enough, they're named the same because I did copy the drawing. But you get the idea there. So I'm looking in the CTB drawing now, for a page set up that I might need to use.

Nice thing is, if I click on one, it tells me what the settings are before I import it. So I know it's the right one. And I know that the parameters in that page set up are the ones that I want. So I can jump in there and bring things in ad nauseum. However much I want to.

Now, viewports. Do we all love viewports? More importantly, did you know that you can set up viewports in your Model tab? Question. Can you plot from the viewports in the Model tab? I love this one.

Simple answer is, yes. Of course you can. Because you can plot for model, no problem at all. However, the viewports in the Model tab are different views on the elements you have in the Model tab. So you can be in a particular viewport in the Model tab and say, I want to plot this. And then you can start utilizing your page setups again.

Because you might have your particular model space set up into four equal viewports. And you

might have a page set up for each particular viewport, because it's a different view on the model. So let's have a little look at the viewports in the model, and the viewports in the layout. And we'll also do a little bit of polygonal viewports and clipping viewports and things as well, which is quite good fun.

So I'll jump back into that main 01 plotting and publishing drawing again. And what I'm going to do, I'm going to create a new layout. In fact, no, what I'll do, I'll do a move and a copy. Much easier. So I'll copy the stair A one there, I'll move it to the end. And I'll create a copy.

Now, are you all aware of how to do that? Yeah? Moving or copying layout tabs is so easy now. Really, really easy. In the old days, it was really hard to do this, because we didn't have tabs. We only had tile mode 1 or 0. Luckily, AutoDesk thought about that one, and it's a lot easier to do now.

So I'll OK that, and I've generated a new Layout tab there. Which is an exact copy of that one there. So there's my Stair A 2. So I'll go in there and you can see that I've got viewports there. And I've also got the Model tab there where I can create viewports as well.

So I'm going to put some new reports in that Stair A 2 in a moment. Let's look at the viewports in the model first. Now, if I want to set up viewports in there, I go to the View tab on the ribbon. And you'll see that you have Model Viewports, like so. So if I click there, I can have all these different configurations of viewports.

Now be aware, if you want any named views in a drawing, this came up in the certification exam last year. This is quite a good one. If you ever want to change your named views now, you have to go up here, to the View Manager. See where it says Top, and View Manager. That's where you can create all your different views and preset views.

So you can see here, I've got some preset views. If I go to something like the Entrance, Set Current and Apply, and OK that. Takes me to somewhere completely different because I moved everything, remember, with the limits. So it's like, oh, OK. It won't find it anymore. But what I can do there, is I can create different views in the View Manager there. And be aware, that's probably the quickest way to get to the View Manager.

So if you're doing any certification or anything, there's always a question on something like this. So check your View Manager like that, and that's how you can set up the views there. And you've obviously got your preset views, like Top View. So if I set that as current, Apply, and

OK, that takes me back to the top view there like that. So that's named views.

Viewports are something slightly different. So if I go in there and I want four equal viewports, it splits the screen. Now these viewports-- of course you can plot from them. There's nothing to stop you plotting from any of these viewports. But you can set up a Page Setup for each one.

So if I go to-- let's say I go into my top left viewport, like that. And then what I can do here now is, I can right click, Page Setup Manager, create a new one there, and call it top left. And I'll use the A4 PDF settings for now. Leave all of that as is, and OK it. And then what I'll do is, I'll Apply that now to my model. And it's using the top left page setup settings.

Because you might have a different view in each viewport that needs different settings. So that's my top left in there like that. So if I close that now, and perhaps zoom in, and let's say I'm looking at those columns there. So if I now right click and go to Plot, it's using my top left, what to display there, so it's DWG to PDF, also A4. I'll un-center the plot there, maybe. Or center again, it's entirely up to whichever way I want to set it up.

I might want to do Window. So I'll pick a window where I'm going to plot, like that. And that's now my top left settings. Or is it? Because I've changed the settings now. It's not showing me a page setup anymore. So if I go there and go top left, and then preview that, it's all set up. Ready to go to that PDF, for that particular viewport in the model.

So your viewports in the model are a method of viewing particular views of the model in the model space. However, you can plot to them as a viewport, like that, but in a slightly different way to the Layout tabs. If you've got a really, really big model in model space, that's a really nice way of getting around and plotting stuff out. Because it just means that you've got a setting for each viewport, depending on your viewport settings in the model tab.

So I'll just cancel this. And if I go back to Viewport Configuration there, go back to a single one, it'll always go back to the current viewport, which is that top left. So when I click on single, I'm zoomed in on those columns at the top there. All OK with that? Does that help anybody, more to the point?

Does that mean that you can now utilize that a little bit in your working environment, so that you can then have four different viewports of the same model, but have differing views in each one? So I'm zoomed in on the columns there, but if I set that back to you four equal, I've now got four equal views of the columns. And so on it goes. OK?

Now, I'm sure most of you just prefer to have that, because you've all got massive great big 27 inch screens back at base, haven't you? Unlike me, with my MacBook screen. My little 15.1 inch MacBook screen. Or better still, you might actually own one of those nice Microsoft Surface Studios that are out in the exhibition hall right now.

I got a quote for one of those yesterday, and I really wished I hadn't. They're about $4,000 a go at the moment. So I won't be rushing to buy one soon. But hey, they are lovely things to look at. They are a thing of beauty.

Polygonal viewports, clipping viewports, and making viewports from objects. Do we all use these? Yeah, got a few of you. So I'm going to jump back into AutoCAD again. Now what I'm going to do, I'm going to jump into my Stair A 2, here. Now, you'll notice something weird's kind of happened. What's going on there?

If go to Stair A and Stair A 2, there's something very strange going on. Let me just jump back into my layers here for a moment. And what we need to check is, ooh, there's some layers being turned off. If ever you get anything like that happen, which I have, they are-- I've deliberately turned these off. So, Title Block, Title Text, they come back. Viewports, switch those on as well as well so I can see. And obviously my text is kind of important as well.

So if I bring that back there, everything is back again. So if you get something like that happen, it's just a sanity check on the layers. Always check your layers. Make sure you can see what you need to see. So if I go back to Stair and A 2 like that.

Now, I've got that viewport that we set up earlier back here, because I did a copy, remember? So there's Stair A and Stair A 2. So I'm just going to lose that one there. Just going to delete that. Now, what I've got here, you'll notice, is I've got got a viewport-- if I just zoom out slow, but that viewport there. Now obviously, you can click on it, click on the grips, perhaps make it a bit smaller like that.

Which leaves me with a weird and wonderful space here. I've got like an upside down L shape. Now the lovely thing is, is if I just jump back into my viewports layer, and go to my Layout tab, I've got the option here of creating a polygonal viewport. Now, that means that I can specify the start point and the end point of the viewport. So if I use my Object Snaps, and just come around like this-- just following the title block around-- and then Enter, I've now got a really weird shaped viewport, which doesn't help my plan B whatsoever.

But, the benefit I have is, I can double click in here, and perhaps bring that down like that. And I might have some-- I might have a table up here, perhaps. A room schedule or something like that in the model space as well. And obviously that's-- in this particular instance, is not a perfect environment for that drawing. But think about it. If you've got an L-shaped building, if I wanted to have an L-shaped building in its own viewport, I've got an L-shaped viewport.

If I've got hexagonal building, I can have a hexagonal viewport, if I need one. So the idea being is, the polygonal viewport setting allows me to obviously generate different shaped viewports apart from the bog standard rectangular viewport. And again, just double click outside to de-activate. I could set a scale for that if I wanted to as well. So I'm just going to remove that now.

And what I'm going to do now is, I'm going to clip a viewport. Now, clipping a viewport, really, really easy to do. I'm just going to literally pop a rectangle, say from there to there. Now that's not a viewport, I hasten to add. That's a rectangle drawn on the Viewports layer. So I jump back into the Layout tab, and I can clip here. So I can clip a layer of viewport object, and reshape the viewport border.

So if I click on Clip, it says select the viewport to clip. So there's the viewport. And select the clipping object, which is there. And it clips it to suit. This is very, very useful, because it means that you can have a viewport that might be already on your drawing. And you think, mmmm, not happy with that. Doesn't look quite the way I want it to. You can then draw an object and clip it to suit.

And that gives me a much cleaner viewport. And then what I can do, if I need to move that, again just use the Move command, Object Snap, Object Snap. And that's a much better utilization of space, because I can guarantee you'll always find that with your viewports on your layouts, in your sheets like that, that you run out of space. You want to put so much on a drawing-- my suggestion there is, is if you do run out of space, create another layout tab. There's nothing to stop you doing that, because everything is in the model space. You just got a create another scaled viewport.

So, do it that way, rather than try and squish everything onto one particular Layout tab. You can have-- well, the layouts are limitless, but I wouldn't try it. You'd probably crash your machine quite well with about 250 Layout tabs. But, I mean the most I've had on corporate and industrial drawings, is somewhere around 15, 20 maybe. But a lot of those are quite small

ones, like little details of structural steel work, for example. You know, door openings, that kind of thing. So, it depends. Depends on how you're setting up your project.

So, viewport scale and annotation scale. Let's review what we've done. We've looked at the viewport scale. We set it to 20 and 30, didn't we? And the annotation scale, we tweaked, with our annotative dimension style. So the annotative scaling allows you to have everything consistent in those viewports. So as long as your dimensions, your text, you can also apply it to hatching-- as long as I've got that annotative scale, of say 1:30 they will all appear nice and neatly in that 1:30 viewport in the Layout tab.

Make sure that you check that one. It's one of those ones where, you just go and check the properties. Like I did. You saw me change it from the 1:20 to the 1:30 in that viewport. It's just a case of adding another annotative scale, or sometimes deleting an annotative scale as well.

Now, any of you use the Quick View, in the Drawing tabs much? I quite like them, they're-- I mean, a lot of the content that I do for LinkedIn, Lynda.com. This allows me to kind of jump between drawings. And it allows me to have multiple drawing set up when I'm creating the video content. So your drawing tabs are up here. And you can see that I've got various drawings open.

And the nice thing I love about this is, I can hover over that tab, and it gives me all of the Model tab, and the layouts. So I can now go here, to that Model tab, in that drawing. I can now go here, to Stair A, in that drawing. And I can now go here, to GA, in that drawing. So if you've got a number of multiple drawings open, it's just literally hover, click, hover, click. It's a really, really nice tool to use.

Now, I can remember having to use alt-tab all the time to jump around between drawings, when I was working with older versions of AutoCAD. This way I can see which drawings I've got open. But also more importantly, I don't know if you can see that. Can you see there's a little asterisk on the tabs? That little asterisk is telling you that that drawing hasn't been saved yet. And it's a great little sanity check just to say, oh, you've made a change but you haven't saved it yet.

So if I went to, let's say the plotting and publishing one here, I went to the model, clicked on Save, you see that little asterisk disappears. It's actually that one there. So if I hover over that one, becomes that drawing there. Click on Save. Can you see the asterisk is disappearing on each one as I save it?

And it just-- it's just one of those little memory aids that you look at it and you go, oh, haven't saved it yet, just before you walk out the door. Kind of like that. So that's a nice little tool. And what's even better still, is if I hover over these and then hover over that, I can plot. So I can plot that particular GA just by hitting that button there. There's the GA. There's the Page Setup, and off we go. I can preview that plot.

And you'll notice that, hmm, things are in red. OK, that's my Plotting and Publishing STB. Now, the reason for that is, that we need to start looking a little bit at plot styles, just briefly before we end. We've got about-- what've we got? 12 minutes ish. So let's have a little look at how that all works. He says, not going back to the PowerPoint first. Let's get-- there we go.

So, plotting and publishing from that quickly, just hover over the tab. You've got a Plot icon, and you've got a Publish icon. So we're going to look now at the publishing, and also the color tables and so on. So, color dependent plot styles. Hands up, who uses CTBs. Hands up, who uses STBs? Yeah, there's a couple of you.

CTB tends to be very common because it's the default setting. So everybody goes, OK, I'm going to use that one. Because they don't want to go any further. We're very good as humans, we're very resistant to change. And also resistant to progress.

STBs can be very, very useful. Because they give you a named plot style in your Layer Properties Manager. And you might just want thicker lines. You're not worried about color, you're worried about thicker lines to demonstrate something. So that's where the STB comes in.

And changing those plot styles, there's a little process involved. And be careful, because when you do change from a CTB style to an STB style, there is no turning back. You cannot restore back to CTB after you've changed it to an STB. OK, so just be aware of that one. So if I jump into my CTB drawing there-- there we go.

Now, I have already converted to an STB drawing, and I've got it open here. So if I go into my Home tab, and into my Layer Properties here, can you see there's my plot styles there? So that's because I'm using an STB style there. So if I went into my Page Setup Manager in here, like so, and I look at, let's say, A1 landscape and modify it right now. Can you see it's CTBs at the moment? And it says that the CTB is missing, because it's gone to STBs. So the monochrome 2 style is missing, because it's a CTB file in an STB drawing.

So that's my STB. I'm going to go back to the CTB drawing there. And what I want to do is, I want to convert this to an STB file. So the first thing I do is, I type convert CTB, like that. And I can then go and pick a CTB style that I want to convert to an STB style, a named plot style. So I've already created this one here before the class, Monochrome 2.

So I click on Open. And that now converts it, can you see, to Monochrome 2 STB, which is already there because I've tested it, and I'll save. Do I want to replace it? Yes I do. Now, the style is now created. So that means I've created a Monochrome 2 STB file.

It does not mean, however, that I've converted the drawing yet. All I've done is created the STB file. Now, I'll OK that. And then the next one is quite a long command, it's Convert P Styles. So it's that one there, Convert P Styles, Convert Plot Styles. So if I click there now, it now tells me, oh, you should convert your CTB styles. We've already done that, so we can click on OK.

And there's my Monochrome 2 STB there. So that's the one I'm going to use to convert this particular drawing from CTB to STB. Click on Open, and that is now converted. And the only way you know is on the command line. It says drawing converted from color dependent to named plot style.

There's no little dialogue box, or bubble, or anything. That's it. It's just a little line on the command line. So it doesn't make it very obvious, which is sometimes a little bit annoying. But this is now an STB drawing, even though I've called it CTB at the top there. And the way to check that, again, is your Page Setup Manager.

So if I come in here and select A1 landscape again, and go to Modify, you'll see that my CTB is missing, and everything now is STB instead. So it's Convert CTB, to convert your CTB to an STB file. And then you run Convert P Styles. Once you've done that, though, you cannot go back. So, that particular file there, my CTB, PlottingandPublishingCTB.dwg, should have already saved as a different file name first.

So the way that I do this, is I have one called CTB, where I use CTBs. One called STB where I've got STB. Otherwise, it causes a whole world of chaos, a whole world of pain. Especially as a CAD manager, when one of your senior draftsmen says, oh, I've just converted the major project drawing to a bunch of STB files. Did you save the CTB one? Oh, no, I didn't. No way back. No way back at all. So just be aware that there's no way back when you do that. There's

no convert back again.

Now, how many of you configure plotters? One? Yeah, some of you. Now, again, this is one of those ones where it's just a case of jumping into the settings. But the way that I like to do it, it's real quick and easy. If you go to the Output tab, you can go in here, Plotter Manager. And there's all your PC3s there.

So if I wanted to create a new one, there's a lovely [INAUDIBLE] on there, Add A Plotter Wizard, boom. So I double click. Go through the steps, set it all up. My Computer is a network. Plotter is a system printer. There's the manufacturer. There's the model. So I'll go with something like, I don't know, DWFx, for example.

And now I can import any PCB or PC2 files that might exist for that particular one. Go in there, plot to file-- well, I've got nothing to link to. So this won't go any further, unfortunately. But you can go in there and Plot to File or Plot to a Port. And you can just configure that, and then obviously that particular plotter is set up.

Now if you want to go in and edit individual plotter files, you can open these as well by double clicking on them. And it'll open up the Plotter Configuration Editor. So there's the ports that it uses, and the document settings. So you can change paper sizes and so on.

One of the jobs I worked on was a really long highways project. And we had a big long stretch of road, and we wanted a big long drawing to plot, to go up on the wall for the public inquiry, so the public could see what the new road was going to look like. So we had a great big A0 plotter with a big roll of paper on it. We just changed those settings to say that we wanted a sheet that was like this long instead of a standard size. And that way we had a custom long sheet that came off the bottom.

So you can go in there and change the plotter configurations very quickly and very easily. And you can obviously rename them, copy them, in any which way. Obviously, don't overwrite your existing standard settings, because then you can't remember what they were before. Always Save As, never Save. Otherwise you'll overwrite them, and then you're done. It does-- unless you remember what it was, you're going to have to start from scratch.

So plotting electronically. This is the bit that I wanted to get into, the DWF, the DWFx, and the PDF. Want to take you guys through this very briefly. Won't take long. Now I'm not going to, obviously, go in and run things like Design Review and Markup Set Manager, and so on. I'm

just going to very briefly show you how that markup can come back into a drawing.

We've also got A360. How many of you use a 360? Ah, some of you. A360 Drive is like Google Drive, Dropbox, and so on. If you set yourself up with an AutoDesk ID, which I'm assuming all of you have to be here, that means you've automatically got 25 gigabytes of storage space. Go to A360.Autodesk.com, AutoDesk sign in with your AutoDesk ID. There's a whole shitload of space there to store documents, or your Bon Jovi albums, or whatever.

And then, obviously, you've got your PDF files as well. Viewing PDF, so I'm assuming everybody's got Acrobat Reader on their machine. Yeah? So if you want a view a PDF, double click on it, poof, it opens up. And there's plenty of bits of software out there that allow you to convert to PDF as well. Obviously the Adobe stuff, but there's things like PrimoPDF, Soda PDF. They all allow you to convert your files to a PDF if need be.

So last but not least-- I'm just going to jump in here and-- the best way to work with all of your settings and plotting, is here, In the export to DWF PDF panel, in the Outputs tab on the ribbon. Because you can go in here and you can just say, right, I want to export to DWFx. And you get a nice big dialogue box like that. Now this is a single DWF. So that's great, you know, but it means I've got to do it one by one. If I've got 15 Layout tabs, that's going to be kind of mundane, isn't it? I'm going to have to going into each one, click, save, and off we go.

So, exporting out, all of your settings are in here. So there's your Preview. You can export your DWF options. Saying set everything up in there, all your data options and does it need a password, and so on. And you've got your PDF options as well. If I come in here, my page setups are there as well. So I've got a page setup there, where I can go in and edit all of my page setups that are in my particular Layout tab at that time.

This is also an override. So I can kick in here, and if I don't like the page setup I'm using, I can change it. I don't have to use the one I've already got. So that's exporting out. Now, if I want to do this all in one go with all my 15 Layout tabs, I just hit Batch Plot. That's my Publish dialogue box. There's all the different offerings that I have there, that I've got open at the moment. These are all my different drawings by the way. So can you see that I've got a whole group of drawings open? Platinum publishing, CTB, and STB, and that's giving me-- can you see, I've got a model, CTB model, and STB model.

So if you only want to plot from one drawing, what you would do is, you close the drawings that you don't actually want to plot from. So I won't save that list of sheets right now. So if I close

that, now I close that. I've only got the one drawing open. And then if I come in here like so, and hit Batch Plot, it then just shows me-- there's the Model tab, and there's the Layout tab.

Now be very careful. Just going to close that a second. Make sure that you hit Save, before you batch plot. Because if you go in and set all those settings in the Published dialogue box, and you haven't saved the drawing, it will say, oh, you haven't saved the drawing. Go back and start again. And it's great for that. It's one of those ones where you've just gone in and you're just going to set all of this up, Ready to Plot, Number of Copies, Plot Stamp, Publishing Background. And it goes, you haven't saved the drawing.

So always, always save the drawing before you hit the Batch Plot button. And what you've got here-- I don't want that one to plot. I don't want to do the model. So I'm going to remove that from the list. And I can rename these as well, which is really quite useful. Because at the moment, all I've got is the drawing name and the tab name.

So what I might do here instead is, I might rename these. So if I rename the sheet-- instead of having 01PlottingandPublishing, it might be that I want something like 01DWG, let's say, GA. And then I can rename this one. And unfortunately there's no multiple way of doing this. You do have to do them one by one.

But you can see from a consistency viewpoint, I'm renaming the sheets. I'm not renaming the files, or the Layout tabs, of the Model tabs. This is purely in this dialog box. And it's a bit like setting up the page setups. You've got a list a page setups you use, so you might have a sheet list that you use to plot as well, when you're batch plotting.

So if I change this one as well, just rename it real quick. So I'm not renaming any drawings or anything here whatsoever. And I'm just going to make that a little bit smaller there, so we can see what we're doing. There we go. So that's-- they're all using this default A1 landscape page setup. I can go and change the page set up for a particular drawing if I want to. And it's telling me no errors. That's really nice. If you get errors there, it means that your page setup isn't working for that particular tab, or Layout tab. So you can go and check it, and make sure it works.

And last but not least, you can include a plot stamp. So, that's things like date, time, who plotted it, and so on. And it publishes in the background. So these are all going to go-- I'm hoping-- to my A1 landscape. So if I just select that for each one, it should, if I remember rightly, go out to either a PDF or DWF. I can't remember which one I set it to.

So, I can Save. So if I save that as what they call the DSD file-- so I'll just drop that into my AU, there we go, and Handouts, and OK. So I pop that in there, plottingandpublishing.dsd. Good thing is, that will now remember what I've just done, the renaming of the sheets. So if I go back into batch plotting later, I can click on Open, and go and find that DSD, and all that renaming are just done is saved. And I can load that up ready to go. So I just hit Publish. Thinks about it. There we go. It's processing in the background. Click on Close. And I've got a little plotter icon chugging away there in the corner.

So when that's done, the usual little plotting bubble comes up, and you've got your batch plot to whatever file format you're actually using at that given time. Now, obviously, you've got those tools. Do you want to know what DWF writer is? It's actually a printer driver. So it's a bit like printing to PDF. But the DWF writer allows you to do a Word document to a DWF, or an Excel spreadsheet to DWF.

So it's still out there. Some of these are a little bit older now. AutoDesk haven't updated them. Design Review is still at the 2013 version, I think. Had a conversation with some of the AutoDesk guys yesterday about this. And it looks like Design Review might be getting a revamp at some point, to tie-in with all the A360 stuff. So I think there's going to be some A360 functionality going in there. But don't quote me on that, OK? I don't know.

Markup Set Manager is in AutoCAD. So when you're in Design Review, you can mark things up, send the file to somebody with AutoCAD. They can go into the Markup Set Manager and see those design reviews that you've put in. A360 Drive is where you store all this stuff. And obviously, viewing PDF files, if you plot it to PDF, you're going to use Acrobat Reader or something similar.

So, Publish dialogue box. Just been through that. Again, just reviewing what we've done. Renaming and removing the sheets. Adding plot stamps. Save the sheet list to a DSD. If you've got about 15 layouts, and you've done all the renaming, and all the layouts, and what page setups you're using, always save it to a DSD file. Because then you don't have to go in and do it all over again. And publishing a sheet list, well I've just done that. I'll hope to have a little bubble in AutoCAD pop up at some point, saying those Layouts have been plotted.

So, we're done. I've over run ever so slightly. My apologies. So, make sure you fill out your class survey for me. If I was rubbish, please tell me. And obviously, use the AU mobile app.

You can do it online really quickly and really easily now. The app is very, very useful, I have to say.

And obviously, the feedback is important. Not just for me, obviously, as a speaker, but AutoDesk like that feedback as well. They like to know how AU's going, and obviously if the classes are relevant and current and so on. And sadly, we do get our feedback in real time now, so if I'm rubbish, I'll know in five minutes whether I was. So, it just obviously feeds back to AutoDesk. They can then process that for next year's AU, and so on.

Now, there is a LinkedIn Learning offer here. I do a lot of work for LinkedIn, or what was Lynda.com. There are some nice little vouchers here for 30 days of free LinkedIn Learning, because there is a cost implication normally. So you can go and maybe check out some of my courses. There's Revit on there, there's Inventor on there. All that kind of stuff, and it's all expert lead training.

So please, help yourselves to that. Help yourselves to the voucher. There's a few little pens and LinkedIn stickies there if you want them as well. So, thank you so much. And obviously, email address is there. That's all the class handout and everything as well. So if you do want to pop me an email or anything, please do.