KEVIN ALLEN: I want to start out with just a little introduction, obviously. Because see a lot of familiar faces in the crowd, but I also see a lot of new faces that I haven't seen. Welcome. Right?

Hopefully it's been a great event for you so far. Hopefully you'll take a few things out of this class and be able to retain that for the trip home and use it once you get back, right? That's the key. That's why you're here, right?

So I'm Kevin Allen, Director of BIM and Productivity at Comfort Systems. I've been here two and a half years. We have 25 companies running the Fabrication CADmep software along with CAM and EST, a mixture of that. 160 users running on one database, OK?

So hopefully some of the tools that we've got and are going to show you will help you in your endeavors when you get back to real work, right? So this is William, that just dropped his mic.

WILLIAM: Yep.

KEVIN ALLEN: So William has been here about, what? Two years, William? Something like that? A little over?

WILLIAM: A little over two years, yeah.

KEVIN ALLEN: Little over two years, so shortly after I got here, William came on board with us as well. Assisting with database setup, implementation of services, service templates, standards, company standards across-- how many of you can get standards within your company to work well? Anybody? We got one? OK.

WILLIAM: Try getting 'em with 25.

KEVIN ALLEN: Try it with 25, OK? It's difficult to say the least, OK? But I think we've done a fairly good job of that in the process that we currently have and support. So we'll go through here, we'll-- you know, stop me along the way.

What we're going to do is go through a PowerPoint first, OK? So we tried to toy with, do we flip back and forth, or what are we going to do here? I think it's going to make more sense if I just go through the PowerPoint, let's talk about what we're going to do, and then we'll actually do it, OK? And show you what we talked about in the PowerPoint, OK?

Again, if you've got some questions, stop me. I'm assuming that most of you have at least done this before. Hopefully you can pick up some tips and tricks and some things that make you faster when you go back, right? So we're not going to go through all of the basics. But here's the class summary if you haven't read it already.

Yeah, you might be in the wrong place, right?

So learn how to make all text on shop drawings the same height, no matter what viewport scale you have. Anybody struggling with that now? A little? OK. Annotative text doesn't work very well with fabrication software, does it? So we're going to talk about that and show you some things with that.

WILLIAM: Let's ask, Kevin, how many people do all their annotation in Model Space?

KEVIN ALLEN: Anybody doing everything in Model, raise your hand.

WILLIAM: How many are doing it in only Paper?

KEVIN ALLEN: So probably a third to two-thirds. So the two-thirds that are doing it all in Model--

WILLIAM: That number's probably going to swap.

KEVIN ALLEN: --we're going to convince you that you should be doing it in Paper. For those guys who are doing it in Paper already, hopefully you're going to pick up something that makes it even better for you, OK? So bear with me.

That's a big topic, right? It changes a lot of your workflows and a lot of things that you do, in changing your process from moving text from Model Space to Paper Space, right?

So it's a big change. And believe me, we have a lot of people making that change currently today with us, still going through that process. And we'll show you, we're supporting both right now, right? But we'll show you what's happening with that.

So learn how to set up ADDREPORT for CTEXT so that the heights match. So everybody knows what CTEXT is. You've got a CTEXT block. How many of you have problems with that block being the right height, right?

If we set it the right height that we think we're going to do for a quarter-inch-scale shop drawing, everything works great, right? But as soon as we need to print a half-scale or

anything else, all bets are off, right? It's done, it doesn't work.

Oh, well. I have to leave it. You know, OK, the field gets it, right? We deal with it. The field gets it the way that it is. Well, we've got a solution for you here, OK? So hopefully that'll be good for you as well.

Modifying text in a single viewport without affecting others. I think most of you, if you've been around the software awhile you may know about these things. But we want to at least go through them anyway.

And then learning how LISP can be used automatically placing text relative to the object location.

This is a fairly new feature in 2016 that's available, so we'll kind of go through that. And I've got an example of how we're using it and what we're going to be doing with it, OK? So we'll get started and get in there, and we'll see what happens, right?

So pretty familiar dialog box to everyone, right? We chose to put FAB in front of all of our descriptions so we knew that was us, right? Distinguishing us from all the other people out there.

So setting up those text styles, right? So back in AutoCAD, I think-- and I was guilty of this when I first came on with the fabrication products. I would set the height to four inches, because I was doing a quarter-scale drawing. And it worked, and everything was great, right?

So in order for this process to work, set it to 0, OK? And then we're going to use the Text Size command in AutoCAD to drive how tall our heights are going to be, OK?

So then, again. Depending on, do you set one AutoCAD Text Style for all of the different CADmep text? So size, elevation, offset? Or do you want them to be individual? Again, this is your choice.

I think breaking them out-- I mean, there's advantages to each, but there's some certain settings that you may like later, if you haven't already done it, if you break it out this way. And there's some other functionality like Fab Viewer, right?

WILLIAM: The Fab Viewer, yeah.

KEVIN ALLEN: The Fab Viewer is a big reason why you would want to break those out. Because inside the

Fab Viewer you've got some spooling and some things in there. If you don't have this broke out, you have a hard time managing those Text Styles inside the Fab Viewer, OK?

So for those of you who have been around for a while, you know what I'm talking about, right?

So anyway, Text Styles existing in your template, right? They have to exist in your template. And then we have to assign them in the database, right? And so you set the size and we're off and running.

So you've got all these other options. We're not going to go through all that, we're going to let you manage those right now, right?

So Annotation Tab, tick the box Only Display in Paper Space. So some of you are cringing right now, saying, oh my God, really? We're going to do this? OK? [LAUGHS]

For those of you who are already doing it, you love it, right? You're doing it and hopefully it's working well for you, right?

So set text size 3/32, 1/8-inch, whatever your preferred ratio there is, right? Are you doing 4-inch or 4 1/2-inch tall text in Model?

And always leave text in Paper Space for best results. So what we don't want you to do-- we need a company standard-- what we don't want you to do is have two detailers in your office that are putting text on in Model Space and two others in Paper Space, right?

Because what's going to happen? Inevitably one of them's going to open up the other guy's model and now we really got some things going crazy, right? OK?

So if you're going to make the switch it needs to be a wholesale switch, in my opinion. Otherwise you're going to struggle. And then you're going to come back next year and I can say I told you so.

Right? OK? So pretty basic, right? I mean, we haven't get anything crazy at this point.

But so now, when Annotating in Paper Space, two viewports on a sheet, right? One set to quarter, one set to half-scale. If you do it in Paper Space with the text size set to 3/32, you can have two viewports on that single sheet and all of your text will be the same height, period. OK?

Can you do that if you're doing it in Model Space and you have your Text Style set to 4-inch style text? Absolutely not. It will not work. Right? OK?

So for some of you, you may already know this. But hopefully this is enlightening for the rest of you, right?

So use REGEN to update the text heights in that particular viewport, so if you get in there and you copied your quarter-inch-scale viewport, and you scaled it to half, just REGEN. All your text will change size for you, OK? So now it's the proper height, OK?

So notice the next line. Making the transition is difficult for some, but once the benefits are understood, its full steam ahead, OK? I had to put that in there, because two-thirds of this class right now are still doing everything in Model Space. OK?

So this should, and hopefully will, once we get in and actually show it to you in action, we-- well, again, your call. But we think you might be changing your mind.

So cleaner models, right? So when you send it out to your subs, it's just the model, right? They don't have all this other stuff in there, right? Especially dimensioning and all the other things that come along with that. Do it all in Paper, right? Then that way you've got model and we're done. Of course, the correct size.

This is the big one. This is the biggest thing that made us change right here. Is because CTEXT will now scale properly if I do it this way. It's the only way we have found to make it work, OK?

So again, I think it's a pretty big piece of the puzzle right there, OK? So what do we need to do when we're talking about that CTEXT block, OK? Now we're going to get into, how do we set up that block to make it function for scaling properly when placed in a Paper Space environment, OK?

So behind the scenes we need two different reports, or at least we do for now, because we're supporting detailers that are making the transition. So we need a report that's for Model Space and we also need a report that's for Paper Space.

Because the block is going to scale differently, OK? So we need two reports. It's using the same block, but now we need two reports. So we just doubled up our ADDREPORTs, OK? Everybody knows what that is, OK?

But adding these reports to the ribbons-- and we'll show you a picture of what we've done to our ribbon in order to accomplish that, to give the flexibility, if you will, OK? To have some in one and some in the other, OK?

You probably will be in the same boat if you're trying to make that transition. You're going to need both for a while until you get to that project that you say, OK, this project we were going to tick the Only Display Text in Paper, and we're never going to un-tick it, right? We're going to do that with everything. OK?

So here's some settings, right? So in the ADDREPORT for-- this is for the Model Space one, right? And look at our list of Model Space ADDREPORTS that we have in our database, right?

This is all the functionality that we have. So valve tags, throat tags, sleeves, grilles, registers, diffusers, equipment, all of these things we're using CTEXT on, right?

So set the Text Style, text height scale 4, and then use whatever tag you need, right? In this case a VAV tag, right? So that's already there, ready to go. So that report's just sitting there, OK?

So now you could type ADDREPORT and you could hit the piece and you could go Next, Next, Next, Finish. And put that on that VAV.

But we want to put that behind a button to make it even faster, right? We just want to click the button and click the piece of equipment, OK?

So here's Paper Space. Look at what we did. Text height set to 0.09375. Anybody know what that is? Where does that come from? 3/32, bingo.

So now we're driving the height of the block based on the preferred text size that we want for Paper Space, OK? So obviously, you may want to put something other than that. Do your factor. We like 3/32, right?

So everything else is-- well, Write in Paper Space, I guess, is the only other tick box over there that's different, right? We're still using the exact same block. I don't need two different blocks in my template. I want one block, but two different reports pointing to the same block.

All right, so then there's a list of our Paper Space ADDREPORTs, right? Believe me, when William and I first started this, we were just naming them Sleeve, Spool, Valve, whatever. And

we realized, uh-oh. We gotta back up and redo this, and so we did.

WILLIAM: We had to leave them that way for a little while.

KEVIN ALLEN: Yeah, we had to leave the ones that we had. As a matter of fact, I think we actually still have three. We have the Model Space ones, the Paper Space ones, and then the original ones we created. Because some people were still using the other ones, right?

So when we're dealing with 25 companies, we have to think about, what we put out there is being used and we can't just take it away. We have to add on top of whatever's there so that whatever's in production can keep moving. And we just take it to, OK, there's a better tool, there's a better button, right?

We got to wean them off of it and then eventually they'll go away. And we'll have that one guy that's going to call us and say, "you took my tool away!" Well, yeah, you're right. Because we want you to do this. Right? [LAUGHING]

So that's the big thing. OK. So we've got two ADDREPORTs, now we've got to build the block, right? So build the block, put the attributes in the block.

Right? Everybody knows how to put the attributes in and do all that good stuff? And then the unit height of that text needs to be 1, OK? So if I back up, if we scale it by 0.09735, or by 4, it's the right height. OK? As long as it's 1.

Don't make your block 4. Because then we would need a 1 there. Everything's off, right? Put it to 1 and it will scale it with the report, right? OK?

So that one block works for both, right? We don't want two different blocks we, want the same block to work with both Model and Paper Space ADDREPORTS. OK?

And then of course fill it out in the piece to say, I want to use this block, right? Does that make sense? Anybody have any questions at that point? Yeah? One question. Josh?

JOSH: So it scales the graphics also?

KEVIN ALLEN: It does.

JOSH: Nice.

KEVIN ALLEN: [LAUGHING] That's what I'm saying. Once everybody sees-- we'll jump into CAD here in a

minute. We'll show you a couple of examples. It's scaling the block, right? The graphics are part of the block, so yes. Yes. OK?

So I put this in there. If nothing else, just go into your CUI and add this and put it behind a button. That's going to pull that report behind a button and it'll use it, right?

If you don't take it any further than that. Because what you don't want to do is type ADDREPORT, and hit Write Output Now, and do it all in this box. And hit ADDREPORT and go to the next box. And ADDREPORT and go to-- you don't want to do that. OK?

If nothing else, do this, OK? If you've got somebody that's doing LISP, get them to put it behind a LISP routine and then put that command behind the button. And now you're getting somewhere, because now we can do lots of things with that, OK?

So combining LISP and Scripting, right? So if you haven't got there I would suggest that you do. I and William both have been forced into writing a bunch of code to make these enhancements and processes become much better for our end users, OK?

I'll be the first to admit I'm not good at probably either one of them. But I can get things to happen, OK? It takes me a lot of trial and error, but I can get things to happen.

WILLIAM: By the way, Kevin, I need to correct you. That should be CTEXT.

KEVIN ALLEN: Which one?

WILLIAM: The ADDREPORT.

KEVIN ALLEN: Oh, sorry. It does say ADDREPORT, you're right.

WILLIAM: That should be CTEXT.

KEVIN ALLEN: That should say CTEXT, sorry. Good catch. Good catch. Yeah, 'cause I went in and typed that in when I took the screenshot. And I took it back out, because I was breaking my button when I made that screenshot, right?

Because I didn't want it like that. I wanted it to be a LISP routine. So I just went in there and typed that in, saying, OK, here. If nothing else, at least do this, right? So make note of that, that should say CTEXT right there. Sorry.

AUDIENCE: It'll work.

KEVIN ALLEN: It'll work. It'll work, it's just not as-- it's separate, right? Everybody understand the difference between ADDREPORT and CTEXT, right? Anybody not understand that? OK, I'm guessing everybody does. OK, perfect. Right? OK? Sorry. Good catch, good catch.

So once we get it in a viewport, now we got to modify it, right? I want it off in one, on in another. I want to move it in one but not in the other, OK? There's all of these things, because it is the same piece of text.

If we don't do it properly, we're moving it in viewport A and viewport B, and I didn't want to do that. I wanted to move it only in one or the other, right? Maybe I did both. There's a way to do that both.

But so Move Object Text, there's commands for that. There's buttons for that. Holding down the Alt and clicking the grip will do the same thing. Some people don't know about those little behind-the-scenes shortcuts, I'll call it.

They're pretty prolific within this software, that there's all of these behind-the-scenes types of things that you can get to something in a whole other way that maybe you never even knew of, right?

So Hide Object Text. So we'll run through a few of those just to kind of give you an example of how that works and what that does, just to give you some pieces. I didn't think that this was a very important part of this piece, but I think it's worth mentioning because if we're going to move you over, right?

If you're going to move into the Paper Space world of annotation, you need to understand the tools that are there to help you do that, right? So they're under the flyout, right? So they're on the flyout for sizes and elevations and so you can bring out that whole toolbar if you want to. I mean, you can manage your own environment there how you want to handle that, OK?

So the last one here, using LISP to automatically place text. So the command here for the LISP is AddTextAtPoint. OK? That's the code to make that function, right?

So the official definition is there, to be displayed at a selected point on the object, right? So we run the command, and I want this text to go right here, OK? So it's similar to turning on the option to have your text on your cursor, but I guess kind of on steroids, a little bit better than

that.

So you can use it with CTEXT as well, OK? So this is an example of where we're using it to AddTextAtPoint for, this happens to be the index of the text. So those of you who are doing this, you understand what I'm talking about. The hanger and then the point definition where I wanted it, and then the block that I wanted to use with that, OK?

So that's kind of a little snippet out of some of our code there to be able to do that.

So the index numbers, OK? So again, some more LISPing-- LISPing, look. See? Lost in parentheses, this thing just gets you all twisted around.

So the index numbers, so Custom 7, so that's using custom data, right? That's the index number for custom data. So these are the indexes. When you set that in the routine, I can add any text based on 1, 2, 3, 4, 5, 6, or 7, to that object based on the index number.

So that's what these are, the index numbers. So again, I'm not good at this. I'm learning, OK? But I've figured out how to do some of these things and it's just productivity tools, right? At the end of the day, that's what it is.

We're going to try to get-- not try, we're going to make our job easier and get it done faster, whether you're the manager or the end user. We don't have the Easy button, but we want to make it easier, right? So that's what these things are going to do for us, OK?

Here's some, if you do this kind of stuff, you look at that and say, well, that's pretty basic, right? There's not too much to that to make that function. Basically in this case, select three pieces of pipe. It does all this, it sets my spacing to 5.0, and I set this one up for Model Space annotation at this point.

Because I'm using 4-inch-tall text, that gives me an inch between my text. And now it adds the point, does the math, adds the second one, does the math. And so on a rack of pipe, it puts one, one and one all altogether all at one time. Done. Click the pipe, click this, done. OK?

So William's going to, we're going to get in and actually start showing some of that and show you how that functionality works, OK? So I've done some modification to this. This was my start, OK? But this points you in a direction.

For those of you who do this, you'll probably look at me and say, eh, that's crap. OK? But you

know what? You gotta understand, I'm self-taught with this, OK? So I'm learning as I go, and I reach out to people to help me do these kind of things, OK?

So I'm looking for volunteers if anybody wants to help me with some of this. No, just kidding.

So any questions on what we went through there? OK? Anybody have anything that they want to discuss or bring up before we actually get into the model and start doing some things? No? Everybody just believes me and everything's good?

[INTERPOSING VOICES]

KEVIN ALLEN: Oh, you want to see it! Oh, OK, you want to see it. Oh, OK, OK. Oh, yeah. Yeah. I know I am, I know I am. OK.

AUDIENCE: If you're perpetuating [INAUDIBLE].

KEVIN ALLEN: OK. OK, so here we go, OK?

So we put up-- oh, yeah.

WILLIAM: I was going to see if I could get that any bigger where we could actually see it.

KEVIN ALLEN: So inside of--

WILLIAM: Can y'all see that good, or not?

KEVIN ALLEN: Yeah, I think we can see that. Everybody see what that is? OK, so I thought I had that screenshot in my PowerPoint, but obviously I missed it.

So down on the bottom, we put just a little tag symbol. And all of those, so you've got accessories, equipment, fire dampers, throat annotations, spool tags, valve tags, VAV tags. We included one to include both size and elevation at the same time, right?

Because if I'm annotating something I want to turn those on at the same time, so that's just another button, you know? I don't want to have to go hit Size and then Elevation. Do it all at one time. OK?

So we built that. Again, it takes time, don't get me wrong. But when you consider the amount of time that you gain after you get that there, it's unbelievable, right? So this is not a class about building the CUI and putting all the buttons in there and all that. There's probably other

guys out there teaching us all of that, right?

So-- huh? Yes. Yeah.

So that could be a whole other learning curve in and of itself. I put a new button. I put a new button in there, but why didn't it show up? What happened? It's wrong. Right? OK. So a little model.

We've got some duct work in here. Some access doors, dampers, some boxes. Just a simulation of a duct model, right? So I don't know, what are you going to start with first, William?

WILLIAM: Let's go with equipment.

KEVIN ALLEN: You go with equipment. OK, so he's going to label equipment first, OK? So he's going to label VAVs, OK? So he's in Model Space. Hopefully he's got his Model Space button turned on properly, right?

So he's going to window the whole drawing and we're going to wait.

WILLIAM: Were there any-- you may not have any equipment in there other than VAVs.

KEVIN ALLEN: That's correct.

WILLIAM: So now we've got VAVs.

KEVIN ALLEN: VAVs. OK? So we windowed the whole drawing, and I've got all of my VAV tags on. Done. OK?

Now, what did I have to do to make that happen? I had to go into the VAV and actually assign it a number, right? It's got to pull the custom name from somewhere. Otherwise I'm going to have a block that's blank. But that's not a bad thing, because that tells the detailer, go back and put the data in, right? OK?

So we window the whole thing, right? This is a small drawing. Imagine this being some of the models that you put together. Window the whole floor and put it on all those blocks at one time. Right? OK?

Now whatcha gonna do?

WILLIAM: Duct accessories.

KEVIN ALLEN: Duct accessories. We're going to window it again. OK, done. So I got all of my dampers, my access doors, all of that accessory type objects, items, all annotated. Now, do we have to move it around? Sure we do, right? I mean, as a detailer I might not want the text exactly there. I've got to move it around a wall or do something with it. But let's get it on there, right? OK?

What'd you do, you want--

WILLIAM: Fire dampers now, let's do that.

KEVIN ALLEN: Oh, fire dampers. OK. OK, there we go. Fire damper. 28 by 20, 21 inches long. OK?

So we're not going through and individually picking, doing filters for these things. That's all happening behind the scenes, OK? We've got all that in the code, right? It's doing all of that for us.

WILLIAM: All right, elbow throats.

KEVIN ALLEN: Elbow throats. How many of you annotate every elbow throat on your rectangular and radius elbows? A lot of you, OK. How do you do it?

AUDIENCE: Very quickly, while I'm drawing it.

KEVIN ALLEN: Very quickly while you're drawing it, OK. Watch this. Very quickly, while we're drawing it, OK?

AUDIENCE: [INAUDIBLE]

KEVIN ALLEN: OK. Run the report, I don't care. Run it when you want to. Our point is, draw it and then we can window the whole thing and do it afterwards. It's however you want to do it, right? It's a workflow thing, I agree.

But there you go, we took all of the throats on all the elbows and we put all that text on there for them all at one time, right?

Yeah, he's going to have to manipulate them, but you got to manipulate them anyway whether you put it on later or like this, right? OK? So because they're CTEXT, yeah, he's going to grab that, stretch that guy out.

And because he's doing that, now it's going to update, right? It's not just ADDREPORT, it's

CTEXT, right? OK? So again, just showing you some of the things that--

WILLIAM: I don't know why that came in that way, but--

KEVIN ALLEN: Yeah, it shouldn't be at an angle. OK?

WILLIAM: All right? What are we on now, some VAVs?

KEVIN ALLEN: You did the VAVs. Let's do some grilles.

WILLIAM: Grille tags?

KEVIN ALLEN: Let's do some grille tags.

WILLIAM: All right. Say all these are 10-inch. Say they all these are 400 CFM.

KEVIN ALLEN: So LISP and Scripting, prompting for the CFM. And prompting for what type it is, OK? OK? Anybody doing that? Hopefully there's a couple of you in here at least doing that, right?

WILLIAM: I bet Chris is.

KEVIN ALLEN: Huh?

WILLIAM: I bet Chris is.

KEVIN ALLEN: You bet Chris is? Yeah, Chris is. Yeah. Yeah. Anybody else doing that now? Anybody else want to do that? Right? OK?

So we got a bunch of tags on there. Go ahead and use your Size Elevation button, William, and pick several pieces along-- nope, go the other way. Yeah. Put some size and elevation on there for that one and that one and that one. And pick several along the way.

OK? So nothing special about that, that's just size and elevation. We've got the text location set up in the database, where it places it exactly where we want it, OK? There's nothing elaborate about that, right?

OK, next. So pipe rack.

WILLIAM: Next is the latest one Kevin's been working on.

KEVIN ALLEN: The latest one with the AddTextAtPoint command, OK?

So we don't even have it in a button yet. It's still, well, it happens to be number 2, by the way. First one didn't work so well.

WILLIAM: Is that right?

KEVIN ALLEN: Yep.

WILLIAM: PE2, right?

KEVIN ALLEN: Yeah. So select the point, select up here, select down there. And do you want a hanger? He's going to skip the hanger this time.

WILLIAM: Do you want a hanger or do you not want a hanger? No?

KEVIN ALLEN: And place the text. Can anybody annotate pipe racks that fast? I know I can't. Joe can. Good job. You're doing this already, then. Nice! We got one guy in here that's doing it. OK. Two guys.

There we go. Well, you're probably looking at my code and saying, what is that guy doing? OK?

WILLIAM: All right. I'll do this one now with the hanger.

KEVIN ALLEN: Select the hanger.

WILLIAM: And y'all probably can't see it so well, can you?

KEVIN ALLEN: Yeah, it's a little hard to read with the yellow text, but you got the point, right? You like that one?

AUDIENCE: It was a wise crack, it wasn't about you.

KEVIN ALLEN: Oh, OK.

AUDIENCE: It was something else.

KEVIN ALLEN: So one of the other functions of that is, if you use that and you have your alignment set to Link on your text, if you go annotate a vertical piece of pipe-- what I consider running north-south on the drawing instead of east-west-- all my text was coming in running vertically, right?

So in LISP there's another command, AlignMapText, and I had to use that to now get the text

that he's going to put on these pieces to still be in the same LISP format and come out the same way.

WILLIAM: I'm trying to get a hanger going.

KEVIN ALLEN: What are you selecting-- oh there. He's putting--

WILLIAM: I'm just trying to put this strut on there.

KEVIN ALLEN: Putting the strut on. So the elevation works with strut, hangers, any of that. We're thinking about changing, instead of being TOS to maybe HE or something for hanger elevation. They're going to know at that point what elevation that is, OK?

So that took me a little while, too. Again, I'm not an expert LISP writer and it took me a while to figure out how to make all that function. But I finally got it to work, OK?

Over Thanksgiving holidays that's what I was working on, knowing that we were going to come here and show that, I wanted to make that function.

OK, so I still have some more work to do to that, but that's pretty good, OK? Pretty quick way to take advantage.

OK, so now he's going to flip over to Model Space, or to--

WILLIAM: To Paper Space.

KEVIN ALLEN: --Paper Space. Now we're going to look at the differences, right? So we annotated this whole piece in Model Space with text size set to 4-inch-tall text, right?

WILLIAM: Would you-- of course, if I zoom in-- I mean, we've got 4-inch-tall text. I'm still set to only display in-- or not set to display in Paper.

KEVIN ALLEN: So if he was to create two viewports here and set one at a quarter and one at a half, the size and elevation text, because they're CADmep Object text, would work fine, but our blocks would not, right? The blocks would not scale. OK?

So now we tick the box Only Display in Paper. Look what happened now, right? We've got a mess, OK? This is the other guy who opened the model, that had his set to Only Display in Paper, and this guy didn't, right? "Oh, what happened? All my text is all messed up." OK?

WILLIAM: So now I'm setting my text size to 3/32, but it doesn't matter, I've still got a mess.

KEVIN ALLEN: So all the blocks are still the same size, but if he zooms in there you could find some of the size or elevation text, and it'll be the right height. Should be.

WILLIAM: Yeah, it will be.

KEVIN ALLEN: It would be, yeah, if we get the right one.

WILLIAM: If I'm on the right model here.

There it is.

KEVIN ALLEN: There it is. OK? So my size and elevation worked, but not my blocks, right? Big problem. Ruh-roh. OK? So now, did you put anything on on the other one? You probably didn't.

WILLIAM: No. No, I haven't put anything on on this one yet. You didn't lock that [INAUDIBLE]?

KEVIN ALLEN: No, I did that last night. No.

Did you get to quarter-scale? Or you don't care?

WILLIAM: It'll be good enough, I think. Close enough. Doesn't really matter.

KEVIN ALLEN: It doesn't, you're right.

WILLIAM: It really doesn't matter. Oh, yeah, it will, too. All right, let me go back and fix this one. Because it is going to matter, actually.

KEVIN ALLEN: Didn't change much. He was real close, wasn't he?

WILLIAM: There we go.

KEVIN ALLEN: OK, so now you've got to go back and put--

[INTERPOSING VOICES]

WILLIAM: --all the same annotation again.

KEVIN ALLEN: Yep. So we do the same annotation, but now we have the box ticked to Only Display in Paper, right? So now we've got to go back and add some blocks and and some text and do some things, right?

Uh-oh. What happened?

[INTERPOSING VOICES]

KEVIN ALLEN: Huh? He used the wrong button, didn't he? He didn't use the button on the top. [LAUGHS] Good thing everybody else was paying attention.

WILLIAM: There we go.

KEVIN ALLEN: Let's use that button.

WILLIAM: That'll probably work better. Maybe we need to tell them to get us in Paper Space there.

KEVIN ALLEN: We're all watching you. Now you turned it off. So now turn it back on again.

WILLIAM: I selected them twice, huh?

KEVIN ALLEN: Turn them back on.

WILLIAM: We all right?

KEVIN ALLEN: Try just one. Yeah, just do a little piece there.

WILLIAM: There we go.

KEVIN ALLEN: Now they're on.

WILLIAM: OK.

KEVIN ALLEN: OK? So now do the grilles on that upper left hand corner right there. Yeah.

WILLIAM: If I find it. Right there. There we go.

KEVIN ALLEN: So now he's applied those in Paper at a quarter-scale. There's the same block at a half-scale, sized properly. And if he was to go-- so change that scale, William. Just change it to 3/4 or something. Just for the heck of it.

It's locked? Yeah, that was probably locked too, wasn't it?

WILLIAM: Yeah, I locked it.

KEVIN ALLEN: OK. So change the scale. Wrong viewport. And you can just zoom in there, whatever. REGEN

block resizes based on the size we need for that scale.

The difference between ticking in the box Only Display Text in Paper, right?

So one more setting, just so that you're aware of. William, go into the main database and go to Takeoff and CAD Settings, and Annotation. Right there you have Only Display Text in Paper.

But right below it, Model Space Text Size. OK? Even though you have that box ticked, but you still want to see your text in Model Space, turn that on. Set it to a height, OK?

Just understand that it's there, but it's not really there, right? OK? It's really in Paper, OK? It's displaying it for you in the model. So you can set that height to whatever you want.

Maybe you make it half the size of what it should be so that visually you can recognize, oh. Yeah, that's really in Paper but I'm just using it as I'm working and going. OK? All right? So that's what that setting is for. So what were you gonna--

WILLIAM: Did you get that working?

KEVIN ALLEN: Uh, yeah.

WILLIAM: OK.

KEVIN ALLEN: I think.

WILLIAM: We're gonna find out.

KEVIN ALLEN: Try it.

So the other issue was, and again, I'm learning this whole LISP thing. But tilemode 0 and tilemode 1. We need to look for this in order to determine what the height, or the spacing, needed to be of the text. Whether I was annotating with the tick box turned on or off, for Only Show Text in Paper Space, OK?

So now I needed to change my spacing based on that number, right? So there's that same text now annotated in Paper Space, with the proper spacing to make it look right. OK?

Again, I'm learning. For some of those other guys back there that are like, oh, yeah, we do that every day. All right? It took me a little while to figure that one out, just because I'm new at it, OK? I'll be the first to admit, OK?

WILLIAM: Just because I wanted one button not two.

KEVIN ALLEN: That's right. And this guy, I'll get something going, and this guy says, well, what about this and this and this? And I say, do you realize how much extra code I have to write to make that happen? Right? But we did. We got there we, got it done.

So for those of you who are annotating in Model Space, does this give you enough ammunition to say, hey, I might want to think about doing it in Paper?

No? These guys are saying, nope, absolutely not. OK.

AUDIENCE: So have you--

AUDIENCE: Show us how it works on--

[INTERPOSING VOICES]

KEVIN ALLEN: Yep.

[INTERPOSING VOICES]

WILLIAM: I don't see why it wouldn't work, to be honest with you.

AUDIENCE: If you do it this way, if you have [INAUDIBLE] you've got a massive file.

WILLIAM: But if everybody saves their drawing Only Display Text in Paper Space, with it set to 3/32 as their normal text height--

KEVIN ALLEN: When you xref that model into your sheet it's going to work just the same.

WILLIAM: Now, remember everybody in the company needs to do the same thing. If you've got one that doesn't, you're gonna have issues.

AUDIENCE: [INAUDIBLE]

KEVIN ALLEN: You pick the text in your working model, right? And then xref it into your sheet. And it'll display just like we're doing here, and scale, and everything does just the same.

AUDIENCE: I think you would want-- you know how earlier you were saying you could set that display to Model Space height to half of it.

KEVIN ALLEN: Yep.

AUDIENCE: I'd think you'd want to make it exactly what you want, so when you're turning it on--

KEVIN ALLEN: If you're moving it around, yeah. I mean, again, there's all different-- yeah. Again, it's another workflow, right? I mean, it does change your current process. I don't care what you're doing, it's going to change something about what you did if you go to this process, right?

AUDIENCE: The thing that still sucks about doing different viewport scales with this is, the mep text always positions to the left. They need to make that where we can choose where it expands from. Because you end up having to go move it if it's in a different scale.

KEVIN ALLEN: So when we created that block--

[INTERPOSING VOICES]

WILLIAM: --that situation out.

KEVIN ALLEN: You what?

WILLIAM: I think that tool is going to help that situation.

KEVIN ALLEN: I think it might, yeah.

AUDIENCE: But I'm referring to when you turn it on, if you change the scale after the fact, all your text repositions from that left--

KEVIN ALLEN: From the left coordinate, yeah. The anchor, yeah.

WILLIAM: Like this one.

KEVIN ALLEN: Yep.

AUDIENCE: There's nothing you can do about that?

KEVIN ALLEN: No. That's Andy. That's Andy. Yeah. Yeah. OK? What else?

WILLIAM: How are we doing on time? Got about five minutes.

KEVIN ALLEN: Yep.

AUDIENCE: You mentioned something about moving, saying that half-scale or whatever scale it is now.

Can you move that tag?

KEVIN ALLEN: Oh, we didn't go through that.

WILLIAM: I'm about to.

KEVIN ALLEN: Yeah. So he's going to move it now.

WILLIAM: I'm going to grab this script right here to move this text. And remember, I've got this in another viewport as well. But I'll move this a little closer right here. Right before I place it, I'm just to hold my Alt key.

KEVIN ALLEN: Or the button Move in Viewport Only, right? So you can do either by the grip, with the Alt, or Move in this Viewport Only.

So do the file, William.

WILLIAM: All right, now I just want to point out that if you're going to move the text you asked about. But there's not one for the leader. For the leader you do have to move and hold your Alt key for it. Hold my Alt key just before I place the leader. That's what I've always taught, to use the Alt key rather than the buttons because--

KEVIN ALLEN: So zoom back out so we can see the other block. So that one moved closer. That one up there wouldn't have moved.

WILLIAM: So yeah, something screwed up there. Yep. Don't know why that one moved. Wasn't supposed to. Unless I did something wrong.

KEVIN ALLEN: What did you do wrong?

WILLIAM: I don't know.

KEVIN ALLEN: You didn't hold the Alt key?

WILLIAM: I don't know what I did.

KEVIN ALLEN: Trying to teach it and he can't even do it.

WILLIAM: I held the Alt key.

KEVIN ALLEN: God dang it. [LAUGHING] OK, sorry. Good point, we forgot to show that little piece. So either

the flyout or the button. So William, show them where the button is on the flyout.

WILLIAM: The button up here?

KEVIN ALLEN: No, no. On the CADmep toolbar the flyout for Move in Viewport. It's underneath the Item tag.

WILLIAM: Under where?

KEVIN ALLEN: Go to Main Database, two buttons down.

WILLIAM: Oh, this one.

KEVIN ALLEN: There you go!

WILLIAM: This toolbar.

KEVIN ALLEN: T bar.

WILLIAM: This toolbar.

AUDIENCE: The red circle.

KEVIN ALLEN: The red circle! There we go! Whoo! We got him, we got him! It takes a little while sometimes.

OK, so right here is your other viewport buttons, right? So Move in This Viewport, Hide in This Viewport, OK? So when you're putting it in Paper you need those other buttons in order to manipulate that text.

Because if you just go hit your size and turn off size, it turned it off in three other viewports because that object is in three other viewports, right? OK? So you want to be able to hide it or show it in just this report but not that viewport, OK? So again, some additional tools that if you're moving from Model to Paper you're going to start using those a lot, OK? A lot. OK, another question.

AUDIENCE: [INAUDIBLE]

KEVIN ALLEN: Still the same, because your one viewport is your background and the other viewport is your model, right? So yeah.

Is he still playing with that tag?

WILLIAM: Yeah, I am.

KEVIN ALLEN: [LAUGHING] It didn't work for him, so he's trying to figure it out now.

WILLIAM: I might just have to REGEN the other viewport, too. There we go. All I did was REGEN that viewport.

KEVIN ALLEN: OK. Any other questions?

I think there's one or two more slides which was, if you didn't know about the new suite or something, which everybody probably knows about, and fill out the survey, I think, right? OK. Yeah, fill out the survey. I don't think I need to show everybody that.

And one more question, yeah.

AUDIENCE: [INAUDIBLE]

Like as far as modeling with it?

AUDIENCE: --annotations to line up with [INAUDIBLE]

KEVIN ALLEN: So--

AUDIENCE: So if I [INAUDIBLE]

WILLIAM: You want it aligned to the view or the item, or--

AUDIENCE: Yeah, I would like the view.

KEVIN ALLEN: To the view, OK. So obviously, in the main database there's Align Text to the View, right?

AUDIENCE: Yeah.

KEVIN ALLEN: The other thing is, if you're working in the Model set the UCS to match the view. So you got portion of the building that's square to the world and you've got another portion of the building that's like this, right? Set your UCS aligned to this, and go Plan Current, and it'll take this piece and roll it up for you so that you're drawing square to the world, right?

A lot of people don't know about that, OK? Now you want to draw square to the world, get all that done, go UCS world and then Plan Current and it'll take everything back. We're not

physically rotating the model, we're just changing our view, right?

So I think that once we do that, now the text just functions.

AUDIENCE: [INAUDIBLE]

KEVIN ALLEN: You have.

WILLIAM: So you basically set your database-- well, you can't see my screen, I'm sorry.

KEVIN ALLEN: We can't see.

WILLIAM: Can you see it now?

KEVIN ALLEN: Yep.

WILLIAM: So you normally have your text aligned to view or length?

AUDIENCE: [INAUDIBLE]

WILLIAM: To view? That should keep it to view.

AUDIENCE: It did seem like [INAUDIBLE]

WILLIAM: Are you running the latest update?

AUDIENCE: No, maybe that's been fixed.

WILLIAM: That was a bug that did get fixed. That's been a while.

KEVIN ALLEN: Is that 2015, maybe? Are you still running '15? 2014? Oh, yeah. OK well.

AUDIENCE: [INAUDIBLE]

KEVIN ALLEN: Huh? Yeah, can't help you. Update. How's that? Update. [LAUGHING] Yeah, update. Yeah.

AUDIENCE: [INAUDIBLE]

KEVIN ALLEN: So that's set text. And so for all of the different indexes of text, if you add the two numbers together it'll put both of those on there for you at the same time. So I think-- help me, guys. One is numbers. There we go. No, not that one! No.

WILLIAM: This one goes back to his aligned text. I'm going to show him his other option right here he's got.

KEVIN ALLEN: Yeah.

WILLIAM: So run your LISP. And this here, you can set them to align to the view or the link or the connector. For--

KEVIN ALLEN: Once you've placed your text--

WILLIAM: For your one-offs, you know? I might want mine aligned to the link most of the time but yet I've got a group of text I want to align to the view. So that will do your one-offs there.

KEVIN ALLEN: So then the other one is-- there we go. So in order to get size and elevation to come on together, you add 2 and 4 together, which is 6. And you do set text on, right? Set text 6 on. And that button will turn on size and elevation for you at the same time.

[INTERPOSING VOICES]

KEVIN ALLEN: --as a macro, and yeah. Or put it behind a list, however you guys want to do that, yes. Absolutely.

WILLIAM: What about [INAUDIBLE]?

KEVIN ALLEN: What?

WILLIAM: [INAUDIBLE] 64. Oh,

KEVIN ALLEN: Yeah. 64 is CTEXT, OK?

WILLIAM: Did you fin out that 128 was--

KEVIN ALLEN: I did not test it yet. We did not test it yet. Yes.

AUDIENCE: [INAUDIBLE]

KEVIN ALLEN: No. No. Yes.

OK? So he's in Help file right there, right? Everybody's got the Help file. So you can go right to the Help file and get that data. And it tells you how to do it and how that functions right there.

That's handy. I mean, size and elevation one time, we do that a lot, right? OK? What else?

OK. Kept most everybody awake after lunch. OK? All right, y'all have a good one.

[APPLAUSE]