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QUICKSTART COURSE - MODULE 2 – PART 4

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Now, let's take a look at placing a structural element, like a column. So this is a 3D element. So it's under the 3D tools, the design tools. And you'll see "Column" is one of the choices. The columns, the icon for it, looks round, but it actually can be rectangular, straight, or on an angle. And it can also be round, or even have a complex shape like structural steel. But let's just say a simple column will suffice. It has a certain height, so right now 9 feet or 3 meters, and a certain depth: 1 foot; or that would be I guess about 300 millimeters. Now when we pop it in, just like that corner cabinet, it will have an origin point. [:54]

So I've just dragged across this info box to be able to see this, and you can see that I can place it by center, and I'll just go ahead and click. And you can see that the point that I clicked on was the center, or I can place it by a corner. So for example I can click right on a wall and then that corner is going to be in that corner of the wall or perhaps put it in the corner of the room here. Now we can place as many of these as we wish one by one, but of course it's common to have a grid, or repetitive pattern, of columns evenly spaced. [1:30]

So let's start to look at some of the tools for dragging elements and dragging copies of them and making multiple copies. So I'll go to the arrow tool, and I'll select this column. And I would like to drag it. So to drag it, I can do it a variety of ways. I can select it; I can go to the Edit menu, Move, Drag. Or use Command+D. This is the long way around. I don't recommend it, in the sense that it takes longer to do this, but it is the most basic thing if you forget everything else, select things and go to the menu like Edit, and then find the appropriate command, and you'll be able to do it. [2:14]

So drag then says, "Enter Drag Reference Point". So basically, the status bar will give you a reminder. It says, "Where are we dragging it from?" (the reference), and "Where are we taking it to?" And enter "Drag to" point. It's very simple. Now instead of going to the Edit menu, I can right click, and you'll see that the Move submenu is available, and there's "Drag". So that's a little bit quicker. And again it says, "Enter Drag Reference Point" from here. And I can move it to anywhere that I like. Now I can also drag a copy. So if I go to Move, there's an option here that says "Drag a Copy". And it does have a shortcut on the Mac; it would be Option+Command+D. And on Windows, you could look at that; I think it's Shift+CTRL+D. But you'll see the reminder in the menu. [3:12]

So I'll say "Drag a Copy". Now when I do this, you'll notice that even before I grab it, there is a little plus sign to the right of the arrow. And when I click here and move this, I can move at a certain distance using the tracker. Of course let me just make this 12 feet, that would be about 4 meters. And you can

see that it made a copy instead of dragging the original one. So this is a very powerful tool that you're going to use a lot is drag a copy. So let me just demonstrate that again. I can either click on the element or in empty space and say "Move, Drag a Copy". And then click on the element and move it to a new position, perhaps precisely typing in a value, or just doing it by eye or lining it up. And then it has made a copy. [4:05]

Now let's say that we wanted to make multiple copies. So there is a command, if I right click, that under the Move menu that says "Multiply". So Multiply has many options. When I select it, it allows me to drag copies in a row, and I can say how many copies. Let's just say three copies for now. "Increment" says I'm going to show ArchiCAD, either just by clicking or by typing in a distance offset, how far the first one is to the next one. And it will create as many additional ones as it needs. So let's just do that. So I'll click on this, I'll move over to the right, and you can see the preview. It's very easy to understand what's going on. Let me just type in "6", so it will just be 6 feet apart, so that we can see the results. That would be 2 meters. [4:56]

And so we've now got three new columns, each one 6 feet, or 2 meters, apart. Now let me just Undo, and we'll see that undid all three of the new ones there. Let me now go and do Multiply a different way. So if I go to Multiply - and by the way, there's a shortcut: Command +U or CTRL+u, which is the second letter of multiply. And let's say "Distribute". So with Distribute, you can say how many copies, and you're going to show the first and last. So I'll say from here to there, and it will then fill in the gaps. So if I type in, oh, let's say 20 feet, then it's going to subdivide that and give me $6 \frac{2}{3}$ feet, that would be say 7 meters. And it will be 2 meters each, give or take in separation. [5:49]

So now, I'm going to show you another option. If I get rid of these two, I'm going to select these by Shift+clicking them, or hitting the Delete key on the keyboard, or backspace key; because one option here, if I select this with the Arrow tool by clicking and right clicking on this and saying, "Move, Multiply", is to do Distribute -1. And what this does is it says, "I'm going to make a certain number of copies between the first and last, but don't put one in the last position, because there already is one." So I'll say OK, and I'll click, and you can see that my cursor is showing wherever I go, the final position; but it's not going to put a new one there. So it put 3 in between the first and the last that already existed. [6:43]

Now there's also an option to, whether we do it here or through the right click, when we do Multiply, to Spread. So this would certainly be very common for a column to say that we'd like to spread it. In this case, instead of the repetition (how many), it says it changes as soon as we click here to spacing. Notice that this says "Number of Copies" and when I click here, it says "Spacing". So let's say that I wanted these 6 feet apart, which would be 2 meters roughly. A little tight for columns, but let's save that for now. And now what it's going to do is as I move, as soon as it hits the 6 foot mark or 2 meters, it will propose that is going to put in a second, a third, etc. It will put in as many as it needs, or as many as it can fit in actually, and then we can click. [7:39]

See you can basically fill up an area on a certain spacing factor without having to count ahead of time how many that would be. And that's certainly a very common thing in construction to do framing and

structural elements on a common spacing, and just see how many will fit; is certainly one option. So I'll use Command+Z to undo it. So I'm starting to use keyboard shortcuts, and I'll mention those controls that would be the ones on Windows. [8:13]

Now we can also do a grid. So if I select this, and I go to Move, Multiply - so all of these have been the Move, Multiply command the last couple of minutes - I can do a Matrix. So there are options for Rotate and Elevate, which we'll look at later. But let's look at Matrix, because what this simply says is, if I spread it, how much distance is it along each dimension. Or if I increment it or distribute it, it will have similar sort of options. But let's just say this will be 6 feet across going one way, so we'll have a certain number of those, and then when I go the other way, they'll be closer. They'll be 3 feet apart. [8:54]

So that is a Grid. So you basically are going to go in one direction, and it will fit in as many as it can at certain spacing, and then you'll go the other direction. And I'll just do Command+Z. So let me just do Command+U, that brings up the Multiply immediately. And let's just look at Increment. And now it says, "How many copies in each direction?" So each one of these will be similar, it just means that you're going in two strokes. So increment here, I'll say three copies and two copies let's say. So that means that it will go three copies, and I'll tell it how far I want the first one, and then I'll move up the first one here, and it will make two copies. [9:36]

So it should be quite intuitive, and I encourage you to play around with the Multiply command to understand it. Now the final option that we'll take a look at in this segment is the option to drag, or create new copies using a keystroke shortcut. So if I press down and start to move, or do the drag command, either way; this would move this into a new position. In order to make a copy, I'm going to press and release a key on the keyboard. If you're on the Mac, it's the Option key. So I'll press and release, and there was just a tiny change. There's a little plus sign now right next to the column. When I click, you can see that there's a change. If you are on Windows, it's pressing and releasing the CTRL key. [10:29]

So again, I'll just start to drag this. This would put it into a new position, but I'll press and release the special key option or CTRL. I get a plus, and now it's going to be making a new copy. Now if I want to do multiple copies, but not in a row; but sort of arrange them freely, then I can do this dragging, for example, and I can press down on the Mac Command+Option. And you can see two tiny little plus signs next to the arrow cursor. And that allows me to just keep on clicking as many of these as I want. Until I hit the ESC key. You remember ESC key will cancel an operation, in this case, ESC doesn't cancel, it just stops. In other words, it doesn't prevent those earlier ones from happening; it just stops the new ones. [11:24]

So on the Mac, it's Command+Option, and I believe on Windows it would be CTRL+Alt. And in this case, in any of these cases, you would press and release the one key or the two keys at the same time, press down and release them, and it will then make that affect. So I'm going to again drag this, I can either just grab it by a gesture or I can go Move, Drag, or Command+D or CTRL+D. And as I move this, if I press Command+Option or CTRL+Alt; I'll be making one set of copies. And then I can make another set of copies, and we can make quite a lovely mess of this until I hit the Esc key. So let me just undo, and undo

back to where we were. [12:13]

So we've just explored in this module how to select elements from the library such as a chair, a table, or a cabinet; how to find elements in the library by folder or by using the find by keyword; how to rotate elements before you place them or select them, and after you place them, rotate them. And how to change the snap points of the elements so that they go at a line immediately into the right position. And then, using the Column tool, just looking at a little bit at the options for placement; meaning the putting it in by center or corner, and the options for dragging individual copies or making copies; doing multiple copies with a variety of different ways. So this concludes our section on choosing placing and manipulating other elements in virtual building model. Thanks for watching.

[13:31 END OF AUDIO]