



BEST PRACTICES COURSE – WEEK 15 – PART 1

Advanced Element Selection and Settings

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Hello, this is Eric Bobrow. In this lesson we'll take a look at some techniques for advanced element selection and interactive editing. We'll start with some of the most basic tools that we have in ArchiCAD, the Arrow tool and the Shift key. When I have the Arrow tool active, and Quick Select is turned on, then I can simply click in the middle of an element and it will select it. I have Quick Select turned off, then if I click in that same location, it will not select it. Instead, it will offer me the option to create a selection rectangle. As I move my mouse and then when I click again, it will select anything that is touched by that selection rectangle. [0:00:39]

Now with the Quick Select turned on, if I wanted to draw that box to select multiple cabinets, I might be tempted to click in the middle of the kitchen and start to draw the box. But as soon as I press and start to move, it will select the element that I was hovering over, which was the floor slab, and start to move it. Now since that's not what I want, I will hit the Esc key to cancel the drag and Esc to cancel the selection. So I will turn off the Quick Select and click in that same location, and then draw the selection rectangle without impediment, and that will select multiple elements. [0:01:11]

Now you can turn on and off the Quick Select. Instead of going up here like I'm doing, you can press the space bar and that will turn it off or on. In fact, it will toggle it. It will basically flip it from whatever status it's in to the opposite state by pressing and or releasing the space bar. Now, when I do select elements, and if I use the Shift key, then I can select multiple elements. This is one of the most basic selection techniques. And if I Shift+click again on an element that is already selected, it will be deselect it. It turns out that in ArchiCAD, rather usual selection method is available, which is when we are in any drawing tool if I press down the Shift Key, I can select. [0:01:55]

So I get the Arrow tool temporarily even though I'm in, for example, the Wall tool. And so the Shift key, which adds or takes away elements in a selection group, can be used with or without the Arrow tool. Now what a lot of people don't realize is that we can also draw a selection rectangle with the Shift key. So if I press down the Shift key and I get the arrow, I can use the same option of turning off the Quick Select with the space bar, and then draw a selection marquee. So you know that I've actually drawn that while I was in the Wall tool. So that can be a real time saver to simply press the Shift key, and as needed, press down the space bar if necessary at the same time. [0:02:42]

Now in addition, if I do that and I select multiple elements and then perhaps I do another marquee or another selection rectangle, with going to happen right now is the selection rectangle will add elements that are not selected and toggle or turn off the elements that are selected. So when I click again here, you'll see that it's now selected the other cabinet, and it's deselected one of the ones that was previously selected. Now when you press down the Shift key to hover over something, it will tell you whether the element is selected or not. Right now it's saying that this is an object that I'm hovering over; it's not mentioning anything about selection. [0:03:22]

But if I hover over another element, then it will say that it's an object that is selected, you can see in parentheses. And in this case we also have the extra option of the tab key, which means that I'm hovering over more than one element. And if I hit the tab key, it will then say well then perhaps you might want a different one. So now saying I'm possibly going to select the slab or hit the tab key again. I will go to a different one, wall cabinet or the gas stove. So it will cycle through all of these things. This makes it possible to select exactly what you want or deselect something that you don't want by making sure that at the point that you click the mouse, you've got the element that you wanted to change its state, you want to add it to the selection or take it away. [0:04:09]

Now if I have something selected, for example this cabinet here and I go to a corner point, I may have an option of the pet palette which gives me the ability to drag, rotate, etc. Or an additional option in many cases it is to move a node point or to stretch an element. So in this case, it's going to allow me to move a node point, which allows me to resize this cabinet. You can see by moving the corner point it resized it. Now if I have a wall, just to make something simple off in space, and I Shift+click or Arrow+click to select it, and I go to the corner point again, I have a similar thing. In this case, the option at the end of the first row is to stretch and leaving the other point, the end locked but moving that point. [0:05:03]

Now if I go to an edge, I get a different pet palette options where I can break this wall into multiple pieces or perhaps curve an edge to make the wall have an arc. Let me just undo these changes. Now this contrasts with the commands that we get when I click on an edge or a corner of an element, when I right click, I get a context menu. So I can then use the context menu to select, move and some other options that would be available from the pet palette, but can be selected here, such as drag or rotate. We also get additional things such as the option to turn off the layer that this element is on or to do some other connection opportunities. [0:05:55]

Now unlike the pet palette, I also have the option to change the element's settings. So in other words, I can open up the wall settings with that element or elements selected. Now so far, that's all very basic operations. But did you know that even if it's not selected, I can hover over an element, right click, and it immediately selects it and gives me all of these commands. So I don't have to preselect it, I can simply hover over it. That means I can be in any tool, for example the Wall tool, right click on a wall or a cabinet, anything else. It selects it and gives me these opportunities here. So if you have it preselected then you can use the left mouse click to get the pet palette. Or right click to get any of the options available from the context menu. But you don't have to have it preselected to right click and get immediately the selection and this opportunity to do the context menu. [0:06:57]

Another convenient shortcut sometimes can be to toggle back and forth between a tool like the Wall tool or the Arrow tool. And that is done with the keyboard shortcut W. So when I press W, you'll notice that it switches to the Arrow tool. If I hit W again, it switches back to the Wall tool. Now W does not refer to wall, in fact I can be in any tool. For example, column and hit W, it will toggle to the arrow, W again it will go back to the last tool that I was working with. You could remember it perhaps by thinking that the last letter of arrow is "W". That is the keyboard shortcut. You'll also find that if you go under Options, Work Environment, Keyboard Shortcuts, where you will see that in the keyboard shortcuts under Alphabetical Order, if I scroll down a little bit under arrow here, there's an Arrow tool, last tool, toggle, and it's set right now for W as the shortcut. [0:07:56]

Now the Arrow tool select things, and the most common way to select things it is to select anything that it touches. And that's actually the option in the upper left, the first choice for the arrow. There's also an option to select only things that are totally enclosed. So let me demonstrate the difference here in case you're not familiar with it. If I click in empty space outside this building and then click in the middle of the kitchen, it's going to select all the elements that are obvious such as the cabinets; but it will also select the two walls that I happen to overlap as well as the slab. Now if I wanted to just select the cabinets, I could switch this to the option where it's selecting only things that are totally enclosed. And then when I draw the same type of selection, you'll notice that the look of the selection rectangle is different, it's got this dash and dot appearance. [0:08:51]

And then when I click again, it only selected the elements that were totally enclosed. Now here's where I can actually use this to great effect. I can go and, for example. click in empty space outside here and go down to the bottom area below the cabinets. Now even though I'm overlapping the walls and other elements, when I click again, it's only going to select in this case all the cabinets that were totally enclosed, and not select the wall that was part of that group. Now if I wanted to select all of these cabinets plus all of the other ones, of course I could go and do something similar. Select one batch, and then hold down the Shift key and select another batch like this one. Perhaps I don't want to include the refrigerator, so I might stop it before that. [0:09:37]

Now if I wanted to do this all in one operation, then I might want to use a different geometry. In other words, I might want to, instead of using the rectangle, I could use a polygon shape. And so I might draw a polygon to enclose part of this. And as I do this here, you'll notice that it's shading in part the area. And the reason why I'm doing this just for demonstration is I would like to bypass and not select the kitchen room tag that is on there. So as I do this, I'm sort of going around it. And I'm now making sure that I'm not including all of the walls, but I am including all of the cabinets and sidestepping the kitchen tag. So now I'm able to select that. Now that was a little bit arbitrary in this context, but I'm sure you get the idea that there are times when you want to be able to select just specific elements, and by drawing an arbitrary shape, you can quickly get exactly the right elements selected for your needs. [0:10:40]

Now I will put this back to the rectangular one just for simplicity and point out that you can also do a rotated rectangle. So when part of the building is on a rotated angle, you may find that useful for doing a Quick Selection, but just in a rectangle that happens to be rotated off the axis. In addition to the

option for a partial selection or anything that is partially enclosed or the one which says only elements that are totally enclosed, there is one here that some people aren't aware of, and that is that you can change it on the fly. So when I do that one here, in terms of the selection arrow, and as I draw this, I go from left to right. This is only going to select elements that are totally enclosed. But if I go from right to left, you notice that the selection box has a different boundary, and now it's selecting anything that's partially enclosed. So on the fly, I can switch back and forth. [0:11:35]

Now I personally prefer leaving it in the partial selection most of time and manually changing it to the total enclosure option. But you may find it useful to just go from left to right one time and right to left the other time, and that will give you even faster options on the fly to switch this. Let's take a look now at marquee selection and stretching. So if I zoom out and Fit in Window here and I use the marquee, I can draw a box around an area. For example, this bottom part of the building. Now the marquee has two options, thin and thick. Thin will affect only the elements on the current story. Thick will affect all the elements on multiple stories, at least all of them that are on visible layers and unlocked. Now if I hit the Delete key, you'll see that it deletes anything that was partially touched by the marquee. So it's similar to the Arrow tool in that way. Now I'll undo, and you can see that it's put everything back but they have handles. If I want to continue with the demonstration, I'm going to hit the Esc key, so now I have just the marquee without handles, and I will explain a little bit more in a moment. [0:12:49]

Now if I go to the Edit menu and say Move, Drag for example, I can move these elements. And you can see again they sort of grab these pieces and move them as a whole, which sometimes is useful, but more often what we will want to do is take advantage of the option within the marquee tool to stretch in a coherent way. This would be under the Edit, Reshape, Stretch command. And there is a keyboard or a shorter way to do this, but let's just take a look. So to stretch. I can click on any element, for example, the corner of this wall, and drag it down. What it did was moved the wall that was totally enclosed and stretched the endpoints of the other two walls that were partially enclosed. And this object, which was the little mini stair, moved with it. So it actually didn't stretch, it actually just moved. [0:13:40]

So let me undo this. Now if I happen to do this same command, the reshape, stretch, and instead of moving straight, I moved on an angle, you'll see how it will distort the building. And this sometimes can be useful. But more often you'll want to move it on a straight axis, certainly in line with the main connecting walls would be the most common thing. So I'll undo this. Now if I happen to have the elements selected in here, and then I do the stretch command here, you'll see something rather different. So I'm going to click on this corner and move it down, and you'll notice that what it did was stretch the two walls that were connected here, but none of the other elements. So the selection arrow or handles took precedence over the selection marquee. [0:14:32]

So I'll undo this back and I'll hit the Esc key so that it will be able to do the stretch operation as I expected. Now instead of using the stretch command explicitly, if I have the marquee active, and the marquee is drawn, then I can actually just click on an element and move it to a new position, and it will actually do that stretch without even having a keyboard command or a menu command to do that. So it's a gestural command. I can go in fact to the body of this wall and move it down and it will do the

same thing. As long as I'm on a part of an element that ArchiCAD recognizes with the Mercedes or a checkmark. [0:15:15]

Now if I'm in empty space, in other words, I'm not on any element, you'll see that I have a trident. Symbol, a special cursor. Now if I click at this point, what it's going to do is actually move the marquee around. So I can move it away, I could fine tune it, just get it so that it's just barely covering things and get it to exactly the right location that I want. Now if you need to adjust it, if it actually needs to be little bit bigger or smaller or changed in some way, then you might want to draw a new marquee by clicking outside it. That will start the process of creating a new marquee. You can also get rid of the marquee by hitting the Esc key. If nothing is selected, it will get rid of the marquee and put you back inside of a neutral position. [0:16:02]

Now let's take a look at the difference for the marquee for a single story vs. multiple stories. So I'm going to go and in the back part of the building, I will select this whole back area. And let's say that I wanted to stretch it. Now if I go up to the upper story here, you'll see that includes part of this bathroom and the balcony. And I'll go down here and I'll just do the same stretching command that I was doing. And you'll see that on the ground floor, it's made the kitchen and certain parts of the building, sleeping area, extended that. But if I go up a story - and I will use the keyboard shortcut Command or CTRL+up arrow to jump up - you can see that the bathroom and the balcony were not affected. Now I'll go back down and I will undo. [0:16:50]

Now after hitting Esc to deselect, I'll switch to the heavy marquee. At this point when I do the same operation of just clicking on a corner and dragging it up, we'll see that it looks the same down on this lower story. But if I go to the upper story, you'll see that the bathroom has stretched and so has the balcony. The bathtub, which used to fit from wall to wall now has an opening here. So there's more space, the bathroom is a larger space. So let me undo that operation here. Now this stretch will only affect visible elements. In other words, elements that are on layers that are turned on. And it is possible if you have layers that are locked that those elements will not move. And you can also individually lock elements if you want to protect them. So this is a common thing for making more controlled modifications it is to either lock certain layers or lock certain elements. [0:17:46]

So for example, if I didn't want this bathtub to move, I can go to the Edit menu and say then Locking, Lock. And then if I stretch with the marquee tool, if I stretch this up, you'll see that all the other elements were adjusted including the cabinets that were partially enclosed. But the bathtub, since it was locked, did not move. And you can select multiple elements and lock them easily. If I select this bathtub you'll notice that its handles now are sort of faded out which indicates that they are locked. And I can go to the Edit menu, Locking, and unlock to make it have standard handles and be editable again. Of course if I lock that layer, for example, if I select one or more elements on a layer and right click on it and go Layers, Lock Layer, then what will happen is when I do the stretch option here like this, then we'll see that the walls move, but actually - well, here. [0:18:50]

Obviously this was on a plumbing layer and not on the same layer as the cabinet. So let me just undo the change, and let me just select even just the lower cabinet and a wall cabinet. Let's see, we'll select the

wall cabinet. Now I've got the lower cabinet and the upper cabinet and I'll right click and say that I'd like to lock those layers. And now, even if they are not selected, if I do this stretch up here we'll see that for example this lower and upper cabinet that was on the right side of the kitchen did not move. Now the stove and the hood did move because they are on different layers. This is on a layer for mechanical as opposed to the layers that I had locked which were for base cabinets and upper cabinets. [0:19:50]

So you can use the Marquee tool to stretch and just know that it will not affect elements that are individually locked or elements that are on layers that are locked. So that can give you some more fine tuning there. Now when you're stretching something like this, there are some special rules that you should be aware of. So let me go down to this lower area to make it a little simpler. And I'll just take it with a single marquee. So if I draw this marquee, and it encloses part of the wall, you'll notice that when I do this the wall will stretch longer in this case. And the window that is totally enclosed will move along with it, but the door that's only partially enclosed will not move. And the objects that are enclosed that are touched will move, so it sort of a complex series. So watch this carefully as I stretch this down. [0:20:47]

You'll see that the window that was totally enclosed moved, the door that was not totally enclosed but was partially enclosed was unaffected. On the other hand, the staircase here, this is an object that was enclosed, of course it moved as well. This door, which was fully enclosed, moved. And the stair, which is another object -or it might be a stair element, the stairs and object tool are similar - if it's partially enclosed it's going to move. So this may take a little getting used to. But basically just to repeat. Openings, like doors and windows that are totally enclosed will stretch or reposition themselves with the marquee, but if they are partially enclosed they will not. They will never resize, they will never get bigger or smaller using the marquee. Objects will never get bigger or smaller, but they will move if they are partially or totally enclosed within the marquee. [0:21:45]

Now let's take a look at controlling the distance that we're moving. So if I click on this point and move it down in this direction, I can type in, in the tracker for example, that I want it to be 2 feet longer. And so that actually moved it a certain, specific distance. You notice here that I have a little bit of an odd thing which is that the slab that was the landing outside the door, I only enclosed part of it. So only one node moved. Let me undo that back. So if I really wanted this to be a coherent stretch in a single action, I would want to enclose that. In other words, I would want to get both of these corners so they would get longer. So slabs, their node points will reposition, and so the other ends, which are not included, will stay locked down just like the other end of the wall will stay locked down. [0:22:41]

Now I started to do this, I brought down a certain distance. Now if I wanted to bring it the other way, I could do that, I can certainly make it shorter, and just make sure that I'm using the tracker and guidelines to keep it straight if that's what is appropriate. And then I can type in, for example, I want it to be 1 foot back in the other direction, that will work just fine as well. Now, sometimes we really don't care, or the distance that we're going is not the important thing. What we care about is how far it ends up from another point. So for example, if I wanted is the end of the wall, which right now if I brought it over to the corner here it says it's 12 feet. Well suppose I wanted it to be 14 feet 4 inches from there. [0:23:30]

Well it would be easy enough for me to say "Well, 14'4" minus 12' is 2'4". So I'd have to move 2'4" in the other direction. But sometimes this arithmetic can get sort of awkward. So what I'm going to do is actually tell it to move a certain distance less from the point that I'm located. So to demonstrate that, if I hover over this point where it is a reference, in other words, it's the point that I want to measure from, I'm going to type in the 14'4" and then a minus. And what that will do is subtract that distance from wherever I'm pointing at. And you can see it's moved it back. It now says, oh, you've moved back minus 2'4" from where you started. So that's pretty obvious. But if I had a complex distance, it might be less obvious in terms of measuring. [0:24:23]

So let's see how this works one more time. Maybe I'll just draw something off to the side that is totally arbitrary. So I'll draw a box here, and it's an arbitrary size. And I want to make this box a certain size. So what I'll do is I will go from this corner, I'll bring it back to here and say I'd like this - you can see it's a rather funny number, but I would like it to be exactly 12'6" in length. So I will type in 12-6 and a minus to say I want to go back that distance, and that will figure out whatever it has to do, some odd number here. Now if I measure, hit the M key to measure from here to here, from this point to say this point here, you can see there's that 12'6". [0:25:07]

So basically what I do with the Marquee tool is I grab one end, position it on the other end, but don't hit Enter. Type in a distance that I want to be away from this. Let's say that I wanted it to be 10' instead of 12'6". I might type in 10, and then do a minus. Now, in feet and inches it's waiting to see if I'm going to do 10-6 or 1'6". I can do 10-0, and then the minus, or I could just do 10 - - (ten dash dash). And it will then assume that in between the two dashes is a zero. So you may, when you do a minus sign in this case, need to do a second one if you haven't already done inches. If you are doing it in metric, you won't have to worry about that, it will just be whatever metric distance you have and a minus will give it to you. [0:26:01]

So that has now made this room 10'. If I measure this from here to here, you can see that it's 10' even. And if I wanted to make the other side of the room a certain specific nominal thing, right now it's sort of this very odd number here. I'm going to make it let's say 15' down, so I will type in 15 - - (dash dash or minus minus) and hit Enter. And so that basically said 15'0" subtract that. And now if I measure it, I've got the distance that I was looking for. So the Marquee tool is great for stretching elements. It will stretch walls and polygon elements such as slabs and roofs and fills and zones, if the zone is set for manual outline as opposed to the following the outline of the room. [0:26:55]

And you can just tell it how much you want to stretch using the Tracker as usual. And there is a special method that I just went through where you want to say how far away from another corner you want this to be, and you position yourself on the other corner, and then you tell it how far away and do a minus. So let's say I have 13'8 1/2", so a rather arbitrary number, and then a minus. And then you can see that it says, "Alright, you need to move a particular distance in to get that. And what that did was it moved it back that distance that I typed. [0:27:36]

So the Marquee tool, one other variation that I wanted to make sure you are aware of is that you have also options for a geometry similar to the Arrow tool. So you can then say that I want to affect - let me

go up to the upper story here - perhaps I want to stretch the bathroom and this main part of the building to the right. But I don't want to affect the closet here. So what I might do is, instead of doing a box like this, which would affect both the closet and the bathroom, I might pick a polygon shape and draw a shape down here and just make sure that I don't include the bathroom walls. It doesn't have to be a very clean, straight-on shape, as long as it includes all the node points. In other words the corners of those walls. Then when I go and click and move it in a certain direction here, you can see how it stretched the right side of the bathroom and this loft area but did not affect the closet. [0:28:41]

So just know that sometimes being able to change the Marquee tool shape can be very effective. So this concludes our lesson on advanced element selection and interactive editing techniques. This has been Eric Bobrow, I look forward to getting your comments and questions, please post them on the page down below, thanks for watching.

[END OF AUDIO 0:29:03]