



QUICKSTART COURSE - MODULE 2 – PART 1

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Hello, this is Eric Bobrow, and in this lesson in the QuickStart course, we'll be looking at coordinate input and precise placement of elements.

I'm going to clean up my screen a little bit by getting rid of some of the elements that I drew before. The easiest way to do this is to go to the Arrow tool and just draw by clicking on two points. And it outlines that area, and it highlights all of the elements in between with handles or grips. And then I'll hit the Delete key, and that will get rid of them. And I'll do the same over in this area. Because it's using the option for partial overlap, in other words, it's selecting things that are partially overlapped; it will include all of the elements that I'm touching. [1:47]

Now, let's proceed with this lesson. I'll activate the Wall tool, and let's look at how we input walls to a specific length. So I'll click to start drawing a wall. And you'll notice that as soon as I click, it says, "Distance 0 Angle 0." The feedback we're seeing on screen is called the Tracker. And as I move around, you'll see the Tracker update to show me approximately where I am at any given moment as I draw. Now the distance here is specifying sort of an arbitrary a level of accuracy. In other words, you can see it's going down to an odd fraction of an inch here. It's generally a good idea not to try to move this until you get something right, because it will never be exactly the distance that you want. It's a good idea to either input a distance directly by typing, or to line something up with another element that's already drawn. [1:50]

So in terms of putting in a distance, I'm simply going to type in "20". Now, if you're in Imperial, or feet and inches, then a whole number like 20 would be interpreted as feet. If you are in metric, then it would be interpreted as either meters, centimeters, or millimeters depending on the system that you're working with. And we'll take a look at setting measurement preferences in a moment. So I hit the Enter key, and that made a wall 20 feet long. To make something with feet and inches, I'm going to be typing in "24", and then a dash or an apostrophe, and "6", and that would be 24 feet 6 inches. And to make something with inches at a fraction of an inch, I can do let's say 28 feet 4, and then I have a choice. I can either I do space 1/2, and I don't have to type in the inch sign, because it will assume that anything after the foot separator works. I can do it that way, or I can do let's say 31 feet 5.5. And that will be considered 5 1/2 inches there. [3:08]

Now to verify these measurements, it's often good to go to the Measure tool and simply click, and we'll read this off. You can see there's 20 feet. I'll hit the ESC key to cancel the measure, and to get the measure tool again I can hit "M". So "M" for measure brings this up, and as soon as I click, we'll get the measurement. And you can see here the nice, even measurement. I can hit "M" to cancel it, or I can hit the ESC key. I'll hit "M" again, and click, and you can see here is the 28 feet 4 1/2. And I'll hit "M" again, and measure this one. And you can see here's 31 feet 5 1/2; I wrote "31 dash 5.5". And you can see how that was accepted. [3:56]

Now if you're working in metric, then it will be similar. Let's go to the Options menu, Project Preferences, Working Units. So working units and dimensions are closely related, but working units are the units you will use for inputting information. So if I switch this in the working units from feet and fractional inches to meters, then I can choose what level of accuracy is going to display. Well, meters with only one decimal point, probably not enough. Let's do 3 decimal points, and then we'll have millimeters being shown. And I'll say OK. And now, you can see that it's giving me feedback 2.679, so that would be 2.679 meters. If I type in three, this is going to be 3 meters. [4:42]

Now you'll notice that the walls here didn't actually change. They still had the same measurement. If I were to measure them though, at this point, we're going to see the 20 feet is now 6.096 meters. So internally, ArchiCAD keeps track of this in the metric system, but it speaks in feet and inches or in metric alternatively, depending upon what you prefer. So, obviously, if we go to our Project Preferences, Working Units, and we were to work in centimeter or millimeter, I think it's pretty obvious how you would work with that in putting in the information. So I'm going to switch it back to feet and fractional inches for now. [5:24]

Now this is what we will see in the "M" or Measure tool, but when we input distances, the dimension preferences are set in a different location under Options, Project Preferences, Dimensions. And we'll be addressing those at a later time. For example, dimensions may be in one format for site plans, a different format for floor plans, and yet another one for cabinet or millwork detail where we need greater accuracy. So, dimensions actually will shift depending upon the drawing, whereas the working units typically will stay constant throughout your work process. [6:08]

Now, and let's look at what is called the Tracker. The Tracker gave me the feedback that the distances that I was going, and the Tracker information can be turned on or off by clicking on this button here. So now, you'll notice that there's no feedback. I don't know how long I'm going. I can turn this on by clicking on it here. And now the Tracker is available. So generally I leave the Tracker on all the time. But there are times when it may get in the way, particularly when you're meeting with a client, or you doing some things where there's just a lot of information that you're overlapping. You can feel free to turn that off or on by clicking on this button here. But you won't be able to type in distances. If I type in, say, a number, it actually beeps at me, because it has no place to put that number while I'm drawing. Only when there's a Tracker available, when I type in a one, will it actually accept that and put that in. [7:10]

Now if you're an older ArchiCAD user, or someone who used an earlier version, you may be wondering where the coordinate palette went. It's still available under the Windows, Palettes, Coordinates. It's in the lower section, because it's sort of less frequently used. If I open that up, you'll see a palette that we can move around, and as I click to start drawing, you'll see that it's given me feedback, the "X" value, which I'll just highlight here. The "X" value is indicating my horizontal displacement, and the "Y", vertical displacement. Now you'll notice that distance right now says 16 feet 9 and a fraction, and the "X" says that value. But as I move down perhaps in another direction, distance is going to be shown in the "Y", and in fact in this case in the "Y", it's a negative value, because it's going down rather than up. [8:06]

So the Coordinate palette is certainly still available. You can type in, for example, a letter Y, and then type in -8, and that will accept it. Let's just turn off the Tracker and see how that works. So I'll click here and I'll type and "Y". And you can see that it highlights it. Minus 6 feet 6. So it will still work, but the reason why the Tracker is simpler to work with is that you don't have to type in coordinates in most cases, because it actually understands the direction you're going as a distance. You can see how it says "Distance" rather than "X" or "Y". So in general, I prefer using the Tracker and I recommend that you use that in preference to the Coordinate palette. You don't usually have to put in a letter like X or Y or A for angle, is only necessary when you're going off of one of the guidelines. And R, or radius, is actually identical to the distance, as long as you're in relative mode, which is activated by this little check box or this little icon there. [9:22]

Now the R value will be the distance based on that point. So this is called the Delta Triangle, and this tells it to measure relative to the last click point. So I'm going to close off the Coordinate palette, because I don't think it's necessary for most purposes, but it's still available if you are used to it from an older version of ArchiCAD. Now if you want to make something go not just horizontally or on a straight angle but perhaps a certain distance over and a certain distance up, you can type "X". And you'll see then, as soon as I type that, it does expand the Coordinate palette or the Tracker palette. So let's say that I wanted to go 10 feet over and then I can type and Y or hit the tab key. And say that I wanted to go up 3 feet. And then hit Enter, and you'll see that that's gone over 10 feet and up 3 feet. So we do have the flexibility with the Tracker to input multiple coordinates X and Y, when that's appropriate or necessary. [10:25]

In this training, we've been using a feature that sometimes gets turned off or on accidentally, or deliberately. And these are the Guidelines. So as I click to draw this wall, you'll see the dashed orange guideline. And as a move away from it, other ones potentially showing up. These are controlled and turned on or off by this button here, the Guidelines. When I turn it off, you'll notice that there's no more snapping. Now, you can have a similar effect to the Guideline by pressing the Shift key down. This is a feature that was available in ArchiCAD from probably the very beginning. It locks it on an angle that you're pointing at. In fact, the nearest known angle or axis. See you can certainly move across with the Shift key. [11:20]

Now be aware that when you have the Shift key held down, if you type in a number, let's say I wanted to make this 15 feet, and I hold the Shift key and I type a "1", it beeps at me because Shift and the 1, at least on the main keyboard, is an exclamation mark. In other words, it's not a digit. So does make it a little hard to use the Shift key. You can type in, for example, Shift and D; or Shift and R will highlight that, and then you can let go and type in say 15. So it's a little more awkward to use the Shift key that way, but sometimes people prefer to do it just so they don't have these guidelines showing up all the time. And you can, for example, press the Shift key down and it will jump to that angle, and then you can point at something else and line it up. So this is a quick way to line something up. Press the Shift key down while it's in the right direction, and then while the Shift key is held down, click when the cursor is lining things up there. [12:27]

So the Guidelines, I think, are really quite useful, but sometimes you may want to turn them off, or you may find that they've been turned off accidentally. And there appears to be a shortcut, the letter "Q" is right next to there. So if I hit the letter "Q", yes it goes off. And if I hit the letter "Q" again, they come back on. So in terms of lining things up, if I am drawing something going this direction here, and I use the Shift key, I can hold down the Shift key and then move my pencil over. And it will find the perpendicular intersection of that element. Now, if I let go of the Shift key, it will just flop over to whatever point that I'm going on an angle. But you'll notice that when I point at this element here, that we have a black pencil. And that indicates that we're on the corner, or the node point, that we're indicating. [13:28]

You'll see blue guidelines shoot off in the main axis directions. These of course are also turned on or off by that Guideline button, or the "Q" letter. Now if I move away from it, ArchiCAD will assume that I didn't really care about those. However, if I instead of moving away from it, I roll my mouse over it, then you can see that that line becomes a lasting guideline. And it becomes a different color, in this case, orange. And this allows me to easily go and snap, for example, you can see the perpendicular snap that it's showing. So I can click. So that's the way you do it without using the Shift key. So for example, if I wanted to make a wall go in line with the other one here, I can simply wait for the blue guideline to show, move my mouse without pressing down the button, but just move it across there, and you can see that this now becomes available for snapping. [14:30]

So this is the way that you would use guidelines for lining things up the when you're drawing. Now in terms of distances, when I use the Measure tool, if I click on measure icon, you'll see that there are some arbitrary numbers. It says "Distance of 80 feet" and a funny angle. As soon as I click, it goes to zero. So it's measuring from the last point that I clicked. This is sometimes called the "Edit Origin". I'll hit the ESC key to cancel. The same way, when I click to start drawing a wall, you'll see that the "X" is measuring from the last point that I clicked. Now that "X" is called the Origin point, and I'm going to zoom out by clicking the Fit in Window, which is the equivalent of zoom to extend here. And you'll notice that there's another "X", right here. That is called the "Project Origin". [15:28]

Now if I click to start drawing, you'll notice that the Project Origin became a lighter gray, and the Edit Origin became a heavier X. So it makes it clear that although the other origin still exists, this is the one that's primary at this point. And I will cancel out of this. And when I cancel out of it, you'll see that this now becomes prominent again. So by measuring, if I use the Measure tool and move around, as I get closer to this you'll see the numbers get smaller and smaller. And when I get on top of it, you'll see that this is the origin point for measurement. Now this is called the Project Origin. And it actually cannot move. It's just by definition, the beginning of all measurement references. However, sometimes we'd like to be able to measure a number of things from a

different relationship. So we can use this little icon here that says "Set User Origin". [16:27]

So when I click on that, actually I have to be out of the Measure tool, so I have to hit ESC. When I click on that, it allows me to, for example, click any point. And now you'll notice - by the way I'll hit the ESC key to get rid of those guidelines, because those guidelines sometimes can get in the way. So hitting the ESC key will clean up your display for temporary items like the guidelines. But you'll notice that there is the Project Origin here. And there is a User Origin. And if I start to draw a wall, the User Origin will be temporarily hidden, because I'm now paying attention to the Edit Origin. So when should you use this? Well it gets - this is a little bit more sophisticated, so perhaps a little early to introduce it, but basically, there are times when you want to be able to measure relative to other parts of the project, rather than just the last click point. And by using a User Origin, you can move that wherever you need. [17:34]

And in terms of the Tracker, occasionally someone will go under the - actually, I guess it is here under the Tracker. Here's the on/off button for the Tracker, and to the right, there's this popup menu. Relative Coordinates and Tracker is what we want to use almost all the time. If that accidentally gets turned off, then what you'll see is that as I start to draw this wall, and that although the wall is very short, it says that it's a certain distance from the User Origin. So you can see that that's 0. So in other words, sometimes you'll find that you get very strange feedback, because by accident, the Tracker has been set to turn off relative coordinates. Now I'll hit the ESC key to cancel out of this operation, and I'll turn back on Relevant Coordinates and Tracker. So make sure that that's turned on there, so that you're getting feedback that makes sense in terms of how far you're going in any particular direction from the last point you clicked. [18:44]

Now let's look at how we can stretch elements. I'm going to zoom in on this area over here by clicking on the magnifying glass and making a box around it. This expands it. This is just one way to do it. Let me take this element here, this wall. And let's just see what length it is. I'll use the Measure tool and go down to here, and you can see that its distance is an odd one, 8 foot 3 and a fraction of inches. Suppose we wanted to make it a nice even number, like 9 feet or 3 meters. Well, I hit the ESC key to cancel out of the Measure operation, and the object is still, or the wall is still selected. I'll go to the Edit menu, and with one or more elements selected, we have many options for moving or changing them in various ways. [19:37]

In this case, let's take a look at the Stretch option. So if I click on Stretch, then it will give me the opportunity to change its length. You'll notice that in the status bar down below it says "Enter Stretch Reference Point". So it says, "Which point do you want to grab or change?" I'll say this point I'd like, and I click on it. And when I click on it, notice that the Tracker gives me the same type of feedback as I had before. So it becomes very simple. I simply type and nine and Enter, and now it has made it 9 feet long. Or I can type in 3 for meters. Click here, click here, and you'll see exactly the distance that I wanted. [20:16]

Now I'm going to use the Arrow tool and click to select a different wall, and I'll show you a faster way to do this. Instead of going to the Edit menu, Reshape, Stretch, I can just press down on the endpoint that I'm interested in. With this already selected, I'll press. And while the mouse button is held down, you'll notice that there is a small palette, sometimes called the pet palette, because it used to move around onscreen like a pet on the leash. And I call it the Editing palette. And you'll notice different options here. If I activate the first one, then this will move, or drag, the element around. This will rotate, mirror, elevate up and down in space, make multiple copies; but the one that I want right now is stretch. So with that option active, then you'll notice that I can move this endpoint wherever I like. [21:15]

So stretching is a reshaping that moves one end and leaves the other where it was. Now if I want this just to be longer or shorter, I can bring it to the point that I am referring to and simply change the distance value, leaving the angle the same. So let me change this to 12 feet 6, about 4 meters, and you can see that that works. So to stretch something, I can click on it, and you'll notice that there is a heavy line here and a handle. I need to go to the end of the reference line, or the line that I drew the wall with, to stretch it. I can't click on this end to get the same type of effect. I need to go to the end of the reference line. I'll press down, and when I press down, you'll see that same palette show up, and it remembers that the last thing I was doing was stretching. So I can actually let go, knowing

that it's going to be doing a stretch command, and then type in the distance, let's say 20, and hit Enter or Return. [22:23]

So, basically, it becomes very easy to stretch things by simply selecting them, and then in a separate action, pressing down one end and using the Editing palette, without even necessarily choosing that, if it's already remembering that that's the last one. And we can move this palette out of the way if it gets in the way by grabbing its little title bar area, the left side. And if we want to keep it on the same angle, we can bring it back to that point here, and we can type in a new distance. Now sometimes you don't want to do a distance, we simply want to line it up. So we can either use the Shift key to move it in a certain direction, or line it up using the guideline here. And if we did want to line it up with something else, remember that we can go on top of this, and wait for the blue line to show up, and then slide along until we get another line. [23:24]

And you'll notice this little intersection cursor has a tiny X with a dot in the middle. That's indicating that it's at the intersection of those two lines. So this is another way that you can use the guidelines to precisely snap and place things. So, these are some of the ways that you can use coordinate input and the Tracker and guidelines to get elements placed to the right length and in the right relationship with each other. So this concludes this first lesson of the second module of the QuickStart course. Thanks for watching. [24:13 END OF AUDIO]