



THE  
**Best Practices**™  
Helping ArchiCAD users  
get the most out of their software  
COURSE

**QuickStart**  
COURSE

## QUICKSTART COURSE - MODULE 2 – PART 2

copyright 2011 by Eric Bobrow, all rights reserved

For more information about the QuickStart Course, visit <http://www.acbestpractices.com/quickstart>

Hello, this is Eric Bobrow, and welcome to the lesson on precise placement of elements, the second lesson in the second module of the QuickStart course.

I am going to clean up my screen here and start fresh with all of the building by using the Arrow tool and selecting everything and then hitting the Delete key. I'll go to the Wall tool, and let's take a look at drawing a box of walls as we have before. When I select that geometry method, and click to start drawing, you'll see "Dimension 1=0, Dimension 2=0". And as I move, you'll see dimension one show the horizontal displacement; dimension two, the vertical. And as I mentioned earlier, to make it a specific size, one of those dimensions is highlighted. You'll notice it's actually bolder. That's dimension one. [1:13]

So if I want to make it a certain size, say 50 feet, I'll just type in "50", that would be about 15 meters, and then I can hit the tab key and change the second dimension. And let's make that's say 35 feet. So I now have a rectangular array of walls. Now I'm going to undo that, and you'll notice that when I undo, all of them go away at once. Because they were made in a single step, they are considered a single step for undo as well. Now, let me start from a different corner, and you'll see in this case that the dimension horizontally still is a positive number. So I can make the same type of input. Let me cancel this by hitting the ESC key and go from the upper right. [2:05]

And you'll see, in all cases, the dimensions are positive. Now depending upon what version of ArchiCAD you have, you may find that when you go from different corners, that the walls have their reference lines in a different relationship. So in this case, you can see that there's a heavy line on the outside of the wall, and a thinner line on the inside. The heavy line is referred to sometimes as the rubber band line, but actually, technically it's called the reference line. This is the line that essentially defines the position of the wall on the plan. The other line is determined by the construction method of the wall. In other words, is it left, right, or center, or some other variations where there is an offset to the face of framing. [2:59]

This other line is determined then by the construction method and the current settings of the Wall tool. So if the Wall tool is set for something thicker, that other line will be further away. And if the wall is set for more complex composite with multiple skins, we'll see that being drawn as well. Now in some versions of ArchiCAD, you may find that, depending upon the direction that you draw, it will place thickness of the wall outside the box that you're creating; and that you need to correct that. So, if I switch to construction method here, you can see that I clicked in the Info box and I changed it to a

different direction. [3:55]

And now I'm drawing the inside face of the wall, and as I move in other directions, you can see how it stays on the inside. But in some versions of ArchiCAD, it was set so that it would flip, depending upon whether you were going left to right or top to bottom. So, pay attention when you're drawing, which side is actually connected to the pencil, which side has the heavy reference line; because the dimensions that you put in will refer to those walls, the lengths on that particular side, or that reference line. So I'm going to again put it back to the direction that gives me the box of walls, where the outside is what I'm specifying, and I'll type in my 50, tab, 35; which would be roughly equivalent to 15, and 10 or 11 meters. [4:49]

So now I've got a box of walls. let me start placing elements and look at the snaps that are available for placing them precisely. I'll go to the Window tool, and I'll make sure that the Window tool is set for the geometry method for center placement. And I'll go to the center, or the midpoint, of this wall. I'll go along the edge, and as soon as the cursor changes to a Mercedes, there was a little tick mark that showed up. This little tick mark right here, when I click on it, will snap the insertion point to the midpoint of the wall. Now here is the eyeball cursor, allowing me to say "This is the outside direction". [5:37]

Now if I go to the right side here, again there's a tick mark that indicates the center point of the wall. Now, that is very useful, and in fact, the most common one to use, but you will need to switch it from time to time. This is turned on and off by the option here called "Special Snap Points". If I turn this off by clicking on the icon here, then when I go the edge, you'll notice that there are no tick marks here. I'll hit the ESC key to get rid of the guidelines that showed up. If I turn this back on, again, there's going to be the tick mark there, available for me to snap. [6:18]

But suppose I wanted to snap to a different relationship. I can use the popup menu next to the special snap and switch perhaps from a half to a division. So here is a division of three. So when I select that, then the tick marks are going to be one-third of the way, and of course I could go and do another window one-third from the other side. The number of divisions is set up by using the option here at the bottom of that menu called "Set Special Snap Values". When I click on that, you'll see that it brings up a dialog box and I can say "How many divisions?" So if I wanted to make it five divisions, and say OK, now when I go along here, you can see 1, 2, 3, 4 tick marks dividing it into five equal divisions. [7:19]

Now another variation of this is to use percentage. This is rarely used I'd say, but certainly sometimes you can say I want it to be a certain percentage along a side of an element. But very commonly used would be distance. Now let's look at the distance here. It says "Distance 4 inches", which would be about the equivalent of about 10 centimeters, and I'm going to zoom in on this area. And we'll see that as I bring my mouse closer to the edge of the wall, that there are a whole bunch of tick marks every 4 inches or 10 centimeters apart. Now that distance is probably not too useful, as there are so many of them, would be hard to tell if I wanted to make a window a specific distance away. [8:09]

Let's look at setting the special snap value, instead of being 4 inches, to a particular distance away from the corner. So change the distance here, oh let's say that I make it 3 feet, about 1 meter from the corner. And perhaps I'll say that the corner of the window will be 3 feet away. So when I go along this

edge, you'll see here now this is 3 feet, and of course this one would be 6 feet, 9 feet, etc. So here we have, now I'll click. And you remember that cursor that was the double eyeball. You can see the opening in the wall to the right, or to the left depending upon where I move my mouse. I'm not clicking yet, I'm just gesturing. [8:54]

Now when I click, it determines that that's where the opening is. And remember that there's a status bar down here that gives me a clue. Earlier it said, "Click for the Window Opening". Now it says the orientation. So I'll say the window is oriented, or facing out here. So I've now got a window that is precisely in this case 3 feet. I'll just measure from the corner here, and you can see here's the 3 foot distance to the corner of the window. [9:27]

So the special snaps here are very powerful, they allow you to measure distance a specific length, or divisions, or halfway. and you can switch between them at any time. So now that I've switched to half way, if I go back out, you'll see that again, the tick mark is showing at the halfway point. Now, let's say that we wanted to put in an interior wall a certain distance away from the corner. So I'll go to the Wall tool, and let's say that we want to create a single wall instead of a box of walls. Now it would be good at this point to change from the layer called "A Wall Exterior" to a different layer. Here, "A Wall Interior". Now this is not critical right now for your basic modeling, but paying attention to categories and organizing the layers properly will be useful for later. [10:30]

So I'll switch to the Interior Wall option. Now, I'm going to go zoom in on this area, and say that I'd like to create a room that has clear space of 10 feet. That would be about 3 meters. So, I'd like to specify a special snap value of 10 feet. And remember that in Imperial, I just type in 10, and it will decide or interpret that as 10 feet. I say OK. So I've set the distance to be 10 feet. But I'd also need to make an extra change here. I need to change it manually from the halfway to the distance. This is something that can often trip me up and trip users up, because although I set the special snap value to 10 feet, I also have to switch that the active snap is 10 feet. So by doing that, then I can go and place the wall properly. [11:34]

Now if I go to the edge of the wall here, you'll see that this is a 10 foot snap point. But that is measuring on the outside. If I go to the inside, you'll see a snap point measured. Let's just compare them. You can see that there's one here and one there. This is the one that is 10 feet clear space. So you should definitely measure along the edge that will give you the correct or appropriate distance that you need. Now I'm going to click to start placing this wall. Now you'll notice that as I move this into the building, that the thickness of the wall is basic facing up, relative to the reference line. And this means it's going to be taking space away from the room that I'm creating. So I'm going to switch right here on the fly to a different orientation, using the construction method option in the Info box. [12:31]

And now you can see that the preview of the wall is correctly placed down below the heavy line, which is the reference line. Now I can do this a very specific distance, or I can just gesture. And I'll just, in this case, just sketch out that this room might be wide enough to see, have these two windows included. Now I had this setup for a single wall rather than a chain, so it finished constructing that one wall when I did that. Now to close off this room, say up above, I'll need to connect these or let's say start the new

wall at the end point here. So I'll go to the end where you see the checkmark. The checkmark indicates that I'm precisely on that point, and it will then join when I create this wall. [13:24]

So I'll click to start this wall, and I'll of course need to decide do I want the wall to be on the right or the left side. This looks fine to me, so I'll just take it up. Now, here is that perpendicular snap that I talked about. Here would be connecting on an angle. Here would be falling short, and here of course would be going too long. But let's take a look at what happens if I connect it on an angle. You'll notice that it is happy to clean up that intersection. I'll just undo this, and I'll do it again. And of course I can go to a different angle. And again, it will clean up just fine. [14:08]

Now if I take this up into the middle of the wall here, it will also clean up just fine, but there's something going on subtly with ArchiCAD that is important to know about and that is what's called "Auto Intersection". This is a setting that's usually turned on, and you'll want to leave it on for almost all purposes. What that does is it makes sure that when you connect the wall, if I for example, do this here. If I draw it into the wall, that it will actually clean up. Now, when I select either of these walls, you'll see that they actually were being extended to the outside face of that wall. They were being extended to the reference line. [15:02]

And so there is a concept you that these walls will clean up if they extend to the reference line of the other wall. Now you'll notice that when I highlight this wall on the left side, that it has a thick line on the outside and a thinner line on the inside. Remember I was describing the reference line, which was the line that I was drawing to define the building outline. The reference line could be top, bottom, inside, outside; but most commonly it's on the outside of a building, when you're working on new construction, because that's going to be the critical or defining measurement. Interior walls it can be on either side, or often its centered for certain types of commercial construction, where tenancy and rental calculations are based on the dividing line or the center line of the wall between tenant spaces. [15:58]

So when we are connecting these here, and I will just delete these two extraneous walls, we do need to connect to the reference line. Now, these two points both are endpoints of the wall, but if you look very carefully you'll see one has a thicker checkmark and the other a lighter one. And the upper wall, or the upper side of the wall, when I hover over it, it has a thicker Mercedes, and the lower one a thinner one. The thick one is the reference line. And you'll get better results if you connect your wall to the end of the reference line. You'll notice how it extended this around. Now it is possible to connect to either end of the wall, and with that Auto Intersection, ArchiCAD will often correct it and make sure that the walls are joining properly. [17:00]

Here you'll see that this wall stops at that corner, and these two are meeting at a clean intersection. So that's a little side note that can sometimes be important for your understanding. Now, let's move on with using the measurement and placement options with the special snap. Sometimes we'd like to put in an element, such as a window, halfway between two other elements. So in this case, if I were to switch to the halfway mark and position it over here, you'll notice that there's a tick mark way down here, because that's halfway along the entire length of the wall. There is a simple option that says, please calculate the distances or divisions such as halfway between intersection points. When I activate

that, instead of along an entire element, now when I go along here, you'll see the tick mark indicating the center of this room. [18:06]

If I go to the other side, you'll notice it's still down, halfway down the entire length of the wall, because there are no intersections on that side. But then on the interior space, I can then click to say that's where I want the window. Now when I'm putting the window in, you'll notice that it's putting it in the corner at that point. So I probably want to switch to putting in the center. So again, many times when you're in the middle of an operation, you can see the preview and change it to get the desired result. In this case, center. And then clicking to place the window. [18:46]

Now, sometimes we want to place a window a certain distance away from another window. And this special snap where we're saying that we want it to be a distance would be good, except that it's only going to measure along an entire element, such as a wall or between intersection points, which would be the distance from where another wall meets this wall. So we can't actually use these options here to place the window, let's say a meter or three feet away from another window. So how would you actually do this? Well, there are two ways that I can suggest. One is very simple, but it does require a couple of extra steps. And the other is a little bit more complicated, but it's actually quicker once you learn it. [19:39]

So let's take a look at the simpler method here, it just takes some extra steps. I'll tell ArchiCAD that I'd like to place a window in the corner, and I'll go right to the corner of the other window, and I'll click. And then as I move this up or down, it says, "Do you want the window right on top of the other one or beside it?" I'll say beside it please, and click until it's done. Then I'll go select this window, and I'll go select it with the Arrow tool, and then using one or another different ways, I will move it the right offset distance. So if I go to the Edit menu with it selected, Move, Drag. Or hit Command+D or CTRL+D, then it says "Enter drag reference point". I can say well, I'd like to start it here, and I'd like to move it down. And you'll notice the Tracker palette happily is sitting right near where I'm doing this. And I can just type in "3", or 1 meter, 3 feet or 1 meter, and this is now exactly 3 feet away. [20:48]

So this method requires placing an element right next to another element you would like to have a specific distance from. And then, in a separate action, selecting and moving it that distance. Now you can speed this up a little bit by learning how to drag or move things with a gesture. I'm in the Arrow tool, and nothing is selected. I can go over the window, and in a single action, press down to select it and start to move it all in one action. So I have pressed to select and held down while I started to drag. Now you can see that it's doing something, and giving me a distance. Let me just type in "1" for 1 foot, and that's actually, within a single action, selected it and dragged it, and then allowed me to type in the distance. [21:49]

To verify that actually worked properly, let me just use the measurement option here, Measurement tool, we'll see that it's exactly 4 feet, because I placed it 3 feet at first and then 1 foot after. So, let's say that we wanted - I'm just going to scroll down here, and I'll use the scroll. So sometimes instead of panning, we can just use the scroll on the side or bottom of the screen. So let me go in and put in another window, and let's say I wanted it to be 4 feet away. So I can go put in this window next to the

other one, and then go back to the Arrow tool, press and start to move it down in the direction I want. In the single action, let go. So I've let go of the mouse, now I'm typing in the distance 4 feet. And that's going to be a four foot gap. So dragging in a single action is a very quick, efficient way to manipulate things. [22:47]

Now, let's take a look at another way that we can do this that we can use for variety of purposes. I'll zoom out here. Let's say that we wanted to have a wall a certain distance away from another wall. And there are different ways to do this but, one method to do this would be to create a temporary line that would be the right distance. So let's say that this was actually going to be a walkway, and there would be another building that would be 2 meters, let's say 6 feet away. So I'll go and use the Guideline tool, and I'll press down on the little popup menu next to the guideline and say "Create a Guideline Segment". [23:37]

So this is an option that does have a keyboard shortcut, it's Shift+~ or Shift+`, and this one, if you do find that on your keyboard, it's usually on the upper left underneath the ESC key. And so this little up arrow is the Shift key, just like when you do capital letters. And as funny symbol is I believe for the ~ in the upper left corner of the screen. Whether you use the keyboard shortcut or not, I can now go and click, and I'm drawing a guideline. I'm actually not drawing a wall. You'll notice that although I have a rubber band line, that it's not giving me a thickness for a wall, because I'm actually going to be drawing a guideline. [24:28]

So let's say that I wanted this to be 6 feet or 2 meters, I'll just type in "6" and hit Return. So now what you can see is that there's a dashed orange line. I'll zoom in by rolling the mouse wheel in this area, and no, that is easily snap to. So I can easily go to the Wall tool and start to draw, perhaps having to shift the reference side of the wall down. So that distance, again, if I measure it is of course the distance that I typed in. So I'll hit the ESC key to cancel out of that measurement. So that was using the option here for "Create Guideline Segment". So if I wanted to do that with a window, what I want to do first is activate the Window tool, make sure that I'm at corner insertion, if that's what is appropriate, or center. [25:26]

So perhaps I want it to be centered a certain distance away from the other window. So what I'll do then is go in and draw a guideline segment from the center of this window, you can see the little checkmark, and I can go along here and type in a distance. Let's say I wanted it to be 8 feet away, which would be two and half meters roughly. And that actually created a guideline there. So now I can pop in the window right here. And let's just measure that. And you can see that's exactly 8 feet away. [26:05]

So, that is a method that you can use sometimes to place elements a specific distance from something else. Make sure you're in the tool that will draw the element so you're ready to go. Go and select "Create Guidelines Segment", and then go click on a starting reference point. Gesture in the direction you want, and type in the value into the tracker for how far you want that guideline to be. and then you'll actually, you could just simply click at that point or hit the Enter key, because it will actually be ready for you to put in the element that you've got highlighted, for example, the Window tool. So let's say I wanted to make another window here 10 feet away, so I'll go and say, Create a Guideline Segment from this point up to here. [27:00]

And I'll just type in 10, and I'll hit the Return or Enter key. I'm not clicking; I'm hitting Return or Enter. And that actually starts the insertion of the window in that position. So in fact, instead of using the mouse to click, sometimes it's simpler to position your mouse somewhere that you want, and then hit Enter on the keyboard. And it will accept that exactly the same as if you click the mouse. So this concludes our lesson on precise placement of elements using the special snaps and guidelines. This is been Eric Bobrow, thanks for watching.

[END OF AUDIO 27:43]