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QUICKSTART COURSE - MODULE 3 – PART 3

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Hello, this is Eric Bobrow, and in this lesson we'll be looking at how to insert windows and doors at specific locations in the walls.

Here I have the building at the end of the previous lesson, and there's one thing I want to clean up before I get going. I'm just going to zoom in on the upper area by clicking on the magnifying glass plus sign, and then clicking two points to zoom in. And you can see that the walls in this area are not cleaning up properly. Now I've got the Arrow tool active, and I'm going to select the upper wall here, and you'll notice that when I select it, that there are handles at the ends of the reference line at the top of the wall, which is obvious, but the bottom of the wall is actually at the interior intersection. [0:45]

Now let me select the wall on the right side here, and you'll see that it's selected now and it has a handle at that same point. Let me go down to the next wall, it should be intersecting, and select it; and you can see that it actually has its endpoint at a different location. It's on the outside corner here. That's why we're getting this funny cleanup. Now the wall on the left, as it turns out, is actually not causing the issue. I'll demonstrate that in a minute after I clean this up. [1:17]

So I'm going to select this wall down at the bottom that I've already got selected, and the wall going off to the right by shift+clicking. So now I have those two selected. And we'll use the Intersect option in the toolbar. When I click on that, you'll notice that it all cleans up properly, because this lower wall is now shortened to meet at the same point. So we actually now have three different walls: the bottom one, the right one, and the top one that all have the same point. In fact, that's generally a good idea for making things intersect cleanly is to have their endpoints meet up at the same location. [1:56]

Now the wall on the left side, actually when I select it, you see that it's going to this corner here at the outside intersection. But it still is cleaning up. Why is that? Well, let me just move it up for a minute, and you'll see that as I move it up, it's cleaning up because it's thinking of itself as a "T" intersection. In other words, its ending in the edge of the wall, and it's opening up a clean intersection there. Now I'm going to undo this and move it back into position. But you can see that in this case the "T" intersection is opening up whereas the other three are meeting at corners, at the same corner. [2:32]

So sometimes it can get a little tricky to make cleanups in ArchiCAD, but in this case we have a nice clean result. So let me go back to the previous view using this command for Previous Zoom here in the Navigation menu, and let's start putting in some windows. I'll activate the Window tool by clicking on its icon in the toolbox. And you can see in the top here that the Info box now shows the Window icon and it

says "W1 Casement 15". So W-1 is single window as opposed to a double or triple or anything else. It's a casement, so that the opening style; and we're in ArchiCAD 15, so this is the ArchiCAD 15 library. [3:15]

If you're in a different version of ArchiCAD, it might say "W1 Casement 12", or 10, or something like that. Now let me switch over to the international version, and you'll see, when I activate the Window tool that it actually says "Empty Window", because the template for the international version has the Window and Door tools set to be the empty openings. Now these are useful, you can cut a hole in a wall without putting in any actual construction element. But in this case, I want to put in a real window. So I'll click on the icon here that opens up the settings dialog for the current tool, which is the Window tool obviously. And you can see that "Empty Window" is what is selected in the bottom left area of the - and in the upper right, we're seeing a preview of just the cutout in the wall. [4:08]

Now I'm going to look in the library for a window. And you see here in ArchiCAD 15 it says "Linked Libraries". And I can then open that little triangle, and then it says "ArchiCAD Library 15", and open that again. Now if you're in another version of ArchiCAD, you may see something slightly different, but basically you need to find a standard library that you're working with, and then navigate to the part of the library that has the windows. In the international version, the organization looks like this; in the U.S. version, it will have windows and doors in category "8" of the CSI standards for openings. [4:43]

Now I'll open up that window section, and then wood and plastic windows, and I'll go to basic windows here. And I'll select "W-115". So I've navigated through the folder structure, and then selected one of the windows. And now we're seeing a real window here, we've got the size 900 mm by 1500 mm, which is just fine for my purposes. Now notice that the little picture here says that it's 900 mm off the ground. So that's this sill height to the wall base. Now I would prefer to work with the header height to the wall base, which will allow me to set a specific distance that the header will be off of the base. And when I do that, in this case, it updates automatically to say, "Well, you're 2400 mm or about 8 feet off the ground." [5:37]

I'll change that to 2100 mm for my purposes, and then when we're putting in windows in this case, even if I change the height of the window here, it will still have the header at a constant height, which is my preference. So having just chosen a window, I'll say OK, and we're now in a similar position for both the international and the U.S. demonstrations. So I'll go back to the U.S. decision, and here I'll say that I'd like to put in this window by center point. So the geometry options are either center or corner. And I would prefer to work with the center option in this case. [6:19]

Now I'd like to put it in halfway along this wall on the left side, at the midpoint. So I'll look at the special snap options, which are special snap points, which are in the toolbox. You can see that it's sort of shaded in, which means it's active. And when I press down on the little triangle popup menu, or pull down menu, you'll see that it says "half". So I'm going to be snapping to the halfway point along the entire element. Now I'll just click outside the menu to make it go away, and I'll move my mouse with the little cross hair along the edge of the wall. And when I get the Mercedes, it then picks up that I'm on the edge of the wall and gives me the tick mark at that midway point. Where I have a checkmark then. When I click, it will start to put in the window. [7:07]

Now to completely put in the window, I need to use the eyeball cursor and tell ArchiCAD that it faces out. That's generally the convention for Windows is to click to the outside direction. Now I'd like to put in some windows down at the bottom wall here, but I'd like to put them in evenly spaced with three divisions. So I'll go down here and change it to "Divisions". In this case it says 3, it might be a different number, and might need to change it, but right now it is already saying three. So I can simply go down, position my cursor over the edge of the wall, find the first tick mark that it highlights, click, click again on the outside to place the next window. [7:48]0

You'll notice that the markers are updating, it says "01", "02". So this is a nice convenience, although it's not always going to serve you. Because sometimes you'll be putting in windows in various places and the numbering won't suit you. So you can always renumber it later. But for now, we'll just accept those numbers. Now, I'll go along the edge here, and again find the other point that's one-third of the way along, and click once on the checkmark and once on the outside of the wall to place the window. [8:15]

Now I'd like to place a window in the right side here. This is going to be a bathroom. And I'd like to place it a specific distance from the corner. So I'm going to go and change this to "Distance". Now when I select "Distance", it actually activates that, but it remembers the last distance that was set. And if I want something different, I need to go to "Set Special Snap Values" from this menu. So I'll open that up, and I'll change the distance setting. In this case I'd like to make it 5 foot 7, so you can do 5'7", or 5-7. Or, if you're in metric, 1,700, one thousand seven hundred, would be the mm. And you don't have to type in "mm", you just type in "1700". [8:58]

Now having done that, I will go along the edge of the wall, and you'll see that there are two tick marks. One is 5'7, or 1700 mm from this corner, and then another one up near the top. If I move away, the tick marks disappear; and if I move back, starting at the top, you'll see I have two different sets of tick marks starting from the upper corner. So essentially, what we need to do is think of which side we want to measure from. In this case, the lower corner. And position nearer to that, then it will give me a snap point relative to that point. [9:31]

So now I will click on the check mark, and then click to indicate the outward direction of the window. I want to put in a window in his upper area for the kitchen, and this measurement here is going to be a little different. So I go to "Set Special Snap Values", and set this to 4 foot 7, so 4-7 or it would be 1,400, one thousand, four hundred mm. And I go along here to a place this along at this point. And click at the tick mark that shows at that proper distance. So you can see how quick it is to set a distance and place something exactly where you want it. [10:14]

Now, we're going to do something a little more complicated. We're going to switch the distance to 6 inches or 150 mm. So type in "6" and the inch sign or 150. But in this case, I'd like to put it in by corner. So in other words I'd like to place the corner of the window 6 inches or 150 mm from something. And I'd also like to switch - and this is very important - to measuring between intersection points. Because I'll just do this without it, I'm going to zoom in on this area, this sort of central area in the back, which is going to be a bedroom. And if I move my cursor along here, you'll see these tick marks are sort of not so much random, but they're not measuring from this corner. [11:02]

Now if I select and change this to between intersection points using this icon here, then when I move along here, you can see that it's measuring from that corner. So now I'll click to say I'd like to place it 6 inches or 150 mm in. Now I get this cursor that indicates that I'm able to choose the opening side. And you see down below it says, "Click for window/door location" in the status bar. So as I move it left to right, you can see how it's proposing opening the wall to the left or to the right. Obviously, I want it to the right. And I'll click. After that click, I get the eyeball cursor, the regular one, and then click to say I'd like to face it out. [11:41]

And I'll just repeat it on this side. It's already still got the 6 inches or 150 millimeters. Click once to say the corner, click another time to say the direction, and click a third time to say that it's facing out. Now I'll switch to the international version, and just repeat the whole process so that you can see how quickly it can be done when I'm not explaining things, but simply doing it. I've got the Window tool active, I've got this set to the halfway mark here, and I'm going to go and simply find the tick mark, click and click; I'll switch to the divisions of three, go down to the bottom, and I'll click on each of these points and then indicate which way the window faces. [12:24]

And I'll switch here to distance, and then set the Special Snap Value to 1700 mm, and go along from the bottom here. And here's where I insert this window. And I'll switch the Special Snap Values to 1400 mm, and go along here to place this window in the kitchen area. And then I'll do the more complex thing where I'll set the Special Snap Value to the 6 inches or 150 mm. But I'll also change to corner insertion for the window, and I'll also switch to make sure that it says "Between Intersection Points". And so now I can go in and find where those points are; click, click, click. And we're done with that. Go to this one, click, click, click. And you see, I don't even have to zoom in very much to get those results. So I did all of those windows in the space of about a minute and a half. [13:30]

So let me go back to the U.S. version, and we'll go back to our viewpoint where we're seeing the entire building, and let's activate the Door tool. So the Door tool is set in the template to an entrance door of a certain size, 3' width and 6'8" in height, which is fine. I'll just leave it at that. Let's go to the international version and look at that. If I switch to the Door tool, again, it's set for an empty door, and I'd like to put in a real door. So I'll go into the door settings by clicking on the little icon and find the Linked Libraries. And the standard library for this version of ArchiCAD, and open up the door folder. And we'll go to the wood and plastic doors, and I'll scroll down a little bit to the wood entrance doors, and scroll down until I find the one that says, "D1 Entrance 15". [14:23]

So this one is set to be 900 in width, 2100 in height. That's fine, I'll leave it alone. And it's set to be zero distance from the sill, from the wall base. So basically, it will sit at the bottom of the wall. I'll click OK. So now we're set up on both of these the same way. I'll go back to the U.S. version and we'll start to put in the first door. Now putting in all of the information using this Special Snap Palette is very workable, but there is a faster way to access some of this information. We can go to the Window menu, Palettes, and open up Control Box. [15:00]

So Control Box is a palette that's been around since ArchiCAD, well since at least version 4. I started actually a little before that. And the Control Palette has, in addition to the other icons that I'm not going

to explain right now, it has the option to set the Special Snap Points directly without having to open up a separate dialog box and close it each time. So right now I'd like to put in a door at a distance of 6'10" here. So it would be 6-10 or 2100 mm from the corner. And I'm going to put this door in by center which it was set at. And I'll go down to the bottom right of the building, and then find the tick mark, and click. [15:52]

Now when I place a door, I usually - the eyeball cursor is used to indicate the swing. So does the door open out or in is the first decision, and the second one is does it open to the left or right? So if I clicked up here, it will open up in that direction. But I'm going to click down in the lower left and it will open up in the direction pointing towards my cursor. So now I'm going to use this palette to very quickly switch to 6 inches or 150 mm, and put the door in by corner. And I'll also switch from 3 feet in width to a narrower door of 2'6". And in the metric that would be 750 mm. And I'm going to go down, I'll just zoom in on this lower left area, and I'll go down to the inside corner. [16:44]

And I want to measure from the insider here rather than the outside. You'll notice that these distances measure from whichever corner I'm closer to. So I'd like to insert it based on this point. And again, which way does the opening get cut? I don't want to take it down towards the corner, I want to take it up. And then I want to take it in and to the right, so I'll click down in this general area, which will make the door swing this way. I'll use the previous zoom option to zoom back out, and we'll put the next door that will be a similar size in as an exit door from the kitchen. And the kitchen is in this upper left area. [17:22]

Now here I'd like to place the door a certain distance from the window. So in order to place that door from the window, I'm going to need to measure from the window rather than from the corner. So these special snap values will not help me, because they'll only go along the edge of an element. They won't measure from a particular point like a window. Now I'd like to put this in by center, and I'm going to use the alternate measurement option for snapping, creating a guideline segment. So again, I'll select create guidelines segment from the little popup next to the guideline icon in the toolbox. And I will go from the center of the window here. [18:08]

Now as I click, I'm starting to draw what will be a guideline. But I'm not seeing the tracker. I'm not seeing the information about distances. So in order to be able to enter that, I need to have the tracker on, which for some reason has been turned off. It's not a problem, I'll simply click on the icon to show the tracker. And now you see as I move around, the distance is being shown, and in fact I can input it. So I'll go along the edge of the wall. So now I'm drawing a line along the wall. And I'll make this a certain distance away from the window center. And it's going to be 3'7", or 1100 mm. So you type in 3-7 or 1100, and then you hit Enter or Return. [18:56]

Now you can just barely see that there's an orange guideline there, but more important, there's a check mark indicating that my cursor currently is right at the end of that guideline. Now I could click, but I might move the mouse a little bit by accident, so in fact it's a little bit easier and more reliable to simply hit the Return or Enter key to say "Click Here". So I do that; and now you can see the cursor indicating

that it's saying, "Which way do I want this to swing?" I'm going to swing it down to the open into the building, and to the right, so that it will swing towards that side, and click. [19:36]

So now I've got all three of my entrance doors indicated. Now I'm going to switch to an interior door, so I'll click on the Door tool. And here for the first time we're looking in the U.S. version. And we'll see here, wood entrance doors and wood internal doors. So I'll pick wood internal doors from the folder, and then pick D-115. And let's just take a look at the preview and positioning, which will allow me to see the size. And 2 foot 6 by 6 foot 8 with a plain flat panel is just fine right now. Now the dialog box has gone a little bit off of my recording screen, so I'm going to close up this panel here so we can see that I can just click OK to say, "Yes, that's what I want to put in". So I'll repeat this for the international version after I complete all the doors, but let me just proceed on with the next one. I'm going to put in a door at 2 foot 8. This would be 800 mm thick. And I'll put it in by corner, and I'll go to this inside corner here of the kitchen. And this is going to be - I click on this corner to say this is where I want the edge of the door to be, and I'll then gesture to the left to say the opening should be this side. And then I'll swing up and to the right. So you can see with this Coordinate Palette, or this Control Palette, that it's actually very quick to just switch these numbers around. [21:05]

I'll change it now to 6 inches, here, which would be 150 mm, and go and place in a door along here. So I'll click, click, click. So it can be start to be very, very quick. And I'll do the same for a door along here. Click, click, click. Now, I'll zoom in on this, and this particular door is actually a little bit of a problem, because it's right up against that closet wall. So instead of being 150 mm or 6 inches, I'm going to move it down. So to move something, I'll go to the Arrow tool, and I'll go select the door. I can go to a corner of the opening, or of the actual end of the door swing and click. It now has it selected. And I'll go to the Edit menu, Move, Drag. And there are many shortcuts that will do it faster, but you can always go to the Edit menu when you want to change an element and find a command there. [22:09]

And when I say Drag, it says "Enter Drag Reference Point". I'll click, say on one of these corner points, and I'll then move it. So now I'm gesturing. And you'll notice that as I move the mouse left or right, it doesn't really change because the door is going to stay within the wall. And really all I need to do is tell it how far I want to move in the wall. So I'll just type in 2 inches or it would be 50 mm, and hit Return or Enter. And you can see now it's moved down to the 4 inches away from the corner, or 100 mm. So we have just a couple of other doors to put in, but these are different doors. So I'll just go back to our previous view so we can see that. [22:54]

And I'll go to the Door tool. I'll activate the Door tool here, and open up the Door Settings dialog. And in the Door Settings dialog, I'd like to actually find a different door. Now, in order to find it, I'd like to find a sliding door. So I could go navigate through the folders to find it, but I'm going to use the "Find Library Parts", and type in a keyword, "sliding". And then hit the Enter or Return key, or I can click the "Find" button. And you can see that it is locating some doors. So I would like the "D2 Sliding 15". And there we have a slider door, very simple. [23:32]

Now the first door I'm putting in is going to be the 5 foot in width. This will be an exterior door in the upper right area of the building, which will be for the utility closet. And I'd like to put this in at the

midway point here. From the midway point, I can do it either at the top or the bottom, because these are in line with each other, and I'll click. Now I made a mistake. I clicked while it still said "Corner Insertion". So I need to switch it to "Center". And when I switch to Center, it actually will work just fine here. But sometimes if you switch from center to corner, you may not get the option of correcting which corner is going to go to. [24:15]

So in that case, if you ever start an operation that you don't want to complete, because you don't have things set up properly, just hit the Esc key, which I will do right now. I'll hit the Esc key, and it will cancel. And then you can make sure you're set up properly, and in this case centered, and I'll go to the midpoint here at the checkmark, click on it. Now with the slider, in terms of opening, the convention here is which way do you want the fixed door, the one that's not sliding, to be facing? And I want this one to be on the inside to the right. And I'll click on it, and you can see how the door that's not showing in motion, that sort of appears fixed, is the one, the side that I indicated. And that it was on the inside of the building. And that was the direction that I clicked on. [25:07]

So, you can always experiment, and you can move doors around, you can change their swings. We'll learn some more of that later, but for now, just know that for a slider, you should click on the direction that you want to fixed door to face, in terms of inside-outside and right and left. To finish up the very last door, we're going to actually change the door settings from the 5 feet to 4 feet for the closet. That would be a size of 1200 mm. The 5 feet was 1500 millimeters. And I'll go in and put this in by the center of the closet. Now do I want it to be the center of the inside of the closet, or the center of the outside? You can see there are two different ones. I'm going to use the inside as my snap, and then I will click to the outside and towards the bottom to specify the fixed leaf of this particular closet door. [26:15]

So we've now put in all of the doors and windows and I'll just zoom out a little bit. If I use the zoom to Fit in Window, it will zoom out to show everything including the elevation markers. I'll just zoom in here with a magnifying glass to show the end results. And we'll take a quick look in 3D, just to have the satisfaction of seeing that we've actually built up a model. I'll use the axo, or axonometric option, and we'll see here's the little building that we've got so far. I'll use the Orbit, and drag this around, and we'll see how it looks. Now I'll deactivate the orbit, and I'll go back to the floor plan by clicking here. And let me switch to the international version, and I'll repeat putting in the doors really quickly, so you'll see how fast you can do it once you're an expert in ArchiCAD. [27:14]

So I'll switch over here. We've got the Door tool active, I've already set it to the entrance door, and I'm going to open up the Window menu, Palettes, and Control Box, and I'll move this into a convenient location here. And I'll now look at putting this in by distance of, in this case, 2100 millimeters or 6'10". And I'll make sure that I'm putting in a door by center, and I'll go along the bottom right, click; and then I need it to swing in and to the left. And then I'll switch the distance here to be 150 mm or 6 inches, and I'll put it in by a corner instead of center, and I'll go to the inside face here, click on the tick mark, click to say that the opening is going to be above rather than below, and then click inside and to the bottom to make its swing in that direction. [28:16]

Oh I forgot, I was supposed to change the size of the door, but I can do the afterward. I'll go to the Arrow tool, select the door. You can see it's highlighted, and I'll change the door width to 750. Now notice that when ArchiCAD does that, that it actually left the anchor point. In other words, the point that I used to insert it at the same location and it shrunk from the other side. So putting it in with a corner or a center part, center insertion, records that that's the important thing as far as you're concerned. So, this is actually a very good thing to remember is that while you can always put it in by either center or corner, which one do you prefer to pay attention to. That's what you should be working with. [29:04]

Now I'll use the eyedropper to using this pick up parameters, eyedropper. And I'll click on the Door tool here. That will switch me back to the Door tool, and now its set to that 750. So, once I've set it up for one element, I can pick up the settings to put in the next one. So let me put in the next door using the option for the guidelines segment. And again, I will activate that, go to the center of this window. Actually before I do that, I'll make sure I'm putting it in the center of the door, because that's what I need. And I'll go to the center of this window and click on the checkmark. I don't have the tracker showing, so let me remember to turn on the tracker so I can see the distances. [29:50]

And then go along the edge, and type in the distance, which would be 1100 or 3'7", and hit Enter right away. That says that I want to make the guideline that length. And then hit Enter again or Return on your keyboard to say, "I'd like to click to place the door at that same cursor location." You can see the eyeball. I'm now going to tell it to open inside the building and to our right as we look on the screen. Now I'm going to switch to an interior door. So I will go and open up the door settings by clicking on the door icon. And let's go to - scroll down through the wood and plastic doors to the wood internal doors, pick "D-115". And I don't really care about the actual panel. In the international version, apparently the default is to have a glass panel as opposed to a flat, opaque panel. [30:46]

That's fine, both of them are fine for my purposes. So I'll just say OK. Actually, I would like to make this a little bit smaller, 750. So I'll change the width here to be a little bit narrower for my interior doors and say OK. Which would be the 2 foot six in the U.S. standard. Now I'll go in and switch here to a distance of 800, and make sure that I'm putting it in by corner. And go down to this location here, and click, click, click. And then I'll switch to a distance of 150. And go down into this corner, click, click, click. And I'll just roll my mouse to zoom in a little bit so I can see this a little bit better, now but this one in, click, click, click. [31:46]

And in this case, it actually fits fairly nicely, but if I want to repeat what I did before, I can go and click on this door at the corner, go to the Edit menu, Move, Drag. And then say, it says, "Enter Drag Reference Point" in the bottom left status bar, I'll just click on this point to say, "I'd like to start moving it up from here." And it will move up or down. It doesn't matter whether I move the mouse side to side, but I will type in that I'd like to move it to 15 mm, or 2 inches, and you can see how it moves down nicely. Now, were going in the final two doors by switching the Door tool. So I'll activate the Door tool, open up the Door Settings, and we'll take a very quick look at Find Library Parts. So I'll switch from Folder view to Find. [32:37]

And I'll type and "Sliding" and hit Enter or Return. And you can see that I've got a number of choices here. Let's pick "D2 Sliding 15" here. And the size that I want, I'll take the 1500 mm for this width. Although it not too critical, but that's what I would prefer. And let's go back to our previous zoom, and we'll pop this in. Instead of a distance, we'll pop it at the halfway mark, and I'll go to the inside halfway, and then I'll make sure that I put it in by center. So I'll click on the center, and then click to say that I want to put it in facing the bottom right. I we'll change the size from the 1500 to 1200, and put it in at the center of the closet. [33:29]

Click on here, and this is going to click in the bottom left to say that the fixed panel should be there. So at this point, we've put in all of the windows and doors. I'll go to 3D by hitting F3, so that will, that is a shortcut for going to the 3D window. And you can see a similar building that has been taking shape in this international version, which we can move around and see what this looks like here. And I will finish the orbit by clicking on the Orbit tool again, and then I'll hit F2 to go back to the floor plan. [34:06]

So this concludes our lesson on putting in windows and doors at specific distances. You may want to on your own just check that your distances match what is on the PDF file that is provided for the plan. So if I want to just double check things, I can use the Measure tool here, so I can click on the Measure tool and say, "Click on this point, and click on the center point here." And you can see distance of 1500. And I can keep on clicking on points, even if I don't carry the distance from that midpoint of the window to the bottom corner. I can ignore that, because really what I'm going to look at is what's the distance here? [34:48]

It's 2233, and this is 2233, and this is again, 2233. So that was evenly spaced. And if I go up to this corner here, 2100, that's the distance that I told the door. And I can just keep on clicking on points and read off, okay that's 1700. So obviously, I did it very cleanly. You might want to check your own to see that they are the distances that you expect. So this is Eric Bobrow, I appreciate that you took the time to watch this, I hope you learned a lot. I look forward your feedback. Please add your comments and questions down below on the actual lesson video on this page. Thanks for watching.

35:33 END OF AUDIO