

SketchUp Quick Start For Surveyors

Reason why we are doing this

SketchUp allows surveyors to draw buildings very quickly. It allows you to locate them in a plan of the area. It allows you to show the relationship of a building to another building. It enables you to consider floor area and details such as a roof detail.

Site Notes

Drawing is good for you - draw over the site notes!

The benefits of being able to hand draw a building/details is that it helps you think through how the building is constructed and the details that are not necessarily visible or photographic that could be a problem, or look at the potential to develop the property.

SketchUp is very useable and makes drawing more presentable.

SketchUp Professional Standard?

The benefits of drawing with SketchUp is that you can produce a professional quality drawing very quickly that, as mentioned, can be linked to Google Earth, that enables you and your client to have a better perspective of any issues or ideas that you are dealing with.

Number	Description	Condition
1.0	Set Up SketchUp	
1.1	Go to Window / Model Info / Units	
1.2	Set units to: Decimal / Millimetres (in the Format section) 0.0 millimetres (in the Precision section)	

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1.3	✓enable length snapping and put 0.1 millimetres after it.	
1.4	Do not tick display units format.	
1.5	Angle units	
1.6	Precision: 0.0	
1.7	✓ enable angle snapping 15.0	
1.8	Close by clicking red x in the corner	

Number	Description	Condition
2.0	Your first box, or is it a house?	
2.1	Click on the red pencil (in the top tool bar left hand side) and start to draw a line	
2.2	Type in 10m and hit enter and you've just drawn a 10m line. Repeat until you have drawn a rectangle (you'll notice the line goes red when it's in line with the red axis and green when it's line with the green axis.	
2.3	If you need to expand your drawing click on magnifying glass (zoom extents will appear) and the orbit button which is the blue arrows in a ball	
2.4	Once you have a rectangle click in the push/pull button (which is the box with a red arrow on the top). Click on the area of the rectangle and pull upwards to form a cube and type in 10m and enter and you have a 10m square cube.	

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2.5	Click on the zoom extents . Use the orbit key to look at the top of the box and zoom extents again to look at all the top of the box.	
2.6	Click on the pencil and draw a line centrally through the box starting on the edge.	
2.7	Use the move copy four arrowed button to pull the line up and form a roof. PS - if you get anything wrong use the eraser that looks like a pink brick. Note: if this isn't working it's probably because the box isn't square and it's easiest to start again.	
2.8	You now have a basic house, which you can view using the orbit button , which is the blue arrowed circle (on version 7.1).	

Number	Description	Condition
3.0	Add windows and doors to your house (two ways either draw them yourself or download them)	
3.1	Draw rectangles on the box and push and pull them to make them into doors and windows.	
3.2	You can then paint the box using the bucket and the paint symbol and choosing the different textures.	

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Number	Description	Condition
4.0	Developing from a Google Earth plan	
4.1	Have Google Earth downloaded and switched on (double click it).	
4.2	In Google Earth type in a post code you know, switch to SketchUp in Tools , go to Google Earth then get current view . This will be pulled into SketchUp .	
4.3	Trace over some of the buildings with the pencil tool to form rectangles that push/pull the tool to add height and add roofs.	
4.4	Hint: when you put your post code into Google Earth you need to zoom down until you can see the buildings properly.	
4.5	Experiment with some of the other buttons.	
4.6	Make sure you do at least ten buildings.	
4.7	Hint: Instead of the eraser (looks like a pink brick) you can also use edit / undo button and the edit / re-do button.	

Number	Description	Condition
5.0	Drawing a building in detail but not in detail and using a perspective photo	
5.1	Go to SketchUp , set up a new drawing by going into file and new .	

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5.2	Go into file / import Click on the use as a new match photo on the right hand side. Find and open up a photo of a building in perspective . Import any photo of any building you have on your lap top or one of the download one from the Internet (this needs to be in perspective).	
5.3	Align the blue vertical line up with the corner of the building. Use the red lines for the top and bottom of the building on the left hand side and use the green lines for the top and bottom of the building, on the right hand side (don't worry about the man in the middle; he can stay there).	
5.4	Then click done on the match photo .	
5.5	With the pencil draw around the either the right hand side front of the building or the left hand side of the building. If you do this correctly they will change to grey.	
5.6	If you click on the blue arrow orbit button you can view the wall that you've built, which you can push/pull to a cube to do things to the building. You can check this by going to the blue highlighted number on the left hand side of the screen and clicking on this and this will put the cube back into the photo.	
5.7	Then develop the roof views.	

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Number	Description	Condition
6.0	Drawing a building in detail using a front elevation	
6.1	Click on file / new .	
6.2	Click on the pencil	
6.3	Draw a cube.	
6.4	Click on file	
6.5	Import – this time set use as image (right hand side circle needs clicking on).	
6.6	Choose picture and click on open . Picture will be imported into SketchUp . Ideally this should be a front elevation of a property.	
6.7	Stick it on front of cube. Adjust cube to mirror photo.	
6.8	Cut lumps out of cube for drawing around the building and pushing and pulling to make a 3D model.	
6.9	Quick sketch hint: You can draw not to scale and with everything to scale at a later date. Can you work out how to do this?	

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Self Assessment Schedule of Condition on Yourself

Number	Description	Condition
1.0	Set up SketchUp	Good/Average/Poor ?????
2.0	Box Building	?????????
3.0	Chair	?????????
4.0	Developing from Google Earth	?????????
5.0	Drawing a building in detail but not in detail	?????????
6.0	Front Elevation Building	?????????

3.0	Save and Close SketchUp	
3.1	Open SketchUp	
3.2	Click on training videos which are linked at the start of SketchUp for SketchUp and new users and there are four videos of how to draw a chair.	
3.3	Draw the chair	

Things to do at home

Change the SketchUp format. First box “or is it house” worked well and “start up” worked well.

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SketchUp Two For Surveyors

Drawing the building from the inside out

Number	Description	Condition
1.0	<u>Go into SketchUp</u>	
1.1	Go into SketchUp and draw a floor plan	
1.2	Use the rectangle application; the third one along after the arrow and pencil	
1.3	Draw a line parallel to the green access and type in 10m. This will give you a rectangle that has one length of 10 metres. You can measure this by going to the eighth icon – the one that looks like a tape measure and clicking on the start point and the end point.	
1.4	Also have another side to the rectangle and measure this to see what it is. It doesn't really matter what it is as long as it's more than four metres. If it isn't more than four metres in length then click onto the arrow to remove the tape measure and click onto the "move" / "copy", which is the 11 th icon that looks like four arrows together and of course when you hover the arrow over it it comes up with move/copy.	
1.5	Click on 17 th icon, which is called "zoom extents". This will allow you to see the entirety of your rectangle/square.	
1.6	HELP none of this is working for me – go back to the SketchUp One notes and probably re-set up your SketchUp.	

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2.0		
2.1	From the rectangular/square outline you need to draw within the rectangle/square. Suggest you experiment by drawing a line around the perimeter a small distance in all the way around the box and then using the “push/pull” which is the 10 th icon that comes up with push/pull! This will pull up the perimeter walls.	
3.0		
3.1	Go to “file/new” which will come up with save changes to untitled – No. This time re-draw the rectangle to the size of your property.	
3.2	Click on the pencil and draw parallel to the green axis and type in the length of your property, for example 12m, and press enter.	
3.3	If you make a mistake go to the icon that looks like a red brick (actually an eraser) and start again.	
3.4	To do your second line you need to have it parallel to the red line.	
3.5	Put the dimensions of your property in, for example 20m, and press “enter”.	
3.6	Click on the “zoom extents” icon and complete the rectangle. HINT: If you take your pencil across the end that you wish to make into the rectangle then SketchUp will automatically give you a line at 90° to it.	
4.0	Drawing the internal walls accurately	
4.1	Click on the “off set” button (13 th button along) and off set comes up when you hover over it with the arrow. This follows directions at the bottom of the page and enter the value of your walls width, i.e. 250mm.	

4.2	Hit “enter”	
4.3	Then add the internal walls HINT: We found it handy to use the “orbit” button – (14 th button). Internal walls can be offset	
4.4	If you are in a building that can’t be measured easily then the dimensions can be approximate. We suggest you pace round the property to get the overall dimension and pace internally to get the walls.	

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SketchUp Three For Surveyors

SketchUp and Google Earth working together

Using SketchUp and Google Earth (both of which of course are owned by Google) can have amazing results very quickly and help show an idea to a client very fast and relate it back to a specific building location.

Skills you will learn

1. How to put a building onto a Google Earth planned view
2. How to use photo textures to apply photos to the boxes/buildings that you have drawn
3. You need to have basic knowledge of SketchUp and Google Earth before you attempt this exercise

Number	Description	Condition
1.0	<p>Open Google Earth, enter the post code of the desired area you want to go to and then zoom in onto the planned view of the building.</p> <p>You can do this by using a post code or even the address of the property.</p> <p>It sometimes comes up with “did you mean” when you are doing the Google search – just check it’s zooming you into the right place</p>	
1.1	<p>Then open SketchUp and on the top line of icons go into the “get current view”, which is the 18th icon that looks like a blue earth. This will then be imported into SketchUp.</p>	

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1.2	<p>We then recommend you use “orbit” to view the black and white plan photograph of the area. Sometimes these don’t come out very well but they come out well enough to draw a box on top of it which you then make into a cube and put the roof on.</p> <p>Before you do this just check the planned view you have includes the buildings close by are appropriate that best show the relationship of your building to other buildings.</p> <p>Sometimes it’s worth zooming out on Google Earth as you get a clearer picture.</p> <p>You need to set this all up before you go into the “get current view” within SketchUp.</p>	
1.3	Then zoom in onto the plan and, using the pencil, orbit the rectangular drawing tools and draw boxes and then a cube and add the roof(s).	
1.4	Once you have the basic shape in place draw any surrounding buildings you think would affect your proposals or be of interest to your client.	
2.0	For this go to Google and zoom in on to the photo of the property then adjust so you get the best view of one side of the property.	
2.1	Back in SketchUp go to “windows” across the top (by windows we mean the word windows), down to “photo textures” (bottom one on my drop down list). This links into the Google photo that you have. You can use the plus and minus buttons and the arrow buttons on the top left hand corner of the photo texture box to adjust the photo.	

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2.2	<p>Select “region”. This allows you to pin the area which you want to look at, grab and bring into SketchUp. You should select the face of the box that corresponds with what you can see in Google. Then click on the “grab” button. This will bring up:</p> <p>“Please select one or faces in your SketchUp model that you would like to photo texture and try again”.</p>	
2.3	<p>Going back into SketchUp repeat the exercise with other elevations, or you can start cutting the box based around the photo texture that you just applied to it.</p>	

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