How to 3D Scan Real World Objects into Unity

3D scanning objects in the real world, and importing them into Unity, along with the texture, is possible, inexpensive and easy if you follow the instructions below. Please note that this does work on Macs, however these instructions are specifically for PC's. You will have to find an alternative for 3D Builder if you are using a Mac. Please note that this is a rough guide and you are welcome to play with the settings however you see fit, except for the information regarding exporting which I recommend you follow.

Step 1: Acquire a Microsoft Kinect. Any model will do.

Step 2: Acquire a Mac or PC and plug in the power.

Step 3: Download and install Skanect (for free) from: http://skanect.occipital.com/download/

Step 4: You may have to install a driver for the Kinect from https://www.microsoft.com/en-ca/download/details.aspx?id=40278

Step 5: Plug in the Kinect to power and USB (before you open Skanect), and then open Skanect.

Step 6: Adjust the scanning area size by clicking on "Body", "Object", "Room", "Half Room", or by using the Bounding box slider to the size of the object you wish to scan. Click Start.

Step 7: If applicable, set a delay. Press start. Note that you will want to start with the bottom of your object or the object may not be scanned successfully due to the bounding box.

Step 8: Move the camera slowly 360 degrees around the object, while moving up and down appropriately. You must ensure that you capture it from all angles, or you will miss some geometry. You should hold the camera no less than two feet away from the object at all times. You can view the process of the rendering on screen, the more green the better. If it prompts you to "Go back to last pose", you must attempt to get the view captured by the camera to match the last frame, or start over; usually, starting over is easier. Once you have captured all of the geometry, press stop and wait for it to render.

Step 9: Drag on the screen to rotate, press shift and drag on the screen to move, press right mouse button and drag to zoom in and out. It's very likely that the object that you see has some holes in it, this is normal. If they aren't too severe, and you are happy with the rendering, press "Process". Fill holes by pressing 'Fill Holes', you are free to play around with the settings to see what you like best, however I would recommend using "Closed Hull" at the low or medium setting, and then press run. To add colour, press "Colorize". You are free to play with any of the other settings as you see fit.

Step 10: When you are happy with your model, press "Share". Select OBJ as the Format, and Texture UV as for Colors. Export the model, and select yes for .mtl.

Step 11: It's very likely that your scan has parts of it that need to be "cut away", such as the floor, or whatever your object is sitting on. This can be done by opening your object in the program that comes with Windows 10, 3D Builder. Simply use the Split tool to remove any sections that you do not wish. You are able to drag and rotate the plane, and accept/reject anything on either side of the plane. If there are any objects remaining that are not connected to the main object you desire, you can remove them by ungrouping them (button on the right for this), click Object, select the undesired object, and then click Delete.

Step 12: Now, export this as a .obj using the file menu. Upon saving the .obj, it will prompt you for the .mtl file as well, save this. Import both the .obj and .mtl file into a folder in your Assets folder in Unity.

Step 13: Create an instance of the object. You may have to apply the .mtl as a texture to the object, which is as easy as dragging it onto the object. The object will likely be very large and not rotated properly, so ensure that you make those adjustments. I would recommend scaling the object by 0.03 for X, Y and Z as a starting point.

Step 14: Unfortunately the object will not have a mesh collider, however you can add box/sphere/other colliders appropriately.

Step 15: Enjoy! There is plenty of support online if you require additional support.