

SKETCHUP TUTORIAL

PART 1 : INTRODUCTION BASIC TOOLS / SITE MASSING



WHY SKETCHUP?

- > ITS EASY TO LEARN. SIMPLE AND INTUITIVE.
- > GREAT FOR QUICK SITE ANALYSIS, BASIC FORM MAKING AND CONCEPTUAL IDEAS.
- > CAN PROGRESS INTO ADVANCED 3D MODEL MAKING THROUGH PLUGINS.
- > CAN BE IMPORTED INTO RHINO, REVIT FOR FURTHER MODIFICATIONS.
- > STILL WIDELY USED IN THE INDUSTRY.

WHERE TO USE SKETCHUP

UNIVERSITY

- > LEVEL 5 COMPUTER LABS

HOME

- > FLEX IT

- > EDUCATIONAL LICENSE (\$89 / YR) VIA PROCADSYS.CO.NZ

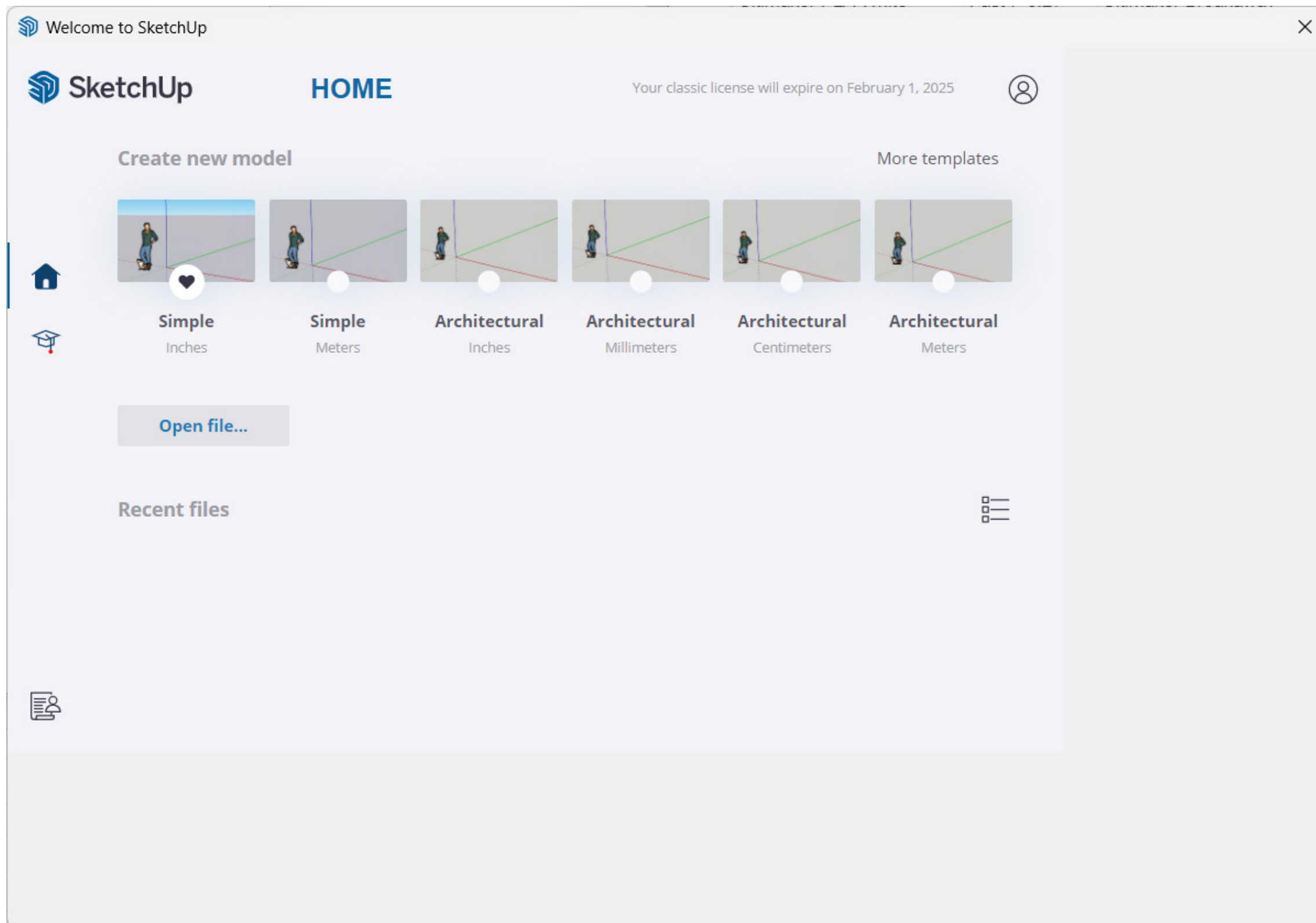
- > **TEMP EMAIL FREE TRIAL**

OVERVIEW OF THIS TUTORIAL

- > LEARN HOW TO USE ALL THE BASIC TOOLS FOR MODEL MASSING
- > STYLES, SHADOWS AND VIEWS
- > ARRAY
- > COMPONENTS AND GROUPS
- > HOW TO APPLY MATERIALS AND MAKE YOUR OWN
- > EXPORTING
- > GEOLOCATION (IMPORTING DATA FROM GOOGLE EARTH INTO A CONTOUR MODEL)

STARTING SKETCHUP

> **CHOOSE A TEMPLATE. IMPORTANT FOR THE CORRECT SCALE AND MEASUREMENTS! TYPICALLY WORK IN METRES, CENTIMETRES OR MILLIMETRES.**

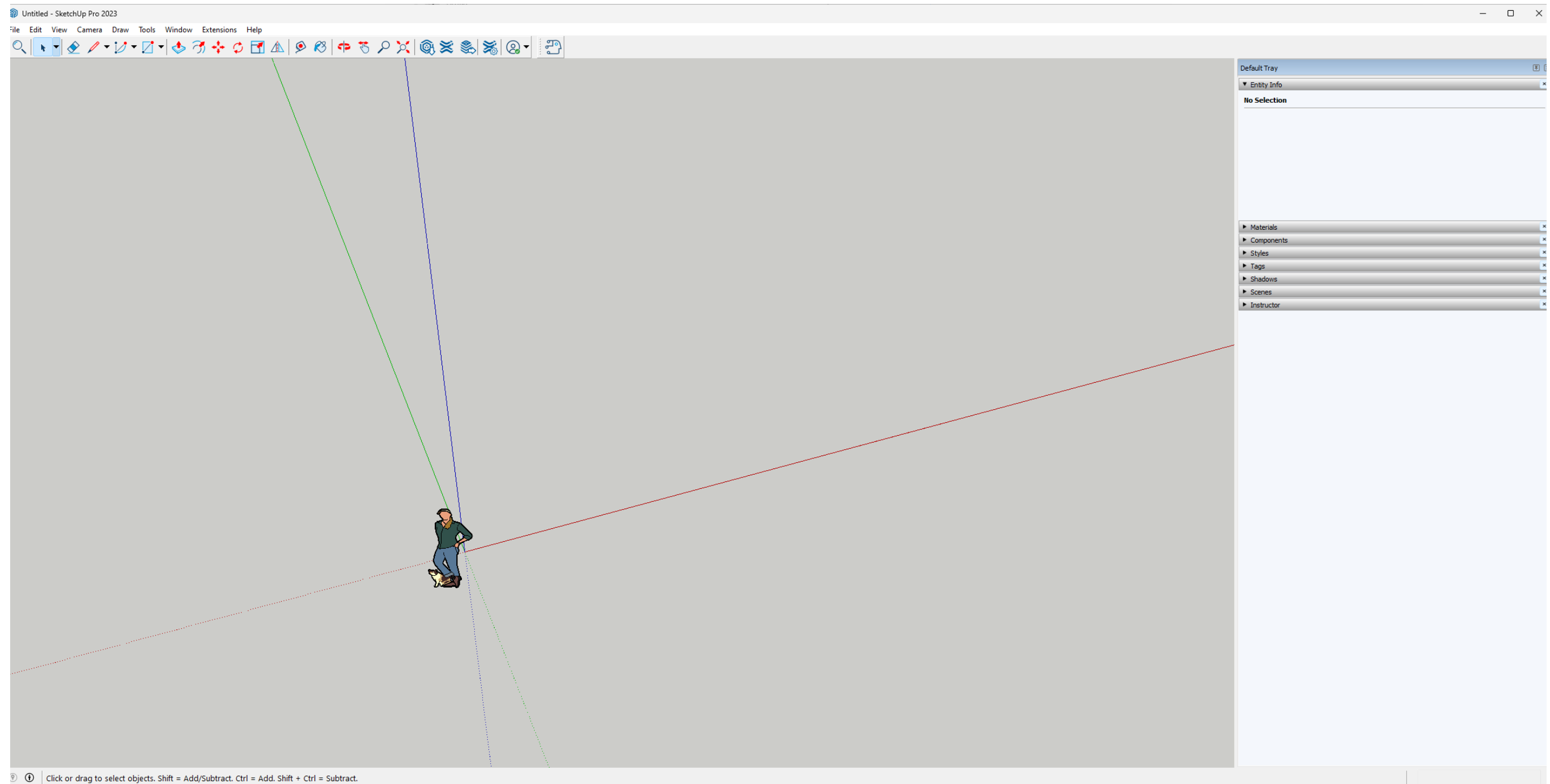


USER INTERFACE

LARGE TOOLS TRAY

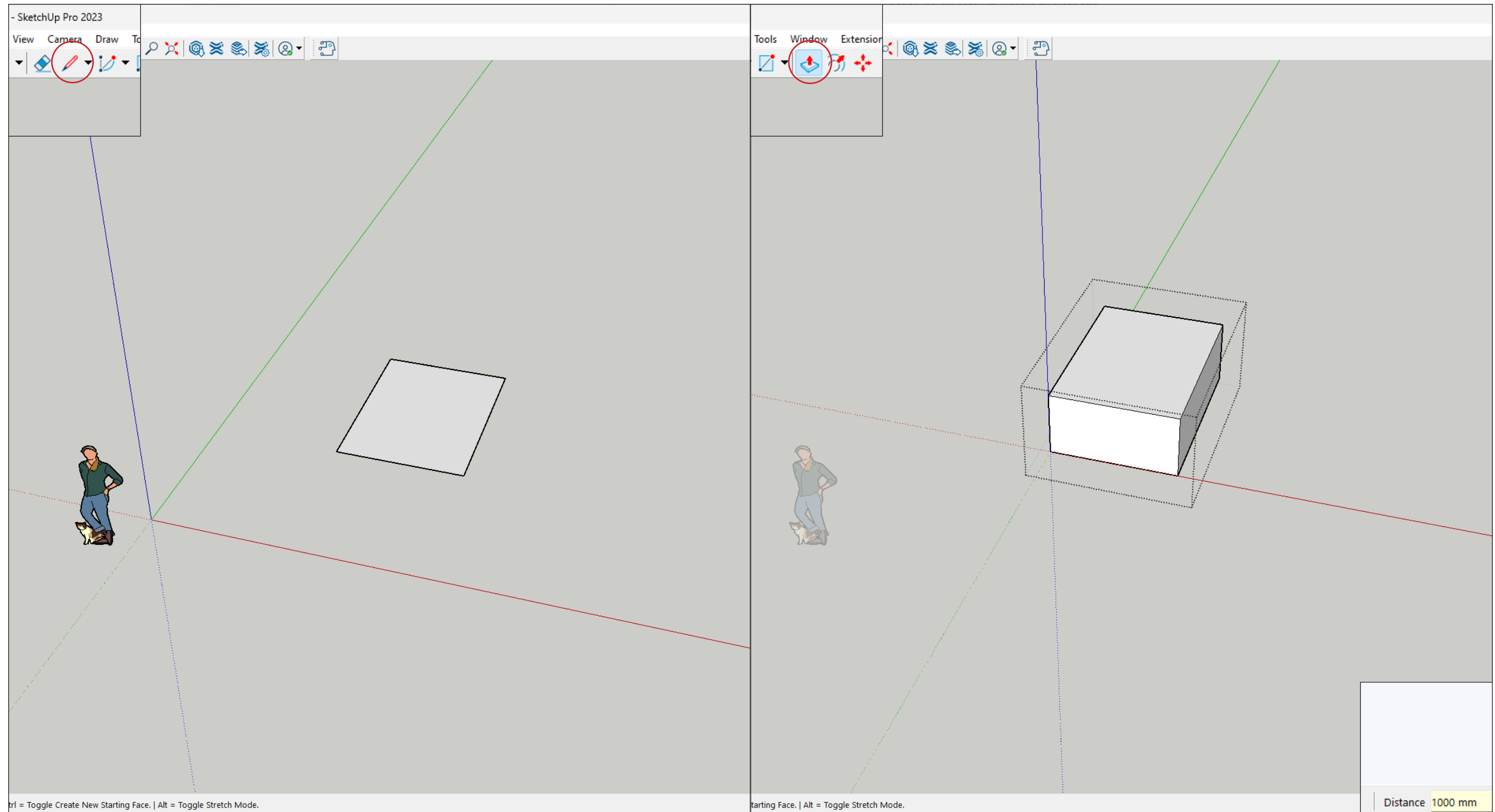
BASIC TOOLS

DEFAULT TRAY (PROPERTIES) - TAGS, STYLES, COMPONENTS, MATERIALS



PEN TOOL AND PUSH AND PULL (MASSING)

- > SELECT PEN TOOL. CREATE BUILDING FOOT PRINT OR ANY MASSING YOU WISH. DOUBLE CLICK TO ENTER ISOLATION MODE.
- > USE THE EXTRUDE TOOL (P) / PUSH AND PULL TO GENERATE MASSING.
- > TIP: YOU CAN TYPE IN THE MEASUREMENT NUMBERS (EG. 10 CM) TO EXTRUDE PRECISELY.
- > **RECTANGLE, CIRCLE, HEXAGON ACTS THE SAME AS THE PEN TOOL.**

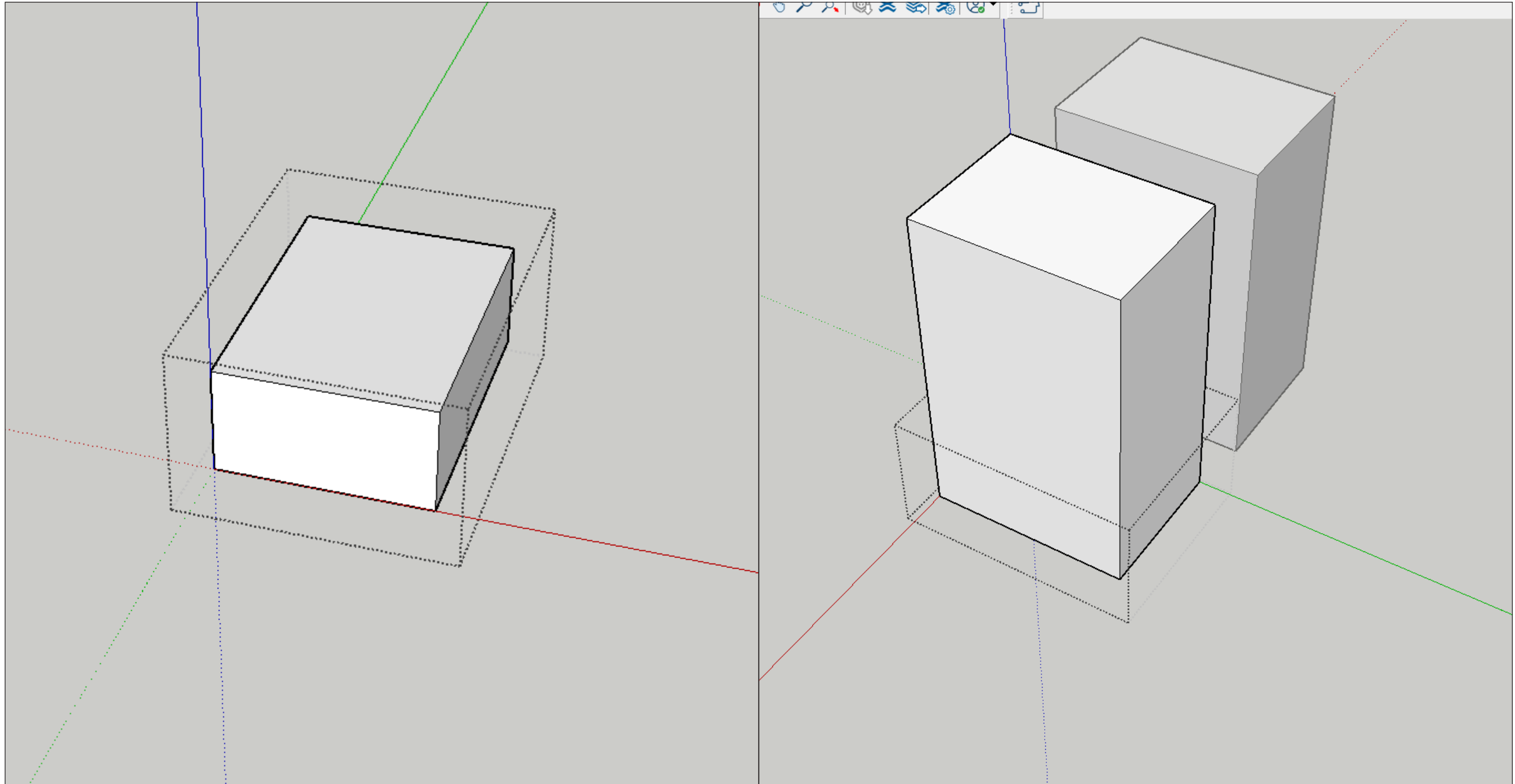


GROUP (G)

- > DOUBLE CLICK ON YOUR INDIVIDUAL MASSING. RIGHT CLICK AND SELECT GROUP.
- > THIS ALLOWS THE MASSING TO BE ITS OWN SEPERATE ENTITY.
- RECOMMENDED WHEN MAKING MULTIPLE MASSINGS IN A FILE FOR EASIER MANAGEMENT.**

COMPONENT

- > ACTS SIMILAR TO GROUP.
- > WHEN YOU MAKE A CHANGE TO A COMPONENT, ALL OTHER COPIES ARE CHANGED AS WELL.**
- > USEFUL FOR REPETITIVE ITEMS THAT MIGHT REQUIRE CHANGE OVER TIME.
- > CAN BE SAVED AND USED LATER IN PROJECTS (LIKE A LIBRARY)

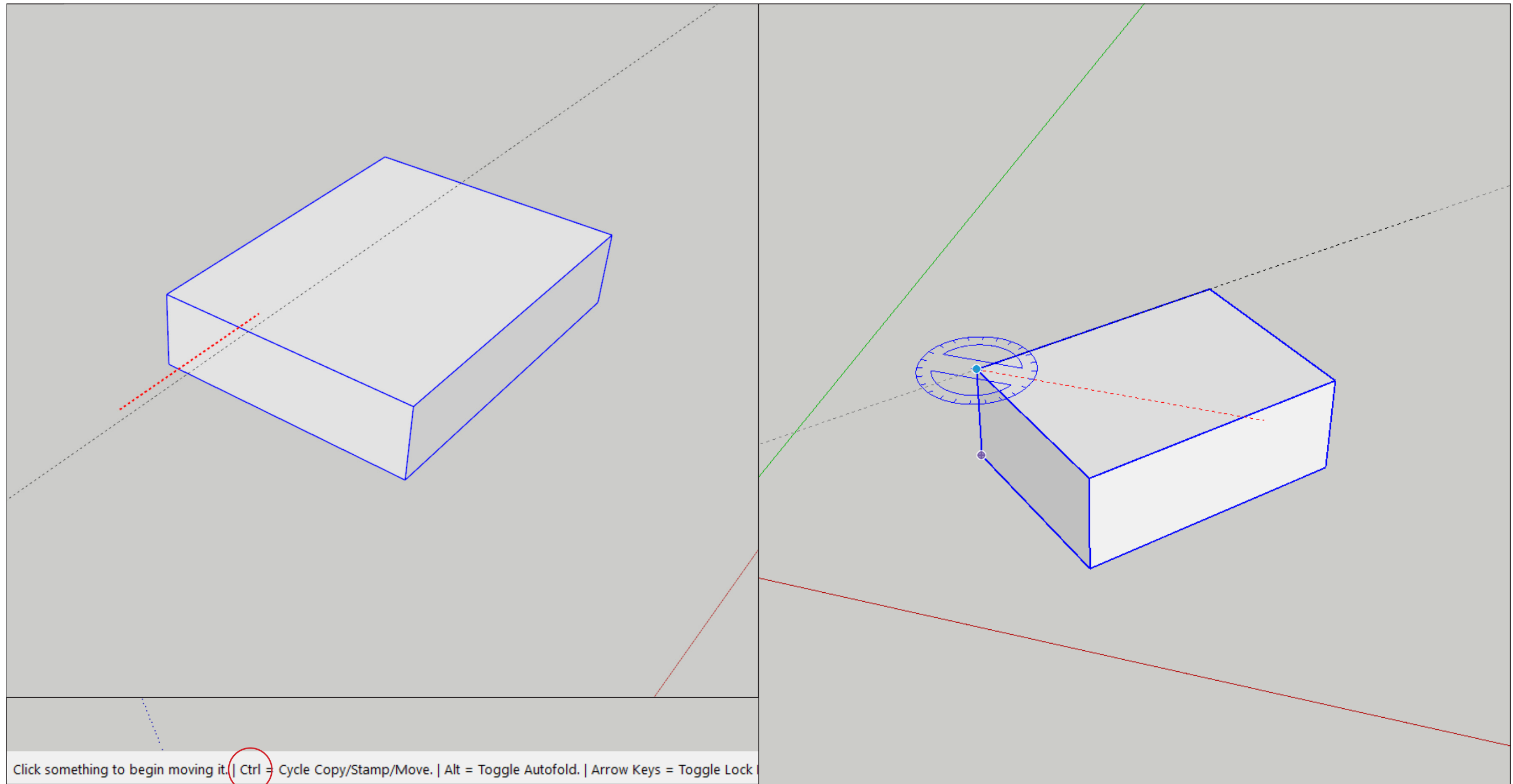


MOVE TOOL (M)

- > LEFT CLICK ON THE POINT YOU WANT TO MOVE.
- > CAN DUPLICATE MULTIPLE OBJECTS. TYPE THE AMOUNT (10X). THIS WILL AUTOMATICALLY MEASURE AND DUPLICATE THE OBJECT.

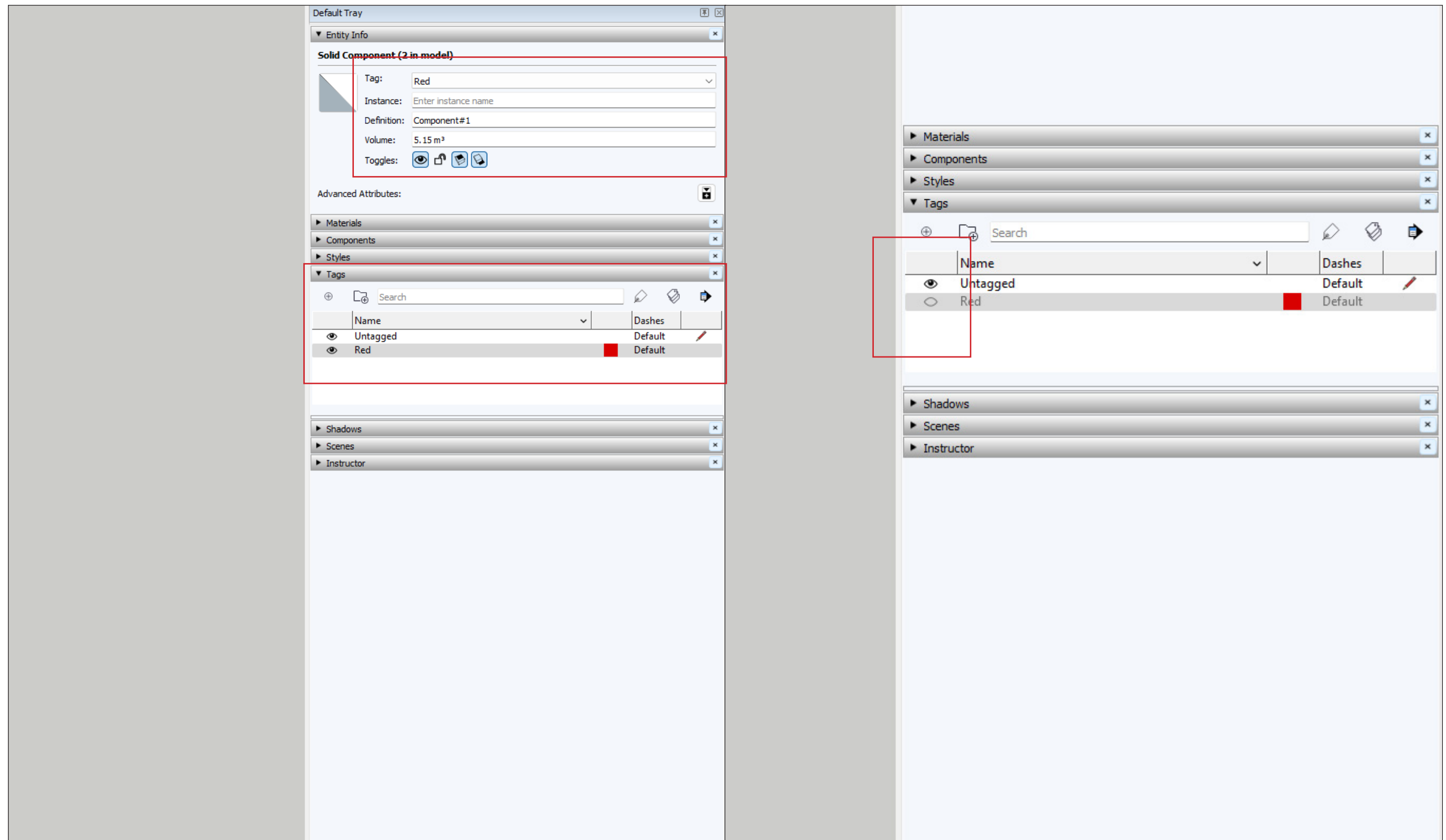
ROTATE TOOL (R)

- > ALLOWS YOU TO ROTATE THE OBJECT DEPENDING ON THE DEGREE YOU WISH.
- > CAN BE USED ON DIFFERENT AXIS DEPENDING ON THE FACE OF THE OBJECT Y X Z. **USE ARROW KEYS TO LOCK AXIS**



TAGS

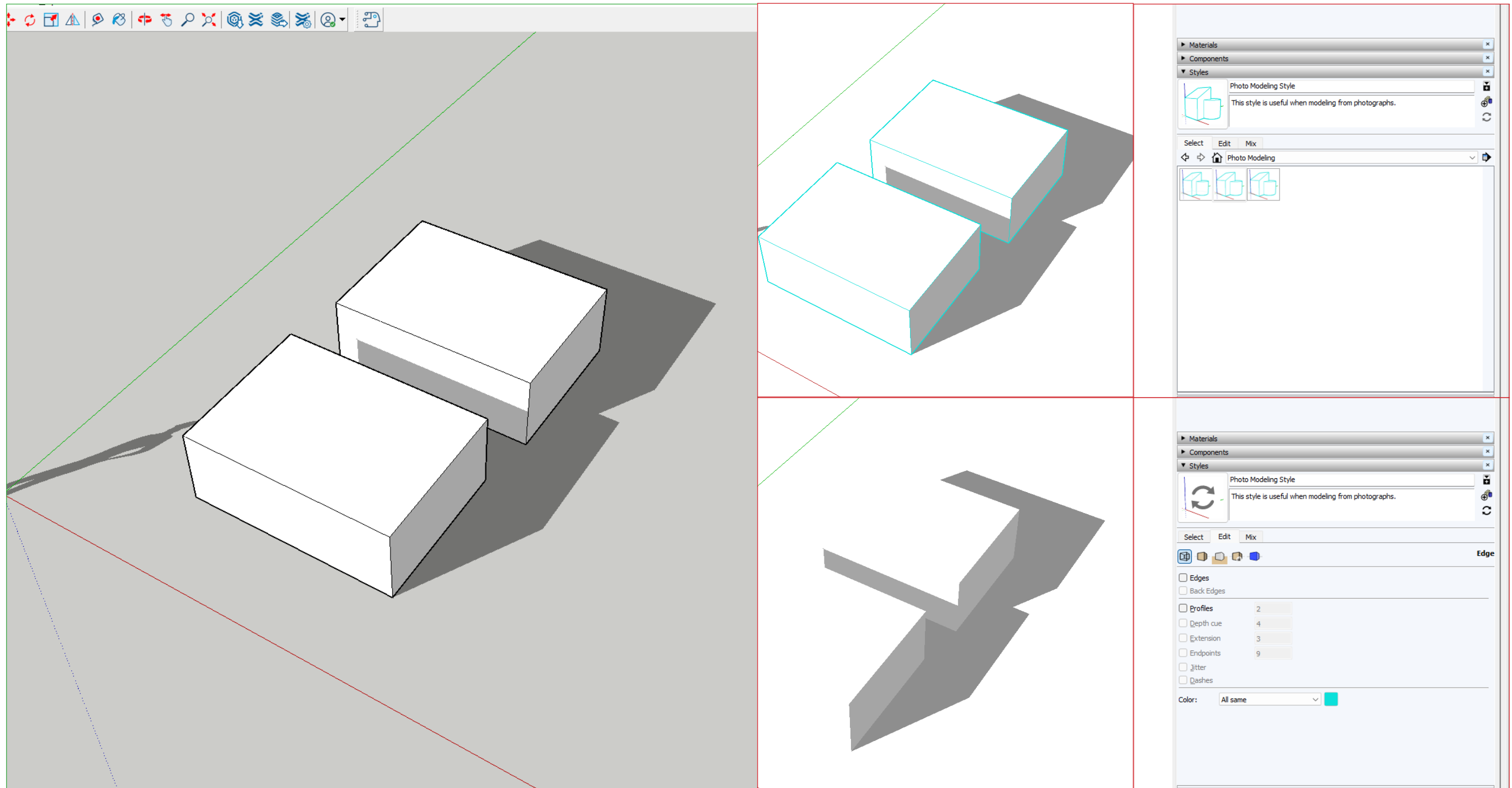
TAGS > ALLOW YOU TO ASSIGN CERTAIN OBJECTS TO LAYER. WORKS SIMILAR TO RHINO AND PHOTOSHOP LAYER SYSTEM. YOU CAN HIDE AND SHOW CERTAIN ONJECTS WITHIN YOUR OWN ASSIGNED TAG.



SHADOW AND STYLES

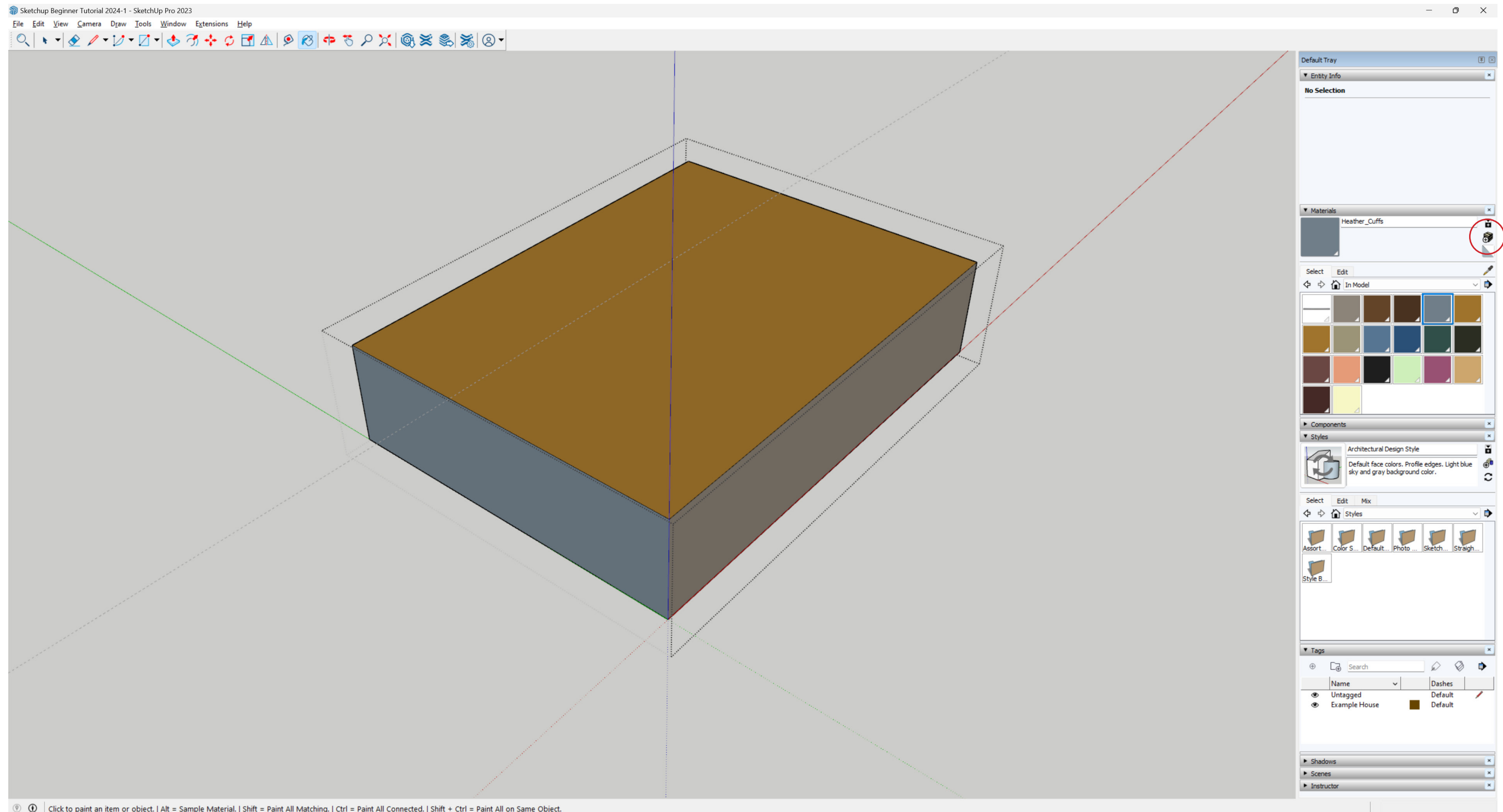
SHADOWS > USEFUL FOR SUN STUDIES AND VISUALISATION. CAN BE GEO-LOCATED.

STYLES > CAN BE MODIFIED. ALLOW YOU TO EXPORT PNGS INTO THE STYLE YOU WANT.



PAINT BUCKET TOOL

- ADD COLOURS AND TEXTURES FROM THE MATERIAL PANEL > LEFT CLICK ON THE FACE YOU WANT TO PAINT
- CUSTOM TEXTURES CAN BE ADDED WITH THE CREATE MATERIAL TAB.



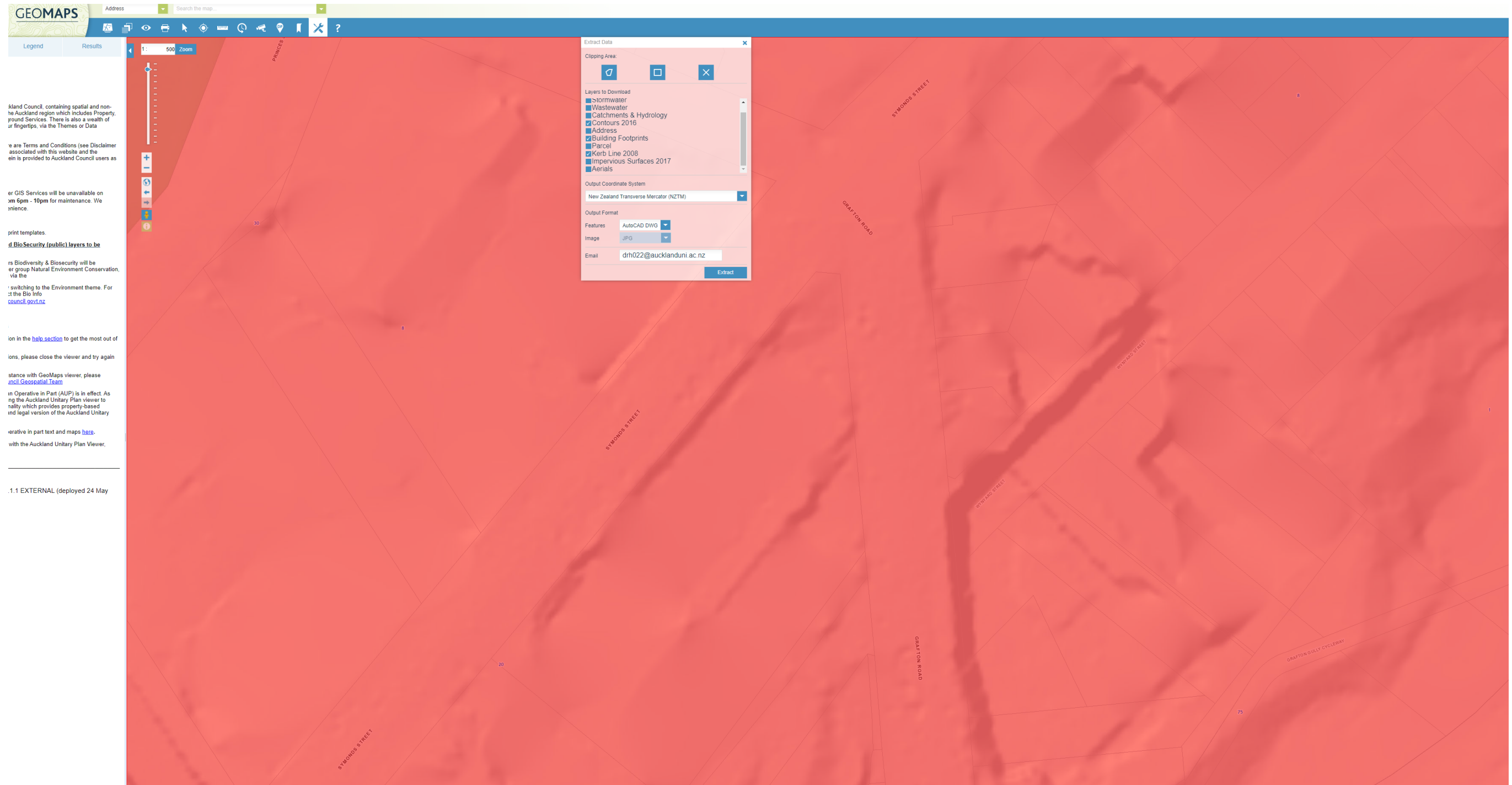
EXPORT SETTINGS

- > EXPORT AS PDF. ALLOWS YOU TO RETAIN VECTOR LINE WORK > USEFUL FOR ADOBE ILLUSTRATOR.
- > EXPORT AS PNG. BEST SUITED FOR RAW EXPORTING OR PHOTOSHOP LAYERING (SHADOWS)
- > EXPORT AS DWG. BEST SUITED FOR REVIT AND RHINO INTERGRATION.
- > EXPORT TO SKETCHUP LAYOUT. USEFUL FOR CREATING SCALED DRAWINGS ACCORDING TO PAPER SIZE (EG. A3)

IMPORT GIS DATA (DWG) INTO SITE MODEL

1. EXTRACT DATA DOWNLOADED FROM AUCKLAND COUNCIL (DWG FILE)

2. FILE > IMPORT DWG (JPG IF IMAGERY REFERENCE IS NEEDED)



IMPORT GIS DATA (DWG) INTO SITE MODEL

3. SELECT DWG. MOVE OVER TO TAGS AND HIDE ALL OTHER LAYERS APART FROM CONTOUR LINES (CONTOUR TAG)

4. USING SANDBOX TOOL. DRAW > SANDBOX > FROM CONTOURS.

TIP: SIMPLY LINE (PLUGIN FROM EXTENSION WAREHOUSE) IS RECOMMENDED WHEN MAKING A SITE MODEL TO HELP IMPROVE PERFORMANCE AND ALLOW FOR LARGER SITE MODELS TO BE CREATED.

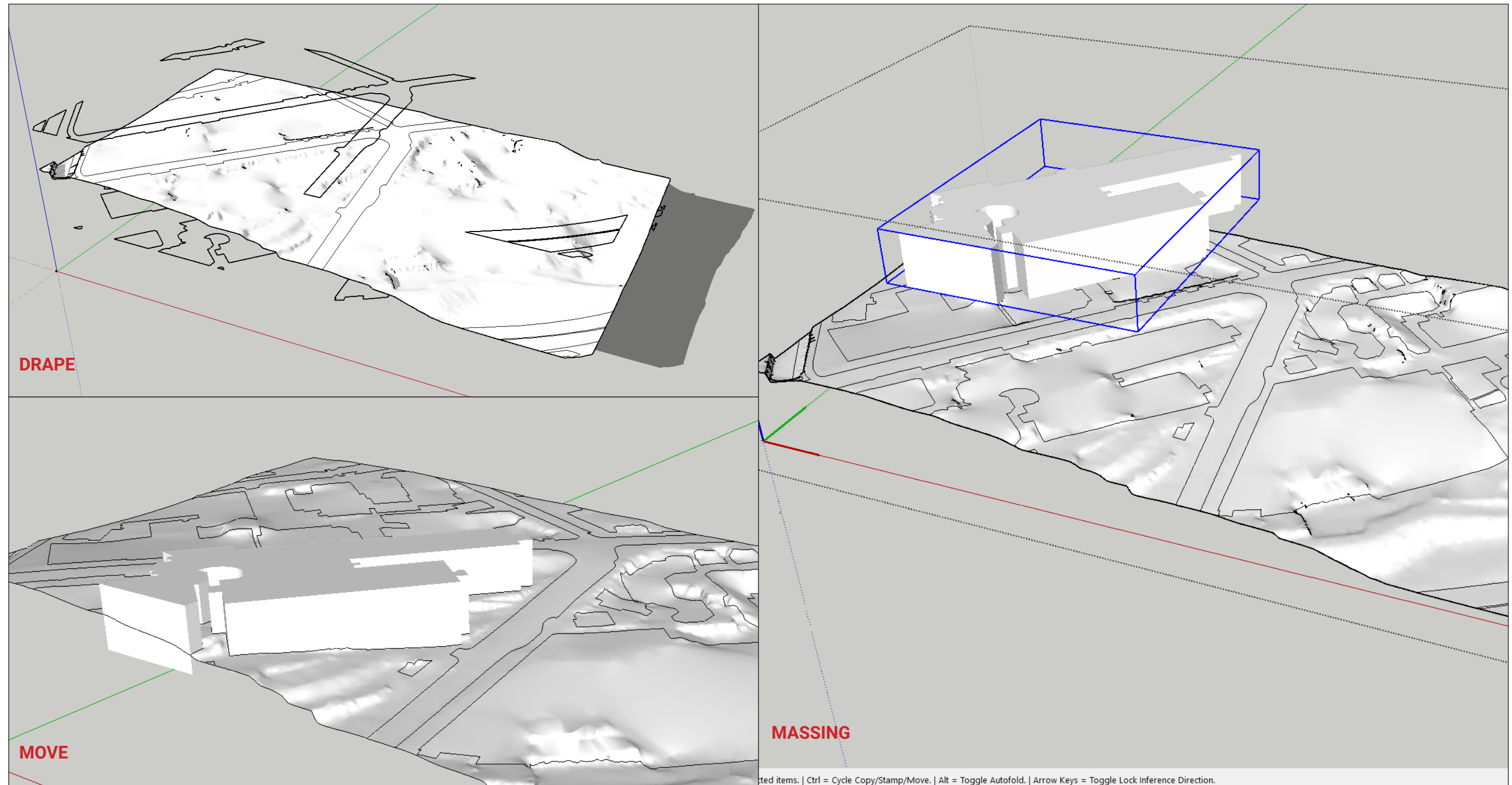
The image shows a 3D site model in SketchUp with contour lines. Overlaid on the model is the Extension Warehouse interface for the 'Simplify Contours Tool'. The tool's description states: 'This command reduces the number of segments of contours or o...'. Below this, it explains: 'When you import contour line drawings that were executed in other CAD applications, SketchUp will often convert polyspline contours into polylines that contain hundreds or even thousands of straight-line segments. This script reduces the number of edge segments that make up the contour lines, which in turn...'. The 'Entity Info' panel on the right shows the 'Contours' tag selected. The 'Shadows' panel at the bottom right shows settings for time (UTC-07:00), date, and light/dark sliders. A legend at the bottom left indicates: 'Select objects. Shift = Add/Subtract. Ctrl = Add. Shift + Ctrl = Subtract.'

SITE MODELLING (DRAPE, ADDING CONCEPTUAL MASSING)

5. USING DRAPE TOOL (TOOLS > SANDBOX > DRAPE). SELECT KERB LINES / BUILDING FOOT PRINTS > SELECT CONTOUR. THE OUTLINES WILL BE ADDED TO THE CONTOUR MODEL.

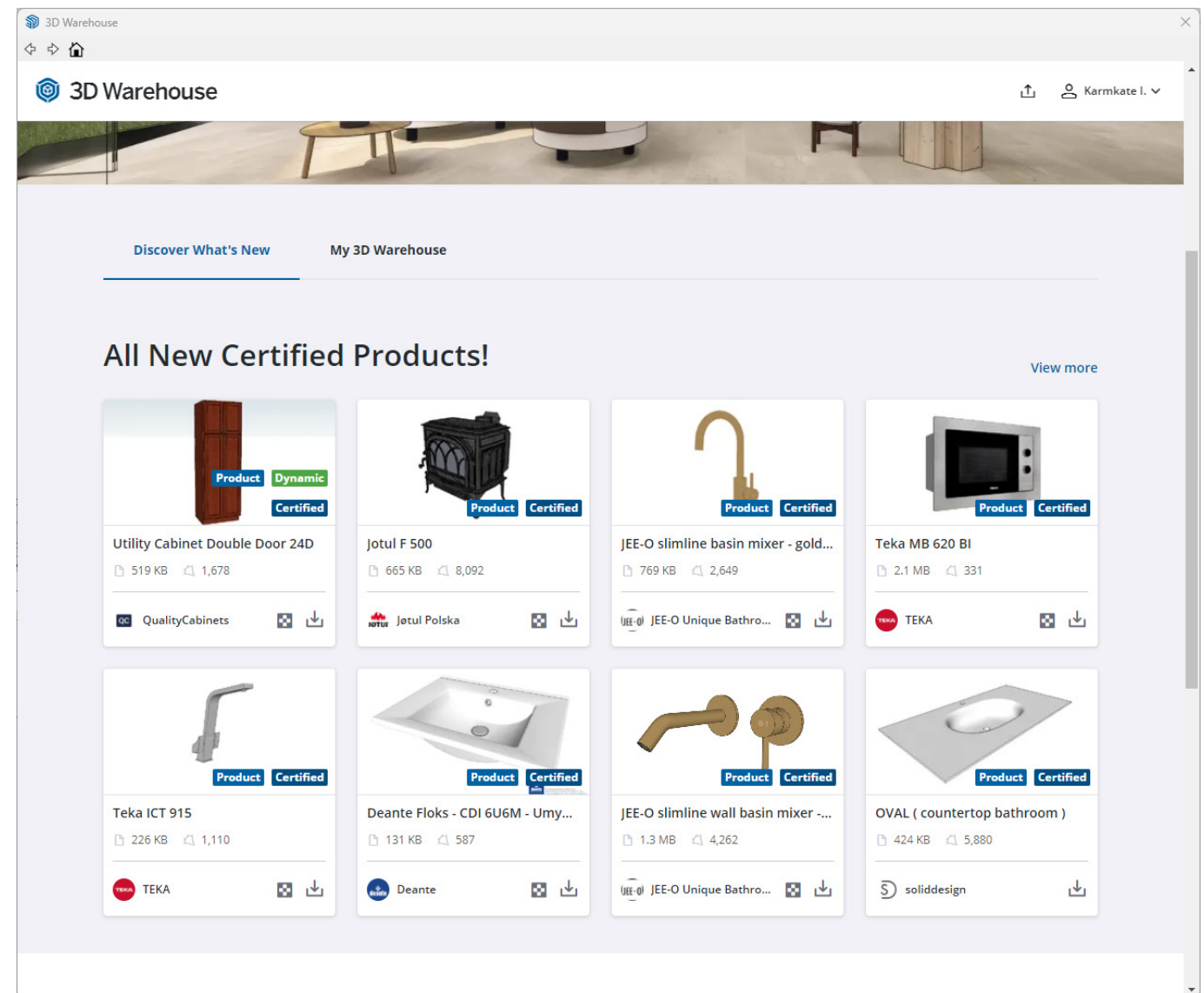
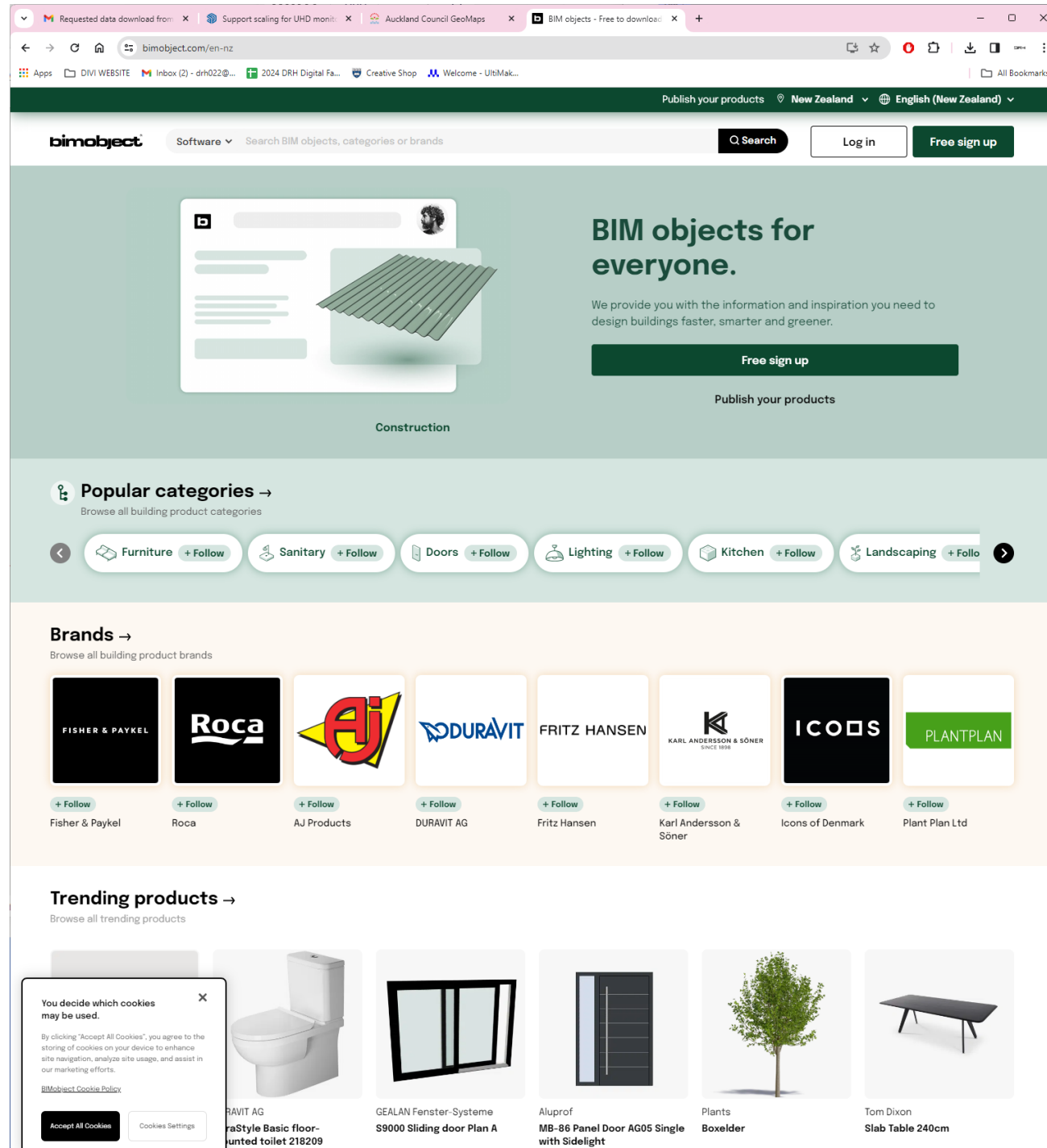
6. USING BUILDING FOOTPRINT. DRAW OVER EXISTING LINE TO GET SHAPES. EXTRUDE AND PLACE INTO SITE WITH MOVE TOOL. ROTATE IF NEEDED.

TIP: YOU CAN MAKE YOUR OWN MASSING THEN PLACE IT INTO THE CONTOUR MODEL.



IMPORTING CAD MODELS

- > BIM OBJECTS (GREAT WEBSITE FOR FINDING 3D ASSETS OF MANUFACTURED FURNITURE, DOORS ETC)
- > SKETCH UP 3D WAREHOUSE (LOTS OF COMMUNITY 3D ASSETS, EASY TO IMPORT AND COMPATIBLE WITH MULTIPLE VERSIONS OF SKETCHUP)



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