Terrain Tile Snipping Tool

This tutorial will show you how to use the Terrain Snipping Tool 'DEMextract.exe' to extract a small area from a larger terrain tile before converting it to a DXF file and loading it into the course creator to replace terrain previously imported.

This is likely to be useful in the following situations:

1) Where you have made a mistake with the terrain that is not reversible and have forgotten to save … reverting to an old version may lose you hours of work. You can re-import just the terrain around the spot where you have made the mistake, keeping the rest as is
2) Where you have imported terrain at lower resolution to save on memory, but want to have higher resolution for eg greens or bunkers
3) If you are doing a Mash-up course of best holes from different locations and want to import just one hole from each terrain tile

For this tutorial I am going to assume that I have made a mistake with the height tool which I need to repair, and I will also be importing a higher resolution of data.

For the purposes of the tutorial I have sabotaged the green to make the repair more obvious. We also want to include the whole bunker to avoid an uneven area.

STEP 1:

Get your LIDAR data and load it into Accutrans 3D. You will then need to save it in two different formats.

      First as a Bitmap: File -> Save Contour Map   (.BMP to locate the co-ordinates to snip)

      Second as TXT: File -> Save Heights as ASCII   (The format that DEMextract works with)

Move both files to your working folder, together with the downloaded DEMextract files (you need to move all of them, not just the .exe file)

STEP 2:

Get the co-ordinates of the area you need. I use MS Paint, as below.

The Bitmap size is 1000x1000. I have marked the area containing the relevant green with a red square, and the cursor (which is not visible) shows that the top left corner is at pixel 595,410. The square is approximately 50x50. While you do have to look carefully, the key landmarks on a plot are usually pretty easy to spot, and greens in particular are pretty obvious.
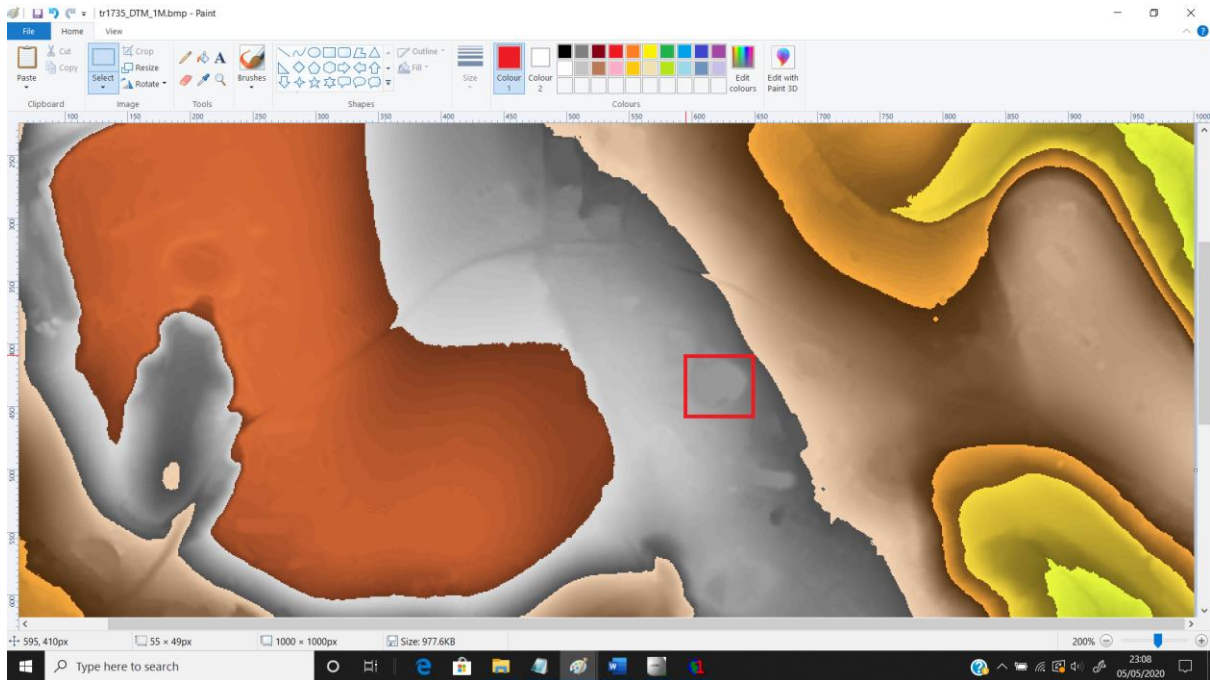
Because the LIDAR elevations start from the South West corner of the tile, while MS Paint Co-ordinates start from the North West corner, we need to subtract the Y co-ordinates from 1000, so the SW corner is at 595, 540 and the square is 50x50.

STEP 3:

Open up a command prompt, and navigate to your working folder. In my case the command is:

>CD desktop\test

Now run the 'DEMextract.exe' tool with the following options:

-i "inputfilename.txt"	The name of your input file
-o "4ᵗʰGreenElevations.txt"	The name of the output file
-c 1000	Number of columns in input file (default is 500, but we need 1000)
-pos 595 540	X, Y co-ordinates calculated above as the starting point
-s 50	Size of the square to be snipped

This should look like the screenshot below, and will take about 1-2 minutes, depending on the speed of your processor. It is written in VB.NET code, so is fairly slow!

I listed the directory of my working file before running the command, so you can see which files you need to have. There are 5 DEMextract files, plus the .txt input file.


STEP 4:

You now have an elevations file for just the area you snipped, which you can load back into Accutrans 3D for conversion to DXF. After loading (file type ASCII to DEM), and converting to 3D Mesh, you should see something like the below, which as you can see is just the green and the bunker.
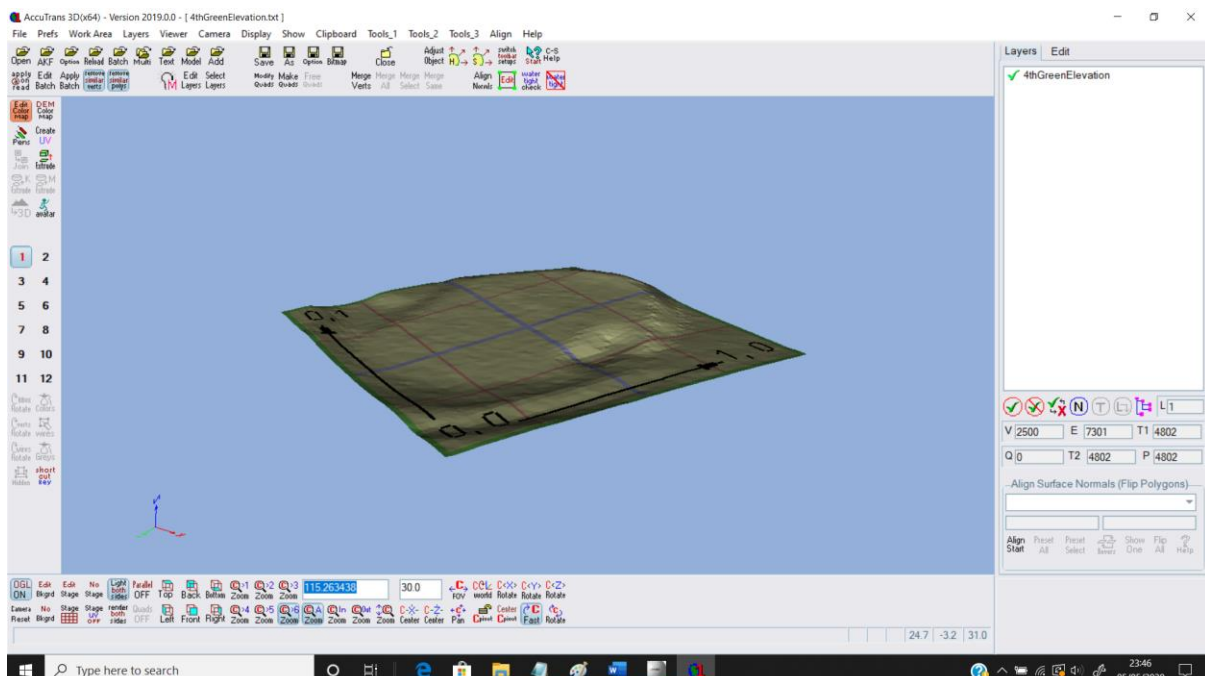

We now need to Save with Options as DXF, remembering to offset the centre by the co-ordinates used above. Click on 'Adjust' and enter the coordinates as negative values X = -595, Y = -540.

Remember to also adjust by any offset that your tiles in the creator were offset by (None in this example). You may need to click UPDATE to make sure the Center Coordinates are correct (they should be the start co-ordinates plus the distance to the center of your tile … 24.5 in this case.
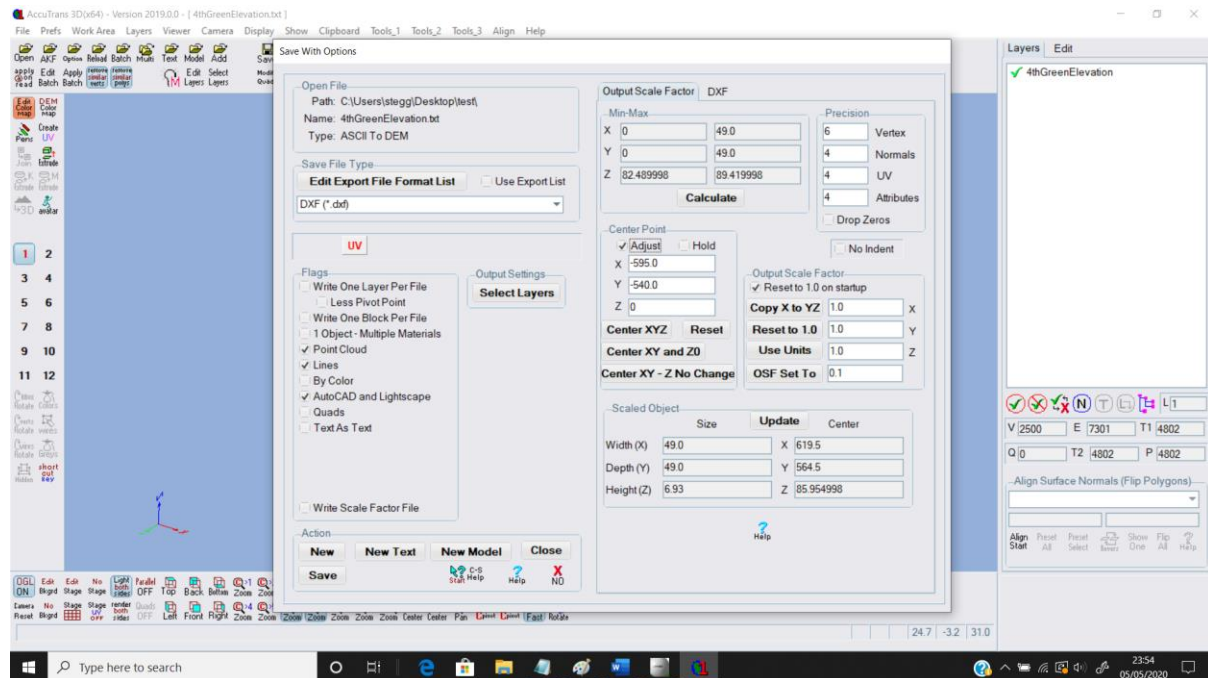
STEP 5:

Load the new DXF file into the creator, making sure the terrain is positioned in the right place.
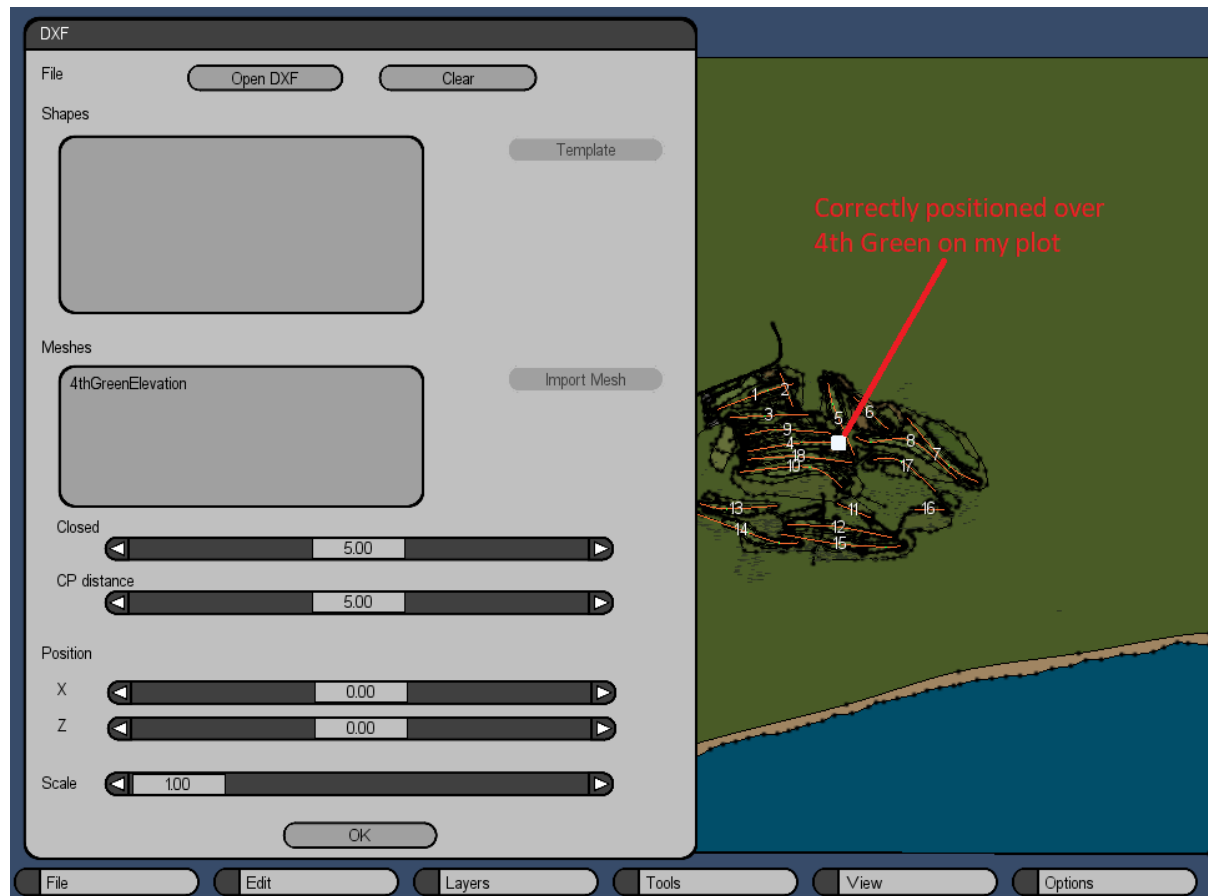
In the Height Layer we should now see that the green has been replaced with fresh terrain. The error has been fixed, but we will have to re-do the bunker, which has been flattened out. It is hard to see from the screenshot, but there is also a slightly steeper slope to a shelf at the back of the green, which is a consequence of the better resolution data on the green.

Enjoy playing with the terrain!