Creating Realistic Views - Draping an Aerial Photograph

## Civil 3D 2016

Introduction

One of the great deliverables of Autodesk's products is the context of what will be in the context of what is. Infraworks 360 is the flagship product for this, allowing you to conceptually design your project in hours or days rather than weeks and months. When we come to the detailed design phase of a project the visualisation will often occur in 3DS Max Design as it is much more suited to photorealism. A feature of Civil 3D that is often overlooked is the ability to Drape an Image onto a surface. This is a way we can apply a texture map, most commonly in the form of an Aerial Photograph of our site, to our trianguled surface.

Most mapping providers are able to supply aerial photography, the format of these images varies from .jpg to .tif and sometimes even .png. They all have something in common though, they are all accompanied by a world file. The world file is a text based file that tells coordinate aware software where the image should be inserted and at what scale. If you are using a .jpg aerial photograph the world file will have the extension .jgw whereas if you are using a .tif image then the world file will have the extension .tgw. No matter which type of aerial photograph we are using the process will be the same, if you are in the unfortunate position of not having the world file worry not as you can still drape your aerial image you will just be responsible for the task of aligning it correctly in your model.

Inserting and Draping Your Image

1. To insert a georeferenced image into Civil 3D we are going to utilise the Map 3D command *MAPIINSERT*, typing this at the commandline and pressing enter will present you with the dialog box shown in Fig. 1. Here we will navigate to and select the image file we would like to insert.

Fig. 1
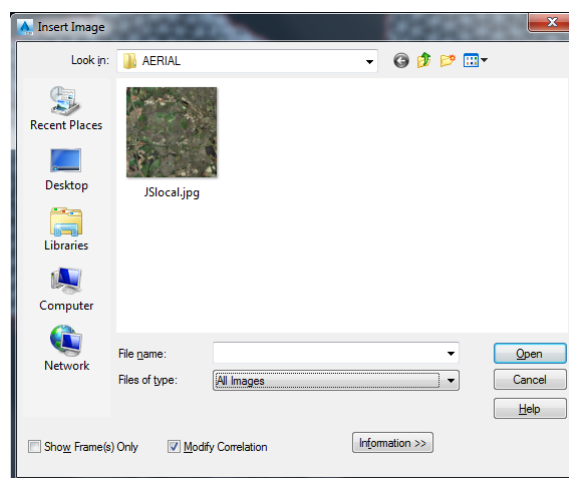
2. Having selected our image we will be presented with the Image Correlation dialog box, this has taken the coordinates and scaling information from the world file and is presenting them to us in an easy to read manner. I am reliant on the provider of my aerial photography for this and so will select *OK* without making any changes.

3. With the image now in my drawing I will select the frame of my image and send it to the back of the drawing so that I may see my surface on top of it. As can be seen in Fig. 2, this is already adding a lot of context to my model, for example I can see that the reason there are some large triangles towards the centre of the model are because these are peoples back gardens and my surveyor would not have had access to these.

Fig. 2
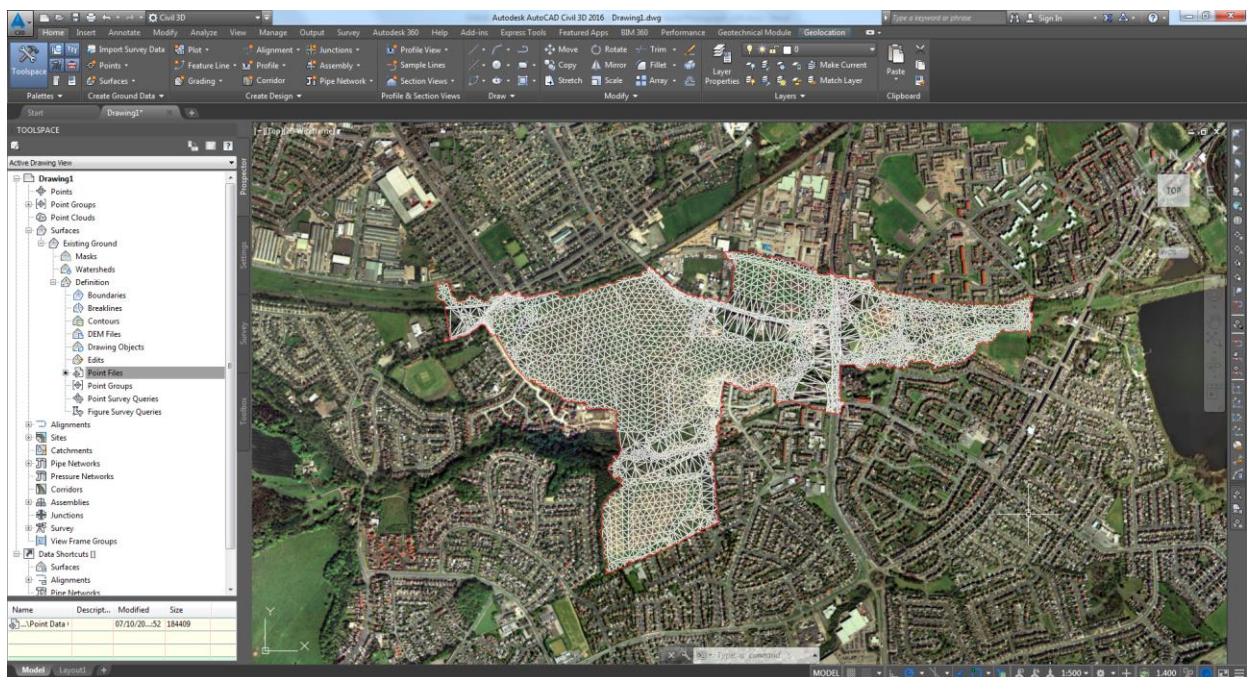
4. Now I need to form the texture map of this image onto the surface, to do this I will select my surface and from the contextual ribbon menu that I am presented select the Drape Image button as highlighted by the red box on Fig. 3.

Fig. 3
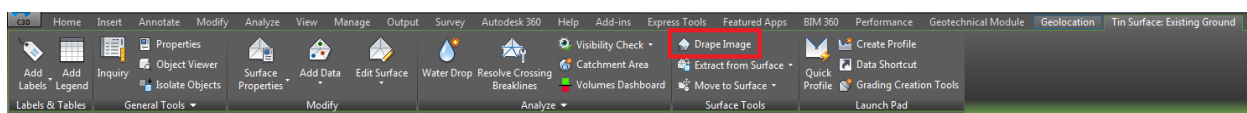
5. Having done this I am presented with the Drape Image dialog box shown in Fig. 4, here I will ensure that the surface I would like to drape the image onto is selected from the first drop down box and the image I would like to drape is selected from the second drop down box. The software has formed a logical name based on the choices though I can override this if I wish. I am however happy with this naming convention and so I will leave it and select *OK*.

Fig. 4
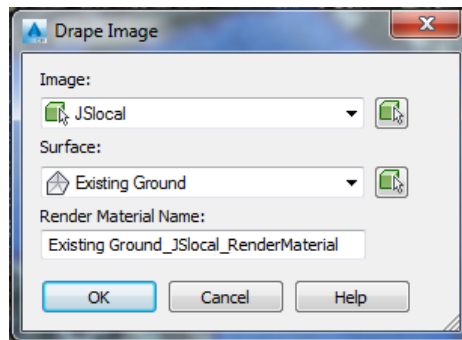
6. Before entering a Realistic 3D view I will unload the aerial photograph so that it does not impede my view. As can be seen in Fig. 5 some impressive results have been achieved and the model looks much more realistic. The image has been bent around my triangulation allowing me a rough idea of current land use and condition.

Fig. 5
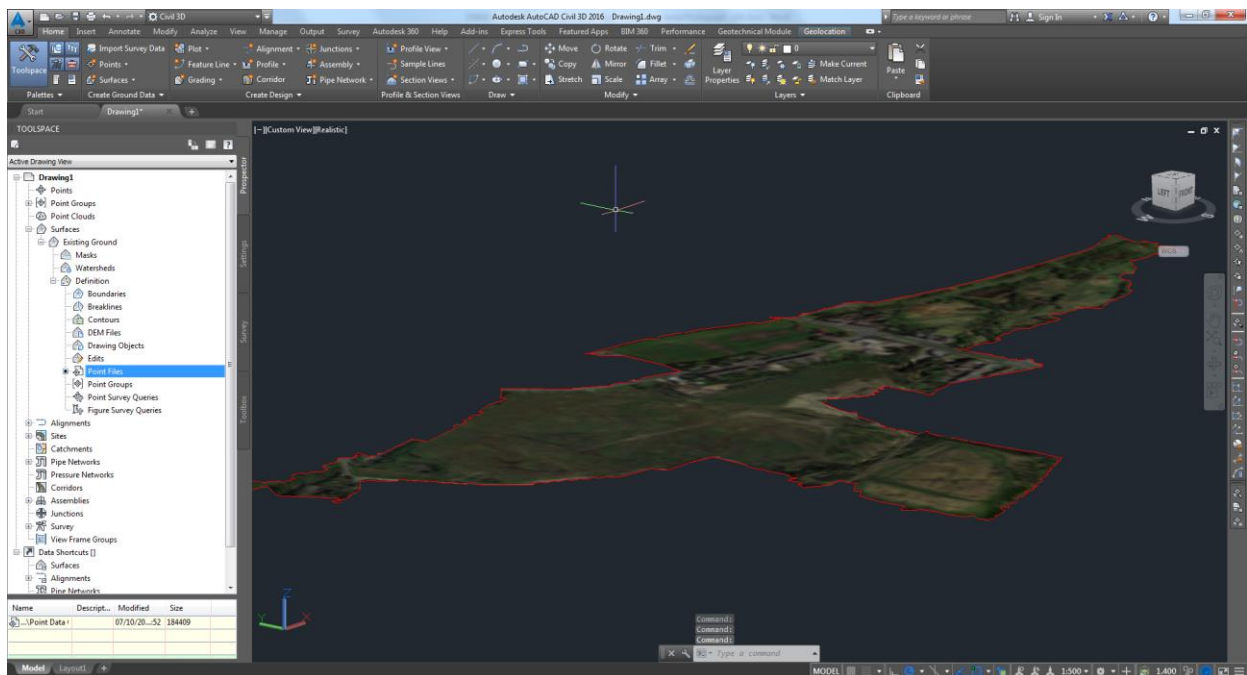
7. This view can be further enhanced by changing the surface display style to a 3D Exaggerated one, this accentuates the slopes and mounds allowing us to view them more easily in a larger context as shown in Fig. 6.

Fig. 6
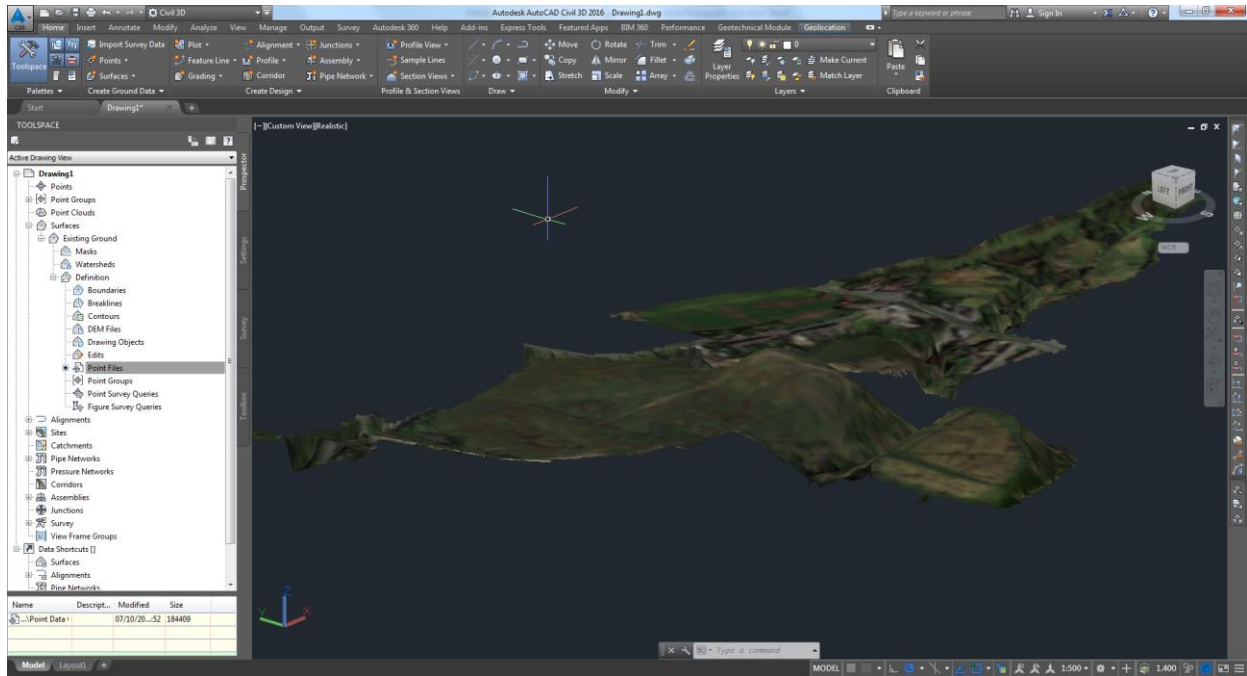
The last point worth making is that if you are using a 3D Exaggerated style then any objects that you wish to be displayed at the correct height will have to be exaggerated by the same amount. That brings us to the end of the document, I hope you have found it useful and enjoy putting the process into practice.