Undergraduate Placement Report

Rosemary Helen Mayne

BSc Hons Archaeological, Anthropological and Forensic Sciences

Student Ref; 4332382 (i7944093)

Level H

Word Count: 1,139

Placement Information;

Organisation: Bournemouth University

Placement Supervisor: Harry Manley

Table of Contents

Table of Figures

Introduction:

My placement involved me assisting Harry Manley with the digitising of site plans and drawings from an archaeological site, with prominent use of the programme ArcMap. The archaeological site I was digitising was one I was already aware of. This is due to being involved with the Durotriges dig during my first university year. I was joined on my placement by Phil, a final year student. We both split the four years (2009-2012) that needed digitising in two, I focused on 2009 and 2012. By digitising each year's worth of plans and adding them as individual layers into one big map, the shapefiles will overlap and display the four years' worth of pits and ditches across the archaeological site.

The finalized digitised map would then be used as the reference for the Durotriges Archaeological site. This is because each individual digitised pit would have attributes which you could query. These attributes were; feature number, the top and bottom of the pits and who digitised them. This would help people identify individual pits and see their relation to the site as a whole and gain greater understanding on this archaeologically important site.

Within this report I have included a lot of print screens to help demonstrate each step of the digitising process. It can be quite confusing when trying to follow the chain of digitising without a visual aid depicting the individual steps involved.

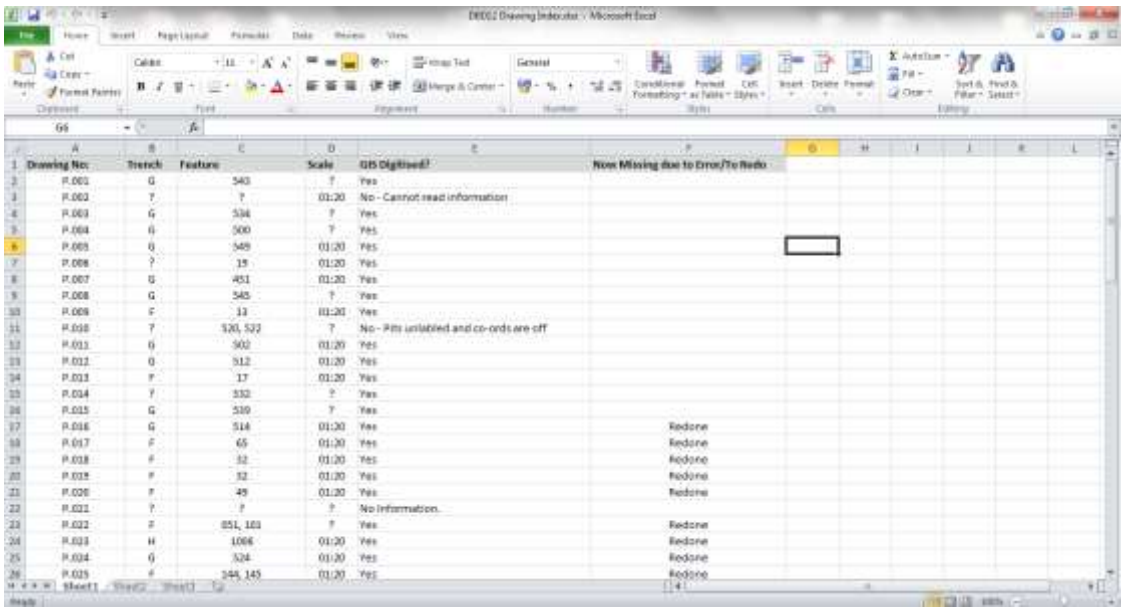
What I did during my placement:

The start of my placement was heavily involved with typing up a section drawing index into Excel. The drawing index consisted of me typing out the context numbers, feature numbers, scale of drawing and what direction it was facing from the handwritten site logbooks. I had 184 drawings in total within the index to type up. This index would help tell people who looked at the digitised map what the trench area of a pit was, what the on-site interpretation was and the context numbers relating to that specific feature number.

After I was done with the section drawing index, I began typing up feature numbers and descriptions for the DBD2009 site plans. I had to organise and write up the log books information of Trenches A, B and C into Excel. The information included what feature number it was and what the description of that feature is; whether it is a pit or pothole and its position. After I had finished with the DBD 2009 environmental log book I made a start on the one for DBD2010 where I did the same thing.

After typing out the indexes, I was given the task of scanning plans of the site. I was taught how to use the scanner to send the scanned drawings directly into my university email inbox via the on-board computer. After I had received the scanned images, I imported them into Photoshop where I then improved the quality of the scans so that the 400dpi scans created the image of the plan and became less pixelated. I cropped the large image which contained

numerous hand drawn plans into individual plans. From these individual plans I created another Index in which I typed the Drawing No., Trench ID, Feature No., Scale and whether it had been digitised (See Figure 1). This drawing index is necessary as it created a digital copy of the handwritten site notes and can confirm whether a pit is included on the finalized map.



Drawing No.	Trench	Feature	Scale	GIS Digitised?	Now Missing due to Error/To Redo
P.001	G	543	?	Yes	
P.002	?	?	01:20	No - Cannot read information	
P.003	G	534	?	Yes	
P.004	G	500	?	Yes	
P.005	G	549	01:20	Yes	
P.006	?	19	01:20	Yes	
P.007	G	451	01:20	Yes	
P.008	G	545	?	Yes	
P.009	F	13	01:20	Yes	
P.010	?	520, 522	?	No - Pits unlabled and co-ords are off	
P.011	G	502	01:20	Yes	
P.012	G	512	01:20	Yes	
P.013	F	17	01:20	Yes	
P.014	?	532	?	Yes	
P.015	G	539	?	Yes	
P.016	G	514	01:20	Yes	Redone
P.017	F	65	01:20	Yes	Redone
P.018	F	32	01:20	Yes	Redone
P.019	F	32	01:20	Yes	Redone
P.020	F	49	01:20	Yes	Redone
P.021	?	?	?	No Information	
P.022	F	851, 101	?	Yes	Redone
P.023	H	1006	01:20	Yes	Redone
P.024	G	524	01:20	Yes	Redone
P.025	F	144, 145	01:20	Yes	Redone

Figure 1; Drawing Index; In order to create a working map, I first had to create an index which in the future could be used to locate the drawing number of the pit and other relevant information.

After I was done with filling in the drawing index I started 'sketching' and 'geo-referencing' the individual pits. This is why it was important to crop down the scanned image containing 5-6 plans into single plan drawings. To begin 'sketching' and 'geo-referencing', I imported the newly cropped plan image into my DBD12 Plans ArcMap file, and then using the geo-reference tool I matched up points that had been drawn on the plan drawing with the co-ordinates of the map (See Figure 2). The co-ordinates were taken on site using a total station and recorded onto the plan drawing. These onsite procedures meant all I had to do was input the data and make sure the aspect and positioning was correct. If the positioning was incorrect or the aspect was wrong, I had to remove the layer from my map file and re-add it to double check I hadn't inputted the information wrong. If it still wasn't right I then removed the layer and left a comment on my drawing index Excel document explaining the problem.

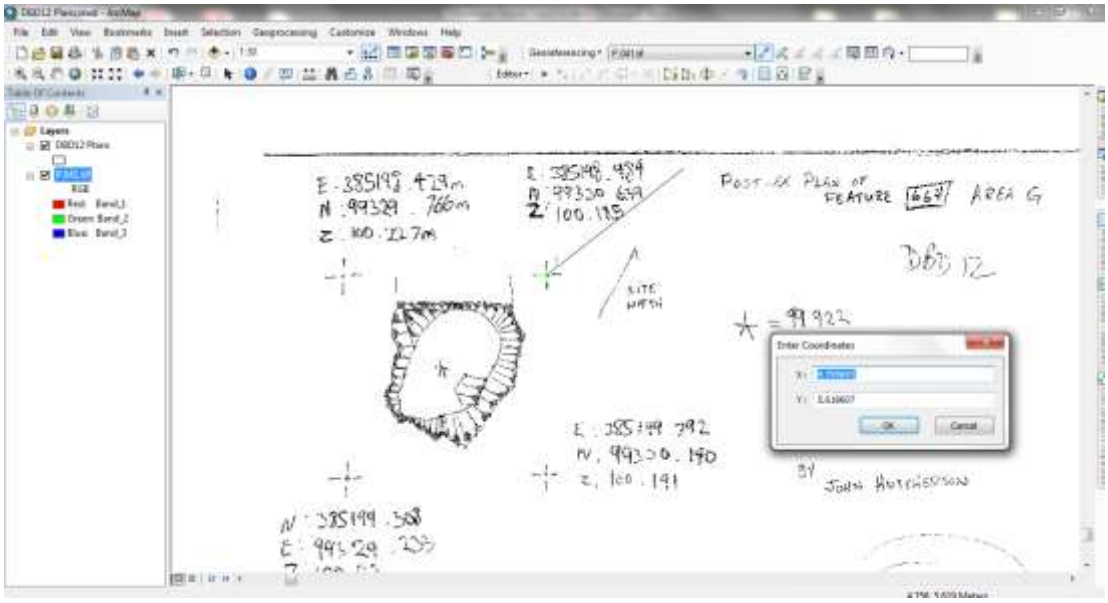


Figure 2; Geo-referencing: By clicking the 'Add Control Point' application, I was able to pinpoint the drawn point on the map and then input the co-ordinates. In this case the co-ordinates would be X= 385198.984 and Y = 99330.639.

Once the image was geo-referenced, I then utilised the 'Editor toolbar' to begin editing. This meant that I sketched around; using multiple points to gain accuracy, the imported image of the pit and it is at this stage I added the correct attributes to the 'sketch' (Figure 3).

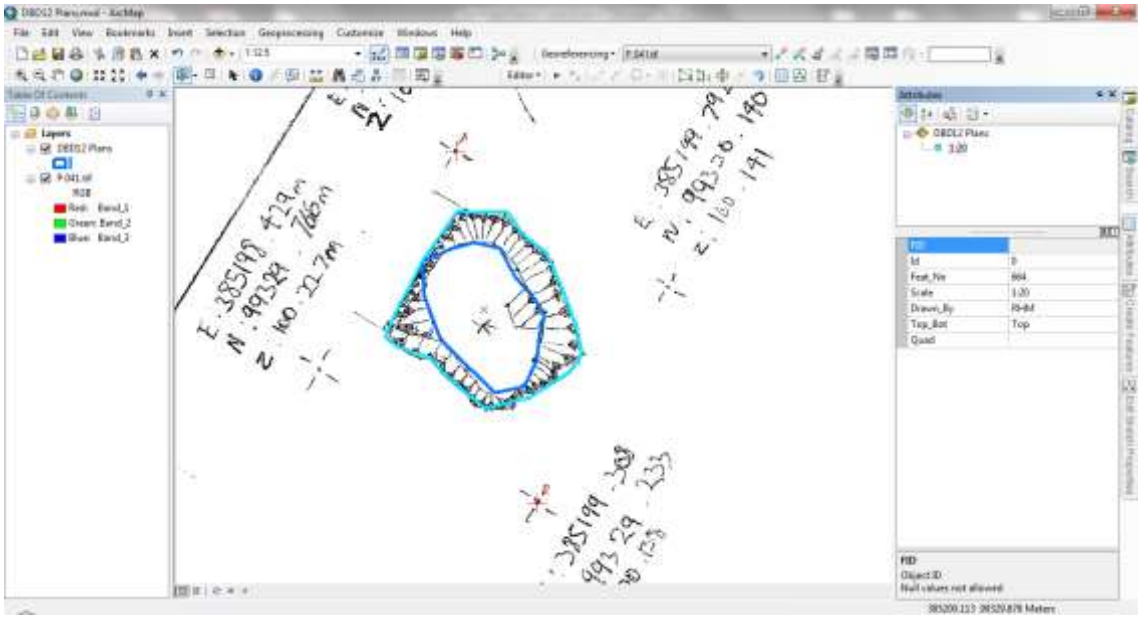


Figure 3; Adding Attributes and 'sketching pits'; After the drawing was correctly geo-referenced, I was able to 'sketch' the outline of the pit to create the digitised copy. The light blue highlighted line represents the 'Top' of the pit whereas the dark blue line represented the 'Bottom' (Abbreviated to 'Bot') of the pit.

By adding attributes to each 'sketch' such as feature number, whether it is the top or bottom of the pit and the scale of the drawing, anyone who uses the map can query a search for their desired pit (Figure 4).

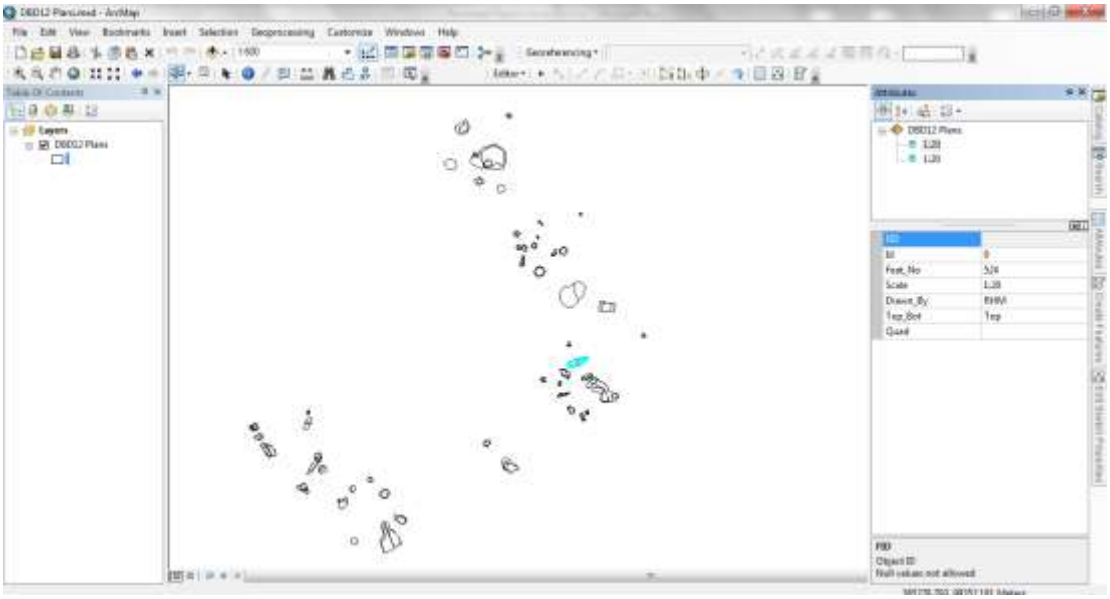


Figure 4; Attribute Function and simple query search: When a 'sketch' is highlighted, such as the blue highlighted pit in the centre, it brings up a list of attributes. This function can help identify pits and locate their plans and to study their relation to surrounding pits or the whole site itself. By adding these attributes a simple query search of 'Feature Number; 524' would highlight this pit.

I repeated these procedures for all of the other scanned drawings until I was left with the finished map which displayed the whole set of pits included in the DBD12 Plans (See Figure 5).

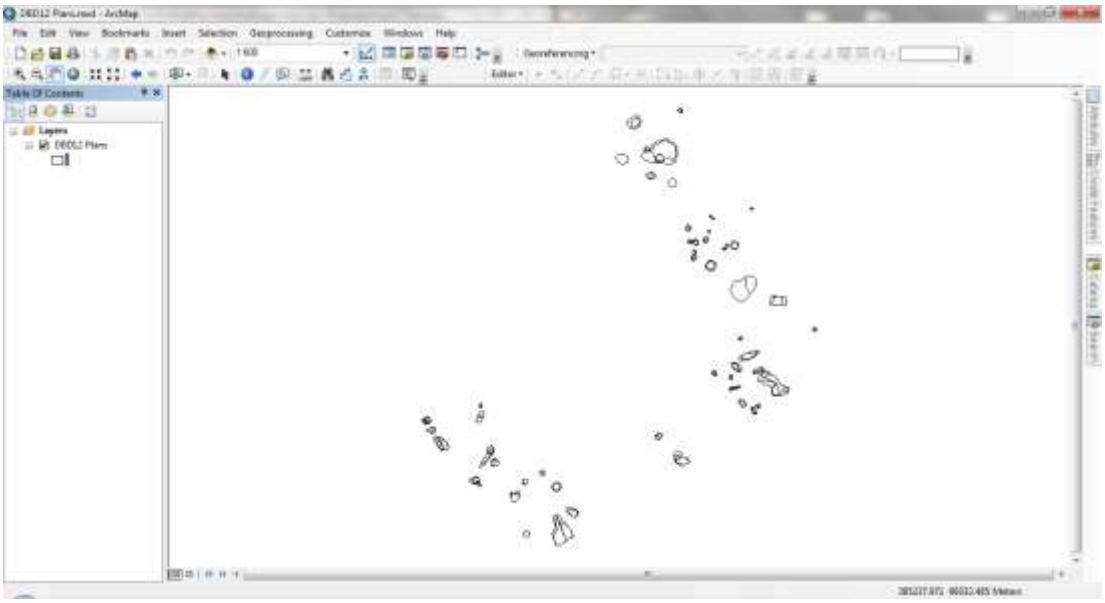


Figure 5; Completed DBD12 Plans: Here is an image of the completed DBD12 Plans which have been correctly geo-referenced to the co-ordinates of the site.

I repeated this process for the DBD09 Plans, and once I was finished I was able to import the DBD09 Plans into my DBD12 Plan file. I was able to see how the two relate to each other and the site by assigning different 'key' colours to each layer. The same could be done with the years that Phil digitised to create a 4 year lapse of the site.

Reflections on my placement:

From this placement I learnt a wide selection of skills, ranging from computer based skills to communication necessities. Most importantly I learnt how to use a multitude of archaeological based computer software with heavy emphasis on ArcMap, which I had never used before this placement. I am very happy with this experience and the skills it has provided me with and will be glad to tell people that I am able to convert hand drawn images, which were recorded on site, into digital maps in ArcMap that can be queried and searched through. I feel this is important as it lets Archaeology progress into the 'Computer and Digital Ages' rather than keep it in the old fashion 'Hand-drawn Era'.

Although my placement was very computer/office based, I learnt a lot about using email effectively and efficiently to communicate with my supervisor. I also had a taster of what having a daily 9.30 till 4.30 office type job would be like if I choose to focus on the digital side of Archaeology rather than the out on a dig/practical side of things. My placement wasn't too computer based as I did get to handle of the scanned drawings. But a major point of my placement was being able to follow a project through from start to finish and the sense of accomplishment when I saw the final time lapsed version of the map.