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UNIVERSITY OF WALES
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From the Field to the (Excel) Table.
An Archaeological Site Data Processing Study
(Assessment 2)

Archaeological Research Methods (HPAR7004)
(Humanities)
Zsuzsanna Veres

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Introduction

In 2019 an unknown Anglo-Saxon Cemetery was discovered by metal detectorists in Lincolnshire. The finds dating to the fifth-sixth century AD and the fragments of bones on the ploughed field suggested that the cemetery was threatened by modern agricultural farming methods, therefore a professional excavation and research was required¹ (Townend 2020, p. 1). The two phase excavation work involved trial trenching and excavation was carried out by Network Archaeology Ltd. as a part of an interactive archaeological project '*Searching for Saxons in Lincolnshire*' created by the Lincolnshire County Council between 1st and 11th September 2020 by the permission of the landowner (Townend 2020, p. 2; Townend 2022, p. 5). Five trenches were opened and one of the trenches (Trench 6) was extended into a big excavation area. Fourteen skeletons in twelve graves and ten cremations were excavated during the project. The graves and cremations contained several grave goods (Townend 2022, p. 25).

The subject of this work is to show how the excavation data was gathered, processed and organised into a dataset. The site information (WSI, indices and specialist reports) was made available by P. Townend post-excavation manager with the kind permission of Dr. L. Brundle, Finds Liaison Officer of Portable Antiquity Scheme and C. Lingard Network Archaeology Ltd. director. As the data contained sensitive information some of it was left out or swapped for a fictitious value. Due to the limitations of the work only a small part of the data was used to create an informative dataset. I had no access to any corporate dataset or database template, all the tables were created by me based on my professional experience and personal judgement. The Spreadsheet is submitted as supplementary data in an .xlsx format while the Metadata Statement and Abbreviations can be found in the Appendix of this paper.

Choosing the ideal site data

The available sources included site indices such as: Trench Index, Context Index, Drawing, Photo and Photogrammetry Indices, Small Find, Skeleton and Cremation lists, Metal Detecting Index and Sample Index. I was also given the written records such as the filled 'pro-forma' Network Archaeology Trench Sheets, Context Sheets and Skeleton Sheets (SX20 Site Data). For the subject of the assignment I chose three parts of the site data to be processed for a dataset as the amount of the original data would exceed the limits of this paper and the capacity of the spreadsheet.

I have created one data set, named *Spreadsheet SX20 Trench, Context and Skeleton Index*, which contains three individual index sheets. The first sheet is the Trench Index data, which consists of the details of all the excavated and unexcavated trenches with assigned context number blocks (see

¹ Thanks to Dr. L. Brundle Finds Liaison Officer working with the Lincolnshire County Council, West Lindsey District Council, and the British Museum's Portable Antiquity Scheme and Historic England a rescue project was made and financed, so the importance of the site is recognised and can be monitored to avoid further damage (Brundle 2021).

Spreadsheet SX20 - Sheet name: *Trench Index*). The second sheet has the entries from the site Context index regarding the features from Trench 6 (see Spreadsheet SX20 - Sheet name: *Context Index for Trench 6*). This trench was extended into the excavation area as it contained the biggest amount of features (graves and cremation pits). I wanted to include numerous features and this trench had the potential to show a good sample of the findings. The third set is the list of the skeletons excavated in the trench mentioned above (see Spreadsheet SX20 - Sheet name: *Skeleton Index for Trench 6*). All three sheets are cross-referenced and can be used individually or together depending on the needs of the reader. Creating three different sheets under one portfolio was the most reasonable option. In my case, having only one sheet with all the information could not be easy to use. Some of the columns containing the same information can be found on different sheets (e.g. photo numbers or photogrammetry numbers), however I think it is necessary and also practical to have cross-referenced points with other site indices, so the information can be found easily without going through the whole archive.

The Trench Index

The sheet contains eight rows, which is the number of the excavated and unexcavated trenches. There are thirteen fields or columns containing a piece of information originating from the site. The data is collected from different indices all relevant to the subject of this sheet. The information comes from physically or digitally recorded data, such as drawings, written records and photographs then these are compiled together for an overall data set.

The first column contains the site code (SX20), and this information is constant. It is important to note the site code to avoid any errors occurring as other previous or running projects can have the same trench numbers allocated. The second field contains the ID number of the trench. These numbers are the foundations of the evaluation works and usually allocated before the excavation starts as they are a result of careful planning needed for the WSI and for the survey data to set out the trenches on site. The third column shows the number block allocated and the amount of numbers taken out relating to each trench allowing the user to cross-reference the number block with the actual context index. The fourth column displays the dimensions of the trenches so these can be checked against the actual survey data or hand drawn plans if there are any. Showing the actual depth of the trench can also give information about the highest level of the archaeological horizon or the geological/natural layer or the thickness of the topsoil and subsoil, if present. The fifth and sixth column could be merged into one 'photo column' however, I found it practical if these categories are separated as sometimes more than one camera is used on a site (especially on large evaluations or mitigation areas). The camera number is the individual number for a camera which was used to record the trench, while the photo numbers are usually the individual shot

numbers issued by the camera, which are assigned to each photo taken.² As the photos are the actual evidence of the trench being open, recorded then backfilled it is one of the most important parts of the index. Similarly, the seventh and eighth columns containing the relevant drawings of the trench could be merged, however speaking from experience, if these sections are separated, it is easier to spot any mistakes, typos which could mislead the reader. Also it is more readable, easier to search and takes less time to locate the records, if they are needed. The ninth column is about the summary of the archaeological features found within the trench. The brief description can help the reader to understand what to expect on the other sheets, what features were unearthed. This listing has to be brief and simple. I also included the Test pit numbers as the tenth column, however this is an optional addition. Prior to the trench opening during this particular project a couple of test pits were dug manually within the set out location of the trenches to investigate the depth of the plough soil and see if any graves were close to the topsoil (Townend 2020, p. 5). These test pits were surveyed so they had existing records, which can be added as extra information. The eleventh and twelfth columns contain the initials of the person(s) who opened, excavated or recorded the trench with the dates of these events. I decided to include these fields as it can be very helpful for the management to follow the work and progress of the field staff and these can be used for appraisals or skill development checks. The last column is an optional addition, however it can be very useful if the post-ex staff need to add or highlight any information (e.g. missing sheets, drawings, errors etc.).

The Context Index For Trench 6

The sheet contains forty five rows, which is the number of the features excavated in Trench 6. There are twenty one fields or columns containing a piece of information originating from the site. Some of the columns are the same as in Trench Index (see above), so these will be only briefly mentioned to avoid repetition.

The first and second columns (Project code and Trench number) are included in this index for the same purpose as in the previous paragraph. The third field is about the type of the archaeological feature, in this case cut, fill or layer. This is important as the numbers allocated to each type will be used for identification and assigning further data such as drawing numbers, photos, survey etc., not to mention site phasing and matrices. Cut and fill numbers are connected so it was important to include column five and six. These two fields are cross-referenced and in case of any additional fill or cut numbers they can be easily located. The seventh column had no importance in this index, however it is relevant when a feature is recorded with more than one cut number or there are corresponding fill numbers. The eight column introduces the features or deposits by describing

² Different companies however can have different protocols to record their photos. In some cases instead of using the individual shot numbers given by the camera a so-called Shot ID is issued, which contains the number of the pictures for the recorded feature, therefore an extra index is created and cross-referenced. The Shot ID Index contains all the relevant information of the feature, and the board displayed on the site photograph also shows the ID number with the actual feature number. For example: CAM 2/Shot 102/4 photos of 123 pit (personal experience).

them to the point, with short head words. These brief descriptions show the reader the nature of the features or their fills. The ninth, tenth, eleventh and twelfth fields focus on the physical attributes and dimensions of the cut features and fills as these can be used for post-ex reports, assessments etc. without searching through the whole archive and context sheets so the user saves time and effort. The thirteenth column shows the orientation of the features, which are essential for ditches, graves and walls or buildings. The use of the fourteenth and fifteenth columns about photographs are covered in the previous paragraph. The sixteenth field contains another type of recording technique. Features with significance such as buildings, kilns, skeletal remains or well preserved in-situ finds can be recorded in great detail by using photogrammetry, instead of hand planing. With this time saving method the archaeology can be recorded, georeferenced and with the available softwares 3D models can be created. The use of photogrammetry on the Saxon cemetery site was essential due to the time pressure and the number of the grave goods unearthed in-situ justified to apply this technique. There was an onsite index for photogrammetry which was added to this sheet as it will make the data recovery easier and faster. This section is also cross-referenced and can be found on the third sheet of this portfolio. The seventeenth and eighteenth columns were not filled on this sheet, however I think it is important to include them. Unfortunately there was no time to draw the profile of the excavated graves and cremation pits, instead they were surveyed. In any other cases these two fields could contain the ID number of the drawing sheet and the numbered hand drawn profiles. The last three columns consist of the Initials, Date and Notes are mentioned, for further information on those please refer to the previous paragraph.

The Skeleton Index for Trench 6

The sheet has twelve rows and thirteen columns. Some of the fields are described in the two previous paragraphs so they will be only listed and additional comments are added, if necessary. The first column is the constant site code for identification of the project. The second column shows the trench number which contains the excavated features, in this case the graves. The third field consists of the unique ID number of each skeletal remains. They are independent records, and can be used on their own however they are closely related to the assigned context numbers and also used by other indices, such as they are mentioned on the photogrammetry, drawing and photo sheets. The fourth and fifth columns contain the assigned context numbers, the cut number of the grave in which the skeleton was laid and the number of the fill(s) covering the remains. This cross-referenced data helps to avoid further mistakes during identification and saves time to have the relevant information at one place or can direct the user to the right direction if more details are needed. Sixth column describes the skeletal remains in short sentences which help to paint a picture of the skeleton itself without seeing any pictures, drawings or having to read through the skeleton records. The description should contain information about the estimated age, position and completeness of the skeleton. The seventh column shows the orientation of the skeletal remains

which is also an important detail. Differences can be spotted and highlighted easily and faster, without reading the whole documentation. The other half of the sheet including columns eight (camera number), nine (photo number), ten (photogrammetry number), eleven (initials), twelve (date) and thirteen (notes) are described in detail in the previous paragraphs. There is extra data which could be included on this sheet, however I decided not to add them to the collection of criteria because it could push the limit of the sheet. The further elements could be very important and help with further research of the data including: the related samples, survey data and finds associated with the skeletons. All this additional data could be used on their own, individual sheet or cross-referenced and displayed on other indices.

Summary

My aim was to create an archeological dataset, which is useful and could help the user to reach the needed information in greater detail within a shorter time by compiling all the site data relevant to the scope I set out in the Introduction. Creating searchable, easily manageable, detailed and well built datasets are very important as this information contains all the work carried out and can help understand the archaeological importance of a site.

When the on-site archaeological investigation finished we only left with the recovered finds, remains, catalogues, records and the description of their context. When the original, primary source of the data, the features are excavated the contexts are destroyed. The only evidence survives are written and digital records (Wise and Miller 1997) so a well written site record and dataset is the foundation for the further research. The standardisation of the data is very important in the case of metadata (Wise and Miller 1997; Dig Digital 2023, Infosheet#4) as well as in the case of the archaeological dataset. The standardised dataset can be searchable and the information can be found faster if the data is uniform. When creating these indices and the metadata statement I tried to be consistent and use the terminology set in the FISH vocabularies (FISH 2023) as a standard. For key points regarding metadata creation I used the CIfA Dig Digital (2023) guidelines and the guidance available on the Archaeological Data Service website.

References

Archeological Data Service

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Appendix

File Name	Title	Description	Creator			Copyright Holder			Period of Creation	
			First Name	Last Name	Organisation	First Name	Last Name	Organisation	Start Date	End Date
SX20Spreadheet 1.xlsx	Spreadsheet SX20 Trench, Context and Skeleton Index	One spreadsheet with three sub-sheets containing Trench Index, Context Index for Trench 6 and Skeleton Index for Trench 6	Zsuzsanna	Veres	ZsV Archaeology	Zsuzsanna	Veres	ZsV Archaeology	10/12/2023	10/01/2024

Language	Software Used	Software Version	Supporting documentation file names
English	Google Sheets: Online Spreadsheet Editor. Google Workspace	2024	SX20Abbreviations.pdf

Sheet Name	Sheet Description	Number of rows	Field Name	Field Description
Trench Index	Trenches excavated or set out during the SX20 project.	8	Project_code	Project code of the excavated site
			Trench_number	Unique trench ID number
			Dimensions	Trench length, width and depth in metres
			Camera_no	Unique photo camera ID number used on site for recording
			Photo_no	Unique photo ID number for each shot taken
			Drawing_sheet_no	Unique drawing sheet ID number for drawings
			Drawing_no	Unique drawing ID number for drawn sections and plans
			Summary_of_archaeology	Listing of features excavated in each trench
			Test_pit_no	Unique test pit ID number
			Initials	Name of the person(s) who excavated and recorded the trench
			Date	Date of the trench recorded
			Notes	Any additional information to add

Context Index for Trench 6	Context list for archaeological features excavated in Trench 6 during the SX20 project	45	Project_code	Project code of the excavated site
			Trench_number	Unique trench ID number containing the listed features
			Context	Unique context ID number
			Context_type	Type of archaeological context
			Filled_by	Unique fill ID numbers belonging to a cut (cross referenced fill number)
			Fill of	Unique cut ID numbers belonging to a fill (cross referenced cut number)
			Same_as	Features recorded with multiple context numbers (e.g. ditches, large features or layers)
			Description	Brief description of recorded features
			Shape_in_plan	Shape of cut features or layers in plan
			Profile	Profile of cut features (e.g. side, break of slope, base)
			Fill_layer_description	Brief description of recorded fills and layers (colour, texture, consistency, inclusions)
			Dimensions	Cut feature length, width and depth in metres and fill thickness in metres

			Orientation	Orientation of features
			Camera_no	Unique photo camera ID number used on site for recording
			Photo_no	Unique photo ID number for each shot taken
			Photogrammetry_no	Unique ID photo number for archeological features and skeletal remains for georeferenced planning and 3D modelling
			Drawing_sheet_no	Unique drawing sheet ID number for drawings
			Drawing_no	Unique drawing ID number for drawn sections and plans
			Initials	Name of the person(s) who excavated and recorded the feature
			Date	Date of the feature recorded
			Notes	Any additional information to add
Skeleton Index for Trench 6	List of skeletons excavated in Trench 6 during the SX20 project	12	Project_code	Project code of the excavated site
			Trench_number	Unique trench ID number containing the listed skeletons
			Skeleton_no	Unique skeleton ID number for each human remain excavated

			Cut_no	Cut number of the feature containing the skeleton
			Fill_no	Fill number associated with skeleton in the cut feature
			Brief_description	Description of the skeletal remains (position, age and completeness)
			Orientation	Orientation of the skeleton
			Camera_no	Unique photo camera ID number used on site for recording
			Photo_no	Unique photo ID number for each shot taken
			Photogrammetry_no	Unique ID photo number for archeological features and skeletal remains for georeferenced planning and 3D modelling
			Initials	Name of the person(s) who excavated and recorded the skeletal remains
			Date	Date of the skeleton recorded
			Notes	Any additional information to add

Abbreviations for Spreadsheet SX20

D - Depth

E-W - East to West orientation

ID - Identification

L - Length

N/A - Not Applicable

No. - Number

SX20 - Project Code

SK - Skeleton

W - Width

Glossary

The terms in the Glossary were compiled by using the FISH vocabularies (<https://heritage-standards.museologi.st/terminology/>).

Feature - An archaeological component which cuts, overlies or abuts other features such as ditches, pits and building foundations.

Layer - An archaeological unit of soil in a horizontal plane which may seal features or be cut through by other features.

Photogrammetry - The measurement of a surface, either in elevation or plan, determined from measurements derived from two or more photographic images taken from different positions; this allows three dimensional viewing of the surface to be mapped.

Test pit - Systematically positioned hole, or holes, utilised in all studies that aim to sample the nature of the topsoil and subsurface deposits.

Trench - Archaeologically excavated trench, either hand or machine dug, as part of a sampling programme to evaluate the presence/absence, nature, preservation, age and extent of any buried archaeological features.