

Grange Farm

MONKTON, SOUTH TYNESIDE

MONITORING OF SERVICE EXCAVATIONS

September 2016



Prepared for Mr and Mrs Powell, Grange Farmhouse, Monkton by:

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Site Name: Grange Farmhouse, Monkton, South Tyneside

Proposed Development: Service trenching across area to north of farmhouse

Clients: Mr and Mrs Powell, Grange Farmhouse, Monkton
South Tyneside

NGR: NZ 3207 6377

OASIS ID: alanwill1-270296

Archaeology Ref: MON14529

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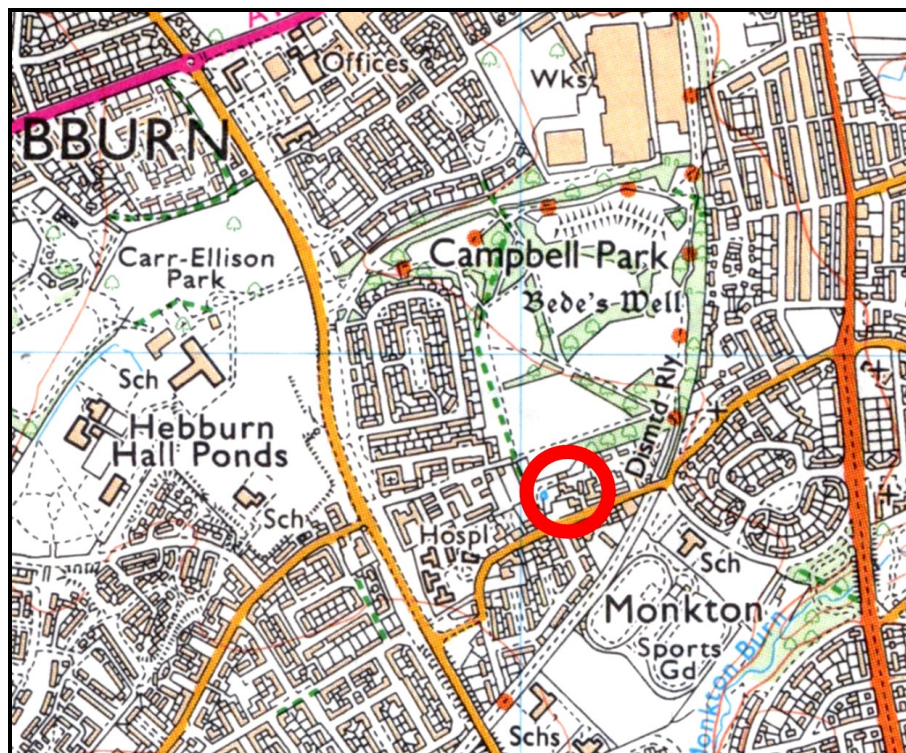
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SUMMARY

Groundworks, for the installation of water services, was carried out over 6th and 7th September 2016 as one element of ongoing development of standing structures to the north of Grange Farmhouse, Monkton Lane, Monkton, South Tyneside. Because the site lies in the core of the historic settlement of Monkton, the Archaeological Officer for Tyne and Wear requested that archaeological monitoring should be carried out during the installation of the services as set out in a briefing document provided by the Archaeological Officer for Tyne and Wear.

Archaeological monitoring of the trenching, carried out within the former farmyard to the north of the house, was carried out by Alan Williams Archaeology. The absence of a developed topsoil over clay subsoil indicated that the area had been truncated at some time in the past, possibly during levelling for the formation of the farmyard. Archaeological features exposed by the trenching included a possible mortar floor, a stone foundation or pad and a sunken timber tank. None of them are considered to be early or of any great archaeological significance. Finds material recovered during the trenching was exclusively modern in date.

Trenching to connect pipework to the mains water supply was carried out at a later date by Northumbrian Water and archaeologically monitored by John Welsh of AAG Archaeology. Results of this work appear under separate cover.



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Figure 1: Monkton in South Tyneside. The red circle locates Grange Farm on Monkton Lane.

1. PROJECT BACKGROUND

1.1 Requirement for Archaeological Input

Trenching, for the installation of water services, was carried out during September 2016 as one element of ongoing development of standing structures to the north of Grange Farmhouse, Monkton Lane, Monkton. Because the site lies in the core of the historic settlement of Monkton, Claire MacRae, the Archaeological Officer for Tyne and Wear, requested that archaeological monitoring should be carried out during service trenching by Northumbrian Water as set out in a briefing document (Ref. MON 14529, June 17th 2016: Appendix 2) and as per agreed policy with Northumbrian Water. The trenching reported on in this document, agreed with the owner of the property, links with this installation but lies within private property and does not relate directly to the briefing document.

1.2 Extent of Trenching

Trenches were excavated by the owner of Grange Farm, Mr Tom Powell. They extended across a yard to the north of the farmhouse. In total, 70m of trench was excavated. This included a 50m east-west run across the northern part of the yard, joined by a 20m run connecting to this from the south. Trenches were generally 0.4m wide and between 0.8m and 1m deep.

1.3 Archaeological Monitoring

Trenching within the property was archaeologically monitored by Alan Williams on 6th and 7th September 2016. Results appear in section 3 of this report. Trenching beyond the property, to connect to the mains water supply, was carried out at a later date by Northumbrian Water and archaeologically monitored by Jon Welsh of AAG Archaeology. Results of this work appear under separate cover.

1.4 Status of the Site

Scheduled Monuments

There are no scheduled monuments within the vicinity of Grange Farm.

Listed Buildings

A number of historic buildings adjacent to the barn are listed. These include Grange Farmhouse (grade II) and The Grange (grade II) both to the south of the barn.

Conservation Area

Grange Farm lies within Monkton Conservation Area encompassing Monkton Lane. The area was designated in 1975.

1.5 The Farmyard (HER 8494)

Service trenching was carried out across an open area to the rear (north) of Grange Farmhouse (HER 8494) which still retains the enclosed and irregular character of its former use, a farmyard (described in the Monkton Conservation Area report). Surviving ranges within the area, all now residential or utilised for storage, include a stone barn with brick and timber lean-to along its south wall (A); a long, stone stable block to the north of this (B); a stone cart shed with brick arches running northwards from the house which includes a northern extension formerly used as calving sheds (C) along the boundary with Monkton Farm; and a second cart shed to the north with roof supported on substantial stone piers (D). In the centre of the yard is a stone byre (E), now in residential use. It formerly contained stalling for milk cattle both transverse and longitudinal to the long axis of the building, with blocked through doors and a small dairy at the west end.

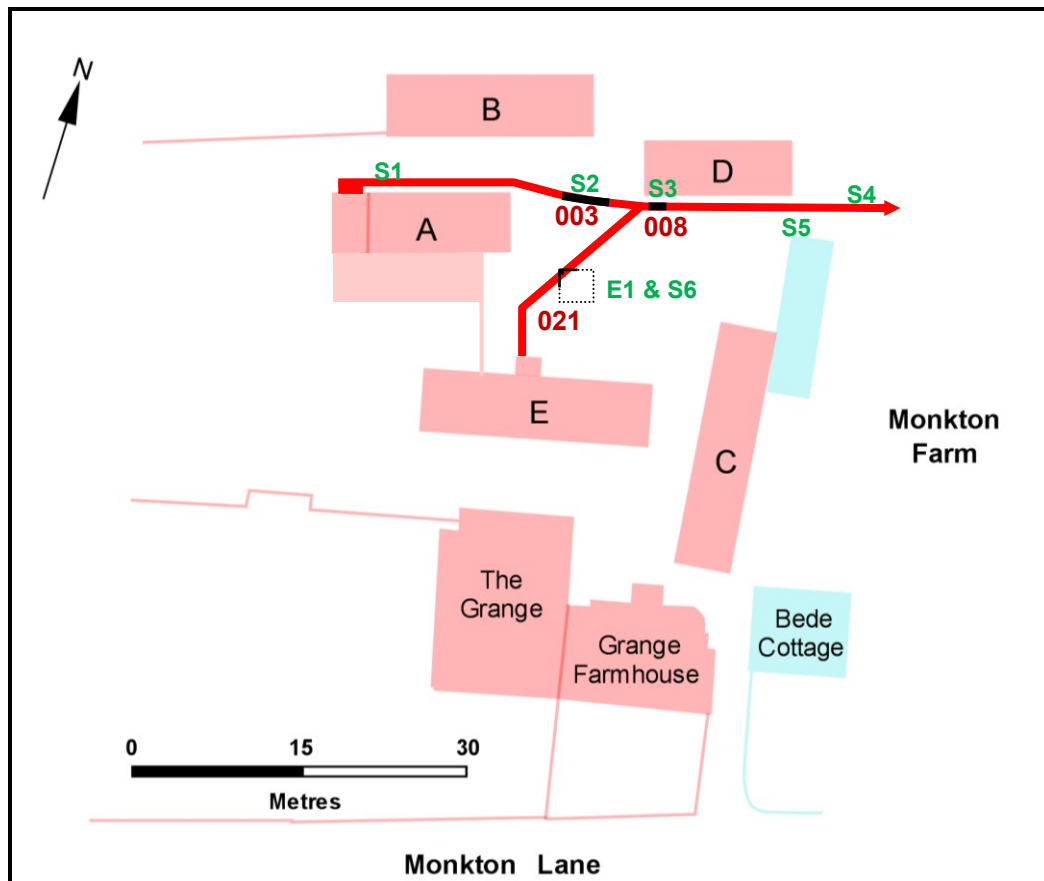


Figure 2: Route of water service trenches at Grange Farm, running eastwards between Former barn A and former stables B and south of cart shed D. A branch line runs from former farm range E (now in domestic use). Features [003] (a mortar spread or floor), [008] (a masonry foundation), and [021] (a sunken timber tank) are located on the plan. Drawings below are located as S1 to S6 and E1 in green.

2. HISTORICAL BACKGROUND

2.1 Monkton Village

The historic township of Monkton lies in the civil parish of Jarrow nearly one and a half miles to the south of the River Tyne and four and a quarter miles to the east of Gateshead town centre. Over the nineteenth century, the settlement was in the vicinity of extensive colliery workings and has today been surrounded by extensive housing developments. However, the historic core of the medieval village which survives along Monkton Lane retains a rural character, and was made a conservation area in 1975.

A settlement existed at Monkton by at least the 1070s (HER152) when it was granted by Walcher, Bishop of Durham, to the monk Aldwin and his colleagues to provide funds for their reconstruction of the church of St Paul at Jarrow. This made the settlement a possession of the Prior and Convent of Durham and was passed on after the reformation to the secular Cathedral Dean and Chapter.

The medieval village was of two row form with properties extending back from both sides of Monkton Lane. Today, most properties have front gardens and there is a wide verge along the south of Monkton Lane, so it is quite likely that the village once had a green.

By the eighteenth century there were four main farms in the village; West Farm, Monkton Farm, East Farm and Grange Farm. There were also a number of large houses including Monkton Hall at the western end of the lane, so as well as tenant farmers, the occupants of the village included merchants and professionals.

2.2 Grange Farm

Grange Farm lies towards the eastern end of Monkton Lane and on its north side. What was formerly one long domestic range was divided up by the mid nineteenth century into two discrete properties, The Grange to the west and Grange Farmhouse to the east. The Grange (listed grade II; HER 8167) became the higher status of the two and was orientated to face west away from the farmyard and the road towards a private, high-walled garden. Grange Farmhouse (also grade II listed; HER 81444) retains its vernacular character. It is a long, two-storey, four-bay sandstone house set beyond a low-walled front garden. It has a rendered and whitewashed front face with a steep pantiled roof and distinctive Yorkshire sliding-sash windows. An historical study of the fabric of the farmhouse was carried out by

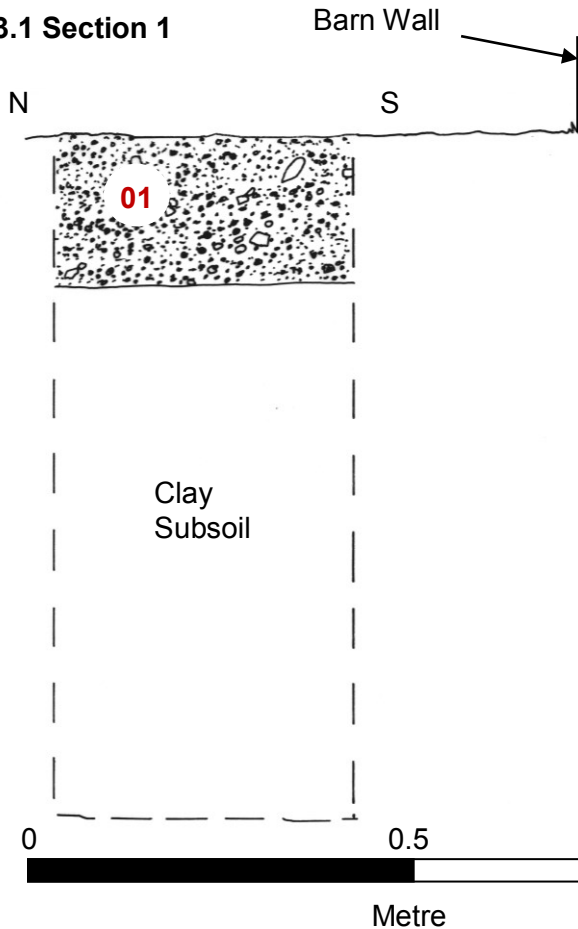
K Fairless (1980) during renovations in 1979. It shows that it probably originated as a single storey, one-celled building some time in the early sixteenth century, with a cross-passage and western block added in the later sixteenth or early seventeenth century. The first floor and an extension to the west (now part of The Grange) were constructed by the middle of the seventeenth century.



Plate 1: *Cutting the pipe trench along the side of the former barn.
Looking east.*

3. RESULTS

As mentioned above, service trenches were excavated within the area of the former farmyard on the 6th and 7th of September 2016 using a machine excavator with 40cm wide toothless ditching bucket. All excavation was monitored by Alan Williams for the presence of archaeological deposits. At points along the trenches, sections were recorded to characterise stratigraphy (figures 3 to 6 below). They are located on figure 2. OD heights across the area of trenching vary from around 33.5m aOD at the west end of the yard to 33m aOD at the east.

3.1 Section 1**Context Descriptions
Sections 1 and 2**

[01] Layer of dark grey-brown hearth ash with some sandy loam. Small fragments of brick and some small stone. Same as [02] and [06]. 0.2m deep.

[02] Layer of dark grey-brown hearth ash with some sandy loam. Small fragments of brick and some small stone. 0.2m deep. Same as [01] and [06].

[03] Mortar spread/floor. Extends for 3m along trench as located on figure 2. 2cms thick. No evidence of defining structures.

[04] Layer of mottled red/black hearth ash. 4-5cms deep.

[05] Layer of yellow/brown clay with some brick fragments and small stone. 5-6cms deep.

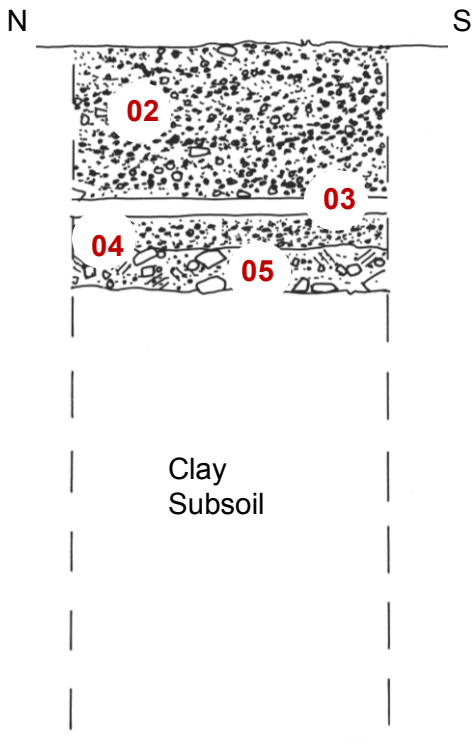
3.2 Section 2

Figure 3: Sections 1 and 2. 1:10 scale (see figure 2 for locations).

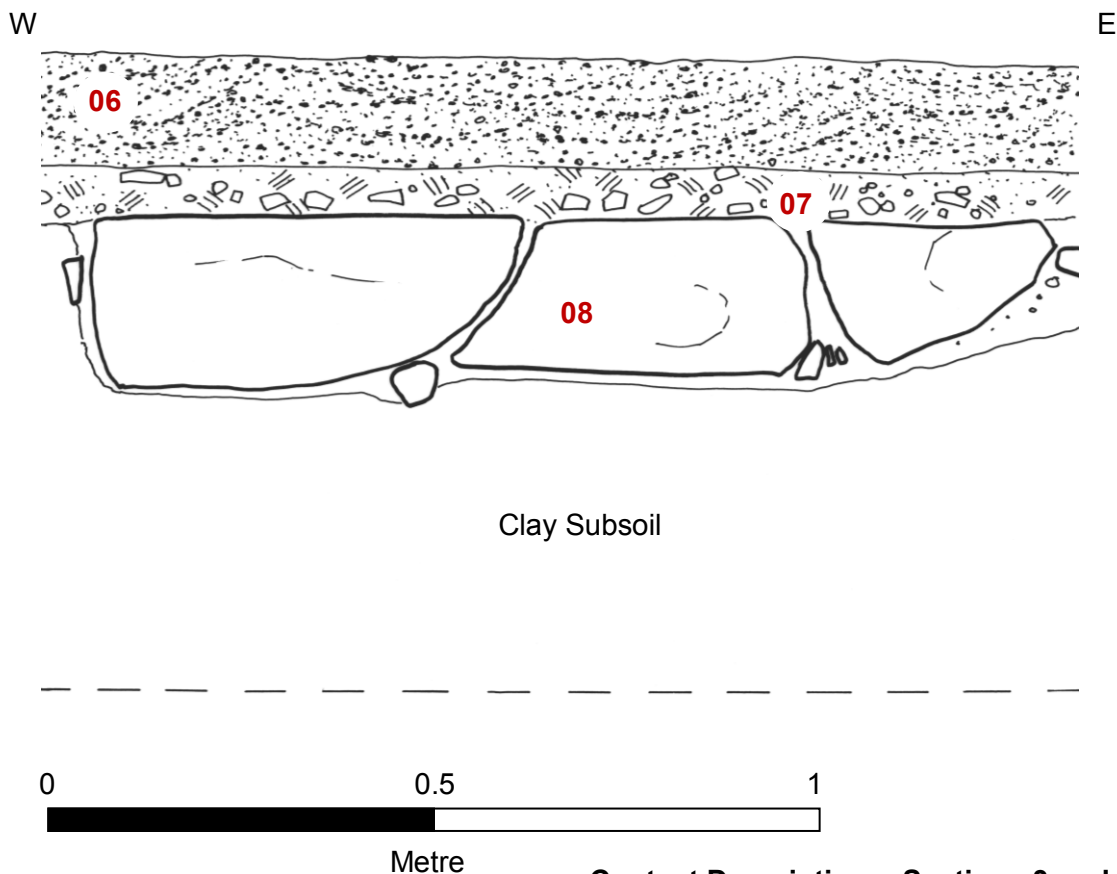


Plate 2: Western end of trench adjacent to the barn. Modern ash [01] sits directly above clay subsoil. 1m scale.

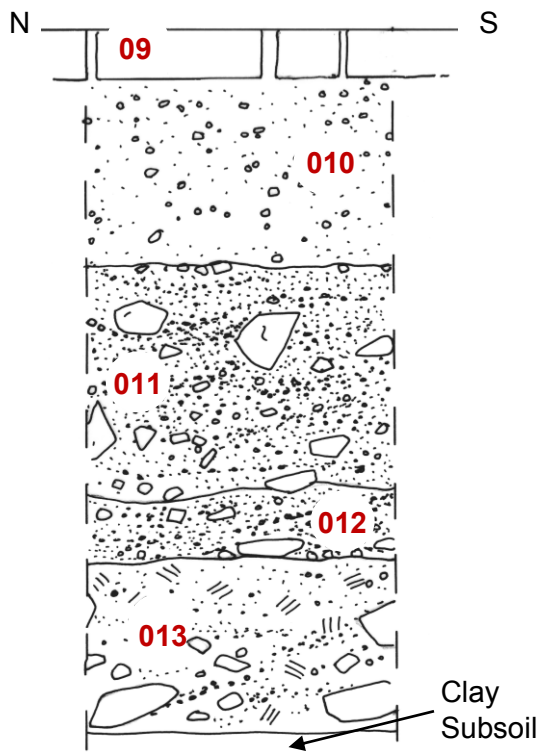


Plate 3: Looking north across the trench west of the cart shed. Mortar surface [03] (thin white band) exposed in section between layers of ash [02] and [04]. 1m scale.

3.3 Section 3



3.4 Section 4



Context Descriptions: Sections 3 and 4

[06] Layer of dark grey-brown hearth ash with some sandy loam. Small fragments of brick and some small stone. Similar to [01] and [02]. 0.15m deep.

[07] Layer of medium-grey sticky clay with fragments of small stone and brick. Only overlies [08].

[08] Foundation/pad of irregular sandstone blocks set in grey clay to the south of cart shed. 1.4m along trench and c. 0.25m -0.3m thick.

[09] Layer. Modern brick-pavior road surface to east of yard entrance.

[010] Layer. Yellow dolomite bedding for [09]. 0.3m deep. Same as [016].

[011] Layers of medium-dark brown soil and dark ash with some stone and brick fragments. 0.4m deep.

[012] Layer. Band of red ash and soil with some stone. C. 0.1m deep

[013] Layer of sandy ashy loam with some clay and large stones

Figure 4: Sections 3 and 4. 1:10 scale (see figure 2 for locations).



Plate 4: Looking north across the trench south of the cart shed.
Upper surface of stone foundation/pad [08] exposed. Note
The overlying band of grey clay [07]. 1m scale.



Plate 5: Looking north across the trench south of the cart shed.
Foundatio/pad [08] exposed in the section. 1m scale.



Plate 6: Looking north across the trench. The gate post is set against the east wall of the cart shed. A modern cut extends to the bottom of the trench at 1m deep. 1m scale.



Plate 7: Looking east along the trench running out of the yard and along the access road. 1m scale.

3.5 Section 5

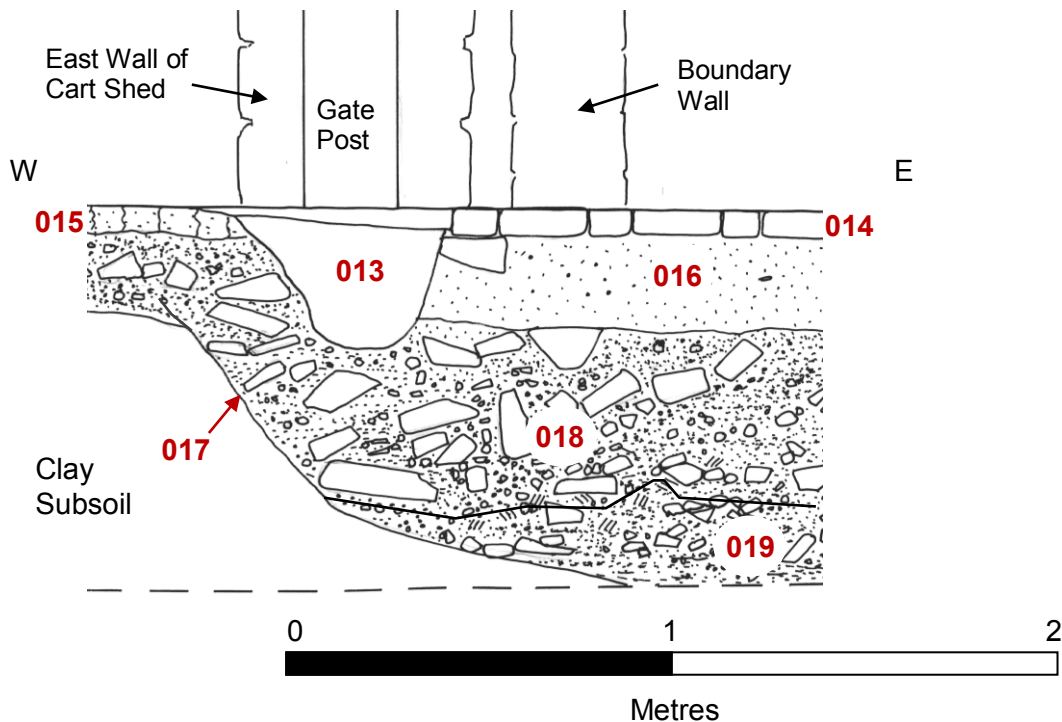


Figure 5: Section 5. 1:20 scale (see figure 2 for location).

Context Descriptions: Section 5

[013] Cut and fill. Concrete-filled foundation pit for post of yard gate.

[014] Layer. Modern brick pavior surface of road to east of yard. Same as [09].

[015] Layer of medium brown ash and sandy loam. Surface in front of cart shed.

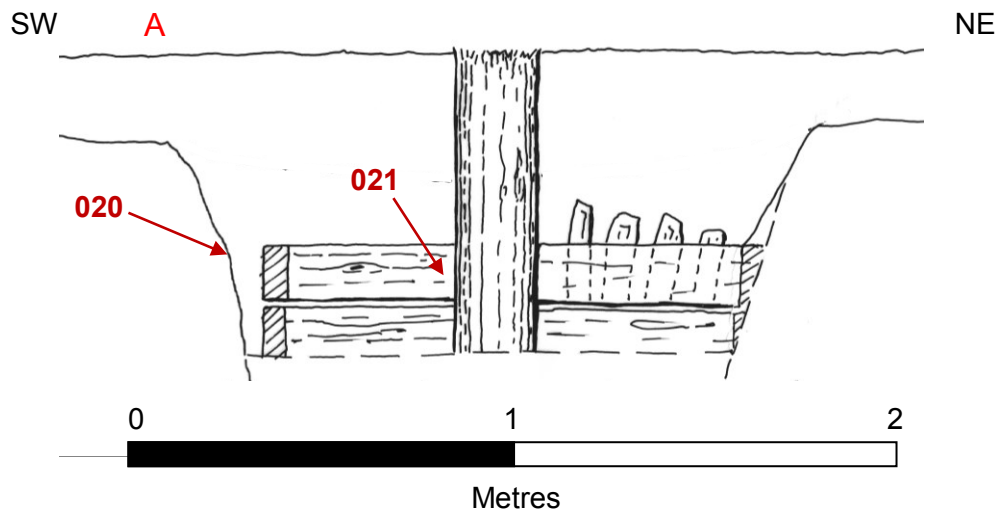
[016] Layer of yellow dolomite bedding for brick paviers. Same as [010].

[017] Cut, from east end of yard. C. 1m deep with sloping east end. Filled with layers [018] and [019]. Modern but of uncertain purpose.

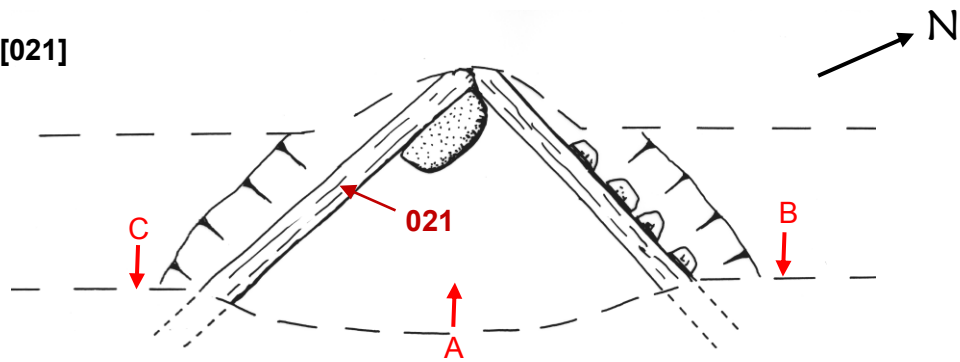
[018] Layer. Medium to dark-brown ash and loam with numerous stone and brick fragments, some stones up to 0.3m. Up to 0.5m deep. Modern fill

[019] Layer. Medium to dark brown ash and loam with some yellow clay. Up to 0.3m deep. Modern fill

3.6 Elevation 1



3.7 Plan of [021]



3.8 Section 6

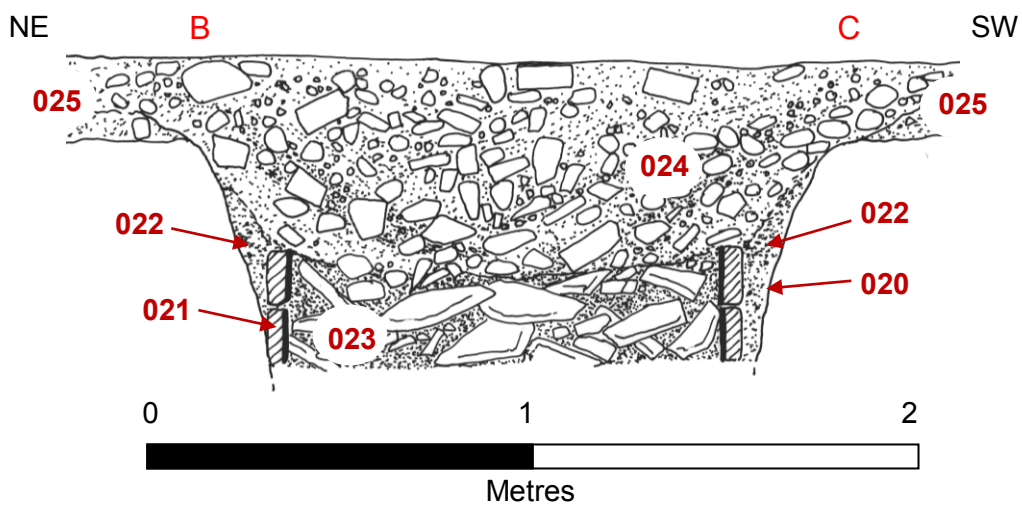


Figure 6: Elevation 1 (top), Plan and Section 6 (mirrored) of timber tank [021]
All 1:20 scale (see figure 2 for location).

Context Descriptions: Elevation 1, Section 6 and plan

[020] Cut for sunken timber structure [021]. Steep, near vertical edges. Only a portion of the feature exposed in plan, nor was it bottomed, although exposed to a maximum of c. 0.8m deep.

[021] Sunken, rectilinear timber structure sitting within cut [020]. North-west corner uncovered and depth not established. Visible remains consist of a sub-rectangular corner post 12" (30cms) by 5 inches (12.5cms) and at least c.1m long. The top of this timber was exposed flush with the yard surface. It supported sides formed of substantial squared and horizontally laid timbers 3" (7.5cms) wide by 5" (12.5cms) deep. At least two of these survived along the south edge of the structure. The upper face of the highest surviving side timber lay at a depth of 0.5m from the yard surface. Given the height of the post, it is quite likely that timbers above had been removed. On the outer face of the northern side of the tank were irregularly placed and formed upright staves (c.10cms by 10cms). Although presumably acting as a tank of some description, no evidence was found for bonding or sealing between the side timbers or for any other waterproofing. The full extent and depth of the structure remains uncertain.

[022] Fill. Dark brown ashy loam between outer face of side timbers of [021] and cut [020].

[023] Fill of lowest exposed level of tank [021]. Dark grey to black very wet 'oily' loam, becoming more liquid and glutinous – and darker - to maximum depth exposed at 1m below yard surface. Contained many fragmented slabs of tarmac and occasional stone and a number of bricks, some fragmentary some whole.

[024] Fill of 'robbed' tank [021]. Medium to dark bands and tip lines of variegated and loose ashy loam with many small to medium stones and some whole and fragmentary bricks. Up to 0.6m deep. Infill into remains of tank [021] was subsequent to removal of upper side timbers.

[025] Layer of dark grey-brown hearth ash and sandy loam with some gravel, also includes small fragments of brick and some small stone. Similar to [01], [02] and [06]. 0.2m deep.



Plate 8: Looking north-east along the trench at timber structure [021]. Scale is 1m long.



Plate 9: Looking north-east along the trench at the external west face of timber structure [021]. Scale is 1m long.



Plate 10: Vertical shot of timber structure [021].



Plate 11: Looking east along the trench running towards the cart shed. Mortar surface [03] is exposed below the scale.

3.9 Summary of Results

3.9.1 Typical Stratigraphy seen across the area of trenching was ground surface formed of a compacted layer of bands of ash and loam with varying quantities of fragmented brick and stone sitting directly over Boulder Clay subsoil. Pottery and occasional ironwork showed that this accreted surface layer was fairly modern.

3.9.2 Absence of a developed topsoil over clay subsoil throughout the area of trenching indicated that the site had been truncated. Whether this was related to levelling for the former farmyard is not known although it would clearly provide one context for the process.

3.9.3 Although truncation of the site has prevented the potential preservation of early archaeological stratigraphy, neither was there any evidence for early cut features such as rubbish pits, frequent in medieval times, which may have survived this truncation.

3.9.4 Features exposed by the trenching were a possible mortar floor [03], a stone foundation [08], and a sunken timber tank [021]. Two of these features are late. Mortar floor [03] lay above ash and clay layers [04] and [05], the latter containing fragments of brick; Timber structure [021] was still open when it was filled with pieces of fragmented tarmac. The age of foundation [08] remains uncertain although there is no reason to think it is of any great age. No evidence was found in the southern trench to suggest that it projected further into the yard and it may have been associated with the adjacent cart shed.

3.9.5 No medieval or early post-medieval pottery or other early artefactual material was found during the trenching.



Plate 12: *Wine bottle bottom, horseshoe and fragments of C19 domestic pottery recovered from the site.*

Pottery recovered, only in small quantities and in small fragments, was from the accreted ash surface of the yard. This included pieces of white and brown-glazed domestic bowls and plates. Some bottle glass was also found including a C18/19 wine bottle base (see plate 12). The only metalwork recovered was a horseshoe.

Two bricks recovered from the lower fill [023] of structure [021] were stamped

JONES & MAXWELL

PELAW

Other bricks from a fragmentary modern surface in the yard were of yellow clay and stamped

SUPER – AXE



Plate 13: Bricks recovered from the site.

3.9.6 No features described in the report are shown on historic Ordnance Survey mapping of the area

4. CONCLUSION

No evidence was found for the survival of medieval or early post-medieval occupation on the site of the later farmyard. This may be either a reflection of truncation of deposits or probably more likely that medieval occupation did not extend this far north from Monkton Lane

5. ARCHIVE

No archive has been retained for this project. Limited finds material including white and brown glazed domestic pottery was discarded. A paper copy of the report along with an electronic copy and photographs on CD have been deposited with the Tyne and Wear HER.

6. BIBLIOGRAPHY

South Tyneside Council (2006) *Monkton Conservation Area: Character Appraisal*

APPENDIX 1: HISTORIC MAPS

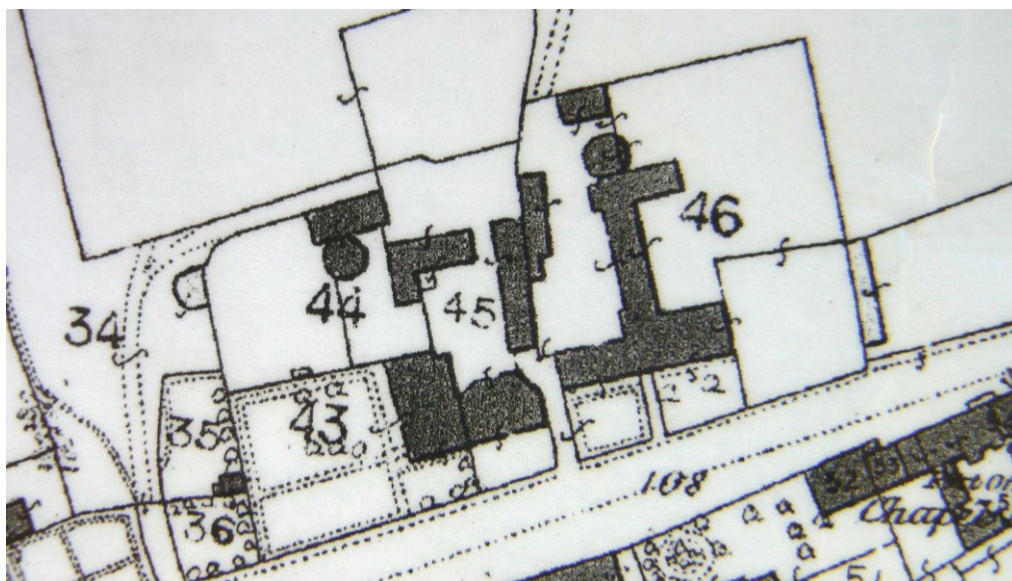


Figure 7: Monkton on the First Edition Ordnance Survey of c.1860. Ranges at Grange Farm include barn A with a circular gin gang on its south wall. Neither cart shed D, nor stable block B have been constructed.

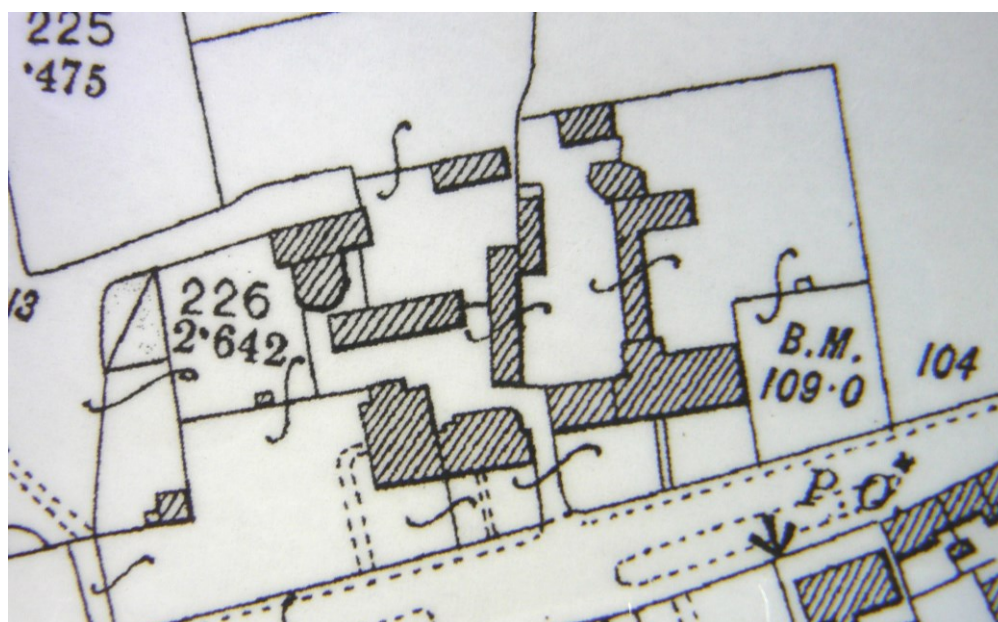


Figure 8: Monkton on the Second Edition Ordnance Survey of 1897. By this time, all the ranges which currently exist at Grange Farm are present other than building B.



Figure 9: Monkton on the 1916 Edition of the Ordnance Survey. For Grange Farm, there has been little alteration to the picture shown in 1897, although a small structure now links the gin gang on the barn to the cattle byre.



Figure 10: Monkton on the 1940 Edition Ordnance Survey. The gin gang has gone and the rectangular brick lean-to added to the south face of the barn.

Tyne and Wear Archaeology Service

Specification for Archaeological Watching Brief at The Byers, Grange Farm, Monkton

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Date: 17th June 2016

County Archaeologist's Reference Number: MON14529

The Tyne and Wear Archaeology Service is the curatorial service for archaeology and industrial archaeology throughout the Tyne and Wear districts. It helps and advises Newcastle, Gateshead, North Tyneside, South Tyneside and Sunderland Councils to carry out their statutory duties to care for the precious historic environment of Tyneside and Wearside. The Service can be found at the Development Management division of the Investment & Development Directorate of

Introduction

Site grid reference: NZ 3221 6372

Northumbrian Water have consulted the County Archaeologist regarding the installation of an 8m long water pipe at The Byers, Grange Farm, Monkton.

The area of the proposed water pipe is in the centre of Monkton village (HER152). It is therefore considered to be an area of archaeological interest.

Ground disturbing work must therefore be monitored by an archaeologist as a Watching Brief, in order that any archaeological remains can be recorded.

The watching brief must be carried out by a suitably qualified and experienced archaeological organisation.

All work must be carried out in compliance with the codes of practice of the Chartered Institute for Archaeologists and must follow the ClfA Standard and Guidance for Watching Briefs (revised 2001).

The work will record, excavate and environmentally sample (if necessary) any archaeological deposits of importance found on the plot. The purpose of this brief is to obtain tenders for this work. The report must be the definitive record for deposition in the Tyne and Wear HER.

A toothless bucket will be used on the plant employed on site to reduce damage to archaeological remains.

The North-East Regional Research Framework for the Historic Environment (2006) notes the importance of research as a vital element of development-led archaeological work. It sets out key research priorities for all periods of the past allowing commercial contractors to demonstrate how their fieldwork relates to wider regional and national priorities for the study of archaeology and the historic environment. The aim of NERRF is to ensure that all fieldwork is carried out in a secure research context and that commercial contractors ensure that their investigations ask the right questions.

The commissioning client will provide plans indicating the location of the proposed work.

Notification

The County Archaeologist needs to know when archaeological fieldwork is taking place in Tyne and Wear so that the local planning authority can visit the site to monitor the work in progress. The Archaeological Contractor must therefore inform the County Archaeologist of the start and end dates of the Watching Brief. He must also keep the County Archaeologist informed as to progress on the site. The CA must be informed of the degree of archaeological survival. The Client will give the County Archaeologist reasonable access to the development to undertake monitoring.

PROJECT DESIGN

Because this is a detailed specification, the County Archaeologist does **not** require a Project Design from the appointed archaeologist. The appointed archaeologist is expected to comply with the requirements of this specification.

The tasks

1 A construction timetable has yet to be agreed. Tenders for the Watching Brief should therefore be a cost per day including overheads such as travel costs and equipment. Contingency costs will be provided for environmental sampling and scientific dating per sample and for finds analysis. Any variation on the agreed timetable will be notified by the client, who will give a minimum of 48 hours notice of a change on the days of site attendance. Close liaison between the parties involved will be needed to co-ordinate this element of the work.

2 The work involves undertaking a structured watching brief to observe and record any archaeological deposits and finds from this locality. The absence of deposits and finds must be recorded as negative evidence. **The Watching Brief will not aim to hinder the construction programme, however should archaeological remains be found, the appointed archaeologist must be allowed sufficient time to fully record (by photograph and scale plan and section), excavate and environmentally sample (if necessary) the archaeological deposits.** Within the course of the Watching Brief, it may be possible to record sections through the stratigraphy exposed during the construction work.

Photographic Recording

The photographic record can be taken in **either** black and white print and colour transparency **or** with a digital camera. All images must include a clearly visible graduated metric scale.

All photographs forming part of the record should be in sharp focus, with an appropriate depth of field. They should be adequately exposed in good natural light or, where necessary, sufficiently well-lit by artificial means.

Use of digital cameras

Use a camera of 8 megapixels or more.

For maximum flexibility digital Single Lens Reflex cameras offer the best solution for power users. 8 megapixels should be considered a minimum requirement.

When photographing with digital SLR cameras, there is often a magnifying effect due to smaller sensor sizes.

If the JPEG (Joint Photographic Experts Group) setting is used, set the camera for the largest image size with least compression. The JPEG format discards information in order to reduce file size. If the image is later manipulated, the quality will degrade each time you save the file.

For maximum quality, **the preferred option** is that the RAW (camera-specific) setting is used. This allows all the information that the camera is capable of producing to be saved. Because all of the camera data is preserved, post processing can include colour temperature, contrast and exposure compensation adjustments at the time of conversion to TIFF (Tagged Interchangeable File Format), thereby retaining maximum photographic quality.

The RAW images must be converted to TIFF before they are deposited with the HER and TWAS because special software from the camera manufacturer is needed to open RAW files.

Uncompressed formats such as TIFF are preferred by most archives that accept digital data.

Post photography processing:

The submitted digital images must be 'finished', ready to be archived.

Post photography processing workflow for RAW images:

- 1 Download images
- 2 Edit out unwanted shots & rotate
- 3 Batch re-number
- 4 Batch caption
- 5 Batch convert to TIFF
- 6 Edit in Photoshop or similar
- 7 Save ready to burn to CD
- 8 Burn to CD
- 9 Dispatch

Batch caption – the image files should be named to reflect their content, preferably incorporating the site or building name. Consistent file naming strategies should be used. It is good practice not to use spaces, commas or full stops. For advice, go to <http://ads.ahds.ac.uk/project/userinfo/deposit.html#filenaming>. In order to find images at a future date and for copyright the site or building name, photographer's name and/or archaeological unit etc must be embedded in the picture file. The date can be appended from the EXIF data. Metadata recording this information must be supplied with the image files. A list of images, their content and their file names should be supplied with the image files on the CDs.

Batch conversion to TIFF – any white balance adjustments such as 'daylight' or 'shade' be required then this can be done as part of the conversion process. Ensure that any sharpening settings are set to zero.

Edit in 'Imaging' software such as Photoshop – tonal adjustments (colour, contrast) can be made. Rotate images where necessary, crop them to take out borders, clean the images to remove post-capture irregularities and dust. Check for sensor dust at 100% across the whole image.

Save ready for deposit – convert to TIFF and save. Retain the best colour information possible – at least 24 bit.

If the JPEG setting has been used and the image has been manipulated in any way it should be saved as a TIFF to prevent further image degradation through JPEGing.

Burn to CD – the NMR recommends using Gold CDs. Use an archive quality disk such as MaM-E gold. Gold disks have a lower burn speed than consumer disks.

Disks should be written to the 'Single Session ISO9660 – Joliet Extensions' standard and not UDF/Direct CD. This ensures maximum compatibility with current and future systems.

Images should be placed in the root directory not in a folder.

The CD will be placed in a plastic case which is labelled with the site name, year and name of archaeological contractor.

For more guidance on digital photography:

Digital Imaging Guidelines by Ian Leonard, Digital Archive Officer, English Heritage 22 September 2005)

Understanding Historic Buildings – A guide to good recording practice, English Heritage, 2006

Duncan H. Brown, 2007, "Archaeological Archives – A guide to best practice in creation, compilation, transfer and curation"

IFA, Guidance on the use and preservation of digital photographs

FISH (Forum on Information Standards in Heritage), September 2006 v.1, A Six Step Guide to Digital Preservation, FISH Fact Sheet No. 1

Visual Arts Data Service and Technical Advisory Service for Images, Creating Digital Resources for the Visual Arts: Standards and Good Practice

AHDS Guides to Good Practice – Julian Richards and Damian Robinson (eds), Digital Archives from Excavation and Fieldwork: Guide to Good Practice, Second Edition

Printing the images:

In view of the currently unproven archival performance of digital data it is always desirable to create hard copies of images on paper of archival quality.

A selection of the images will be printed in the finished report for the HER, two images per A4 page.

When preparing files for printing, a resolution of 300dpi at the required output size is appropriate.

A **full set** of images will also be professionally printed in black and white and colour for submission as part of the site archive (if the results warrant the production of an archive).

Use processing companies that print photos to high specifications. Commercial, automatic processing techniques do not meet archival standards and must not be used.

All prints for the archive must be marked on the back with the project identifier (e.g. site code) and image number.

Store prints in acid-free paper enclosures or polyester sleeves (labelled with image number)

Include an index of all photographs, in the form of running lists of image numbers

The index should record the image number, title and subject, date the picture was taken and who took it

The print sleeves and index will either be bound into the paper report or put in an A4 ringbinder which is labelled with the site name, year and archaeological unit on its spine.

General Conditions

All staff employed by the Archaeological Contractor shall be professional field archaeologists with appropriate skills and experience to undertake work to the highest professional standards.

The Archaeological Contractor must maintain a Site Diary for the benefit of the Client, with full details of Site Staff present, duration of time on site, etc. and contact with third parties.

The Archaeological Contractor must be able to provide written proof that the necessary levels of Insurance Cover are in place.

The Client may wish to see copies of the Archaeological Contractor's Health and Safety Policies.

Finds Processing and Storage

Finds shall be recorded and processed in accordance with the IFA Guidelines for Finds Work

Finds will be assessed by an experienced finds specialist.

The Archaeological Contractor will process and catalogue the finds in accordance with Museum and Galleries Commissions Guidelines (1992) and the UKIC Conservation Guidelines, and arrange for the long term disposal of the objects on behalf of the Client. A catalogue of finds and a record of discard policies, will be lodged with the finds for ease of curation.

Assessment should include x-radiography of all iron objects (after initial screening to exclude recent debris) and a selection of non-ferrous artefacts (including all coins). Refer to "Guidelines on the x-radiography of archaeological metalwork, English Heritage, 2006.

If necessary, pottery sherds and bricks should be recommended for Thermo-luminescence dating.

Finds processing, storage and conservation methods must be broadly in line with current practice, as exemplified by the IFA "Standard and guidance for the collection, documentation, conservation and research of archaeological materials", 2001. Finds should be appropriately packaged and stored under optimum conditions, as detailed in the RESCUE/UKIC publication "First Aid for Finds" (Watkinson and Neal 1998). Proposals for ultimate storage of finds should follow the UKIC publication "Guidelines for

the Preparation of Excavation Archives for Long-term Storage” (Walker 1990). Details of methodologies may be requested from the Archaeological Contractor.

Other useful guidance – “A Strategy for the Care and Investigation of Finds”, English Heritage, 2003, “Finds and Conservation Training Package”, English Heritage, 2003.

All objects must be stored in appropriate materials and conditions to ensure minimal deterioration. Advice can be sought from Jacqui Huntley of English Heritage (07713 400387) where necessary.

The report

The production of Site Archives and Finds Analysis will be undertaken according to English Heritage Guidelines (Managing Archaeological Projects 2nd Edition).

The archaeological contractor will provide a report of archaeological operations, including:

- a site location plan and grid reference
- brief description of recording procedures
- plans and sections of stratigraphy recorded (if practical)
- report on the finds (if any)
- environmental report (if relevant)
- colour photographs of the site and any significant archaeological features/finds
- a summary of the results of the work
- copy of this specification

The report will form an addition to the *Short Reports* files in the Tyne and Wear Historic Environment Record.

One bound and collated paper copy of the report needs to be submitted:

- for deposition in the County HER

A pdf copy is needed:

- for deposition in the County HER at the address on the first page. Please do not attach this to the paper report.

The report for the HER must be sent by the archaeological consultant or their client directly to the address above. If the report is sent via the planning department, every page of the report will be stamped with the planning application number which ruins the illustrations. The HER is also often sent a photocopy instead of a bound colour original which is unacceptable.

Site Archive

The archive should be a record of every aspect of an archaeological project – the aims and methods, information and objects collected, results of analysis, research, interpretation and publication. It must be as complete as possible, including all relevant documents, records, data and objects {Brown, 2007, 1}.

The site archive (records and materials recovered) should be prepared in accordance with Managing Archaeological Projects, Second Edition, 5.4 and appendix 3 (HBMC 1991), “Archaeological documentary archives” IFA Paper No. 1, “Archaeological Archives – creation, preparation, transfer and curation” Archaeological Archives Forum etc., Guidelines for the Preparation of Excavation Archives for Long Term Storage (UKIC 1990) and “Archaeological Archives – A guide to best practice in creation, compilation, transfer and curation” by Duncan H. Brown, Archaeological Archives Forum, July 2007.

Documentary Archive

The documentary archive comprises all records made during the archaeological project, including those in hard copy and digital form.

This should include written records, indexing, ordering, quantification and checking for consistency of all original context sheets, object records, bulk find records, sample records, skeleton records, photographic records (including negatives, prints, transparencies and x-radiographs), drawing records, drawings, level books, site note-books, spot-dating records and conservation records, publication drafts, published work, publication drawings and photographs etc.

A summary account of the context record, prepared by the supervising archaeologist, should be included.

All paper-based material must at all times be stored in conditions that minimise the risk of damage, deterioration, loss or theft.

Do not fold documents

Do not use self-adhesive labels or adhesive or tape of any kind

High quality paper (low-acid) and permanent writing materials must be used.

Original drawings on film must be made with a hard pencil, at least 4H.

Do not ink over original pencil drawings.

Use polyester based film for drawings (lasts longer than plastic).

Store documents in acid-free, dust-proof cardboard boxes

Store documents flat

All documents must be marked with the project identifier (e.g. site code) and/or the museum accession number.

All types of record must use a consistent terminology and format.

Use non-metal fastenings, and packaging and binding materials that ensure the longevity of documents.

Copies of reports and appropriate drafts, with associated illustrative material, must be submitted for inclusion with the archive.

Material Archive

The material archive comprises all objects (artefacts, building materials or environmental remains) and associated samples of contextual materials or objects.

All artefacts and ecofacts retained from the site must be packed in appropriate materials.

All finds must be cleaned as appropriate to ensure their long-term survival

All metal objects retained with the archive must be recorded by x-radiograph (except gold or lead alloys or lead alloys with a high lead content and objects too thick to be x-rayed effectively e.t.c.)

All finds must be marked or labelled with the project and context identifiers and where relevant the small-finds number

Use tie-on rot-proof labels where necessary

Bulk finds of the same material type, from the same context, may be packed together in stable paper or polythene bags

Mark all bags on the outside with site and context identifiers and the material type and include a polyethylene label marked with the same information

Use permanent ink on bags and labels

Sensitive finds must be supported, where appropriate, on inert plastic foam or acid-free tissue paper. It is not advisable to wrap objects in tissue as the unwrapping could cause damage.

The archive will be placed in a suitable form in the appropriate museum (typically Museum of Antiquities for Newcastle and Tyne and Wear Museums for the rest of Tyne and Wear (check with these institutions) with the landowner's permission.

A letter will be sent to the County Archaeology Officer within six months of the report having been submitted, confirming where the archive has been deposited.

Monitoring

The Archaeological Contractor will inform the County Archaeologist of the start and end dates of the Watching Brief to enable the County Archaeologist to monitor the work in progress. The Client will give the County Archaeologist reasonable access to the development to undertake monitoring.

OASIS

The Tyne and Wear County Archaeologist supports the Online Access to the Index of Archaeological Investigations (OASIS) project. This project aims to provide an online index/access to the large and growing body of archaeological grey literature, created as a result of developer-funded fieldwork.

The archaeological contractor is therefore required to register with OASIS and to complete the online OASIS form for their watching brief at <http://www.oasis.ac.uk/>. Please ensure that tenders for this work takes into account the time needed to complete the form.

Once the OASIS record has been completed and signed off by the HER and NMR the information will be incorporated into the English Heritage Excavation Index, hosted online by the Archaeology Data Service.

The ultimate aim of OASIS is for an online virtual library of grey literature to be built up, linked to the index. The unit therefore has the option of uploading their grey literature report as part of their OASIS record, as a Microsoft Word document, rich text format, pdf or html format. The grey literature report will only be mounted by the ADS if both the unit and the HER give their agreement. The grey literature report will be made available through a library catalogue facility.

Please ensure that you and your client understand this procedure. If you choose to upload your grey literature report please ensure that your client agrees to this in writing to the HER at the address below.

For general enquiries about the OASIS project aims and the use of the form please contact: Mark Barratt at the National Monuments Record (tel. 01793 414600 or oasis@english-heritage.org.uk). For enquiries of a technical nature please contact: Louisa Matthews at the Archaeology Data Service (tel. 01904 433954 or oasis@ads.ahds.ac.uk). Or contact the Tyne and Wear Archaeology Officer at the address below.

APPENDICES

1 *Environmental Sampling, Scientific Analysis and Scientific Dating*

This is a compulsory part of the watching brief exercise where suitable archaeological features are found.

Advice on the sampling strategy for environmental samples and samples for scientific dating etc. must be sought from Jacqui Huntley, English Heritage Advisor for Archaeological Science (07713 400387)

before the evaluation begins. The sampling strategy should include a reasoned justification for selection of deposits for sampling.

Scientific investigations should be undertaken in a manner consistent with “The Management of Archaeological Projects”, English Heritage 1991 and with “Archaeological Science at PPG16 Interventions: Best Practice for Curators and Commissioning Archaeologists”, English Heritage, 2004.

See also ‘Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post excavation’, English Heritage, second edition 2011.

<https://www.historicengland.org.uk/images-books/publications/environmental-archaeology-2nd/>

English Heritage guidance documents on archaeological science can be downloaded as pdf files from www.helm.org.uk or www.historicengland.org.uk > Learning and Resources > Publications > Free Publications.

See also the Environmental Archaeology Bibliography (EAB):
http://ads.ahds.ac.uk/catalogue/specColl/eab_eh_2004/

and the NMR sciences thesaurus:

http://thesaurus.english-heritage.org.uk/thesaurus.asp?thes_no=560

There must be full specialist liaison throughout the project – this need not necessarily be face-to-face.

Sampling should be demonstrated to be both fit for purpose and in-line with the aims and objectives of the project.

The choice of material for assessment should be demonstrated as adequate to address the objectives.

Evaluations and assessment of scientific material should provide clear statements of their potential and significance in addition to descriptive records. These statements should relate to the original objectives but may also lead to new or modified objectives.

Post excavation analysis and interpretation requires sufficient information exchange and discussion to enable scientific specialists to interpret their material within the established intellectual framework.

Archaeological and scientific analyses should be integrated as fully as possible. It is not acceptable to leave the scientific analyses simply as appendices.

Archive reports should include full data from all specialist materials. All reports, including any publications, must present sufficient primary data to support the conclusions drawn.

{From ‘10 principles of good practice in archaeological science’ by English Heritage 2010}.

Types of sample

Flotation samples are used to recover charred and mineral-replaced plant remains, small bones, industrial residues etc. Such samples should be whole earth, 40-60 litres or 100% of small features. The flot mesh size should be 0.25-0.3mm. The residue sieve size should be 0.5-1mm. The flot and <2mm residue should be sorted under the microscope. >2mm residues can be sorted by eye.

Coarse-sieved samples are used to recover small bones (such as bird and fish), bone fragments, molluscs and small finds (beads, pottery, coins etc). Such samples should be 100 or more litres, wet or dry sieved, minimum mesh 2mm. Specialist advice is recommended.

Other types of sample are monoliths, specialist, cores and small spot. These are taken for specific reasons and need specialists.

Aims and objectives

Aims of environmental sampling – to determine the abundance/concentration of the material within the features and how well the material is preserved, to characterise the resource (the site) and each phase, to determine the significance of the material and its group value, what crop processing activities took place on the site? What does this tell us about the nature of the site? Is there any evidence for changes in the farming practice through time? How did people use this landscape? Can we place certain activities at certain locations within the site? Function and date of individual features such as pits, hearths etc. Are the charred assemblages the result of ritual deposition or rubbish? Is the charcoal the result of domestic or industrial fuel?

Deposits should be sampled for retrieval and assessment of the preservation conditions and potential for analysis of biological remains (English Heritage 2002). Flotation samples and samples taken for coarse-mesh sieving from dry deposits should be processed at the time of fieldwork wherever possible. Sieving recovers fish, amphibian, small bird and mammal bone, small parts of adult mammals and young infused bones which may be under-represented otherwise. However it is noted that sticky clay soils in this region make sieving difficult. Discuss the potential for sieving with Regional Advisor for Archaeological Science.

Environmental samples (bulk soil samples of 30–40 litres volume) will be collected by the excavator from suitable (i.e. uncontaminated) deposits. It is suggested that a large number of samples be collected during evaluation from which a selection of the most suitable (uncontaminated) can be processed. All tenders will give a price for the assessment, full analysis, report production and publication per sample.

The full 30–40 litre sample must be assessed by the laboratory, not just a small sub-sample.

The following information should be provided with the environmental samples to be processed – brief account of nature and history of the site, aims and objectives of the project, summary of archaeological results, context types and stratigraphic relationships, phase and dating information, sampling and processing methods, sample locations, preservation conditions, residuality/contamination etc.

Laboratory processing of samples shall only be undertaken if deposits are found to be reasonably well dated, or linked to recognisable features and from contexts the derivation of which can be understood with a degree of confidence.

A range of features, and all phases of activity, need to be sampled for charred plant remains and charcoal. Aceramic features should not be avoided as the plant remains from these features may help to date them. Deep features should be sampled in spits to pick up changes over time. Part or all of each of the contexts should be processed. In general samples should be processed in their entirety. All flots should be scanned, and some of the residues.

Scientific Dating

Deposits will be assessed for their potential for radiocarbon, archaeomagnetic and Optically Stimulated Luminescence dating.

See ‘Archaeomagnetic Dating: Guidelines on producing and interpreting archaeomagnetic dates’, English Heritage, 2006 and

‘Luminescence Dating: guidelines on using luminescence dating in archaeology’, English Heritage, 2008.

Timbers will be assessed for their potential for dendrochronology dating. Sampling should follow procedures in “Dendrochronology: guidelines on producing and interpreting dendrochronological dates”, Hillam, 1998.

All tenders will quote the price of these techniques per sample.

For large excavations, particularly of prehistoric sites, a specialist scientific dating consultant must be part of the post-excavation assessment team. They will ensure that money set aside for dating is well spent, that the most appropriate soil samples are submitted for dating, that the right number of

samples are submitted for dating. The expert will explain what to date and why. Don't send off samples for dating just for sake of it. The English Heritage Scientific Dating team (contact Pete Marshall) can provide contact details for scientific dating experts.

Once radiocarbon date results come back from the lab, avoid eyeballing your C14 dates. Modelling gives better date estimates.

AMS can now be used to date cremated bone.

Pollen

Pollen samples can be taken from features such as lakes, ponds, palaeochannels, estuaries, saltmarshes, mires, alluvium and colluvium, and from waterlogged layers in wells, ditches and latrines etc. Substances such as honey, beer or food residues can be detected in vessels. Activities such as threshing, crop processing and the retting of flax can be identified. When taken on site, pollen samples should overlap. Your regional science advisor can advise on the type of corer or auger which would be most appropriate for your site. Samples need to be wrapped in clingfilm and kept dark and cool. Make a description of the sediments in which the pollen was found, and send this with the sample to be assessed.

Forams and diatoms

Coastal or estuary sites (even those which are now well drained) are suitable for sampling for foraminifera. Diatoms can also be found on marine sites, but also in urban settings (sewers, wells, drains, ditches etc). They only survive in waterlogged conditions. These aquatic microfossils are used as proxy indicators of the former aquatic ecological conditions on site, changes in sea levels and temperature, salinity, PH and pollution. Forams are taken from cores, monolith tins or bulk samples. Diatoms are cut from monolith tins or cores or taken as spot samples.

Insects

Insects, which are useful as palaeoenvironmental indicators, survive best in waterlogged deposits such as palaeochannels and wells. They can provide information on climate change and landscape reconstruction as some species are adapted to particular temperatures, habitats or even particular trees. Certain insects can indicate the function of a feature or building (eg. Weevils, which were introduced by the Romans, often indicate granary sites, parasites will indicate the presence of particular animals such as sheep or horse, latrine flies survive in the mineral deposits in latrines, or in the daub of medieval buildings etc). Samples need to be sealed (eg. in a plastic box).

Industrial Activity

Where there is evidence for industrial activity, macroscopic technological residues should be collected by hand. Separate samples should be collected for micro-slugs (hammer-scale and spherical droplets). Guidance should be sought from the English Heritage Regional Science Adviser on the sampling strategy for metalworking features and advice on cleaning and packaging. Specialist on-site advice must be sought on identification of metalworking features. Slag and metal working debris must be assessed by a specialist. Scientific analysis (such as x-ray fluorescence, chemical analysis, metallography or scanning electron microscope) of slag can provide information on the melting temperature, chemical composition (is it iron, zinc, copper etc), microstructure (the type and shape of the crystals), physical properties (the hardness or viscosity), isotopic composition (strontium_87 or strontium_88 etc) and mineralogical composition.

See "Archaeomagnetic dating", English Heritage, 2006

"Guidelines on the X-radiography of archaeological metalwork", English Heritage, 2006.

Historical Metallurgy Society, 2008, "Metals and metalworking: a research framework for archaeometallurgy".

Centre for Archaeology Guidelines on 'Archaeometallurgy' 2001.

'Science for Historic Industries: Guidelines for the investigation of 17th to 19th century industries', English Heritage, 2006.

Buried soils and sediments

Buried soils and sediment sequences should be inspected and recorded on site by a recognised geoarchaeologist. Procedures and techniques in the English Heritage document "Environmental Archaeology", 2002 and "Geoarchaeology", 2004 should be followed.

See also 'Geoarchaeology. Using earth sciences to understand the archaeological record', English Heritage, 2007.

Wood

Sampling strategies for wooden structures should follow the methodologies presented in "Waterlogged wood. Guidelines on the recording, sampling, conservation and curation of waterlogged wood" R. Brunning, 1996. If timbers are likely to be present on your site, contact a wood specialist beforehand. Pre-excavation planning – determine questions to ask, agree on a sampling strategy, allocate reasonable time and budget. Soil samples should be taken of the sediments surrounding the timber. Keep the timbers wet! Record them asap on-site – plan, photograph, record the size and orientation of the wood (radial, tangential, transverse), any toolmarks, joints, presence of bark, insect damage, recent breaks, and if another piece of wood was on top of or below the piece sampled. Both vertical and horizontal positioning of wattling must be recorded. Wood samples can provide information on woodland management such as medieval coppicing, type of taxa (native or foreign), conversion technology (how the wood was turned into planks), building techniques and type of tools used.

Suitable samples should be submitted for dendrochronological dating. See English Heritage guidelines, 2004, "Dendrochronology".

Leather and organic materials

Waterlogged organic materials should be dealt with following recommendations in "Waterlogged Organic Artefacts – Guidelines on their Recovery, Analysis and Conservation", English Heritage, 2012 and "Guidelines for the care of waterlogged archaeological leather", English Heritage and Archaeological Leather Group 1995.

Glass

As glass-making furnaces are above ground structures, they rarely survive. However sample residues can produce glass fragments which define glass working even though no traces of furnaces survive. Excavations at Whitby Abbey recovered glassworking waste from preliminary sampling. Targeted bulk sampling in subsequent years recovered more evidence for glass working. Raw glass, twisted rods of glass and a possible glass inlay for an illustrated book were found. Similar glass rods were found at St. Gregory's Minster at Kirkdale, North Yorkshire.

Analysis can find out where glass was imported from (a lot of Roman glass came from Alexandria).

Analysis of the composition of glass can show varying additives and salt composition. At Whitby Abbey the varying salt composition in glass throughout the Early Medieval period reflected climate change.

Is the glass made from recycled glass waste or raw materials?

Is there evidence of glass blowing?

English Heritage has guidance forthcoming in 2010.

2 Animal Bone

Animal bone can explore themes such as hunting and fowling, fishing, plant use, trade network, seasonality, diet, butchery, animal husbandry, food procurement, age structures, farrowing areas, species ratios, local environment.

Domestic animal bone was used in prehistoric and Roman cremation rituals.

Post medieval cattle bones – small cow bones invariably represent animals which produced high quality buttermilk for cheese. Big ‘improved’ cattle with large bones were produced for large quantities of meat and poorer quality milk. Large and small cattle bones are often found together on post medieval sites, usually with less of the small bones.

Animal bone assemblages should be assessed by a recognised specialist.

The specialist will need to know a brief account of the nature and history of the site, an account of the purpose, methods (details of sampling) for recovery of animal bones, and the main aims and results of the excavation, details of any specific questions that the excavator wants the animal bone specialist to consider, information about other relevant finds from the excavation (e.g. bone tools, fishing equipment, weaving equipment), specific information about each context that has produced significant quantities of animal bone (recovery method, phase, context type, position in relation to major structures, contamination by more recent material, some indication of the amount of bone (by weight or by container size). See “Ancient Monuments Laboratory Advisory Note, “Assessment of animal bone collections from excavations”, Sebastian Payne, 1991 and “The Assessment of a collection of animal bones”, S. Davis, n.d., Ancient Monuments Laboratory.

Fish bone

Because fish bones are so small, particularly freshwater and estuarine species, they are often only recovered in large bulk samples. Samples must always be sieved.

Rescue excavations carried out in the 1970s at the Iron Age hillfort of Broxmouth in East Lothian produced an assemblage of fish bone. Recent analysis of this material has proved the presence of large specimens of ling and other species which suggests that the Broxmouth population carried out deep-sea fishing. It has previously been suggested that Iron Age fishing would only have been undertaken by lines from the shore. It has also been suggested that fish was not consumed in Iron Age Britain due to religious or cosmological reasons (Hannah Russ, Ian Armit, Jo McKenzie, Andrew Jones, 2012, Deep-sea fishing in the Iron Age? New evidence from Broxmouth hillfort, South-east Scotland in *Environmental Archaeology*, Vol 17, Number 2, pp 177-184).

Roman agenda – did the Romans eat fish? Were they sourced locally or imported? Use of fish as a sauce (garum).

Excavations at Bridge Street, Chester showed that in the Roman period fish was eaten and was both locally sourced and imported (mullet and Spanish mackerel).

Medieval and post medieval agenda – evidence for the deep sea fishing ‘revolution’, size-biased collections, replacement or supplement of freshwater and estuarine fish in the diet by deep sea fish.

There was some herring exploitation in the early medieval period. Christian fasting from around 970 allowed fish to be eaten on Fridays which led to a huge demand for fish. There was an increase in marine fishing, fish trade and fish consumption (cod, haddock, ling, herring etc) around 1000 AD. Middens provide evidence of commercial fishing. There was a decline in freshwater fish (cyprinid or carp, salmon, smelt, eel, pike) from the eleventh century.

Smoking fish is a recent practice. They were previously air dried and salted.

Newcastle was a major port. Samples should be sieved to retrieve fish and bird bones along with small parts of other animal skeletons and young infused bones.

A crane bone was recovered from excavations at Tuthill Stairs, Newcastle – a rare find.

Herring bones are so small that they can only be retrieved by 2mm sieving.

Clay soils are difficult to sieve, hot water can help.

Acidic soils mean poor preservation of bone.

See English Heritage 2002, "Environmental Archaeology – a guide to the theory and practice of methods from sampling and recovery to post excavation", Centre of Archaeology Guideline 1.

Isotope analysis can determine where the fish were coming from – North Sea, Scandinavia, Newfoundland, Iceland etc.

There is an excellent reference collection of fish bone at York.

Fish bones should be archived to museums for future dating and isotope analysis where this is not undertaken as part of the post-excavation process.

3 *Human Remains*

Human remains must be treated with care, dignity and respect.

Excavators must comply with the relevant legislation (essentially the Burial Act 1857) and local environmental health concerns. If found, human remains must be left in-situ, covered and protected. The archaeological contractor will be responsible for informing the police, coroner, local Environmental Health department and the County Archaeologist. If it is agreed that removal of the remains is essential, the archaeological contractor will apply for a licence from the Home Office and their regulations must be complied with.

The excavation area must be shielded from public view with screens.

The excavation of human remains is a delicate and time consuming operation. The process can take one or two days per skeleton. If the skeleton cannot be excavated all in one day cover it with plastic sheeting overnight to prevent it from drying out. The remains should be excavated as completely as possible to give the bioarchaeologist the maximum amount of data.

A bioarchaeologist should be employed for any burial excavation from the start of the project.

A basic diagram of a skeleton should be available on site for staff to consult (such as that in Abrahams et al, 2008, McMinn's the human skeleton).

Once the top of a skeleton is reached, excavation will be undertaken using delicate tools such as paintbrushes, teaspoons, dental equipment and plasterers' leaves.

Recover all teeth, hand and foot bones.

Excavate the pubic symphysis of the pelvis with care as it is needed for age estimation of adults.

The ends of the ribs that meet the sternum are useful for age estimation of adults.

There will be a possibility that gall, bladder and kidney stones may survive. Sesamoid bones may be present in the hands and feet, calcified cartilages in the neck, on the ribs and on the hyoid bone in the neck.

Foetal bones may be present in the abdominal area of female skeletons.

The bones should be shaded from strong sunlight so they do not dry out and crack.

Bones should be drawn at 1:10 using a planning frame. Manual and digital photographs should be taken with a scale and a magnetic north arrow clearly visible. 3D recording using an EDM may be undertaken.

Site inspection by a recognised osteologist is desirable for isolated burials and essential for cemeteries. The remains will be recorded in-situ and subsequently lifted, washed in water (without additives). They will be marked and packed to standards compatible with "Excavation and post-

excavation treatment of cremated and inhumed human remains”, McKinley and Roberts, 1993. After excavation, the remains will be subject to specialist assessment.

Analysis of the osteological material should take place according to published guidelines “Human Remains from Archaeological Sites, Guidelines for producing assessment documents and analytical reports, English Heritage, 2002.

There is a new (2013) English Heritage guideline for the destructive sampling of archaeological human remains for scientific analysis ‘Science and the Dead’.

Some of the potential benefits from the study of human skeletons – demography, growth profiles, patterns of disease, genetic relationships, activity patterns, diet, burial practices, human evolution. New scientific techniques available include DNA and stable isotope analyses.

Diseases which yield ancient DNA – leprosy, syphilis, tuberculosis, mycobacterium bovis (animal form of TB passed to humans when they shared a living space from Neolithic period onwards).

Radiocarbon dating can be used to chronologically phase burial grounds and track developments in demographic change and variations in the health of the population.

Cremation destroys the crown of the tooth so it cannot be dated (the closure of the cranium vault can be used in adults for dating instead). Cremation also fragments bone, distorts it due to lack of water, shrinks the bone, causes microstructural alteration and destroys organic components (so DNA analysis not possible).

AMS can now be used to date cremated bone.

Carbon and nitrogen stable isotope analysis can be used to study diet, usually to address broad questions about a wider population, rather than to study an individual. Most studies use 30 or more skeletons. Studies have included how social position influenced diet and how diet varied with geographic location.

Strontium and oxygen stable isotope analysis can be used to determine where individuals originated from.

The final placing of the remains after scientific study and analysis will be agreed beforehand.

Health & Safety associated with human remains:

Micro-organisms that might cause harm to humans are extremely unlikely to survive beyond about 100 Years.

More recent remains could be more hazardous to health as they may be in sealed lead coffins. Lead coffins should not be opened. They should be reburied intact without archaeological examination.

There is a danger of lead poisoning arising from high levels of lead in the atmosphere generated by lead coffins (see H. Needleman, 2004, Lead poisoning in Annual Review of Medicine, 55, pp. 209-22).

The possible risks of contracting disease from excavated human remains are highly negligible but could include the virus smallpox, tetanus and anthrax spores, the bacterial infection leptospirosis and the fungal disease mycoses (a problem in dry dusty soils and in crypts).

Excavators should be up-to-date with tetanus inoculations.

Anthrax can come from materials derived from animals – coffin pads, pillows or coffin packing.

Working with human remains may cause psychological stress (see J. Thompson, 1998, Bodies, minds and human remains, in M. Cox (ed) 1998, Grave concerns: Death and Burial in England 1700-1850, pp 197-201).

Normal hygiene measures should be undertaken – washing hands, wearing masks and gloves. Heavily soiled clothing should be burned at an HSE approved site.

Further guidance is available in:

“Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England”, The Church of England and English Heritage, 2005 (www.english-heritage.org.uk/upload/pdf/16602_HumanRemains1.pdf)

“Church Archaeology: its care and management”, Council for the Care of Churches, 1999

Charlotte A. Roberts, 2009, ‘Human Remains in archaeology: a handbook’, CBA Practical Handbooks in Archaeology No. 19

S Mays, 2010, The Archaeology of Human Bones, second edition

The Advisory Panel on the Archaeology of Christian burials in England can provide free well-informed advice with consideration of relevant religious, ethical, legal, archaeological and scientific issues.

Panel’s website:

<http://www.britarch.ac.uk/churches/humanremains/index.html>

or email the secretary simon.mays@english-heritage.org.uk

4 *Treasure*

All finders of gold and silver objects, and groups of coins from the same finds, over 300 years old, have a legal obligation to report such items under the Treasure Act 1996. Prehistoric base-metal assemblages found after 1st January 2003 also qualify as Treasure.

Summary Definition of Treasure (Portable Antiquities Scheme www.finds.org.uk)

The following finds are Treasure under the Act, if found after 24 September 1997 (or, in the case of category 2, if found after 1 January 2003):

- Any metallic object, other than a coin, provided that at least 10 per cent by weight of metal is precious metal (that is, gold or silver) and that it is at least 300 years old when found. If the object is of prehistoric date it will be Treasure provided any part of it is precious metal.
- Any group of two or more metallic objects of any composition of prehistoric date that come from the same find (see below)
- Two or more coins from the same find provided they are at least 300 years old when found and contain 10 per cent gold or silver (if the coins contain less than 10 per cent of gold or silver there must be at least ten of them). Only the following groups of coins will normally be regarded as coming from the same find: Hoards that have been deliberately hidden; Smaller groups of coins, such as the contents of purses, that may have been dropped or lost; Votive or ritual deposits.
- Any object, whatever it is made of, that is found in the same place as, or had previously been together with, another object that is Treasure.

Any object that would previously have been treasure trove, but does not fall within the specific categories given above. Only objects that are less than 300 years old, that are made substantially of gold or silver, that have been deliberately hidden with the intention of recovery and whose owners or heirs are unknown will come into this category.

Note: An object or coin is part of the 'same find' as another object or coin if it is found in the same place as, or had previously been together with, the other object. Finds may have become scattered since they were originally deposited in the ground.

If anything is found which could be Treasure, under the Treasure Act 1996, it is a legal requirement to report it to the local coroner within 14 days of discovery. The Archaeological Contractor must comply with the procedures set out in The Treasure Act 1996. Any treasure must be reported to the coroner

and to The Portable Antiquities Scheme Finds Liaison Officer, Rob Collins (0191 2225076 or Robert.Collins@newcastle.ac.uk) who can provide guidance on the Treasure Act procedures.

If you need this information in another format or language, please contact Jennifer Morrison, Archaeology Officer.