

Coquet Street Development The Glassworks

Newcastle upon Tyne

Archaeological Watching Brief

February 2015



Prepared for B I Brims by:

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Site Name: Coquet Street, Newcastle upon Tyne
Development: Residential (Student) Development
Client: B I Brims Ltd
NGR: NZ 2605 6450
Site Code: CSN 14 (Coquet Street Newcastle 2014)
Conservation Team Ref: Mon10579
Oasis Reference: alanwill1-203142

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SUMMARY

This report sets out the findings of an archaeological watching brief carried out during groundworks for a student residential development on the north side of Coquet Street, Byker, Newcastle upon Tyne by Alan Williams Archaeology (AWA) in autumn and winter of 2014. This was required by Newcastle City Council, along with the preparation of a photographic record of standing buildings on the site carried out previously in 2009 to discharge archaeological planning conditions for the development.

The watching brief showed, as was suggested in the previous desk-based assessment of the site, that much of the area had been taken up by a clay pit excavated in the first half of the 19th century, a part of St Ann's Brickfield. This was infilled over the 1860s and early 1870s. Wasters and kiln furniture dumped within the backfill of the pit has provided a useful insight into the production techniques and product of Maling Pottery, a very substantial local industry. Pottery included a range of forms including mass-produced marmalade pots, bowls and smaller spread and paste and ointment pots. Fragments of kiln waste recovered included stilts and cockspurs for stacking pots during glaze firings and large fragments of saggars which held pottery during these firings.

Once the clay pit was levelled, industrial buildings developed over the site. In one area, adjacent to the northern boundary, two tanning pits and the remnants of a third survived. These were a part of R & F Harrison's Stepney Bank Tannery which expanded into the site in the 1860s-70s and continued in use until the 1930s exploiting the numerous slaughterhouses in the area which supplied skins for processing. The tanning pits were substantial rectangular structures, formed with thick lining walls of tongue-in-groove pine planks set in clay. The pits have been compared in this report with a number of other examples excavated on Tyneside. A rectified photographic montage of the surviving fragment of the south frontage wall of Harrison's Tannery is included as appendix 1 in this report.

To complete this project, a paper will be submitted for publication in Archaeologia Aeliana, the journal of the Newcastle Society of Antiquaries, detailing the results of the recovery from the fill of the clay pit of wasters and kiln furniture from the adjacent Maling Pottery. This will be set in the context of the development of an important local industry that had trade links with Scotland (the long-standing association with Keiller of Dundee) and with many parts of the British Empire through this association.

The paper will also provide a short review of evidence for the construction of tanning pits as found through archaeological excavation on Tyneside.

1. PROJECT BACKGROUND

1.1 Location

The development site is located at NZ 2605 6450 on the western edge of the valley of the Ouseburn, along the northern side of Coquet Street and between lanes to east and west, both of which run to Stepney Bank to the north. The south frontage of Coquet Street is taken up with a broad, south-sloping grassed area with modern multi-storey flats lying beyond an access road. The site takes up the eastern two thirds of the street and in 2009 consisted of three commercial properties; Frank Nesbitt Plant Hire to the east, the former Index Print to the centre and Argyle Garage to the west. The whole block covers an area of 0.28 hectares. The standing buildings on site, all brick, were demolished in 2010.

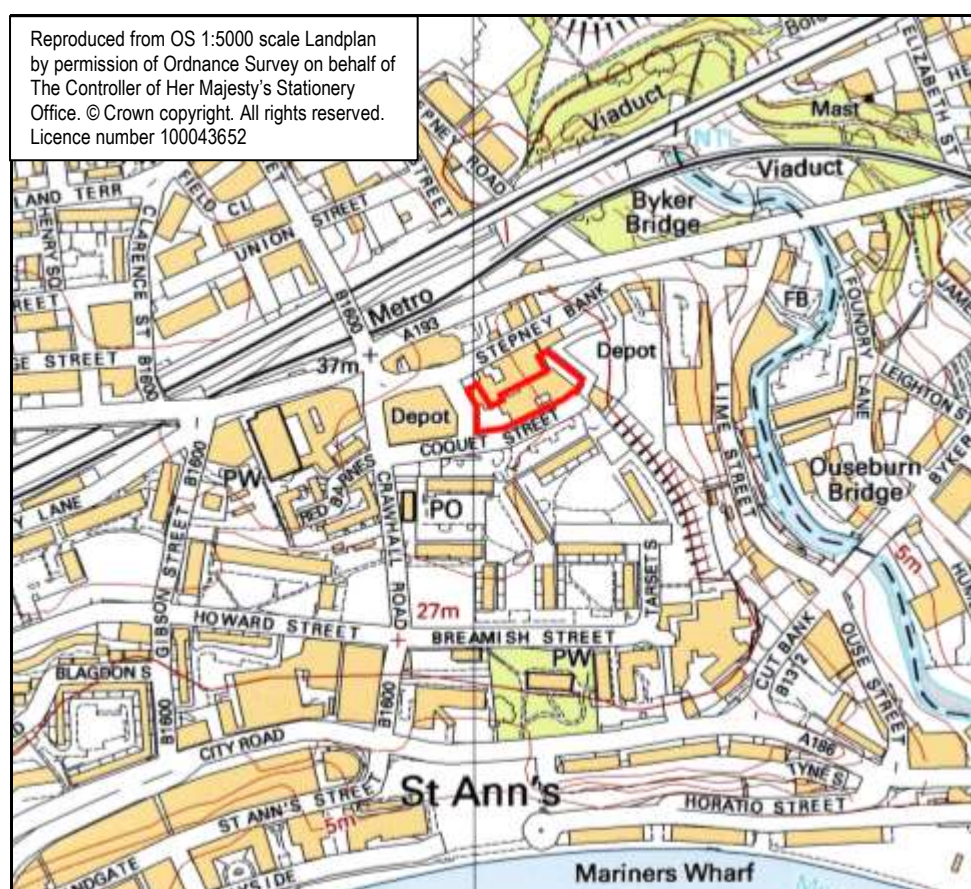


Figure 1: The location of the Glassworks development site to the north of Coquet Street and south of Stepney Bank outlined in red.

1.2 Development proposal

The development, called the Glassworks, is for construction of student accommodation.

1.3 Requirement for watching brief

An archaeological desk-based assessment prepared by AWA in 2009 detailed the archaeological and historical background to the development area and its surroundings. In summary:

- the site lies a short distance to the south of the line of Hadrian's Wall and the Wall Ditch
- the associated Military Way may have run across the area
- the utilisation of large parts of the site as a clay pit in the first half of the 19th century is likely to have removed any evidence for early features
- prior to this use, early maps and plans show that the site was in agricultural use
- by the later 19th century, as shown on the second edition Ordnance Survey, the site was brought into industrial use with a range of buildings across it.

1.4 The watching brief was carried out in line with a specification provided by Jennifer Morrison, the Archaeological Officer for Tyne and Wear (see appendix 4) and took place over autumn and winter 2014.

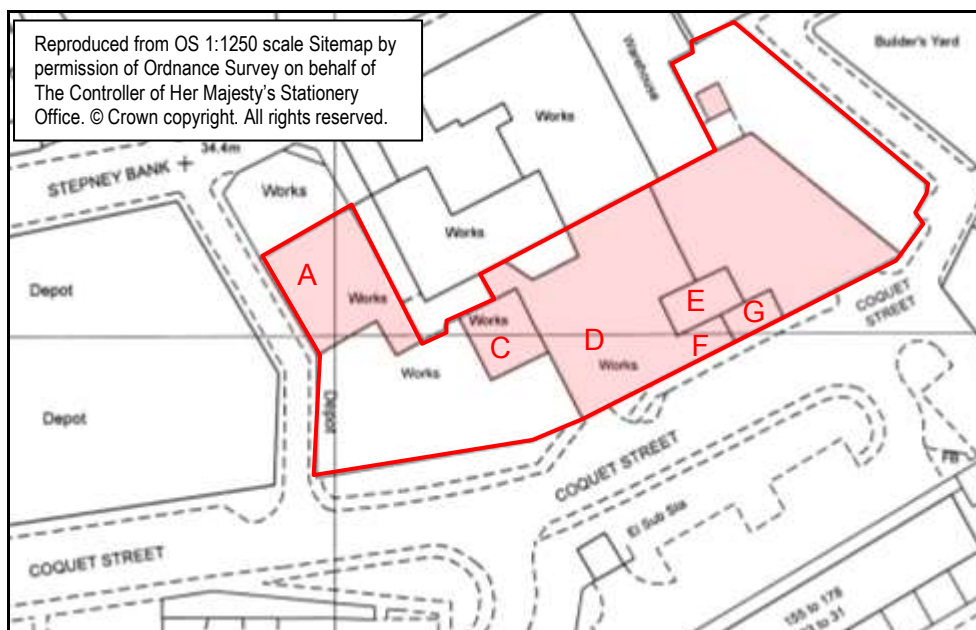


Figure 2: Modern Ordnance Survey showing the standing structures on the site (pink tone) prior to demolition. Buildings identified by red letters are described briefly in the text. The overall development site is outlined in red.

2. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

2.1 The desk-based assessment (AWA 2009) confirmed that R & F Harrison's Stepney Bank Tannery and Leather Works extended into the site from its earliest location immediately to the north of the development area which included a courtyard block with a rectangular pattern of tanning tanks shown on the first edition Ordnance Survey of 1858. The tannery was long-lived but closed by the 1930s. Parts of buildings D, E, F and G were included within the tannery complex. Building C was a blacksmiths and cartwright's shop present in the 1860s for the Stepney Cart and Rolley Works. Building A was built between 1895 and 1913 as an industrial warehouse.

2.2 As mentioned, all of the buildings on the site were demolished in 2010. None contained any visible early industrial fixtures or fittings relating to the blacksmiths, tannery or roley works.

3. RESULTS OF THE WATCHING BRIEF

3.1 Truncation of early deposits

As was established in the archaeological assessment of 2009, most of the potential for survival of early deposits on the site was removed when it was used as a clay pit as part of St Ann's Brickfield (HER 4156). At no point was the base of the clay pit located during the overall site strip for the current development. No early features were located during the watching brief.

3.2 Use and abandonment of the clay pit

The clay pit would appear to have been in use over the first half of the 19th century and was worked out and abandoned by the middle of the century. The first edition Ordnance Survey of 1858 shows no buildings within the development area, nor does it mark it as a clay pit or indicate any worked extent. Presumably by this time the pit was in the process of being levelled. By the end of the century, as shown on the second edition Ordnance Survey, industrial buildings extended across the site.

3.3 Character of dumped deposits

Deposits dumped into the worked-out clay pit varied and included bands of ash, loam and clay. No particular direction was noted for the dumping and tip lines were generally limited in scale and interleaved. However, a fairly constant presence in the dumped material was pottery wasters and kiln furniture.

3.4 Maling Pottery: wasters and kiln furniture

The pottery wasters - and by association the kiln furniture - recovered from the infill of the clay pit derived from the adjacent Maling Pottery. Section 4 includes a list of the material collected. This forms what was considered to be a representative sample of the material. By far the commonest form found was the marmalade pot produced by Maling largely for the Keiller Marmalade Company of Dundee. There were many minor variants of the type.

3.5 Tanning pits

Subsequent to the levelling of the clay pit, industrial buildings were constructed over the site. This included an addition to R & F Harrison's Tannery expanding from its base immediately to the north. A strip of this part of the tannery complex survived within the northern part of the development site where ground surface had been raised up above the general fall to the south within later buildings. This preserved the remains of three tanning pits. Pits 1 and 2 were well preserved, Pit 3 surviving only as a remnant of its west lining wall. The tanks were located as shown on figure 5, the first edition map base and on figure//the modern Ordnance Survey.

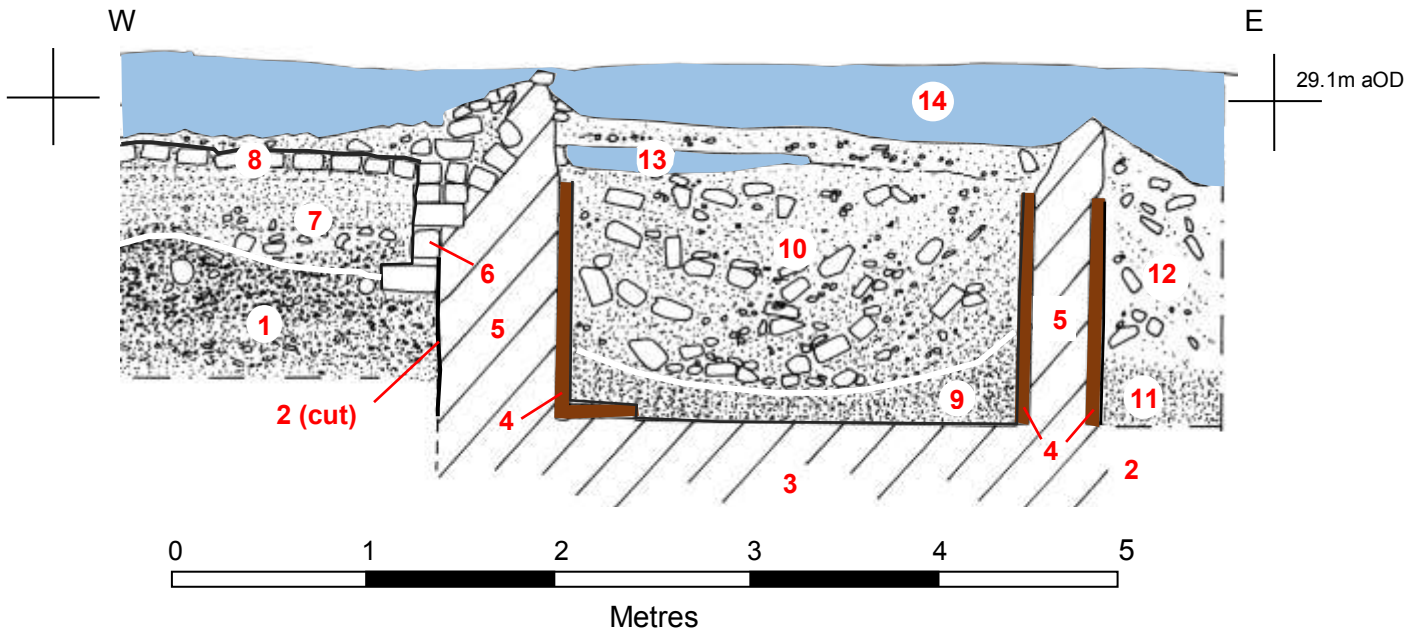


Figure 3: West-East section as located on figure 7 showing Tanning Pit 1 (centre) the remnant of Pit 3 to east and stratigraphy to west. Concrete floors in blue tone.

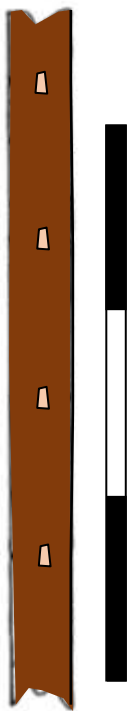


Figure 4: Timber planking (tongue in groove) forming pit sides. Scale is 0.6m in 0.2m divisions

The two surviving timber-lined tanning pits and the remnant of pit 3 sat immediately to the south of the northern boundary of the development area formed by a surviving length of the south wall of R&F Harrison's Tannery before its expansion in the later 19th century (figure 5).

3.6 Construction of the Pits (figures 3, 4, 6 and 7)

A foundation trench for the pits [2], more extensive than the timber lined tanks, was cut into pre-existing deposits of compacted hearth-ash, cinders and loam [1]. No pottery or other dateable material was recovered from the deposits to provide a chronological context for the development of this pre-pit stratigraphy.

A substantial yellow-clay base [3] was laid within the foundation. The timber lining, formed of pine tongue-in-groove planking [4] was then set on to this base. Each horizontally-laid plank 0.17m (6¾") deep by 0.062m (2½") wide had a central longitudinal rebate 12mm (½") wide along each narrow edge into one of which was fixed a fillet just under 25mm (1") deep and 12mm (½") wide. The original depth of the pits is not certain, but survived up to eight planks high (c.1.4m). The gap between timber lining and foundation cut was packed with clay [5].

- **Pit 1** (to the north) may have butted against the wall of Harrison's Tannery but this junction was not exposed as part of the development. Therefore, its length north-south is not known. Its internal width (timber lining to timber lining) east-west was 2.35m. Clay to the east of the lining was set against another timber wall which formed the western lining of a third pit (Pit 3) which was largely lost.
- **Pit 2**, to the south, had lost its east face but the surviving timber lining at the south gave the pit an east-west width of 2.35m, the same as Pit 1. Its north-south length was 3.15m, although the presence of a vertical channel in the internal north face of its western lining-wall which once held a timber partition wall, and the lack of lining to the north of this putative partition, would have made the pit square with a separate tank or leet to the north between it and Pit 1.

A brick wall [6] was built against the west face of clay packing [5], presumably as a retaining structure. Deposits of ash and loam [7] were then dumped to the west of this wall and a brick floor [8] laid above which presumably related and provided access to the pits, certainly the west side of Pit 1.

The lower fill of Pit 1 [9] and of Pit 3 [11] were wet dark-brown loams with some lime within the matrix. They were badly contaminated with ground water and other materials from upslope on the site and were not sampled. No horn cores or fragments of leather were found in any of the fill.

Abandonment of the pits is marked by infilling with brick rubble and loose variegated soils (layers [10] and [12] in Pits 1 and 3). Pit 1 was sealed with a concrete floor [13] before ground level was raised across the area and a substantial concrete floor [14] set above all.



Figure 5: First Edition Ordnance Survey of 1858 showing R & F Harrison's Stepney Tannery to the north of the development area (marked in red line) and location of excavated tanning pits in green. The extent of the surviving south wall of the tannery (shown as a montage in appendix 1) is indicated in blue line.

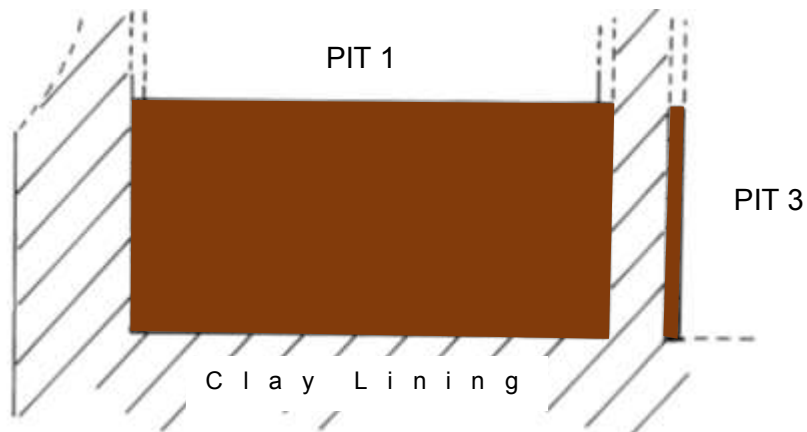


Figure 6: Elevation of south lining-wall of Tanning Pit 1

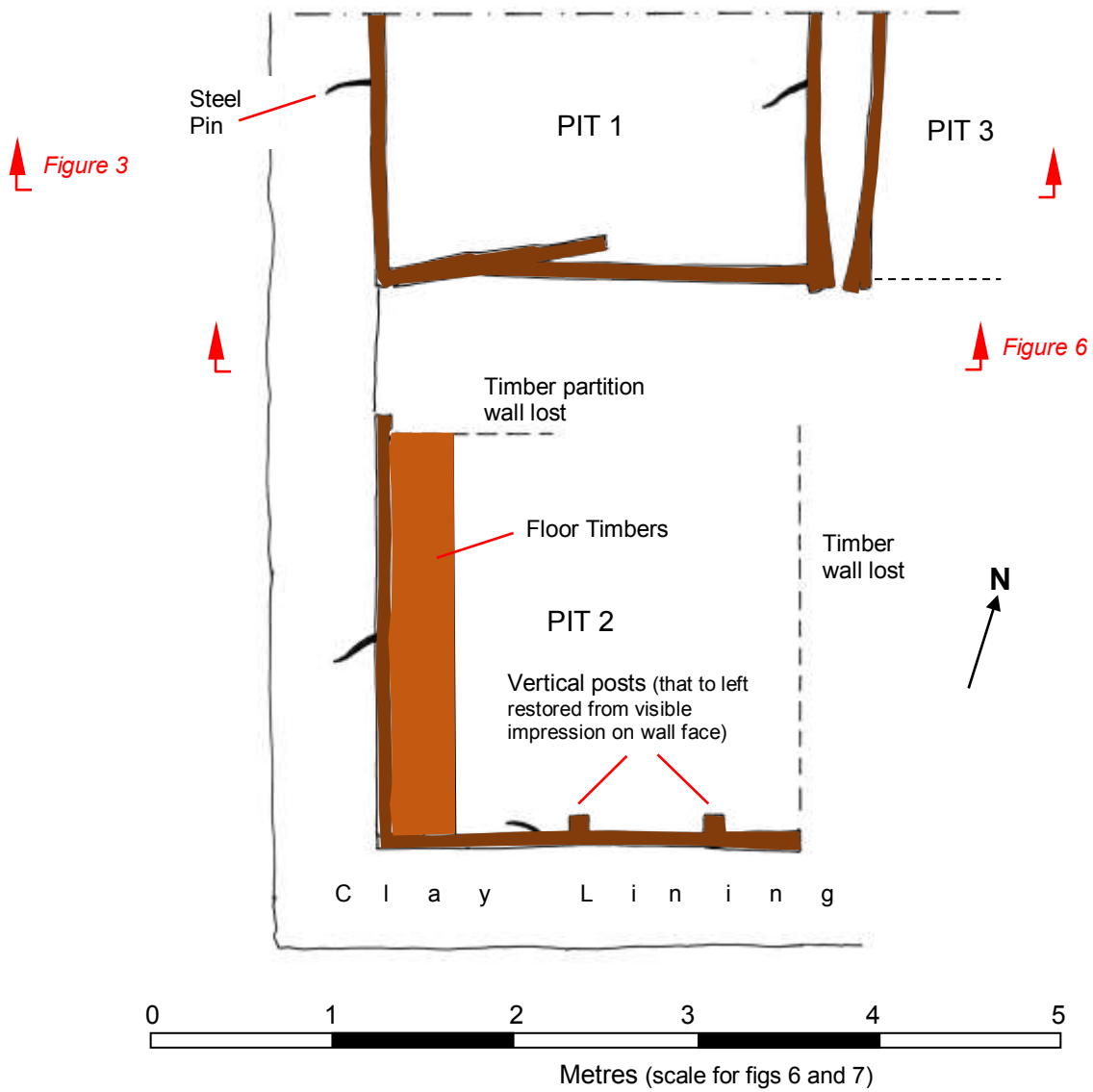


Figure 7: Plan of Tanning Pits. Red arrows indicate locations of figures 3 and 6. Steel pins were set vertically in drilled holes through most of the lining walls as shown.



Plate 1: Tanning Pits 1 and 2 looking south-west.



Plate 2: Tanning Pits 1 and 2 looking north.



Plate 3: The pits looking south-east. The planked wall is the west side of Pit 1



Plate 4: Clay packing [5] between the timber walls of Pits 1 and 3.



Plate 5: Timber post, and impression of a second to the right against the south wall of Pit 2 (see figure 7).



Plate 6: Clay packing exposed in the west face of Pit 2. The channel in the timber lining of the pit for a partition wall can be seen to the left.

4. MALING POTTERY WASTERS AND KILN FURNITURE

4.1 A quantity of pottery wasters and kiln furniture was recovered from the infill of the clay pit which was excavated on the site over the first half of the 19th century, a part of St Ann's Brickworks. As far as has been determined, all of the wasters derived from the C T Maling Pottery which was located in the Ouseburn valley. The pottery concentrated on the production of commercially used pressed and moulded wares in a white china clay. A very large element of production was pots for the Keiller Marmalade Company in Dundee. The table below shows the types of waster recovered from the site and whether they were biscuit or glaze fired. They include marmalade pots, paste or spread pots and ointment jars as well as plates and a variety of bowls. A range of the profiles of the types is shown on figure 8.

4.2 Maling Pottery Wasters and Saggars

As well as vessel fragments, recovered fragments of saggars, large fire-clay containers used to hold pottery in the kiln whilst firing are listed in the table below. A minimum vessel count is included in the table.

Type	Base Sherd		Rim Sherd		Body Sherd	
	Glazed	Biscuit	Glazed	Biscuit	Glazed	Biscuit
Marmalade Pots (36 vessels)	8	14	9	6	n/a	n/a
Bowls (30 vessels)	6	11	2	11	3	11
Paste/spread Pots (6 vessels)	4	0	2	0	0	0
Ointment Pots (8 vessels)	4	3	1	2	0	0
Lids	n/a	n/a	6	2	n/a	n/a
Plates (20 vessels)	3	5	5	8	n/a	n/a
Tea Caddy (lid)	0	0	6	0	0	0
Saggars	4		10		3	

4.3 Kiln Furniture

A substantial amount of kiln furniture was also recovered from the dumped material including cockspurs, stilts and more irregularly formed struts which were used to separate pots during a glaze (or 'glost') firing.

Type	Number of pieces	Illustration
Stilts whole or partial	121	Plate 9
Cockspurs whole or partial	17	Plate 9
Struts partial	32	



Plate 7: Much of the production of Maling Pottery was for Keiller of Dundee. The four photographs above show the bases of marmalade pots recovered from the site. The top left is specifically marked 'Maling K', the K for Keiller. The larger diameter pots are all for one pound of marmalade, the smaller diameter pot at the bottom is a miniature.



Plate 8: Marmalade pots sent to Keiller at Dundee had transfer-printed labels. These were added before the biscuit firing (top left photograph). A second glaze-firing sealed the labels and the pot surfaces. Letters under the oak wreath (circled in red on bottom right pot) provide a sequential numbering system for the pots although this has not been shown to belong to a particular year. Some pots have no letters (bottom left). All but one of the pots recovered with these identification marks (5 of 6) were marked with an E (top right).

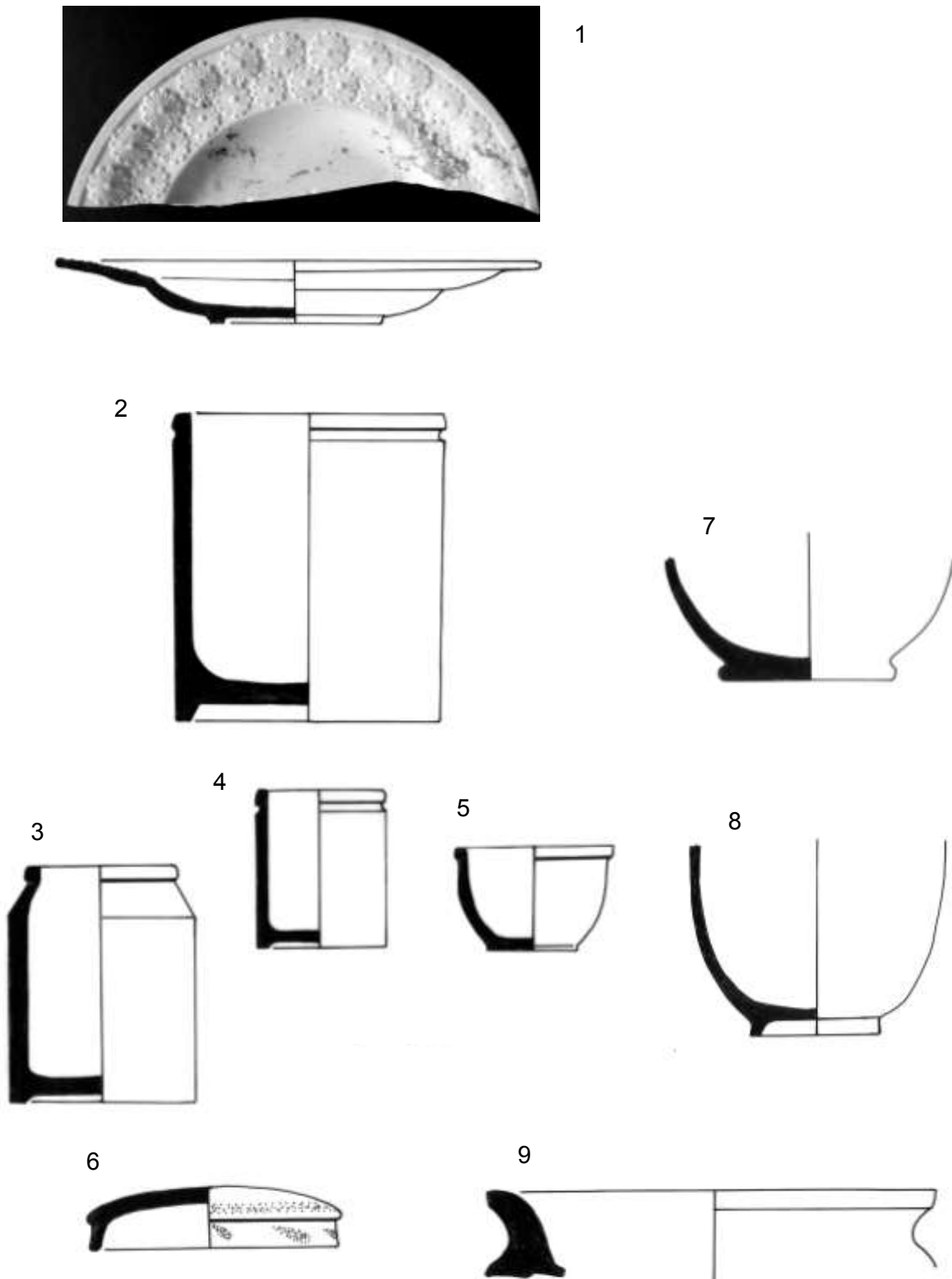


Figure 8: Profiles of some of the types of Maling pottery recovered from infill of the clay pit on the site. All 1:2 scale. 1. Pressed-ware floral-patterned plate; 2. Marmalade pot; 3. Paste or spread pot; 4. Small spread or ointment jar; 5. Ointment pot; 6. Tea-caddy lid with blue decoration (stippled); 7. Base of small bowl/jug; 8. Base of small bowl jug; 9. Rim of bowl.



Plate 9: Kiln furniture from dumped deposits within the clay pit. To right is a stilt, the remaining three are 'cockspurs' all fragmentary. All were for stacking pots during a glaze firing.



Plate 10: Overheating of a kiln during a glaze firing melted a batch of ribbed marmalade-pots in a saggar. Stilts, for separating the pots during the firing, can be seen attached to the saggar wall in the left hand photograph. Recovered from infill of the clay pit.

5. DISCUSSION

5.1 St Ann's Brickfield

As was anticipated from the results of the desk-based assessment of the development area prepared in 2009 (AWA 2009), the extraction of clay deposits from the site as part of the very extensive St Ann's Brickfield in the first half of the 19th century removed any evidence for early remains such as possible traces of the Military Way (a component of the Hadrian's Wall frontier line) which may have run across the site. The tunnel for the Quayside Branch Line (HER 4326) also removed deposits across the east end of the site where it was constructed in an open cutting.

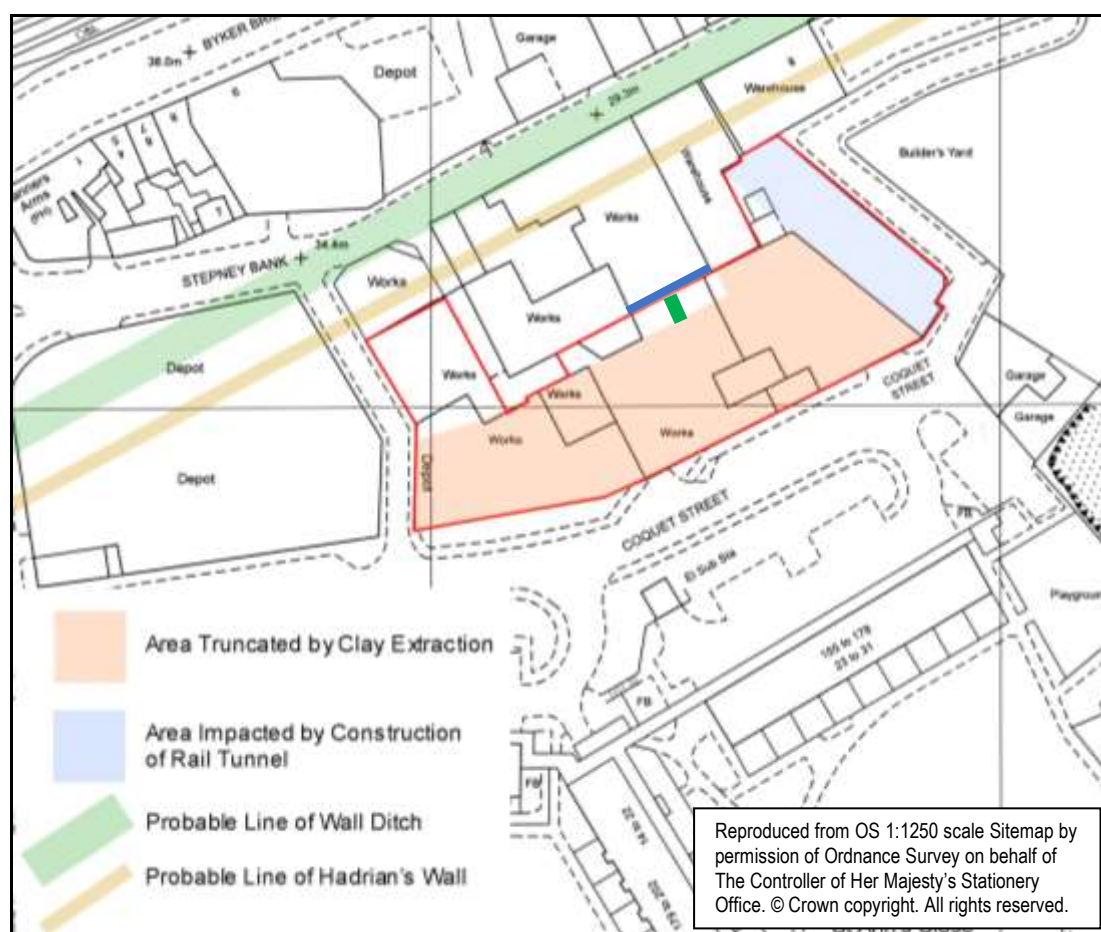


Figure 9: The development area (in red outline) showing the projected line of Hadrian's Wall and areas impacted by clay extraction and by the cutting for a section of the Quayside Rail Line tunnel at the east end of the site. Tanning Pits 1-3 are indicated by dark green block. South wall of tannery recorded as rectified montage (Appendix 1) indicated by blue line.

5.2 Development across the Area

There is no indication from documentary or early map evidence that the development site was in anything other than agricultural or horticultural use over the medieval and post-medieval periods with Stepney Bank to the north a trackway overlying the Wall Ditch. Industries developed to the east along the valley of the Ouseburn in the 17th and early 18th centuries but there was little development up the western side of the

valley along Stepney Bank. A plan of 1767 by John Donkin (figure 10) shows only a tile kiln and a mill, both some way to the north.

5.3 R & F Harrison's Stepney Tannery (HER 5455)

Industrial buildings were appearing along Stepney Bank, to the north of the site, over the early 19th century. Wood's plan of 1827 (figure 11) shows a tannery to the north of Stepney Bank, almost certainly R & F Harrison's Stepney Tannery which probably extended to some of the unnamed buildings shown along the south side of the road.



Figure 10: An extract from John Donkin's map of 1767 (site outlined in red).

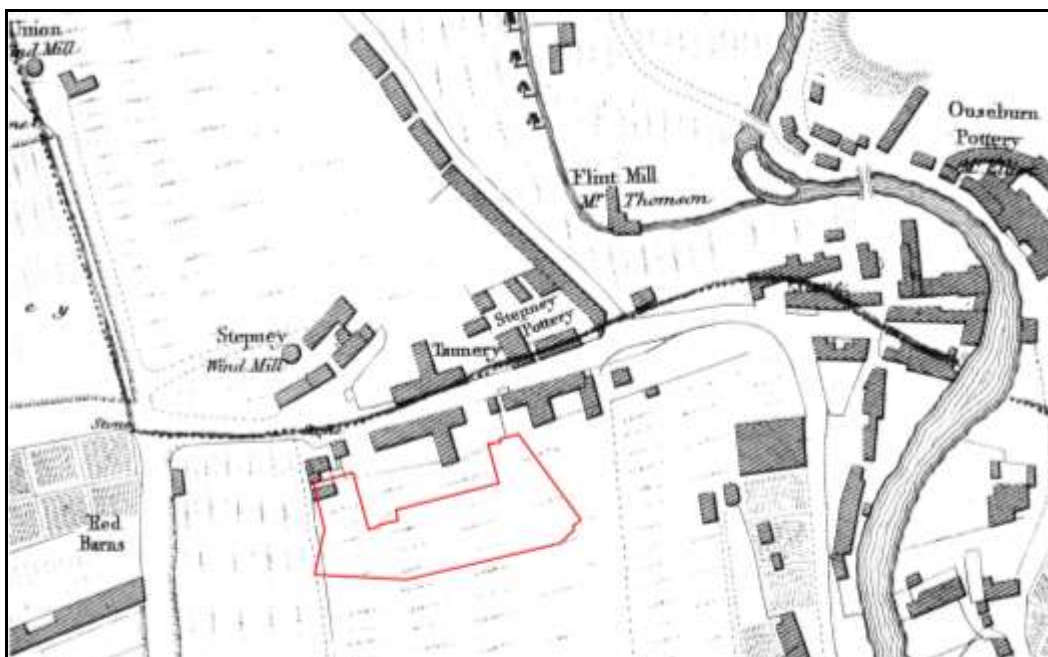


Figure 11: An extract from Wood's map of Newcastle 1827 showing Stepney Bank and buildings developing along its line (site outlined in red).

The first edition Twenty Five Inches to One Mile Ordnance Survey of 1858 (figure 5) names this as a tannery showing a grid of tanning pits extending across a courtyard. The Stepney Tannery was one of a number which developed around the Ouseburn on the back of the large-scale facilities for slaughtering cattle which had been shipped in to the Ouseburn from elsewhere in the country and from abroad. Slaughterhouses at Upper Steenberg Yard (buildings still along the west side of Lime Street) were supplied with livestock from the cattle sanatorium at the Lower Steenberg Yard (this only fairly recently demolished). Skins were then sold on to tanners such as R & F Harrison.

With the need for construction materials for this industrial development and the concomitant need for new housing for the working population, brick works were frequent in the Byker area which had readily available deposits of superficial clay. As mentioned above, a part of St Ann's Brickfield extended across much of the site involving deep excavation for the extraction of clay deposits. The Harrison's were listed in a number of trade directories of the period as brick makers as well as tanners and probably owned a share of the site along with Walter Scott, a local builder, who is named on a plan showing the clay pit on an undated (but probably 1860s) plan. R & F Harrison's Tannery certainly extended across much of the development site in the later part of the 19th century once the brick pit had been infilled. It remained a family company until its closure in the 1930s.

5.4 Tanning Pits at Coquet Street

A narrow strip of ground surface within the tannery buildings on the development site survived the closure of the works and the large-scale alteration of floor levels associated with later buildings on the site. This was alongside the south wall of the old tannery as shown on the first edition Ordnance Survey (A part of the south face of this wall survives and was recorded during the watching brief (see Appendix 1)). Within this area, three tanning pits, two relatively complete and well-preserved, a third fragmentary, were exposed during groundworks for the development. How many pits sat across the area originally is not known. They certainly did not extend to the west of Pits 1 and 2 where a stratigraphy of dumped deposits was seen (figure 3). Nor did pits immediately continue to the south of Pit 2, which was sealed on this orientation with a thick clay lining. Pit 3 extended to the east of Pit 1. Although no more structural remains were seen to the east of the fragmentary remains of this pit, some loss may have occurred here during demolition of buildings in 2010.

The pits exposed during the watching brief were substantial and well-built. A rectangular foundation trench was excavated into the existing ground surface. On this was laid a bed of puddled clay c. 0.5 - 0.6m thick. The timber linings of the pits were then set in place on this bed. The linings consisted of tongue-in-groove planking laid horizontally. The butting corners of the pits were fixed together with flat shanked iron nails. Pit 1 was not fully excavated but was probably 2.35m square and a minimum of 1.44m deep. Pit 2 was also nearly square (2.35 – 2.4m) excluding a separate channel or leet between it and Pit 1, the south wall of which may have been formed of thinner planks, a few of which were located *ex-situ* within the pit. The south internal face of Pit 2 was buttressed, albeit very insubstantially, with two vertical

posts, only one of which survived (plate 5). They may have functioned as a support for a lost horizontal timber. A partial timber floor sat within Pit 2, extending from the west face and consisting of three tongue-in-groove planks laid north-south. The dimensions of Pit 3, other than minimum depth, c.1.4m are not known.

The gap between foundation trench and lining, and in the case of Pits 1 and 3, between the discrete timber lining walls, was then packed with clay forming, along with the underlying clay, a watertight seal.

At least along the west face of Pit 1, quite probably also along the west face of Pit 2, was a brick floor. The western edge of Pit 1 rose above the level of this floor as can be seen in figure 3, but just how high, as mentioned above, is not known.

5.5 Comparison with other Excavated Tanning Pits on Tyneside

The tanning pits at Coquet Street can be compared with the evidence for pits from two other tannery sites excavated on Tyneside.

5.5.1 Newgate Street, Newcastle upon Tyne

A number of tanning pits was revealed during archaeological works carried out by AOC Archaeology Group to the rear of Newgate Street in 2005 in advance of the development of The Gate Leisure Complex. Five of these pits were seen in one of the evaluation trenches (Trench 2) and parts of probably tanning related features, badly disturbed, in another trench (Trench 3). Documentary evidence shows that tanning was present in the locality in the 18th century but all the pits probably dated to the 19th century. They were well-constructed features and represented a larger group of tanning pits known from cartographic evidence, primarily the first edition Ordnance Survey of 1858.

In Trench 2, the whole plan (1.16m by 1.4m) but not the full original height (maximum 0.44m) of one pit (206) was recovered. Three other pits were partially explored but extended beyond the area of the trench. Pit 206 and 212 to the north was set on a bed of clay overlying subsoil. Cut into subsoil were slots for a square-profiled wooden drainage conduit (formed of four planks) serving the pit and a beam into which the floor planks of the pit (0.3m wide by 40mm thick) were dowelled. The drain had holes cut through the upper plank, sealed with wooden bungs in both pits 206 and 212. The construction of the lining walls of 206 was of horizontally-laid planks set edge to edge and fastened by dowels to external supporting posts. Pit 212 was a continuation to the north of Pit 206, divided from it by a plank cross-wall set in channels in the lining walls to east and west. Clay packing behind the lining walls sealed the pits to east and west. Two further pits (210 and 230) lay immediately to the east and were only partially exposed. They were divided from 206 and 212 by the clay packing. Their construction techniques, and their alignment, mirrored that of 206 and 212. A fifth pit was seen to the west of 206 but was very badly disturbed.

Further remnants of features associated with tanning pits were seen in deeply truncated deposits within Trench 3. They consisted of timber drains of poorly squared tree trunks bored through longitudinally. Holes cut through the timbers from above

probably marked the former location of tanning pits as seen with similar drainage arrangements for pits 206 and 212 in Trench 2.

5.5.2 Tanners Bank, North Shields

Archaeological Services University of Durham carried out archaeological excavation to the west of Tanners Bank in North Shields in 2005 (ASUD 2006) in advance of development. Two areas of the site investigated (Areas A and C) provided evidence for tanning probably as early as the 18th century and continuing into the 19th century. In Area A (the southern trench) up to 14 wood-lined tanning pits were identified in five north-south rows. All the lining planks of the pits in this area were pegged together. In Area C, seven tanning pits were uncovered associated with a drainage gully probably serving the pits. All of the tanning pits in this area were also wood-lined but unlike those in Area A were constructed of tongue-and-groove planks for bases and walls. Two of the pits were larger than the others: Pit F309, divided in two by a wooden partition wall, was 4.7m long and survived to a depth of just under 1m. An adjacent pit (F317) was 3.8m long, 2.9m wide and 1.1m deep. The five smaller pits (F319 to F323) were each around 1m by 1m in plan) and ran in a north-south row. Variation in construction of the timber linings of pits between areas A and C may have been functional or chronological.

5.6 Maling Pottery

A significant insight into the production techniques and product of the C T Maling Pottery has been provided by archaeological monitoring of the Coquet Street site. This is in the form of wasters and kiln furniture dumped in the backfill of an extensive clay pit over a fairly short period in the second half of the 19th century. All of the Maling marmalade pots recovered include on the transfer printed label the inscription 'International Exhibition 1862' above an oak wreath, but none carry the inscription 'Grand Medal of Merit Vienna 1872' which was common to all pots after this award. This suggests that deposition was limited to the 1860s and early 1870s. This likelihood is enhanced by most of the pots being marked with circumscribed year/season batch codes (D and E), although which years these represent is not certain.

Evidence has been recovered from the site for the firing processes at the pottery including substantial fragments of Saggars, large fire-clay containers used to hold pottery whilst being fired in hovel kilns. Many stilts and cockspurs were also recovered, used to stack pottery whilst undergoing a glaze firing.

6. SOURCES

Publications

Bell, R.C (1971) *Tyneside Pottery* (Studio Vista Press)

Bell, R.C, Cottle,S and Dixon, L (1981) *Maling: a Tyneside Pottery* (T&WM)

Newsletters

Maling Collectors Society Newsletter Issue 4 Sept 1999

Maling Collectors Society Newsletter Issue 5 Dec 1999

Maling Collectors Society Newsletter Issue 36 Sept 2007

Maling Collectors Society Newsletter Issue 39 June 2008

Maling Collectors Society Newsletter Issue 8 Sept 2000

Limited Circulation Reports

AOC Archaeology (2006) *Archive Report for Excavations at Newgate Street, Newcastle*

ASUD (2006) *Tanners Bank North Shields Archaeological Excavation: Assessment Report*

7. GENERAL SITE PHOTOGRAPHS



Plate 11: *Stripping deposits at the east end of the site.*



Plate 12: Looking east. Starting to pile the site.



Plate 13: Dumps within the backfill of the clay pit.
Pottery fragments and burnt stone



Plate 14: Looking north across the site during stripping.

Appendix 1: South wall (south face) of R&F Harrison's Stepney Bank Tannery

Scale in metre divisions



Rectified photographic montage of the surviving section of R & F Harrison's Stepney Bank Tannery (not to scale)

Appendix 2: Photographic Catalogue

Number	Description	Date
1	General site view during stripping looking east	10/10/2014
2	General site view during stripping looking west	16/10/2014
3	General site view during stripping and start of piling looking south-east	
4	General site view during stripping looking north at west end of site	24/10/2014
5	Tanning Pits 1 and 2 when first exposed	10/10/2014
6	Tanning Pit 1 when first exposed looking west	10/10/2014
7	Tanning Pits 1 and 2 cleared looking south-west	10/10/2014
8	Tanning Pits 1 and 2 cleared looking south	10/10/2014
9	Tanning Pits 1 and 2 looking east	10/10/2014
10	General view of Tanning Pits looking north	10/10/2014
11	General view of Tanning Pits looking north	10/10/2014
12	South face of Tanning Pit 2 looking south	10/10/2014
13	South face of Tanning Pit 1 looking north	15/10/2014
14	Tanning Pits 1 and 2 exposed base looking north	16/10/2014
15	Tanning Pits 1, 2 and 3 exposed looking north	16/10/2014
16	Clay packing behind west wall of Tanning Pit 2 looking west. Detail	13/10/2014
17	Clay packing behind west wall of Tanning Pit 2. Looking west. General	13/10/2014
18	Clay packing between walls of Tanning Pits 1 and 3	13/10/2014
19	Clay packing between walls of Tanning Pits 1 and 3. Looking north	15/10/2014
20	Timber lining between Pits 1 and 3. Vertical shot	13/10/2014
21	Section to west of Tanning Pit 1. Looking north	14/10/2014
22	Section against west end of Tanning Pit 1. Looking north	15/10/2014
23	Section to west of Tanning Pit 1. Looking south along section	15/10/2014
24	Removal of Tanning Pit 1. Looking east	16/10/2014
25	Removal of Tanning Pits 1 and 3. Looking north	16/10/2014
26	Maling marmalade pot base	
27	Maling marmalade pot base	
28	Maling marmalade pot base	
29	Maling marmalade pot base	
30	Pieces of saggar and marmalade pots melted together in kiln	
31	Maling plate	
32	Maling spread pots	
32	Maling ointment pots and lids	
33	Stilts	
34	Stilts and cockspurs	
35	Marmalade pot label	
36	South wall of Harrison's Tannery: Montage	

Appendix 3: Context Descriptions (see figure 3 for locations of [1] to [14])

1. Dark grey to grey brown bands of hearth ash with some cinders, small stone fragments. Some loam within areas of matrix.
2. Cut for foundation trench of Tanning Pits 1 and 2. Vertical sides. Base not fully exposed.
3. Bed of yellow clay bed laid over base of [2] c.0.6m deep. Watertight base.
4. Timber lining of all Tanning Pits. Tongue-in-groove pine planks set horizontally. Same planks used for partial floor in Pit 2, 3 planks wide. See text description for construction details.
5. Yellow clay packing between timber linings and foundation cut for Pits 1 and 2 and packed between timber lining of Pits 1 and 3. Watertight seal and support for pits.
6. Brick wall along west edge of Pit 1. Only seen in section so its extent is not known. Retained clay packing around pit.
7. Layers of medium to dark brown loam and silt with some small stone with lenses and spreads of fire ash and cinders within the matrix.
8. Brick floor to west of Pit 1. Only seen in section so extent not known but probably floor associated with use of pit. Moulded C19 bricks.
9. Base fill of Pit 1. Wet, dark brown loamy silt with some lime.
10. Upper fill of Pit 1. Brick and stone rubble and fragments of mortar in a matrix of sandy brown gritty loam.
11. Base fill of Pit 3. As [9].
12. Upper fill of Pit 3. As [10].
13. Partial concrete surface over Tanning Pit 1.
14. Modern (probably late 20th century) concrete floor over all deposits.

Not shown on Figure 3:

15. Base fill of Pit 2. As [9].
16. Upper fill of Pit 2. As [10].

Dumps within fill of clay pit not ascribed context numbers. Described in text as clay-pit fill.

Appendix 3: Specification

Tyne and Wear Specialist Conservation Team Specification for Archaeological Watching Brief at Coquet Street, Ouseburn, Newcastle upon Tyne

Planning Application: 2013/0230/01/DET

Author:

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Date: 29 April 2013

County Archaeologist's Reference Number: MON10579

The Tyne and Wear Specialist Conservation Team is the curatorial service for archaeology, industrial archaeology and historic buildings 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 Team can be found at the Housing, Planning and Transport Division of the Environment & Regeneration Directorate of Newcastle City Council.

Introduction

Site grid reference: NZ 2604 6450

A planning application has been submitted for the demolition of existing industrial buildings and erection of five 5-storey blocks of student accommodation. An archaeological desk based assessment was produced in 2009 (Alan Williams Archaeology). The historic industrial buildings on the site have been recorded.

The site lies a short distance south of the line of Hadrian's Wall, possibly on the line of the associated Military Way. However the site was used for a brickfield/clay extraction in the mid 19th century and has been intensively developed since that time. The course of the NER Quayside Branch Railway ran through the eastern part of the site. This was covered by a tunnel in the 1890s. The line closed in 1969.

The site was in agricultural use until the first half of the 19th century. Coquet Street was laid out by the late 1800s with Harrison's Stepney Bank Tannery (HER 5455) and the Stepney Cart and Rolley Works (HER 10573) on the north side of the street.

HER 4156 brickfield

A Brickfield, with what appear to be clay pits. This is probably out of use by 1895, as it is not shown on the 2nd edition OS mapping. The location of the brickworks associated with the brickfield is uncertain. The field was probably only used for the extraction of clay for manufacturing of bricks. A windmill to the west of Stepney Bank was used to drive a pump or pug mill for the brickyard. The most prominent brickmaker of the period was Samuel Carr of Red Barns, last recorded in directories of 1841. His works were at the top of Stepney Bank. This was probably his brickfield.

Ground disturbing work (including site preparation, foundation and service trenching) must therefore be monitored by an archaeologist as a Watching Brief, in order that any archaeological remains can be recorded.

In the event of archaeological remains being found, the County Archaeology Officer must be informed. In the event of Roman remains being found, Mike Collins of English Heritage must also be informed.

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 Institute of Field Archaeologists and must follow the IFA 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 he can inform the local planning authority and 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 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 coordinate 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.

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 Thermoluminescence 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

Three pdf copies on CD are needed:

- one for the commissioning client
- one for the planning authority (Newcastle City Council) – to be submitted formally by the developer with the appropriate fee
- and one for deposition in the County HER at the address on the first page. Please do not attach this to the paper report.

The report and CD for the HER must be sent by the archaeological consultant or their client directly to the address below. 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 notebooks, 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 etc)
- 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: Catherine Hardman 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.

<http://www.english-heritage.org.uk/publications/environmental-archaeology-2nd/>

English Heritage guidance documents on archaeological science can be downloaded as pdf files from www.helm.org.uk or www.English-Heritage.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 subsample.

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 (hammerscale 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.

www.fishlab.org

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.