

396 GORGIE ROAD, EDINBURGH

Archaeological Excavation

For 3DReid

Planning Reference: 11/02827/FUL

June 2016

FINAL

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396 GORGIE ROAD, EDINBURGH

Archaeological Excavation

Headland Archaeology (UK) Ltd undertook a programme of archaeological works on a site at 396 Gorgie Road, Edinburgh. The work was required to support a planning application (Planning Ref 11/02827/FUL) for a proposed development. The excavation demonstrated that there were multiple phases of activity on the site starting with the construction of a mill wall, lade and operation of timber-lined tanning pits during the early 19th century. The site continued in development with the construction and operation of a set of mill buildings in the mid to late 19th century which were restructured on multiple occasions into the 20th century.

During the excavation no features relating to earlier periods were encountered and the presence of the natural geology seen directly beneath the tanning pits indicated that nothing earlier had survived the development process during the 18th and 19th centuries.

This work at Gorgie Road was followed in 2015 by further trial trenching and excavation work (GORE14/004) which is reported elsewhere but the phases identified are cross-referenced throughout this report.

1 INTRODUCTION

Headland Archaeology Ltd was commissioned by 3DReid (the client's representative) to undertake a programme of archaeological works in connection with the proposed development at 396 Gorgie Road, Edinburgh.

An application for development (Planning Ref. 11/02827/FUL) was submitted to City of Edinburgh Council. Subsequently, Headland Archaeology was commissioned by the client to agree a programme of archaeological work with the City of Edinburgh Council Archaeological Service (CECAS) who advise the Local Planning Authority on archaeological matters. This work comprised a first phase of Trial Trench Evaluation (Headland Archaeology, 2011), Historic Building Recording (Headland Archaeology, 2014) and a second phase of Trial Trench Evaluation (Oct 2014). A Desk Based Assessment relating to the development has been also undertaken in connection with a previous planning application for the site (Headland Archaeology, 2007).

The Trial Trench Evaluations undertaken as a pre-demolition phase of work established the presence of significant structural and archaeological remains in some parts of the site. CECAS advised the Planning Authority that further recording and reporting was required.

In order to fulfil this requirement a Written Scheme of Investigation (WSI) was prepared by Headland Archaeology (Oct. 2014) setting out the proposed strategy for archaeological mitigation.

This included excavation of an area during the pre-demolition phase consisting of controlled stripping of overburden followed by set-piece investigation within part of the footprint of the proposed development. The WSI was submitted to and agreed with CECAS. This report details the results of the work.

1.1 Site Location and Description

The development area (DA) is located on the north side of Gorgie Road (NT 2248 7214). It is currently occupied by a number of commercial operations using standing buildings, car parks and yards. These include some stone-built structures, brick buildings and modern industrial units. Most of the open areas are surfaced with tarmac and are used for vehicle access and parking.

The DA lies around 46m OD and is underlain by clay, sand and gravel, which are either alluvial or lacustrine in origin (British Geological Survey website). Geological deposits are overlain by 'made ground' containing a variety of material, some of it likely to be modern in origin (brick, 'colliery' spoil); the depth of this varies from 1 m in the southwest of the DA, to over 2 m in the northwest.

2 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

2.1 Historical Background

Records of a mill at Gorgie exist as far back as the 13th century. It is likely that the mill was located along the Gorgie Burn, later augmented by a lade fed by the Water of Leith. It seems that by the 16th century accommodation for the tenants of the mill was associated with the mill buildings, in what has been described as a 'manor house' (Smith 1928: 268-269). The location and nature of the accommodation is not known.

Although 'Gorgymill' is marked on Bleau's 1654 map of the Lothians, it is not shown in detail. The earliest detailed plan of the area (Roy 1747) shows the location of two or possibly three buildings at 'Gorgiehouse' on the eastern bank of the mill lade. The buildings are surrounded by gardens, suggesting a residence was located next to the mill.

A structure known as Gorgie House existed on the site until c.1937, when it was demolished during the construction of the Roxy Cinema to the east (Cant 1995: 28). The date of construction of this structure is uncertain. Smith (1928: 277) dated the structure to 1578. However, on visual assessment the structure was said to date to the 17th century when visited by the RCAHMS in 1929.

All accounts are clear that the building originally took the form of an 'L' shape, which was then added to in the 18th century, to create an oblong structure. In the 19th century, after the house had been bought by the Cox family, a new eastern frontage was added (Smith 1928: 279). First edition Ordnance Survey mapping (1855) shows a structure located close to the mill buildings, on the eastern bank of the lade within the development area. Architect's plans for the glue works held by RCAHMS (Cowie & Seaton collection) and OS mapping from 1905 indicate that this structure was Gorgie House. Whilst some photographs and drawing of architectural detail within Gorgie House exist (in Smith 1928), no photographs showing the entire structure have been discovered.

Maps from the 18th century onwards (Laurie 1766 & 1786; Kirkwood 1817; Thompson 1821) show a gradual increase in the number of buildings around

the site, although little reliable detail of its layout. On Knox's plan of 1816 the lade runs through a building; probably the standing mill building that still exists. The first large scale mapping of the area was the OS 1st Edition of 1855 which depicts a range of structures associated with Gorgie House and the mill buildings. To the south of the site, Cox's glue works, established in 1798, has a substantial presence. By the early 20th century, the glue manufactory has taken over the entire site north of the road, and had installed turbines within the mill building in order to run some of their industrial processes (RCAHMS: Cowie & Seaton collection). The mill lade ran through the building, with an overflow culvert around the western side. When photographed in 1967, the mill was under the ownership of the Didcock Brothers' upholstery business (RCAHMS archive photo SC590225).

2.2 Archaeological Background

Previous archaeological research included a desk-based assessment (Headland Archaeology 2007) (2012) and an initial Trial Trench Evaluation (Headland Archaeology 2011) that highlighted the archaeological potential of the DA.

Trial Trench Evaluation undertaken in 2011 (Headland Archaeology) placed two trenches on the supposed site of Gorgie House. These trenches contained the remains of a square building present on the 1855 Ordnance Survey 1st Edition map that is likely to be associated with the 19th century industrial buildings to the south and west. No trace of a medieval or early post-medieval structure was located and it was thought that Gorgie House was sited to the north-east, out with the development area. The remaining trenches uncovered the remains of an early 19th Century building which had been recently demolished.

A further evaluation was undertaken as part of the current programme of mitigation (this report). Three trenches were excavated in the available open ground (Illus 1; Trench 4 had been excavated by the client at an earlier date). The trenches established that remains associated with the historic industrial complex survived below ground, comprising wall foundations and associated features. After consultation with the client and CECAS, full excavation was undertaken of an area incorporating the locations of Trenches 1 and 2. The

area around Trench 3 could not be excavated due to the proximity of standing buildings.

Further evaluation and subsequent excavation was undertaken in late 2015 (GORE 14/004). The location of these trenches and the excavation area is shown in red on Illus 1. The phases defined within this archaeological investigation (GORE14/003) and GORE14/004 have been cross-referenced in both reports.

3 AIMS & OBJECTIVES

In line with the WSI the main objectives of archaeological works were:

- to record any archaeological and structural remains threatened and exposed by the proposed development works.
- To undertake an appropriate level of analysis and reporting to meet the requirements of the Planning Authority.

4 METHODOLOGY

4.1 Fieldwork

The work was undertaken as specified in the WSI (Headland Archaeology, 2014).

An open area excavation, covering an agreed portion of the footprint of the proposed development, was undertaken. Overburden was removed using a 360° mechanical excavator fitted with a 2m wide flat bladed bucket under direct archaeological control. Mechanical excavation stopped either at the first significant archaeological horizon or when clean geological sediments were reached. As the depth of excavation exceeded 1m below the present ground surface, the edges of the excavation were stepped to allow safe access as necessary.

In the event that archaeological structures visibly extended beneath the stepped sides of the excavation, a meeting was held between the client, Headland and CECAS, to discuss alternatives to the above method to allow full, safe excavation of archaeological remains.

Once stripped of overburden the areas were fully hand cleaned to allow the detailed planning and recording of structures and deposits. All

archaeologically significant structures and deposits identified were characterised and an appropriate sampling and recording strategy was implemented.

Within Trench 4, photogrammetry was utilised to record the phasing and profile of the exposed lade (see Illus 1).

4.2 Recording

All aspects of the work were undertaken in accordance with the IfA Standards and Guidance for conducting archaeological excavations.

All contexts and environmental samples were given unique numbers and all recording was undertaken on *pro forma* record cards that conform to accepted archaeological norms.

The photographic record comprises high resolution digital images (JPEG at 10mp). A graduated metric scale was clearly visible in record photographs. All photographs were recorded by individual print number alongside information on the context and direction of view.

An overall site plan was recorded using Total Station survey linked to a PC running AutoCAD/TheoLT and related to the National Grid and Ordnance Datum. Hand-drawn plans, sections and elevations of individual features at a scale of 1:20 were drawn where appropriate.

All artefacts retrieved during the excavation have been catalogued and will be subject to standard Treasure Trove procedures. Bulk finds were collected by context. Finds were stored in appropriate conditions as advised by Headland's Finds Manager.

Archaeological deposits were sampled systematically in accordance with Headland Archaeology Ltd standard environmental sampling practice.

4.3 Reporting and Archives

The results of the works are presented below. A summary report has been prepared for submission to *Discovery & Excavation in Scotland* (Appendix 4) and the OASIS database (headland1-195635).

The complete project archive will be deposited with the National Monuments Record of Scotland (NMRS) within six months of the completion of the

project. The records (paper and digital) will be archived according to best practice guidelines set out by the Archaeological Archiving Forum.

5 RESULTS

5.1 General Stratigraphy

The phasing is based on stratigraphic relationships and map evidence. However, some areas were heavily truncated by later features which severed stratigraphic links between contemporary features. Therefore, similarities in construction technique and materials were used to identify contemporary horizons within the site.

The DA was partially vacant at the time of fieldwork, having been levelled following the demolition of buildings, including part of the mill building. The overburden (051) consisted variously of crushed concrete, stone, brick, rubble and clinker material to depths of between 0.50m and 0.90m below the current, post-demolition, ground level (45.92m OD).

Orange brown gravel (057) was encountered on the western limit of excavation (LOE) directly below the overburden to a depth of 44.22m OD. The gravel was associated with the lade; a similar gravel was observed within Trench 3 of the evaluation to the south, and when investigating the lade to the west. This was thought to be a levelling material in connection with the lade construction.

Natural clays (geological subsoil) were encountered below the gravel to a depth of 43.82 m OD.

5.2 Phase 1: *Early 19th Century* (GORE14/004 Industrial Phase 1)

Stone wall (006) was thought to be the earliest structure recorded within the DA (Illus 2). It was an 'L shaped' foundation situated at the north and east LOE and could be traced for the majority of the length of the eastern LOE. Foundation (074) was recorded in the southern half of the DA on the same alignment as (006) and was thought to be a continuation of the same stone wall (See also Phase 3, below). The wall was constructed of large roughly squared sand stone blocks bonded with yellowish lime mortar, and measured 0.65m in width and at least 1.20m in depth, although the full depth was not reached.

The interior was rendered with a lime mortar and along the NE-SW portion of the wall there was suggestion of the removal of an internal wall; which would have been present at a perpendicular angle. This wall had likely been removed in a remodelling of the building to allow for the construction of tanning pits (below).

The lade (009) was recorded in the NE corner of the DA at the extremity of the excavation. Only a small portion was exposed with remains of the eastern wall of the lade visible in both the north and west section of the LOE (Illus 2). A ceramic pipe was running within the lade which appeared to be placed above levelling material (057) and was encased by demolition overburden (051).

Another section of the lade was investigated to the SE of the DA within Trench 4 and was revealed to be constructed of stone side walls (055) built upon natural geology. A levelling material (057) was contained within the walls and overlain by cobbled stones which was presumed to be the base of the lade. A red brick arch roof (056) was present as a capping to the lade but, however this was thought to be a later addition and most likely 20th century.

Directly below the lade, two culverts (007) & (047), cut into natural clay geology were orientated on the same alignment as the lade, running N-S (Plate 6). Both were constructed from cut stone blocks on the base, sides and capped on the top and measured a depth of c. 0.25m. Whilst the full extent of culvert (007) was unknown due to it running into the LOE at both ends, culvert (047) looked to be truncated on the north side by the construction of tanning pits (below). It is thought that the culverts may have been a first attempt at diverting the water course eventually made into the lade.

A series of pits were excavated across the DA. There were 23 pits recorded in a uniform grid pattern on a rough NW-SE alignment. On average, the majority measured 1.3m by 1.2m in plan, with the exception of three larger pits which measured 1.1m by 2.4m. A column of clay was present between each pit measuring, on average, 0.50m.

The height of the base of the pits was consistent with the natural gradient of the landscape with pit (063) in the south being at a height of 43.42m OD, and pit (011) in the north, 43.052m OD.

All of the pits were timber lined with pine wood. The floors and side panels of the pits were constructed from sheets made of at least six vertical planks secured by three or more thinner horizontal planks on the back; all joined together by timber dowels (Plate 7). On the base of pits (011), (014), (017), (026), (039) and (053) was an angled timber on each side of the floor which measured 0.20m in width. Each was perforated with small circular holes cut into the timber (Illus 7). In the SE corner of (011) and the NE corner of (020), the pits contained a smaller vertical plank which was placed diagonally against the south and east walls [(011)], and the north and east walls [(020)] (Illus 10). These features inserted into the pits appeared to be part of a liquid management system within the tanning pits. The remainder of the pits did not contain these angled timbers; this looked to be on purpose and not merely that they had been removed.

The larger type of pit was constructed in the same way; the only difference being that there was a suggestion of a metal, possibly lead, lining on the base of the pits. The full extent of this lining was not clear as it was only recorded in a small strip along the edge between the floor and side panels. If there was more of a lining present, it may have been robbed out prior to backfilling.

The network of pits was constructed within cut [040] which was recorded on the western and southern edge of the pits (Illus 2). Surrounding the pits and contained in cut [040] were two clay deposits (001) and (002): Illus 6. Grey clay deposit (001) measured between 0.30m and 0.80m depth and was overlain by light brown clay (002) which measured up to 1.0m in depth. These deposits were clean, well sorted clays with no inclusions and were thought to be poured clay sealing the sides of the pits.

All of the pits contained the same fill deposits. The primary fill (050) consisted of a thin deposit (0.05m in depth) of dark brown organic clay silt. This was overlain by a similarly organic friable dark brown/black clay silt (043) which contained some horse and cow animal bone along with metal tools (See Finds Assessment – Section 7). This deposit varied in depth across the pits but on average measured c. 1.0 m (Illus 6).

Above deposits (050) and (043), deposit (042) was present in the majority of the pits. This deposit was

a loose dark red brown silt containing small stones, shell and some bone. It was generally 0.4m to 0.5 m deep and was thought to be a deliberate backfill deposit of the pits as opposed to a residual working fill. Similarly, deposit (041) which overlay (042) in the more northerly pits contained brick frags and stone in a dark brown silt and represented deliberate backfill of demolition material for levelling.

Pits (037), (061), (062), (063) and (064) contained primary and secondary fills (050) and (043) (not illustrated) but were sealed by three discernible backfill deposits (044), (045) and (046). This area of the DA was more disturbed and may explain the presence of a different stratigraphy above the pit bases.

5.3 Phase 2: *Mid to late 19th Century* (GORE14/004 Industrial Phase 2)

Remains of the north wall of the now partially demolished mill building were recorded on the southern LOE (Illus 2). The wall (073) was orientated NE-SW and stood at a maximum height of 1.2 m, with a length of 9m within the excavation. The central part of the wall (within the excavation) was considerably shorter in height; this was likely due to material being removed during demolition. The wall was 0.85m in width and comprised a stepped foundation of large sandstone masonry sat on top of natural geology.

A second stone wall (070) was recorded directly north of wall (073) on the western LOE; forming three sides to a rectangular structure (Illus 2, Plate 18). It was a construction of rough cut squared stone bonded with yellow lime mortar and formed an area of 4.85 m in length (N-S) and 1.9 m in width. The structure survived to a maximum height of 1.2m. A short length of the fourth return wall (east side) survived below a concrete foundation (038 – see Phase 4) but the majority had been truncated. The southern wall of (070) abutted mill wall (073) and although it was unclear, it was thought these structures may be contemporary.

A wall (071) of identical construction to (070) was orientated NE-SW and divided the rectangular structure of (070) in two. The wall was keyed into the main west wall of (070) and was truncated on the east side. It stood to a height of 1.1m and stood over slab floor (072) which formed the base of this

structure. Nails were present jutting out of the interior western wall of (070) in a non-uniform pattern. It was thought that these may be an indicator of what process was being undertaken within this structure.

To the NE of (070), a large stone platform (065) aligned roughly E-W stood 2.1m in height and was cut into the natural geology. It measured 1.8m by 1.7m and consisted of roughly squared stone blocks bonded with lime mortar.

Directly to the east of (065), the basal remains of a narrow stone wall (080) measuring 1.70m in length and 0.38m in width seemed to be truncated by (065) (Illus 8). The wall had a flat even edge to the north side, but was uneven on the south side. The east end of (080) keyed into structure (081).

Structure (081) ran on the edge of the eastern LOE (Illus 2, 8 and 9). It consisted of a stone-lined pit, capped with large stone slabs, the west wall of which was linked into wall (080). The feature was observed at the height of the natural geology of which it was cut into. The N-S aligned capstones comprised a series of 0.35m high slabs with a slight concave inner face suggesting a wheel pit. The pit had subsequently been blocked by a stone wall (090) and infilled with steps (087) (Illus 8 and 9) as well as being disturbed beyond this by the restructuring of the lade (see Phases 3 & 4).

5.4 Phase 3: *Early 1900s*

A rectangular structure (066) measuring 6.5m long, 3.5m wide and 2m high (maximum), was located in the SE corner of the DA (Illus 2). It was constructed of large cut stone blocks bonded with lime mortar. A dividing wall (076) was orientated NE-SW within the structure. It was constructed of rough sandstone and built upon levelling material (079). The full extent of the structure was unknown with only the northern and western wall being revealed, both running in the LOE.

Four stone steps (087) were recorded within structure (081) (Phase 2) (Illus 2, 8, 9; Plate 22). They were set against the north face of wall (066) and thought to be contemporary. Although the full extent was unknown due to disturbance beyond a blocking wall (Phase 4) it was thought the steps

were associated with the lade towards which the steps lead.

The remains of stone foundations (074) (See Phase 1) was revealed below the northern wall of (066) and seemed to have been utilised for the construction of this structure. The two walls were not only on a slightly different alignment but constructed of different material; hence the unlikelihood that they were contemporary. The abutting of (066) against (073) looked to create a possible threshold also which was later blocked up. (Illus 8 - see Phase 3).

Foundation (074) was also utilised on the eastern portion of the structure. Revealed on the eastern LOE, culvert (069) was recorded as abutting and lying on top of (074) (Illus 2). The culvert was subsequently built over by (078) which was of similar construction to wall (066) and hence likely contemporary.

Remains of the stone lined culvert (069) ran from the eastern wall, through the western wall of (066). The culvert direction then took a left turn, running for a short distance N-S along the outer face of (066) before curving right to run E-W to be truncated by concrete foundation (038) (see Phase 4). The culvert was constructed of a stone flag base, sides and capping and was placed directly on top of levelling material (079). Wall (066) looked to be purposely built to accommodate the culvert making them presumably contemporary.

Directly above culvert (069), floor (067) and platform (068) were recorded. Both were constructed of frogged red bricks; possibly re-used bricks as various types present. Floor (067) was not complete and may have previously been damaged during later demolition/construction. Platform (068) was square in shape and measured 0.7 meters squared and 0.30m in height. Being of the same construction, it was thought to be contemporary with floor (067) although their full extent and use was unknown.

5.5 Phase 4: *Mid 1900s onwards*

From their construction methods, some features recorded in the DA can be associated with later changes and alterations of the buildings present on the mapping evidence.

A large concrete 'L' shaped foundation (038) ran NW-SE along the western perimeter of the DA (Illus 2), measuring 19.9m in length, 1.5m in width and 1.6m in depth. The return portion of the wall running NE-SW measured 4.2m in length. A red frogged brick wall (059) sat directly on top of this foundation and measured 0.36m in width and 0.8m in height.

The foundation (038) truncated pits (039), (028) and (030) (Phase 1). A small amount of timber planks were noted pressed into the natural geology west of (038); this was thought to be perhaps the remains of timber lined pits which had been truncated by the construction of (038), however it was unclear whether these timbers were in situ or residual debris.

A large concrete floor (060) was located to the east side of wall (059). The floor was most likely contemporary with (059) as the floor abutted the wall with a shallow concave drainage channel inserted by the wall. The floor was made up of 3m² slabs and measured roughly 5m by 6m, although it had been disturbed.

Two parallel walls, (024) and (025), were recorded on a NW-SE alignment towards the eastern LOE. Wall (024) was constructed of yellow brick, 6 courses high, and resting on a concrete foundation base. It measured 7.1m long, 0.25m wide and 0.55m in height. Wall (025) was constructed mostly of red brick and abutted wall (024). It was longer in length at 14.4m, 0.5m wide and 0.2m high above the concrete foundation it sat on. The concrete foundations for the wall were different so presumably not entirely contemporary. Both concrete foundations sat above the backfilled timber lined pits (Phase 1).

The north end of wall (024) was directly east of a large square concrete foundation (023). This foundation measured 2.8m by 2.2m by 2m and truncated the surrounding timber lined pits and presumably pits which had been present below the area prior to construction of the foundation. Although it was not entirely clear, (023) looked to post-date wall (024), perhaps making (023) and (025) a remodelling of an area where wall (024) was already present.

Later additions to earlier structure (066) were recorded in the form of a possible blocking up of an entrance on the north wall of (066) by red brick

construction (075). It lay directly on top of foundation (074) and abutted (066) on the west and (078) on the east.

Three courses of yellow bricks (089) lay above stone foundation (078). It was not clear whether these were contemporary and part of the same structure, or whether the bricks were a later addition associated with the lade directly to the east. A blocking wall (090) was also inserted into wheelpit (080) and may have represented the converting of the lade to a culvert.

The final activity on the site was a later floor surface (058) recorded in the southern part of the DA. It was present on both east and west sides of wall (059) (Illus 2) and constructed from concrete slabs approx. 2m². The east side of floor (058) lay 0.5m above floor (060) with a rubble make-up layer in between. The full extent was unknown as the edges had been disturbed, possibly during previous demolition works. The eastern branch of the lade was also replaced by a concrete pipe which has truncated a large portion of the site to the east of the DA. The concrete pipe was inserted and the cut backfilled with red blaze which is seen on the eastern LOE of the DA.

6 ENVIRONMENTAL ASSESSMENT

By Laura Bailey and Tim Holden

Five two litre samples, recovered during the course of an evaluation carried out at Gorgie road, Edinburgh, were received for palaeoenvironmental assessment, together with hand collected animal bone and a timber. The samples were from the fills of several square troughs, representing a sample of a much larger number, from an early phase in an 18th/19th century tannery. The aims of the assessment were to assess the presence, preservation and abundance of palaeoenvironmental remains in the sample. The environmental remains are quantified in Tables 1 (waterlogged samples) and 2 (animal bone).

Method

The samples were from waterlogged contexts, therefore 250ml sub-samples were sieved through meshes of 4mm, 1mm and 500µm for the recovery of plant macrofossils. All samples were scanned using a stereomicroscope at magnifications of x10

and up to x100 where necessary to aid identification. Identifications, where provided, were confirmed using modern reference material and seed atlases including Cappers *et al.* (2006).

Wood identification

A section of timber, (0.47m x 0.17m x 0.06m) part of the lining of trough 033 was collected for species identification. The timber was sliced along radial, tangential and transverse sections using a razor blade and then bleached before being mounted on a slide in glycerol and examined under a microscope at x100 and x400. Wood sections were identified to species level using features described by Schweingruber (1978, 1990) and IAWA (1989).

Results

Results of the assessment are presented in Tables 1 (waterlogged samples) and 2 (animal bone). Material suitable for AMS (Accelerated Mass Spectrometry) radiocarbon dating is shown in the tables.

Waterlogged samples

The samples showed good organic preservation with grass, wood, leaf and coarse animal hair fragments (contexts 043 and 050, sample 3 and 4) surviving.

Small fragments of bark and wood were recovered from context 043 (samples 3 and 5). The identification of the bark was not easily made, though on morphological grounds, and in the absence of rounded 'sclerids' it is not likely to be oak (*Quercus*). Many of the bark fragments had a flaky character suggesting that they may be from a coniferous tree.

The pH of the samples were tested with litmus papers in order to identify whether lime was present in the samples. All had a neutral pH, suggesting it was not present.

Insect remains

A small number of heavily fragmented insect remains were present in context 027.

Timber

A timber plank (033) recovered from the trough was identified as pine (*Pinus* sp).

Animal bone

Animal bone was recovered from two deposits (043 and 015). The bone was extremely well preserved

with skin still attached. Elements including horse radius, ulna, femur, scapula, pelvis and tibia were recovered from the secondary fill (043) of trough (033), together with a cow radius. Similarly, horse proximal and distal femur fragments and tibia were present in the basal fill (015) of trough (014).

Discussion

There are few documented examples of tanning pit fills containing the material used in them (Hall *et al* 2003), but detailed contemporary records (Lambert 1905) provide a good description of both glue-making and tanning on the site. Evidently the two different processes required both heat and chemical input to render down the carcass and stabilise the leather.

The timber lining of the troughs was identified as pine. Fragment of pine bark and fragments of wood from the environmental samples are also thought to be of that species.

Although the excavator indicated that the basal deposits in all of the trenches revealed a similar sequence, nothing from the samples is specifically indicative of their use. The samples contained grass, animal hair, degraded wood and occasional leaves all of which would have been expected on the floors and surfaces around a site dealing with animal products. They are, however, perhaps more indicative of the sites' dis-use.

Of note were a number of large horse bones in one of the troughs. Horses are, of course, often linked with glue manufacture so it is perhaps not surprising to find some examples of these around the site. However, horse skin is also used in certain specialised leather goods such as 'Shell cordovan' and this cannot be discounted.

7 FINDS ASSESSMENT

by Julie Franklin

The assemblage was characterised by few but large finds, 14 finds, with a combined weight of 42kg. All were of 19th or 20th century date, though few could be finely dated within this period. Most of the finds were found in the fills of a number of wooden lined troughs found at the site.

Some finds were potentially related to the use of the area as a tannery. A large metal weight found in the basal fill of trough (011) (012) might have been part of a set of weights, or a counterweight for some piece of machinery or lifting apparatus. Its weight of 37.2kg suggests the latter. This equates to approximately 82lb, but does not convert to a regular number of stone or proportion of a hundred weight (5 stone 12lb or 0.73cwt). Though it may have lost or gained some weight after its deposition due to corrosion, it is unlikely to have dropped the kilogram difference from 0.75 cwt. Vivianite (a deep blue corrosion product) attached to its surface is characteristic of iron corroding in waterlogged conditions with protein-rich substances such as meat and leather.

A large leather strap was the other find from the basal fill of the troughs, this time from trough (014) (015). It was made from several lengths stitched together with thongs. And is over 3m long, and 55mm wide. Holes along its length suggest its function required its length to be adjusted, though its precise function is not clear. It is too large for horse harness and may have been used for suspension or as a drive belt for machinery. It may have been used in the factory, and/or been a product of it.

A baling hook from the secondary fill of trough (033) (043) may also have been related to the use of the building. These were used for moving large objects such as boxes, timber and hay bales, and it is possible to imagine a use in a tannery for moving items such as bundles of hides

Other finds from the secondary fill of the troughs (043) include sherds from a large stoneware jar, two large pantile sherds and a possible wooden tool handle. There was also a milk bottle marked for Murchie's Creameries, a dairy based in Lochrin Place, Edinburgh. The company was trading between 1903 and 1983 and was a household name in Edinburgh (Glasgow Herald 1983) and the bottle must therefore have been deposited in the 20th century. The other finds are consistent with deposition in the early to mid-20th century, though several might be a little earlier.

8 DISCUSSION

Records of a mill at Gorgie exist as far back as the 13th century, however no features recorded within

the DA are likely to date to any earlier than the 1800s. All of the features recorded within the DA were thought to be associated with the tannery and glue factory of J. & G. Cox which was established in 1798. Although many of the features recorded could not be precisely dated, general phasing of the site resulted in four phases being attributed to the site.

Phase 1- Early 19th Century (GORE14/004 Industrial Phase 1)

The presumed earliest activity within the DA was the construction of wall (006), lade (009) and culverts (007) and (047). Due to a lack of detailed mapping in the area pre-1855, it is hard to confidently phase these features but it was thought they were connected with earlier mill activity that was later altered.

The lade appeared to have multiple phases of development with a variety of building material indicated alterations and additions. The construction suggested it was an open lade originally with bridges crossing it. At a later, unknown date, the lade was fully capped; most likely in the 20th century.

Rendering on the internal face of wall (006), behind clay (002), was indicative of the wall being erected prior to the installation of the pits. There was a suggestion of an internal wall keyed into (006) that had been removed, perhaps in a building restructure to allow for the construction of the tanning pits. The pits, however, respect the line of the earlier wall so may have utilised the wall as a boundary.

James Knox's Map of the Shire of Edinburgh in 1816 depicts a rectangular structure aligned north-east to south-west as well as another building directly to the north; both connected to the lade. Although it is unclear what buildings these relate to, it could be that wall (006) would have been a part of these and represent the first buildings of Cox's factory. Benjamin Rees Davies' Map of Environs of Edinburgh in 1838 also illustrates buildings and activity on the north side of Gorgie Road which is likely connected with this earlier phase of the factory; perhaps by then the tanning pits were present on the site.

The network of pits spans a large majority of the DA and are typical of tanning pits. The pattern of

pits does not fit in with any of the detailed mapping available for the area. Even by OS map of 1855, buildings are present on the site which would not have housed the expanse of the tanning pit network. It is therefore presumed that the pits are associated with the earliest years of Cox's tannery.

Although Cox was also known for glue manufacture, no evidence of lime (that was used in the glue manufactory process) was present within the soils within the pits (See Section 6 - Environmental Assessment) and the residual soils were more suggestive of tanning.

Various contemporary tannery's in Edinburgh are known including Dean Tannery; in close proximity to Gorgie Mills, J Hewit And Sons Ltd Tannery in the city centre and White, Burns and Co Tannery in the Broughton Area. However, there is little knowledge on the tanning process used by these tanneries in the 19th century.

The structure of the pits is also suggestive of Cox's method of tanning described in his patent of 1844;

'My second improved process of tanning...can be easily applied in existing tan yards...The manner in which I prefer to tan ...is to sew up the hide or skin... but leaving the aperture for the introduction of liquor at the head into which I introduce and fix a rigid tube connected with a cistern about two feet above the level of the pit. The pit or cistern into which the hide or skin is to be immersed should be sufficiently deep to admit of its being totally submerged in liquor without or merely touching the bottom. The connecting tube through which the liquor is to be introduced into the bag should be some inches in diameter...so as to admit of a plunger or rod being introduced into it occasionally to stir up the bark or sediment that may lodge at the bottom parts.' (Cox, 1884, United States Patent Office)

The patent itself suggests that Cox had been tanning for quite some time to establish these new methods outlined in patents. It may have been that the tanning pits recorded within the DA were an example of early tanning by Cox that was established and altered over a 50 year period before restructuring of this side of the mills took place.

The tanning method using timber lined pits is not individual to Cox's manufactory. Archaeological evidence from tanneries in London have similar results to that seen at Gorgie, but on an even larger scale with, in one case, a network of over 80 timber

lined square pits present (Guarino & Harris, 2009). Almost identical to Gorgie was a tannery in Tower Bridge Road in London where a number of timber and later, brick lined pits were recorded (Langthorne, 2009). The timber pits were of the same construction as those at Gorgie and included the vertical timber in the corner of the pits (Illus. 10). The vertical timbers likely represent a type of liquid management or could be where a pipe was inserted as demonstrated in Cox's Patent drawing of 1844 (Illus 12) where two pits are used side by side with another tank at a higher level (removed or not surviving).

The fills within the pits most likely post-date their use; perhaps a final use for tanning and then a backfilling. The amount of animal bone present was likely the result of surrounding material around the pits falling in; there wasn't large enough amounts within the deposit to indicate a process taking place within the pits involving the actual carcasses of animals being immersed in these pits. The majority of the animal bone recovered was of horse (See Section 6) with only one cow radius present; suggesting a preference to horse hides.

It is likely that the tannery and glue manufactory would have utilised every aspect of the animal;

"In the manufacture of high-class glues, much discretion is required in blending the various waste products from the tannery, and experience has shown that a mixture of hide, ear, and face clippings...yields the best glue" (Lambert, 1905, 38).

It is thought that this network of pits was likely put out of use by 1855, when the OS map shows a different layout of structures in the area. The presence of the 20th century milk bottle within the upper fill of one of the pits may suggest a later date for the pits going out of use. However, as this came from the upper portion of the backfill of pit (029) on the NE side of the DA, directly below walls (024) and (025), it is thought that it may be intrusive into deposit (043) during the construction of these later 20th century walls.

Phase 2- Mid to late 19th Century (GORE14/004 Industrial Phase 2)

Structural features presumably connected with that depicted on the 1855 and 1895 OS map were uncovered within the southern half of the DA.

However, the lack of detail on the mapping, again, restricts interpretation.

A mill building, still present today on the SE corner of the DA, had been partially demolished. The foundation recorded on the southern LOE related directly to this mill building and is the foundation of the demolished portion. The building is most likely to relate to the larger factory structure that begins to appear on the 1855 OS Map and continues to be present throughout OS mapping.

Although the mapping of 1855 and 1895 does not give precise detail to the buildings it depicts or internal divisions within buildings, there are some features that can be matched. The wheel pit (081) recorded on the eastern LOE, along with the large stone block support (065) relate to the 1895 OS Map which shows the eastern branch of the lade running into and along the north side of the building. As the wheel pit was orientated NE-SW, it was thought to relate to this as the turn in the lade on the map may be a depiction of location of the wheel pit. Perhaps the large stone block was a support for machinery associated with the wheel pit.

The stone structure (070) was phased by construction technique and was thought to be contemporary with the wheel pit and stone block. The structures location would have been contained within the large building depicted in the 1855 OS Map onwards. Their construction can be compared with that of settling tanks which are photographed within the RCAHMS archive. Although the photos in the archive are of a later date, it is likely that a similar construction was part of the earlier processes within the DA. The settling tanks would have been used to remove solids from the waste water from the washers before the water was run into the town sewers (RCHAMS website, SC710620, accessed 01.12.14). The location of (070) on edge of the western branch of the lade may suggest the lade and any associated sewers in the area were utilised for the settling process.

There was a void in the evidence for buildings of this phase in the northern half of the DA which are depicted on the OS Maps. As the tanning pits have not been truncated until later foundations (see Phase 4), it can be presumed that any buildings that were in this area had a fairly shallow foundation and have been removed prior to the later construction in the 20th century

Phase 3- Early 1900s

Structures relating to the factory depicted on the 1905 OS Map were uncovered during the excavation. Again, detail is not shown on this map but it is clear a restructure has taken place with the removal of some buildings and the alteration of others.

Structure (066) was built over wheel pit (081) and the foundation of wall (006)/(074), and therefore was thought to be part of the later alterations. The construction technique also differed from earlier structures, with rougher masonry and more random assembly. The culvert (069), covered by brick floor (067), ran through this structure and was directly associated with the eastern branch of the lade. If the settling tanks were still present in the factory at this time, the culvert may have joined the tanks to the lade; however this remains enigmatic.

The stone steps and wall block inserted over the wheelpit were difficult to phase but perhaps an alteration made at the same time as the introduction of structure (066). It was thought that the wall block was perhaps representative of the capping of the lade into a culvert and may be of slightly later date than the insertion of the steps.

Phase 4- Mid 1900s onwards

A second substantial reconstruction of the northern half of the DA is visible by the 1935 OS Map. Walls (024), (025) and (059), all constructed on a concrete foundation, are most likely to be part of this reconstruction (Illus 5). Associated floors on different levels indicate the many changes that took part within the buildings over the period.

10 CONCLUSION

Excavation of the site of the proposed development at 396 Gorgie Road, Edinburgh revealed archaeological remains dating from the 19th and 20th centuries.

It has been clearly shown by this archaeological investigation that, despite some truncation due to the various changes in Gorgie Mills in the 20th, the earliest phase of Cox's tanning and glue manufactory is well represented on the site in the form of tan pits.

The presence of natural geology seen directly beneath the tanning pits indicated that no potential deposits of an earlier date have survived in the development process from the 18th century onwards.

Future investigation to the south of the DA may identify further aspects of the development of Gorgie Mills throughout the 19th and 20th Century.

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NT27SW 8 Gorgie House

NT27SW 3126 Gorgie Mills, Grain Mill

NT27SW 3428.02 Gorgie Mills, J and G Cox Ltd, Old Store

NT27 SW 3428.01 Gorgie Mills, Ivy Cottage, Gate
Keeper's Cottage

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plans of Cox's Glue Works CSE 1920/93/1-12

Ian G Lindsay Collection: Sketches of architectural
detail within Gorgie House IGL 1920/8/1

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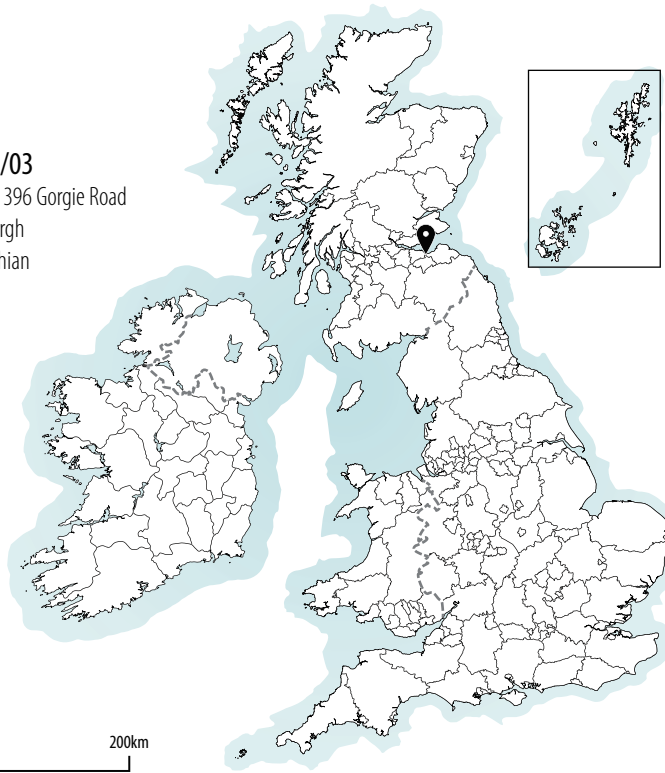
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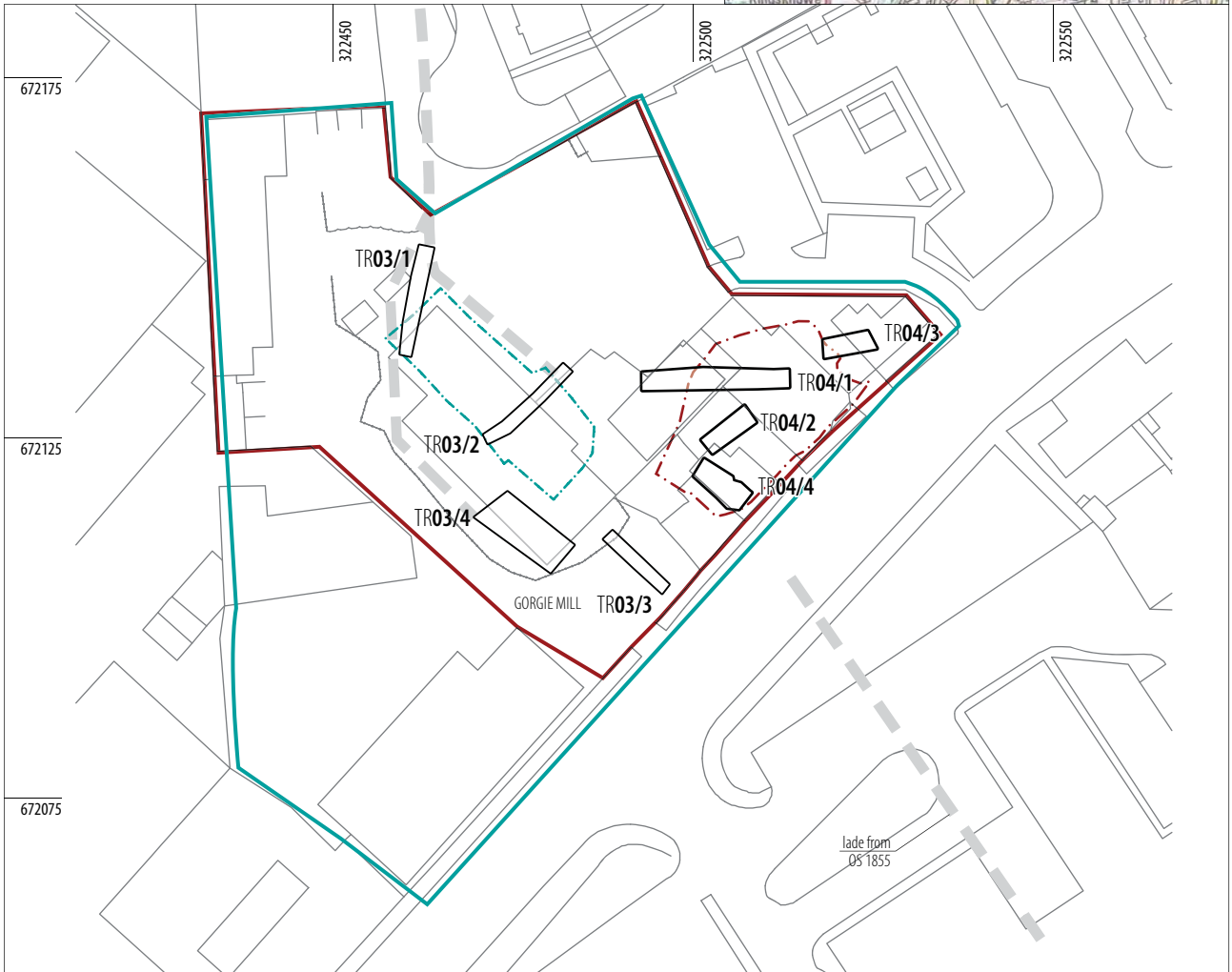
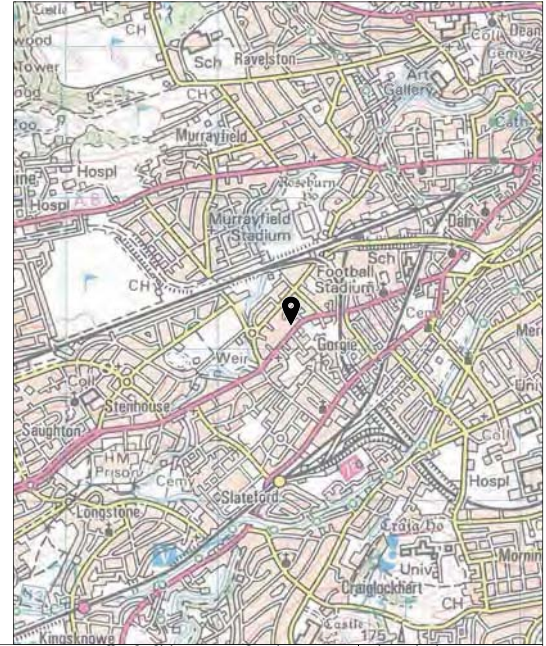
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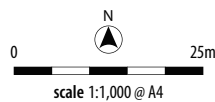
GORE/03
land at 396 Gorgie Road
Edinburgh
Midlothian



0 200km



- KEY**
- GORE/03 site boundary
 - GORE/04 site boundary
 - GORE/03 limit of excavation
 - GORE/04 limit of excavation
 - trial trench location



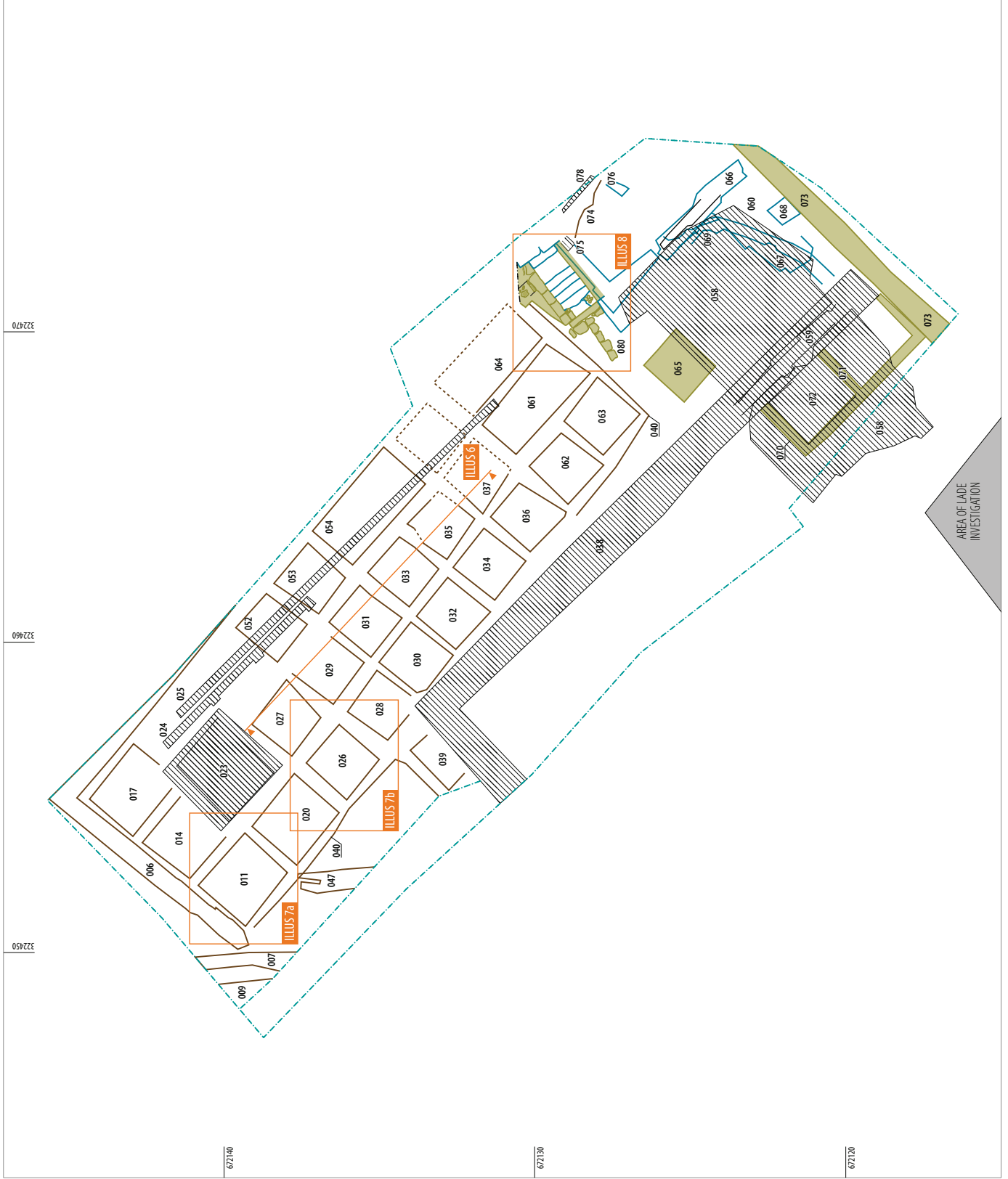
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ARCHAEOLOGY

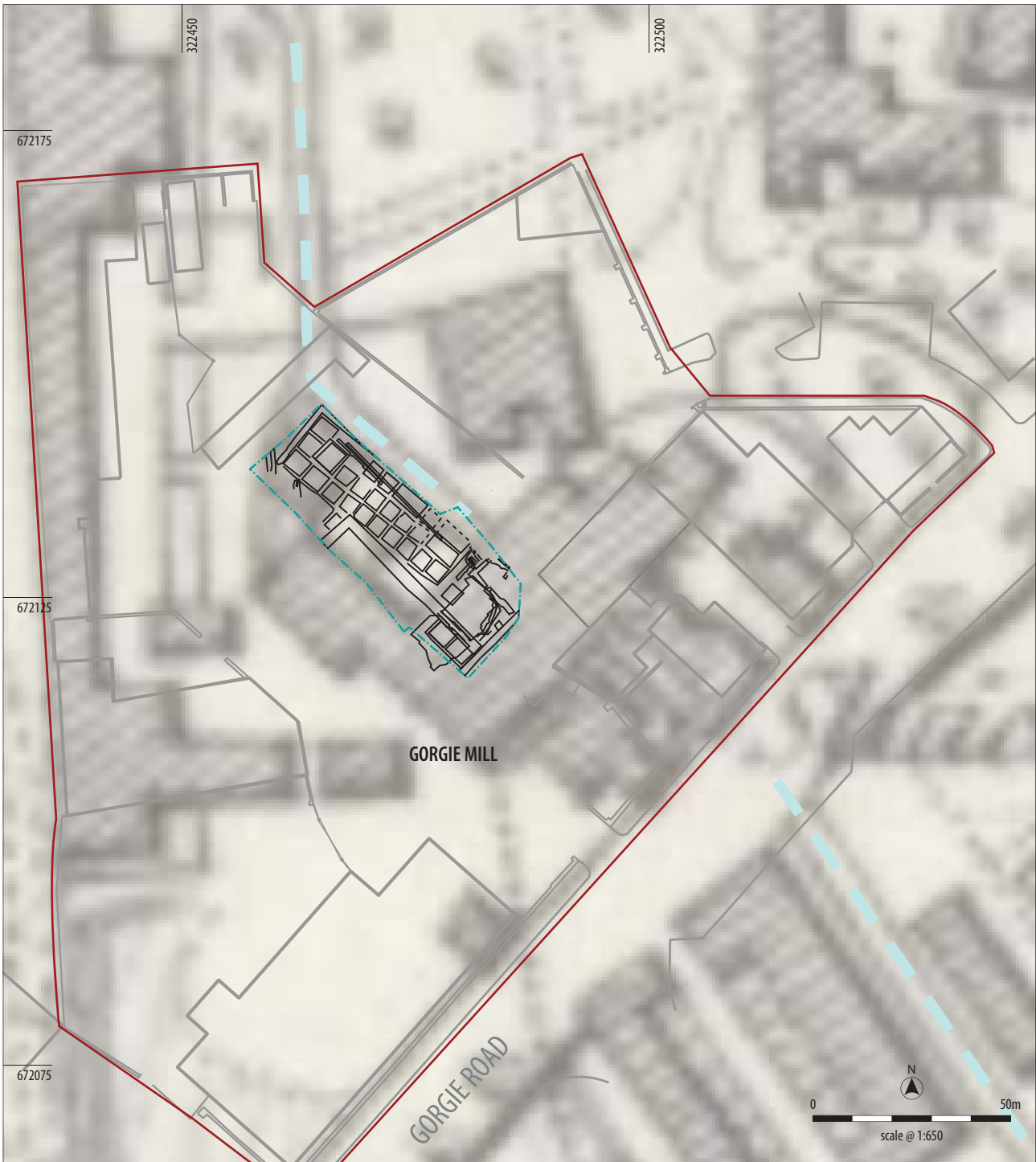
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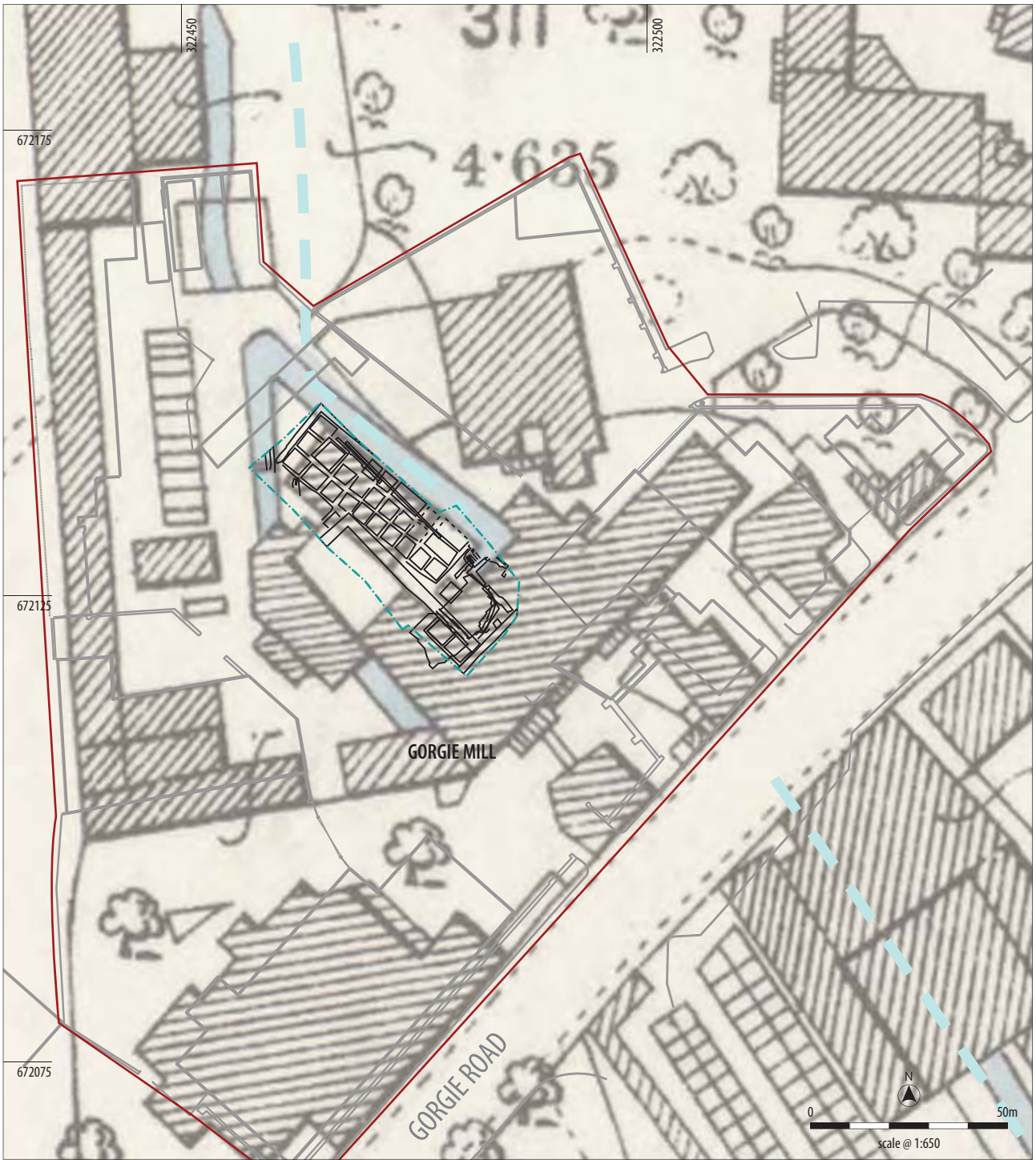
www.headlandarchaeology.com

ILLUS 1
Site location

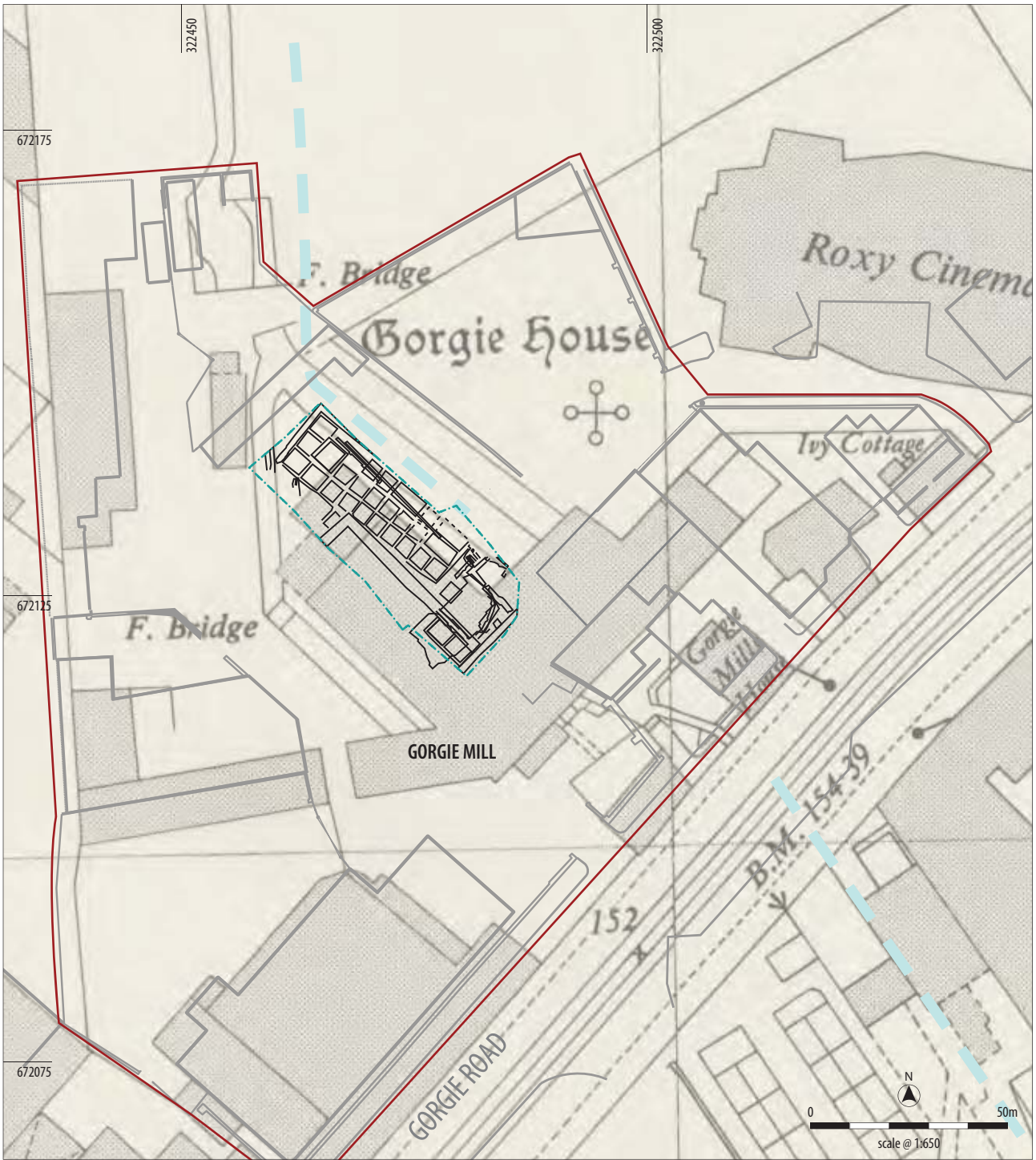




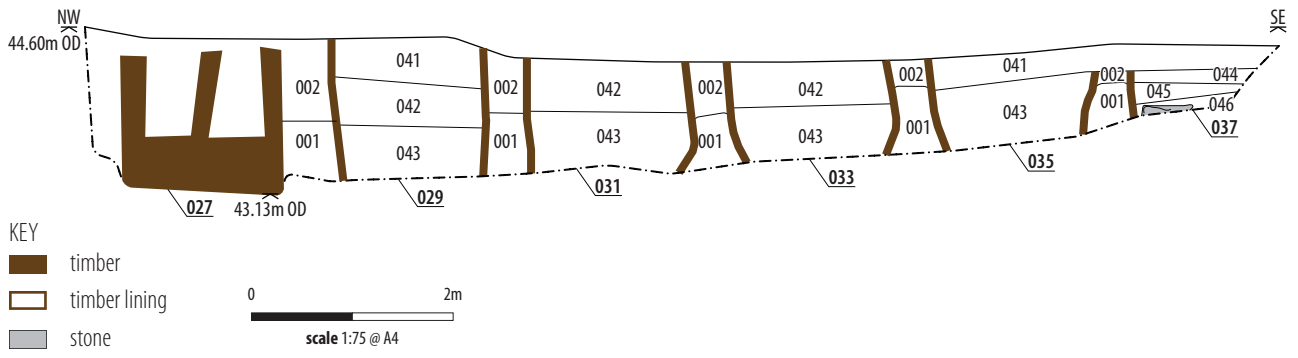
ILLUS 3
Site plan overlay on 1855 OS Map



ILLUS 4
Site plan overlay on 1895 OS Map

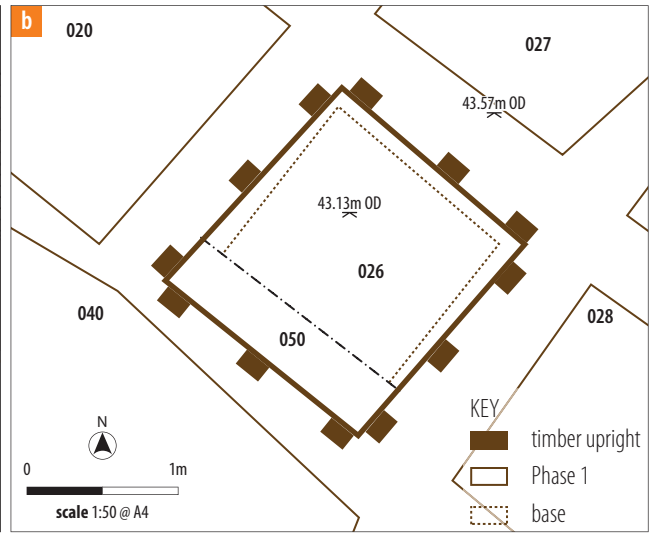
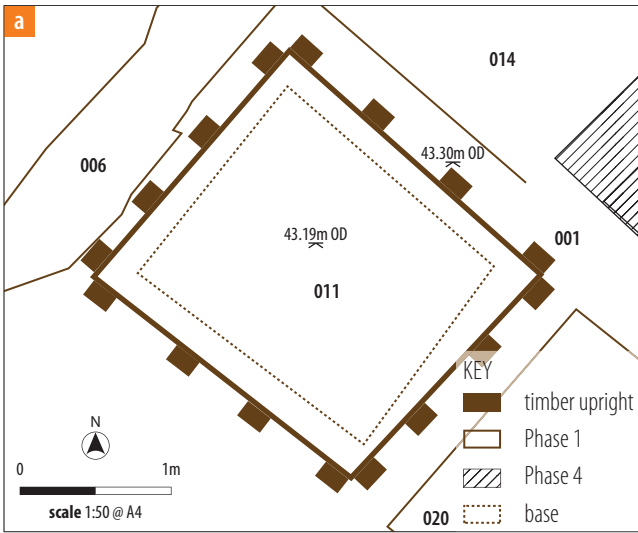


ILLUS 5
Site plan overlay on 1944-63 OS Map

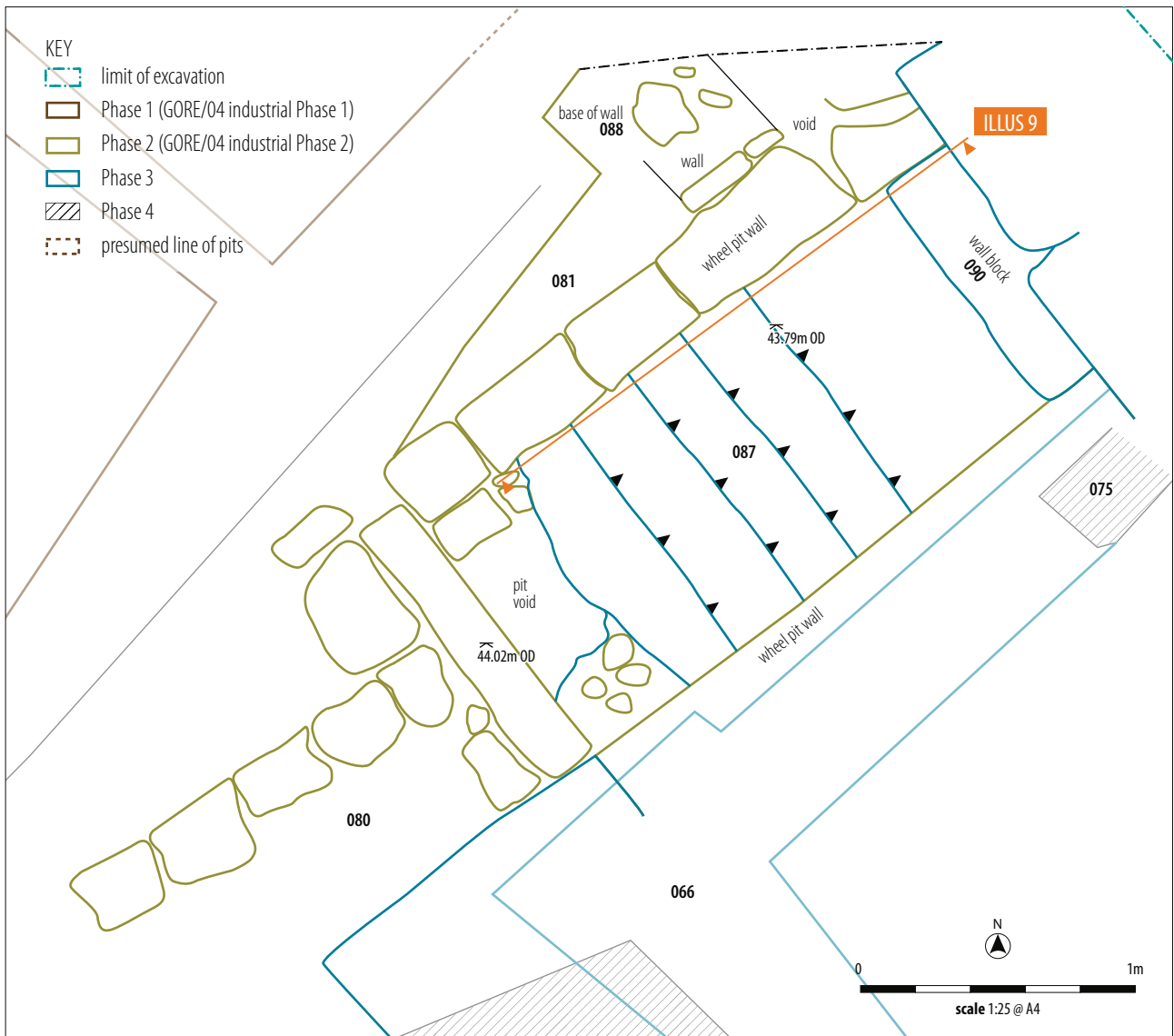


ILLUS 6

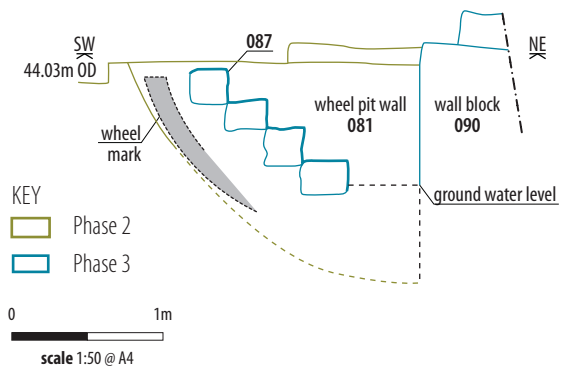
SW facing section through pits (027), (029), (031), (033), (035) and (037)



ILLUS 7
Detail of timber lined pits (011) and (026)



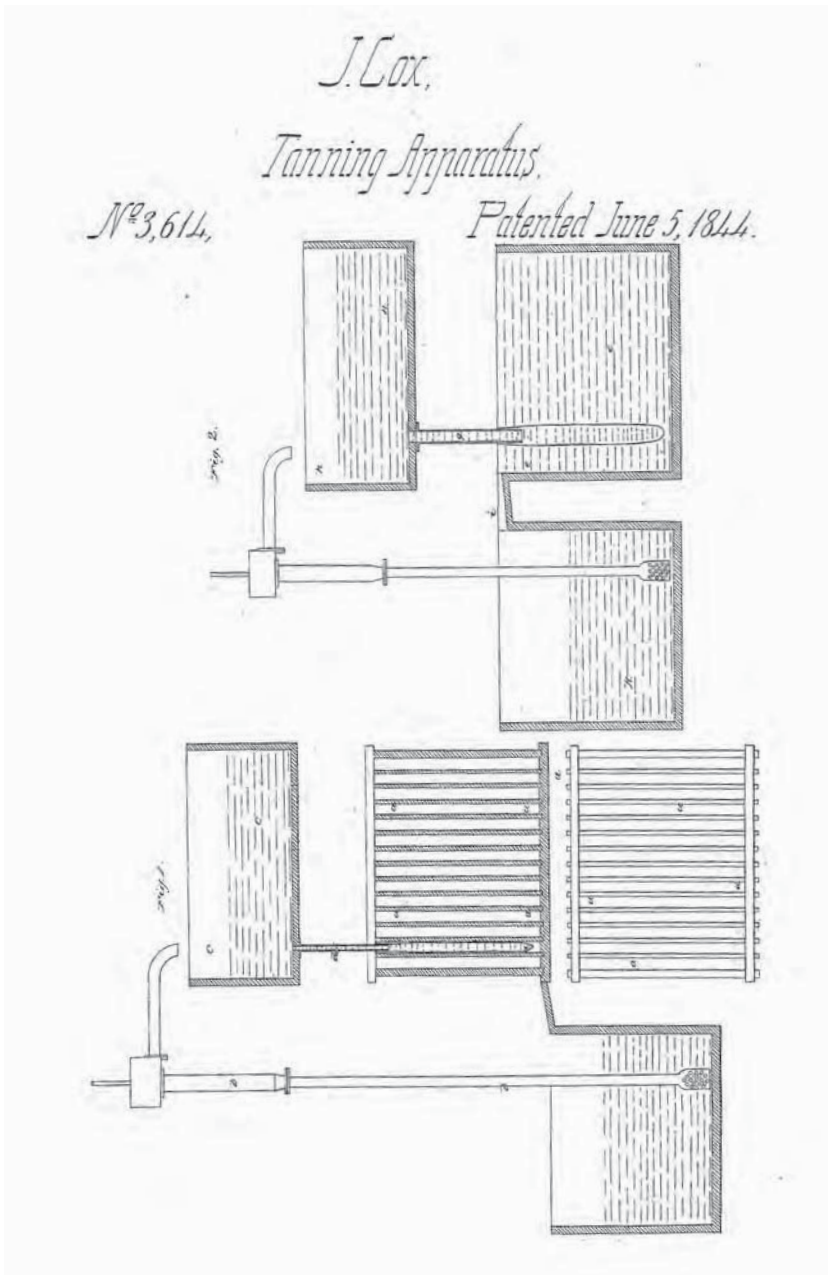
ILLUS 8
Plan of wheel pit (Phase 2) with later steps (Phase 3)



ILLUS 9
SE facing section of wheel pit (081)



ILLUS 10
Timber-lined tanning pit from Tower Bridge Road, London (top);
Pit (011) and (022) from Gorgie Road with similar construction (bottom), vertical timbers encircled



ILLUS 11
John Cox's 1844 Patent illustration



ILLUS 12
Projection showing NW face of ledge on western boundary of site

PLATE 1

Pits (011), (014) and (017), looking NE



PLATE 2

Tanning pits (pre-ex), looking NW



PLATE 3

Tanning pits (pre-ex), looking SE



PLATE 4
Tanning pits (post-ex), looking NW



PLATE 5
SW facing section of pits



PLATE 6
Culvert (007)



PLATE 7

Base of wooden frame of tanning pit



PLATE 8

Tanning pit (052), looking NW



PLATE 9

Pits (052), (053) and (054), looking NNW



PLATE 10

SE facing section of tanning pits below (024) and (025)



PLATE 11

Wall (006), west of pits (052), (053) and (054)



PLATE 12

North end of excavation area, looking S



PLATE 13

Profile of lade within Trench 4



PLATE 14

SW facing elevation of lade wall (Trench 4)



PLATE 15

Floor (058)



PLATE 16
Tanning pits (061), (062) and (063)



PLATE 17
Culvert (069)



PLATE 18
Structure (071/072), looking NW



PLATE 19

Structure (066), looking NW



PLATE 20

Structure (066) – looking through to culvert (069)
opening into lade



PLATE 21

SE facing section through pit (061)





PLATE 22

Steps (087) within wheel pit



PLATE 23

Wheel pit (080/081), looking NE

12 APPENDICES

Appendix 1 – Site registers

Context register

Context	Area	Description
1	A	A silty blue/grey clay forming a sealing deposit between the timber-lined troughs.
2	A	A silty brown clay overlying clay layer 001 and sealing the upper part of the timber-lined troughs
3	A	A dark grey/black compact clayey sand deposit with regular small stone inclusions. Thought to be geological
4	A	An orange brown compact stone rich sand. The stones are rounded indicating this is an alluvial deposit. Recorded across the site where it has not been cut in to.
5	A	Layer of demolition rubble/overburden overlying large areas of the site
6	A	Remains of a stone wall forming an L shape along the northern limits of the excavation area. The wall was constructed of roughly squared stone bonded with a yellow lime mortar. It was aligned SW-NE tuning 90 degrees to their SE at the NE end. The wall stood to over 1m in height but included a number of alterations. The SW-NE wall had been truncated at the SW end by a later mill lade and possibly by a stone-lined culvert 007. Close to the NE corner an internal partition wall has been removed leaving a series of holes in the elevation. The base of the NW-SE aligned wall had been cut into in order to fit in the timber-lined troughs indicating these were a later phase. The wall also included a short length of projecting foundation indicating evidence of additional support being required on this part of the wall. The top of the wall had also been capped with a concrete base for a later phase brick wall. Possible remains of an early mill building.
7	A	Remains of a stone-lined culvert aligned N-S close to the NW corner of Area A. The culvert follows the line of a lade. It was unclear if this truncated wall 006.
8	A	Remains of a stone wall abutting the N side of 006. Only a single stone was visible aligned N-S and its function was unclear.

9	A	Intermittent remains of a N-S aligned stone wall representing one side of a mill lade. This was only seen in the LOE section making its function uncertain.
10	A	Lower fill of mill lade represented by wall 009. This was only seen in plan so the depth was unknown
11	A	A square timber-lined trough formed of a series of horizontal planks attached to a series of uprights (four to each side measuring 0.13m x 0.08m) attached using timber dowels and very occasional handmade nails. The base was of similar construction with timber planks attached to three horizontal beams forming a well-sealed trough. The trough was approximately 2.2m and 0.3m deep, although the original depth of the trough was thought to be over 1m. The whole trough was them sealed to the outer edge by a layer of blue clay (001). Trough 011 also included a series of angled timber planks along the edges at the base of the trough. These angled planks included a series of small holes thought to be for attaching netting. The trough had two fills, 012 at the base and 013 above.
12	A	Basal fill of trough 011. A mid yellowish brown wet clayey silt 0.05m thick below 013
13	A	Upper fill of trough 011. A black course silt with larger gritty lumps along with timber animal bone and a large lead weight.
14	A	A timber-lined trough similar to 011 to the west and 017 to the east. Part of a series of troughs demarcated by wall 006 but on a slightly different alignment. The construction of the trough was similar to 011 including the angled planks along the bottom edges. It was also truncated by concrete foundation 023 in the SE corner. It was filled with 015 and 16
15	A	Basal fill of trough 014. A mid yellowish brown wet clayey silt 0.05m thick below 016
16	A	Upper fill of trough 014. A black course silt with larger gritty lumps along with timber animal bone and broad leather strips
17	A	A timber-lined trough similar to 011 located to the east of 014. Part of a series of troughs demarcated by wall 006 but on a slightly different alignment. The construction of the trough was similar to 011 and included the angled plank with holes. It was filled with 018 and 019
18	A	Basal fill of trough 017. A mid yellowish brown wet clayey silt 0.05m thick below 019
19	A	Upper fill of trough 017. A black course silt with larger gritty lumps along with timber animal bone and broad leather strips
20	A	A timber-lined trough similar to and located to the south of 011 and north of 026 measuring 2.20m x 1.8m. This trough was not fully excavated. Filled with deposit 043
21	A	Basal fill of timber troughs comprising a soft wet yellowish brown silt.
22	A	Upper fill of timber troughs comprising a black course silt with larger gritty lumps along with timber fragments and animal bone

23	A	A large concrete foundation 2.6m x 2.2m and 1.7m tall located to the NE side of Area A immediately W of wall 024. The foundation had a 0.25m step 0.7m below the top and must have been shuttered as the sides were fairly smooth. It was not clear if the foundation preceded or superseded the wall. The base of the foundation truncated a number of timber troughs.
24	A	An N-S aligned brick wall sat on a concrete foundation and located immediately E of foundation 023. The wall was constructed of frogged red brick stamped WHITEHILL (Mid-19th C) standing to 6 courses high in an English Garden Bond with a cement bonding. The wall included integral brick buttresses to the W side 1.66m apart. The wall cut layer 002 and had a back fill of grey black loose silt with stone and brick fragment inclusions. Wall 025 was constructed over the top of the concrete foundation of 024.
25	A	An N-S aligned brick wall sat on a concrete foundation and located immediately E of wall 024 at a slightly higher level being over the foundation of the earlier wall. The red frogged bricks were stamped HBC (Possibly BBC circa 1930s).
26	A	A timber-lined trough similar to 011 located to the S of 020 and W of 027. The trough was 1.7m E-W x 1.64m N-S and 0.5m deep. The side panels were supported by three uprights to each side and the trough included angled panels at the base and had a single back silty fill 022
27	A	A timber-lined trough similar to 026 located to E of 026 and N of 029. The trough was 1.62m x 1.62m with the W facing section indicating the trough would have been 1.2m high. The basal fill was a black silt 043 0.25m deep. The construction of the trough showed that the N-S aligned side panels overlapped the E-W aligned panels. No angled panels were recorded at the base.
28	A	A timber-lined trough similar to 026 located to W of 029 and N of 030. The trough was 1.62m x 1.62m and 0.2m deep filled with 043. The SW corner was truncated by concrete foundation 038
29	A	A timber-lined trough similar to 026 located to E of 030 and N of 031. The trough was 1.68m N-S the east edge not being fully exposed. The trough had 3 fills exposed in the W facing section 042, 043 & 050.
30	A	A timber-lined trough similar to 026 located to W of 031 and N of 032. The trough was 1.70m E-W x 1.62m N-S and 0.2m deep. The trough was not fully excavated.
31	A	A timber-lined trough similar to 026 located to E of 030 and N of 033. The trough was not initially fully exposed but was 1.62m N-S with two visible fills 042 0.4m deep above 043 (not excavated)
32	A	A timber-lined trough similar to 026 located to W of 033 and N of 034. The trough was 1.7m N-S x 1.62m E-W. The trough was not fully excavated but had no angled side panels at the base and was 0.3m deep through mixed fills of 043 and 050.

33	A	A timber-lined trough similar to 026 located to the E of 032 and N of 035. The trough was 1.62m N-S but not fully exposed to the E. It had 3 fills 042 0.33m deep over 043 0.45m deep and 048 0.1m deep at the base. No angled side panels were recorded.
34	A	A timber-lined trough similar to 026 located to the W of 035 and N of 036. The trough was 1.72m E-W x 1.6m N-S and 0.4m deep filled with a black silt 043 overlying 0.05m of brown silt 050. No angled panels were recorded at the base and as with the others the N-S aligned side panels extended beyond the E-W aligned panels
35	A	A timber-lined trough similar to 026 located to the E of 034 and N of 037. The trough was not fully excavated but was 1.65m x 1.65m and 0.6m deep. It included an upper fill 042 0.4m deep over 043 0.4m deep
36	A	A timber-lined trough similar to 026 located to the W of 037 and S of 034 at the S extent of Area A. The trough was not fully excavated but was 1.64m x 1.64m filled with a black silt 043 0.34m deep. No angled panels were recorded at the base.
37	A	A timber-lined trough similar to 026 located to the E of 036 and S of 035 at the S limit of Area A. The trough was not fully exposed as it was at the limit of the excavation but the upper fills (revealed in the section) indicated that it had been truncated by modern service pipes as the fills 041, 044 045 & 046 were different from the other troughs.
38	A	A large L-shaped concrete foundation to the SW side of Area A. The foundation was 1.5m wide and 1.6m deep. The S end abutted the demolished mill building wall 073 and the N end turned to the W continuing beyond the limit of excavation. The foundation truncated a number of timber troughs and was also constructed over the E walls of a stone basement 070 close to the S end. The foundation supported a brick wall 059 associated with floors 058 and 060
39	A	Remains of a timber-lined trough similar to 026 located to W of 028 and mostly truncated by foundation 038 to the S. The trough was 0.9m E-W and 0.4m deep and included angled panels at the base with two fills recorded 050 below 0.1m of 043.
40	A	A construction cut representing the limits of the timber troughs forming an L shape cut enclosing troughs 011, 020, 026, 028 and 039. It cuts the natural geology 003 and is filled with blue clay 001
41	A	Upper fill of troughs recorded in Section A along the W extent of Area A. The fill was a very mixed deposit of dark brown silt, brick, and stone in a loose friable matrix. Recorded in troughs 027, 029, 031, 033, 035 & 037
42	A	A loose fill of dark reddish brown silt with frequent small stone, shell and bone inclusions. Recorded below 041 and above 043 in troughs 029, 031, 033, 035 & 037 between 0.4 and 0.5m deep formed of a re-deposited backfill/levelling layer.

43	A	A dark brown/black silty clay deposit recorded in the majority of the troughs forming a secondary fill associated with the use of the troughs. The fill included animal bone, timber, tools etc.
44	A	A dark brown loose silt deposit recorded in trough 037. The deposit is below 041 and above 045 forming a layer of disturbed ground possibly associated with the laying of a service pipe
45	A	A deposit of yellow rubble stone below 047 and over 046 within trough 037 indicating an area of disturbed ground associated with the insertion of a modern service pipe.
46	A	A black silt with timber and stone inclusions within trough 037 indicating the remains of the original fill that had been disturbed possibly due to fills above. The base of this layer was not exposed in the section.
47	A	Remains of a stone-lined culvert aligned NE-SW located to the NW corner of Area A, The culvert was truncated by cut 040 indicating it was earlier phase than the troughs. IT was 0.6m wide and 0.25m deep and 1.8m long on a similar alignment to culvert 007 to the N.
48	A	Cut for the stone-lined culvert as seen in the LOE E facing section. The cut was steep cutting the natural geology and filled with 047 and 049.
49	A	A compact orange brown gravel rich silty clay forming the backfill to culvert cut 048.
50	A	A mid yellowish brown soft silty clay deposit forming the primary fill of many of the timber-lined troughs. The fill was very homogeneous and gelatinous and usually between 0.1 and 0.05 m thick.
51	A	A layer of mixed clay and sand with brick, stone and demolition material forming a deposit of made ground/overburden above 049 as recorded in the E facing section of the LOE
52	A	A timber-lined trough similar to 026 located to the E of 029 and N of 053 and close to stonewall 006. The trough was 1.7m E-W x 1.6m N-S and 0.25m deep with only the base fill recorded a brown silty clay 050. No angled panels were recorded at the base.
53	A	A timber-lined trough similar to 026 located to the E of 031 and N of 054 close to stonewall 006. The trough was 0.7m E-W x 1.62m N-S and 0.2m deep. The internal sides included angled timber panels with two rows of 12 holes inserted in each side.
54	A	A larger trough that seemed to be lined with lead sheets as no timber side panels were present although very little of the lead lining survived. The trough was located to the E of 033 and 035 and S of 053. It was 3.47m N-S x 1.74m E-W and included a timber floor that had been removed in the central part of the trough. No upright timbers were visible and the trough was 0.3m deep filled with a mixed black silt similar to 043.

55	B	Stone walls of a lade located to the W of the excavation area. The walls were constructed of random rubble walls 0.8m tall and aligned N-S. No bonding material could be seen. The lade was 2.15m wide and the exposed walls were 0.2m wide. The lade was filled with gravel 0.57m deep and constructed over a grey clay natural. The top of the walls had been capped with a brick cover 0.56m deep although further to the N within the lade a stone capped roof at a slightly lower level could be seen. No floor surface could be seen although water ingress made this difficult to determine.
56	B	Arched brick capping/roof to the mill lade located to the W side of the excavation area. The roof sits over stone walls 0.55m high with brick headers showing in section.
57	B	Primary fill of the mill lade 055 comprising compact orange gravel and clay with a mix of 20th C pottery and glass (not recovered) artefacts. The fill was approximately 0.3m deep although water ingress made it difficult to record accurately. Material resulted from the silting up of the lade.
58	B	A large concrete floor divided in two by brick wall 059 with a flat dimpled surface. The floor seemed to be constructed of large concrete slabs 2m ² and had a plastic sheet base. This floor was a later phase than wall 059 and was over floor 060.
59	B	An N-S aligned brick wall sat over concrete foundation 038. The wall was constructed of red frogged bricks stamped UFP (or possibly UFF) forming a wall 3 courses wide and 0.8m high. The wall had been bounded by concrete floor 058 but was originally associated with floor 060 to the E side of the wall
60	B	A concrete floor surface recorded 0.3m below floor 058 and forming the external floor level to wall 059. A shallow concave drainage channel formed the western edge of the floor as it abutted the brick wall 0.5m above the base of the wall.
61	B	Large rectangular timber-lined trough/pit similar in construction to the other troughs but much longer. The feature was constructed of timber side panels and base supported by 6 timber uprights to the sides and three to the ends. The trough measured 3.5m N-S x 1.75m E-W and was filled with a two fills 084 and 085. A lead sealing was noted at the base of the side panels and the whole feature was sealed with blue clay 001. It was located to the W of 064 and W of 062 & 063
62	B	A timber-lined trough similar to the others on site measuring 1.7m E-W x 1.65m N-S and located N of 063 and W of 061. The trough included 3 uprights to each side and was sealed with clay 001.
63	B	A timber-lined trough similar to the others on site measuring 1.7m E-W x 1.65m N-S and located S of 062 and W of 061. The trough was 0.55m deep filled with a single black silty fill 065. The construction included 3 uprights to each side and was sealed with clay 001.

64	B	<p>A second long timber-lined trough located to the E of 061 on the E LOE. The trough measured 3.5m N-S x 1.18m E-W and was 0.6m deep with three fills. The upper fill 086 was a yellow clay forming a sealing layer indicating this trough had probably gone out of use whilst the others were still being used. The edges at the base of the side panels had a lead seal and the sides included 6 timber uprights with 3 at each end all sealed with blue clay 001.</p> <p>A large stone constructed platform 1.84m E-W x 1.7m N-S and 2.1m tall. The platform was located to the E of wall foundation 038 and W of wall 066. The feature was constructed of large roughly squared stones up to 0.72 x 0.14 x 0.2m in size with regular coursing and bonded with a pale yellow lime mortar. The top had been slightly damaged probably during the removal of whatever sat on the platform.</p> <p>Rough stone walls representing the remains of a basement located to the W side of Area B. The wall formed an L shape with the S end abutting the mill building foundation 073. The wall turned to the W at the N end where it was truncated by wall 075 and abutting wall 074. A return wall to the S is represented by wall 076. The wall was up to 2m deep and 0.5m wide. A culvert 069 runs through the wall.</p>
65	B	<p>A floor surface constructed of red frogged bricks of various type sat on a bed of sand. The floor measured 3m E-W x 1.5m N-S although the edges had been disturbed so the full extent was not known. The wall abutted the top of the W side of wall 066 and abutted brick platform 068. The floor may represent a cover after the insertion of the culvert 069.</p>
66	B	<p>A small raised brick platform 0.7m² standing 0.3m high and bonded with cement and possibly associated with brick floor 067.</p>
67	B	<p>The remains of a stone-lined culvert aligned E-W turning to the N at the E end abutting the W side of wall 066 before turning to the E again to run through wall 066 towards the mill lade. Only the base slabs survived with the exception of where the lade runs along the side of wall 066. It did not survive at all within the basement</p>
68	B	<p>A large stone wall forming 3 sides of a basement located to the W side of foundation 038. The basement was 4.8m N-S x 1.9m E-W partitioned into two separate rooms by wall 071. The stone walls stood to a maximum height of 1.2m constructed of roughly squared masonry with a regular coursing and bonded with a pale yellow lime mortar. The S wall abuts mill building foundation 074 and the E wall has been truncated by the foundation 038 with only a small area at the N end still visible. The basement had a stone flag floor 072.</p>
69	B	<p>An E-W aligned stone wall forming a partition wall within basement 070. It was keyed into the W wall of 070 and truncated by foundation 038.</p>
70	B	<p>A flagstone floor for basement 070 formed of large flagstones up to 0.96 x 0.63m in size with a smooth finish.</p>
71	B	
72	B	

73	B	Remains of the N wall of the main demolished mill building standing to a maximum height of 1.2m although the central area was much lower. The wall was 0.85m wide constructed of rubble stone up to 0.85 x 0.27 x 0.25m in size with a stepped foundation close to the base. It was abutted by foundation 038, wall 066 and wall 070.
74	B	Potential remains of a mill building wall also recorded in Area A 006. The N-S aligned wall was located within the basement area of wall 066 and comprised rubble stone wall bonded with lime mortar. It had been heavily disturbed. The exposed wall was 1.2m long and 0.7m wide standing to a maximum height of 1m
75	B	A brick and stone built modification to the E-W aligned stone wall 066. Overlies foundation 074 and abuts 066. It had a cement bond and was 1m long x 0.4m wide and 0.3m high.
76	B	An E-W aligned stone wall possibly forming a dividing wall to basement walls 066. The wall was 2.4m long x 0.3m wide and 1.3 m tall. The wall was in a poor condition and sat over layer 079.
77	B	Sandstone wall recorded in the E wall of Basement 066 overlying wall remains 074 and abutting culvert 069. Constructed of squared sandstone masonry bonded with a lime mortar. The full extent of the wall was not exposed. It was overlain by wall 078
78	B	A stone and yellow fired brick wall laying on top of culvert 069 and stone foundation 077. It was 2m long and 0.6m high. It may relate to the inspection pits for the water course of the lade seen to the E of Area B.
79	B	A levelling material for the construction of the culvert and wall. The deposit comprised a dark brown compact gravel rich clay 0.3m deep below 069 and 076 and overlying the natural geology.
80	B	Remains of a narrow E-W aligned stone wall 1.7m long and 0.39m wide. Only the base layer of this survived and it was thought it may have been a revetment wall associated with wheel pit 081 and possibly stone platform 065. The wall formed an even line to the N side and was uneven to the S side and it was bonded with lime mortar.
81	B	A stone lined wheel pit 1.4m wide with the pit being 1m wide and aligned E-W, The pit was surrounded by a low stone wall bonded with lime mortar. The S side of the wheel pit has a sloping side formed of a series of large stone blocks. The N side wall included a shallow wear mark in the stone edging and the S side had been truncated by wall 066. The pit had been infilled with rubble and a set of steps 087 inserted in to the pit.
82	B	Geological subsoil formed of a compact orange gravel rich sandy clay recorded across Area B
83	B	A compact grey clay forming a layer of geological subsoil recorded below 082 in a number of areas of the site.

84	B	A dark brown soft silt fill recorded at the base of the timber-lined troughs 061, 063 and 064 between 0.05 and 0.1m deep. Below 085
85	B	A black friable clayey silt forming a secondary deposit with timber-lined troughs 062, 063 and 064
86	B	A yellow firm clay deposit forming a sealing layer within timber-lined trough 064.
87	B	Three wide stone steps inserted within wheel pit 081 and set against the outer face of wall 066 - possibly part of the same phase as this wall. The steps measured 1.05m long x 0.28 x 0.23m bonded with cement.
88	B	A cast-iron fixing plate sat on the wall of wheel pit 081, The plate included two pin fastenings and represents part of the wheel pit structure.
89	B	Yellow brick wall lying on top of culvert 069 and foundation 077. Later addition/repair associated with lade inspection put to east of wall.
090	B	Wall block in wheel pit 081

Sample register

Sample	Context	Volume	Description
1	43	2 ltrs	Upper fill from trough 034
2	50	2 ltrs	Basal fill from trough 034
3	43	2 ltrs	Upper fill from trough 033
4	50	2 ltrs	Basal fill from trough 027
5	43	2 ltrs	Upper fill from trough 020
6	50	2 ltrs	Basal fill from trough 020
7	43		2 x Bags of animal bone for ID
8	43		2 x Bags of animal bone for ID
9	33		Timber from trough for id
10	15		Large animal bone for ID

Photographic register

Shot	Facing	Ctxt	Description
001	NE		Pre-condition survey
002	N		Pre-condition survey
003	W		Pre-condition survey
004	NNE		Pre-condition survey
005	NE		Pre-condition survey
006	E		Pre-condition survey
007	N		Pre-condition survey
008	W		Pre-condition survey
009	E		Pre-condition survey
010	SW		Working shot of machine strip
011	NW		Working shot of machine strip
012	SW		Working shot of machine strip
013	W		Slot through trough with rubble material above
014	W		Slot through trough with rubble material above
015	S		Working shot of machine strip
016	NW		Working shot of machine strip
017	N	17	Trough 017
018	NE	17	Trough 017
019	NW	17	Trough 017
020	NW	17	Trough 017
021	NW	17	Trough 017
022	SW	17	Troughs 017, 014, & 011
023	SW	17	Troughs 017 & 014
024	NE	17	Troughs 017 & 014
025	NE	14	Post-ex of Trough 014
026	NW	14	Post-ex of Trough 014
027	NW	38	Section within L shaped concrete foundation 038

028	NE	38	View of concrete foundation 038
029	NE	38	View of concrete foundation 038
030	N	38	View of concrete foundation 038
031	SE	11	Trough 011 post ex
032	NW	11	Trough 011 post ex
033	NE	11	Troughs 011, 014, & 017 post ex
034	SW	11	Trough 011 post ex
035	SE	1	Timber and clay 001 between Troughs 011 & 020
036	E	13	Post in the E corner of Trough 013 + metal stay
037	NE	11	E corner of Trough 011 & N corner of Trough 020 showing angled timbers
038	SW	11	S corner of Trough 011 showing substance on timbers
039	N		Pre-excavation shots of Troughs in Area A
040	NW		Pre-excavation shots of Troughs in Area A
041	SE		Pre-excavation shots of Troughs in Area A
042	SW		Pre-excavation shots of Troughs in Area A
043	W		Pre-excavation shots of Troughs in Area A
044	SW		Pre-excavation shots of Troughs in Area A
045	NW		Pre-excavation shots of Troughs in Area A
046	NW		Pre-excavation shots of Troughs in Area A
047	SE		Pre-excavation shots of Troughs in Area A
048	SE		Pre-excavation shots of Troughs in Area A
049	SE		Clay 001 and 002 SE of Trough 017
050	E	27	W facing section through Trough 027
051	E	28	W facing section through Trough 028
052	E	29	W facing section through Trough 029
053	S	26	View of Trough 026
054	S	26	View of Trough 026
055	SE	26	View of Trough 026
056	E	26	View of Trough 026

057	N	26	View of Trough 026
058	S		Working shots of troughs in Area A
059	S		Working shots of troughs in Area A
060	S		Working shots of troughs in Area A
061	S		Working shots of troughs in Area A
062	S		Working shots of troughs in Area A
063	S		Working shots of troughs in Area A
064	S		Working shots of troughs in Area A
065	S		Working shots of troughs in Area A
066	S		Working shots of troughs in Area A
067	S		Working shots of troughs in Area A
068	S		Working shots of troughs in Area A
069	E		View of troughs at the N end of Area A
070	SE		Working shots of troughs in Area A
071	S		Working shots of troughs in Area A
072	S		Working shots of troughs in Area A
073	N		Working shots of troughs in Area A
074	N		Working shots of troughs in Area A
075	N		Working shots of troughs in Area A
076	E		W facing section at the N end of Section A
077	E		W facing section at the N end of Section A 031
078	E		W facing section at the N end of Section A 033
079	NE		General view troughs
080	N		General view troughs
081	N		General view troughs
082	N		General view troughs
083	N		General view troughs
084	N		General view troughs
085	N		General view troughs
086	N		General view troughs

087	E		View of W facing section A
088	NE		View of troughs to N end of Area A
089	S		View of troughs to S end of Area A
090	W	34	Detail of trough 034
091		33	Detail of trough 033
092		27	Detail of trough 027
093	E	39	Remains of trough 039
094	SW	39	NE facing section through trough 039
095	NW	28	Trough 039 W of 028 and SW of 026
096	E	37	W facing section through trough 037
097	E	35	W facing section through trough 035
098	E	33	W facing section through trough 033
099	E	31	W facing section through trough 031
100	E	29	W facing section through trough 029
101	E	27	W facing section through trough 027
102	SW	47	NE facing section of LOE showing culvert 047
103	NE	47	View of culvert 047
104	N	40	Clay 001 around troughs showing cut 040
105	NW	47	View of Culvert 047
106	NE	7	View of Culvert 007
107	E	7	View of Culvert 007 + wall 006
108	SE		Working shot
109	SE		Working shot
110	SW		Western LOE showing overburden depth
111			Working shots of trough removal
112			Working shots of trough removal
113			Working shots of trough removal
114			Working shots of trough removal
115			Working shots of trough removal
116			Working shots of trough removal

117	N		S facing section showing base of trough and clay 001 below
118	N		S facing section showing base of trough and clay 001 below
119	N		S facing section showing base of trough and clay 001 below
120	S	34	View of natural below trough 034
121	S	35	View of natural below trough 035
122	N	36	View of natural below trough 036
123			Details of trough construction
124			Details of trough construction
125			Details of trough construction
126			Details of trough construction
127			Details of trough construction
128			Details of trough construction
129			Details of trough construction
130	NE		Working shot
131	N		View of pits revealed below walls 024 & 025
132	E	6	Stone wall 006 at E end of LOE
133	NE	6	Pits close to 006 wall
134	NW	53	View of trough 053
135	N	53	Detail of the angled side panels in trough 053
136	NE	53	Location shot of trough 053
137	SE		View of trough 054 to base
138	E		View of trough 054 to base
139	SE	54	Base of trough 054 showing support planks
140	NE	54	View of trough 054
141	E	54	View of trough 054 with wall 006
142	W	54	Detail of lead lining of trough 054
143	N	24	S facing section showing walls 024 & 025
144	N	25	S facing section showing walls 024 & 025
145	S		View of troughs 052 - 054
146	N		View of troughs 052 - 054

147	E	6	General view of inner face of wall 006
148	NE	6	General view of inner face of wall 006
149	N	6	General view of inner face of wall 006
150	E		Internal face of wall 006
151	SE	6	View of wall 006
152	E	6	View of wall 006
153	E	6	Detail of wall foundation 006 showing truncation
154	NE	6	Detail of wall foundation 006 showing truncation
155	SE	6	Detail of wall foundation 006 showing truncation
156	NE	6	View of removed internal wall from wall 006
157	N	6	View of removed internal wall from wall 006
158	NW	6	Wall 006 at the W end
159	E	6	Top of E-W aligned wall 006
160	E	6	Top of E-W aligned wall 006 showing NE corner
161	SE		General site shots of Area A
162	S		General site shots of Area A
163	SW		General site shots of Area A
164	W		General site shots of Area A
165	NW		General site shots of Area A
166	NW		General site shots of Area A
167	N		General site shots of Area A
168	N		General site shots of Area A
169	W		Pre-excavation shot of the mill lade
170	S		Working shots of lade excavation
171	SW		View of mill lade
172	S		View of mill lade
173	SE		View of mill lade
174	S		View of mill lade
175	SE		View of mill lade
176	SW		Detail of lade walls

177	S	Detail of lade walls
178	S	Detail of lade walls
179	SW	Detail of lade walls
180	S	Detail of lade walls
181	S	Detail of lade walls
182	SE	Detail of lade walls
183	SW	Detail of lade walls
184	SE	Detail of lade walls
185	E	East internal wall face of the lade
186	SE	Detail of lade walls and roof
187	S	Detail of lade walls and roof
188	S	Detail of lade walls and roof
189	S	Detail of lade walls and roof
190	S	Detail showing lower stone roof of lade
191	SE	Detail showing lower stone roof of lade
192	SW	Detail showing lower stone roof of lade
193	S	Section through fills of the lade
194	S	Section through fills of the lade
195	SE	Detail of roof edge sat on lade wall
196	E	Detail of lade wall
197	N	lade from above
198	E	lade from above
199	SE	working shot of removal of lade fills
200	SE	working shot of removal of lade fills
201	N	View of lade fills
202	N	Pre-excavation shot of Area B
203	NE	Mid excavation shots of Area B
204	NE	Mid excavation shots of Area B
205	N	Mid excavation shots of Area B
206	N	Mid excavation shots of Area B

207	W	Mid excavation shots of Area B
208	W	E facing section of Area B showing disturbed timber trough
209	S	N facing section in Area B showing made ground W of foundation 038
210	S	N facing section in Area B showing made ground W of foundation 038
211	E	Concrete floor 058
212	W	Concrete floor 058
213	S	N facing section showing concrete floor 058 and brick wall 059
214	S	Detail of brick wall 059 on concrete foundation 038
215	N	Brick wall 059
216	N	View of troughs 061 - 064
217	NE	View of troughs 061 - 064
218	E	View of troughs 061 - 064
219	E	Detail of trough 063
220	N	Concrete floor 060
221	E	Concrete floor 060
222	S	Section showing floor 060 to left and 058 to right
223	S	N facing section of brick wall 059
224	N	View of troughs 061 - 064
225	N	View of troughs 061 - 064
226	N	Timber trough 061
227	NW	View of troughs 061 - 063
228	N	View of troughs 061 & 064
229	NW	View of timber troughs 061 - 064
230	S	Site view with troughs 061 - 064 in foreground
231	S	Site view with troughs 061 - 064 in foreground
232	S	View of troughs 061 - 064
233	SE	View of troughs 061 - 064

234	N	65	South face of stone platform 065
235	N	65	Detail of S face of platform 065
236	N	65	Detail of S face of platform 065
237	W	38	Foundations of concrete foundation 038
238	W	38	Foundations of concrete foundation 038
239	W		E facing section showing made ground to W of foundation 038 in Area B
240	SW		E facing section showing made ground to W of foundation 038 in Area B
241	E	66	Foundations of stone wall 066
242	SE	66	Foundations of stone wall 066
243	E	66	View of walls 066
244	S	66	View of walls 066 showing NW corner
245	SE	66	View of walls 066 showing NW corner
246	W	67	View of brick floor 067
247	N	67	View of brick floor 067
248	W	68	Raised brick base 068
249	S	68	Raised brick base 068
250	N	69	E half of culvert base 069
251	N	69	W half of culvert base 069
252	E	69	View of culvert base stones 069
253	E	69	View of culvert base stones 069
254	W	69	View of culvert base stones 069
255	S	69	View of culvert base stones 069
256	SE	69	Culvert 069 as it turns along wall 066
257	E	69	Culvert 069 as it turns along wall 066
258	NE	69	Section through culvert 069
259	NE		General views of Area B
260	E		General views of Area B
261	S		General views of Area B

262	SW	General views of Area B
263	W	General views of Area B
264	NE	General views of Area B
265	W	General views of Area B
266	N	General views of Area B
267	NW	General views of Area B
268	N	Working shots
269	N	Working shots
270	N	Working shots
271	N	Working shots
272	N	Working shots
273	N	Working shots
274	W	View of N basement area 070 - 072
275	W	View of S basement area 070 - 073
276	N	General view of basements 070 - 072
277	N	General view of basements 070 - 072
278	S	General view of basements 070 - 072
279	SW	General view of basements 070 - 072
280	E	E wall of basement 070 below concrete foundation 038
281	E	E & S wall of basement 070 below concrete foundation 038
282	E	Top of mill building wall 074
283	E	Top of mill building wall 074
284	S	N facing elevation of wall 074
285	SE	N facing elevation of wall 074
286	N	S face of stone platform 065
287	W	E face of stone platform 065
288	NE	General view of platform 065
289	NE	Detail of platform 065
290	E	W facing section showing walls 069, 076 - 078
291	E	Detail of culvert 069 through lade wall

292	N	View of walls 066 & 074 - 075
293	NE	74 Detail of wall remains 074
294	W	66 E elevation of the west side of stone wall 066
295	NW	66 NW corner of wall 066
296	NE	66 W elevation of the west side wall 066
297	S	66 Remains of the south wall of 066
298	S	66 Top of wall 066 along the west wall
299	NE	66 General view of area of wall 066
300	N	66 General view of area of wall 066
301	NE	66 General view of area of wall 066
302	E	66 Detail of culvert 069 through wall 066
303	S	66 Culvert 069 along the outer edge of wall 066
304	SE	66 Detail of the NW corner of wall 066
305	E	66 Detail of the N half of wall 066
306	E	81 View of wall 080 and wheel pit 081
307	E	81 Detail of wheel pit 081
308	S	81 Detail of wheel pit 081 and wall 080
309	S	81 Detail of wheel pit 081
310	S	66 Base of wall 066 at the wheel pit
311	E	View of the wheel pit 081 from above
312	N	81 Detail of the side wall of the wheel pit 081 showing the wear mark
313	N	81 Detail of the side wall of the wheel pit 081 showing the wear mark
314	N	61 S facing section through fills of trough 061
315	N	61 View of trough 061
316	NW	63 View of side panels of trough 063
317	N	64 S facing section through trough 064
318	SE	General views of Area B
319	S	General views of Area B

320	S	General views of Area B
321	NE	General views of Area B
322	E	General views of Area B
323	E	General views of Area B
324	N	General views of Area B
325	NW	General views of Area B
326	E	General views of Area B
327	NE	General views of Area B
328	NE	General views of Area B
329	N	General views of Area B
330	E	81 Detail of wheel pit 081
331	N	81 Detail of wheel pit 081 from above
332	S	87 Detail of wheel pit showing steps 087
333	E	88 Detail of iron fixing 088
334	E	81 View of wheel pit 081
335	SE	Working shot
336	SE	Working shot
337		Detail of C-I shovel
338	E	81 View of exposed wheel pit 081
339	E	81 View of exposed wheel pit 081
340	E	81 Detail of the top of the N wall of wheel pit 081
341	E	81 View of stone blocking wall over the top of the wheel pit wall
342	S	81 Internal face of the S wall of the wheel pit
343		81 View of wheel pit from above showing inserted stairs
344	E	81 Detail of sloping W edge of wheel pit 081
345	N	81 Internal face of the N wall of the wheel pit 081
346	S	81 General view of wheel pit 081
347	S	81 Location of the wheel pit 081
348	W	81 View of wheel pit 081

349	W	81	Location of wheel pit with stone platform to rear
350	W	81	View of wheel pit 081
351	E	81	Detail of stone blocking wall in wheel pit 081
352	E	81	General view of wheel pit 081

Appendix 2 – Environmental Assessment Tables

Table 1: GORE-Waterlogged samples

Context Number	Sample Number	Feature	Total flot Vol (ml)	Plant remains	Wood fragments	Bark	Material available for AMS	Comments
43	1	Trench 34	250	+	++		Yes	Wood fragments, moss, grass and cinders
50	2	Trench 34	250	+	++		Yes	Grass fragments, wood fragments, animal hair
43	3	Trench 33	250	+	++	+	Yes	Animal hair, occasional leaf fragments, bark, wood and moss leaves
50	4	Trench 27	250	+	++		Yes	Wood fragments, moss and insect fragments
43	5	Trench 20	250	+	++	+	Yes	Animal hair, wood and bark fragments and cinders
50	6	Trench 20	250	+	++		Yes	Wood and leaf fragments
Key: + = rare (1-5), ++ = occasional (6-15), +++ = common (16-50) and ++++ = abundant (>50) NB charcoal over 1cm is suitable for identification and AMS dating								

Table 2-Animal bone catalogue

IM = indeterminate mammal

+ = species present

Context	Sample	Context	Cattle	Horse	Condition	Comments
43	8	Secondary fill of trough (033)	+	+	Fair	Horse radius, ulna and femur, scapula, pelvis and tibia. Cow radius
15	10	Basal fill of trough (014)		+	Fair	Horse proximal femur, and distal femur fragment, tibia.
43	7	Secondary fill of trough (033)		+	Fair	Horse femur

Appendix 3 – Finds Catalogue

Context	Context Notes	Sample	Quantity	Weight (g)	Material	Object	Description	Spot Date
12	basal fill of timber lined trough 011		1	37200	Iron	Weight	Large weight. Truncated conical shape with loop at top. Made of cast iron, though may have a lead core. Vivianite on exterior. Weight = c.82lb.	
15	basal fill of timber lined trough 014		1	1290	Leather	Strap	Substantial strap in two pieces. Holes pierced along either edge, in pairs but unevenly spaced. Joined in two places (break occurs at one of these joins), with evidence of joins at either end as well. Joins achieved by overlapping ends and threading a smaller leather straps through the overlapping and adjacent holes. These small straps broken so not clear how they were secured. Not clear if joins are to repair breaks or to create a longer strap, possibly both. Longest continuous piece of leather 1.35m, shortest 0.69m. Overall length estimated c.3.01m. Width 55mm, thickness 5mm. Weighed wet. Seems too long and wide for horse harness. Possibly for suspension or drive belt for machinery or some other industrial use.	
43	secondary fill of troughs	8	1	617	CBM	Pantile	Large corner sherd	17th-20th
43	secondary fill of troughs	7	1	464	Wood	Tool Handle?	Thick round shaft of wood with square section at end, augmented with small block on either side to form T-end. Broken at other end. Has small brass shaft sticking out of side of shaft, not clear if this is part of the object or incidental. Possibly handle and part of shaft of spade/shovel or similar. Possibly part of a large frame. Possibly a structural fitting. Waterlogged but good condition. Weighed wet. L360, shaft W 38, T width 65	
43	secondary fill in trough 033		1	265	Iron & Wood	Baling Hook	Large hook with perpendicular cylindrical wooden handle. Type of hook used for moving large loads, sometimes called box hook, cargo hook, hay hook etc.	
43	secondary fill of troughs		1	1117	Pottery (Mod)	Stoneware	Two large joining sherds from large round-bellied jar, glazed grey with brown upper.	19th/e.20th
43	upper secondary fill of troughs		1	273	CBM	Pantile	Large edge sherd	17th-20th
43	upper secondary fill of troughs		1	40	Iron	Strap/Plate	Strip of iron, broken both ends and along one edge. Vivianite patches on surface.	
43	upper secondary fill of troughs		1	136	Pottery (Mod)	Stoneware	Stopper, broken and chipped, brown mottled salt glaze	19th/e.20th
43	upper secondary fill of troughs		1	325	Glass	Bottle	Milk bottle, complete but for chip on rim. Marked 'THE PROPERTY OF / MURCHIES / EDINBURGH' and 'MURCHIES ALFA MILK'.	1903-1983

Context	Context Notes	Sample	Quantity	Weight (g)	Material	Object	Description	Spot Date
51	overburden		3	163	Pottery (Mod)	Various	Rockingham teapot lid, blue trans printed hollowware rime	1840-present
51	overburden		1	52	Glass	Bottle	Near complete small square inkwell type bottle, natural greenish glass	

Appendix 4 – Discovery and Excavation in Scotland entry

LOCAL AUTHORITY:	Edinburgh
PROJECT TITLE/SITE NAME:	Excavation at 396 Gorgie Road, Edinburgh
PROJECT CODE:	GORE14/003
PARISH:	City of Edinburgh
NAME OF CONTRIBUTOR:	Nuala C. Woodley
NAME OF ORGANISATION:	Headland Archaeology UK Ltd
TYPE(S) OF PROJECT:	Excavation
NMRS NO(S):	None
SITE/MONUMENT TYPE(S):	None
SIGNIFICANT FINDS:	19 th /20 th Century Pottery
NGR (2 letters, 8 or 10 figures)	NT 22487214
START DATE (this season)	October 2014
END DATE (this season)	December 2014
PREVIOUS WORK (incl. DES ref.)	Headland Archaeology, 2007, 2011 & 2014

MAIN (NARRATIVE)

DESCRIPTION:

(May include information from other fields)

Headland Archaeology (UK) Ltd undertook a programme of archaeological works on a site at 396 Gorgie Road, Edinburgh. The work was required to support a planning application (Planning Ref 11/02827/FUL) for a proposed development. The excavation demonstrated that there were multiple phases of activity on the site starting with the construction of a mill wall, lade and operation of timber-lined tanning pits during the early 19th century. The site continued in development with the construction and operation of a set of mill buildings in the mid to late 19th century which were restructured on multiple occasions into the 20th century.

During the excavation no features relating to earlier periods were encountered and the presence of the natural geology seen directly beneath the tanning pits indicated that nothing earlier had survived the development process during the 18th and 19th centuries.

PROPOSED FUTURE WORK:

CAPTION(S) FOR ILLUSTRS:

SPONSOR OR FUNDING BODY: 3DReid

ADDRESS OF MAIN CONTRIBUTOR: 13 Jane Street, Edinburgh EH6 5HE Scotland

EMAIL ADDRESS: nuala.woodley@headlandarchaeology.com

ARCHIVE LOCATION (intended/deposited) NMRS