

Archaeological Excavation Report

# FORGE MILL CONGLETON

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For Nexus Heritage

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D Garner

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L~P:ARCHÆOLOGY

Archaeological Excavation Report

# FORGE MILL CONGLETON

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Client: Nexus Heritage

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Local Authority: Cheshire East Council

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NGR: 384896, 363609

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Planning App: 13/2623C

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Author(s): D Gamer

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## L-P: ARCHAEOLOGY

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# Abstract

An archaeological excavation was carried out at the former Forge Mill, Forge Lane, Congleton, Cheshire, due to the potential for archaeological remains associated with a former silk mill to survive on the site. The work was carried out by L - P : Archaeology. This report has been prepared by Dan Garner of L – P : Archaeology on behalf of Nexus Heritage.

The archaeological works carried out on land at Forge Mill between the 28<sup>th</sup> November and 12<sup>th</sup> December 2016 and 9<sup>th</sup> and 20<sup>th</sup> January 2017 were intended to investigate and record the archaeological remains of structures shown on the plan of the silk mill dated to 1865.

The results of this work have provided insights into the construction techniques employed for the buildings within the mill complex. The remains encountered have also allowed further detail to be added to the organisation of the machinery within the mill Carding Room. Examination of the remains of the gas tank were able to provide enough detail to be able to ascertain the type of technology employed for its operation.

The results of the excavation of the terraced cottages and associated outbuildings produced a small but interesting assemblage of domestic waste. The botanical and faunal remains in particular suggest a higher level of status than expected with evidence for the consumption of red deer, grapes and figs. The pottery assemblage provided some good dating evidence for the features and deposits encountered as well as one commemorative jar produced in Devon.

# 1. Introduction

- 1.1. This report details the results of an archaeological excavation carried out at the former Forge Mill, Forge Lane, Congleton, Cheshire for Nexus Heritage. The local authority is Cheshire East Council.
- 1.2. The fieldwork was carried out by Dan Garner, Beki Jones, Chris Matthews, Ric Buckle, Pascal Eloy, Dave Lavery and Karolina Siara of L – P : Archaeology between the 28<sup>th</sup> November and 12<sup>th</sup> December 2016 and 9<sup>th</sup> and 20<sup>th</sup> January 2017. This report was written by Dan Garner of L - P : Archaeology.
- 1.3. The site is located at the former Forge Mill, Forge Lane, Congleton, Cheshire (FIGURE 1). The NGR is 384896, 363609.
- 1.4. The site code allocated by L – P : Archaeology is LP 2381C.
- 1.5. The work was carried out in accordance with the Written Scheme of Investigation (WSI) prepared by Anthony Martin of Nexus Heritage.
- 1.6. This report should be read in conjunction with the WSI (MARTIN 2016B) and Archaeological desk based assessment (MARTIN 2016A) produced by Nexus Heritage.

## 2. Site Background

### 2.1.PLANNING

2.1.1. Outline planning consent has been granted for a residential development (C3) of 48 units including, associated parking, landscaping, creation of a nature area, open space and off-site highway works. The application reference is 13/2623C.

2.1.2. Cheshire East Council (hereafter the Council), as advised by the Cheshire Archaeology Planning Advisory Service (hereafter CAPAS), considered the site to be of potential archaeological interest and wished to secure satisfactory treatment of the archaeological remains, as required by the National Planning Policy Framework (hereafter NPPF). Accordingly a condition (no. 8) was placed on the consent.:

*No housing development shall take place until a programme of archaeological work relating to the area of proposed housing has been implemented in accordance with a Written Scheme of Investigation (WSI) to be submitted to and approved in writing by the local planning authority.*

2.1.3. A desk-based assessment (MARTIN 2016A) was prepared and provided to the Council in 2016, which identified areas within the Site requiring further archaeological investigation. This programme of archaeological work involved open area archaeological excavation and recording which was defined with in an agreed Written Scheme of Investigation (WSI) prepared by Nexus Heritage (MARTIN 2016B).

2.1.4. This document seeks to satisfy the condition by describing the results of the excavation and clarifying the status and location of the project archive.

### 2.2.LOCATION

2.2.1. The Site, which extends to an area of c. 6.43ha (of which c. 2ha is under development), is situated on the north-western side of Congleton and is located at the end of Forge Lane, c. 1 km from the town centre (FIGURE 1). The site is centred, approximately, at National Grid Reference SJ 84897 63601, within a commercial and residential area. To the north and the east the Site is

bounded by the River Dane with agricultural fields forming the southern boundary of the site. The western boundary is formed by wooded area leading onto a large industrial estate (FIGURE 2).

### **2.3.GEOLOGY**

2.3.1. There are three categories of superficial deposit at the Site. The first covers the majority of the eastern half and is characterised as alluvium consisting of clays, silts, sands and gravels. The majority of the western portion comprises glaciofluvial sheet deposits which consist of sands and gravels. A thin strip of glacial till is present along the western boundary which is considered to comprise of unsorted clay with interspersed bands of sands and gravel. The area of glacial till is anticipated to underlie the area of Forge Wood with the remainder of the site typified by fluvioglacial materials.

2.3.2. The solid geology underlying the Site comprises the Sidmouth mudstone formation which is carnian/olenekian in age and comprises mainly of mudstone inter-bedded with sandstones and siltstones.

### **2.4.TOPOGRAPHY**

2.4.1. The site is largely flat, with an average height of 73m OD.

2.4.2. To the north and the east the Site is bounded by the River Dane with agricultural fields forming the southern boundary of the site. The western boundary is formed by wooded area leading onto a large industrial estate (FIGURE 2).

### **2.5.SITE CONDITIONS**

2.5.1. At the time of the excavation in late 2016 and early 2017 the site could be divided into three distinct zones. Firstly there is an area of roadways, hardstanding, relict concrete floor slabs and stockpiles of demolition debris from recently demolished buildings. This zone corresponds with the historic industrial use of the Site and also contains an open, rectangular pond and a series of underground tanks which contain standing water and demolition rubble. The second zone extends along the western boundary of the Site and also extends partially across the southern boundary and takes the form of a belt

of trees representing the southern edge of Forge Wood. The third zone is to the north of the area of hardstanding, between the wood land and the River Dane Site is relatively open, flat and level characterised as rough grass, scrub and bulrushes. There was a small area of open ground laid to grass immediately to the south of the hardstanding area.

## **2.6.ARCHAEOLOGY AND HISTORY**

- 2.6.1. An archaeological assessment of the Site was prepared in 2015 (MARTIN 2016A) and a summary of the research undertaken for the assessment report was included within the WSI and this is reproduced below.
- 2.6.2. The assessment confirmed that the Site corresponds with the location of the now demolished Forge Mill identified on the CHER as entry MCH9263 / 2887/23.
- 2.6.3. Fourteen archaeological sites were identified within an Assessment Area establish for the purposes of the archaeological assessment, one of which was the location of the now demolished Forge Mill which was recorded within the Site. There are four heritage interventions (events) recorded within the Assessment Area, one of which – the East Cheshire Textile Mills Survey (CALLADINE & FRICKER 1993) included the Site. There are four Locally Listed Buildings within the Assessment Area, but none within the Site and nine Listed Buildings within the Assessment Area, but none within the Site. There are no World Heritage Sites, Scheduled Ancient Monuments, Archaeological Areas, Conservation Areas, or Registered Battlefields wholly or partly within the Assessment Area. The Site does not fall wholly or partly within any Area of Special Archaeological Importance, Area of Archaeological Potential or Area of Archaeological Importance recognised by Cheshire East Council. There are no township or parish boundaries within the Site or along its boundaries.
- 2.6.4. There are no known archaeological remains on the Site pre-dating the Post Medieval period but the general area of the Site witnessed multiple, significant changes to the topography during the Post Medieval period, as a result of influences such as population growth and communication development arising from the Industrial Revolution. There are manuscript archives relating to a



metal forge close to the site of the later Forge Mill which include indentures, mortgages and deeds dating to the late 18<sup>th</sup> century, and early 19<sup>th</sup> maps show the position of a building thought to be the metal forge, to the south of the location of Forge Mill.

2.6.5. The Congleton Tithe Map from 1845 shows the Site extending over multiple land parcels of various shapes and sizes including those containing Forge Silk Mill. The mill complex extends over five particular land parcels, all owned and occupied by Robert Thompson & Co. and includes Forge Silk Factory & Premises, Eight Dwellings, Croft, Garden and Reservoir & Garden. The open area to the south of the mill was owned by Sir Charles Peter Shakerley, occupied by George Cookson and identified as Big Smithy Meadow and Shaws, suggesting that the field was named in association with the earlier metal forge which once occupied a position within the Site.

2.6.6. A Plan of Forge Silk Mill, Congleton (Plan from Sale Particulars drawn up by Charlton & Co. Solicitors), dating to 1865 shows the Site in detail. The four-storey mill building is divided into various rooms with various functions – Carding Room, Dressing Room, Doubling Room, Waste Room, Arch, Shop Chimney and Staircase. To the south of the mill is a range of warehouses, adjacent to which is a leat leading from/to the River Dane. To the west of the mill there a further range of buildings identified as an engine house and two boiler houses beyond which is a shrubbery. A large rectangular pool lies to the south-west of the engine house and a culvert leads from the pool to the engine house. To the south-west of the pool there is a feature noted as Track of Water Pipes. To the north of the mill is a terrace of two-storey cottages, to which there leads a watercourse from the River Dane and to the east there is a garden.

### 3. Aims and Objectives

3.1. The general aims of the archaeological excavation were to record the character, date, type, state of preservation, and extent of any archaeological remains on site.

3.2. The broad aims of the archaeological works were:

- ◆ to enhance knowledge and understanding of the historic environment of Congleton in particular, and north-western England in general;
- ◆ to effectively and rapidly disseminate the results of the project, and to archive them, enabling the project findings to be widely and readily accessed by professional and non-professional audiences alike;
- ◆ to ensure that professional expertise and experience is advanced by the continual improvement of archaeological method and practice.

3.3. The detailed objectives of the archaeological excavation were:

- ◆ To make a full and proper record of any archaeological structures, deposits, features, artefacts, ecofacts and palaeoindustrial items within the relevant areas of the Site, permitting a reconstruction of the Site's history and formation processes. To recover all artefact and palaeoindustrial samples from deposits of potential;
- ◆ To analyse the Site records, artefacts and ecofacts to produce a report on the archaeology of the site, identify the research implications of the site with reference to the regional research agenda and recent work in the Congleton area in particular and Cheshire/north-west England in general.

3.4. The archaeological works were implemented with reference to the North-West England Regional Research Agenda (2007), specifically relating to the Industrial and Modern periods (MCNEIL & NEWMAN 2006). Research topics that might have been able to be addressed at the Site included:

- ◆ The nature and development of technological innovation and industrial production;

- ◆ Approaches to architecture and the use of space to address landscape and social impacts of the industrial development and new forms of community living;
- ◆ Revealing the history and lifestyles of the silent majority by investigation of the accommodation at the Site which may elucidate aspects of and early 20<sup>th</sup> century urban life especially, with reference to the urban working class. Cellars associated with dwellings represent target sub-surface structures for investigation and often survive as the only remains of demolished residences.

## 4. Methodology

- 4.1. For a full description of the archaeological methodology please refer to the WSI (MARTIN 2016B).
- 4.2. The targeted area excavation was undertaken within the areas shown on Figures 2 and 3 of the WSI (MARTIN 2016B). The position and size of excavation areas were adjusted on site to account for services and other constraints, with the approval of the Client. The final 'as dug' area was recorded accurately using both a GPS survey and aerial drone photography.
- 4.3. Initially works comprised the mechanical removal of non-archaeologically significant material, under constant archaeological supervision, using a mechanical excavator with a combination of toothed and toothless buckets.
- 4.4. Upon exposure of the first horizon exhibiting archaeological deposits, features or structures the use of the mechanical excavator ceased. The mechanical removal of non-archaeologically significant material and/or hand-cleaning proceeded to depths which equated to the maximum depth required for construction works in order to ensure that any and all sub-surface strata in which archaeological remains were present could be examined for archaeological remains, and such remains were identified and recorded.
- 4.5. Surfaces were cleaned and prepared as appropriate in order to allow visual inspection for the presence/absence of archaeological remains, deposits, features and structures. After the areas have been opened, there was a visual inspection of the exposed surface by the Client and representatives of the Council. Any archaeological features present were investigated by means of manual excavation by qualified and experienced archaeologists.
- 4.6. All archaeological deposits, features and structures were excavated manually in a controlled and stratigraphic manner sufficient to address the aims and objectives of the project. All excavated areas conformed to the stated dimensions at their base and provision were made for safe systems of work to be deployed.
- 4.7. The method of recording followed the normal principles of stratigraphic excavation and the stratigraphy was recorded in written descriptions even where no

archaeological deposits were identified. The drawn record comprised plans of the site at a suitable scale, area plans at scale 1:20 and sections at scale 1:10. Drawing conventions followed accepted conventions. Proprietary electronic hardware and software were used to prepare site drawings as appropriate.

- 4.8. All artefacts discovered were retained for processing and analysis. Appropriate specialists were involved from an early stage of the excavation process. Attention was paid to the context of individual artefacts and collective assemblages, with reference to possible structured and/or ritual deposition. All finds were assessed in order to recover information that would contribute to an understanding of their date and function. All retained finds were stabilised and packaged in accordance with best practice and the requirements of the organisation nominated to receive the archive.
- 4.9. No items subject to the terms of the Treasure Act (1996) were recovered.
- 4.10. Samples from stratified deposits were taken for assessment of archaeo-botanical remains by means of coarse sieving, floatation and other techniques as appropriate.
- 4.11. No human remains were encountered during the excavation.
- 4.12. The archaeological works were surveyed with respect to the nearest Ordnance Survey datum point and with reference to the Ordnance Survey National Grid. The excavated areas, and deposits, features and structures within them were accurately located using GPS survey equipment.
- 4.13. The photographic record comprised conventional silver halide photography with a supporting index. The photographic record was supplemented with images of the works in progress captured on a digital camera (with resolution 12 mega-pixels or greater), and images recorded on these media also formed the images of record. Site photography included general site shots and shots of individual features and groups of features. The use of low level aerial photography using remote controlled camera equipment was also used. All photographs were recorded on a photographic register with the subject and direction of each shot.
- 4.14. The control of water within the excavation works was problematical. This was particularly the case with works undertaken in January 2017 when constant heavy rain/snow fall had caused the water level in the adjacent River Dane to be raised to

almost the same height as the excavated trenches. This essentially meant that all hand excavation work was below the water level of the river. The prevailing conditions particularly affected excavation of the gas tank in Trench 3 which almost instantaneously filled with water after excavation; this could not be pumped away owing to the presence of contaminants within the gas tank.

## 5. Results

5.1. Results are given below trench by trench. Not all context numbers referred to in the text are illustrated, but all are in the archive. Deposit numbers are given in (parentheses) and cut numbers are given in [square brackets]. The trenches are described below in the order that they were excavated rather than in numerical order.

### 5.2. TRENCH 4

#### 5.2.1. PHASE 1

5.2.2. The earliest context encountered within Trench 4 was an extensive layer of dark brown clay silt (3); containing occasional fragments of charcoal and brick. Layer (3) was tested by the mechanical excavation of a *sondage* in the south-west corner of Trench 4 and this demonstrated that it was in excess of 1m in depth and pre-dated the construction of the Carding Room ( Plate 4). Layer (3) was interpreted as the pre-mill soil horizon; probably representing the uppermost river silts formed by the River Dane.

#### 5.2.3. PHASE 2

5.2.4. At the northern end of Trench 4 a deposit of rubble (50) was identified between the northern wall (11) of the Carding Shed and the northern wall (51) of the Phase 4 chimney flue. Deposit (50) was dominated by complete and broken fragments of handmade brick and lime mortar; the complete brick dimensions averaged 230 x 111 x 80mm. The deposit was at least 9.53m long and 1.43m wide; it was mechanically excavated to a depth of 1.27m but the base was not established due to water inundation and unstable trench edges.

5.2.5. Deposit (50) was initially thought to be the backfill of a void associated with machinery for the Carding Shed; however, the foundations of wall (11) could be seen to be laid over the top of deposit (50) ( Plate 1). This would suggest that deposit (50) was the backfill of a large void cut in to layer (3) but pre-dating the construction of the Carding Shed. Deposit (50) did not extend south beyond the Phase 4 flue wall (49) and it was removed to the north of wall (11) by the construction of substantial later cellared structures ( Plate 2). The

character of deposit (50) would suggest that it was associated with a phase of demolition which pre-dated the construction of the Carding Room; and it is perhaps associated with either an earlier phase of the mill complex or a former activity associated with the iron forge.

#### 5.2.6. PHASE 3

5.2.7. Phase 3 involved the primary construction of the Carding Room and the associated Stair-Chimney (described separately under Trench 1). The Carding Room had a long rectangular foot-print aligned northwest to southeast and measuring 27.52m long and 9.6m wide ( Plate 4). The four walls of the Carding Room were individually recorded as contexts (11), (12), (13) and (14). A central row of eight pier bases aligned on the building's long axis were given the group context (15) but were individually recorded as cuts (16), (18), (21), (22), (24), (26), (28) and (30) (FIGURE 5).

5.2.8. The northern wall (11) of the Carding Room was 0.48m wide and consisted of a foundation course of brick headers laid directly on to Phase 2 rubble deposit (50). Towards the western end of wall (11) there was a greater depth of foundation courses ( Plate 3); however, this lower brickwork was slightly off-set and it is possible that it represents part of an earlier structure associated with brick rubble (50). Above the header course wall (11) had six surviving brick stretcher courses bonded in an off-white lime mortar, giving the wall a surviving height of 0.45m. The average brick dimensions for wall (11) were 230 x 110 x 70 mm. The eastern end of wall (11) was bonded to (and of the same construction phase as) the outer wall (63) of the Stair-Chimney.

5.2.9. The western wall (14) of the Carding Room was 0.6m wide and consisted of a foundation of hard pale grey brick and lime mortar aggregate up to 0.13m thick ( Plate 5). Above the aggregate foundation there were six surviving brick header courses bonded in an off-white lime mortar, giving the wall a surviving height of 0.45m. The wall (14) foundation was cut in to Phase 1 layer (3).

5.2.10. The southern wall (13) was 0.48m wide and of very similar construction to western wall (14); with the exception that the lowest course of brickwork was stepped outwards in a similar fashion to the primary brick course of north wall



(11).

5.2.11. Eastern wall (12) was 0.58m wide and of very similar construction to western wall (14); with the exception that the lowest two courses of brickwork were headers followed by three courses of stretchers and then another course of headers. The north-eastern end of wall (12) was bonded to (and of the same construction phase as) the outer wall (56)/(63) of the Stair-Chimney. The eastern ends of machine-base walls (33) and (38) appeared to be bonded to wall (12) approximately half way along its length.

5.2.12. A series of eight central pier bases running up the long axis of the Carding Room were interpreted as part of the primary construction ( Plate 4). These bases probably accommodated cast-iron columns providing additional structural support for the upper storeys of the Carding Shed.

5.2.13. The third pier base (21) from the southern end of the Carding Room consisted of a large rectangular yellow sandstone block (measuring 0.84 x 0.72 x 0.5m) set on a base of hard pale grey brick and lime mortar aggregate (20) up to 0.19m thick ( Plate 6).

5.2.14. The remaining seven pier bases consisted of rectangular pits cut in to Phase 1 layer (3) and entirely backfilled with loose crushed brick aggregate recorded as contexts (17), (19), (23), (25), (27), (29) and (31) respectively ( Plate 7). Pit (16) was the only pit to be examined in half-section and measured 1.1 x 0.85 x 0.45m deep. It is uncertain whether these seven pits had originally contained sandstone blocks of similar dimensions to (21); or whether the crushed brick fills were an original foundation deposit (as seen in the foundations of the terraced cottages in Trench 2).

5.2.15. Towards the centre of the Carding Room (between pier bases (22) and (24)) was an amalgamation of brick and stone elements forming an east-west aligned linear structure. This structure was given the group context of (32) and was 9.8m long and 0.98m wide ( Plate 8) and (FIGURE 5).

5.2.16. The eastern end of structure (32), composed of parallel brick walls (33) and (34) with a section of sunken brick flooring (41) between them, appeared to be bonded to the inner face of wall (12). This suggested that the structure was

contemporary with the primary construction phase of the Carding Room. A deposit of clinker overlying floor (41) produced a small assemblage of pottery including an almost complete dish stamped with a maker's mark dated to 1860.

5.2.17. To the west of floor (41) there was a square 'Yorkstone' slab (40) measuring 0.48 x 0.37 x 0.06m. This was set next to a yellow sandstone block (39) measuring 1.1 x 0.45m which had been set across the line of brick walls (33) and (34). The upper face of block (39) had a pair of parallel rectangular notches carved on to its western side and a pair of threaded iron fixings set in to the southeast and southwest corners (Plate).

5.2.18. To the west of block (39) was another area of sunken brick flooring (38) which measured 2.54 x 0.5m. At the western end of floor (38) was a second sandstone block (37) measuring 0.65 x 0.5m which had also been set across walls (33) and (34). The upper face of block (37) had a pair of parallel rectangular notches carved on to its western side and four threaded iron fixings set in to the corners.

5.2.19. West of block (37) was a third section of sunken brick flooring (35) which measured 2.3 x 0.63m. At the western end of floor (35) was a third sandstone block (43) measuring 1.85 x 0.64m which had also been set across walls (33) and (34). The upper face of block (43) had a pair of parallel rectangular notches carved on to its western side and four threaded iron fixings set around them (Plate). It is thought that block (43) marked the western end of structure (32) in Phase 3.

#### 5.2.20. PHASE 4/5

5.2.21. The Phase 3 structure (32) was later modified with an extension at the western end which necessitated the partial removal of a section of the Carding Room wall (14). This addition consisted of a pair of parallel brick walls (44) running from the eastern side of block (43), each being 1.73 x 0.24m. Between these walls was set a roughly rectangular stone block (45) measuring 1.6 x 0.73m; the space between blocks (43) and (45) being filled with an area of brick flooring (42). The upper face of block (45) had three pairs of parallel

rectangular and square notches carved on to its centre and four threaded iron fixings set around them (PLATE 9).

5.2.22. To the west of block (45) there was a void (46) where a section of wall (14) had been partially removed; this had been filled with a black clinker-rich deposit.

5.2.23. To the north of block (45) a small square brick chamber (47) had been constructed against the inner face of wall (14). A small section of wall (14) adjacent to structure (47) had been smashed away to accommodate an iron pipe running out of the Carding Room to the west. Chamber (47) was filled with a loose dark grey clinker-rich deposit (48) which contained two skeins of spun silk. The feature is thought to represent a drain.

#### 5.2.24. PHASE 5

5.2.25. At the northern end of the Carding Room a pair of parallel brick walls (49) and (51) had been constructed across the entire width of the building. These walls represented the final phase of the flue system serving the Stair-Chimney in Trench 1. The construction of walls (49) and (51) had necessitated making a breach through walls (12) and (14) demonstrating that this was a later addition to the original design of the Carding Room ( Plate 4) and (FIGURE 5). Wall (51) had been constructed in to backfill deposit (50) and this had made it unsound; eventually leading to it collapsing in to the flue cavity. The flue cavity was backfilled with demolition debris (52) from the eventual destruction of the mill in the 20<sup>th</sup> century.

5.2.26. The northernmost pier base (30) was apparently re-set slightly to the west of its original location. This was represented by rectangular pit (64) which had been filled with brick and lime mortar and measured 1.1 x 1.1m ( Plate 4 & 10). This alteration may have been necessitated by the construction of the chimney flue wall (49) immediately to the north.

### 5.3. TRENCH 1

#### 5.3.1. PHASE 1

5.3.2. The earliest context encountered within Trench 1 was an extensive layer of

dark brown clay silt (3); containing occasional fragments of charcoal and brick. Layer (3) was also encountered in Trenches 2 and 4 where it was interpreted as the pre-mill soil horizon; probably representing the uppermost river silts formed by the River Dane.

### 5.3.3. PHASE 2

5.3.4. No activity attributable to Phase 2 was identified in Trench 1.

### 5.3.5. PHASE 3

5.3.6. Phase 3 involved the primary construction of the Stair-Chimney and the associated Carding Room (described separately under Trench 4 above). The Stair-Chimney comprised an outer circular brick wall (56)/(63) and an inner circular brick wall (58) which had been served by a succession of brick flues (FIGURE 6 to 8) and ( Plate 11). The rapidly developing nature of the technology in the 19<sup>th</sup> century textile industry would suggest that the succession of brick flues were constructed over a relatively short period of time.

5.3.7. The brick walls (56) and (63) formed two elements to the outer wall of the Stair-Chimney structure; with the staircase originally having been accommodated between the outer wall and inner wall (58). At foundation level this space between the two walls was filled with a fairly compact red brown silt (55) containing fragments of brick, roof slate and mortar. Wall (56) formed the southern half of the outer wall and had an outer diameter of 5.54m, being 0.47m wide and surviving to a height in excess of 0.85m. Wall (56) was constructed of handmade brick (average dimensions of 230 x 111 x 80 mm) bonded in lime mortar and surviving as 12 courses of stretcher bond. The western end of wall (56) was bonded in to Carding Room's eastern wall (12).

5.3.8. Wall (63) formed the northern half of the Stair-Chimney's outer wall as well as a spur wall running eastwards, continuing the line of the Carding Room's northern wall (11). The spur wall is likely to represent the southern wall of the adjacent Dressing Room which was not investigated as part of the targeted excavation.

5.3.9. Brick wall (58) formed the inner wall of the Stair-Chimney and enclosed the chimney element of the structure. The wall had an outer diameter of 2.5m and was 0.6m wide with a surviving height in excess of 0.85m. Wall (58) was constructed of handmade brick (average dimensions of 230 x 111 x 80 mm) bonded in lime mortar. The wall was surviving as 6 courses of stretcher bond followed by a header course after which there was a step inwards followed by two more header courses ( Plate 12). Within wall (58) the base of the chimney was filled with a deposit (54) that was very similar to deposit (55).

5.3.10. The original opening at the base of the chimney stack was on the north-eastern side of wall (58) and was 0.6m wide. A parallel opening was also made in outer wall (56) which was 0.6m wide. The opening in outer wall (56) was served by a brick lined flue represented by parallel walls (66) and (69) and brick floor (82). Brick floor (82) appeared to extend in to the gap between walls (56) and (58); however, the line of wall (69) did not, and had possibly been removed by the insertion of Phase 4 wall (59). The line of wall (66) was continued between outer wall (56) and inner wall (58) by wall (57) ( Plate 13). Wall (57) was a poorly built structure measuring 3.35 x 0.34 x 0.6m; which appeared to have subsided at the north-east end where it butted the inner face of wall (56). The makeshift nature of wall (57) suggests that this was a later modification to the original design.

5.3.11. The eastern end of flue wall (66) was later modified by the insertion of brick wall (70) which was a wedge shaped structure measuring 0.86 x 0.24 x 0.46m. Wall (70) would have served to narrow the eastern end of the original flue by creating a funnel like shape in plan.

#### 5.3.12. PHASE 4

5.3.13. Phase 4 involved the construction of a new brick flue which was given the group context (75) ( Plate 15). This ran from the chimney stack on a 45 degree angle to the west before turning and running south-west parallel with the northern wall (11) of the Carding Room (FIGURE 7).

5.3.14. Brick flue (75) made use of the original opening in the north-eastern quadrant of chimney wall (58); however the adjacent opening through wall (56) was

blocked by the insertion of curving brick wall (59) ( Plate 14). This would have made the Phase 3 flue represented by walls (66) and (69) redundant and it might be that a second blocking wall (70) at the eastern end of the flue was also inserted at this time. Brick flue (75) was initially constructed in a westerly direction and necessitated the creation of a new opening in outer wall (63) that was 1.3m wide. The space between inner wall (58) and outer wall (63) was linked by the insertion of wall (60), so that walls (60) and (59) formed the parallel sides of flue (75) with the Stair-Chimney. Both walls (60) and (59) had evidence of sooting on their internal faces.

5.3.15. Wall (60) extended west of Stair-Chimney wall (63) for a distance of 0.9m where it then joined wall (76) which formed a 225 degree angle with it ( Plate 15). Wall (76) ran parallel to Carding Room wall (11) for a distance of at least 4.3m; however, after a length of 2.3m there was an opening to accommodate a side chamber. The side chamber was located in the space between walls (76) and (11) and comprised a curving section of brick wall (78) which enclosed brick surface (79) ( Plate 16). The western end of brick surface (79) had a 'yorkstone' slab with the remains of an iron fixture (80) running along its northern edge. The northern wall (77) of flue (75) ran parallel to wall (76) creating a channel that was 0.7m wide. The entire length of the flue had subsequently become filled with a dark grey clay-silt (61) which contained fragments of bricks and mortar.

5.3.16. To the east of the flue and blocking wall (70) a well-made brick culvert (71) had been constructed on a north-west to south-east alignment ( Plate 17). This culvert would have further compromised the course of the Phase 3 flue.

#### 5.3.17. PHASE 5

5.3.18. Phase 5 involved the construction of a third and final brick flue which ran south-west from the base of the chimney stack, across the northern end of the Carding Room ( Plate 4).

5.3.19. The third brick flue construction involved the creation of a new opening on the south-west quadrant of the chimney stack which was 1.8m wide. Further openings were also made through the eastern wall (12) and western wall (14)

of the Carding Room. The new flue consisted of a pair of parallel brick walls (49) and (51) ( Plate 18); each of which were at least 11.3m long, 0.23m wide and at least 0.74m high. Both walls (49) and (51) had evidence of sooting on their internal faces. The entire length of the flue had subsequently become filled with a dark grey clay-silt (52) which contained fragments of bricks, roofing slate and mortar. Wall (52) had collapsed inwards at some point owing to it having been constructed within brick rubble deposit (50) (described in Trench 4 above).

**5.3.20.**The original opening to the chimney stack on the north-east quadrant of wall (58) was blocked up with brick wall (120). This is likely to have happened at the same time as the construction of brick flue (76) and (77).

**5.3.21.**On the northern side of the Phase 3 flue wall (69) a square brick chamber was constructed over the northern end of the Phase 4 brick culvert (71). This chamber was formed from brick walls (67), (73) and (72) ( Plate 19). A short section of wall (74) to the west of this brick chamber may be contemporary with this phase of construction but the function remains uncertain.

#### **5.3.22.PHASE 6**

**5.3.23.**The final phase of structures in Trench 1 involved the construction of a sewer pipe encased in concrete which ran across the eastern side of the Stair-Chimney on a roughly north-south alignment. This service destroyed part of the Phase 3 flue wall (69).

### **5.4.TRENCH 2**

#### **5.4.1. PHASE 1**

**5.4.2.** The earliest context encountered within Trench 2 was an extensive layer of dark brown clay silt (3); containing occasional fragments of charcoal and brick. Layer (3) was also encountered in Trenches 1 and 4 where it was interpreted as the pre-mill soil horizon; probably representing the uppermost river silts formed by the River Dane. In Trench 2, a clay tobacco pipe bowl was recovered from the top of layer (3) which was stamped with the maker's mark 'ISAAC IONES'; the pipe bowl form is dateable to c.1680-1720.

### 5.4.3. PHASE 2

5.4.4. Along the north-western edge of Trench 2 there was a sandstone culvert (103) consisting of a pair of parallel walls constructed from large roughly dressed sandstone blocks ( Plate 21). The culvert followed a slightly sinuous route across Trench 2 on a south-west to north-east alignment. The course of the culvert closely matches the route of a water filled channel shown on the 1865 plan (FIGURE 3) of the Forge Silk Mill that drained in to the River Dane. This water filled channel is also shown on the Congleton Tithe map of 1845 (FIGURE 10) where it is synonymous with a pre-existing field boundary. The watercourse is likely to be one of two “streams of water” referred to in the sale particulars for the site in 1824. The field boundary is also shown on Moorhouse's Map of Congleton in 1818 and possibly on an earlier map of Congleton dated to 1775. This would suggest that the construction of the stone culvert pre-dates the development of the mill complex and the associated terraced houses.

5.4.5. A brick structure (121) could be seen to stratigraphically pre-date the construction of the Phase 3 terraced cottages. Wall (121) was set on a north-south alignment and consisted of a course of brick headers running between the eastern end of stone culvert (103) and the Phase 6 concrete foundation (93). The line of wall (121) had been cut by the excavation of terraced cottage wall foundation (83). The relationship of wall (121) would suggest that it was associated with a phase of activity which pre-dated the construction of the terraced cottages; and it is perhaps associated with either an earlier phase of the mill complex or a former activity associated with the forge.

5.4.6. At the western end of Trench 2 there was an 'L' shaped length of brick wall foundation (139). This ran south from the edge of the stone culvert wall (103) across the line of the rear cottage wall (83) towards the centre of cottage 1; then it dog-legged east until it reached wall line (92)/(94). Structure (139) was unlike the construction of the cottage building in that it comprised a single course of stretchers many of which had been set on edge as a 'soldier' course. The relationship with wall (83) had been destroyed but it appeared to butt wall (94). The structure may not be contemporary with the cottages and is



similar in character to wall (121); as such, it may represent part of an earlier building on the site.

5.4.7. Brick structures (95) and (116) which occupied the rear part of cottage 2 are not duplicated in the other mid terrace cottages (no.s 3 to 6) and they may be an element of the earlier building represented by wall (139).

5.4.8. An isolated rectangular brick structure (123) in the rear of cottage 1 was filled with coal dust and clinker suggesting it was the base for a fireplace. This feature may also be associated with the building represented by wall (139).

#### 5.4.9. PHASE 3

5.4.10. Phase 3 was dominated by the construction of a row of terraced cottages which were framed by brick outer walls (83), (84), (85) and (86) ( Plate 20) and (FIGURE 9). Preservation of the cottage foundations was variable along the length but in general the western end was slightly better preserved than the east. There were also a number of brick structures and associated floor surfaces to the north of the terraced cottages adjacent to stone culvert (103). These structures probably represent the outside toilets for the row of cottages.

5.4.11. The terraced cottage block involved the erection of two continuous front and back walls (86) and (83) which were each 32.77m in length. These were connected at the east and west gables by walls (85) and (84) which were each 7.6m long. The method of construction in all four walls involved the excavation of a linear foundation trench which was entirely backfilled with loose brick rubble hardcore ( Plate 22). A single course of double-header bricks were then laid directly above the hardcore creating a foundation that was 0.47m wide. Above this basal course was a slightly more narrow off-set course of headers and stretchers ( Plate 23) 0.35m wide which were then alternated in higher courses of the walls.

5.4.12. A series of north-south aligned partition walls were laid between walls (83) and (86) to divide the terrace into individual dwellings. Three of these partition walls (87)/(100), (88)/(99) and (90)/(97) only survived as brick rubble filled foundation trenches. The western most wall (92)/(94) as well as wall (96) had surviving lower courses consisting of double-stretchers which

created walls 0.24m wide; this width was confirmed at the southern end of wall (89). These partition walls suggested that the terrace had been divided into seven dwellings with the eastern and western end terraces being slightly larger than the five mid-terrace cottages. These cottages have been numbered 1 to 7 from the western end for reference purposes.

5.4.13. The five mid-terrace cottages (cottages 2-5) were further sub-divided from front and back by a continuous east-west wall (101). Much of the length of wall (101) only survived as a brick rubble filled foundation trench but at the western end a surviving lower course consisted of single header bricks which created a wall 0.24m wide. This created two rooms per terrace cottage: the front room measuring 3.56m east-west by 3.66m north-south; and the back room measuring 3.56m east-west by 2.5m north-south. Wall sections (90), (89) and (88) all had evidence for a small projection on the western side which was 1.5m north of front wall (86). These projections are likely to represent the locations of the chimney stacks evidenced by both the elevation drawing on the 1865 plan (FIGURE 3) and by the 1929 aerial photograph (FIGURE 4).

5.4.14. The most westerly mid-terrace cottage (cottage 2) had a brick structure represented by walls (95) and (116) in the rear room. However, this structure is not mirrored in the other mid-terrace cottages and it is somewhat anomalous; as such it could be associated with the Phase 2 activity.

5.4.15. The eastern end-terrace cottage (cottage 7) had no evidence for internal divisions or the location of possible chimney stacks; the enclosed internal space measured 5.7m east-west by 6.2m north-south.

5.4.16. The western end terrace (cottage 1) appeared to have some evidence for a partition wall following the line of dividing wall (101); however, there are reasons to suspect that this structure is associated with activity in Phase 2. If this wall is discounted then there is no evidence for internal divisions; the enclosed internal space measured 6.3m east-west by 6.2m north-south. The location of possible chimney stacks might be indicated by two brick projections on the western side of wall (92) and a coal and ash filled brick

chamber (123) adjacent to wall (94).

**5.4.17.**To the north (rear) of the row of terrace cottages were a series of brick and stone surfaces and walls adjacent to Phase 2 culvert (103) which probably represented outbuildings for the cottages. The most westerly structure (to the rear of cottage 2) was represented by brick floor (106) which formed a roughly rectangular shaped surface measuring 2.9m east-west by 2m north-south ( Plate 24). The western edge of floor (106) were defined by wall (114), whilst the eastern edge was defined by wall (124); suggesting that a building had once covered the footprint of the floor surface. A sunken brick structure (125) had been inserted in to the north-western corner of floor (106) which measured 1.4m east-west by 0.65m north-south. Structure (125) was built against the southern wall of stone culvert (103) and may represent the location of a latrine. In the south-east corner of floor (106) was a raised area of bricks (115) which might represent the base for something such as a wash-tub.

**5.4.18.**Adjoining the eastern side of brick wall (124) was a second sunken brick structure (105) which measured 1.5m east-west by 0.8m north-south. Structure (105) was built against the southern wall of stone culvert (103) which had been modified by the removal of several stone blocks; this would have facilitated the flow of material from (105) in to the culvert channel. The connection between structure (105) and the culvert suggests that it would have been continuously flushed by water flowing along the culvert towards the River Dane. As with (125), structure (105) probably represents the location of a latrine.

**5.4.19.**A north-south wall (126) ran south from the centre of structure (105) towards the rear wall (83) of the terrace cottages. Wall (126) followed the line of internal cottage partition wall (91)/(96) and as such could represent part of a backyard boundary wall between cottages 2 and 3. This would suggest that latrine (105) was shared between the two properties.

**5.4.20.**To the east of structure (105) was a square brick structure (112) measuring 2.3m east-west by 2.2m north-south ( Plate 25). The interior of structure

(112) had a brick floor (104) which had been covered by a layer of grey ash-rich silt (109) containing domestic debris including transfer printed pottery and Mocha ware. Deposit (109) might suggest that the structure had served as a coal shed.

5.4.21. To the east of structure (112) was another area of brick flooring (127) measuring 1.5m east-west by 1.3m north-south. The location of floor (127) would have been to the rear of the fourth cottage but there was little to indicate its function beyond inferring it as a possible latrine.

5.4.22. The rear yards to cottages 5 and 6 had been heavily disturbed by later activity and no evidence for outbuildings had survived. However, to the rear of cottage 7 there was a square brick and stone structure (117) measuring 2m east-west by 2m north-south which probably represented another outside latrine. The interior of structure (117) was covered by a floor of broken 'yorkstone' fragments (118) ( Plate 26).

5.4.23. To the east of structure (117) was a rectangular brick tank (119) which measured 3 x 0.73 x 0.24m; the base of the tank sloped gently from east to west. Tank (119) was built parallel to culvert (103) and may have served a similar function to brick chambers (125) and (105) to the rear of cottages 2 and 3.

5.4.24. Along the southern edge of Trench 2 and south of terrace cottage wall (86) was a line of 'yorkstone' paving slabs (140). This paving was thought to represent the external pavement in front of the cottages which can be seen on the 1929 aerial photograph (FIGURE 4) of the mill complex.

#### 5.4.25. PHASE 4

5.4.26. A brick culvert (102) was inserted beneath the western side of cottage 7, cutting through wall foundations (83) and (86), and running parallel with partition wall (87)/(100). Culvert (102) consisted of two parallel brick walls up to three courses high which had originally been capped with 'yorkstone' slabs ( Plate 27). The culvert was 12.3m long, 0.44m wide and 0.16m deep; and it ran from the roadside south of terrace wall (86) northwards to stone culvert (103). Culvert (102) appears to have served as a surface water drain for

the road running parallel to the front of the row of terraced cottages.

5.4.27. A series of inter-connecting walls (128) were added to the rear of the western cottage (cottage 1). These walls were constructed from bricks laid as double-stretchers 0.24m wide and bonded in a hard light grey mortar. Structure (128) corresponds to a large outbuilding at the western end of the terraced cottages shown on the 1865 plan (FIGURE 3). The 1929 aerial photograph (FIGURE 4) suggests that this was a single storey building.

5.4.28. During this phase the stone culvert (103) began to become choked with silt and increasing amounts of domestic waste represented by fill (108) ( Plate 28), The pottery from fill (108) included a dish with a maker's stamp dated c.1882-94. An environmental sample recovered from fill (108) indicated that the silt had contained faecal matter in keeping with its probable function as a sewer. Connected to the silting of culvert (103) was silt deposit (110) within brick chamber (105) which produced a terracotta jar dated to 1864.

5.4.29. Deposits of silt (107) and (109) also accumulated over brick floors (104) and (116) respectively. These silt deposits were similar in character to a more extensive layer (111) which covered much of the backyard area between the back wall (83) of the terraced cottages and stone culvert (103). Layer (111) contained domestic waste including a dish with a makers stamp dated c.1860-72.

#### 5.4.30. PHASE 5

5.4.31. During Phase 5 both stone culvert (103) and brick culvert (102) were furnished with salt-glazed sewer pipes. This is likely to have been as part of a wider system of drainage and sewerage improvements on the site.

#### 5.4.32. PHASE 6

5.4.33. During the 20<sup>th</sup> century the row of terraced cottages was demolished and a substantial concrete footing (93) was constructed over the top of it. Concrete footing (93) incorporated a series of steel stanchion bases along its length.

5.4.34. Parallel to concrete footing (93) was a service trench (129) consisting of a shallow linear trench containing a corrugated plastic pipe; which had been

backfilled with pea-grit gravel.

### **5.5.TRENCH 3**

#### **5.5.1. PHASE 2**

5.5.2. The earliest activity encountered within Trench 3 was a backfilled linear ditch (130) aligned roughly north-south along the western side of Trench 3. This ditch was cut in to the natural boulder clay and had been backfilled with an organic-rich silt (131). Ditch (130) had been heavily truncated by the Phase 3 gasometer wall construction.

#### **5.5.3. PHASE 3**

5.5.4. During Phase 3 a large circular brick wall (132) for a small gasometer had been constructed in Trench 3 which had largely removed Phase 2 ditch (130). Wall (132) was 0.48m wide and formed a circle with an outer diameter of 7m and a surviving height of c.1m ( Plate 29 and 30). The area enclosed by wall (132) had a 'yorkstone' flagged floor (134) at the base which had been covered by a thick black tar-rich deposit (136). The potential for arsenic contamination coupled with the rapid flooding of the structure meant that further examination and recording were not possible.

5.5.5. To the east of gasometer wall (132) was the foundation to a linear brick boundary wall (133) that was aligned north-south. This boundary wall is shown on the 1865 plan (FIGURE 3) of the mill complex and is probably contemporary with the construction of the gasometer.

#### **5.5.6. PHASE 4**

5.5.7. The gasometer was subsequently demolished and the base (132) was backfilled with a deposit of orange/brown clay (137) that was rich in fragments of brick rubble. Following the demolition, all of the area to the west of boundary wall (133) was sealed with a layer of redeposited natural boulder clay (138). This activity must have taken place between the publication of the 1<sup>st</sup> edition and 2<sup>nd</sup> edition OS maps (between 1873 and 1897) (FIGURE 11 and 12).

#### 5.5.8. PHASE 5

5.5.9. A series of brick wall foundations (135) were constructed over the footprint of the former gasometer forming three sides of a roughly square structure measuring 7m by 7m. This structure corresponds to a building shown on the third edition OS map which was published in 1909 (FIGURE 13).

## 6. Finds

6.1. The artefacts recovered from the excavations have been fully processed and assessed with individual assessment reports being produced for some of the larger material categories such as the animal bone and the pottery. The full assessment reports are reproduced in the appendices and the key results are summarised below:

### 6.2. *Pottery:*

- 6.2.1. 436 sherds of pottery weighing 9.335 kilograms were recovered from contexts encountered within excavation trenches 2 and 4; these have been catalogued on an xl.spreadsheet and will form part of the site archive. There were no groups worthy of more than basic quantification and the primary function of the material was to inform the dating for the structural narrative.
- 6.2.2. All of the catalogued pottery was of Post Medieval date. In particular, Trench 2 context (108) produced 189 sherds, weighing 5.235 kg.
- 6.2.3. The bulk of the assemblage consisted of Pearl-glazed earthenwares (343 sherds, weighing 5.205 Kg) decorated with a mixture of hand-painted and transfer printed decoration. Amongst the transfer printed wares the 'willow pattern' scheme was dominant with 'Asiatic Pheasant' and 'Doric' patterns also represented.
- 6.2.4. A number of semi-complete Pearlware vessels were present in the assemblage and these included a dish from context (41) decorated in the 'Doric' pattern. The dish had a back-stamp 'DORIC' and maker's mark of 'Davenport' above an anchor with the numerals '6' and '0' either side of the anchor indicating a manufacture date of 1860. A second dish from context (108) and decorated with the 'Asiatic Pheasant' design had a back-stamp 'H & R' (either Hall & Read 1882-8 or Hughes & Robinson 1888-94). Another dish decorated with the 'Asiatic Pheasant' design from context (111) had a back-stamp 'T & T' (Turner & Tomkinson 1860-72).
- 6.2.5. Part of a matching ointment/paste jar and lid were recovered from context (110). The lid was decorated with a polychrome transfer printed scene known as 'the village wedding' and would have been produced by F & R Pratt & Co



between 1845-75. The jars were mass produced and contained products such as hand cream, rouge, meat and fish pastes, soothing salves and ointments.

6.2.6. A semi-complete red terracotta jar was also recovered from context (110); probably a product of the Watcombe Terracotta Company, Devon. This jar was decorated with blue/green enamel decoration; one side depicting the 'seven ages of man' as described in a poem by Shakespeare. The other side had an unintelligible scene with faint transfer printed lettering along the bottom reading 'C.....R/BORN/APRIL 23 1864'.

6.2.7. The Post-Medieval pottery assemblage from the Forge Mill excavations can be seen as typical of material recovered from late Post-Medieval deposits in Cheshire. The material from Trench 4 probably represents a house clearance episode(s) during the later part of the 19th century. It does not greatly enhance our understanding of the status of the cottage dwellers but does provide interesting snap-shots (such as the commemorative terracotta jar) in to the lives of the occupants. The primary function of the assemblage is to provide a chronology for the structural sequence encountered on the site. It should be retained as part of the permanent site archive.

### ***6.3. Clay Tobacco Pipe:***

6.3.1. A total of 14 fragments of clay tobacco pipe weighing 51 grams were recovered from Trench 2 contexts (3), (107), (108), (109) and (111); these have been catalogued on an xl.spreadsheet and will form part of the site archive. There were no groups worthy of more than basic quantification and the primary function of the material was to inform the dating for the structural narrative.

6.3.2. Only one bowl fragment was recovered from context (3) and this was a form dateable to c.1680-1720. The bowl had a stamped foot consisting of a square stamp with the name 'ISAAC IONES' printed on two lines. The maker could not be identified at either Chester or Broseley.

6.3.3. The rest of the assemblage consisted of thirteen undecorated stem fragments from contexts (107), (108), (109) and (111).

#### **6.4. *Glass:***

6.4.1. 32 fragments of Post Medieval glass weighing 1.407 kilograms were recovered from the excavation. 30 of the fragments were unmarked vessel glass from Trench 2 contexts (108), (110) and (111). The vessel fragments were mainly from mould formed bottles of both cylindrical and hexagonal shape. Fragments from (108) and (110) had moulded measurement marks on them suggesting they had contained some form of medication. Stemmed drinking glass fragments were recovered from (108) as well as a base from an hexagonal tumbler. Fragments from glass phials were recovered from (108) and (110).

6.4.2. Two fragments of Post Medieval window glass were recovered from context (111).

#### **6.5. *CBM:***

6.5.1. One fragment of unglazed Post Medieval floor tile weighing 187 grams and one fragment of roof ridge tile weighing 22 grams were recovered from context (108). These fragments are likely to be derived from the fabric of the terraced cottages and give some suggestion of the materials covering the internal floor and ridge of the roof.

#### **6.6. *Faunal Remains:***

6.6.1. The hand collected assemblage from Forge Mill, Congleton, has a limited species count, with only three mammal species present. These were cattle, red deer and pig, with oyster and chicken also present. The deep marks on several of the elements, and the saw cut ends, show evidence of later Post Medieval butchery practice.

6.6.2. It is clear that this assemblage represents kitchen waste, however it is of note that within the fill of the culvert, (108), there is evidence of at least two red deer, suggesting that high status meat was being consumed. The remainder of the assemblage is typical of domestic waste from the Post Medieval period in the area.

#### **6.7. *Metalwork:***

6.7.1. A complete copper-alloy tea-spoon was recovered from culvert backfill (108). The object was covered in corrosion from an associated iron object and no further detail could be recovered without x-ray.

6.7.2. An iron object was recovered from context (108) which appeared to be a length of rod 260mm long and 10mm in diameter, weighing 203 grams. The object was bent at a 90 degree angle at one end but it was not possible to establish if this was part of the original shape or due to later damage. No further detail could be recovered without x-ray.

**6.8. *Organic:***

6.8.1. Two complete silk skeins each measuring 150mm in length were recovered from drain backfill (48) within the Carding Room area of Trench 4. A third partial skein was also recovered with some fragments of iron corroded to it.

6.8.2. A complete wooden spindle-like object measuring 185mm long and 7mm in diameter was recovered in association with the the silk skeins in context (48). This spindle-like object may be associated with the spinning process.

## 7. Environmental Sampling

- 7.1. The full report on the environmental sampling is reproduced in the appendices. A summary of the results is presented below:
- 7.2. Forty litres of fill from a Post Medieval drain were presented for assessment. Twenty litres of the sample was processed in a Siraf-style flotation tank, another twenty litres was dry sieved through a 10mm mesh, and two 'squash' sub-samples (SENSU DAINTON 1992) were taken, from which slides for microscopy were created.
- 7.3. The heavy fraction ('residue') was caught on a 1mm mesh, while the washover ('flot') was caught on a 250µm mesh sieve. The residue was air dried and weighed prior to being sorted. The flot was weighed wet then scanned for waterlogged organics under a low power binocular microscope. It was then air dried and sorted. After drying, the residue weighed 1877g, and the wet flot weighed 175g. Squash slides were scanned at x100 magnification, and identifications made at x 400 magnification.
- 7.4. Brief notes were made about the preservation of oyster shell and any evidence of damage by human activity or encrustation by epibiont organisms was recorded. Measurements of complete valves were taken following Claassen (1998).
- 7.5. The seed assemblage is well preserved, and largely represents edible fruit taxa. This strongly suggests the incorporation of human faeces into this deposit. The presence of fig seeds are of some interest, as fertilisation of figs requires the wasp *Blastophaga psenes* (LINNAEUS, 1758), which is a Mediterranean species not found in the British Isles. This means that, although figs do grow in Britain, their fruits will not contain seeds, meaning that the figs were imported, most likely as dried fruit. The non-edible taxa consist of an unidentified grass and seeds of red campion, a wildflower of woods and hedges, which grows on damp soils (FITTER 1987).
- 7.6. The charcoal fragment comes from a piece of wood with weak ring curvature, meaning it is likely to be part of a large branch or trunk. Other plant remains include a thorn, possibly from a blackthorn bush, and a fragment of bark from a small twig. No attempt has been made to identify the fungal spores on the squash slides.
- 7.7. The oyster shell represents food waste. Both a right (flat, upper) and a left (cupped,

lower) valve are present, the left valve is too damaged to be sure that the two match, however. Damage may be associated with opening of the shell, although such damage to the left valve is probably more likely post-consumption, as the oyster would be eaten from the intact left valve. The staining is due to contact with chemicals in the burial environment, and is commonly seen in oysters from cesspits.

7.8. The deposits derive largely from household waste, and include human faeces. The absence of parasite ova in the squash slides does not preclude their presence in the deposit as a whole, as slides represent a tiny proportion of the available sediment. Aside from the red campion seeds, there is little indication from the sample of environmental conditions. This may be due to poor calcareous preservation affecting the presence of snail shells, or it may be due to rapid infilling of the feature.

## 8. Discussion and Conclusions

8.1. The archaeological works carried out on land at Forge Mill, Congleton, Cheshire between the 28<sup>th</sup> November and 12<sup>th</sup> December 2016 and 9<sup>th</sup> and 20<sup>th</sup> January 2017 were intended to investigate and record the archaeological remains of a structures shown on the plan of the silk mill dated to 1865. The results of this work are discussed by trench below.

### 8.2. Trench 4

8.2.1. A pre-mill feature in the form of a large pit backfilled with brick rubble was identified at the northern end of Trench 4. The function of this pit could not be ascertained within the confines of the excavation and immediately to the north the area had been voided by the insertion of a later brick-lined chamber.

8.2.2. Trench 4 successfully located the structure referred to on the 1865 plan (FIGURE 3) as the 'Carding Room'; which in both the 1865 elevation and the 1929 aerial photograph (FIGURE 4) is shown as a four-storey building. The building is first mapped in the Congleton tithe map of 1845 (EDT 123/2) (FIGURE 10) where it is described as part of the 'Forge Silk Factory and Premises'. A bankruptcy note in the Macclesfield Courier for December 1840 states that 'the principle mill is four stories high, 96 feet (29.26m) long by 30 feet (9.14m) wide and 46 feet high being well supplied by a constant stream of excellent water' (MARTIN 2016A). The combined cartographic and documentary evidence would suggest that the Carding Room equates to this 'principle mill' building and that it was therefore built during the 1830s.

8.2.3. An interpretative version of the 1865 Forge Mill plan was published in 1993 in which the Carding Room is labelled as '2' (CALLADINE & FRICKER 1993). The accompanying text describes the stages of processing the silk and states that the 'dressed silk was taken for carding on the ground floor of the four-storeyed mill building, which is comparable in scale to silk mills of the mid 19<sup>th</sup> century, measuring 8.5m wide by 24m long, with floor to ceiling heights of 3.6m'. The 1993 publication also states that 'Since there is no mention on the key to the plan of the processes of drawing (the equivalent of cotton roving) and spinning, it is reasonable to assume these were carried out on the upper

floors' (CALLADINE & FRICKER 1993).

- 8.2.4. The Carding Room would have housed machines which converted the dressed silk in to a rope-like material called sliver. This would then have been taken to roving machines which refined the sliver into a more refined product that could fit into a spinning frame and be stretched and twisted in to thread. The bankruptcy note in the Macclesfield Courier for December 1840 states that 'The machinery at Crosslatch (Forge) Mill comprises two 30 inch blowers, pickers, with double scutcher, 36 carding engines of 30, 36 and 40 inches in the wire and four double engines of 48 and 54 inches each, drawing, stubbing and roving frames, cans & Skips; twelve doubling frames, from 180 to 240 spindles each; hydraulic screw and making up presses, three power looms, turning and drilling, latches and tools, two copper boilers with furnaces etc. The whole of gearing through the mill expect the main shaft and a general and excellent assortment of the necessary implements including mechanics' and joiner's shops' (MARTIN 2016A).
- 8.2.5. The carding machines would have been belt-driven by large leather belts powered by horizontal drive shafts on the ceilings of each production room. The horizontal shafts would in turn have been driven by vertical drive shafts powered from either a water wheel or steam from a boiler room. There was no evidence for a wheel-house at Forge Mill but an engine house and boiler house are marked on the 1865 plan (FIGURE 3) in the strip of buildings to the west of the Carding Room and to the south of the gas tank.
- 8.2.6. The floor of the Carding Room did not survive and the only evidence for the arrangement of the machinery was provided by the sunken brick structures and associated stone mounting blocks crossing the middle of the building footprint. It seems likely that these mountings were associated with the main drive shafts powering the 36 carding engines that were once located within the building. The more substantial mounting block at the western end of the structure may suggest the location of the main upright shaft which would have reached to the upper floors of the mill building. The insertion of a larger mounting block during Phase 4/5 might suggest a larger upright shaft was required during the later development of the mill.

### 8.3.Trench 1

8.3.1. Trench 1 successfully located the structure referred to on the 1865 plan as the 'Chimney and Staircase'. The structure is first mapped in the Congleton tithe map of 1845 (EDT 123/2) (FIGURE 10) where it is described as part of the 'Forge Silk Factory and Premises'. The excavation confirmed that the chimney and staircase were contemporary with the construction of the Carding Room and (as already suggested above) this is likely to have been achieved during the 1830's.

8.3.2. The location of the chimney in comparison to the engine and boiler house marked on the 1865 plan (FIGURE 3) does not seem to be logical. However, the excavation suggested that the earliest arrangement of flue to reach the chimney was directed from the east rather than the west. The 1840 bankruptcy notice states that the mill comprised 'of two recently built spinning mills, ... two steam engines, one of 26 horse power and the other of 10 horse power, boilers, heavy gearing and fixtures' (MARTIN 2016A). The evidence might suggest that the steam engines were originally located on the east side of the Carding Room but had been relocated by the time of the 1845 tithe map.

8.3.3. The closest surviving example of a circular stair tower enclosing a mill chimney is at the Brownsfield Mill in Manchester. This compares well with the elevation of the stair-chimney provided on the 1865 Forge Mill plan (FIGURE 3). A slightly more elaborate example can be seen at the Bliss & Son's Tweed Mill outside Chipping Norton, in Oxfordshire.

### 8.4.Trench 2

8.4.1. The partial remains of a pre-cottages rectangular brick building were identified at the western end of Trench 2 and allocated to Phase 2. This building would have pre-dated the 1845 tithe map and may be the building shown on the Swires' and Hutchin's Map of 1830. Unfortunately, little could be added to the function of this building beyond the location of a possible fireplace in the south-east corner.

8.4.2. Trench 2 successfully located the structure referred to on the 1865 plan as the 'Cottages'. The structure is first mapped in the Congleton tithe map of 1845



(EDT 123/2) (FIGURE 10) where it is described as 'eight dwellings'. The 1840 bankruptcy notice states that the mill had 'six dwelling homes'. However, in 1860 the then owner of Forge Mill (Peter Wild) had a workforce of 70 people and by 1899 this had increased to 140 employees (MARTIN 2016A). This would suggest that it is unlikely that these cottages were intended to house the mill's workforce and the status of the occupants might have been slightly higher.

8.4.3. The elevation shown on the 1865 plan (FIGURE 3) shows the cottages to be a two storey terrace with seven front doors. Each front door has a pair of windows (one above the other) to the east of it with the exception of the western end terrace which has four windows (two above two) and a possible porch. The cottages roof line shows six chimney stacks. A single storey building is shown on the north-east corner of the eastern end terrace. The excavation of the terraced cottages in Trench 2 confirmed that the 1865 plan and elevation appear to be correct and that the cottages were divided in to 7 dwellings from the outset.

8.4.4. The outbuildings to the rear of the terraced cottages were set against the line of a stone culvert carrying water eastwards to the River Dane. This pre-existing feature seems to have been utilised as a drain to remove effluent from these outbuildings and this would have prevented a build up of sewage to occur on the site.

8.4.5. The evidence from Trench 2 suggested that the stone culvert gradually silted up during the later part of the 19<sup>th</sup> century; eventually becoming entirely choked leading to the insertion of a replacement sewer pipe. Indeed this culvert has disappeared by the time of the 1897 OS map (FIGURE 12), with the back yards of the cottages extending further north than on earlier maps. The pottery recovered from culvert silts was not particularly unusual with the exception of the commemorative terracotta jar from Devon dated 1864. Environmental and faunal remains recovered from the culvert silts reveal something of the diet of the occupants of the terraced cottages during the later 19<sup>th</sup> century. Principally, the assemblage is noteworthy for being slightly exotic with butchered red deer amongst the faunal remains and fig and grape seeds amongst the botanical remains. In particular, the fig seeds would be derived

from imported (probably dried) fruit from the Mediterranean. These exotics may support the notion that the occupants of the cottages were of slightly elevated status compared to the majority of the mill workers.

### 8.5. Trench 3

- 8.5.1. Trench 3 successfully located the structure referred to on the 1865 plan as the 'Gas Tank'. The structure is not shown on the Congleton tithe map of 1845 (EDT 123/2) (FIGURE 10) nor is a gas tank referred to in the 1840 bankruptcy notice. The earliest mapping of the structure appears to be the 1865 plan (FIGURE 3), it is marked on the 1873 OS map (FIGURE 11) as 'Gasometer' but does not appear on the 1897 OS map (FIGURE 12) or later editions (MARTIN 2016A).
- 8.5.2. The word 'gasometer' is commonly found on historical Ordnance Survey maps dating back to their first editions. The term can even be found on older tithe maps. It was a term used by the lay person, never the gas engineer. In terms of coal gas storage and supply, gasometer was an incorrect term. They were not used to measure gas, as that was the role of the gas meter. They were designed to fulfil the role of a gas storage vessel (gasholder) (RUSSELL 2010).
- 8.5.3. The remains of the gas tank in Trench 3 consisted of a circular brick wall c.7m in diameter with a flat internal paved stone base set in puddled clay. The construction trench on the outer side of the brick wall had been backfilled with puddled clay and the internal face had been rendered; this served to waterproof the tank.
- 8.5.4. A gasholder consisted primarily of two parts: a tank which contained water, and a vessel or lift which would contain the gas. The purpose of the gasholder was more than just to store the purified gas; it provided the pressure in the gas mains for the distribution of the gas. The gasholder operated on the basic principle of a gas-filled floating vessel, rising and falling in a seal of water. For single-lift holders the height of the vessel varied from 30 to 40% of the diameter of the tank. The height of the vessel was usually about a foot (0.304m) shorter than the depth of the tank (RUSSELL 2010). The wall diameter of 7m in Trench 3 suggests a vessel height of between 2.1 and 2.8m with a

brick tank of comparable depth.

8.5.5. The gasholder tank was the part of the gasholder which would house the lifts when down and contain the water in which the holder raised and descended depending on gas flow. The water functioned primarily as an elastic gas-tight seal. The tank was waterproofed to prevent water leakage. The Gasholder tank could be below the ground level, partially below the ground level, or entirely above the ground level, depending on the type of gasholder employed and the ground conditions. Where the ground conditions were favourable it was more economical to leave a conical mound within the centre of the gasholder tank, this was called a cone or dumpling. In tanks, whose diameters did not exceed 18m, it would be more economical to remove all the material if it required waterproofing. Brick, stone and concrete materials were normally only used to construct tanks which were totally or predominantly below ground (RUSSELL 2010).

8.5.6. Many old sites marked as 'gasometers' adjacent to mills, factories, hospitals and country houses were associated with small gasworks which were often not marked on maps and the production plant would have been located in a nearby building. Whilst many of these factory/mill gasworks appeared small, they often produced more gas than many of the smaller village and town gasworks. This was because an adequately lit mill using the simple burners available at the time could have been operating many hundreds of burners throughout the mill and associated properties. These mill and factory gasworks disappeared because of economic rather than technical reasons. The larger town gasworks established in the industrial towns could supply many mills at a much cheaper price than they could achieve independently (RUSSELL 2010).

8.6. All relevant analyses and assessments on the results of the archaeological investigation have been completed and are contained within this report. No further post-excavation work is considered necessary unless the results are considered worthy of publication.

8.7. The strip-map-and-record exercise was undertaken during enabling works associated with building demolition and site clearance. The groundworks contractor was also

responsible for breaking out areas of hard standing and grubbing up buried obstructions; which in essence included foundations associated with former buildings on the site.

**8.8.** Beyond the conditions described above there were no constraints to addressing the aims of the programme of archaeological works as detailed within the Written Scheme of Investigation (MARTIN 2016B). As such the highest confidence can be placed in the data recovered and the reports conclusions.

## 9. Archive

9.1. The paper archive consists of:

- ◆ 2 x Drawing Register
- ◆ 25 x Drawing Film
- ◆ 9 x Photographic Register
- ◆ 28 x Black and white photographs and negatives
- ◆ 3 x Context Register
- ◆ 120 x Context sheets

9.2. The finds archive consists of:

- ◆ 3 x box artefacts as described in Section 6 (all materials).

9.3. The archive is to be deposited at the Cheshire East Museum Service.

# SOURCES CONSULTED

## BIBLIOGRAPHIC

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- MARTIN, A., 2016a. *Land at Forge Mill, Forge Lane Congleton, Cheshire (13/2623C) Archaeological Assessment*. Nexus Heritage.
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- MCNEIL, R. & NEWMAN, R., 2006. The Industrial and Modern Period Resource Assessment. In *An Archaeological Research Framework for the North West Region: Resource Assessment*. Council for British Archaeology, North West.
- RUSSELL, T., 2010. 'Gasworks Profile B: Gasholders and their Tanks'. Available at: <http://www.eugris.info/newsdownloads/Gasholders%20and%20their%20tanks.pdf>.

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# FIGURES



FIGURE 3 // Plan of Forge Mill 1865



0 50 m



PROJECT // 2381C - Forge Mill, Congleton, Cheshire

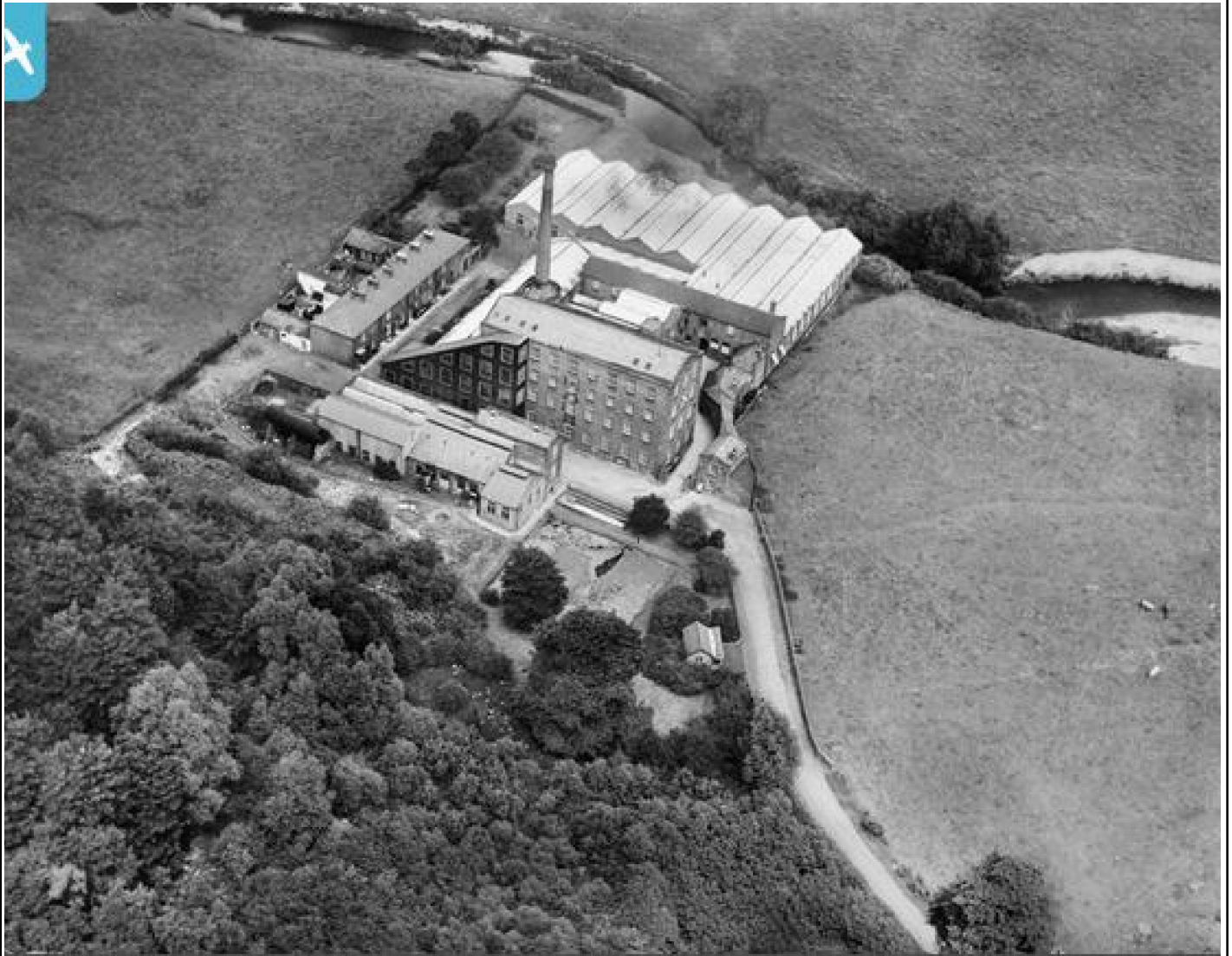
DESCRIPTION // Plan of Forge Mill 1865

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DOC REF: LP2381C-AMR-v1.5

L~P:ARCHÆOLOGY

FIGURE 4 // 1929 Aerial Photograph



<http://www.britainfromabove.org.uk/image/EPW028125>

© Historic England

0 200 m



PROJECT // 2381C - Forge Mill, Congleton, Cheshire

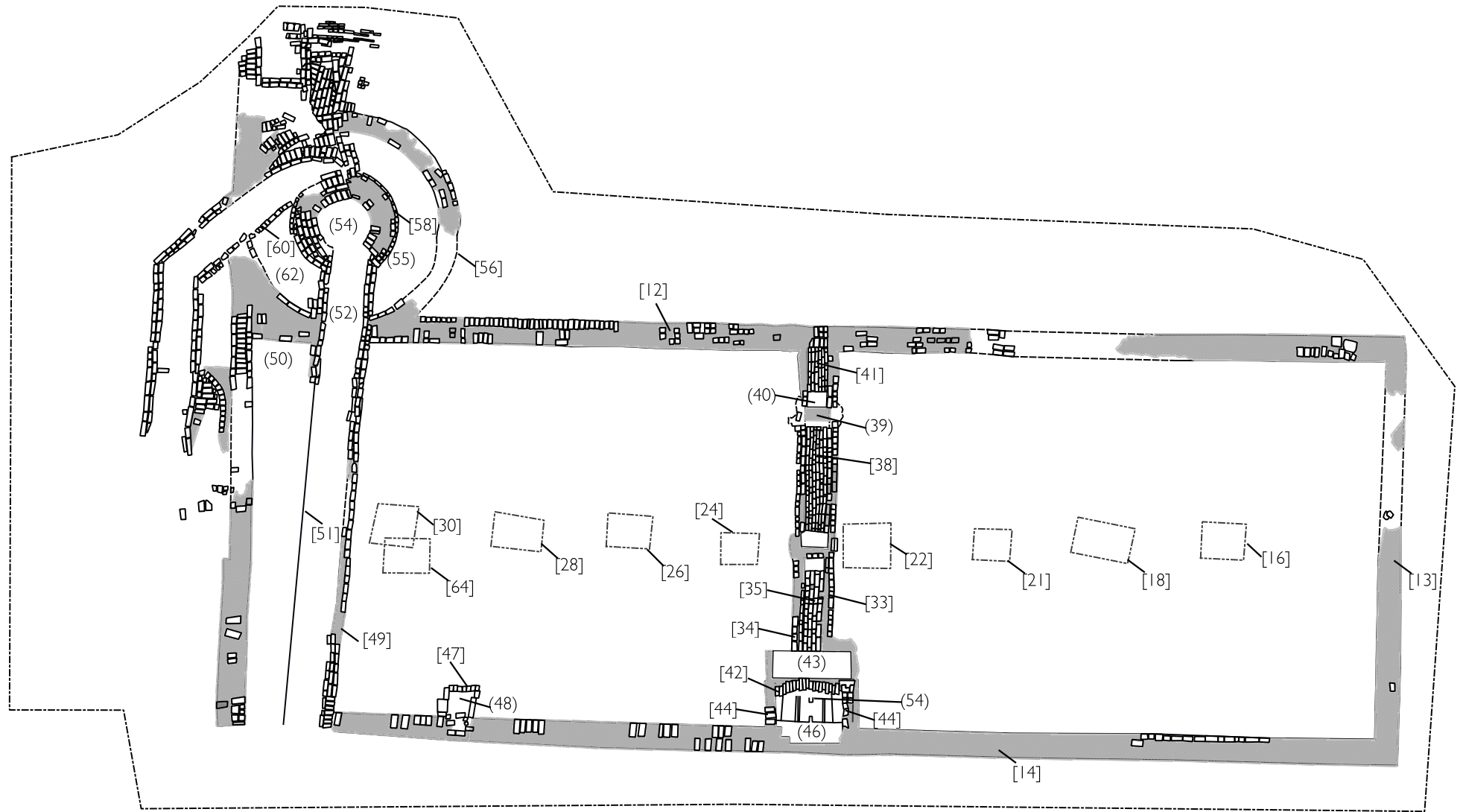
DESCRIPTION // 1929 Aerial Photograph

Reproduced by permission of the controller of HMSO. Licence no. 100053067

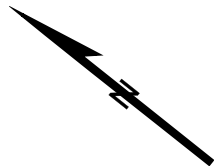
DOC REF: LP2381C-AMR-v1.5

L~P:ARCHÆOLOGY

FIGURE 5 // Plan of Trench I & 4



0 10 m



PROJECT // 2381C - Forge Mill, Congleton, Cheshire

DESCRIPTION // Plan of Trench I and 4

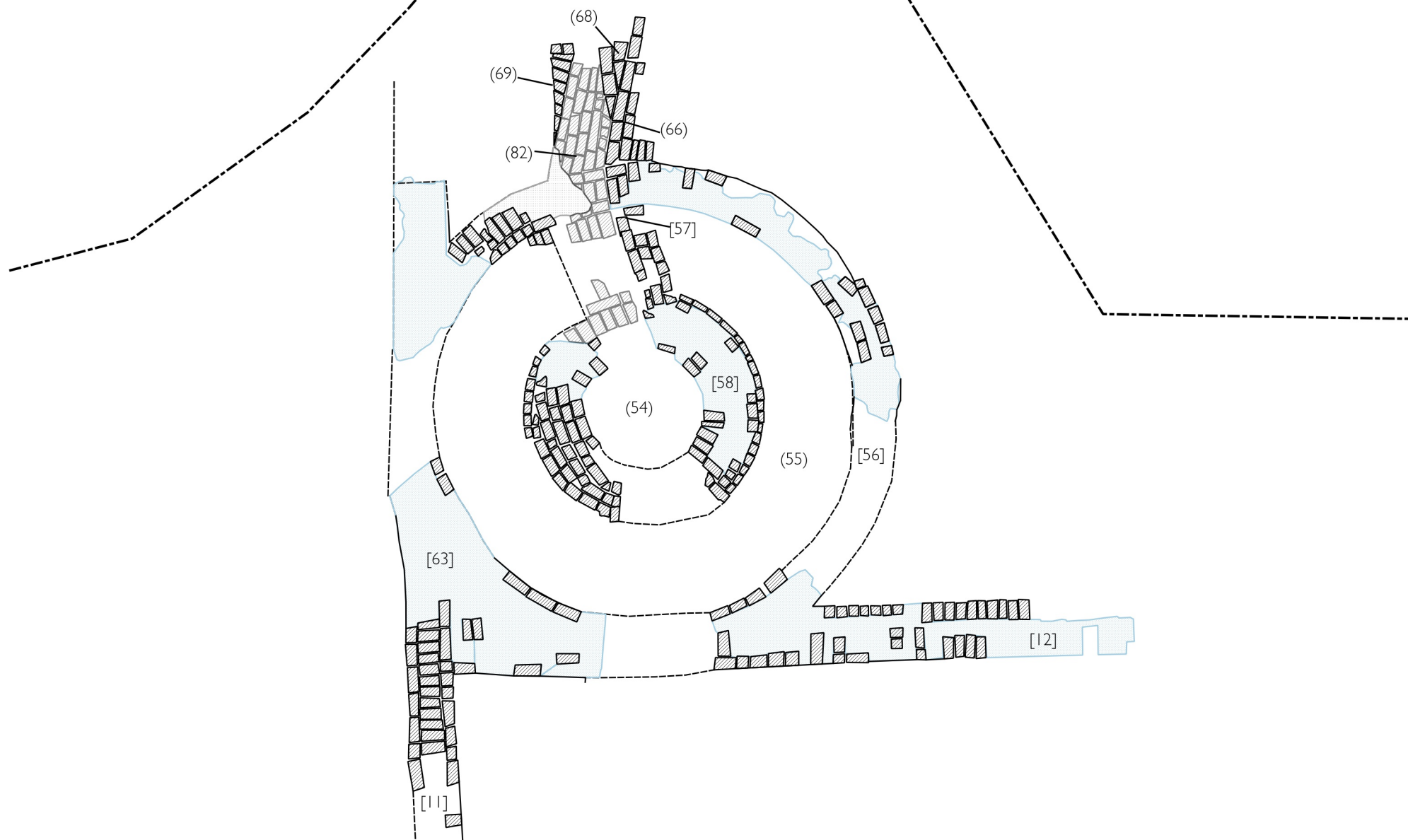
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DOC REF: LP2381C-AMR-v1

L-P:ARCHAEOLOGY

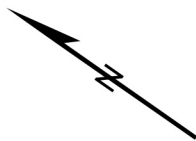


FIGURE 6 // Trench I, Phase 3



0

5 m



PROJECT // 2381 C - Forge Mill, Congleton, Cheshire

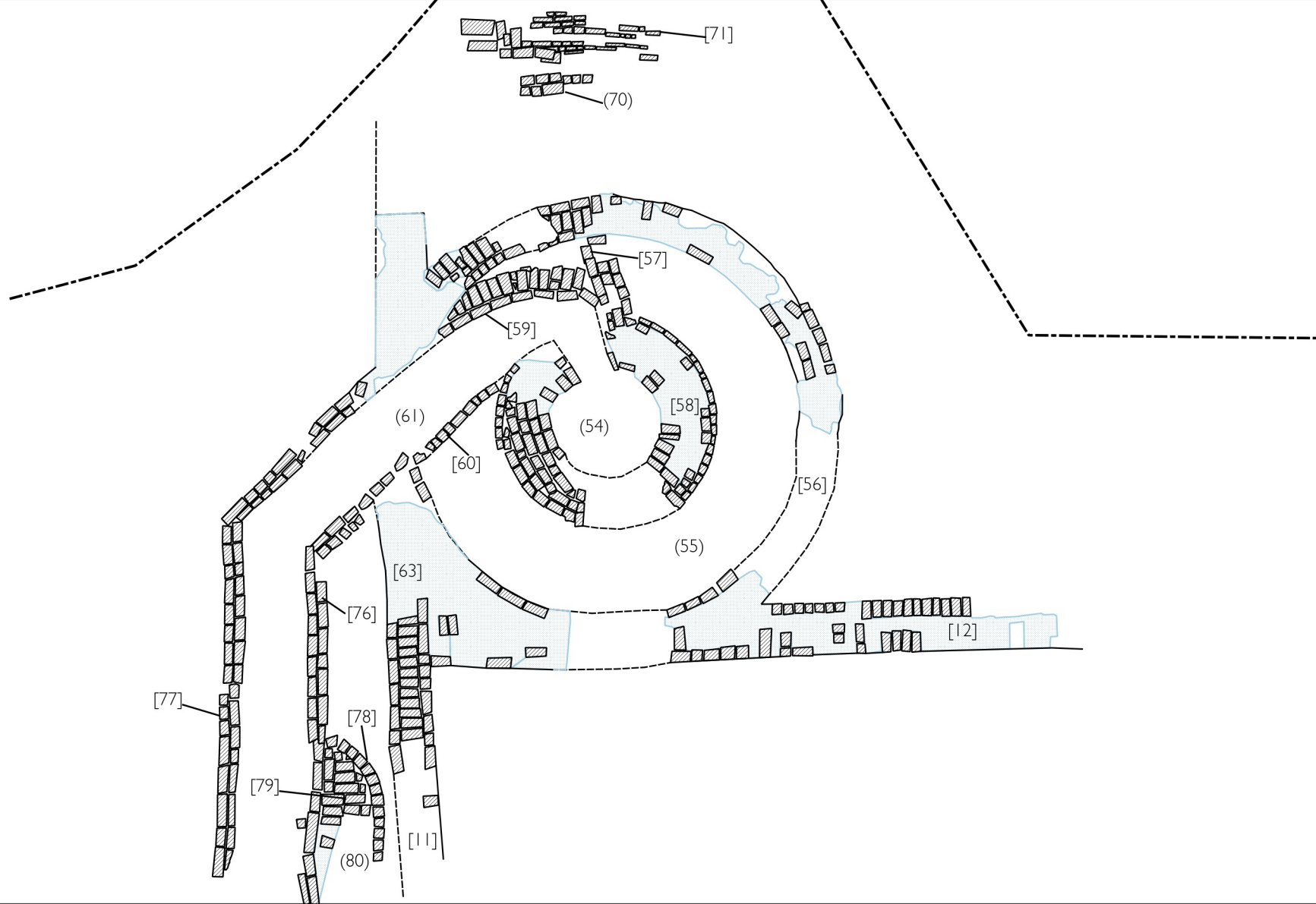
DESCRIPTION // Trench I plan of Phase 3

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DOC REF: LP2381 C-AMR-v1

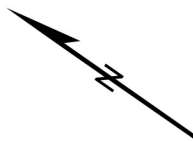
L-P:ARCHAEOLOGY

FIGURE 7 // Trench I, Phase 4



0

5 m



PROJECT // 2381C - Forge Mill, Congleton, Cheshire

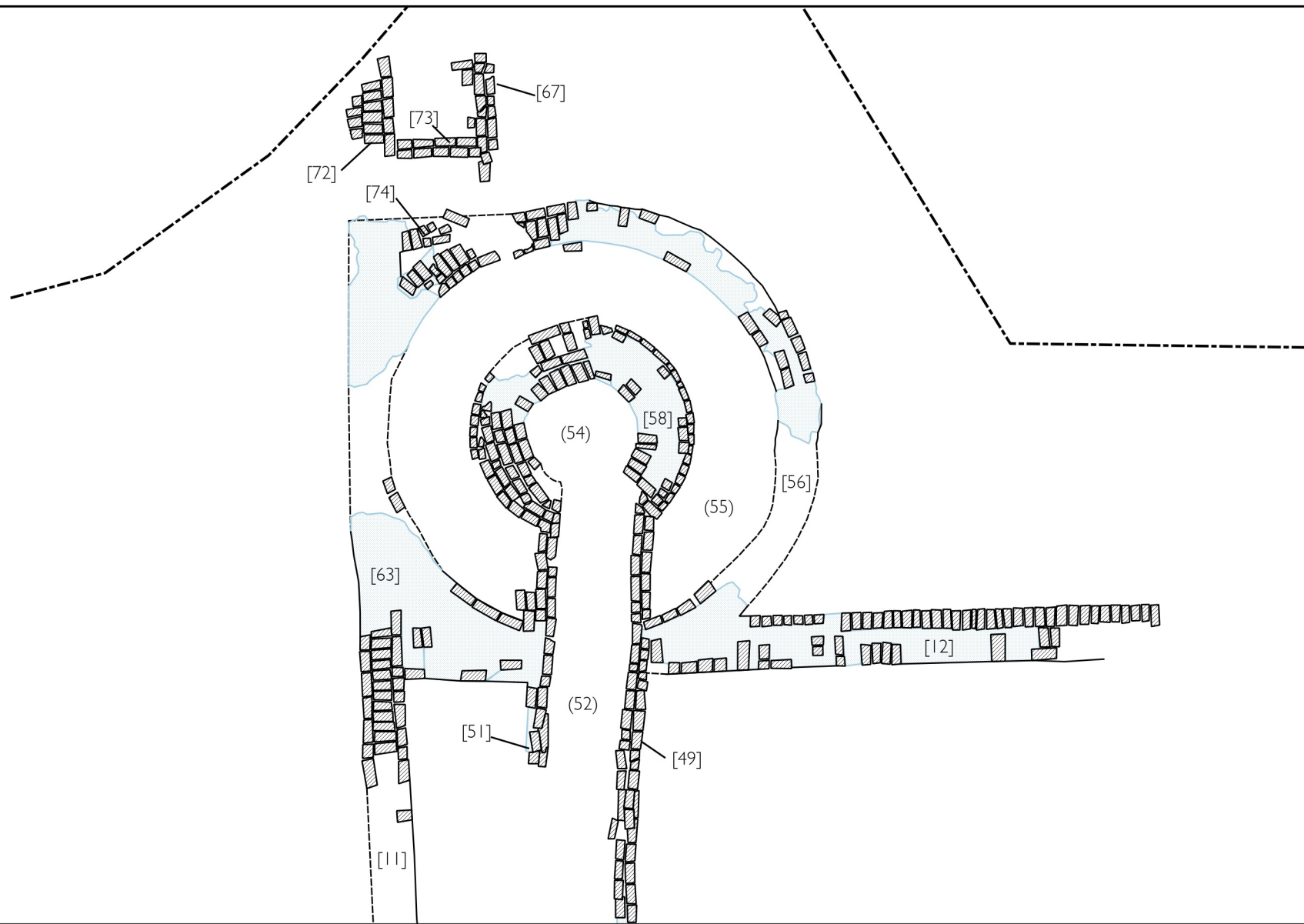
DESCRIPTION // Trench I plan of Phase 4

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DOC REF: LP2381C-AMR-v1

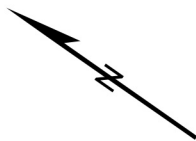
L-P:ARCHAEOLOGY

FIGURE 8// Trench I, Phase 5



0

5 m



PROJECT // 2381C - Forge Mill, Congleton, Cheshire

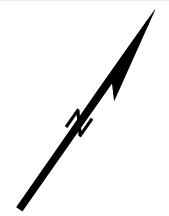
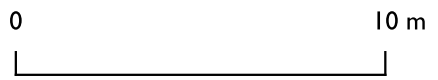
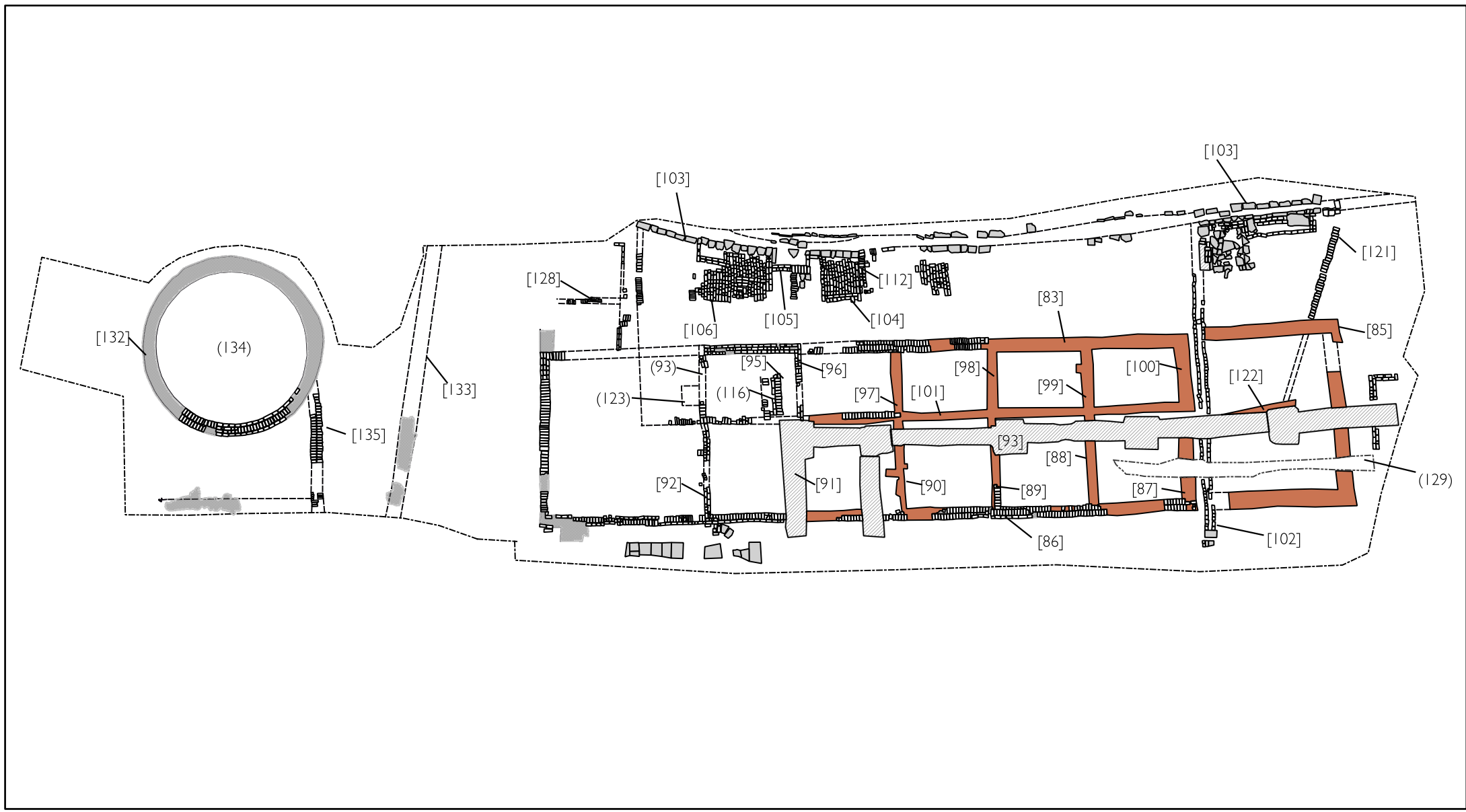
DESCRIPTION // Trench I plan of Phase 5

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FIGURE 9 // Plan of Trench 2 & 3



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DESCRIPTION // Plan of Trench 2 and 3

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FIGURE 10 // 1845 Tithe Map



0 50 m



PROJECT // 2381C - Forge Mill, Congleton, Cheshire

DESCRIPTION // 1845 Tithe Map

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DOC REF: LP2381C-AMR-v1.5

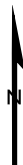
L~P:ARCHÆOLOGY



FIGURE 11 // 1873 OS Map



0 50 m



PROJECT // 2381 C - Forge Mill, Congleton, Cheshire

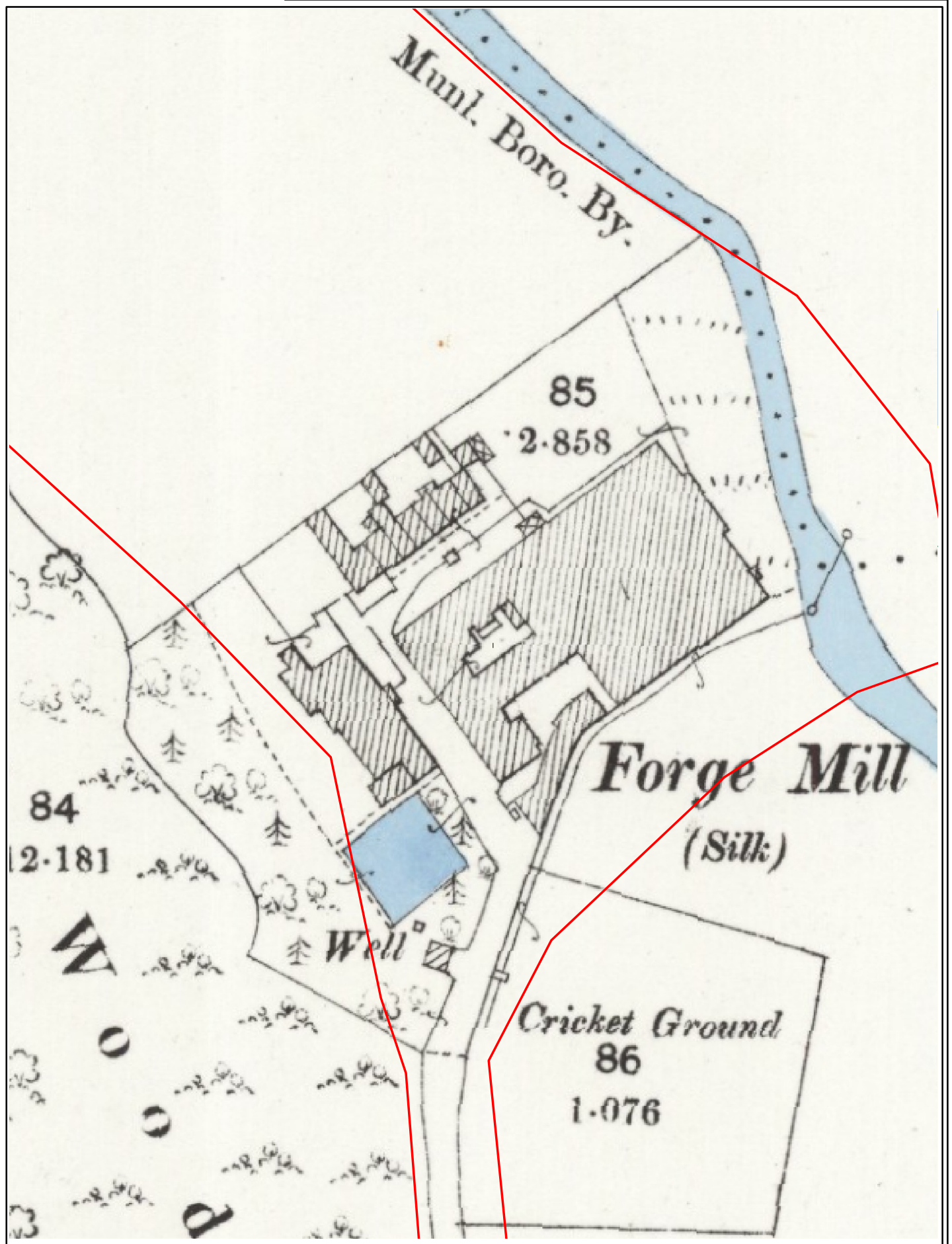
DESCRIPTION // 1873 OS Map

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DOC REF: LP2381 C-AMR-v1.5

L-P:ARCHÆOLOGY

FIGURE 12 // 1897 OS Map



0 50 m



PROJECT // 2381C - Forge Mill, Congleton, Cheshire

DESCRIPTION // 1897 OS Map

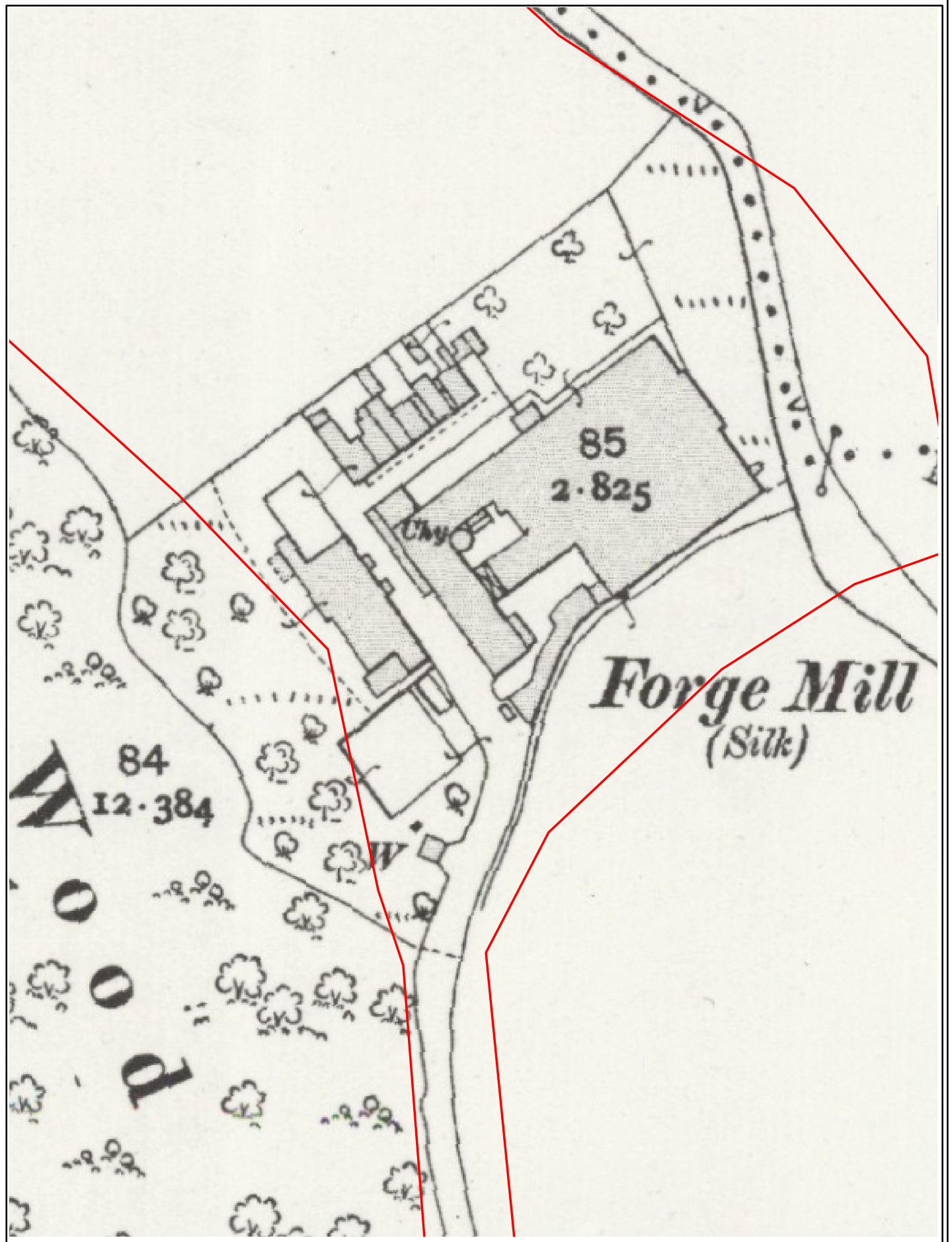
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FIGURE 13 // 1909 OS Map



0 50 m



PROJECT // 2381 C - Forge Mill, Congleton, Cheshire

DESCRIPTION // 1909 OS Map

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# PLATES



Plate 1 - Detail of south facing section of Trench 4, showing Phase 2 brick rubble deposit (50) beneath Carding Room wall foundation (11), with 1 x 2m scale.





Plate 2 - South facing section of Trench 4, showing Phase 2 brick rubble deposit (50) beneath Carding Room wall foundation (11), with 1 x 2m scale.



Plate 3 - Looking south towards Trench 4, showing the later brick cellar north of Carding Room wall foundation (11).





Plate 4 - Aerial view of Trenches 1 and 4, showing the Carding Room and the Stair-Chimney.





Plate 5 - Trench 4. Looking west, showing the mortar and brick wall elevation of Carding Room wall foundation (14), 1 x 1m and 1 x 2m scale.





Plate 6 - Trench 4. Looking east, showing sandstone pier base (21) set on top of a pale grey mortar foundation, 1 x 1m scale.





Plate 8 - Trench 4. Aerial view, showing brick and stone machine base (32) within the Carding Room, 1 x 1m scale.





Plate 9 - Trench 4. Looking east, showing machine mounting blocks (45) and (43), 1 x 1m scale.



Plate 10 - Trench 4. Looking north, showing relocated pier base (64) cut in to original pier base (30), 2 x 1m scale.





Plate 11 - Trench 1. Showing aerial view of Stair-Chimney (56)/(63) and (58) with the three successive flues.



Plate 12 - Trench 1. Looking north-west showing the elevation of Chimney wall (58), 1 x 1m scale.





Plate 13 - Trench 1. Looking south-west showing Phase 3 flue wall (57), (66), (69) and flue floor (82), x 1m scale.



Plate 14 - Trench 1. Looking north-west showing the elevation of flue blocking wall (59), 2 x 1m scale.





Plate 15 - Trench 1. Looking north-east showing the brick flue (75), 1 x 1m and 1 2m scale.





Plate 16 - Trench 1. Looking south-east showing side chamber (78)/(79), 1 x 1m scale.



Plate 17 - Trench 1. Looking north-west showing the brick culvert (71), 1 x 1m scale.





Plate 18 - Trench 1. Looking north-east showing Phase 5 flue walls (49)/(51) and blocking wall to Phase 3 flue, 1 x 1m scale.



Plate 19 - Trench 1. Looking north-east showing structure (67)/(72)/(73), 1 x 1m scale.





Plate 20 - Trench 2. Aerial view showing remains of the terraced cottages and associated outbuildings.





Plate 21 - Trench 2. Looking south-west showing the eastern end of stone culvert (103), 1 x 1m scale.





Plate 22 - Trench 2. Looking north-east showing the brick rubble foundation trench to wall (86), 1 x 0.5m scale.





Plate 23 - Trench 2. Looking south-west showing a section of terraced cottage wall (83), 1 x 1m scale.





Plate 24 - Trench 2. Looking south-east showing outbuilding structures (106)/(125), 1 x 1m scale.



Plate 25 - Trench 2. Looking north-west showing outbuilding structure (104)/(112), 1 x 1m scale.





Plate 26 - Trench 2. Looking north-west showing outbuilding structure (117)/(118), 1 x 1m scale.



Plate 27 - Trench 2. Looking south-east showing brick culvert (102), 1 x 1m scale.





Plate 28 - Trench 2. Looking north-west showing silting (108) of stone culvert (103), 1 x 0.5m scale.



Plate 29 - Trench 3. Aerial view of gas tank (132).





Plate 30 - Trench 3. Looking north-east showing brick gas tank wall (132), 2 x 1m scale.



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# OASIS FORM

## APPENDIX I

# OASIS DATA COLLECTION FORM: England

[List of Projects](#) | [Manage Projects](#) | [Search Projects](#) | [New project](#) | [Change your details](#) | [HER coverage](#) | [Change country](#) | [Log out](#)

## Printable version

**OASIS ID: Iparchae1-290355**

### Project details

Project name	Forge Mill Congleton
Short description of the project	Archaeological strip, map and record exercise on the site of a former 19th century silk mill.
Project dates	Start: 28-11-2016 End: 30-06-2017
Previous/future work	No / No
Any associated project reference codes	LP 2381C - Sitecode
Type of project	Recording project
Site status	None
Current Land use	Other 13 - Waste ground
Monument type	SILK MILL Post Medieval
Significant Finds	POTTERY Post Medieval
Significant Finds	CLAY TOBACCO PIPE Post Medieval
Significant Finds	GLASS Post Medieval
Significant Finds	ANIMAL BONE Post Medieval
Significant Finds	CBM Post Medieval
Significant Finds	COPPER ALLOY Post Medieval
Significant Finds	IRON Post Medieval
Significant Finds	ORGANIC Post Medieval
Investigation type	"Open-area excavation"
Prompt	Planning condition

### Project location

Country	England
Site location	CHESHIRE CONGLETON CONGLETON Forge Mill, Congleton
Postcode	CW12 4HF
Study area	2 Hectares

Site coordinates SJ 84897 63601 53.16902108392 -2.225952412 53 10 08 N 002 13 33  
W Point

Height OD / Depth Min: 70m Max: 72m

### Project creators

Name of Organisation L - P : Archaeology

Project brief originator Consultant

Project design originator Nexus Heritage

Project director/manager Dan Garner

Project supervisor Pascal Eloy

Type of sponsor/funding body Developer

Name of sponsor/funding body Wainhomes (NW) Ltd

### Project archives

Physical Archive recipient Cheshire Museum Service

Physical Archive ID LP 2381C

Physical Contents "Animal Bones","Ceramics","Environmental","Glass","Metal","Textiles"

Digital Archive recipient Cheshire Museum Service

Digital Archive ID LP 2381C

Digital Contents "Stratigraphic","Survey","Textiles","Animal Bones","Ceramics","Environmental","Glass","Metal"

Digital Media available "GIS","Images raster / digital photography","Spreadsheets","Survey","Text"

Paper Archive recipient Cheshire Museum Service

Paper Archive ID LP 2381C

Paper Contents "Stratigraphic","Survey"

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# ASSESSMENT OF FAUNAL REMAINS

## APPENDIX 2

**An Assessment Report on the Faunal Remains and Shell  
Recovered from Forge Mill, Congleton**

## Non Technical Summary

*This document is an assessment on the faunal assemblage recovered during mitigation works carried out at Forge Mill, Congleton.*

*Three mammal species were identified: cattle, pig and red deer. Fowl bone was also present in the assemblage, as was oyster. Many elements showed some form of butchery marks, with saw cut marks prevalent. As such it is clear that this assemblage represents the remains of animals butchered for consumption.*



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## Introduction and Methodology

This document forms an assessment on the faunal assemblage recovered during excavations carried out at Forge Mill, Congleton, during December 2016 and January 2017 by L – P : Archaeology.

The assemblage contains mammal and bird bone and bivalve elements, and has been catalogued in line with English Heritage recommendations (2014).

The assemblage was examined macroscopically and entered into a catalogue spreadsheet, attached as an appendix to this assessment. The catalogue is organised by context. Where multiple skeletal elements are present within a context, such as a number of femur fragments of the same species, these have been recorded by count and total weight. Otherwise skeletal elements have been recorded individually.

A total of 25 fragments were recovered from the site, totalling 460g in weight. Three mammal species were identified: cattle, pig and red deer. Fowl bones were also present, as were oyster shells.

## The Assemblage

The assemblage will be discussed by context below.

### Context (41)

Context (41) contained a total of 4 fragments of bone. These all came from chicken (*Gallus gallus*), weighing a total of 16g. The bone fragments included 1 rib fragment and 3 humerus fragments. The deposit formed a layer over the engine base of the carding room, and is thought to date from the mid to late 19<sup>th</sup> century. It is likely that these bones form discard from a meal taken within the mill by a worker.

### Context (108)

Context (108) contained an interesting assemblage, comprising eight red deer (*Cervus elaphus*) bones and two oyster (*Ostrea edulis*) valves. The red deer elements included a fragment of scapula and three rib bones. A number of the ribs had saw cut ends and cut marks on their surface. A fragment of pelvis was

also present, along with the proximal end of a femur. These were both from an adult individuals with the femur having a saw cut distal end. Juvenile elements from red deer included fragments of tibia and metacarpal, each with unfused ends and saw cut marks.

Two lower valves from oyster were also recovered from this deposit. The deposit is the fill of a culvert and these elements are thought to be kitchen waste. The presence of butchered red deer is of note, as it shows that the meat being consumed was of higher status than expected of mill workers.

### **Context (110)**

Context (110) was another culvert fill, which contained a short fragment of cattle (*Bos taurus*) femur, with saw cuts at each end. Three chicken (*Gallus gallus*) bones were also recovered, comprising two tibia fragments and a metacarpal. Two lower valves and three upper valves from oyster (*Ostrea edulis*) were also identified.

The presence of cattle, chicken and oyster is usual for domestic kitchen waste from this area in the 19<sup>th</sup> century.

### **Context (111)**

Context (111) was a spread of material covering the culvert and brick outbuildings. This deposit produced two fragments of pig bones (*Sus scrofa*); a saw cut fragment of humerus, and a fragment of metatarsal, with cut marks present on the surface.

This is thought to be discarded food waste.

## **Assessment & Summary**

The assemblage for Forge Mill, Congleton, has a limited species count, with only three mammal species present. These were cattle, red deer and pig, with oyster and chicken also present. The deep marks on several of the elements, and the saw cut ends, show evidence of later Post Medieval butchery practice.

It is clear that this assemblage represents kitchen waste, however it is of note that within the fill of one of the culverts, (108), there is evidence of at least

two red deers, suggesting that high status meat was consumed. The remainder of the assemblage is typical of domestic waste from the Post Medieval period in the area.



(Hesse 1985)

(English Heritage 2014a)

(English Heritage 2014b)

(O'Connor 2003)

(O'Connor 2004)

(Brothwell & Higgs 1969)

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(Armitage & Clutton-Brock 1976)

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# Catalogue

**Forge Mill Faunal Assemblage**

<b>Context</b>	<b>Count</b>	<b>Class</b>	<b>Item</b>	<b>Description</b>	<b>Weight (g)</b>	
(41)	1	Chicken	<i>Gallus gallus</i>	Rib	Fragments of rib	2
	3	Chicken	<i>Gallus gallus</i>	Humerus	Almost complete left humerus	14
	4					16
(108)	1	Red Deer	<i>Cervus elaphus</i>	Scapula	Fragment of scapula	12
	3	Red Deer	<i>Cervus elaphus</i>	Rib	Three fragments of rib. Saw cut, showing butchery	45
	1	Red Deer	<i>Cervus elaphus</i>	Innominate	Fragment of pelvis, with saw cut butchery evident	24
	1	Red Deer	<i>Cervus elaphus</i>	Femur	Proximal end of femur, saw cut showing butchery, fused epiphysis	52
	1	Red Deer	<i>Cervus elaphus</i>	Tibia	Fragment of tibia from juvenile animal	35
	1	Red Deer	<i>Cervus elaphus</i>	Metacarpal	Metacarpal from juvenile animal, unfused	20
	2	Oyster	<i>Ostrea edulis</i>	Valve	Lower valve shell	35
10					223	
(110)	1	Cattle	<i>Bos taurus</i>	Femur	Fragment of femur, saw cut at both ends	30
	2	Chicken	<i>Gallus gallus</i>	Tibia	Fragment of tibia	6
	1	Chicken	<i>Gallus gallus</i>	Metacarpal	Complete metacarpal	16
	2	Oyster	<i>Ostrea edulis</i>	Valve	Lower valve shells	62
	3	Oyster	<i>Ostrea edulis</i>	Valve	Upper valve shells	58
9					172	
(111)	1	Pig	<i>Sus scrofa</i>	Humerus	Fragment of humerus, saw cut at both ends with cut marks on face	22
	1	Pig	<i>Sus scrofa</i>	Metatarsal	Fragment of unfused metatarsal with cut marks on face	27
2					49	
<b>Count</b>	<b>25</b>				<b>Weight</b>	<b>460</b>



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# ASSESSMENT OF BIOLOGICAL REMAINS

APPENDIX 3

LP2381C Assessment of Biological Remains

M Law

# 1. Introduction and Methods

- 1.1. Forty litres of fill from a post-medieval drain were presented for assessment. Twenty litres of the sample was processed in a Siraf-style flotation tank, another twenty litres was dry sieved through a 10mm mesh, and two 'squash' sub-samples (*sensu* DAINTON 1992) were taken, from which slides for microscopy were created.
- 1.2. The heavy fraction ('residue') was caught on a 1mm mesh, while the washover ('flot') was caught on a 250µm mesh sieve. The residue was air dried and weighed prior to being sorted. The flot was weighed wet then scanned for waterlogged organics under a low power binocular microscope. It was then air dried and sorted. After drying, the residue weighed 1877g, and the wet flot weighed 175g. Squash slides were scanned at x100 magnification, and identifications made at x 400 magnification.
- 1.3. Brief notes were made about the preservation of oyster shell and any evidence of damage by human activity or encrustation by epibiont organisms was recorded. Measurements of complete valves were taken following CLAASSEN (1998).
- 1.4. Identifications were carried out using a reference collection.

## 2. Results

2.1. Organic preservation was largely good throughout the samples. Calcareous preservation may be less good: molluscs were represented only by robust shells of European oyster (*Ostrea edulis*). The samples contained a variety of botanical remains (seeds, charcoal, oyster shell and bone). Records of botanical remains are presented in TABLE 1. Records of oyster shells are presented in TABLE 2, and records of animal bone in TABLE 3. Other finds are presented in TABLE 4. The ‘squash’ slides did not contain any parasitic worm eggs, although three fungal spores were seen.

	SAMPLE	
	CONTEXT	
		1
		108
<b>SEEDS</b>		
<b>Edible fruits</b>		
<i>Ficus carica</i> L. Common fig		27
<i>Fragaria</i> sp. Strawberry		5
<i>Prunus spinosa</i> L. Blackthorn		1
<i>Rubus fruticosus</i> agg. Blackberry		149
<i>Sambucus nigra</i> L. Elder		1
<i>Vitis vinifera</i> L. Grape		7
<b>Weed' taxa</b>		
<i>Poaceae</i> indet. Grass		1
<i>Silene dioica</i> (L.) Red campion		14
<b>CHARCOAL</b>		
Charcoal >4mm, weak ring curvature		1
<b>OTHER BOTANICAL</b>		
Thorns, ? <i>Prunus spinosa</i>		2
Bark fragments		2

Table 1: Botanical remains from LP2381C

CONTEXT NUMBER	SAMPLE NUMBER	VALVE	SHELL HEIGHT (MM)	SHELL LENGTH (MM)	STAINING	DAMAGE
108	1	Right	55.99	52.86	Reddish brown	Break on ventral margin
108	1	Left			Reddish brown	Ventral portion missing

Table 2: Records of oyster (*Ostrea edulis* Linnaeus, 1758) shells from LP2381C

CONTEXT NUMBER	SAMPLE NUMBER	IDENTIFICATION	ELEMENT	COUNT
108	1	Small/ medium mammal ?sheep/goat	Rib	4
108	1	Cattle	Tarsal or carpal	2

Table 3: Records of animal bones from LP2381C

SAMPLE NO	CONTEXT	BAG/ BUCKET NO	PROCESSING	ARTEFACTS									
				LEATHER	GLASS	POT	CLAY TOBAC CO PIPE	CBM	FE SLAG	COAL	WORKED BONE	SLATE	
1	108	1 & 2	Wet sieve flot @ 250µm Residue @ 1mm	Flot: E (<1g)	Residue: D (17g)	Residue : E (25g)	Residue : E (1g) - stem	Residue: E (17g) 2 x fragment s	Residue: D (230g)	Residue: E (111g) (Discarded )	Residue: Bone brush: E (9g). Also 2 x bristles	Residue: E (76g) 1 x fragment (discarded )	
1	108	3	Dry sieve @ 10mm		D (25g)	D (18g)		D (345g)		D (130g) - discarded			
1	108	4	Dry sieve @ 10mm	E (4g)	E (4g)	D (20g)		D (300g)		D (86g) - discarded			

Table 4: Finds from samples



## 3. Discussion

### 3.1. PLANT REMAINS

- 3.1.1. The seed assemblage is well preserved, and largely represents edible fruit taxa. This strongly suggests the incorporation of human faeces into this deposit. The presence of fig seeds are of some interest, as fertilisation of figs requires the wasp *Blastophaga psenes* (Linnaeus, 1758), which is a Mediterranean species not found in the British Isles. This means that, although figs do grow in Britain, their fruits will not contain seeds, meaning that the figs were imported, most likely as dried fruit. The non-edible taxa consist of an unidentified grass and seeds of red campion, a wildflower of woods and hedges, which grows on damp soils (FITTER 1987).
- 3.1.2. The charcoal fragment comes from a piece of wood with weak ring curvature, meaning it is likely to be part of a large branch or trunk. Other plant remains include a thorn, possibly from a blackthorn bush, and a fragment of bark from a small twig. No attempt has been made to identify the fungal spores on the squash slides.

### 3.2. ANIMAL REMAINS

- 3.2.1. The oyster shell represents food waste. Both a right (flat, upper) and a left (cupped, lower) valve are present, the left valve is too damaged to be sure that the two match, however. Damage may be associated with opening of the shell, although such damage to the left valve is probably more likely post-consumption, as the oyster would be eaten from the intact left valve. The staining is due to contact with chemicals in the burial environment, and is commonly seen in oysters from cesspits.
- 3.2.2. The vertebrate remains similarly represent food waste.

### 3.3. OTHER FINDS

- 3.3.1. A range of artefacts were found in the sample, comprising an assortment of household waste.

### **3.4.GENERAL COMMENTS**

- 3.4.1. The deposits derive largely from household waste, and include human faeces. The absence of parasite ova in the squash slides does not preclude their presence in the deposit as a whole, as slides represent a tiny proportion of the available sediment. Aside from the red campion seeds, there is little indication from the sample of environmental conditions. This may be due to poor calcareous preservation affecting the presence of snail shells, or it may be due to rapid infilling of the feature.

## 4. Statement of Potential and Recommendations

The samples give insight into the nature of material that makes up the fill, and the diet of local residents. No further work is recommended for any of the biological remains.

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# ASSESSMENT OF THE POTTERY

APPENDIX 4

**AN ASSESSMENT REPORT ON THE POTTERY RECOVERED FROM AN  
EXCAVATION FORGE MILL, CONGLETON, CHESHIRE**

**BY DAN GARNER BA, FSA, MCIfA**

**15/06/17**





## **Non-Technical Summary**

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This report details the assessment of the pottery archive for an excavation at Forge Mill, Congleton, Cheshire, which was undertaken between November 2016 and January 2017 by L-P Archaeology. Pottery artefacts of Post-Medieval date have been identified in the archive material.

The assessment has provided a chronology for the structural narrative of the site, however, the assemblage is not considered to be of a high enough quality to lend itself to more than basic statistical scrutiny. A full catalogue of the material submitted for assessment is contained within the digital site archive.

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# 1. Introduction and Methodology

- 1.1 This report details the assessment of the pottery archive for an excavation at Forge Mill, Congleton, Cheshire, which was undertaken between November 2016 and January 2017 by L-P Archaeology. Pottery artefacts of Post-Medieval date have been identified in the assemblage.
  - 1.2 The pottery has been fully catalogued to a level and standard that is in keeping with recommendations made by both the Study Group for Roman Pottery and The Medieval Pottery Research Group (Slowikowski, Nenck & Pearce, 2001); and assessed in accordance with recommendations by English Heritage (1991).
  - 1.3 All the pottery was examined macroscopically and where necessary using a binocular microscope (x20) and was also separated by fabric type within each context. Sherds from each different vessel were then recorded individually by sherd count and weight on an Excel spreadsheet. The finds were briefly considered in relation to the stratigraphy, as understood from the site matrices, and with reference to other sites in the general area.
  - 1.4 Where possible the Post-Medieval pottery has been identified to ware and makers marks have been identified to the specific factory of manufacture.
-

## 2. Post-Medieval Pottery

2.1 A full catalogue of the Post-Medieval pottery has been created on an Excel spreadsheet and will form part of the digital site archive. A key to the fabric type series is in Section 8.2.

### 2.2 *The Post-Medieval Pottery (16<sup>th</sup> to 19<sup>th</sup> century)*

2.2.1 A total of 436 sherds of post-medieval pottery with a combined weight of 9.335 kilograms were identified in the ceramic assemblage and details of this are summarised in tables 1 and 2. This material was recovered from within excavation trenches 2 and 4. The primary function of the material is in being able to suggest a chronology for the structural narrative of the site as it is too small to lend itself to other statistical analysis.

2.2.2 The bulk of the assemblage consisted of Pearl-glazed earthenwares (343 sherds, weighing 5.205 Kg) decorated with a mixture of hand-painted and transfer printed decoration. Amongst the transfer printed wares the 'willow pattern' scheme was dominant (**Plate 1**) with 'Asiatic Pheasant' and 'Doric' patterns also represented.

Context \ Ware	41	108	109	110	111	Total
BBG		6		4		10
BRWST		12		8	1	21
CREAM		2		2		4
MOCHA		10	2	2	14	28
PEARL	18	148	19	56	102	343
PORCBW		7		3		10
PRATT				3		3
SCBW		2				2
SLIPW			1			1
STONEW		1	7			8
TERRA				1		1
TORTOISE					2	2
UNGRE		1		1		2
WSGST				1		1
<b>Total</b>	<b>18</b>	<b>189</b>	<b>29</b>	<b>81</b>	<b>119</b>	<b>436</b>

**Table 1: Post-medieval Pottery by context, ware and sherd count**

2.2.4 A number of semi-complete Pearlware vessels were present in the assemblage and these included a dish from context (41) decorated in the 'Doric' pattern (**Plate 2**). The dish had a back-stamp 'DORIC' and makers mark of 'Davenport' above an anchor with the numerals '6' and '0' either side of the anchor indicating a manufacture date of 1860. A second dish from context (108) and decorated with the 'Asiatic Pheasant' design had a back-stamp 'H & R' (either Hall & Read 1882-8 or Hughes & Robinson

1888-94). Another dish decorated with the 'Asiatic Pheasant' design from context (111) had a back-stamp 'T & T' (Turner & Tomkinson 1860-72) (**Plate 3**).

Context \ Ware	41	108	109	110	111	Total
BBG		507		243		750
BRWST		1430		205	84	1719
CREAM		20		25		45
MOCHA		269	29	10	152	460
PEARL	204	2583	546	486	1386	5205
PORCBW		46		36		82
PRATT				147		147
SCBW		288				288
SLIPW			9			9
STONEW		84	91			175
TERRA				284		284
TORTOISE					94	94
UNGRE		8		63		71
WSGST				6		6
<b>Total</b>	<b>204</b>	<b>5235</b>	<b>675</b>	<b>1505</b>	<b>1716</b>	<b>9335</b>

**Table 2: Post-medieval Pottery by context, ware and weight (grams)**

- 2.2.5 Part of a matching ointment/paste jar and lid were recovered from context (110). The lid was decorated with a polychrome transfer printed scene known as 'the village wedding' and would have been produced by F & R Pratt & Co between 1845-75 (**Plate 4**). The jars were mass produced and contained products such as hand cream, rouge, meat and fish pastes, soothing salves and ointments. A second plain ointment/paste jar was recovered from context (108).
- 2.2.6 A range of other vessel forms were noted in Pearl-glazed earthenwares including meat platters, bowls, cups, jugs, coffee pots, jars and chamber pots.
- 2.2.7 A sub-group of the Pearl-glazed earthenwares were Mocha wares or 'industrial slipwares' which were decorated with a range of brown, blue and white slip bands. These were in a range of tableware forms including bowls, jugs and cups. Two examples were also decorated with black dendritic decorative panels.
- 2.2.8 Brown salt-glazed stoneware vessels were the next largest group with two semi-complete ink wells (**Plate 6**) being recovered from contexts (108) and (111). Other forms in this ware included storage jars and a bowl.
- 2.2.9 A semi-complete red terracotta jar was also recovered from context (110); probably a product of the Watcombe Terracotta Company, Devon. This jar was decorated with blue/green enamel decoration; one side depicting the 'seven ages of man' as described in a poem by Shakespeare (**Plate 5**). The other side had an unintelligible scene with faint transfer printed lettering along the bottom reading



'C.....R/BORN/APRIL 23 1864'. The item appears to be commemorative and may represent a christening present to one of the inhabitants of the cottages.

- 2.2.10 Porcellaneous bodied wares from contexts (108) and (110) were mainly represented by egg-cups (**Plate 7**); however, part of the leg from a china doll was recovered from context (108); and a fragment from a hollow figurine was recovered from context (110).
  - 2.2.11 Utilitarian vessels were poorly represented in the assemblage with black and brown glazed earthenwares from contexts (108) and (110) being derived from large lug-handled storage jars.
  - 2.2.12 There were a small number of sherds which are derived from 18<sup>th</sup> century finewares; either representing residual material or evidence for curated vessels. These included: a sherd of white salt-glazed stoneware from context (110); sherds of Creamware dish and bowl from contexts (108) and (110); and a Tortoiseshell coffee-pot lid from context (111) (**Plate 8**).
  - 3.3.11 No continental imports were identified in the Post-Medieval pottery assemblage.
  - 3.3.12 The Post-Medieval pottery assemblage from the Forge Mill excavations can be seen as typical of material recovered from late Post-Medieval deposits in Cheshire. The material from Trench 4 probably represents a house clearance episode(s) during the later part of the 19<sup>th</sup> century. It does not greatly enhance our understanding of the status of the cottage dwellers but does provide interesting snap-shots (such as the commemorative terracotta jar) in to the lives of the occupants. The primary function of the assemblage is to provide a chronology for the structural sequence encountered on the site. It should be retained as part of the permanent site archive.
-



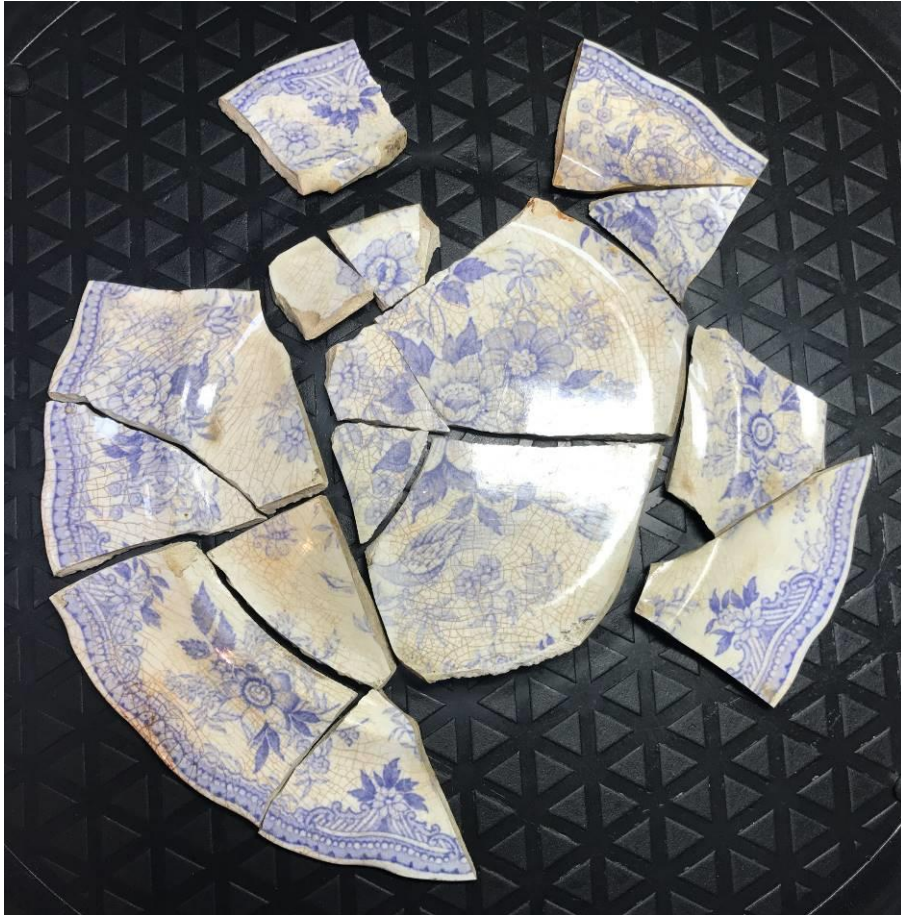
***Plate 1: Pearl-glazed earthenware dishes decorated in the 'Willow Pattern' design. From Context (111) (top); and Context (108) (bottom). The design includes the images of two doves and an apple tree which are later additions to the original 'willow pattern' design.***

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**Plate 2:** Pearl-glazed earthenware dish decorated in the 'Doric' pattern. The back-stamp 'DORIC' and makers mark of 'Davenport' above an anchor with the numerals '6' and '0' either side indicating a manufacture date of 1860. Context (41)





***Plate 3: Pearl-glazed earthenware dish decorated with the 'Asiatic Pheasants' design.  
The back-stamp 'Asiatic Pheasants' and makers mark of 'T&T' (Turner &  
Tomkinson 1860-72). Context (111).***

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***Plate 4: Ointment/paste jar and lid decorated with a polychrome transfer printed scene known as 'the village wedding' and produced by F & R Pratt & Co between 1845-75. Context (110).***

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**Plate 5: Red terracotta jar probably a product of the Watcombe Terracotta Company, Devon. This jar was decorated with blue/green enamel decoration; one side depicting the 'seven ages of man'. Context (110).**



**Plate 6: Brown Stoneware ink wells from contexts (108) (left) and (111) (right).**



*Plate 7: Porcellaneous bodied ware egg cup. Context (110)*



*Plate 8: Tortoiseshell ware lid, probably from a coffee pot with sprigged relief decoration c.1750's to 1770's. Context (111).*

## **4. Potential**

- 4.1 In general the pottery assemblage has limited potential for further analysis. The Post-Medieval pottery assemblage is of some interest as it provides a chronological framework for the structural narrative of the site. However, it does not greatly enhance our understanding of the status of the cottage dwellers but does provide interesting snap-shots (such as the commemorative terracotta jar) in to the lives of the occupants. It has little potential for further study.

## **5. Significance of the data**

- 5.1 The post-medieval assemblage is generally of local significance with a lot of the material being fragmentary; though some semi-complete vessels are present. It can be seen as typical of material recovered from Post-Medieval deposits in the Cheshire area.

## **6. Revised Research Aims**

- 6.1 *Post-medieval:*** None.



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## 8. Key to Pottery Fabric codes

### 8.1 Key to Post-Medieval Pottery Fabric codes

<b>Fabric Code</b>	<b>Fabric</b>	<b>Date</b>
BBG	Black & brown glazed ware	16 <sup>th</sup> to 19 <sup>th</sup> century
BRWST	Brown stoneware	17 <sup>th</sup> to 19 <sup>th</sup> century
CREAM	Cream ware	c.AD 1760+
MOCHA	Industrial slipware	19 <sup>th</sup> /20 <sup>th</sup> century
PEARL	Pearl glazed earthenware	c.AD 1780+
PORCBW	Porcellaneous bodied ware	19 <sup>th</sup> /20 <sup>th</sup> century
PRATT	Prattware	c.AD 1845-75
SCBW	Slip-coated buff ware	c.AD 1740+
SLIPW	Slip ware	17 <sup>th</sup> to 19 <sup>th</sup> century
STONEW	Late stoneware	19 <sup>th</sup> /20 <sup>th</sup> century
TERRA	Red terracotta ware	19 <sup>th</sup> /20 <sup>th</sup> century
TORTOISE	Tortoiseshell ware	c.AD 1750-80
UNGRE	Unglazed red earthenware	18 <sup>th</sup> to 19 <sup>th</sup> century
WSGST	White salt-glazed stoneware	c.AD 1720+

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