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PERSIMMON HOMES (LANCASHIRE)

ST. GEORGE'S QUAY

LUNESIDE EAST

LANCASTER

PHASE 2 ARCHAEOLOGICAL EVALUATION REPORT


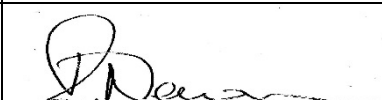
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PERSIMMON HOMES (LANCASHIRE)

St. George's Quay, Luneside East, Lancaster

Phase 2 Archaeological Evaluation Report

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SUMMARY

Wardell Armstrong LLP (WALLP) was commissioned by Ian Sandiford of Persimmon Homes (Lancashire), to undertake an archaeological evaluation on land at St. George's Quay, Luneside East, Lancaster (centered on NGR: SD 46886 62280). The archaeological fieldwork was required to discharge the outstanding planning conditions relating to the archaeology on the site (Ref: 1/01/0287/OUT, 1/11/01134/RENU and 1/11/00885/FUL).

The site contains the remains of Lancaster's sole delftware pottery manufactory. The proposed redevelopment of the site has already provided the opportunity to investigate these remains by means of an open area excavation. This work was undertaken by North Pennines Archaeology Ltd during 2007 and 2008, which investigated the majority of the footprint of the delftware pothouse, as well as the central kiln and the shardruck deposits (pottery dumps) associated with the pothouse. Even so, unanswered questions still remained following these previous investigations, including the exact location and form of the front of the pothouse, the location and extent of additional shardruck deposits, the exact form of the kiln superstructure and further questions regarding the type of delftware produced at Lancaster.

As a result of the potential to further our understanding of this significant site, it was agreed with Lancashire County Archaeology Service (LCAS), that additional archaeological investigations should be undertaken at the site. It was agreed that this final phase of fieldwork should be undertaken, specifically to investigate the northern extent of the pothouse building and to identify and investigate the location and extent of both known and previously unrecorded shardruck deposits.

The archaeological work was undertaken over ten days between the 24th October and the 4th November 2016, and comprised the excavation of seven trenches. The investigation revealed the front of the pothouse, allowing a full plan of the complex to be produced. Furthermore, it was established that this area was most likely used for the storage of raw materials associated with the pottery production process. The investigation also identified that the important shardruck deposits were only located at the eastern edge of the site.

ACKNOWLEDGEMENTS

Wardell Armstrong LLP (WALLP) thank Ian Sandiford of Persimmon Homes (Lancashire) for commissioning the project, and for all their assistance throughout the work. WALLP also thank Doug Moir, former Planning Officer (Archaeology) at Lancashire County Council, and Peter Iles, former Specialist Advisor (Historic Environment) at Lancashire County Archaeology Service, for their assistance.

Wardell Armstrong LLP are also grateful to Barbara Blenkinship, Emlyn Roberts, Alan James, Kevin Mounsey and John Nelson for their help during the project. Special thanks are also due to Andy Brown and Gary Taylor for providing the aerial survey and to Bill Huddleston for his assistance.

The evaluation was undertaken by David Jackson, Ed Johnson, Charles Rickaby, Mark Lawson, Adam Mager and Kevin Horsley, with the aid of Barbara Blenkinship, Emlyn Roberts, Kevin Mounsey and Alan James. Specialist pottery identification on site was undertaken by Barbara Blenkinship and Emlyn Roberts. The report was written by David Jackson and the figures produced by Helen Phillips. The finds were assessed by Megan Stoakley. The project was managed by Frank Giecco, Technical Director for WALLP and the report was edited by Richard Newman, Post-Excavation Manager for WALLP.

1. INTRODUCTION

1.1 Project Circumstances

1.1.1 In October/November 2016, Wardell Armstrong LLP (WALLP) undertook an archaeological evaluation on land at St. George's Quay, Luneside East, Lancaster (centered on NGR: SD 46886 62280; Figure 1). The work was commissioned by Ian Sandiford of Persimmon Homes (Lancashire) in order to discharge the outstanding planning conditions relating to the archaeology on the site (Ref: 1/01/0287/OUT, 1/11/01134/RENU and 1/11/00885/FUL).

1.1.2 Archaeological work was required as the proposed development will impact upon significant archaeological remains associated with the Lancaster delftware manufactory. Previous work at the site had already revealed the well preserved remains of the delftware pothouse, kiln and associated shardruck deposits, which highlighted this as a site of national significance. Therefore, further work was required in order to understand as much about the site as possible prior to development taking place.

1.1.3 The evaluation was undertaken in accordance with a written scheme of investigation (WSI), which was developed in consultation with Doug Moir, former Planning Officer (Archaeology) at Lancashire County Council, and presently with Peter Iles, former Specialist Advisor (Historic Environment) at Lancashire County Archaeology Service (LCAS).

1.2 Project Documentation

1.2.1 A WSI (WAA 2015) was produced to provide a specific methodology for the archaeological evaluation, in accordance with discussions held between Wardell Armstrong Archaeology, Doug Moir and Peter Isles. The WSI was approved by the archaeological planning advisor prior to the fieldwork taking place. This is in line with government advice as set out in Section 12 of the National Planning Policy Framework (NPPF 2012).

1.2.2 This report outlines the work undertaken on site, the subsequent programme of post-fieldwork analysis, and the results of this scheme of archaeological evaluation.

2. METHODOLOGY

2.1 Standards and guidance

2.1.1 The archaeological evaluation was undertaken following the Chartered Institute for Archaeologists *Standard and Guidance for archaeological field evaluation* (2014a), and in accordance with the WALLP fieldwork manual (2016).

2.1.2 The fieldwork programme was followed by an assessment of the data as set out in the *Standard and Guidance for archaeological field evaluation* (CIfA 2014a) and the *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (CIfA 2014b).

2.2 The Field Evaluation

2.2.1 The evaluation comprised the excavation of seven trenches, located within and immediately adjacent to the pothouse (Figures 2 & 3), in order to obtain the maximum amount of information possible within the constraints of the project. The initial WSI stated that the evaluation should include a trench targeting the previously unexcavated frontage of the pottery complex, as well as two 20m by 1.6m trenches located to the rear of the pothouse, in order to identify and investigate potentially unknown shadruck deposits. However, it was not possible to fully achieve the requirements of the WSI to the rear of the pothouse, due to the presence of several abandoned cabins/containers and extensive tracts of contaminated ground within that area. Therefore, it was deemed appropriate to separate the two 20m long trenches into several smaller investigation areas and relocate these within areas of the site with greater archaeological potential. The locations and results obtained from each trench are outlined in Section 4 below.

2.2.2 The general aims of the investigation were:

- to investigate and record the c.80m² unexcavated section of the pottery complex that fronts onto the River Lune;
- to determine the character, date, extent and distribution of any unrecorded archaeological deposits and their potential significance;
- to investigate potentially unknown shadruck deposits to the rear of the pothouse;
- to collect as much fired and biscuit fired forms of pottery as possible, in order to further enhance the understanding of Lancastrian delftware production;

- to investigate any further areas of the pottery complex which had the potential to enhance the understanding of the site.
- 2.2.3 All trenches were cleared of modern overburden, rubble and backfill deposits by mechanical excavator with a toothless ditching bucket, under close archaeological supervision. The investigation areas were subsequently cleaned by hand and investigated and recorded fully according to the WALLP standard procedure as set out in the Excavation Manual (WALLP 2016).
- 2.2.4 Finds of potential archaeological interest were retained on site and returned to the Carlisle office where they were identified, quantified and dated to period. On completion of this project, the finds will be cleaned and packaged according to standard guidelines (*Ibid*). Please note, the following categories of material will be discarded after a period of six months following the submission of this report, unless there is a specific request to retain them (and subject to the collection policy of the relevant depository):
- modern pottery;
 - material that has been assessed as having no obvious grounds for retention.
- 2.2.5 On completion of the fieldwork, the evaluation trenches were backfilled with the excavated material and levelled as much as possible.
- 2.2.6 A full professional archive has been compiled in accordance with the specification, and according to the Archaeological Archives Forum recommendations (Brown 2011). The archive will be retained at the WALLP Carlisle office until a suitable repository becomes available. Copies of the report will be sent to the Lancashire Historic Environment Record (HER), available upon request. The archive can be accessed under the unique project identifier **WAA16, LUN/D, CL11898/16**.
- 2.2.7 Wardell Armstrong Archaeology supports the **Online Access** to the Index of Archaeological Investigations (OASIS) project. This project aims to provide an on-line index and access to the extensive and expanding body of grey literature, created as a result of developer-funded archaeological work. As a result, details of the results of this project will be made available by WAA as a part of this national project. The OASIS reference for the project is: **wardella2-268826**.

3. BACKGROUND

3.1 Location and Geological Context

3.1.1 The study area is situated on a flood plain forming the south bank of the River Lune, to the west of the historic core of Lancaster (Figure 1). The site is located within a brownfield area, which was formerly industrial in character and has been the focus of redevelopment for at least 15 years. Presently, the character of the surrounding area is residential and recreational, with residential properties present along St. George's Quay, Lune Road and Long Marsh Lane (Figure 2). Recreational spaces exist in the form of Vicarage Fields to the east of the West Coast Railway Line, the cricket pitch on Lune Road and the football pitches off West Road to the south of the proposed development site.

3.1.2 The proposed development site is situated in the Morecambe Coast and Lune Estuary landscape character area, an area which is strongly linked to the coastal environment along its margin with Morecambe Bay, and inland through the estuaries of the Lune and the Keer. To the north and west, the area is framed by areas of higher ground, including the Lake District Fells and the Bowland Fells (Natural England 2015).

3.1.3 The solid geology of the area predominantly consists of sandstone of the Roeburndale Member; a sedimentary bedrock which formed approximately 318 to 322 million years ago during the Carboniferous Period (BGS 2016 online). The underlying geology is overlain by raised tidal flat deposits of clay and silt (*ibid*).

3.2 Historical Context

3.2.1 This historical background is only intended as a brief summary of events within the immediate vicinity of the study area. The background largely comprises excerpts from two previous archaeological investigations undertaken on the site by North Pennines Archaeology Ltd (Town 2009, Jackson 2009).

3.2.2 Although Lancaster has a rich history stretching back into the prehistoric periods (LUAU 2000), the present study area appears to have been largely peripheral to the main settlement, and presumably marshland until the 18th century. It is worth noting however, that the existence of a ford over the River Lune dating to the prehistoric and early Roman period has been postulated within the area (PRN 4635; *ibid*), although no evidence for pre-18th century activity has been identified during any investigation of the site.

- 3.2.3 In 1749, the River Lune was subject to a programme of improvement and the quayside was upgraded between 1750 and 1770. The improvement works gave a boost to trade with the West Indies and Lancaster entered a period of prosperity with the creation of a number of fine buildings (*ibid*). It was during this prosperous period that the pottery was established in c.1754 (Adams 1972a).
- 3.2.4 The pottery complex operated for just over 30 years, ceasing production sometime around 1786-87 (LUAU 2000). However, no record exists of the type of pottery being produced on the site until it is described in Binn's survey and map of 1821 as the "Pot House formerly a Delft ware manufactory". Delftware is the common name given to earthenware glazed with lead and tin oxide and painted with cobalt giving a blue decoration. The pieces were fired at a low temperature to allow the glaze and the decoration to fuse (Price 1973a). Delftware was a development of the later medieval decorated pottery traditions of the Netherlands, and was a combination of imitations of Chinese designs fashionable during this period and this tradition (Crossley 1990). Delftware was produced at a number of ports on the west coast of England with the intention of export, especially to the Americas.
- 3.2.5 To date, no particular style of delftware has ever been given a Lancaster provenance with the most probable examples being attributed to Liverpool or Bristol which, together with London, made up the three main centres of delftware production. This is likely due in part to the use of trained craftsmen from Liverpool producing similarly stylized pottery at Lancaster, with pieces wrongly assigned to the Liverpool kilns (LUAU 2000). This situation is beginning to change however, following the recent archaeological investigations undertaken at the site.
- 3.2.6 After the Lancaster Pothouse went out of use, it was likely sold off as a parcel with other land which is shown on a plan dated to 1785 (LUAU 2000), before the site was possibly used as a shipyard for building large vessels (Town 2009). In 1826, the Lancaster Gas Light company established a gasworks on the site which continued to expand throughout the 19th century (LUAU 2000). By the late 19th century, the Pottery was within the gasworks (Adams 1972b), with some of its outbuildings being destroyed during the construction of the gasometers (Town 2009).
- 3.2.7 The Pothouse buildings were finally earmarked for demolition in the late 1930's as part of the Ministry of Health's 'clearance of unsanitary property' (LUAU 2000). By this time, the buildings were largely in use as tenements (Town 2009). After the Pothouse was demolished, which is recorded as occurring in 1946 but is more likely

to have taken place prior to 1938 (*ibid*), the site is recorded as having been used as a coal dump (Mr. L. Grubb, cited in Price 1973a). After the gasworks closed in 1958 (LUAU 2000), the site was partially occupied by the Grubbs Builders Depot which was demolished prior to proposed redevelopment.

3.3 Previous Work

- 3.3.1 Prior to 1972, sherds of delftware were being collected from the site (Adams 1972a), particularly during the construction of the Grubbs building in the 1950's (LUAU 2000). James Price (1973b) carried out limited excavations to the north and west of the Grubbs building in 1972, but the construction of the workshop had disturbed much of the stratigraphy. Price recovered over 170 pieces of undecorated delftware (biscuitware) including jugs, teapots and pressed ware, as well as kiln furniture. However, only a few sherds of decorated ware were recovered, and as the tip of broken pottery and fired clay (shardruck deposit) was not located, very little information could be attained about the wares being produced.
- 3.3.2 During October 2000, Lancaster University Archaeological Unit carried out an archaeological assessment on the site of the former pottery (LUAU 2000). During the assessment, a four metre length of wall associated with the Pothouse was identified immediately to the west of the Grubbs building, together with the bases of biscuitware which were identified within the rubble along the edge of the site (*ibid*).
- 3.3.3 During October/November 2007, North Pennines Archaeology Ltd. (NPA) carried out an archaeological evaluation and excavation on the site in advance of the proposed redevelopment (Town 2009). An area measuring c.28m x 20m was excavated which succeeded in locating walls, surfaces and other deposits relating to the 18th century pottery including the kiln, the footprint of two separate buildings both east and west of the kiln, and the shardruck deposits. The kiln was found to be of a 'continental style', typical of the production of delftware, few of which have ever been recorded outside of London (Crossley 1990). The extensive waste deposits were found to the east and south of the pottery and had clearly been formed by the episodic dumping of waste material, which comprised the broken and misfired pottery and furniture from the kiln (Town 2009). The NPA excavation also identified later activity on site, accurately locating a number of changes made to the pothouse throughout the 19th and early 20th century and charting the buildings evolution from pottery through to tenements and finally demolition.

3.3.4 North Pennines Archaeology Ltd undertook a further small-scale programme of work at the site, during August 2008. The work was in the form of an archaeological watching brief on behalf of the Northern Ceramics Society and involved the excavation of four trenches and five test-pits. This work was designed to answer specific questions about the pottery complex and the type of delftware produced there. Most of the results obtained during the investigation served to support the conclusions drawn from the NPA 2007 excavation. An additional shardruck deposit separate to those observed during 2007 was however, identified and investigated. This newly exposed pottery dump not only contained examples never before attributed to Lancaster, but also contained styles which appear to have been unique to that factory (Jackson 2009).

4. ARCHAEOLOGICAL EVALUATION RESULTS

4.1 Introduction

4.1.1 The archaeological investigation was undertaken over ten days between the 24th October and the 4th November 2016, in order to answer specific questions about the delftware manufactory. The work comprised the excavation of seven trenches, located within and immediately adjacent to the pothouse (Figures 2 & 3). One of the trenches was located at the northern extent of the site in order to locate the front of the pothouse, with a further five trenches located to the east, southeast and south of the pothouse, which were positioned in order to investigate both known and potential shardruck deposits. A further trench was located immediately north of the kiln frontage, which was intended to answer specific questions about the construction, form and extent of the structure.

4.1.2 Topsoil, deposits of backfill and modern overburden were removed by mechanical excavator with a toothless ditching bucket, under close archaeological supervision. The trenches were subsequently cleaned by hand and investigated and recorded fully.

4.2 Results

4.2.1 **Trench 1 (Figure 4):** Trench 1 was located at the northern extent of the site, in order to locate the front of the pothouse and produce a full plan of the pottery complex (Figure 3). This particular area of the site could not be accessed previously, due to the presence of a later boundary wall. It was considered critical to reveal the front of the pothouse however, as questions still remained regarding the construction and form of this part of the pottery complex (see Town 2009).

4.2.2 Trench 1 was aligned east-northeast to west-southwest and measured 27m in length by 3m in width. The trench was excavated to a maximum depth of 1.9m, revealing the remains of the pothouse's front wall (Plate 1) which had been utilised as a firm foundation for a later boundary wall. Only the south facing (interior) elevation of the wall was revealed however, as the exterior elevation now lies below the present pavement. The front wall (**120/123/126**) was found to be of a single construction and measured over 1.9m in height and over 25m in length, equating to the entire width of the pothouse. The wall was constructed from medium to large roughly hewn sandstone blocks, bonded with lime mortar.

- 4.2.3 Trench 1 revealed the northern extent of a number of cellars at the front of the pothouse which were initially identified during the 2007 investigation, although the western most cellar could not be investigated due to the extant remains of the boundary wall. The northern extent of each cellar was marked by the north wall (**120/123/126**) of the pothouse complex, with the eastern and western extents of each cellar demarcated by the major north-northwest to south-southeast aligned walls of both the eastern and western buildings of the complex.
- 4.2.4 The western most cellar revealed within Trench 1 (Cellar 1; Plate 2) measured 2.6m in width, 1.6m in height and was formed by the eastern wall of the pothouse's western building to the east and a later brick and sandstone wall to the west. Cellar 1 also retained a well laid cobbled surface (**110**). The eastern wall of the cellar {**124**} measured over 1.7m in height, 0.7m in width and comprised roughly hewn sandstone blocks, bonded with lime mortar. This wall was clearly keyed into the front wall of the pothouse, highlighting that it was part of the original ground plan of the complex. The west wall of Cellar 1 was clearly a later addition however, as it not only abutted the front wall of the structure, but had also been constructed directly above the cobble surface (**110**). This later wall {**125**} measured 1.1m in height, 0.4m in width and comprised a mixture of roughly hewn sandstone blocks and both frogged and un-frogged bricks. This wall likely represents a subdivision within the cellars when the pothouse buildings were in use as tenements. Also of note within Cellar 1 was the presence of a chute within the north wall {**123**}, which measured c.1m in width, 0.85m in height and retained an outward sloping gradient of <20°. This chute appears to have been an original feature of the structure, indicating that goods were deposited within the cellar via the front of the building. It is likely that this area was utilised for the storage of fuel for the kiln, such as wood or peat, although it was clear that the area had been later used for the storage of coal given the amount of coal dust around the chute and the cobbled floor.
- 4.2.5 Immediately east of Cellar 1 was a large central cellar (Cellar 2; Plate 3), which measured 7.3m in width, 1.9m in height and was formed by the eastern wall of the pothouse's western building to the west and the west wall of the eastern building to the east. The east wall of Cellar 2 {**127**}, which measured over 1.8m in height and 0.6m in width, was similar to wall {**124**} to the west, comprising roughly hewn sandstone blocks, bonded with lime mortar and forming part of the original ground plan of the pothouse complex. Cellar 2 had been further subdivided by a central single skin wall {**128**}, which measured c.1.5m in height and 0.11m in width and

comprised un-frogged red bricks. It appears that this wall was an original feature of the pothouse, as it was keyed into the front wall of the cellar {126}. This wall was not a supporting structure however, and appears to have been utilised as an internal dividing wall, effectively separating Cellar 2 into two areas (Cellar 2a and Cellar 2b). Both of these sub-divided cellars retained well laid cobbled surfaces (111 & 130), which were approximately 0.2m lower than the floor surface observed within Cellar 1. Both Cellars 2a and 2b also retained openings within the north wall, which appeared to represent windows. It is unclear whether these were original features of the cellars, although the eastern most opening within Cellar 2b appears to have been utilised as a coal chute at some point. Cellar 2b also retained a later brick-built feature at its eastern extent. The feature {129} comprised two courses of frogged bricks, which measured 0.48m in width and extended from the northeast corner of cellar for 1.2m. The brick feature had been laid in such a way as to form a c.45° slope, which probably aided with the shovelling of material within the corner of the cellar. Also of note was the presence of an excessively worn sandstone step, which had been laid above the north wall of Cellar 2a. It is possible that the step marks the level of the former ground surface and indicates that Cellar 2a was approximately 1.8m in height.

- 4.2.6 The eastern most cellar of the building (Cellar 3; Plate 4) measured 6.9m in width, over 2.4m in height and was formed by wall {127} to the west and the outer wall of the pothouse's eastern building to the east. This outer wall {119} measured over 1.65m in height, 0.85m in width and comprised roughly hewn sandstone blocks, bonded with lime mortar. Interestingly, no floor surface was observed within Cellar 3, the area being made up of thick deposits of clay. The lowest observed deposit of clay (121) was mid-blueish grey in colour and measured over 0.5m in depth. This was sealed by a deposit of mid-light brown clay (122), which measured 0.5m in depth. Given the presence of these deposits, it would appear that Cellar 3 was utilised for the storage of clay which was obviously fundamental to the production of pottery. The use of this area for the storage of clay was supported by the north wall of the cellar {120}, which retained a large central opening measuring c.1.8m in width and c.1.1m in height. Such a large opening would likely be needed to deposit clay within the cellar, which was likely transported as large blocks from vessels moored on the river bank straight into the front of the building. At some point this opening was blocked up by large sandstone blocks {131} and sand (132), probably when pottery production ceased at the site.

- 4.2.7 Trench 1 was also extended approximately 6.8m east of the pothouse's eastern building, in order to investigate the pottery dumps within that area. This area was excavated to a maximum depth of 2.5m, revealing the dark grey natural clay (**101**). This was sealed by an extensive pottery dump (**104**), which measured c.2m in depth and extended from the eastern wall of the pothouse to the eastern extent of the trench. Although the pottery dump comprised several visible tipping layers, these individual deposits could not be accurately recorded due to the depth of the trench and the unstable nature of the sections. The pottery dump was sealed by c.0.1m of mid-brown silty clay (**103**) and 0.45m of dark greyish brown garden soil (**102**) (Plate 5).
- 4.2.8 **Trench 2:** Trench 2 was located immediately adjacent to the western building of the pottery complex, approximately 2.5m south of the structure's southeast corner (Figure 3). The sole purpose of this trench was to investigate potential shadruck deposits within this area. Although this part of the site had been identified as an external yard during the 2007 investigations, these investigations also indicated that this yard was a later development within the area and that shadruck material was present below the surface (Town 2009, 34).
- 4.2.9 Trench 2 was aligned north-northwest to south-southeast and measured 5m in length by 1.6m in width. The trench was excavated to a maximum depth of 1m, revealing a probable natural deposit of gravel and randomly sorted cobbles (**107**), which measured over 0.3m in depth. This was sealed by a compact levelling deposit of crushed saggars (kiln furniture) (**106**), which measured c.0.3m in depth. This was further below a c.0.2m deposit of blue/grey clay (**105**) and c.0.2m of silty clay and rubble topsoil (**100**).
- 4.2.10 Although only a limited investigation of Trench 2 could be undertaken due to extensive diesel contamination, enough of the area was observed to conclude that no significant deposits of shadruck material were present. It is highly likely that the deposit of crushed saggars (**106**) was identified during the 2007 excavation and, due to limited investigation because of contamination, was incorrectly interpreted as a pottery dump. However, it appears likely that this material formed part of a more extensive levelling deposit which was crushed and compacted, probably during later developments at the site.
- 4.2.11 **Trench 3:** it was established during the previous investigation undertaken in 2008 that potential pottery dumps were unlikely to extend more than 12m south of the

pothouse's western building (Jackson 2009, 17). Given the absence of shadruck deposits within this previously investigated part of the site and Trench 2, it was deemed appropriate to position Trench 3 between these two areas in order further explore the possibility that pottery had been dumped within this part of the site (Figure 3).

4.2.12 Trench 3 was aligned north-northwest to south-southeast and measured 5m in length by 1.6m in width. The trench was excavated to a maximum depth of 1m, revealing the same sequence of deposits identified within Trench 2 (Plate 6) and providing further evidence that the southwest part of the site was never utilised for the dumping of pottery.

4.2.13 **Trench 4:** Trench 4 was located to the southeast of the pothouse, approximately 11.8m from the eastern building's southeast corner, and was positioned in order to further investigate one of the pottery dumps initially identified during the 2008 investigation. Prior to the commencement of the fieldwork, it was envisaged that a trench would be positioned immediately to the west of the area investigated during 2008 in order to explore the western extent of this particular pottery dump. This was not possible however, because of the presence of several abandoned cabins and containers within the proposed trench location. The investigation was also unable to explore the southern extent of the dump as the previous work had clearly highlighted significant levels of contamination within that area (see Jackson 2009). Therefore, it was decided to position Trench 4 immediately to the east of the previous investigation area (Figure 3).

4.2.14 Trench 4 was aligned east-northeast to west-southwest and measured 5m in length by 1.6m in width. The trench was excavated to a maximum depth of 1.35m, revealing a heavily contaminated deposit of shadruck material (**402**), which measured c.1m in depth and was clearly associated with the pottery dump identified within this area during 2008. It was also clear however, that this deposit had been subjected to significant disturbance during the installation of a large drainage pipe, which was observed at the base of the trench. The disturbed shadruck material (**402**) was sealed by a c.0.15m deposit of mid-grey clay (**401**) and c.0.2m of greyish brown silty clay topsoil (**400**).

4.2.15 **Trench 5 (Figure 5):** Due to the significant disturbance and heavily contaminated ground identified within Trench 4, it was decided to position a further trench to the northwest in an attempt to thoroughly investigate the pottery dump within that area

(Figure 3). Unfortunately, only the northern extent of the dump was revealed which was largely comprised of saggars and added little interpretive value to the investigation.

4.2.16 Trench 5 was aligned east-northeast to west-southwest and measured 7.5m in length by 1.6m in width. The trench was excavated to a maximum depth of 1.35m, revealing the heavily stained natural grey clay (509). This was sealed by the northern extent of the pottery dump (Group no. 108), which measured 1.1m in depth and comprised up to six clearly visible tipping layers (503 -508). The western observed extent of the dump had been cut by a large U-shaped pit [502], which measured 2.1m in width, 0.9m in depth and had been filled by a deposit of silty clay and modern rubbish (501). The pit had been sealed by a c.0.25m deposit of greyish brown silty clay topsoil (500) (Plate 7).

4.2.17 **Trench 6:** Given the largely negative results obtained from the areas investigated to the south and southeast of the pothouse, the decision was taken to position a trench through the known shadruck deposits to the east of the pottery complex (Figure 3). Although these particular deposits had already been thoroughly investigated during 2007 and 2008, the eastern extent of the pottery dumps had never been located. It was therefore considered appropriate to further investigate these deposits, in order to not only identify the eastern extent of these dumps, but also to collect as much shadruck material as possible and strengthen the possibility of identifying forms and patterns unique to Lancaster.

4.2.18 Trench 6 was aligned north-northwest to south-southeast and measured 9.8m in length by c.3m in width. The trench was excavated to a maximum depth of 1.6m, revealing the dark grey natural clay (602). This was sealed by an extensive pottery dump (Group no. 109/601), which measured c.1m in depth and comprised several visible tipping layers (Plate 8). Unfortunately, these individual deposits could not be accurately recorded due to the depth of the trench and the unstable nature of the sections. Enough of the area was exposed however, to establish that the eastern extent of the pottery dump was located approximately 8m east of the pothouse. It is possible that these deposits (109/601) represents some of the earliest waste material associated with the pottery complex, which gradually encroached upon the eastern edge of the pothouse during the course of manufacturing activity at the site. These deposits were sealed by c.0.5m of greyish brown silty clay topsoil and rubble (600).

4.2.19 **Trench 7 (Figure 6):** Trench 7 was located immediately north of the kiln working floor, in order to answer specific questions about the construction and extent of the kiln structure (Figure 3). The kiln structure was investigated during both the 2007 and 2008 phases of work, which established that the entire floor plan of the kiln was constructed on substantial foundations forming a separate structure nestled within the rest of the pottery complex. However, there has been some speculation about the actual form of the kiln and the possibility that the structure retained a lower level beneath the firing chamber (Barbara Blenkinship *pers. comm.*). No evidence for such a lower level was observed during the previous archaeological work, although the northern elevation of the kiln, where access into a lower level would most likely be situated, was never investigated due to the presence of structural elements associated with the feature. It was noted at the onset of the present investigation however, that these structural elements, which included cobbled passageways and a brick lined loading area, had been severely damaged at some point since the last investigation in 2008. Therefore, the opportunity was taken to investigate the northern side of the kiln in order to confirm or refute the possibility of there being an additional level within the structure.

4.2.20 Trench 7 was aligned east-northeast to west-southwest and measured 4.4m in length by 2.8m in width. The trench was excavated to a maximum depth of 1.7m, revealing further information about the construction of the kiln (Plate 9). No lower level below the firing chamber was observed within the trench, making it highly unlikely that one ever existed. The trench did however, reveal a substantial wall foundation below the kiln which had not previously been observed. The north-north west to south-southeast aligned wall **{118}** measured over 2.5m in length, 0.9m in width and over 1.3m in height, and was comprised of large, roughly hewn sandstone blocks bonded with mortar. Interestingly, the wall did not correspond with the alignment of the known foundations of the kiln and instead, appeared to be situated centrally to the feature. It is probable that this wall formed a central spine for the kiln, which would have been needed to support the immense weight of the structure.

4.2.21 The wall had been encased within a lower deposit of dark grey clay (**117**), which measured over 0.65m in depth, and a c.0.6m upper deposit of light brown clay (**116**), similar to the other observed foundations associated with the pottery complex (see Town 2009, Jackson 2009). These deposits and the wall **{118}** formed part of the foundations for the kiln floor, which were noted to be comprised of a lower

foundation course of roughly hewn sandstone blocks {115} and a severely heat affected brick surface {114}.

4.2.22 Also noted immediately east of the kiln floor were the remains of an outer sandstone built wall {112}, which had been built on a c.0.7m deposit of rubble (113). It is unclear however, whether this wall was associated with the original kiln structure or whether it was a later addition following the cessation of pottery manufacture at the site. The fact that it had been built upon a deposit of rubble might suggest the latter. Trench 6 also revealed further evidence for later developments associated with the structure, as the central foundation wall of the kiln {118} had clearly been carefully dismantled and reduced by c.0.9m in height. It is likely that this occurred during a reorganisation of space, when the structure was in use as tenements and additional space was needed.

5. FINDS

5.1 Introduction

5.1.1 A total of 7189 artefacts, weighing 116,004g, were recovered from five deposits during archaeological investigations at St George's Quay, Lancaster, Lancashire (site code LUN-D).

5.1.2 All finds were dealt with according to the recommendations made by Watkinson & Neal (1998) and to the Chartered Institute for Archaeologists (CIfA) Standard & Guidance for the collection, documentation, conservation and research of archaeological materials (2014b). All artefacts have been boxed according to material type and conforming to the deposition guidelines recommended by Brown (2011) and EAC (2014).

5.1.3 The material archive has been assessed for its local, regional and national potential and further work has been recommended on the potential for the material archive to contribute to the relevant research frameworks.

5.1.4 The finds assessment was compiled by Megan Stoakley with contributions from David Jackson.

5.1.5 Quantification of bulk finds by context was compiled by Sue Thompson and are visible in Tables 1 and 2.

Context	Qty	Wgt (g)	Date	BW	MC	PC	Glaze - plain	Kiln Furniture
104	924	24247	Post-med	X				
104	2561	32329	Post-med		X			
104	691	9113	Post-med			X		
104	1094	10280	Post-med				X	
104	87	4564	Post-med					X
108	7	68	Post-med		X			
109	188	6561	Post-med	X				
109	901	10843	Post-med		X			
109	237	2720	Post-med			X		
109	390	5829	Post-med				X	
109	24	1074	Post-med					X
U/S	12	226	Post-med		X			
U/S	3	40	Post-med			X		
TOTAL	7119	107894						

Table 1: Quantification of 18th century Delftware by context

Key:

BW: Biscuitware

MC: Monochrome Delftware

PC: Polychrome Delftware

Context	Qty	Wgt (g)	Material	Date	Comments
104	1	30	Animal Bone	Post-med	
104	29	393	Ceramic	Post-med	Red earthenware, refined whiteware, transfer printed, stoneware
104	2	26	Ceramic	Post-med	Delft figurine fragments
104	1	6930	Ceramic	Post-med	Large mortar/crucible
109	2	50	Ceramic	Post-med	Red earthenware
111	1	20	Ceramic	Post-med	Red earthenware, transfer print
111	1	4	Ceramic?	Post-med	Bottle stopper? Marble?
104	8	28	Clay pipe	Post-med	Stem frags - 1 x stamp
109	8	23	Clay pipe	Post-med	Stem frags - stamp x 1
U/S	1	4	Clay pipe	Post-med	Bowl frag
109	1	7	Cu Alloy	Post-med	Penny?
109	1	34	Fe	Post-med	Corroded nail
104	1	27	Flint	?	Burnt
109	1	42	Flint	?	Lump with cortex
104	2	12	Glass	Post-med	Clear glass, 1 x bottle, 1 x window
109	1	126	Lead	Post-med	Waste lead
104	1	59	Mortar	Post-med	Lime mortar
104	5	121	Slag?	Post-med	Waste glaze?
109	2	151	Slag?	Post-med	Waste glaze?
104	1	23	Stone?	Post-med	Raw Pigment?
TOTAL	70	8110			

Table 2: Quantification of Bulk Finds by Material and Context

5.2 Delftware Ceramics

5.2.1 A total of 7119 sherds of 17th to 18th century Delftware, weighing 107,894g, were recovered from four deposits (Table 1). The sherds are in good condition, with only some sherds displaying evidence for post-depositional damage.

5.2.2 The assemblage includes biscuitware (15.6%, 1112 sherds), monochrome Delftware (48.8%, 3481 sherds), polychrome Delftware (13%, 931 sherds), plain glaze Delftware (20.8%, 1484 sherds) and a small quantity of kiln furniture (1.5%, 111

fragments).

5.2.3 Two fragments of an unusual Delftware figurine were recovered from deposit (**104**) (Table 2).

5.2.4 It is recommended that, should the project proceed to publication, the entire assemblage is examined, recorded and analysed in detail by Barbara Blenkinship. New designs and patterns have been observed in this assemblage and further research is certainly required. Diagnostic sherds and unusual patterns must be illustrated.

5.3 Other Post-medieval Ceramics

5.3.1 A total of 34 sherds of post-medieval pottery, weighing 7397g, were recovered from three deposits (Table 2). The sherds are in good condition.

5.3.2 Fabric types comprise Buckley-type coarse red earthenware, Transfer Print, Refined white earthenware and stoneware. Vessel types include plates, jars, mixing bowls and saucers.

5.3.3 A ceramic bottle stopper was recovered from deposit (**111**).

5.3.4 A large mortar was recovered from deposit (**104**) (Table 2).

5.3.5 A date of 18th to 20th century is suitable for this small assemblage.

5.3.6 No further analysis is necessary.

5.4 Clay Tobacco Pipe

5.4.1 A total of 17 fragments of clay tobacco pipe, weighing 55g, were recovered from three deposits (Table 2). The fragments are in good condition.

5.4.2 The vast majority of the small assemblage comprise undiagnostic, plain stem fragments. A partial bowl fragment was recovered from an unstratified deposit. Two stems are stamped; one stamp from (**104**) comprises a lattice decoration. The other, recovered from deposit (**109**), comprises 'EDKIN', which is the stamp of a pipe-maker named Andrew Edkin (LAHS 2016 online). Originally from Hornby, Edkin was active in Lancaster from 1760-1790 (*ibid*).

5.4.3 An approximate date range can be provided by measuring the internal stem diameters of the stem fragments (Table 3).

5.4.4 The internal stem diameter measurements for this assemblage range from 1.22mm to 2.52mm, providing a date range of 1680 to 1800 (late 17th century to 19th century).

5.4.5 No further analysis is warranted.

Stem-Hole \emptyset (in/XX)	Conversion (mm) 1 inch = 25.4mm 1/64 (inch) = 0.4mm	Dates
9/64	9 x 0.4mm = 3.6	1590 – 1620
8/64	8 x 0.4mm = 3.2	1620 – 1650
7/64	7 x 0.4mm = 2.8	1650 – 1680
6/64	6 x 0.4mm = 2.4	1680 – 1720
5/64	5 x 0.4mm = 2	1720 – 1750
4/64	4 x 0.4mm = 1.6	1750 - 1800

Table 3: Binford's Pipestem Chronology (Kipfer 2008, 8)

5.5 Glass

5.5.1 Two fragments of late post-medieval glass, weighing 12g, was recovered from deposit (**104**) (Table 2).

5.5.2 One fragment comprises a bottle shard and the other comprises a shard of window glass.

5.5.3 No further analysis is warranted.

5.6 Zooarchaeology

5.6.1 A single animal bone, weighing 30g, was recovered from deposit (**104**) (Table 2). The bone is in good condition.

5.6.2 Guidelines adhered to for zooarchaeological analysis include 'Animal Bones & Archaeology: Guidelines for Best Practice' (Historic England 2014) plus reference material from Schmid (1972), Serjeantson (1996) and Hillson (1992). Measurements follow von den Driesch (1976).

5.6.3 The bone comprises a left-sided partial os coxae (pelvis) of a breed of domestic sheep (*Ovis sp.*).

5.6.4 No measurements could be taken.

5.6.5 No further analysis is required.

5.7 Metal

5.7.1 Three metal artefacts of late post-medieval date were recovered during the archaeological investigations and all were recovered from context **(109)** (Table 2). The artefacts are in poor to moderate condition.

5.7.2 The artefacts comprise an iron nail (34g), a copper alloy penny (7g) and a fragment of lead waste (126g).

5.7.3 No further analysis is required.

5.8 Archaeometallurgical waste

5.8.1 Seven fragments of archaeometallurgical waste, weighing 272g, were recovered from two deposits (Table 2). The fragments are in moderate condition.

5.8.2 The fragments comprise possible waste glaze left over from firing activity.

5.8.3 Should the project proceed to publication stage, it may be worth including these fragments with the pottery discussion.

5.8.4 No further analysis is required at this stage.

5.9 Mortar

5.9.1 A single fragment of mortar, weighing 59g, were recovered from deposit **(104)** (Table 2).

5.9.2 The fragment comprises lime mortar and is of a late post-medieval date.

5.9.3 No further analysis is required.

5.10 Flint

5.10.1 Two fragments of flint, weighing 69g, were recovered from deposits **(104)** and **(109)** (Table 2). The flint is in good condition.

5.10.2 The flint possibly comprises ballast from ships and would be of a late post-medieval date (*Pers. Comm.* Jackson 2016).

5.10.3 No further analysis is required.

5.11 Stone

5.11.1 A single fragment of stone, weighing 23g, was recovered from deposit **(104)** (Table 1). The stone is in good condition.

5.11.2 The stone has traces of pigment on several surfaces and could be associated with the manufacture of Delftware at the Luneside pothouse.

5.11.3 Should the project proceed to publication, it may be worth including this stone object when analysing the pottery and archaeometallurgical waste.

5.11.4 No further analysis is required at the post-excavation assessment stage.

5.12 **Statement of Potential**

5.12.1 The Delftware pottery assemblage is of high archaeological significance; further analysis, reporting and illustration of diagnostic sherds and unusual patterns is certainly recommended. This Delftware assemblage must also be analysed in conjunction with the previous material recovered from the site of the pothouse (LUN-A to LUN-C). It may be worth analysing the stone artefact and the archaeometallurgical waste with the Delftware ceramic assemblage.

5.12.2 The remainder of the material archive is of low archaeological significance and no further analysis is required.

6. CONCLUSIONS

- 6.1 The investigation comprised the excavation of seven trenches located within and around the pottery complex, in order to answer specific questions about the pothouse building and the production of pottery at the site. One of the major aims of the project was to investigate the pothouse building and allow the completion of the 2007 fieldwork phase, producing a full plan of Lancaster's sole delftware manufactory. In this respect, the investigation was successful. Furthermore, the investigation revealed that the cellars at the front of pottery complex were likely used for the storage of raw materials associated with the pottery manufacturing process. It appears that these raw materials would have been deposited within the front of building, most likely from vessels moored on the banks of the River Lune.
- 6.2 The fieldwork also sought to investigate both known shadruck deposits and the potential location of additional pottery dumps to the south of the pothouse. It was established that the southern area of the site was never used for the dumping of pottery, highlighting that only the area to the east of the pothouse was used for this process. It was also established that the eastern extent of these deposits was located approximately 8m from the east wall of the pothouse. It is possible that these deposits represent some of the earliest waste material associated with the pottery complex, which gradually encroached upon the eastern edge of the pothouse during the course of manufacturing activity at the site. It is possible therefore, that the pottery collected from this area could represent some of the earliest forms produced at the site, although further analysis would be needed to confirm this. Further analysis of all of the pottery retrieved during the investigation is also needed, as initial assessment has highlighted forms and patterns which may not only be unique to Lancaster, but also appear different to those retrieved during previous investigations at the site (Barbara Blenkinship *pers. comm.*).
- 6.3 Additional work at the site included an investigation of the front of the kiln, in order to confirm or refute the possibility of there being an additional level below the kiln's firing chamber. No lower level below the firing chamber was observed during the investigation, making it highly unlikely that one ever existed. The trench did however, reveal a substantial wall foundation below the kiln which had not previously been observed. It is probable that this wall formed a central spine for the kiln, which would have been needed to support the immense weight of the structure.

6.4 The programmes of archaeological investigation undertaken intermittently between 2007 and 2016 has already provided a significant amount of information about this nationally significant site. However, there is still much to learn about the production of delftware at the site and how it relates to wider questions regarding the development of post-medieval pottery production, trade and industry.

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APPENDIX 1: TRENCH DESCRIPTIONS

Trench 1

Length: 27m Width: 3m Orientation: East-northeast/West-southwest
 Min Depth: 0.3m Max Depth: 1.9m

Context #	Context Type	Description	Height/Depth
100	Deposit	Overburden/Rubble	c.0.2m
101	Natural	Grey clay	NFX
102	Deposit	Garden Soil	0.45m
103	Deposit	Mid-brown blue clay	NFX
104	Deposit	North-eastern shardruck deposit	1.5-2.0m
110	Structure	Cobble surface within Cellar 1	NFX
111	Structure	Cobble surface within Cellar 2a	NFX
119	Structure	Eastern wall of pothouse	NFX
120	Structure	North wall in Cellar 3	1.6m
121	Deposit	Mid brown clay deposit	0.5m+
122	Deposit	Mid grey clay deposit	NFX
123	Structure	North wall in Cellar 1	1.7m+
124	Structure	Eastern wall of Cellar 1	1.7m+
125	Structure	West wall of Cellar 1	1.0m+
126	Structure	North wall of Cellar 2a/2b	0.9m+
127	Structure	Western wall of Cellar 3	1.8m+
128	Structure	Brick partition within Cellar 2a/2b	1.38m+
129	Structure	Sloping bricks within Cellar 2b	0.25m+
130	Deposit	Cobble surface within Cellar 2b	NFX
131	Structure	Blocking stones within Cellar 3	0.5m
132	Deposit	Sand infill	0.9m

Trench 2

Length: 5m Width: 1.6m Orientation: North-northwest/South-southeast
 Min Depth: 0.3m Max Depth: 1m

Context #	Context Type	Description	Height/Depth
100	Deposit	Silty clay rubble	c.0.2m
105	Deposit	Blueish grey clay	c 0.2m
106	Deposit	Sagger levelling deposit	c.0.3m
107	Deposit	Gravel cobble deposit	c.0.3m+

Trench 3

Length: 5m Width: 1.6m Orientation: North-northwest/South-southeast
 Min Depth: 0.8m Max Depth: 1m

Context #	Context Type	Description	Height/Depth
100	Deposit	Silty clay rubble	c.0.2m
105	Deposit	Blueish grey clay	c.0.2m
106	Deposit	Sagger levelling deposit	c.0.3m
107	Deposit	Gravel cobble deposit	c.0.3m+

Trench 4

Length: 5m Width: 1.6m Orientation: East-northeast/West-southwest
 Min Depth: 0.8m Max Depth: 1.35m

Context #	Context Type	Description	Height/Depth
GN 108	Deposit	South-east shardruck deposit	1.5-2.0m
400	Deposit	Silty clay rubble	c.0.3m
401	Deposit	Light grey/brown clay	c.0.3m
402	Deposit	Orange shardruck deposit	c.0.4m+
403	Deposit	Dark grey/black coke deposit	c.0.4m
404	Cut	Modern drain cut	1.35m+

Trench 5

Length: 7.5m Width: 1.6m Orientation: East-northeast/West-southwest
 Min Depth: 0.76m Max Depth: 1.38m

Context #	Context Type	Description	Height/Depth
GN 108	Deposit	South-east shardruck deposit	1.5-2.0m
500	Deposit	Silty clay rubble	c.0.1m
501	Deposit	Modern backfill	0.95m
502	Cut	Modern pit	0.95m
503	Deposit	Greyish brown silt tipping layer	0.24m
504	Deposit	Tipping layer	0.06m
505	Deposit	Tipping layer	0.65m
506	Deposit	Tipping layer	0.6m
507	Deposit	Tipping layer	0.15m
508	Deposit	Light grey brown clay tipping layer	0.17m
509	Natural	Yellow/grey contaminated clay	NFX

Trench 6

Length: 50m Width: 1.6m Orientation: North-northwest/South-southeast
 Min Depth: 1.6m Max Depth: 1.6m

Context #	Context Type	Description	Height/Depth
GN 109	Deposit	Central shardruck deposit	1.5-2.0m
600	Deposit	Silty clay rubble	0.5m
601	Deposit	Shardruck deposit	1.0m
602	Natural	Grey clay	NFX

Trench 7

Length: 4.4m Width: 2.8m Orientation: East-northeast/West-southwest
 Min Depth: 0.9m Max Depth: 1.7m

Context #	Context Type	Description	Height/Depth
100	Deposit	Overburden/Rubble	c.0.2m
112	Structure	Kiln Wall	0.62m

113	Structure	Rubble infill	0.7m
114	Structure	Kiln floor	c.0.2m
115	Structure	Foundation layer for kiln floor	0.29m
116	Deposit	Light grey clay	NFX
117	Deposit	Dark grey clay	0.6m
118	Structure	North-south wall	1.1m

APPENDIX 2: PLATES



Plate 1; Overview of Trench 1



Plate 2; View north-northwest of Cellar 1



Plate 3; View north-northwest of Cellars 2a and 2b



Plate 4; View north-northwest of Cellar 3



Plate 5; View northeast of northern shardruck deposits (104)



Plate 6; View south-southeast of Trench 3



Plate 7; North-northwest facing section of Trench 5 showing northern extent of shardruck deposits (108)

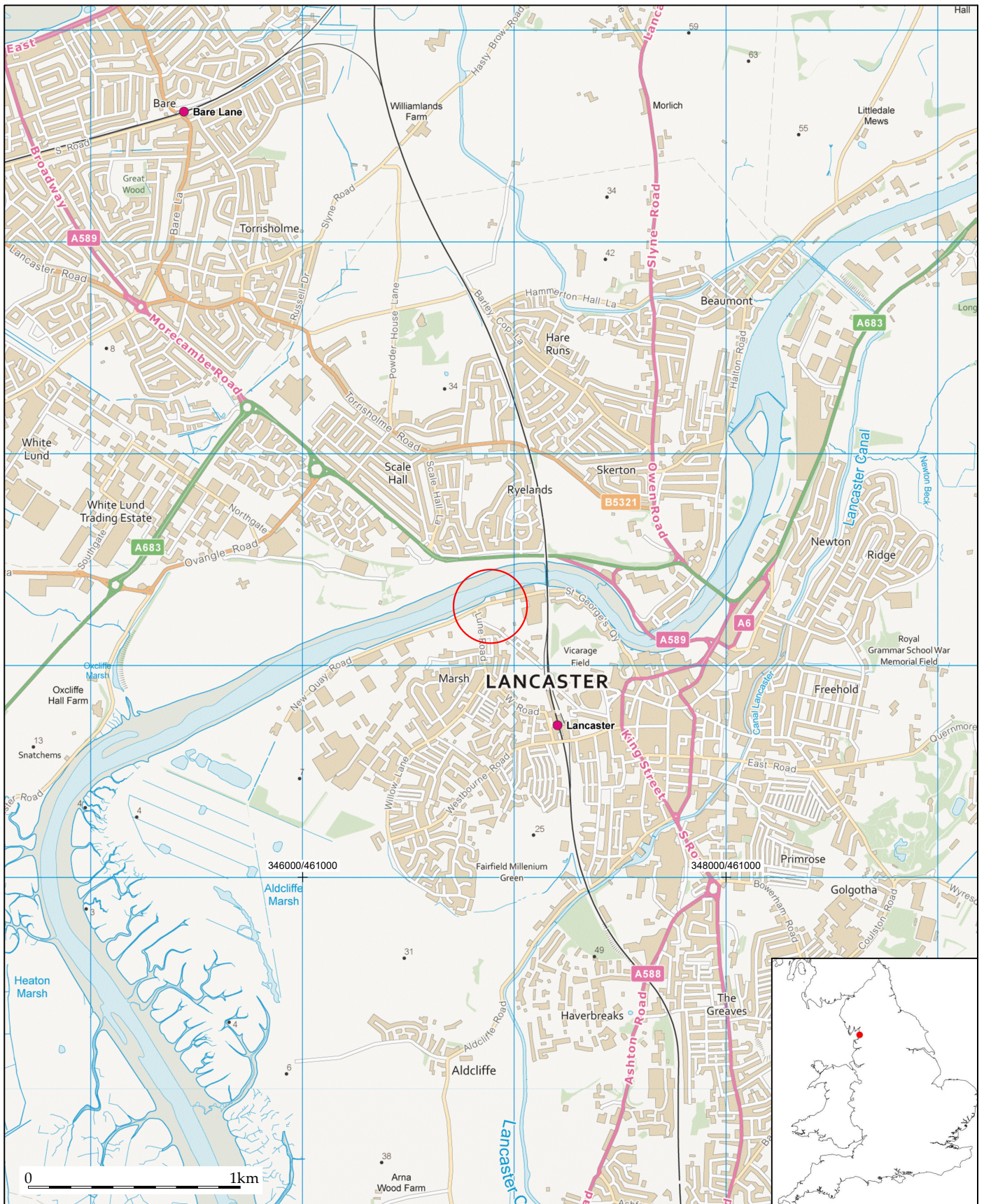


Plate 8; South-southeast facing section of Trench 6 showing shardruck deposits (109)



Plate 9; View south-southeast of Trench 7 showing central spine wall {118}

APPENDIX 3: FIGURES






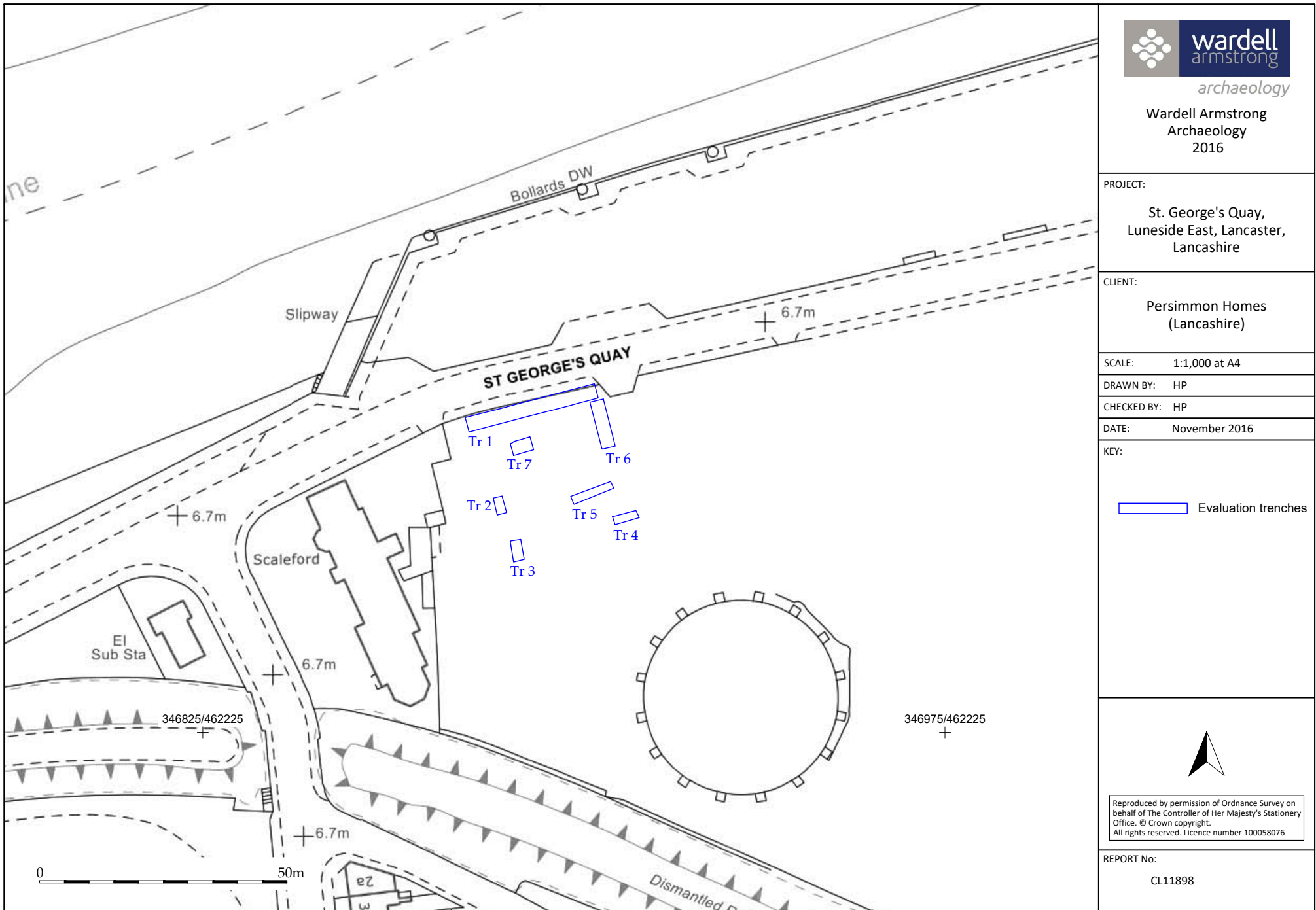
 <p>Wardell Armstrong Archaeology 2016</p>	<p>PROJECT: St. George's Quay, Luneside East, Lancaster, Lancashire</p> <p>CLIENT: Persimmon Homes (Lancashire)</p> <p>SCALE: 1:25,000 at A4</p> <p>DRAWN BY: HP</p> <p>CHECKED BY: HP</p> <p>DATE: November 2016</p> <p>REPORT No: CL11898</p>	<p>KEY:</p>  Site boundary	 <p>Reproduced by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown copyright. All rights reserved. Licence number 100058076</p>
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Figure 1: Site location.



PROJECT:
St. George's Quay,
Luneside East, Lancaster,
Lancashire

CLIENT:
Persimmon Homes
(Lancashire)

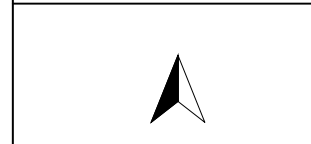
SCALE: 1:1,000 at A4

DRAWN BY: HP

CHECKED BY: HP

DATE: November 2016

KEY:
 Evaluation trenches



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REPORT No:
CL11898

Figure 2: Trench location plan.

PROJECT:

St. George's Quay,
Luneside East, Lancaster,
Lancashire

CLIENT:

Persimmon Homes
(Lancashire)





SCALE: 1:150 at A3

DRAWN BY: HP

CHECKED BY: HP

DATE: November 2016

KEY:

-  Evaluation trenches
-  Walls excavated in trenches
-  Surveyed plans of buildings
-  Previous areas excavated



REPORT No:

CL11898

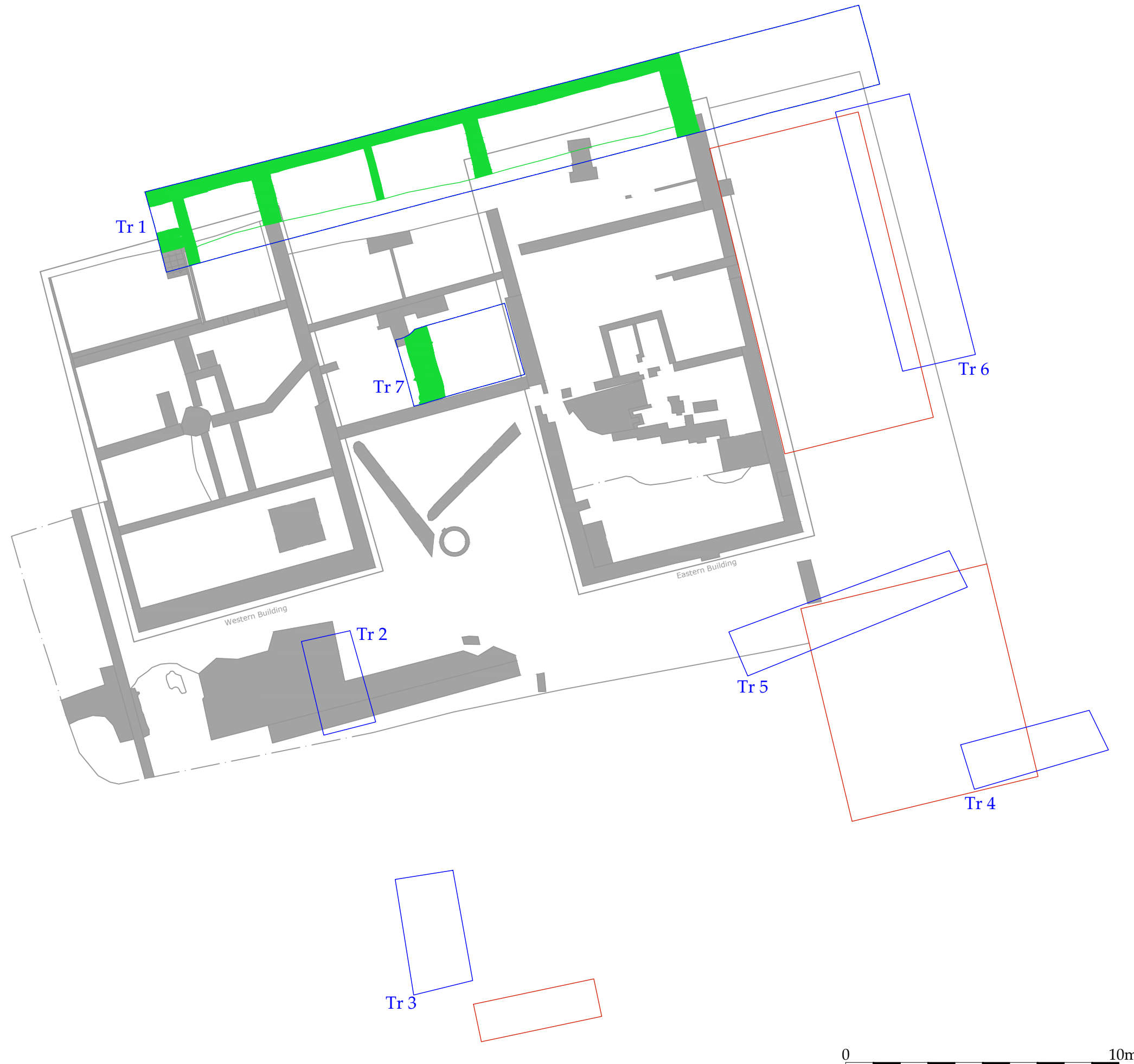


Figure 3: Plan showing full extent of Pothouse complex.

PROJECT:

St. George's Quay,
Luneside East, Lancaster,
Lancashire

CLIENT:

Persimmon Homes
(Lancashire)





SCALE: Plan 1:100/Sections 1:50 at A3

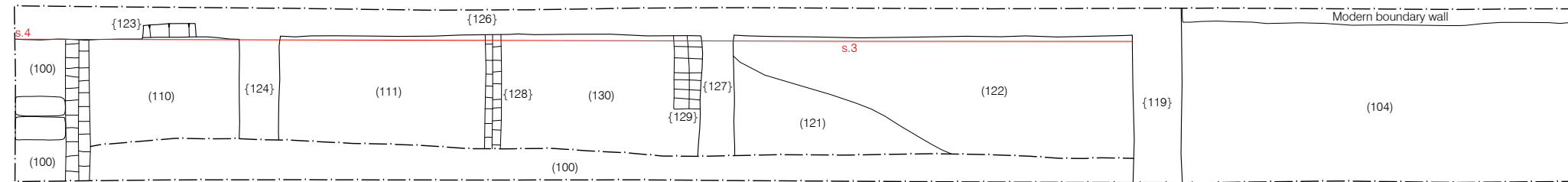
DRAWN BY: HP

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DATE: November 2016

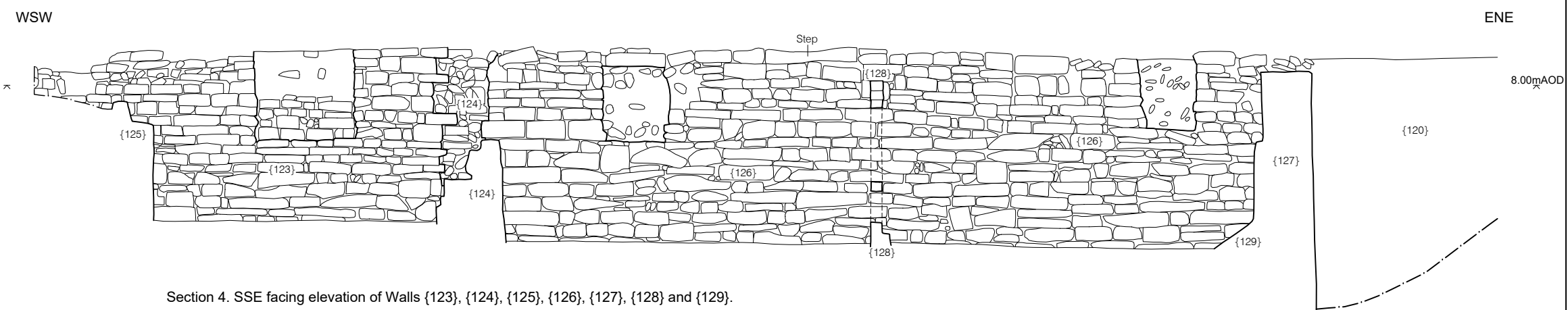
KEY:

- (101) Context number
-  Height mAOd
-  Section location
-  Limit of excavation
-  Plaster

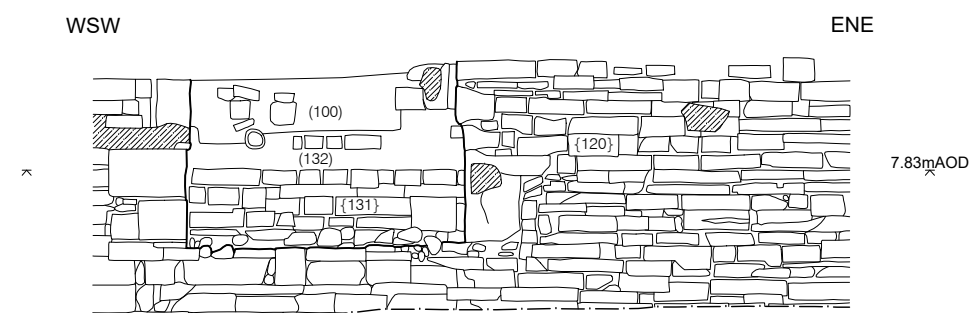


Trench 1. Plan.

0 5m



Section 4. SSE facing elevation of Walls {123}, {124}, {125}, {126}, {127}, {128} and {129}.



Section 3. SSE facing elevation of Wall {120}.

0 2m

REPORT No:

CL11898

Figure 4: Trench 1; plan and sections.

PROJECT:

St. George's Quay,
Luneside East, Lancaster,
Lancashire

CLIENT:

Persimmon Homes
(Lancashire)




SCALE: Plan 1:100/Section 1:50 at A4

DRAWN BY: HP

CHECKED BY: HP

DATE: November 2016

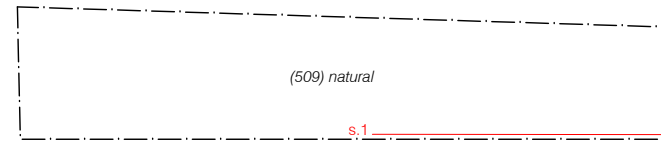
KEY:

(101)	Context number
	Height mAOD
	Section location
	Limit of excavation

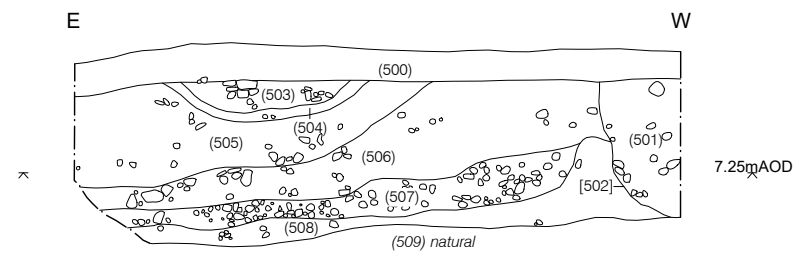
REPORT No:

CL11898

Trench 5. Plan.



0 5m

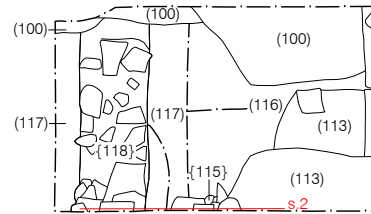



Section 1. North facing section of Trench 5 showing [502].

0 2m



Figure 5: Trench 5; plan and section.



Trench 7. Plan.



PROJECT:

St. George's Quay,
Luneside East, Lancaster,
Lancashire

CLIENT:

Persimmon Homes
(Lancashire)




SCALE: Plan 1:100/Section 1:50 at A4

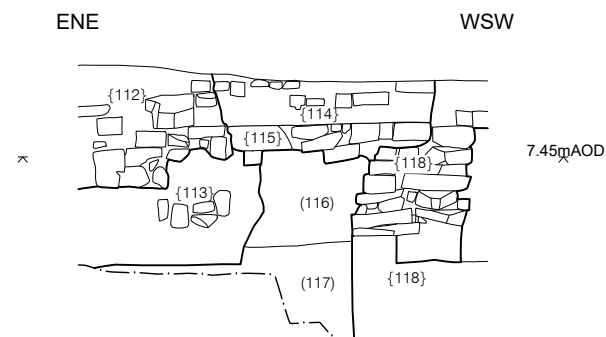
DRAWN BY: HP

CHECKED BY: HP

DATE: November 2016

KEY:

- (101) Context number
-  Height mAOd
-  Section location
-  Limit of excavation



Section 2. NNW facing section across Kiln {114}.



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Figure 6: Trench 7; plan and section.

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