

# FLEET SQUARE GARAGES, LANCASTER, LANCASHIRE

## Archaeological Watching Brief



Client: RP Tyson  
Construction Ltd

NGR: SD 47581 61924

Planning Application Ref:  
06/01495/FUL

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## Non-Technical Summary

Following a proposal by RP Tyson Construction Ltd to construct a block of flats on the site of some disused garages at Fleet Square, Lancaster, a programme of archaeological work was required by Lancaster City Council following consultation with Doug Moir, Planning Officer (Archaeology) at Lancashire County Council. This was to comprise a watching brief during any ground works associated with the excavation of new footings and service trenches, and the excavation of test pits prior to this.

The area of the site is located within part of the Roman *vicus* or civil settlement attached to the fort situated on the site of the present castle and the area is known to have been developed from at least the medieval period. The site itself is located on the west side of Fleet Square, an area of Lancaster that largely developed in the mid 18<sup>th</sup> century following the passing of an Act of Parliament for the creation of a quay in 1749.

Little information could be gained from the test pits because of their very limited depth and extent, which was in part due to their proximity to wall footings. The excavation of a small open area revealed the former edge of the River Lune on a north-west/south-east alignment across the north side of the site and a waterlogged dark grey clay deposit backfilling the resulting palaeochannel. A similar feature was also encountered in the south-east corner of the site. It is possible that these deposits were both part of the same feature but unfortunately the area where the two features might otherwise have met was not exposed during the course of the groundworks. The discovery of what appears to be the edge of the former course of the River Lune is significant in understanding the topography of ancient Lancaster as previous archaeological work in this part of the city, while revealing associated deposits, has not been able to define their edge.

A large piece of a window arch, which probably housed a leaded light, was recovered from the palaeochannel, but estimates for its date range from the 12<sup>th</sup> to the 17<sup>th</sup> century and its origins cannot be determined. Some late medieval pottery was recovered from this deposit, with a broad date range from the 15<sup>th</sup> to the 17<sup>th</sup> century, but other finds from this deposit were more consistently 17<sup>th</sup> to 18<sup>th</sup> century in date, after which time the area was known to have been built on as part of the quayside. That there was activity on site nearer to the earlier date suggested for this piece of stonework was evidenced by some abraded fragments of pottery, with a late 13<sup>th</sup> to 14<sup>th</sup> century date, but these were recovered from an overlying deposit and thus residual; the majority of the finds which were recovered from the overlying deposits related to activities on the site after this time, and dated from the 18<sup>th</sup>, 19<sup>th</sup>, and 20<sup>th</sup> centuries.

## Acknowledgements

Greenlane Archaeology would like to thank RP Tyson Construction Ltd for commissioning the project and Daniel Causer in particular for his help with access to and information about the site. In addition, thanks are due to the staff of the contractors on site for their assistance in accessing the groundworks. Thanks are also due to Doug Moir, Planning Officer (Archaeology) at Lancashire County Council, for issuing the brief and for additional comments and information.

The watching brief was carried out by Sam Whitehead and Tom Mace and the finds assessed by Jo Dawson, with the exception of the masonry, which was examined by Stuart Harrison (Ryedale Archaeological Services Ltd) and Stephen Gardner (Conservation Officer at Lancaster City Council). The environmental samples were examined by Scott Timpany of Headland Archaeology. The project was managed by Dan Elsworth who also edited the report together with Jo Dawson.

# 1. Introduction

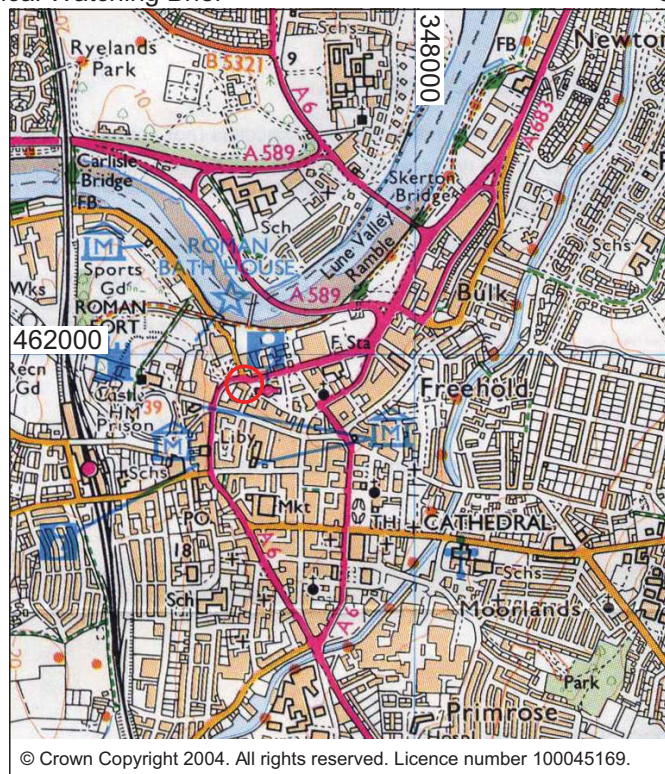
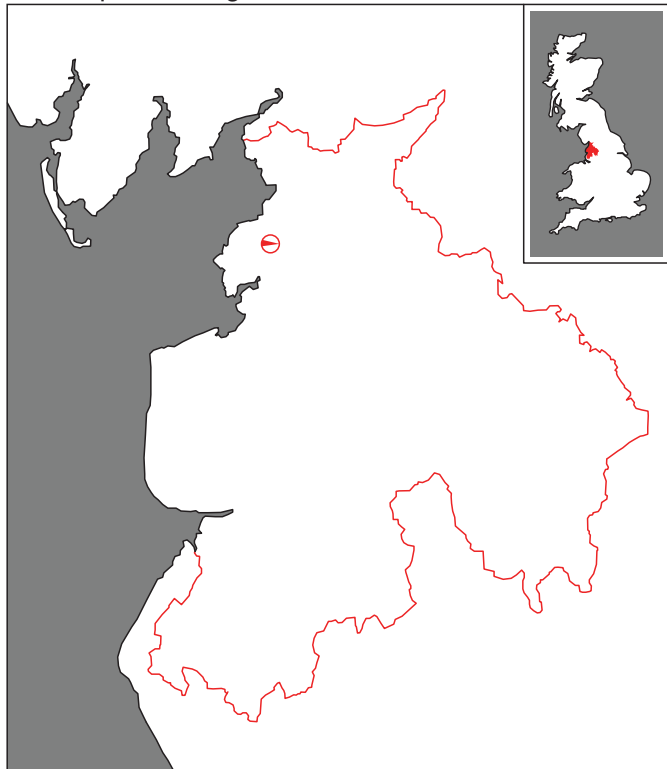
## 1.1 Circumstances of the Project

1.1.1 As a condition of planning consent (Planning Application No. 06/01495/FUL) for the construction of a block of flats on the site of some disused garages at Fleet Square, Lancaster, Lancashire (NGR SD 47581 61924; Figure 1), a programme of archaeological work was required by Lancaster City Council, following consultation with Doug Moir, Planning Officer (Archaeology) at Lancashire County Council. It was determined that the work should comprise an archaeological watching brief on ground works associated with the development, including the excavation of test pits, new footings, and service trenches. A project design was produced by Greenlane Archaeology (*Appendix 1*), which was approved by Doug Moir, and the work was conducted in three stages between September 2008 and September 2010.

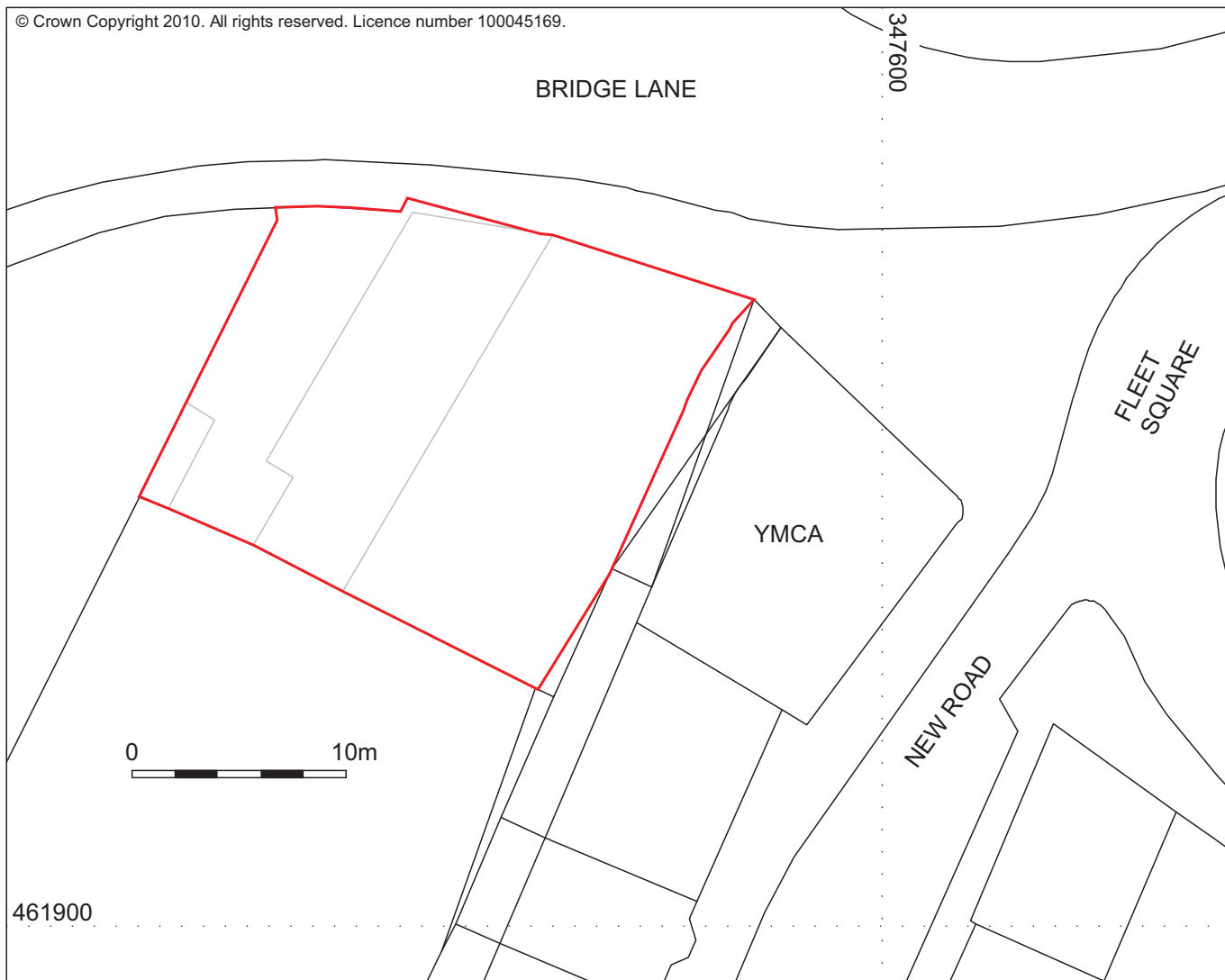
1.1.2 The initial stage involved monitoring the excavation, by Sub Soil Surveys Ltd, of three small pits intended to investigate the depth of foundations/wall footings at the site, which was carried out on the 22<sup>nd</sup> of September 2008 (see Figure 3). The next stage involved the exposure of a large area to the north-west side of the site and the excavation of Trenches A to E, which was carried out on the 11<sup>th</sup>, 17<sup>th</sup>, and 23<sup>rd</sup> of February 2010 (Figure 4). Monitoring of the excavation of footings against the south-west wall took place on the 1<sup>st</sup>, 3<sup>rd</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> of September 2010 (see Figure 5).

## 1.2 Location, Topography and Geology

1.2.1 The site is located at the junction of Damside Street with New Road (off Fleet Square), in Lancaster, at approximately 10m above sea level (Ordnance Survey 2004). The local topography is urban, with Fleet Square on the west edge of Lancaster city centre close to the River Lune (Figure 1). The underlying geology largely comprises the coarse grained sandstones of the Pendle grit formations which are overlain with stony till deposits derived from the Lake District through fluvo-glacial action (LCC and ELC 2006, 8).



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Figure 1: Site location

## 2. Methodology

### 2.1 Desk-Based Assessment

2.1.1 A desk-based assessment was carried out in accordance with IfA guidelines (IfA 2008a). This principally comprised an examination of early maps of the site, and published secondary sources. A number of sources of information were used during the desk-based assessment:

- **Lancashire Record Office, Preston (LRO):** this was visited in order to examine early maps of the site, and other primary and secondary sources;
- **Lancashire Historic Environment Record (HER):** reports relating to previous archaeological work in the area were consulted in order to compare results and find comparable sites;
- **Lancaster Library, Local Studies Collection:** a number of secondary sources relating to the site and the general history of the area were consulted;
- **Greenlane Archaeology:** additional secondary sources held in Greenlane Archaeology's library were also examined to provide information for the site background.

### 2.2 Archaeological Watching Brief

2.2.1 The intention of this element was to establish, where possible, whether any remains of archaeological significance were present on the site, their nature, degree of survival, extent, significance, and date. All aspects of the archaeological recording were carried out according to the standards and guidance of the Institute for Archaeologists (IfA 2008b). During the test pitting stage, the foundation pits were hand excavated and extended to the depth of the natural geology where possible below the depth of the concrete slab, which was broken out by a pneumatic drill. A midsize tracked mechanical excavator was used to strip an area to the north-west side of the site and for the excavation of Trenches A to E, and a compact excavator was used to excavate trenches in small sections along the south-west wall. The boundary walls had to be propped with heavy duty supports during the course of the excavation along the south-west wall and a pump was required for drainage. The watching brief involved the excavation and recording of approximately 175m<sup>2</sup> of the underlying deposits on site, which was recorded in the following manner:

- **Written record:** descriptive records of all deposits and features were made using Greenlane Archaeology *pro forma* record sheets. In addition, a general record was made of each trench and the day's events;
- **Photographs:** photographs in both black and white print and colour digital format were taken of all archaeological features uncovered during the groundworks, as well as general views of the site and working shots. A selection of the colour digital photographs is included in this report. A written record of all of the photographs was also made using Greenlane Archaeology *pro forma* record sheets;
- **Drawings:** features of interest were recorded relative to the known location of nearby buildings and other structures that were evident on the site plans and Ordnance Survey maps. Drawings were produced on site as follows:
  - i. A trench location plan was produced at a scale of 1:200;
  - ii. A trench plans and measured trench sections were produced at a scale of 1:50 for Trenches A to C and 1:100 for Trenches D and E;
  - iii. Additional measured sketch plans and sections were produced on the watching brief record sheets.



## 2.3 Environmental Samples

2.3.1 **Strategy:** samples were taken, as practical and possible, from any negative cut feature that was deemed to have the potential for the preservation of organic matter.

2.3.2 **Processing:** the one sample collected was processed using flotation techniques, with 250µm and 500µm sieves used for the flot, and a 1mm mesh used for the retent. The flot and retent were then naturally air dried.

2.3.3 **Assessment and recording:** artefacts and ecofacts were removed from the flot and retent and were assessed by Scott Timpany of Headland Archaeology. The content of the flot and retent was recorded on *pro forma* record sheets, and this information is summarised in *Appendix 4*, and discussed in *Section 4.4*.

## 2.4 Finds

2.4.1 **Processing:** during the course of the test pitting, finds of 19<sup>th</sup> and 20<sup>th</sup> century material were noted but not retained and no earlier finds were recovered. All of the artefacts recovered from the excavation of the trenches were washed, with the exception of metal and glass, which were dry-brushed. They were then naturally air-dried and packaged appropriately in self-seal bags with white write-on panels.

2.4.2 **Assessment and recording:** the pottery finds were assessed and identified by Jo Dawson, and were recorded on *pro forma* record sheets. The stonework was examined by Stuart Harrison. A catalogue of the finds was produced (*Appendix 3*).

2.4.3 **Deposition:** it is anticipated that the finds will be deposited in the Lancaster City Museum, following consultation with the Lancashire Museums service, with a copy of the archive and report as required.

## 2.5 Archive

2.5.1 A comprehensive archive of the project has been produced in accordance with the project design (*Appendix 1*) and current IfA and English Heritage guidelines (English Heritage 1991, Brown 2007). The archive, which comprises the drawn, written, and photographic record (see *Appendix 5*) will be deposited with the Lancashire Record Office in Preston (LRO(P)). A copy of the written report will also be submitted to the client, Greenlane Archaeology will retain a copy, and digital copies will be produced for the Lancashire Historic Environment Record (HER), the NMR, and the OASIS scheme (English Heritage 2007).

### 3. Desk-Based Assessment

#### 3.1 General Background

3.1.1 Remains of Neolithic date have been recovered from Church Street, which runs immediately to the south-west of the current site (White 2003, 26), but prehistoric remains are otherwise relatively rare in Lancaster, typically comprising stray finds and the occasional evidence for burial (Penney 1981, 40; Iles 2009). An actual settlement of Lancaster is known to have existed from at least the end of the first century AD and the site was probably within on the edge of the Roman *vicus* or civil settlement attached to the fort situated on the site of the later castle (Shotter and White 1990). The forts situated atop Castle Hill would have '*afforded a commanding position, overlooking the lowest fording point of the River Lune [which] almost certainly flowed further to the south and closer to the site of the forts than it does today; possibly along, or near the line of North Road and Damside Street*' (LUAU 1991b, 1), '*and it has been suggested that a harbour may have existed in this area, protected by the fourth century fort, which was aligned parallel to the river.... [The area] is regarded as being of archaeological interest due to the proximity of known Roman archaeology, and possible waterfront activity of this and subsequent periods*' (LUAU 1992, 1).

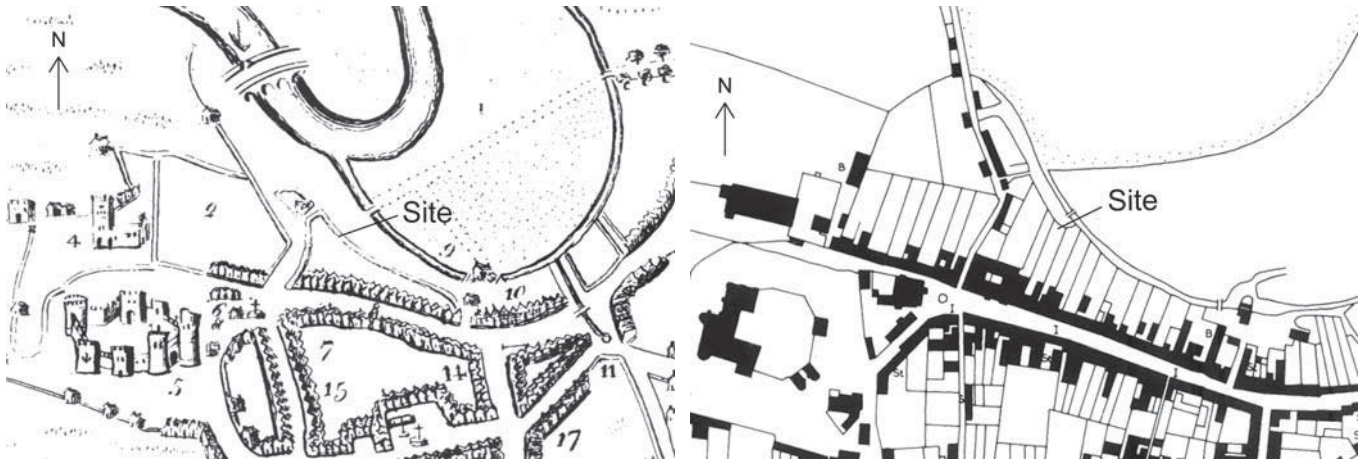
3.1.2 The growth of post-Roman Lancaster undoubtedly owed a great deal to the arrangement of the existing Roman fort and *vicus* and it is likely that some buildings survived from the Roman period into the early medieval and therefore that there was some degree of continuity (White 2001, 33). The town may have developed from two dependent villas of the manor of Halton mentioned in the Domesday Survey, one based on the Castle Hill area (*Chercalonastre* or Church Lancaster) and the other perhaps in the Stonewell area (LUAU 1991b, 1). Actual archaeological evidence for this period is very slight, however, although it is apparent from the discovery of fragments of cross shafts that the site of the former Roman fort was occupied by an early religious site in the 8<sup>th</sup> or 9<sup>th</sup> century AD, which has been interpreted as a monastery (White 2001, 35). Lancaster certainly developed as a town in the medieval period and it is apparent from documentary sources what the extent of its topography was by the 15<sup>th</sup> century (Penney 1981, 42). Specific details relating to the area including the site are not certain, but the map evidence indicates that it is situated at the rear of burgage plots running off Church Street, which is recorded in the 13<sup>th</sup> century (*ibid*). Of additional interest is the line of the mill leat, which is clearly recorded on Speed's plan of 1610 (Plate 1) and probably fed the mill recorded in the borough charter of 1193 (White 2001, 54), which must have run close to the site (for a more detailed discussion of this see Horsfield 2001 and *Section 5*). A port is recorded in Lancaster during the medieval period although there are no details concerning the position or nature of early wharves (LUAU 1992, 3).

3.1.3 During the 16<sup>th</sup> and 17<sup>th</sup> centuries the growth of Lancaster seems to have stalled somewhat (LUAU 1991b, 2), and it is likely that 'Fleet Square', as such, did not come into existence until the middle of the 18<sup>th</sup> century, following the construction of 'New Road' in 1752 (White 2000, 26), before which the area, once called Green Ayre, had comprised flat meadows surrounded by the River Lune (Bathgate and Pye 1997, 12). Much of this area was developed as part of the creation of St George's Quay, which came into existence following an Act of Parliament in 1749 (*op cit*, 27). This soon led to the construction of a dock and associated buildings such as warehouses, inns, and private dwellings, initially in a somewhat disorganised fashion, although with ground set aside for important buildings such as the Custom House (*ibid*). The map and image regression demonstrates that Fleet Square was an established feature of the local topography from the late 18<sup>th</sup> century at least (see *Section 3.2* below). The adjoining warehouse was recently recorded by Greenlane Archaeology and is thought to date to c1881 (Greenlane Archaeology 2008). It is likely that the standing buildings that were on the site were of a similar, or possibly slightly later date.

3.1.4 The area retained much of its original form until substantial clearances that took place between 1938 and 1939 to provide improved access to the bus station (White 2003, 22). This, coupled with the widening of China Street that had already occurred in 1896 (*ibid*), changed the character of the area and paved the way for the development of the present one-way system that takes up the north side of Fleet Square, the rest of which is now dominated by a taxi rank.

### 3.2 Map and Image Regression

3.2.1 **Early maps:** although there are earlier maps of Lancaster that show the site, these are typically of little use in understanding its development because of the relatively poor level of detail. Speed’s map of 1610 and Docton’s plan of 1654 are the most relevant as they shows the course of the former mill leat and the line of the River Lune by this date, but are otherwise of generally limited use (Plate 1 and Plate 2). It is apparent, however, that there are some discrepancies in the depiction of the river between these two maps, with Docton’s plan showing a much wider section immediately north of the site.



**Plate 1: Extract from Speed’s map of Lancaster, 1610 (from Penney 1981, 43)**

**Plate 2: Extract from Docton’s map of Lancaster, 1654 (from Penney 1981, 44)**

3.2.2 **Map of 1754:** this map, produced as part of a legal dispute regarding the fishing rights on the Lune belonging to William Bradshaw and reproduced by Horsfield (2001, 16). Although not especially detailed it is of interest for its depiction of the River Lune at the time, which seems to have had a number of small islands within in it to the east of the site, and it also shows the line of the mill leat, which was becoming built over by this time.



**Plate 3: Extract from a plan of c1754 showing the area of the mill race and the course of the River Lune**

3.2.3 **Mackreth’s map, 1778:** this map shows the early development of the quayside in the 18<sup>th</sup> century and the layout of New Road, joining Church Street and ‘Dam Side’, currently known as Damside

Street (Plate 4). There is a building shown on the corner of the junction of Dam Side and New Road, which is the current location of the Lancaster and District YMCA. The site occupies an area immediately to the north-west of the YMCA which is shown as undeveloped at this time, although there are buildings shown further to the north-west along Dam Side in limited detail.

3.2.4 **Clark's map, 1807:** this map is taken from Clark's (1807) *Historical and Descriptive Account of the Town of Lancaster* and shows a similar arrangement of buildings on the corner of Dam Side and Fleet Square (Plate 5), but again the detail is scant.



Plate 4: (left) Mackreth's map, 1778

Plate 5: (right) Clark's map, 1807

3.2.5 **Binns' map, 1821:** this map appears to show an L-shaped building in the space to the north-west of what is now the YMCA building on the corner of Dam Side and New Road, and it is more detailed than the earlier maps and shows the adjoining properties more clearly (Plate 6). The passage along the north-west side of the YMCA building is also clearly marked.

3.2.6 **Atkinson's map, 1824:** this map is taken from Baines's (1824) *History, Directory, and Gazetteer of the County Palatine of Lancaster* (Plate 7). There is some discrepancy between this plan and Binns' map in the arrangement of the buildings around Fleet Square; a considerably larger gap is shown on Atkinson's map, where there is just a narrow passage between the YMCA building and the L-shaped building to the north-west on Binns' map (*cf.* Plate 6).

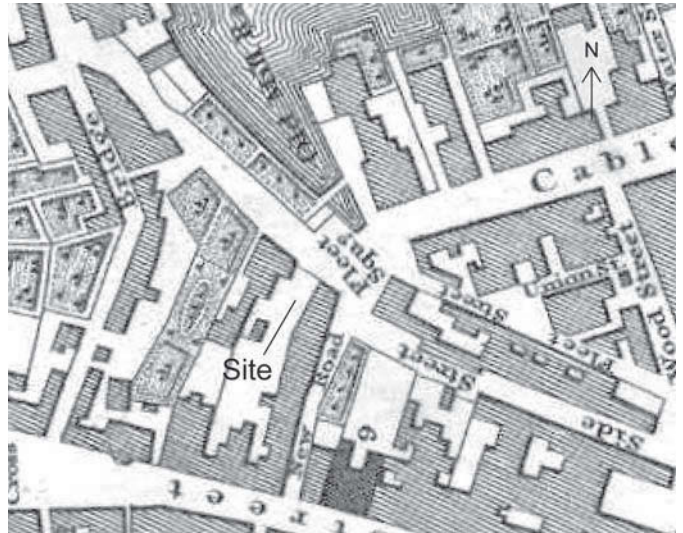


Plate 6: (left) Binns's map, 1821

Plate 7: (left) Atkinson's map, 1824

3.2.7 **Ordnance Survey, 1848:** this map shows limited detail of the buildings around Fleet Square, but again shows an L-shaped building on the site and the passage to the south-east (Plate 8).

3.2.8 **Ordnance Survey, 1893:** this map is considerably clearer than the preceding ones due to the scale at which it was produced, and shows the footprint of the structures on Damside Street. Further development has taken place along Damside Street to the north-west of the site. The site itself has been filled, and the arrangement of the buildings is much changed. Those to the north-west of what is now the YMCA building, which at the time was Pye's warehouse, seem to have formed part of the overall complex, which included additional warehousing and a garage, perhaps initially for housing horse-drawn wagons (Greenlane Archaeology 2008) (Plate 9).



Plate 8: (left) Ordnance Survey map, 1848

Plate 9: (right) Ordnance Survey map, 1893

3.2.9 **Photograph, c1900:** this photograph (from Bathgate and Pye 1997, 11) shows the Fleet Square Mills (now the YMCA) on the corner of Fleet Square and Damside Street in the late 19<sup>th</sup> or early 20<sup>th</sup> century (Plate 10). The building is depicted probably much as it looked soon after its construction in 1881, and it's external appearance has changed relatively little (Greenlane Archaeology 2008). It is shown in active use, with all of the loading doors open and goods being winched to the upper floors from waiting wagons below; all of the floors seem to have been used, at least partially, for warehousing at this

time. The stepped front of the buildings visible to the right of the picture formed part of the garages located on the current site.

3.2.10 **Photograph, 1912:** this photograph shows the view across Fleet Square from the west end of Cable Street towards Lancaster Castle. The garages which occupied the current site are visible in the centre of the photograph, with the castle behind (Plate 11; after Hayes 2000, 26).

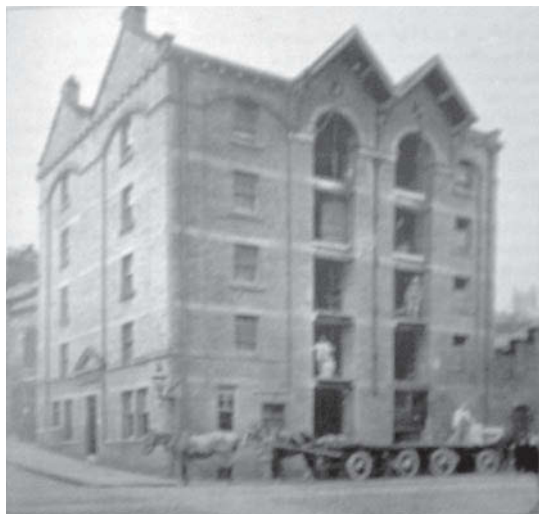


Plate 10: (left) Photograph, c.1900

Plate 11: (left) Photograph, 1912

3.2.11 **Ordnance Survey, 1913:** this map shows a similar arrangement of buildings as the earlier edition of the Ordnance Survey (cf. Plate 9), although some more infilling of the space behind the garages has occurred, especially in the south-west corner of the site (Plate 12). The eastern building is labelled '22'.

3.2.12 **Ordnance Survey, 1933:** the arrangement of buildings in the south-west corner of the site has seen further alteration, one of which has evidently been removed.

3.2.13 **Ordnance Survey, 1938:** this map records the demolition carried out under the Corporation Clearance Scheme in the 1930s of the buildings near Fleet Square (Bathgate and Pye 1997, 9; Plate 13).



Plate 12: (left) Ordnance Survey map, 1913

Plate 13: (right) Ordnance Survey map, 1938

### 3.3 Previous Archaeological Investigation

3.3.1 **Introduction:** although the site is on the northern edge of the area considered to be occupied by the *vicus* associated with the Roman fort and the medieval town, with a principal street of both represented by the line of Church Street, the proximity of the site to the River Lune and the nature of the deposits encountered meant that previous pieces of work carried out to the north and north-west were most relevant. For this reason reports relating to the following sites were consulted.

3.3.2 **15 Damside Street:** trial trenches excavated by Lancaster University Archaeology Unit (LUAU) at 15 Damside Street in November 1990 revealed almost 4m of undisturbed deposits which indicated activity from the early Roman period to the present day, including well preserved Medieval remains about which little was then known for Lancaster (LUAU 1991a, 20; see Figure 2). The Roman deposits were sealed by an accumulation of silts caused by a post-Roman marine transgression, evidence for which has been found elsewhere along the Fylde coastline (*op cit*, 15); the silts were '*deposited by the river either as it changed its course, or the river may have been enhanced during the post-Roman period by a marked rise in sea level*' (LUAU 1991b, 1). A medieval ditch with at least one re-cut was thought to possibly represent a northern boundary to the burgage plots associated with properties erected along Church Street, shown on John Speed's map of 1610 (Plate 1) and Kenneth Docton's reconstructed map of 1684 (Plate 2; LUAU 1991a, 13 and 16).

3.3.3 **Car and Coach Park East of Damside Street:** trial trenches were excavated to the north-east side of Damside Street, near to the River Lune, by LUAU in November 1991 (LUAU 1991b; see Figure 2). Recent deposits of industrial residues (c19<sup>th</sup> century) and features likely associated with the construction of the Green Ayre railway line as well as 3.5 to 4m of made-ground deposits were encountered above dark grey river silts containing traces of organic material, the general sequence of which suggested systematic reclamation of the river mud-flats within a relatively short period of time (LUAU 1991b, 6).

3.3.4 **West of Damside Street:** an archaeological evaluation carried out to the west side of Damside Street in June 1992 recorded the presence of Romano-British and late medieval to 18<sup>th</sup> century objects as well as more modern finds up to the 20<sup>th</sup> century, indicating '*activity on, or near, the site over a long, but not unbroken, period*' (LUAU 1992, 1-2, 9). The lowest depths of excavation recorded '*a sticky, very dark grey gritty clay*' above the grey shale bedrock, which was noted to slope sharply down to the east (LUAU 1992, 4). This layer was in turn overlain by various silty sand and sandy silt lenses containing sherds of Romano-British pottery, dating from the late second to third centuries AD (LUAU 1992, 9). An 18<sup>th</sup> to 19<sup>th</sup> century structure with a cobble surface was recorded in the centre trench, and similar deposits were encountered to the east, including a '*grey silt which became darker toward the base of the profile*' (LUAU 1992, 5-6). '[These] *deposits may well reflect alterations in the course of the River Lune and subsequent silting or scouring of that course [and] could infill an earlier river channel*' (LUAU 1992, 6). There was also evidence for land reclamation in the 18<sup>th</sup> century and further structural remains of a retaining wall in the east trench were exposed, but the dating evidence for this wall was not secure (LUAU 1992, 6-7). Waterlogged wood-working debris suggested the possibility of possibly large-scale structural carpentry during both the Roman and late medieval phases, but given the location of the site the possibility of ship-building could not be ruled out (LUAU 1992, 9).

3.3.5 **Millenium Bridge:** an archaeological watching brief carried out on the excavations associated with the construction of Millenium Bridge in January and February 2000 (LUAU 2000) recorded various deposits which were part of the estuarine environment within the River Lune but no archaeological features were found.

3.3.6 **Bus Station, north-east of Damside Street and south of Cable Street:** an archaeological evaluation and watching brief carried out by OA North in June 2000 to the east of the current site recorded a number of 18<sup>th</sup> century house cellars with cobbled floors; the associated houses were demolished in 1938 (OA North 2000). The cellars had been cut into levelling deposits, below which segments of very dark grey humic silt deposits were encountered, probably relating to mud-flats associated with the previous course of the Lune (*ibid.* 12-14).

3.3.8 **Former Pye's Warehouse, Fleet Square:** evaluation trenches were excavated in August 2002 and a watching brief was maintained on the groundworks between September and October of the same year ahead of the construction of new housing on the site of the former Pye's Warehouse (OA North 2003; see Figure 2). Layers of building debris and domestic waste from the early to mid-18<sup>th</sup> century had intentionally been dumped over the soft alluvial deposits of the river's edge to build up and stabilise the ground and later accumulations of post-medieval and modern make up or levelling layers were also recorded (*ibid*, 4). The estuarine deposits were a mix of mid to dark grey, clayey silt and silty clay deposits above which were various tipped deposits that had been dumped with the intention of extending the stable ground along the edge of the river; the consistency of the angle of dumping suggested that this had been done in a relatively short time period (*ibid*, 16).

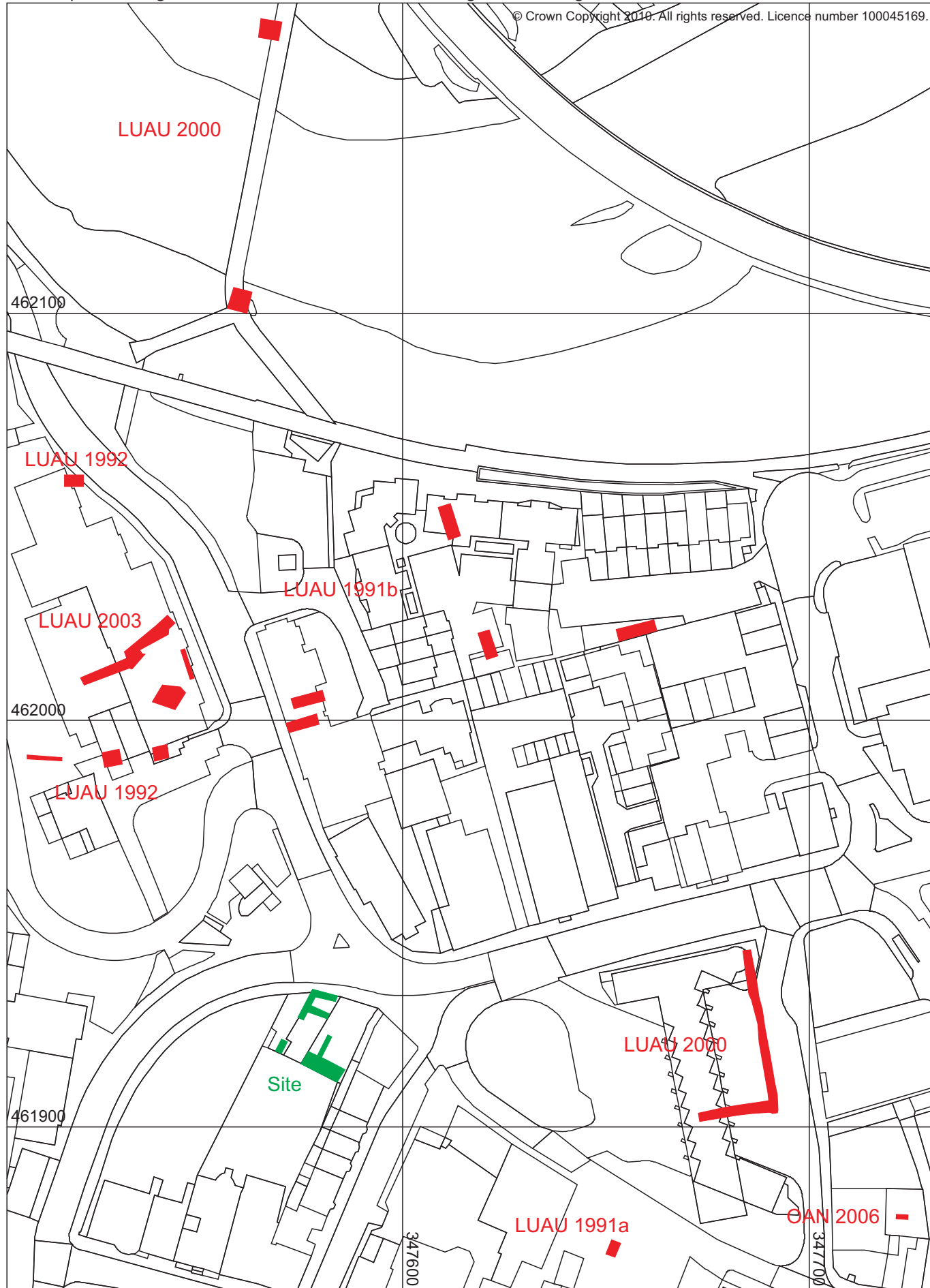
3.3.9 **Dye House Lane:** an archaeological watching brief carried out by OA North in July 2006 recorded the backfilled cellars below the hard standing of limestone chippings at which point the excavation was discontinued (OA North 2006; see Figure 2).

## 3.4 Discussion

3.4.1 The long history of this part of Lancaster meant that there was potential for undisturbed features to be present on the site, especially as deposits above natural are thought to be up to six feet deep in this part of the city (Penney 1981, 45). Although estuarine deposits have been encountered during the course of groundworks associated with the redevelopment of this part of Lancaster in the past (see Section 3.3), the exact course of the River during the medieval and earlier periods is unknown. Certainly, the whereabouts of the river's edge had not been determined with any certainty and its proposed location appears to have been extrapolated from the course of the mill leat marked on Speed's map of 1610 (Plate 1; *op cit*, 43; see Shotter 2009 for the most recent estimates of the river's position during the Roman period). Systematic reclamation of the land along the edge of the Lune during the 18<sup>th</sup> century allowed development of the quayside of which the buildings at Fleet Square formed part, but this in turn completely covered the former line of the river and the mill leat, making the position of both impossible to establish on the surface. Establishing the actual course of the river would help to identify areas of lesser and greater potential for the recovery of archaeological remains associated with waterfront activity at an early date.



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Figure 2: Previous archaeological investigations

## 4. Fieldwork Results

### 4.1 Test Pits

4.1.1 **Test pit 1:** this pit was located against the south-west face of the yard wall to the north-west of the two warehouse buildings (see Figure 3). The pit measured 0.50m by 0.50m and appeared to reveal the footings of this wall to be only 0.10m deep. Excavation had to be stopped at a depth of 0.40m due to the presence of a relatively modern ceramic drain pipe that ran parallel to the wall. Some orangey-pink natural clay was evident below the wall but the remaining sections revealed deposits of greyish-brown slightly silty-sand, probably backfilling the pipe trench.

4.1.2 **Test pit 2:** this pit was located against the north-west face of the yard wall at the extreme north-west of the site (see Figure 3). The pit measured 0.50m by 1.00m and revealed the footings of this wall to be 0.70m deep. Excavation stopped at a depth of 1.00m and natural pinkish-yellow clayey-sand was encountered at 0.50m at the south-east end of the pit where it was not truncated by the cut for the wall foundation. Between the yard cobbles which extended to a depth of 0.20m and the natural at 0.50m a mid-dark brown clayey-silt was encountered which incorporated some sand and occasional gravels. It was not possible to accurately characterise the small region of this deposit that was undisturbed by the cut for the wall footings in this dark and narrow pit.

4.1.3 **Test pit 3:** this pit was located against the centre of the internal face of the warehouse wall at the south-east of the site (see Figure 3). The pit measured 0.50m by 0.50m and revealed the footings of this wall to be 0.55m deep. Excavation stopped at a depth of 1.00m, a depth at which no natural deposits had been encountered. Made ground with occasional ceramic building material, stone and ceramic pipe was evident to a depth of 0.30m below the concrete floor of the building, below which there was an homogenous greyish dark-brown silt from which no artefacts were recovered.

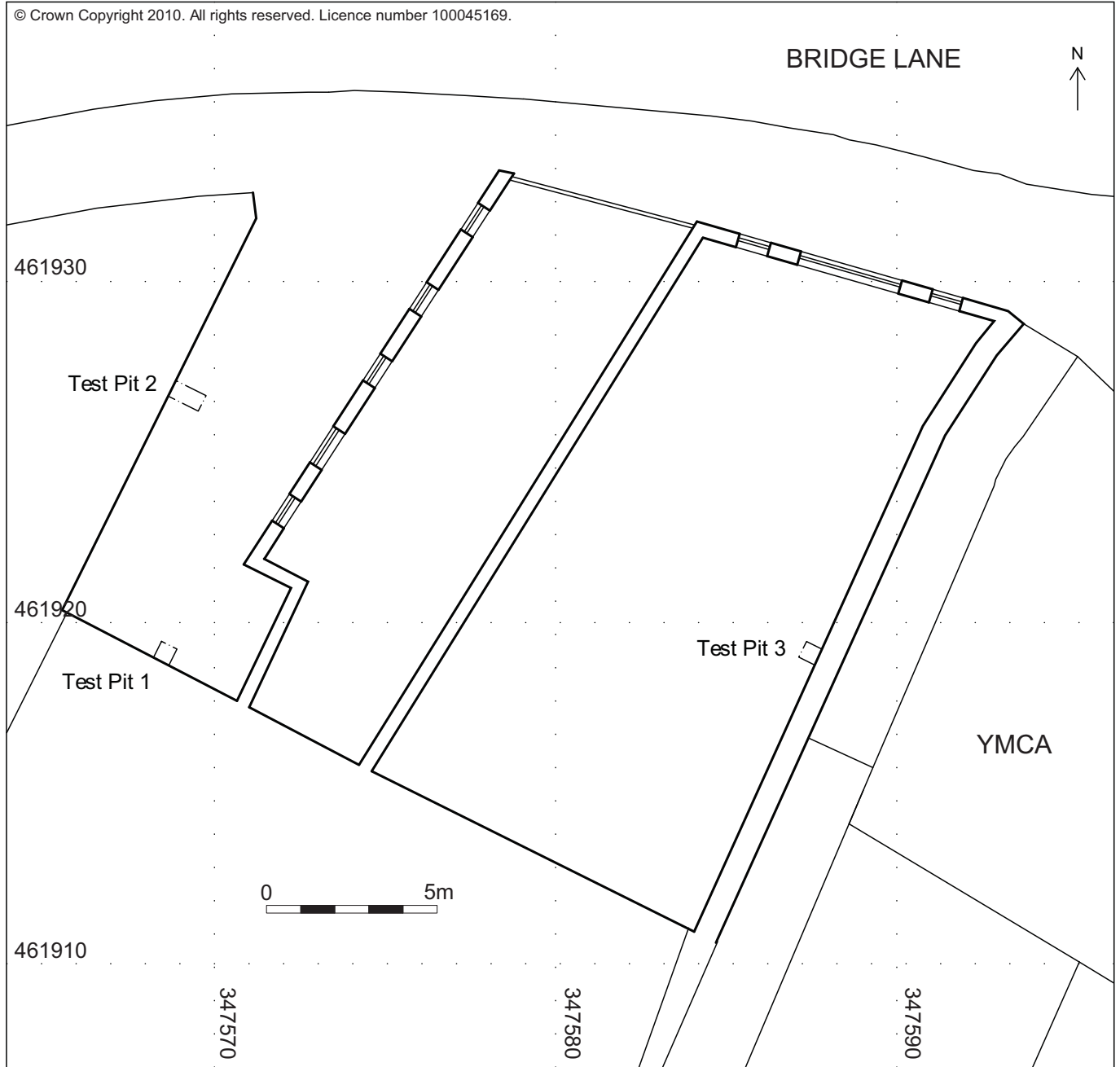
### 4.2 Excavation

4.2.1 **Phase 1:** initially, a large open-area of the site (approximately 130m<sup>2</sup>) was exposed by machine along the north-west side of the site, approximately 2.8m away from the walls (Plate 14; see Figure 4). This revealed a distinct edge, possibly of a curvi-linear feature (**12**), formed by a dark greyish-brown deposit (**10**), below the level of the overburden and demolition rubble (**11**), which was clearly discernible against the soft reddy-brown clay natural (**13**). This dark greyish-brown deposit (**10**) was visible on a north-west/south-east alignment across the centre of the site and seemed to shelve downwards towards the street front to the north, and the upper part was clearly somewhat disturbed as it contained some mortar fragments, ceramic pipe, and brick and stone building rubble as well as fragments of transitional pottery (late medieval or early post-medieval) immediately below layer **11**.



Plate 14: Open area excavated towards the north-west side of the site

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Test Pit 1 - facing south-west

Test Pit 2 - facing north-west

Test Pit 3 - facing north-east

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Figure 3: Test pits

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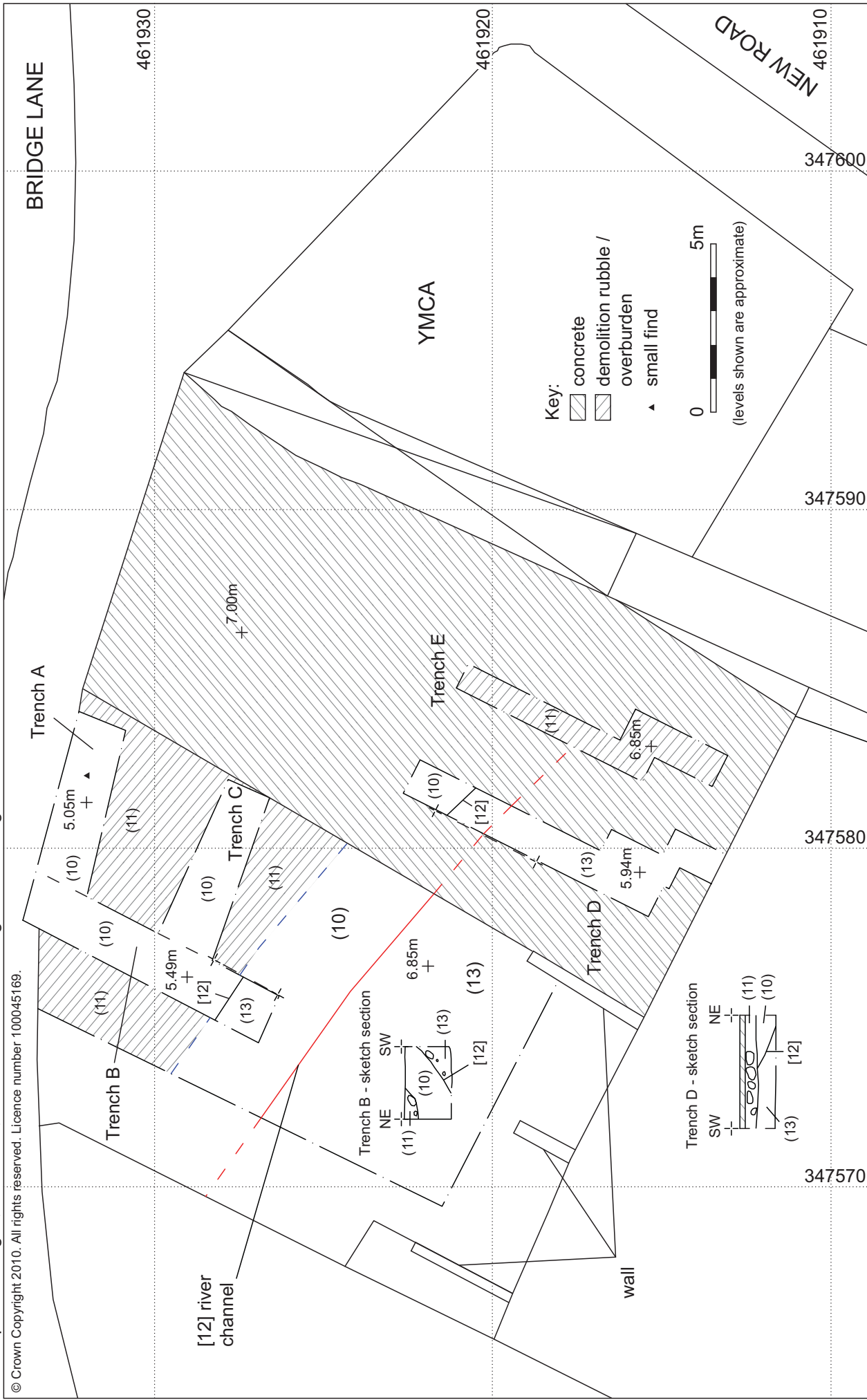


Figure 4: Trench plan

4.2.2 **Phase 2:** the next stage of work involved the excavation of an F-shaped trench (Trenches A to C), within the open-area towards the north side of the site, towards the road (see Figure 4). A further two trenches (Trench D and E) were opened within the confines of the concrete floor of the warehouse (as was) to the south-east.

4.2.3 **Trench A:** the overburden/demolition rubble (**11**) below the concrete slab was approximately 0.75m thick above a waterlogged black silt deposit (**10**), which was initially excavated to a depth of 1.45m (Plate 15). The depth of the trench was later re-dug and reduced to a depth of 1.8m, revealing a continuation of context **10** to this level, and a piece of curved and worked stone was recovered at approximately this depth (see *Appendix 3* and *Section 4.3.2*; see also Figure 6). This blackish deposit was thought to be a continuation of the dark-greyish brown deposit observed in the open area excavation of Phase 1; it had a different colouration due to the lack of mixing of the deposit with the overlying demolition rubble at this level.

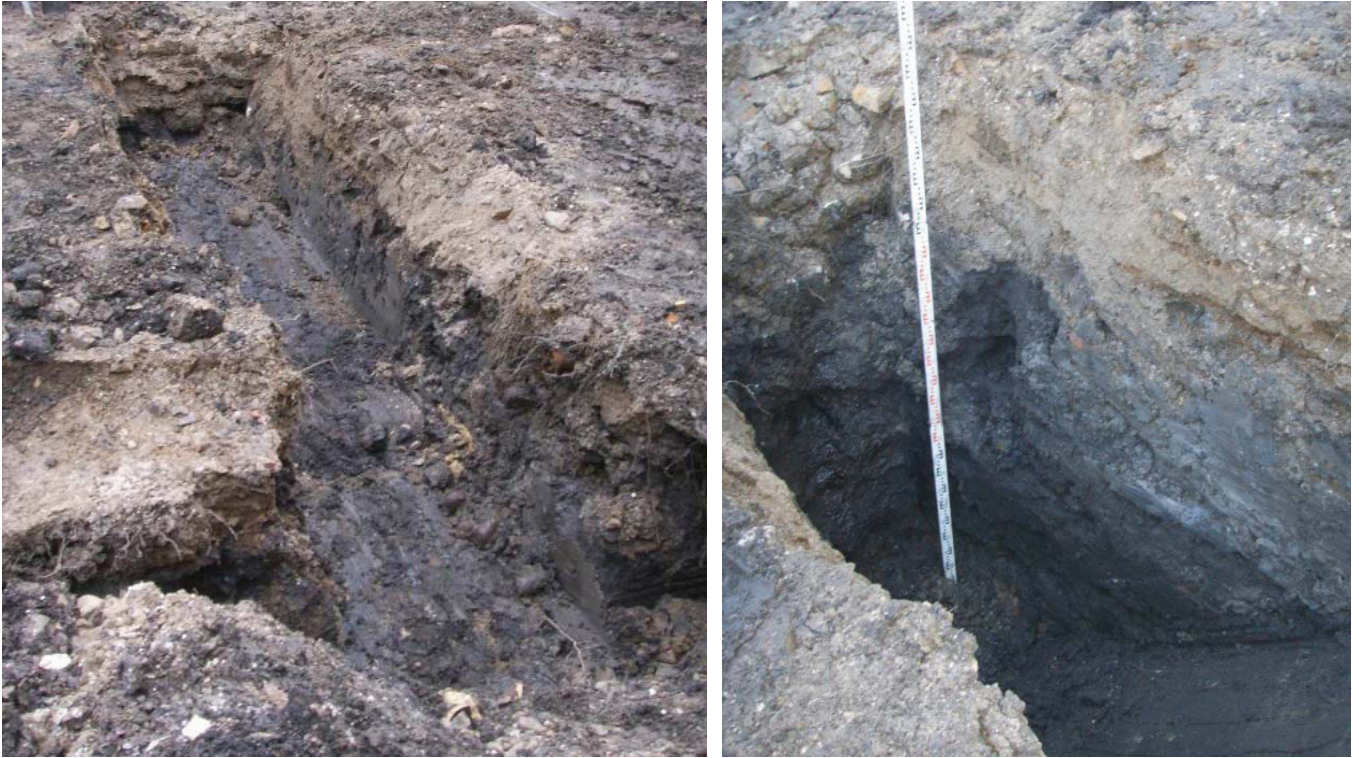
4.2.4 **Trench B:** the overburden (**11**) was 0.6m thick at the north end of the trench but petered out towards the south (Plate 16). It overlay a black silty deposit (**10**), which was encountered to the maximum depth of the trench, which was originally excavated to a maximum depth of 1.3m and then increased to 1.6m. Context **10** appeared to be more sterile towards the rear of the site.



Plate 15 (left): Context 10 exposed in Trench A, looking west

Plate 16 (right): Trench B, looking south-west

4.2.5 **Trench C:** the west end of the trench was dug to a depth of 1.25m where context **11** was observed to be 0.6m thick on top of context **10** (Plate 17). An area extending 2.8m from the east end of the trench was excavated to a depth of 2.7m. Context **10** continued to this depth and it was observed that the upper part was more clayey (Plate 18). Some sandy looking yellowish-grey clay was observed at this depth which appeared to be underlying context **10**, but it was not possible to investigate this deposit due to the depth of excavation.



**Plate 17 (left): General view of Trench C from the north-west**

**Plate 18 (right): North-east facing section at the east end of Trench C**

4.2.6 **Trench D:** this trench was excavated to a depth of approximately 1.0m and revealed similar deposits to those that were encountered in Trenches A to C (Plate 19). Rubble (**11**) was exposed below the concrete, which lay on top of the orange clay natural. A blackish silt deposit, probably the same as context **10**, was encountered towards the north end of the trench and appeared to follow the same alignment as context **12**, which is thought to be a palaeochannel, presumably the earlier course of the River Lune.



**Plate 19: North end of Trench D, viewed from the south**

4.2.7 **Trench E:** the rubble deposit, context **11**, was exposed below the concrete floor.

4.2.8 **Phase 3:** the final phase of the on-site work involved the supervision of trenching along the south-west wall (Figure 5). The remnants of the concrete floor and some stone flags, which were above a demolition deposit that contained frogged 'LUNESDALE' bricks, was also removed from this corner, and various water pipes were observed running along and parallel to the back wall below the floor (Plate 20). The trenching was carried out piecemeal, with shuttering and concrete being laid after each section had been excavated (Plate 21). The trench along the south-west edge of the site was excavated in sections and was overall between 3.3m and 3.6m from the wall. Unfortunately, the far south-east corner of the site filled with water as soon as it was excavated, so this section of the watching brief was reduced to examination of the spoil for finds until the area could be adequately drained.



**Plate 20 (left): Removal of the remaining floor in the south-east corner of the site**

**Plate 21 (right): Working shot, concrete having been laid either side**

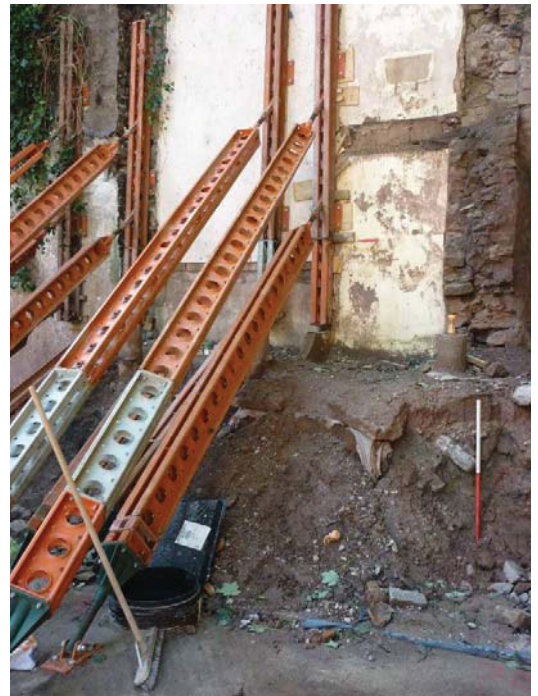
4.2.9 The south-west wall appeared to overly a layer of overburden with red brick and gravel, which was above a similar blackish clayey-silt deposit to context **10**. This black clayey-silt deposit, context **14**, apparently the fill of distinct feature (**15**) different to the palaeochannel (**12**), had some large limestone and sandstone blocks in its upper part, some of which appeared to have been worked and had similar proportions to the worked piece, which was recovered from Trench A, and had presumably been laid to make the ground suitable for construction, although there was no apparent structure or a cut for a foundation wall. This blackish clayey-silt deposit extended as far as the south-east corner of the site and was observed to continue to the maximum depth of excavation against the south-east wall with a maximum thickness of approximately 0.5m (Plate 22). This deposit continued 5.8m to the north-west (Plate 23) and appeared to follow a similar alignment to the edge created by context **10**; it had a similar consistency, colour and organic content, but was encountered much further to the south. It did not extend into the south end of Trench D.



**Plate 22 (left): South-east corner of the site post-excavation**

**Plate 23 (right): Continuation of context 14 in the trench section**

4.2.10 The retaining wall around the south side of the site had to be carefully propped further to the north before any excavation could be carried out (see Plate 24 and Plate 25). Various levelling deposits (**17** and **18**) and fill deposits (**19**) of cuts for water pipes and/or drains were recorded within the confines of the structure to the north and west side of the site, above the red clay natural (**13**) (Plate 26), which were observed to continue along the north-west side of the site towards the road (Plate 27). The natural appeared to change to yellow-brown sand in the south-west corner of the site at a depth of approximately 2.5m. A similar deposit was also observed in Trench C.



**Plate 24 (left): Propping of the south-west wall**

**Plate 25 (right): Detail of the props against the south-west wall**



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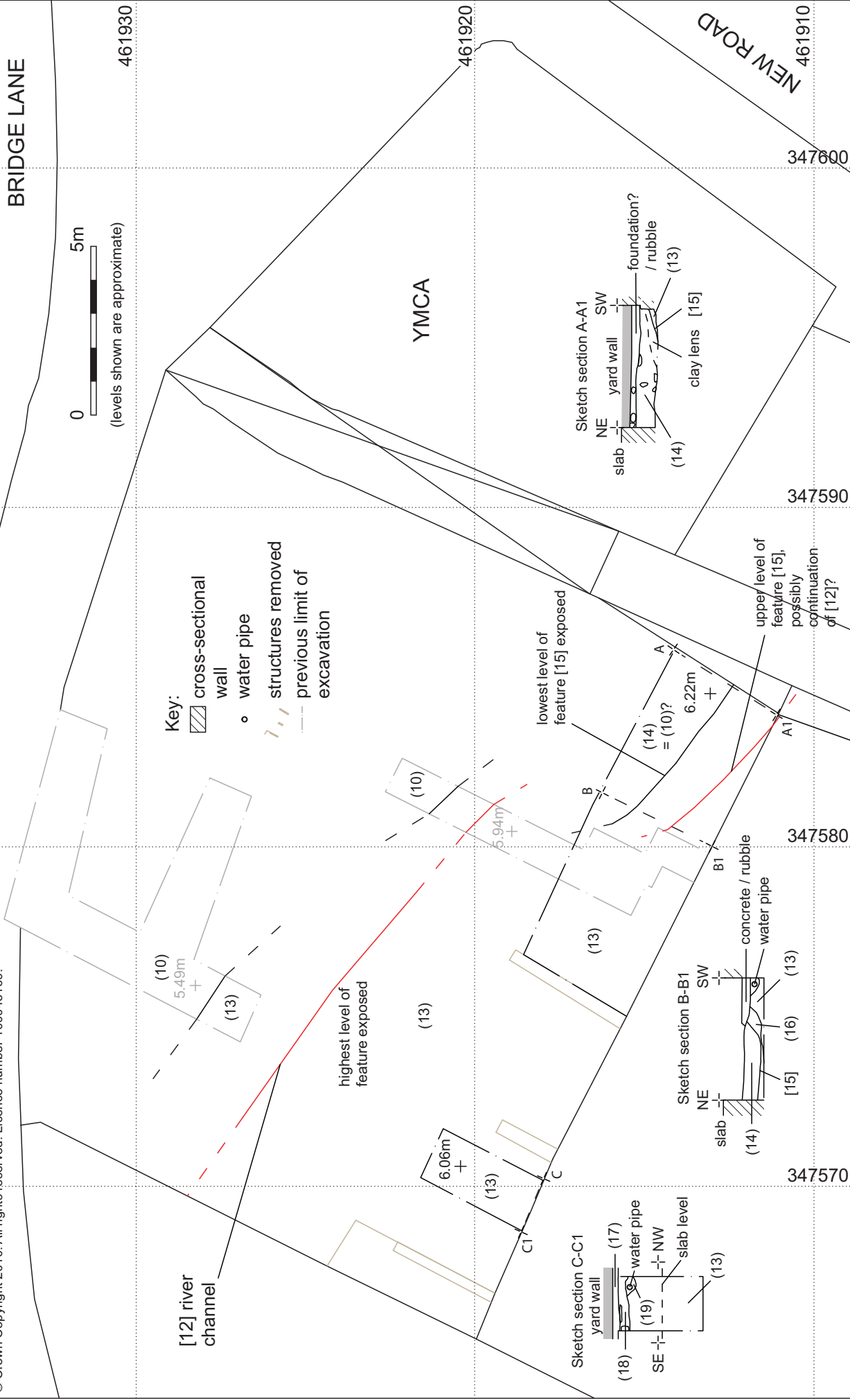


Figure 5: Plan of trenches along the south-west wall



**Plate 26 (left): Deposits within the structural remains against the south-west wall**

**Plate 27 (right): Continuation of deposits along the wall to the north-west**

### 4.3 Finds

4.3.1 A total of 10 fragments of coarseware and fineware pottery were recovered from context **10**, including black- and brown-glazed red earthenware (Figure 7.4) and buff-coloured earthenware (which typically dates from the late 17<sup>th</sup> into the early 20<sup>th</sup> centuries but in this cannot practically post-date the late 18<sup>th</sup> century, by which time there were buildings on the site), and four fragments of a possibly earlier transitional ware (Figure 7.1-2), with a broad date range from the 15<sup>th</sup> to the 17<sup>th</sup> century (see *Appendix 3*). Some 18<sup>th</sup> century glass bottle fragments were also found (see Figure 7.5-6) as well as some other pieces of glass, possibly an iron nail, and a fragment of slate, none of which are closely dateable.

4.3.2 The large piece of stonework recovered from context **10** in Trench A was part of a chamfered voussoir from a window head (Stuart Harrison pers comm.) (Figure 6). The glazing rebate originally held the glass, probably a leaded light (Stephen Gardner pers comm.), but the later groove shows that it was redone at some time (Stuart Harrison pers comm.). Stephen Gardner suggests that a 17<sup>th</sup> century date is the most likely, although precise dating would be difficult, whereas Stuart Harrison has suggested an earlier date of 12<sup>th</sup> to 13<sup>th</sup> century (see *Appendix 3*).

4.3.3 Finds from context **11** were fairly consistently dated from the 18<sup>th</sup> to 20<sup>th</sup> century, including transfer-printed white earthenware, red earthenware, bone china, and glass, although the date range for some of these finds is fairly broad. Two abraded fragments of medieval pottery, dating from the late 13<sup>th</sup> to 14<sup>th</sup> century (Figure 7.3), were also recovered from this context, but these are considered to be residual.

4.3.4 A saucer fragment from context **19**, the back-fill of a drain cut for a water pipe below the structures to the north-west corner of the site, dated from the 19<sup>th</sup> century.

### 4.4 Environmental sample results

4.4.1 A 20 litre sample was taken from context **10**, which was wet sieved before being sent for analysis by Scott Timpany of Headland Archaeology. A wide range of plant material was observed in this sample (see *Appendix 4*). Abundant plant monocotyledon and wood fragments were present together with abundant elder seeds. Plant material present in smaller amounts included: goosefoot seeds, bramble fruits, sedge nutlets, chickweed seeds, common nettle seeds, henbane seeds, water pepper seeds and

rush seeds, together with moss fragments. The assemblage as a whole would suggest open wet damp ground such as meadow vegetation, possibly around the former river channel, with elder trees present close by. The presence of species such as common nettle and henbane may also indicate manure and thus grazing animals. The only other material present in the sample was small quantities of coal and cinder, which may have been washed in from elsewhere.

4.4.2 The material recovered from the retent is also of interest as it suggests that industrial activity was taking place in the vicinity as iron working slag, cinders, and fuel ash were present in reasonable quantities. This may have been iron smithing as both prill and hammerscale were present, but these were not in particularly large quantities. The presence of unprocessed haematite might even suggest that iron smelting was taking place nearby, although this could easily represent material that was being brought into the port at Lancaster and was lost during unloading. The nearest supply of such ore is south Cumbria, in particular the Furness Peninsula, and scatters of haematite dropped around the remnants of the jetty on the beach at Conishead Priory have previously been recorded (Greenlane Archaeology 2009). In addition, the fragments of Welsh slate might represent remains from nearby buildings, but could also represent material dropped during unloading at a quayside. The other material is likely to represent food and domestic waste; although it is notable that the only artefactual material recovered from the samples was abraded pieces of medieval pottery, all of Northern Gritty Ware types likely to date to the late 12<sup>th</sup> to 13<sup>th</sup> century.

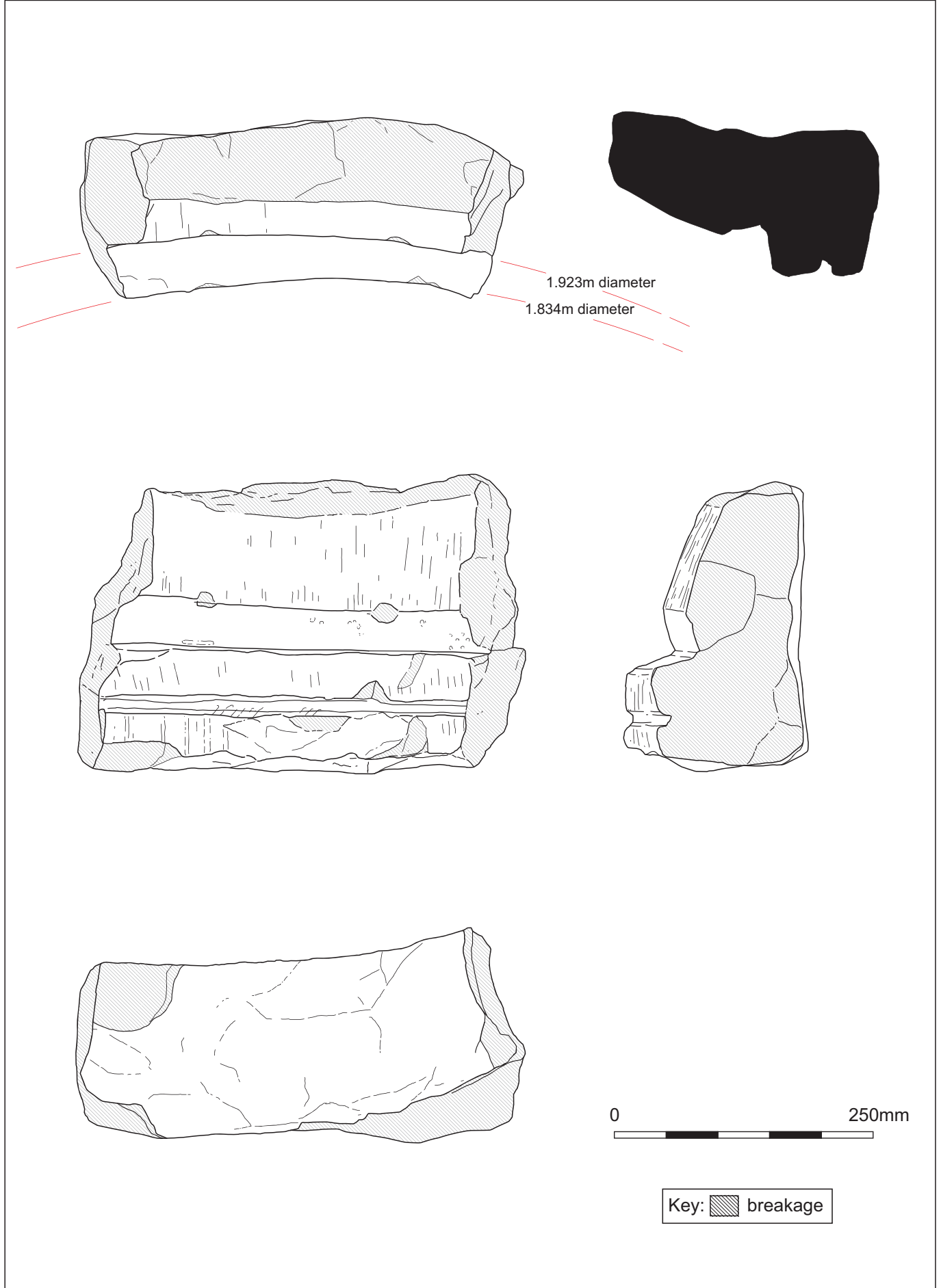


Figure 6: Section of window voussoir recovered from context 10

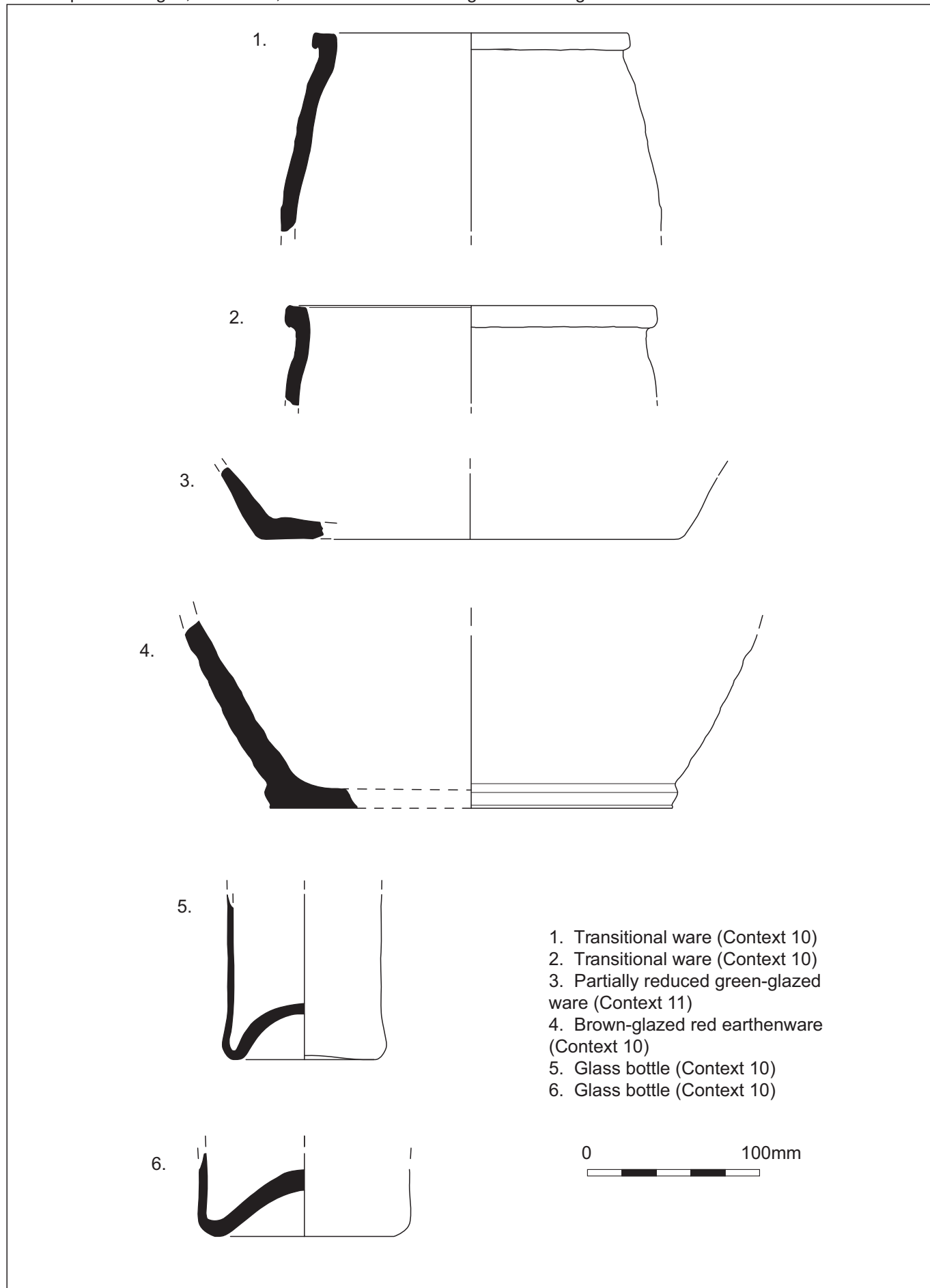


Figure 7: Selection of pottery and glass finds

## 5. Discussion and Conclusion

### 5.1 Discussion

5.1.1 **Test pits:** Test Pit 3 appeared to reveal undisturbed deposits of silt that extended to a depth of at least 1.00m, below 0.30m of made ground of probable 19<sup>th</sup> century date but Test Pits 1 and 2 were inconclusive due to their proximity to wall footings and the resulting disturbance.

5.1.2 **Foundations:** the excavation of a small open area to the north-west side of the site exposed what is believed to be the edge of the former course of the River Lune, which was filled with a blackish clayey silt deposit (**10**). At the time of excavation it was observed that the deposit appeared to have formed by fluvial processes and the environmental sample taken from this context was conducive with what might be encountered from an area of open meadow vegetation around a former river channel. Although excavations in Lancaster have exposed similar riverine deposits (see *Section 3.3*), pinpointing the river's edge like this is unusual, although bedrock shelving down to the east was encountered during one of these pieces of work, that might represent the edge of the river (LUAU 1992). It appeared to be on a north-west/south-east alignment across the north side of the site and was encountered in Trenches A to D and extended to a depth of at least 2.7m in the east end of Trench C. The concave edge of this palaeochannel was observed in Trenches B and D, and although it was steeply sloping in Trench B, it was found to be shallower in Trench D. Based on the finds from this deposit, it dates certainly no later than the end of the 18<sup>th</sup> century (see *Section 4.3.1; Appendix 3*), from which point the area is known to have been developed as part of the quayside (see *Section 3.2*). A similar waterlogged blackish clayey-silt deposit (**14**) was encountered in the south-east corner of the site along the south-west wall. Charting the former course of the River Lune may help identify more likely sites of waterfront activity in Lancaster.

5.1.3 It is possible that context **10** and context **14** were both part of the same feature. However, the angle at which these two deposits may have met would be very sharp, and in which case context **14** might represent the fill of another distinct feature (**15**). It is also possible that the apparently more southerly alignment of context **15** when compared to the edge created by context **10** could be a consequence of the different levels at which the deposits were encountered (unfortunately, the points of reference which had been used on site earlier were no longer available), but no finds were recovered from context **14** for comparative dating purposes and no stratigraphic relationship was established. It is unfortunate that the area where the two features might have met was not exposed and therefore could not be investigated during the course of the groundworks.

5.1.4 It is unclear how these features relate to previous archaeological work carried out in the area; without dating evidence from some of the features from the current site and in the absence of more detailed descriptions of features encountered elsewhere, sadly lacking from the earlier reports, it is difficult to make valid comparisons between the various sites. For instance, the recorded fill deposits of the suggested medieval boundary ditch recorded at Damside Street are dissimilar to context **14**, besides only one 'fill' deposit was observed for context **15**, which would suggest that it is not a continuation of this boundary ditch. On the other hand, the boundary ditch might have been re-cut and need not necessarily have a uniform fill throughout. Unfortunately, the original section of this possible boundary ditch at Damside Street, which is described simply (and somewhat uninformatively) as containing 'dull organic clay' (LUAU 1991, 14), is not shown in the original report; the original cut (as opposed to the more shallow re-cut) was only observed in the opposite section to the one which is illustrated in the report (*ibid.*, figure 3). Certainly, context **10** and context **14**, at least in descriptive terms, are very similar to the dark grey silts of the river mud-flats which were encountered during excavations of trial trenches to the east side of Damside Street, nearer to the River Lune (LUAU 1991b). Similar mid to dark grey clayey silts and silty clay deposits were recorded during the excavation of evaluation trenches at the site of the former Pye's warehouse in 2002 (OAN 2003, 15). As noted above in *Section 5.1.2* this deposit was potentially derived from an area of open meadow vegetation around a former river channel. Although estuarine deposits have been exposed during the course of previous archaeological investigations in this part of Lancaster, the river's edge had not been physically found; it had been the subject of speculation but its exact location before this piece of fieldwork had remained unknown. It now appears that the

course of the river during the medieval period ran much further to the south and east than had previously been supposed, which seems to have been based on extrapolations from the course of the mill leat (e.g. Penney 1981, 40). The course of the old river also appears to be on a more north-west/south-east alignment at this point than had previously been assumed (see Shotter 2009 for example for more recent estimation of its extent).

5.1.5 The large piece of stonework recovered from context **10** was part of a voussoir window head, but its date is debated, with estimates ranging from the 12<sup>th</sup> to the 17<sup>th</sup> century. The origins of this piece of masonry cannot be determined. It is possible that it was cast into the river when a structure elsewhere was demolished. Possible sources for the stone are the priory on Castle Hill, the Dominican Friary in the Dalton Square area, and the leper hospital at the end of St Leonard's Gate, although several 17<sup>th</sup> century buildings did formerly exist in Damside Street (Stephen Gardner pers comm.).

5.1.6 The other finds from the site more consistently dated from the 18<sup>th</sup>, 19<sup>th</sup>, and 20<sup>th</sup> centuries, and related to activities on the site after the area had become an established part of the quayside (see *Section 4.3.3* and *Section 4.3.4*).

## 5.2 Conclusion

5.2.1 In apparently identifying the former edge of the River Lune the work at Fleet Square has made an important discovery regarding the topography of early Lancaster. The documentary sources show that the river had approximately taken its current course by at least the beginning of the 17<sup>th</sup> century, when Speed's map was published (Plate 1), and certainly by the 18<sup>th</sup> century the former river channel had been built on. The suggested position of the mill leat, which would have otherwise been within the river, suggests that this area was effectively dry land by the 12<sup>th</sup> century. It is possible, however, that the edge of the river was more broken, with perhaps several smaller channels present with dry land between, which seems to have been partially the case in c1754 (see Plate 3).

5.2.2 The deposits encountered during the watching brief indicate that the area was still very waterlogged by the post-medieval period and was only approximately reclaimed before being built on, perhaps in part with rubble and material taken from elsewhere. The finds are essentially consistent with the general sequence of events with those from the channel typically belonging to the period immediately before the construction of buildings on the site in the 18<sup>th</sup> century. The second feature in the south-east corner of the site, although it was not possible to examine in detail, is of uncertain purpose. It may represent a continuation of the medieval ditch identified to the south-east (LUAU 1991), but it could not be dated although it clearly pre-dates the buildings on the site and the adjoining warehouse, built in c1881. The watching brief also casts some doubt on the suggestion that the mill leat in fact has Roman origins, acting as a part of a 'by-pass' loop designed to allow boats to travel up-river across a weir (Horsfield 2001, 64-65, citing the example presented in *The Piercebridge Formula* by Raymond Selkirk). This would appear to have been impossible as the deposits in which the leat is built are unlikely to have existed in the Roman period.

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## Appendix 1: Project Design

# FLEET SQUARE GARAGES, LANCASTER

Archaeological Watching Brief Project Design



Client: RP Tyson Construction Ltd

September 2008

Planning Application Ref.: 06/01495/FUL

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Client: RP Tyson Construction Ltd

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## 1. Introduction

### 1.1 Project Background

1.1.1 Following a proposal by RP Tyson Construction Ltd (hereafter 'the client') to construct a block of flats on the site of some disused garages at Fleet Square, Lancaster (Planning Application No. 06/01495/FUL; NGR SD 47581 61924), a programme of archaeological work was required by Lancaster City Council following consultation with Doug Moir, Planning Officer (Archaeology) at Lancashire County Council. This was to comprise a watching brief during any ground works associated with the excavation of new footings and service trenches, as well as with the excavation of test pits prior to this (CHES 2008).

1.1.2 The site is located on the west side of Fleet Square, an area of Lancaster that largely developed in the mid 18<sup>th</sup> century following the passing of an Act of Parliament for the creation of a quay in 1749 (White 2000, 26-27). It is immediately north-east of Church Street, which is known to have been developed from at least the medieval period and was the site of part of the Roman *vicus* or civil settlement attached to the fort situated on the site of the present castle (Shotter and White 1990). Remains of Neolithic date have also been recovered from Church Street (White 2003, 26), so there is some potential for even earlier features to be present on the site, especially as deposits above natural are thought to be up to six feet deep in this part of the city (Penney 1981, 45). The adjoining warehouse was recently recorded by Greenlane Archaeology and is thought to date to c1881; it is likely that the standing buildings on the site are of a similar, if slightly later date (Greenlane Archaeology 2008).

### 1.2 Greenlane Archaeology

1.2.1 Greenlane Archaeology is a private limited company based in Ulverston, Cumbria, and was established in 2005 (Company No. 05580819). Its directors, Jo Dawson and Daniel Elsworth, have a combined total of over 16 years continuous professional experience working in commercial archaeology, principally in the north of England and Scotland. Greenlane Archaeology is committed to a high standard of work, and abides by the Institute of Field Archaeologists' (IFA) Code of Conduct. The watching brief will be carried out according to the Standards and Guidance of the Institute of Field Archaeologists (IFA 2001).

### 1.3 Project Staffing

1.3.1 The project will be managed by **Dan Elsworth (MA (Hons), AIFA)**. Daniel graduated from the University of Edinburgh in 1998 with an honours degree in Archaeology, and began working for the Lancaster University Archaeological Unit, which became Oxford Archaeology North (OA North) in 2001. Daniel ultimately became a project officer, and for over six and a half years worked on excavations and surveys, building investigations, desk-based assessments, and conservation and management plans prior to establishing Greenlane Archaeology. These have principally taken place in the North West, and Daniel has a particular interest in the archaeology of the area. He has recently managed projects of various sizes in Cumbria, from watching briefs to large area excavations.

1.3.2 The watching brief will be carried out by **Sam Whitehead (BA (Hons), MA)** or **Steve Clarke**, depending on scheduling. Sam has more than eight years continuous professional experience in commercial archaeology, much of which has been in a supervisory capacity. He has extensive experience of excavations, evaluations, and watching briefs, as well as report writing and illustration production. He joined Greenlane Archaeology in 2006, and since then he has increasingly been involved in all aspects of building recording projects, as well as running larger excavation and evaluation projects. Steve began working for Albion Archaeology in 2001, before moving to OA North in 2004, where he worked in a supervisory capacity principally on excavation projects, and has carried out large numbers of watching briefs on sites across the north west of England. He joined Greenlane Archaeology in 2008 and has since been involved in a wide range of projects including excavations, desk-based assessment and building recording.

1.3.3 All artefacts will be processed by Greenlane Archaeology, and it is envisaged that they will initially be examined by Jo Dawson, who will fully assess any of post-medieval date. Finds of earlier date will be assessed by specialist sub-contractors as appropriate, and in this case it is envisaged that Roman pottery will be examined by Ruth Leary, and medieval pottery will be examined by Ian Miller at Oxford Archaeology North. LHES will be notified of any other specialists, other than those named, who Greenlane Archaeology wishes to engage, before any specialist contracts are awarded, and their approval will be sought.

1.3.4 Environmental samples and faunal remains will be processed by Greenlane Archaeology. It is envisaged that charred plant remains will be assessed by Scott Timpany of Headland Archaeology Ltd, and faunal remains by Steve Rowland or Andy Bates, both at Oxford Archaeology North. LHES will be informed and their approval will be sought for these arrangements.

## 2. Objectives

### 2.1 Rapid Desk-Based Assessment

2.1.1 To examine information held in the Lancashire Historic Environment Record (HER), and also those primary and secondary sources referenced in the HER.

### 2.2 Watching Brief

2.2.1 To identify any surviving archaeological remains and to investigate and record any revealed archaeological remains or deposits.

### 2.3 Report

2.3.1 To produce a report detailing the results of the desk-based assessment and watching brief.

### 2.4 Archive

2.4.1 Produce a full archive of the results of the watching brief.

## 3. Methodology

### 3.1 Rapid Desk-Based Assessment

3.1.1 A rapid desk-based assessment will be conducted, and sources will be consulted at the following locations:

- **Lancashire Historic Environment Record (HER):** this is a list of all of the recorded sites of archaeological interest recorded in the county, and is the primary source of information for a study of this kind. Each site is recorded with any relevant references, a brief description and location related to the National Grid. All of the references relating to sites identified in the HER will be examined in order to verify them and add any necessary background information. In addition, relevant secondary sources, particularly previous archaeological investigations in the immediate area, will also be examined;
- **Lancashire Record Office (Preston):** any primary and secondary sources referred to by the HER but not available for consultation there will be examined at the Lancashire Record Office in Preston;
- **Lancaster City Library, Local Studies Collection:** additional early maps and other primary sources will be examined, as well as directories and any secondary sources that will aid the interpretation of the site and its past uses;
- **Greenlane Archaeology:** a number of copies of maps, local histories, unpublished reports, and journals are held in Greenlane Archaeology's library. These will be consulted as necessary.

### 3.2 Watching Brief

3.2.1 The groundworks are to be monitored, with one archaeologist on site.

3.2.2 The watching brief methodology will be as follows:

- Foundation trenches and/or trenches for services will be excavated by machine under supervision by staff from Greenlane Archaeology. Any test pits excavated prior to these will also be monitored where suitable;
- All deposits of archaeological significance will be examined by hand if possible in a stratigraphic manner, using shovels, mattocks, or trowels as appropriate for the scale;
- The position of any features, such as ditches, pits, or walls, will be recorded and where necessary these will be investigated in order to establish their full extent, date, and relationship to any other features. If possible, negative features such as ditches or pits will be examined by sample excavation, typically half of a pit or similar feature and approximately 10% of a linear feature;
- All recording of features will include detailed plans and sections at a scale of 1:20 or 1:10 where practicable or sketches where it is not;
- Photographs of specific features, the general area of investigation and working shots in both black and white and colour digital format, supplemented by colour digital, will be taken wherever practicable;

- All deposits, drawings and photographs will be recorded on Greenlane Archaeology *pro forma* record sheets;
- All finds will be recovered during the watching brief for further assessment as far as is practically and safely possible. Should significant amounts of finds be encountered an appropriate sampling strategy will be devised;
- All faunal remains will also be recovered by hand during the watching brief as far as is practically and safely possible, but where it is considered likely that there is potential for the bones of fish or small mammals to be present appropriate volumes of samples will be taken for sieving;
- Deposits that are considered likely to have preserved environmental remains will be sampled. Bulk samples of between 10 and 40 litres in volume, depending on the size and potential of the deposit, will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits, and ditches) and occupation deposits such as hearths and floors. An assessment of the environmental potential of the site will be undertaken through the examination of samples of suitable deposits by specialist sub-contractors (see *Section 1.3.4* above), who will examine the potential for further analysis. All samples will be processed using methods appropriate to the preservation conditions and the remains present;
- Any human remains discovered during the watching brief will be left *in situ*, and, if possible, covered. The Planning Officer (Archaeology) at Lancashire County Council will be immediately informed as will the local coroner. Should it be considered necessary to remove the remains this will require a Home Office licence, under Section 25 of the Burial Act of 1857, which will be applied for should the need arise;
- Any objects defined as 'treasure' by the Treasure Act of 1996 (HMSO 1996) will be immediately reported to the local coroner and secured stored off-site, or covered and protected on site if immediate removal is not possible;
- Should any significant archaeological deposits be encountered during the watching brief these will immediately be brought to the attention of the Planning Officer (Archaeology) at Lancashire County Council so that the need for further work can be confirmed. Any additional work and ensuing costs will be agreed with the client and according to the requirements of the Planning Officer (Archaeology) at Lancashire County Council, and subject to a variation to this project design.

### 3.3 Report

3.3.1 The results of the desk-based assessment and watching brief will be compiled into a report, which will include the following sections:

- A front cover including the appropriate national grid reference (NGR);
- A concise non-technical summary of results, including the date the project was undertaken and by whom;
- Acknowledgements;
- Project Background;
- Methodology, including a description of the work undertaken;
- Results of the rapid desk-based assessment;
- Results of the watching brief including descriptions of any deposits identified, their extent, form and potential date, and an assessment of any finds or environmental remains recovered during the watching brief;
- Discussion of the results;
- Bibliography;
- Illustrations at appropriate scales including:
  - a site location plan related to the national grid;
  - a plan showing the location of the study area in relation to nearby structures and the local landscape;

- copies of early maps, plans, drawings, photographs and other illustrations of elements of the site, as appropriate;
- a plan showing the location of the ground works;
- plans and sections of the watching brief ground works, as appropriate, showing any features of archaeological interest;
- photographs of the watching brief, including both detailed and general shots of features of archaeological interest and the trenches;
- photographs of individual artefacts as appropriate.

## 3.4 Archive

3.4.1 The archive, comprising the drawn, written, and photographic record of the watching brief, formed during the project, will be stored by Greenlane Archaeology until it is completed. Upon completion it will be deposited with the Lancashire Record Office in Preston (LRO). The archive will be compiled according to the standards and guidelines of the IFA (Brown 2007), and in accordance with English Heritage guidelines (English Heritage 1991). In addition details of the project will be submitted to the Online Access to the Index of archaeological investigations (OASIS) scheme. This is an internet-based project intended to improve the flow of information between contractors, local authority heritage managers and the general public.

3.4.2 A copy of the report will be deposited with the archive at the Lancashire Record Office in Preston, one will be supplied to the client, and within six months of the completion of fieldwork, a digital copies will be provided for the Lancashire Historic Environment Record (HER). In addition, Greenlane Archaeology Ltd will retain one copy, and digital copies will be deposited with the NMR and OASIS scheme as required.

3.4.3 The client will be encouraged to transfer ownership of the finds to a suitable museum. Any finds recovered during the watching brief will be offered to the Lancaster City Museum, depending their suitability and significance. If no suitable repository can be found the finds may have to be discarded, and in this case as full a record as possible would be made of them beforehand.

## 4. Work timetable

4.1 Greenlane Archaeology will be available to commence the project on **18<sup>th</sup> September 2008**, or at another date convenient to the client. It is envisaged that the project will involve tasks in the following order:

- **Task 1:** rapid desk-based assessment;
- **Task 2:** watching brief;
- **Task 3:** post-excavation work on archaeological watching brief, including processing of finds and production of draft report and illustrations;
- **Task 4:** feedback, editing and production of final report, completion of archive.

## 5. Other matters

### 5.1 Access

5.1.1 Access to the site will be organised through co-ordination with the client and/or their agent(s).

### 5.2 Health and Safety

5.2.1 Greenlane Archaeology carries out risk assessments for all of its projects and abides by its internal health and safety policy and relevant legislation. Health and safety is always the foremost consideration in any decision-making process.

### 5.3 Insurance

5.3.1 Greenlane Archaeology has professional indemnity insurance to the value of **£250,000**. Details of this can be supplied if requested.

## 5.4 Environmental and Ethical Policy

5.4.1 Greenlane Archaeology has a strong commitment to environmentally and ethically sound working practices. Its office is supplied with 100% renewable energy by Good Energy, uses ethical telephone and internet services supplied by the Phone Co-op, is even decorated with organic paint, and has floors finished with recycled vinyl tiles. In addition, the company uses the services of The Co-operative Bank for ethical banking, Naturesave for environmentally-conscious insurance, and utilises public transport wherever possible. Greenlane Archaeology is also committed to using local businesses for services and materials, thus benefiting the local economy, reducing unnecessary transportation, and improving the sustainability of small and rural businesses.

## 6. Bibliography

Brown, DH, 2007 *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer, and Curation*, Institute of Field Archaeologists (IFA), Reading

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Penney, SH, 1981 *Lancaster: The Evolution of its Townscape to 1800*, Lancaster

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White, AJ, 2000 *The Buildings of Georgian Lancaster*, Lancaster

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## Appendix 2: Summary Context List

Context	Type	Description	Interpretation
10	Deposit	Fairly homogeneous greyish dark brown, moderately well compacted, slightly silty-sand, which was subsequently built on. There was some variation within the deposit, which was elsewhere observed to be blacker clayey-silt. It looked like it had formed by fluvial processes. It continued beyond the limit of excavation and exceeded a depth of 2.7m (observed in Trench C).	Deposit within possible palaeochannel ( <b>12</b> )
11	Deposit	Moderately compact, yellow to mid-brown crushed sandstone and gritstone rubble and sand with occasional brick fragments. 0.60m thick.	Building demolition forming the foundation layer for the construction of the most recent buildings on site and probably relates to the demolition of earlier buildings at this site.
12	Curvi-linear feature	Slightly curved, linear feature, approximately north-west/south-east aligned, extending across site from the centre of the site to the north. The edge was steeply sloping and concave where it was encountered towards the south end of Trench B, but was more shallow in Trench D.	Possible palaeochannel relating to the former course of the River Lune.
13	Deposit	Soft, reddy-brown to orange clay with no inclusions. Some very large but infrequent sandstone boulders were encountered at greater depths.	Natural geological deposits. This changed to a yellow-grey clay-sand at around 2.7m depth of excavation in Trench C.
14	Deposit	Soft, blackish clayey-silt deposit, encountered in the south-east corner of the site. It did not continue into Trench D to the west and extended beyond the limit of the site to the south-east. It was similar to context <b>10</b> and had a similar consistency, colour and organic smell. It had a clayey lens towards the south-west, below the south-east wall, above the natural.	Deposit observed in section below the south-east wall. Fill of a possible cut, ( <b>15</b> ) or possibly a continuation of context <b>10</b> ?
15	Feature?	A possibly slightly curved edge of a feature was observed below the concrete and rubble deposits against the south-west and south-east walls, extending below the concrete slab to the north for approximately 5.8m. The south edge was concave and gently sloping, and the base appeared to flatten slightly to the north, at a depth of 0.48m.	The blackish deposit ( <b>14</b> ) formed an edge against the natural, which was possibly part of a discrete (cut?) feature in the south-east corner of the site.
16	Deposit	Soft, light yellowish-brown, slightly clayey-sand with no inclusions. This deposit was encountered below context <b>15</b> towards the south-east corner of the site	Possibly represents a variation in the natural ( <b>13</b> ).



<b>Context</b>	<b>Type</b>	<b>Description</b>	<b>Interpretation</b>
17	Deposit	0.25m thick, red, solid clayey-sand deposit, with infrequent small pebble inclusions. This deposit peters out towards the road, to the north.	Made ground? Possible levelling deposit for floor surface.
18	Deposit	Uniform, hard white concrete and gravel layer with frequent small stone inclusion (<0.05 each); 0.2m thick.	Levelling material
19	Deposit	Black, friable silty deposit, with cutting land drains/water pipes, etc. This deposit thickens towards the road.	Fill deposit of various cuts for water pipes and other services within the structures towards the south and north-west sides of the site.

### Appendix 3: Summary Finds List

Context	Quantity	Material	Description	Date
10	1	Stone	Neatly dressed voussoir from a window head, with original glazing rebate and a later groove where it has been re-cut.	12 <sup>th</sup> to 13 <sup>th</sup> century or possibly as late as 17 <sup>th</sup> century
10	1	Stone	Slate fragment.	Not closely dateable
10	7	Animal bone	Large and medium mammal bone, comprising two rib fragments, jaw, and long bones. All incomplete, some butchery marks. Likely to be cattle and sheep.	Not closely dateable
10	4	Pottery	Huge un-abraded chunks of transitional pottery from at least two different vessels, all very similar and certainly the same fabric; large jar fragments including two rims, but no adjoining fragments. Fabric: reduced mid grey beneath dark grey to olive glaze, oxidised pale orange near surface where unglazed.	15 <sup>th</sup> to 17 <sup>th</sup> century
10	3	Pottery	Large un-abraded fragments of a high-fired black-glazed red earthenware coarseware crock or jar; two refitting fragments, third possibly from the same vessel.	Late 17 <sup>th</sup> century to 18 <sup>th</sup> century
10	1	Pottery	Black-glazed, red slip-coated, buff-coloured coarseware (high-fired to stoneware) crock base – huge, un-abraded fragment.	Late 17 <sup>th</sup> century to early 18 <sup>th</sup> century
10	1	Pottery	Fine black-glazed red earthenware (purple fabric).	Late 17 <sup>th</sup> century to early 18 <sup>th</sup> century
10	1	Pottery	Fine brown-glazed red earthenware.	Late 17 <sup>th</sup> century to early 18 <sup>th</sup> century
10	2	Glass	Green bottle bases with fairly high kicks, no mould lines, punt scars smooth, slight bulge at the base then parallel sides.	1720 to 1800
10	1	Fe	Corroded, square-sectioned rod, possibly a large nail.	Not closely dateable
10	1	Glass	Very light blue thin sheet.	Post-medieval, pre-20 <sup>th</sup> century
11	1	Glass	Colourless complete milk(?) bottle, multi-part mould, seam up side of lip and around top, side embossed 'GRIMSHAW & CULSHAW LTD / WIGAN & SCORTON' Punt mark on base: '2119K / C.T.G. / I'	20 <sup>th</sup> century
11	5	Animal bone	Medium and small mammal bone, comprising two teeth and long bones. Mostly incomplete.	Not closely dateable
11	1	Pottery	'Willow' transfer printed white earthenware plate rim.	19 <sup>th</sup> to 20 <sup>th</sup> century
11	1	Pottery	An unusual sherd, almost like a transition from tin-glazed earthenware to white earthenware – blue painted pattern, thin body, possibly from a cup, buff earthenware body, with a fairly thick white glaze	Mid 18 <sup>th</sup> to early 19 <sup>th</sup> century
11	1	Pottery	Bone china fluted tea cup rim, blue chinoiserie transfer-printed pattern, enamelled gilded edge stripe.	Late 18 <sup>th</sup> – 20 <sup>th</sup> century
11	1	Pottery	White slip coated glazed red earthenware dish rim.	Late 17 <sup>th</sup> to early 20 <sup>th</sup> century

<b>Context</b>	<b>Quantity</b>	<b>Material</b>	<b>Description</b>	<b>Date</b>
<b>11</b>	1	Pottery	Abraded base fragment of a partially reduced coarseware vessel – the orange fabric has a central dark grey stripe where the clay has been more fully reduced and a whiter colouration towards the exterior of the vessel, below a thin olive green glaze which has been applied to the outside of the vessel only.	Late 13 <sup>th</sup> to 14 <sup>th</sup> century
<b>11</b>	1	Pottery	Body sherd of a fine, sandyware vessel. The buff fabric has been more fully reduced to a grey colour towards the middle and the internal and external surfaces are un-glazed and light orange in colour.	Late 13 <sup>th</sup> and 14 <sup>th</sup> century
<b>11</b>	1	Cu alloy	Corroded slightly domed disc, possibly part of a button? (not a coin) – probably metal insert for cloth button as there is no visible means of attachment	17 <sup>th</sup> century onwards
<b>19</b>	1	Pottery	White earthenware saucer fragment with 'Broseley' transfer print	19 <sup>th</sup> century

## Appendix 4: Environmental Samples

Sample	Context	Volume (litres)	Description
1	10	20	Palaeochannel

Environmental samples list

Plant Monocotyledon fragments	Wood fragments	Seeds	Other plant remains	Comments
++++	++++	<i>Rubus fruticosus</i> +, <i>Sambucus nigra</i> +++++, <i>Hyocyanus niger</i> +, <i>Chenopodium sp</i> +, <i>Urtica dioica</i> +, <i>Persicaria sp. cf. P. hydropiper</i> , <i>Carex sp.</i> +, <i>Stellaria media</i> +, cf. <i>Junucs sp.</i> +, cf. <i>Potentilla sp.</i> +	Moss fragments +	Also contained coal +, cinder +

Key: + = rare, ++ = occasional, +++ = common and ++++ = abundant

Contents of waterlogged sample

Sample number	1	Approx. volume = 2 litres	
Potash/fuel ash	++	Welsh slate	++
Iron slag	++	Bone	++
Coal/cinder	++	Burnt bone	+
Hammerscale	+++	Mortar	+
Prill	+++	Medieval pottery	+
Marine mollusc shell	+++	CBM	+
Wood	++	Plaster	+
Haematite	+		

Key: + = 1-5, ++ = 6-20, +++ = 21-100, ++++ = >100

Contents of retents

## Appendix 5: Archive Index

<b>Project name:</b>	Fleet Square Garages, Lancaster, Lancashire		
<b>Project Code:</b>	G1096	<b>Site Code:</b>	FS08
<b>Description</b>	<b>Material</b>	<b>Size</b>	<b>Quantity</b>
Report	Paper	A4, Comb-bound	23 pages, double-sided
Record sheets	Paper	A4	13 sheets, double-sided
Photo record sheets	Paper	A4	2 sheet, double-sided
Trench plans	Drafting film	Non-format	4 sheets
Negatives	Negative film	6 inches x 1 inch (approx)	7 strips
Photographic slides	Colour transparency in a plastic frame	2 inches x 2 inches (approx)	9 slides
Black and white prints	Photographic gloss prints	6 inches x 4 inches	24 prints
Digital archive indices	Paper	A4	1 sheet, Single-sided
Digital archive	CD	-	1