



Land off Queen Street, Lancaster Girls' Grammar School, Lancaster

Archaeological Investigation Report



Oxford Archaeology North

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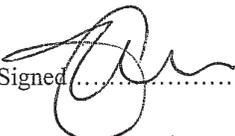
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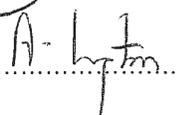
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CONTENTS

CONTENTS.....	1
SUMMARY	3
ACKNOWLEDGEMENTS.....	4
1. INTRODUCTION	5
1.1 Circumstances of Project	5
1.2 Location, Topography and Geology	5
1.3 Historical and Archaeological Background	6
2. METHODOLOGY	9
2.1 Project Design.....	9
2.2 Strip, Map And Record.....	9
2.3 Watching Brief.....	9
2.4 Archive.....	10
3. FIELDWORK RESULTS	11
3.1 Introduction.....	11
3.2 Strip And Record	11
3.3 Watching Brief.....	13
4. CONCLUSION.....	15
4.1 Discussion.....	15
4.2 Impact and Recommendations.....	15
5. BIBLIOGRAPHY	16
5.1 Cartographic Sources.....	16
5.2 Secondary Sources.....	16

6. ILLUSTRATIONS	18
6.1 Figures	18
6.2 Plates	18

SUMMARY

In 2011, Lancaster Girls' Grammar School proposed to construct an extension to the existing technology block on the east side of the school, adjacent to Queen Street, Lancaster (centred on NGR SD 47586 61429). To inform the planning application of the archaeological potential of the site the school commissioned Oxford Archaeology North (OA North) to undertake a desk-based assessment. The potential to encounter Roman remains was identified, specifically evidence of the cemetery that was positioned outside of the vicus. More recently, however, cartographic sources showed that the proposed extension area was within open fields, but by the time of the mapping of 1824 part of the proposed extension site, to the north, had been developed for houses that remained until the 1960s. Subsequently, the site has been within the school gardens.

Planning permission was granted with one of the conditions being to undertake an archaeological investigation due to the potential identified. Following discussions between OA North and the Lancashire County Archaeology Service (LCAS), on behalf of the client, a programme of strip, map and record was agreed. The field work commenced in December 2011. The north-eastern part of the area to be developed was still in use as a concrete hardstanding for bin storage and a pond area, and so was omitted at the time of the strip, map and record exercise; it was investigated subsequently under a separate watching brief to monitor the groundworks for construction in February and March 2012.

As anticipated from the mapping evidence, remains of structures were observed in the northern half of the site, but these were largely truncated and fragmentary. These consisted of the remains of the lower courses of walls, **100-102**, and a sandstone flagged floor, **103**, that are likely to have been the buildings identified on the early nineteenth century maps during the desk-based assessment. Concrete screed and drains recorded on the north and west faces of walls **101** and **102** implied that these were the external walls facing on to an outside yard, and that the buildings had been truncated by services, at the north end of the site, as well as the construction of the existing technology block on the west side. The structural evidence suggested that the remains of the cottages would have extended further to the east, to meet with the road frontage on Queen Street, and that they had been removed by the concrete hardstanding and construction of the pond. An east/west-aligned wall, **109**, observed to the north of the arrangement of structural evidence during the watching brief appeared to be the northernmost limit of the yard, or boundary wall, to the properties. To the south of the development site, the services crossing through the area had almost completely truncated the upper archaeological horizons. However, from the evidence from the historical maps no building remains were expected.

The remains of the late eighteenth century cottages were so poorly-preserved that they contributed little to any understanding of the buildings as heritage assets. Therefore, their significance is considered to be low and the impact has been assessed as minor. There are no recommendations for any further archaeological work on this area of the extension.

ACKNOWLEDGEMENTS

OA North would like to thank Nicola Chester of the Lancaster Girls' Grammar School for commissioning the project. Thanks are also due to Frank McCabe and Dan Brown of Cassidy and Ashton, Michelle Pickford of Thomas Consulting, and Clive Hurt Plant Hire.

The archaeological investigation was undertaken by Becky Wegiel and Andy Bates, assisted by Lewis Stitt. Becky Wegiel wrote the report, and the drawings were produced by Anna Hodgkinson and Mark Tidmarsh. The project was managed by Emily Mercer, who also edited the report.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 In 2011, Lancaster Girls' Grammar School proposed to construct an extension to the existing technology block on the east side of the school, adjacent to Queen Street, Lancaster (Fig 1). To inform the planning application of the archaeological potential of the site the school commissioned Oxford Archaeology North (OA North) to undertake a desk-based assessment (OA North 2011). The potential to encounter Roman remains was identified, specifically possible evidence of the cemetery that was positioned outside of the *vicus*. More recently, however, cartographic sources showed that the proposed extension area was within open fields, until the late eighteenth century when the site was developed as formal gardens. By the time of the mapping of 1824 part of the proposed extension site, to the north, had been developed for houses that remained until the 1960s. Subsequently, the site has been within the school gardens (*ibid*).
- 1.1.2 Planning permission was granted with a condition to undertake an archaeological investigation. Following discussions between OA North and the Lancashire County Archaeology Service (LCAS), on behalf of the client, a programme of strip, map and record was agreed, and the fieldwork commenced in December 2011. The proposed development area equated to approximately 210m², although the north-eastern part of the area to be developed was still in use as a concrete hardstanding for bin storage and a pond area, leaving only 104m² available (Fig 2). The bin storage and pond areas were investigated subsequently under a separate watching brief (Fig 3) to monitor the groundworks during construction in February and March 2012.
- 1.1.3 This report sets out the results of the strip, map and record, and subsequent watching brief in the form of a short document, outlining the findings and assessing the impact of the proposed development.

1.2 LOCATION, TOPOGRAPHY AND GEOLOGY

- 1.2.1 The proposed development area is positioned to the immediate south-west of Lancaster town centre, on land between Regent Street (to the west) and Queen Street (to the east) (centred on NGR SD 47586 61429; Fig 1). The technology block extension area is on the eastern side of the school, where the ground slopes down from the existing school buildings to the west, to Queen Street to the east (from approximately 25-20m AOD).
- 1.2.2 The solid geology of Lancaster consists predominantly of Silesian (Upper Carboniferous) grey/brown or reddened medium- to coarse-grained sandstones of the Pendle Grit Formation, which is part of the Millstone Grit Group (British Geological Survey 1992, 5). These sandstones are thickly-bedded with thin siltstone partings, but with mixed sandstone/siltstone units near the top. The drift geology for the site has been mapped as glaciofluvial sheet deposits of clayey sands and gravels (*ibid*).

1.3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 1.3.1 The following section presents a précis of the site and its surroundings in order to provide a context to the site and its findings from the investigation. For further detail, the desk-based assessment (OA North 2011) should be consulted.
- 1.3.2 **Prehistoric Period:** the earliest evidence for prehistoric activity within Lancaster is a Neolithic Mortlake bowl found to the north of the site on Church Street (White 1988). The distribution of lithics for the Neolithic period suggests that settlement was concentrated in the lowlands, mainly around the coasts and in the river valleys; in particular, the early farming communities seem to have sought out areas of gravel within a landscape predominantly covered with boulder clay (Middleton 1996, 40).
- 1.3.3 From an increase in the variety and geographical spread of finds in the Bronze Age, it is likely that the landscape was becoming more extensively used (*op cit*, 54). Two Bronze Age burial findspots are recorded nearby the development area, as antiquarian observations, from the area of Penny Street but may actually represent Roman cremations (White 1988; Shotter and White 1990, 5). In addition, the 2005 excavation at Aldcliffe Road, revealed several phases of prehistoric activity. The earliest of these was a small pit which contained frequent hazelnut fragments and which had been used as a stored food resource, or for the disposal of domestic waste (UMAU 2007).
- 1.3.4 **Roman Period:** towards the end of the first century AD, the Romans first made use of Lancaster's strategic location (Shotter and White 1995, 19-21) with a sequence of three forts established on Castle Hill, north of the site, overlooking a crossing of the River Lune (Shotter 1993, 92-92). The alignment of the latest, fourth-century, fort differed from its predecessors and seems to have been built parallel to the Lune (Shotter and White 1990, 26; 1995, 78-9) so as to ensure the security of the harbour and probably acted as a supply base (*ibid*). Excavations have shown that the main area of extramural development extended along Church Street (LUAU 2000), and later extended as far as the Market Place (Drury 1995), with some activity along Penny Street (LUAU 1996), which, together with Cheapside, may follow the line of a Roman road running towards a presumed river crossing and passing to the east of the fort (Shotter 2001, 16, 20). The Penny Street Roman road is likely to have been flanked by a Romano-British cremation cemetery, which was found to be the case at the 2005 Aldcliffe Road excavation, a short distance away from the site to the south-east, in which evidence for the road and the cemetery was recovered (UMAU 2007). An archaeological excavation also carried out on the former Streamline Garage site, King Street, Lancaster, by Lancaster University Archaeological Unit (former guise of OA North; LUAU 2001), found several Roman cremations, dating to approximately the second/third century AD. Of these, five were cut into the top of a large sub-rectangular enclosure, which was orientated north-east/south-west, approximately parallel to Penny Street, but at a diagonal angle to the adjacent King Street. It is probable that the enclosure, possibly a mortuary structure, was later used as a focus for cremations. Several rectangular features were also encountered,

ostensibly of Roman origin, which cut through the cremations, and were thus of later date (*ibid*).

- 1.3.5 Excavations at the market hall revealed evidence for Roman activity, although the area is not thought to have been densely occupied during the Roman period as it was outside of the core of the *vicus* on Church Street (Drury 1995).
- 1.3.6 **Early Medieval Period:** the evidence for the immediate post-Roman period in Lancaster is slight, based largely upon isolated chance finds, but it is likely that settlement persisted in the vicinity of, and most probably within, the defences of the Roman fort, north of the site, with a monastic foundation on Castle Hill from at least the seventh-century (Penney 1981, 13). It seems likely that any occupation of the hill would have utilised extant elements of the Roman fortifications, together with the reuse of materials from unwanted structures. A predecessor of Lancaster's Priory church, is likely to be that mentioned in Domesday Book (Faull and Stinson 1986).
- 1.3.7 **Late Medieval Period:** place names and written documents become the principal sources of evidence in the late medieval period, although excavations have suggested the physical form of the settlement at Lancaster (White 1988; Penney 1981). The Domesday Survey of 1080-86 records two independent villas of the manor of Halton, '*Loncastre*' and '*Chercaloncastre*', the latter being in the area of the Priory on Castle Hill (Penney 1981, 13-14; Jones and Shotter 1988; White 1993, 11; Newman 1996, 98). The centre of Lordship was moved to Lancaster shortly after 1086, and Lancaster Castle, on the site of the earlier Roman forts, was founded by 1094 (Penney 1981, 19). A borough was created in 1193, with Church Street, Market Street and Penny Street being the main thoroughfares (*op cit*, 11-14 and 26-29), a pattern conforming closely to that of the Roman settlement (LUAU 2001, 7).
- 1.3.8 **Post-medieval, industrial and modern periods:** there is extensive evidence for the extent and nature of activity within Lancaster during this period from cartographic and documentary sources, as well as from archaeological investigations. The earliest map record is that produced by John Speed in 1610 which, although rather stylised, shows King Street (then known as Chennel Lane) and Penny Street. The map does not allow the confident identification of the development area, but Docton's (reconstructed) map of Lancaster *c* 1684 (Docton 1957), indicates that the area of Queen Street was occupied by arable land running off from Back Lane (now King Street, the A6) during the seventeenth century. Mackreth's map of 1778 indicates that both Queen Street and Queen Square were laid out during the eighteenth century.
- 1.3.9 During the Industrial period, this area between High Street/Regent Street and Queen Street, close to the development site, was populated with sites such as a nursery garden, a sawmill and associated timber yard, with residential development extending outwards from the town centre. Nos 8-10 Queen Street, which were built on the north-eastern part of the development site, were shown on mapping from 1824 (Baines 1824) onwards until they were demolished in the 1960s (Ordnance Survey 1968). There are also four Grade II listed buildings in close proximity to the proposed development: No 12 Queen Street, a former vicarage and now part of the school buildings; Nos 4-6 Queen

Street, formerly houses, now the Registry Office; No 1 Queen Street, formerly a house, is now an office; and No 1B Queen Street, a former coach house to No 1 Queen Street, also now an office. Findspots in and around the development site also show heightened activity: two find spots of a barrel tap and a Victorian pendant are within the school grounds; the find spot of two clay pipe bowls, is just to the west of High Street.

- 1.3.10 **Lancaster Girls' Grammar School:** the Lancaster Girls' Grammar School was established in 1907 at the Storey Institute on Meeting House Lane (Harrison 2006, 6). However, these premises quickly became too small for the school and the High Street Estate was purchased as the new location, which opened on Regent Street in 1914 (*op cit*, 9). The proposed development area is located in what is known as the Lower Garden, and in 1989 a biology pond was created in the area against the Queen Street boundary. The school buildings have gradually encroached on the Lower Garden in the last 20 years, with the technology block (to the immediate west of the proposed extension) opened in 1992, and further building in this area took place between 1997 and 2000 (*op cit*, 36-37).

2. METHODOLOGY

2.1 PROJECT DESIGN

- 2.1.1 A project design (*Appendix 1*) was submitted by OA North in response to a verbal brief provided by LCAS. The project design was adhered to in full, and the work was consistent with the relevant Institute for Archaeologists (IfA) and English Heritage guidelines (IfA 2008a, 2008b, 2010; English Heritage 2006).

2.2 STRIP, MAP AND RECORD

- 2.2.1 The topsoil was removed by machine (fitted with a toothless ditching bucket) under archaeological supervision to the surface of the first significant archaeological deposit. This deposit was cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and inspected for archaeological features. All features of archaeological interest were investigated and recorded. The areas of the pond and bin storage hardstanding were excluded, however, for logistical purposes as these would be extant until the phase of the main groundworks.
- 2.2.2 The area was excavated in a stratigraphical manner, and the positions of features were located by the use of total station (TST) and altitude information was established with respect to Ordnance Survey Datum.
- 2.2.3 All information identified in the course of the site works was recorded stratigraphically, using a system adapted from that used by the former Centre for Archaeology of English Heritage, with an accompanying pictorial record (plans, sections, and digital photographs). Primary records were available for inspection at all times.
- 2.2.4 Results of all field investigations were recorded on *pro forma* context sheets. The site archive includes both a photographic record and accurate large-scale plans and sections at an appropriate scale (1:50, 1:20 and 1:10). All artefacts were recorded using the same system, and will be handled and stored according to standard practice (following current IfA guidelines).

2.3 WATCHING BRIEF

- 2.3.1 An archaeological presence was maintained during groundworks in those areas not covered by the strip, map and record, i.e. the pond and bin storage area. The purpose was to identify, investigate and record any archaeological remains encountered during groundworks.
- 2.3.2 A daily record of the nature, extent and depths of groundworks was maintained throughout the duration of the project. All archaeological contexts were recorded on OA North's *pro-forma* sheets, using a system based on that

of the English Heritage former Centre for Archaeology. A digital photographic record was maintained throughout.

2.4 ARCHIVE

- 2.4.1 A full professional archive has been compiled in accordance with the project design (*Appendix 1*), and in accordance with current IfA and English Heritage guidelines (English Heritage 2006). The paper and digital archive will be deposited in the Lancashire Historic Environment Record, Preston, on completion of the project.

3. FIELDWORK RESULTS

3.1 INTRODUCTION

- 3.1.1 The area of archaeological investigation was on a gentle east-facing grassed slope, at 20.3m AOD, and equated to approximately 210m². However, only 104m² was topsoil stripped due to obstructions to be cleared during the main groundworks phase (Fig 2), which was subsequently subject to a watching brief. A manhole was observed to the south of the site, in association with a number of services revealed during the stripping exercise, which meant that only a small proportion of the site was excavated to the level of the first archaeological horizon or the natural geology. A summary of the results is presented below, with a list of contexts used provided in *Appendix 2*.



Plate 1: Sandstone wall **100**, east-facing view

3.2 STRIP AND RECORD

- 3.2.1 The natural geology, **108**, was observed at a depth of 18.27m AOD at the southern end of the site, which was overlain by a levelling layer up to 1m thick consisting of sandstone rubble **106**, containing nineteenth-century pottery (not retained).
- 3.2.2 Towards the north of the site, there was a similar thickness of demolition rubble **104**, upon which a north/south-aligned sandstone wall, **100** (Plate 1; Fig 2), had been constructed. Measuring 1.7 x 1.1m, the wall survived to a height of 0.8m and had been constructed with a rubble core. A possibly later north/south-aligned brick wall, **101**, had been constructed abutting part of the eastern side of wall **100** (Plate 2). The wall comprised wire-cut red bricks bonded with lime mortar, and survived to a height of 0.51m. The wall was

built on large sandstone block foundations. The west face of the wall had a concrete screed 0.05m thick, suggesting this was an outer face.



Plate 2: Brick wall **101**, north-facing view



Plate 3: Brick wall **102** showing sandstone foundations, north-facing view

3.2.3 Contemporary with wall **101**, and adjoining its east side, was brick wall **102**, aligned east/west. It measured 2.45 x 0.23m and survived to a height of five courses, which had a 0.05m thick concrete screed on the northern face. The

wall was built on large roughly-hewn sandstone blocks, which were apparent to a depth of 0.5m below the bricks (Plate 3). To the north of wall **102**, floor **103** was observed (Plate 4; Fig 2). The floor comprised several 0.3m thick sandstone flags, and measured 2.45m x 1.4m overall. There was evidence for a drainage system, with an outdoor drain and a down-pipe outlet from within the building, up against wall **102**. These remains were truncated to the south by the construction of the modern technology block, and to the north and west by the concrete hardstanding and pond area (Fig 2). The whole area was sealed with overburden **105** and topsoil **107**.



Plate 4: Floor **103** to the north of wall **102**, east-facing view

3.3 WATCHING BRIEF

- 3.3.1 The watching brief was conducted over two phases during construction groundworks (Fig 3). The first concerned the reduction of the pond area to construction depth, wherein the same nineteenth century demolition rubble, **105**, recorded during the strip and record was observed. The reduction in ground level did not reach the bottom of this deposit, and no archaeological features were observed.
- 3.3.2 The second phase was the excavation of foundation piles (Fig 3) into the deposits revealed after the removal of the concrete hardstanding. A total of five foundation piles (approximately 2 x 3m) were excavated to a depth of approximately 2m bgl (below ground level). However, on one occasion, pile 3, the excavation was required to go deeper in order to provide a more stable footing beyond the demolition rubble therein.

- 3.3.3 An east/west-aligned sandstone wall, **109**, was observed in foundation piles 2 and 3 (Plate 5), which appeared to be of the same construction as the north/south-aligned wall **100**, recorded during the strip and record (Section 3.2.2). Wall **109** was observed continuing west up towards the existing technology block building. It had not been observed in the strip, map and record investigation as the level of the excavation had been inhibited by a service cable at the point at which the wall would have been seen. It was not observed eastwards in pile 4, implying that it had either stopped before reaching the road front, or had been previously truncated.



Plate 5: West-facing section through wall **109**

4. CONCLUSION

4.1 DISCUSSION

- 4.1.1 The largely truncated and fragmentary remains of structures observed during the archaeological investigation in the north of the site during the archaeological investigation are likely to have been buildings identifiable on early nineteenth century maps (OA North 2011). The concrete screed and drains on the north and west faces of walls **101** and **102** suggested that these were the external walls facing on to an outside yard, and that the main buildings, believed to be cottages (*ibid*), had been truncated by services, at the very northern end of the site, as well as the construction of the existing technology block on the west side. The structural evidence suggests that the remains of the cottages would have extended further to the east, to meet with the road frontage on Queen Street, but they had been removed by the concrete hardstanding and construction of the pond. The east/west-aligned wall, **109**, observed during the watching brief appeared to be the northernmost limit of the yard, or boundary wall to the properties.
- 4.1.2 To the south of the site, the services crossing through the area had almost completely truncated the upper archaeological horizons. However, from the evidence from the historical maps no building remains were expected as this area had been open fields before being enclosed as gardens.

4.2 IMPACT AND RECOMMENDATIONS

- 4.2.1 The remains of the late eighteenth century cottages were so poorly preserved that they contributed little to understanding of the buildings as heritage assets. Therefore, their significance is very low and the impact has been assessed as minor. There are no recommendations for any further archaeological work on this area of the extension.

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6. ILLUSTRATIONS

6.1 FIGURES

Figure 1: Site location

Figure 2: Plan of area under investigation during the strip and record

Figure 3: Plan showing foundation piles 1-5, and wall **109**

6.2 PLATES

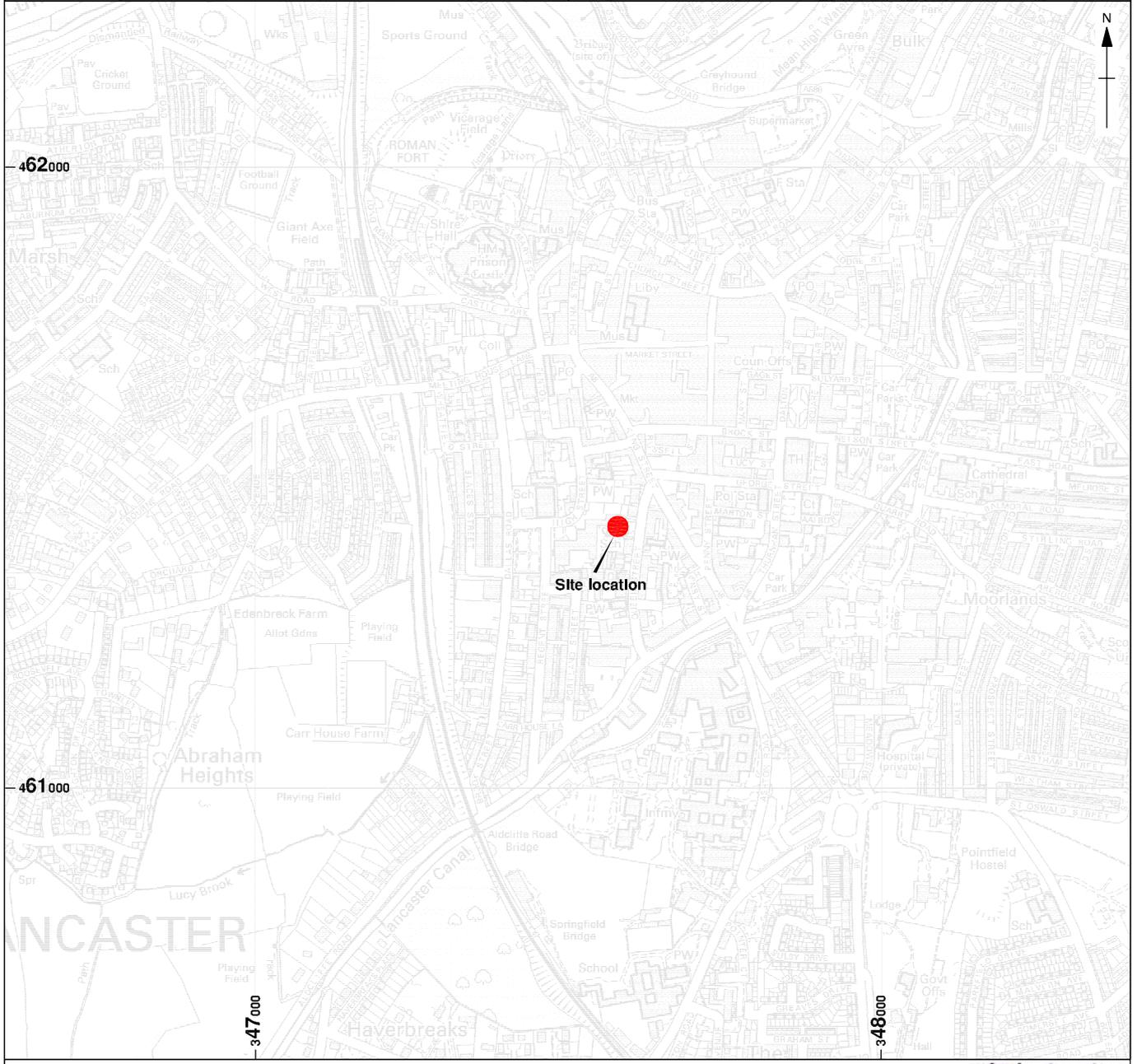
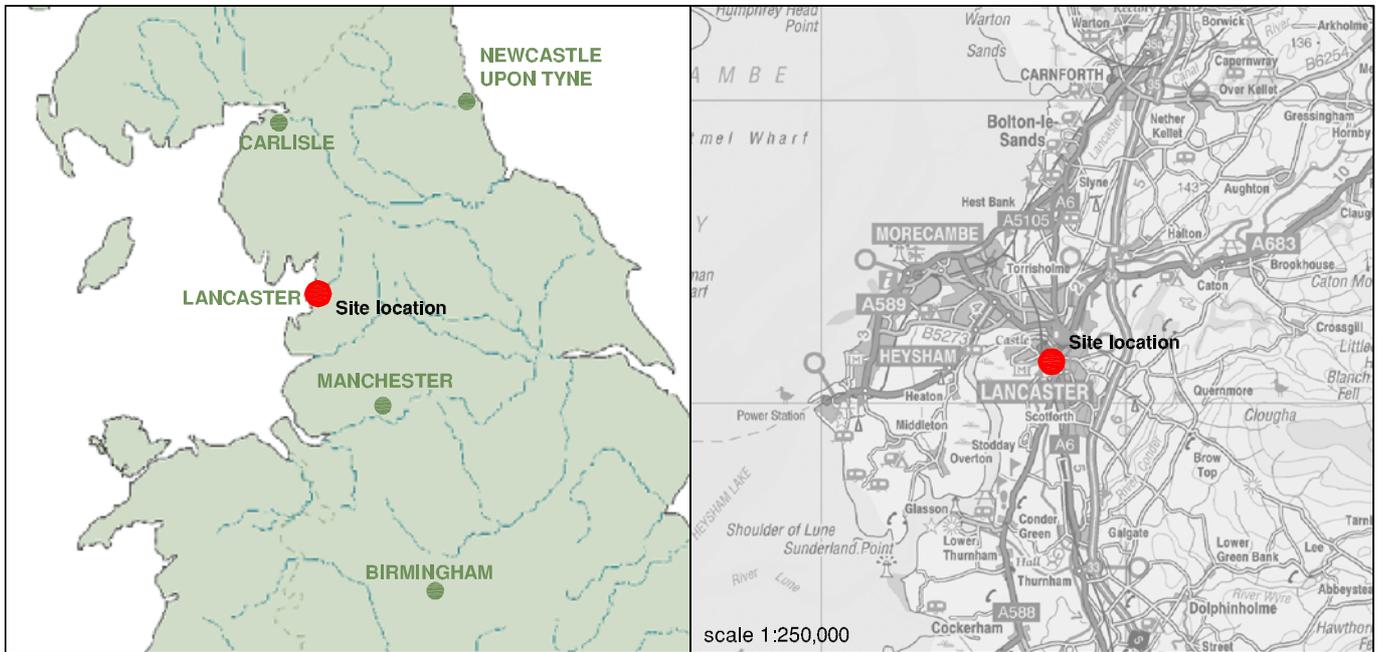
Plate 1: Sandstone wall **100**, east-facing view

Plate 2: Brick wall **101**, north-facing view

Plate 3: Brick wall **102** showing sandstone foundations, north-facing view

Plate 4: Floor **103** to the north of wall **102**, east-facing view

Plate 5: West-facing section through wall **109**



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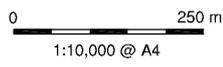
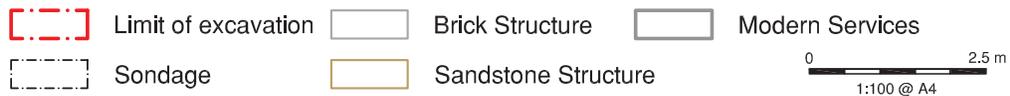
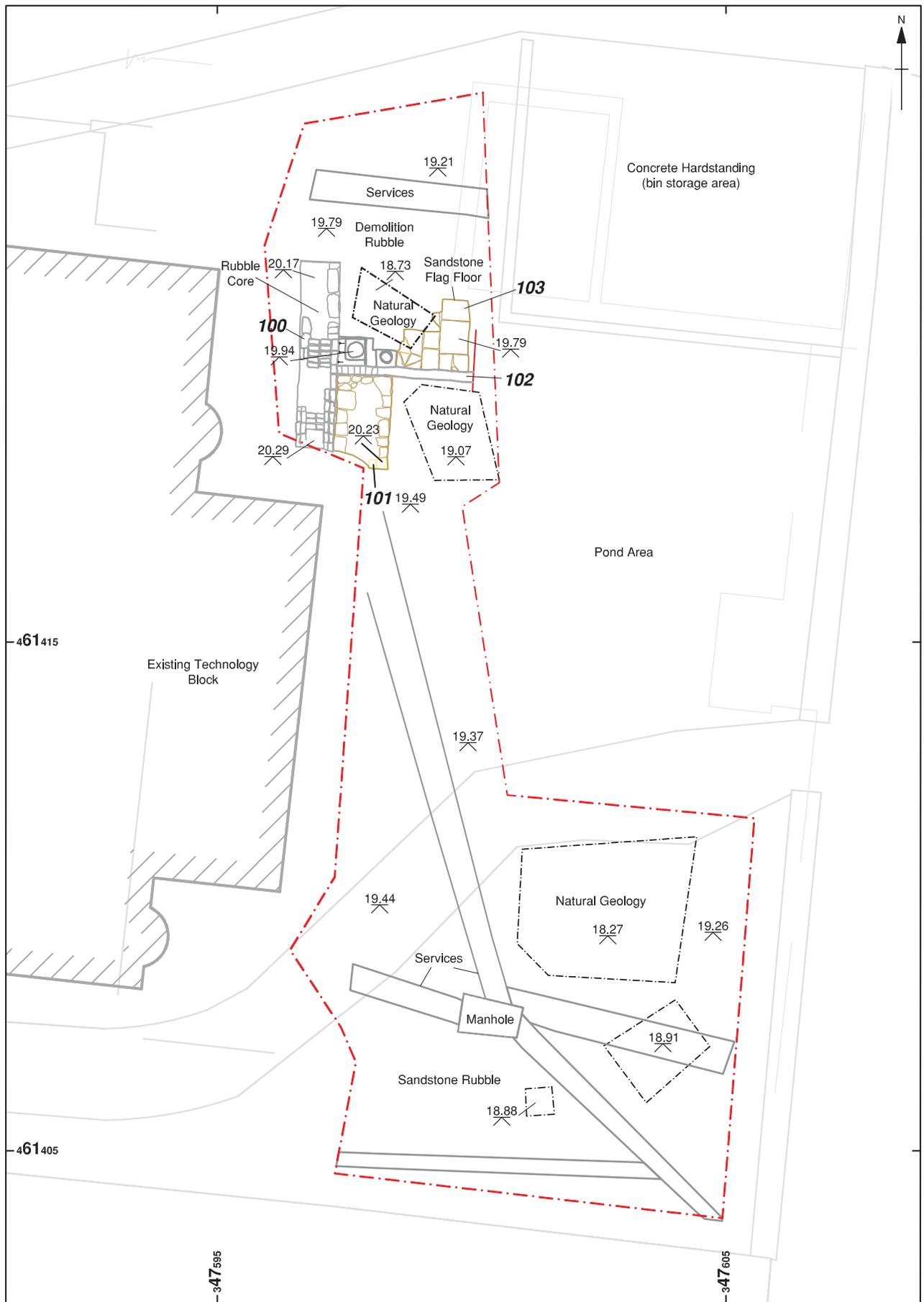


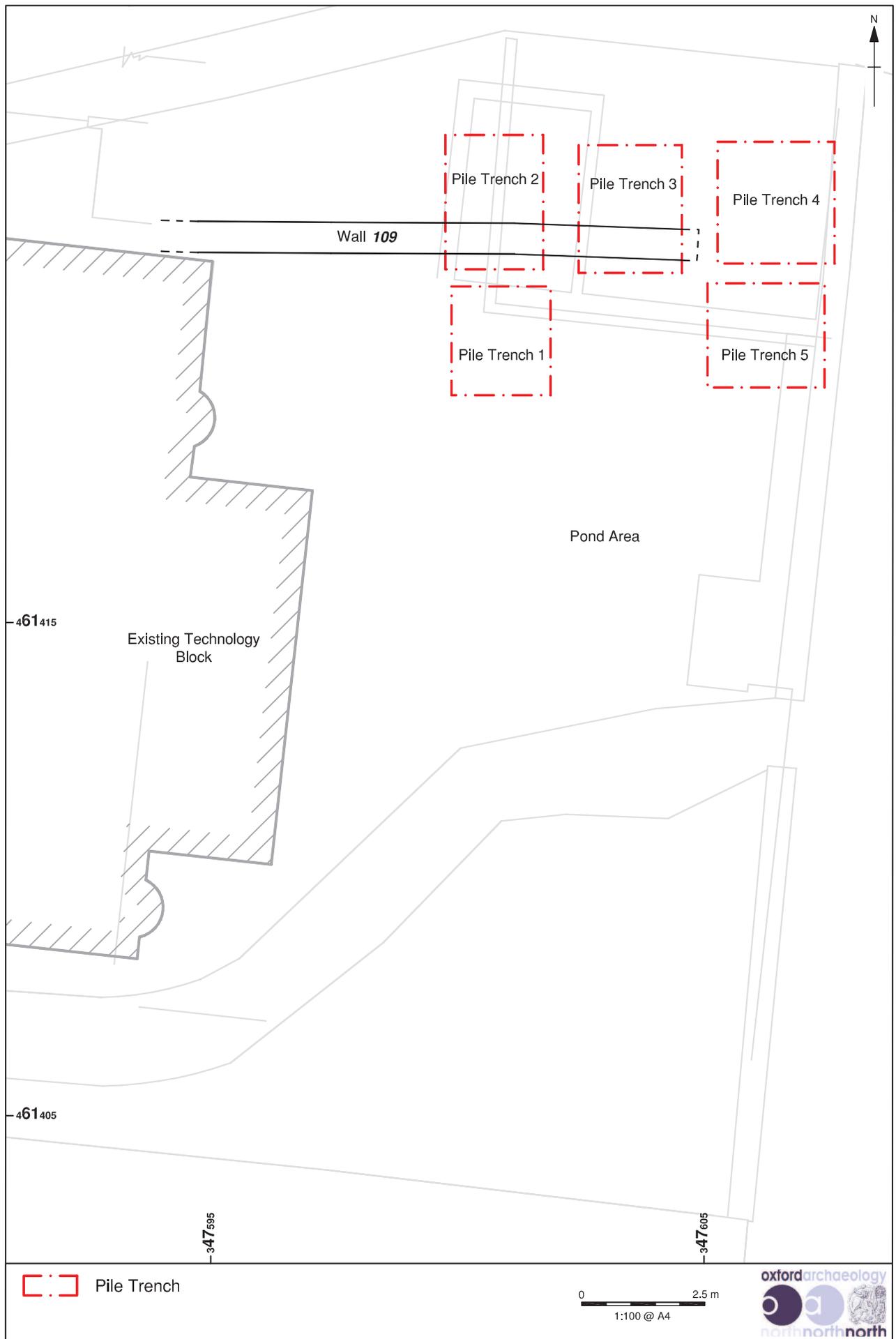
Figure 1: Site location

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EM*L10432*AKH*16/01/2012

Figure 2: Plan of area under investigation during the strip and record



EM*L10432*MT*May2012

Figure 3: Plan showing foundation piles 1-5, and wall 109

APPENDIX 1: PROJECT DESIGN

1 INTRODUCTION

1.1 PROJECT BACKGROUND

- 1.1.1 Cassidy and Ashton, acting on behalf of their client the Lancaster Girls' Grammar School, is currently putting together proposals for the construction of an extension on the east side of the existing technology block at the school, which is positioned on the Queen Street side of the school grounds in Lancaster (centred on NGR SD 47586 61429).
- 1.1.2 Oxford Archaeology North (OA North) undertook an archaeological desk-based assessment in July 2011 to inform the planning process as to the potential impact of the proposed development on any cultural heritage resources. This also included a second extension on the east side of the existing main building, which is no longer included in the proposals. The desk-based assessment showed that the proposed development site was within an area of arable fields until the late eighteenth century when the site was developed as formal gardens. By the time of the mapping of 1824 the proposed development site had been developed for houses that remained until the 1960s. Since then the site has been within the school gardens and, with the installation of the pond in 1989, within the eastern edge of the proposed development area, features associated with the former houses (nos 8-10 Queen Street) were found, and layers containing twelfth to fifteenth century pottery interpreted as night-soiling on the previous medieval fields. A find spot of a medieval spindle whorl is also known within this area. Consequently, there is a potential for further archaeological deposits outwith the 1989 pond excavation area.
- 1.1.3 There is also the potential for remains of Roman date within the outlined area. The Roman road from Preston to Lancaster runs a little over 100m to the east of the site, and a cemetery is known to exist alongside it, although its exact boundaries not fully known, but some Roman cremations have been identified a short distance to the east of the proposed development area.
- 1.1.4 Consequently, following discussions between OA North and the Lancashire County Archaeology Service (LCAS), the county council's body responsible for advising local planning authorities on cultural heritage matters, a programme of strip, map and record is proposed. The following project design for that scheme of works has been compiled in accordance with a verbal specification, and to meet all the requirements and standards of the Institute for Archaeologists (IfA) and, within the framework of MorRPHE (EH 2006), which represents a methodology, for fieldwork and post-excavation reporting. Should significant archaeological remains be identified during the programme of strip and record, it will be necessary to produce an updated project design for a programme of detailed archaeological excavation, archive processing, and post-excavation assessment, making allowance for any appropriate analysis and publication.

1.2 OXFORD ARCHAEOLOGY NORTH

- 1.2.1 Oxford Archaeology is an educational charity under the guidance of a board of trustees with over 35 years of experience in archaeology, and can provide a professional and cost-effective service. We are the largest employer of archaeologists in the country (we currently have more than 300 members of staff throughout three regional offices in Oxford, Cambridge and Lancaster), and can thus deploy considerable resources with extensive experience to deal with any archaeological obligations you or your clients may have.
- 1.2.2 Oxford Archaeology North has considerable experience of sites of all periods, having undertaken a great number of small and large scale projects throughout Northern England during the past three decades. Evaluations, assessments, watching briefs and excavations have taken place within the planning process, to fulfil the requirements of Clients and planning authorities, to very rigorous timetables.

1.2.3 OA North has the professional expertise and resources to undertake the project detailed below to a high level of quality and efficiency. OA North is an Institute for Archaeologists (IfA) registered organisation, registration number 17, and all its members of staff operate subject to the IfA *Code of Conduct* (2010).

2 AIMS AND OBJECTIVES

2.1 ACADEMIC AIMS

2.1.1 The main research aim of the investigation, given the nature of the development, will be to establish the presence or absence of buried archaeological remains on the site and, if present, compile a detailed record to mitigate their destruction during the course of the development in accordance with planning guidance PPS 5 (2010).

2.2 OBJECTIVES

2.2.1 The objectives of the project may be summarised as follows:

- the main objective of the archaeological investigation is to determine the presence or absence of any buried remains of archaeological interest within the proposed development area;
- to investigate the nature, extent and significance of the remains of the former houses (8-10 Queen Street) observed during a previous intervention in 1989 within the proposed development area;
- to determine the presence or absence of any Roman remains, in particular the cemetery, within the proposed development area;
- to determine the survival of palaeo-environmental evidence for any earlier settlement or agriculture than the post-medieval houses within the proposed development area;
- to compile an archival record of any archaeological remains within the proposed development area.

2.2.2 To these ends, the following programme of archaeological work has been designed, in accordance with English Heritage (1991) and the Institute for Archaeologists (IfA) (2008a, b and 2010) standards and guidelines. The results will provide information as to whether more detailed works are required during the fieldwork or post-excavation stages of the project.

3 HEALTH AND SAFETY

3.1 **Risk Assessment:** OA North provides a Health and Safety Statement for all projects and maintains a Company Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A written risk assessment will be undertaken in advance of project commencement and copies will be made available on request to all interested parties.

3.2 **Services and other constraints:** full regard will, of course, be given to all constraints (services etc) during the investigation, as well as to all Health and Safety considerations. As a matter of course the field team will use a Cable Avoidance Tool (CAT) and Signal Generator prior to any excavation to test for services. However, this is only an approximate location tool. Any **information regarding services**, i.e. drawings or knowledge of live cables or services, within the study area and held with the client should be made known to the OA North project manager prior to the commencement of the investigation. Indeed, some plans have already been received. If the client does not hold the remaining service drawings, OA North can purchase these at cost on behalf of the client, although this may delay the commencement of the site work.

- 3.3 **Contamination:** any known contamination issues or any specific health and safety requirements on site should be made known to OA North by the client to ensure all procedures can be met, and that the risk is dealt with appropriately. Should any presently unknown contamination be discovered during excavation, it may be necessary to halt the works and reassess the risk assessment. Should it be necessary to supply additional PPE or other contamination avoidance equipment this will be costed as a variation.
- 3.4 **Staff issues:** all project staff will be CSCS qualified, proof of which can be provided in the form of CSCS cards.
- 3.5 A toilet and hand washing facilities is required and can be provided and positioned on or adjacent to the site, unless the client would prefer to arrange alternative facilities. Therefore, the cost has been provided as a contingency item.
- 3.6 **Fencing requirements:** the archaeological groundworks area will be protected with heras-type security fencing whilst open. Any other requirements for fencing at the client's request may be charged as a variation.
- 3.7 **Insurance:** OA North has professional indemnity to a value of £2,000,000, employer's liability cover to a value of £10,000,000 and public liability to a value of £15,000,000. Written details of insurance cover can be provided if required.

4 METHOD STATEMENT

4.1 INTRODUCTION

- 4.1.1 The following methodology is to archaeologically supervise the stripping of topsoil deposits down to the underlying natural or archaeological deposits, whichever is encountered first, to survey-in any archaeological features and deposits revealed, and then sample-excavate a proportion of these deposits so that their nature, quality, extent and importance can be established, and an appropriate programme of detailed investigation devised. This methodology will provide a flexible, iterative approach, to allow the implementation of an appropriate strategy for dealing with the remains.
- 4.1.2 The strip and record investigations will be undertaken in two stages: Stage 1 comprises the removal of topsoil and overburden material to expose the first archaeological horizon. All archaeological features thus exposed will be sufficiently cleaned to allow a pre-excavation plan to be produced. This will be used in consultation with LCAS to agree a strategy for the next stage; Stage 2 comprises the sample excavation and recording of any archaeology revealed in the Stage 1. The sample will be appropriate and proportional to the importance, quantity and complexity of the archaeology exposed, as well as its perceived research value.
- 4.1.3 **Stage 1:** the initial topsoil stripping will be designed to expose the character and nature of the archaeological remains, and assess their potential research value. The primary aims will be:
- to expose archaeological remains across each of the three archaeological sites by the mechanical removal of topsoil and any masking subsoil;
 - to create a pre-excavation plan of exposed deposits;
 - to collect datable/activity specific material from the surface of exposed deposits;
 - to confirm the priorities for and level of further archaeological investigation.
- 4.1.4 It will not be necessary for the strip and record exercise to include groundworks continuing below the surface of the underlying natural geology once this has been demonstrated to be barren of archaeological remains.

4.1.5 **Stage 2:** further archaeological investigations will be designed to recover data sufficient to allow for “preservation by record” and establish the extent, date, character and significance of the archaeological remains. The primary aims will be:

- to characterise the overall nature of the archaeological resource and to understand the process of its formation;
- to create a detailed plan of all archaeological features;
- to establish the character of those features in terms of cuts, soil matrices and interfaces;
- to recover, where appropriate, across the archaeological site representative ecofactual and palaeoenvironmental samples to provide evidence of function and past landuse;
- to establish in outline a dated sequence of structures and/or deposits and thus to define changes in site organisation over time.

4.2 STRIPPING (STAGE 1)

4.2.1 This will be undertaken by a team of two archaeologists: one to machine watch and one to clean and plan. It is anticipated that the maximum period of time required would be four man-days. This is dependent upon the level of archaeology encountered and weather conditions.

4.2.2 During the investigation, a mechanical 360 excavator, or equivalent, fitted with a toothless ditching bucket will remove the topsoil under archaeological supervision over an area *c* 12m x 28m (Fig A), which includes the footprint of the proposed extension and adjacent associated ancillary areas; no machine work will be carried out in the absence of an archaeologist. The topsoil will be stripped in a systematic and logical manner, to ensure that where practicable the excavators and machines used to remove spoil do not rut, compact or otherwise damage buried or exposed archaeological features and deposits by crossing previously stripped areas.

4.2.3 Stripping will proceed in successive spits until the uppermost horizons of significant archaeological remains have been revealed or, where these are absent, the natural substrate. All machine stripping will be carried out at a speed which will leave a good standard of finished surface, i.e. a smooth, even and clean surface, with a minimum of smearing, polishing and rutting. The stripped areas, including the edges if necessary, will be cleaned sufficiently to enhance the definition of features. The surface of the exposed natural deposits will be inspected for archaeological finds. Mechanically excavated spoil will be monitored in order to recover artefacts that will assist in meeting the aims of the project, before being removed to the designated storage area (see 4.2.5, below).

4.2.4 If appropriate, further machine excavation will be carried out after hand- excavation and recording of deposits has been completed. Such techniques are only appropriate for the removal of homogenous low-grade deposits, which may give a "window" into underlying levels; or for characterising features where there is no danger of removing important stratigraphic relationships and sufficient stratigraphy will remain to allow the excavation of hand-excavated samples.

4.2.5 It is assumed that the topsoil and any subsoil will need to be kept separate, therefore a significant proportion of the site, if not all, will be stripped of topsoil before subsoil is removed. Spoil resulting from the stripping, and smaller quantities from the excavation, will be stored in the refuse storage area. Spoil will be tamped down by the mechanical excavator.

4.2.6 Stripping will extend to as close as possible to the existing technology building (Fig A) without causing any disruption to its foundations, depending on depth of excavation.

4.2.7 The site will be stripped in two phases, due to the presence of a concrete hardstanding for the refuse storage area. Currently, it is proposed that this area will be investigated once the groundwork contractors are on site, whilst the remainder of the area will be stripped ahead of groundworks in order to identify any potential risk ahead of the groundwork contractor's schedule. There is also a pond surrounded by shrubbery and trees that will be dealt with as appropriate during stripping. It is likely that this area will have been disturbed during creation of the pond and associated planting in 1989 (Harrison 2006).

4.2.8 **Significant archaeological discoveries:** during supervision of the machining, should archaeological remains be identified, the archaeologist will stop the machine so that they can examine what has been revealed. In the very rare event that the findings are extremely fragile, the archaeologist may cease excavation within that part of the site. The archaeological features or deposits will be demarcated with netlon fencing or candy tape. LCAS will be informed of the discovery of the features, and will be kept abreast of the results of subsequent exploratory investigations. Ordinarily, the archaeologist will utilise the machine to strip the soil from around the feature of archaeological interest, gradually expanding this area until the limits of the archaeological find are defined.

4.3 MAPPING (STAGE 1)

4.3.1 The stripping team will pay close attention to achieving a clean-stripped surface, using the mechanical plant under close archaeological supervision, to reduce the need for extensive hand cleaning, which uses either hoes, shovel scraping, and/or trowels depending on the soil conditions. Limited areas may still require hand-cleaning, to clarify complex feature intersections. The principal aim of the initial work will be to produce a plan of the revealed features that can be used to define and quantify the second stage of formal and detailed excavation. Plans will be maintained as stripping progresses and features will be defined on the ground by a process of scoring around the feature, or other such methods. A general site plan will be produced at an appropriate scale to map the exposed features. The plan will be presented to LCAS and the level of Stage 2 works agreed. This consultation normally causes a short delay in the progress of the fieldwork.

4.3.2 It should be borne in mind that over the course of several days, archaeological features can 'weather-out' and become visible as the minerals within their fills oxidise (i.e. rust) upon exposure to the air. This means that features such as ditches and pits may only be visible after several days. For these reasons, it may be some days before an archaeologist is able to sign-off seemingly archaeologically blank areas of the site.

4.3.3 The area will be planned digitally by experienced surveyors utilising GPS to record the sites according to Ordnance Survey (OS) coordinates. A Leica differential GPS will be employed that uses real-time (RTK) corrections using mobile SmartNet technology to achieve an accuracy of $\pm 0.01\text{m}$. The accuracy of the OA North GPS system provides for a quick and effective means of recording the position and extent of sites. The digital survey data will be transferred, via Leica Geo Office (V.4), as shp files into a CAD system (AutoCAD Map 2004), and superimposed onto the embedded digital OS data. Should coverage prevent the use of GPS, a EDM Total Station will be used, based on a site grid related to the national grid obtained from client base mapping.

4.4 SAMPLE EXCAVATION (STAGE 2)

4.4.1 This stage would follow a consultation period with LCAS. The number of archaeologists on site may increase, depending on the complexity of features requiring excavation. The research value of the archaeology and the necessity to achieve "preservation by record" in advance of the development will inform the second stage excavation sampling strategies. The exact sampling levels will be determined by the nature of the remains uncovered.

4.4.2 Any archaeological deposits will be excavated to the extent that they are sufficiently characterised and understood, this will involve excavating a representative range of elements such as postholes, ditches etc. Some sufficiently important features, e.g. hearths or burials, require 100% samples.

- 4.4.3 A selection of the features will be sample-excavated in order to ascertain depths, state of preservation, complexity, function, date and significance. All such investigation of intact archaeological deposits will be exclusively manual. Selected discrete features, such as pits and postholes, would be subject to 50% examination (i.e. half-sectioned), linear features will be subject to a 25% sample where the fill is found to be non-uniform, and 10% where the fill is uniform, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation will be undertaken with a view to avoiding damage to any archaeological features, which appear worthy of preservation *in situ*.
- 4.4.4 For other features, such as working hollows, quarry pits, etc, all relationships will be ascertained. Further investigation will be a matter of on-site judgement, but should seek to define their extent, date and function. If features/deposits are revealed which need to be removed and which are suitable for machine excavation, such as large-scale dump deposits, large areas of cultivation soil, or substantial linear cut features, then they would be sample-excavated to confirm their homogeneity before being removed by machine. Large post-medieval deposits/features will be fully recorded, such as cobbled or flagged surfaces, and machine-removed.
- 4.4.5 Cut features identified against the edges of the excavation will not be excavated below a safe working limit unless it is confirmed by LCAS that they are of exceptional importance.
- 4.4.6 Should any particularly deep-cut feature, such as a well pit, be revealed this will be manually excavated to a safe working limit. Thereafter, if LCAS wishes to see the further excavation of any such feature, this could be achieved by reducing the general area of the feature (i.e. a 1m 'cordon') using a machine to allow further safe manual excavation.
- 4.4.7 **Significant Archaeological findings:** should, following the exploratory investigation of the features, it be found that the archaeological remains are highly significant, it is likely that LCAS would recommend a more formal process of excavation and a revision to the present project design, more accurately reflecting the nature of the discovery, and the attendant academic aims and objectives, both in terms of the fieldwork requirements, and of the post-excavation programme, which may include detailed analysis and publication. All such works would be submitted to the client as a resource variation to the present scope of works.
- 4.4.8 **Recording Strategy:** all information identified in the course of the site works will be recorded stratigraphically, using a system, adapted from that used by Centre for Archaeology Service of English Heritage, and in accordance with IfA standards (2008b), with sufficient pictorial record (plans, sections, and photographs) to identify and illustrate individual features. Primary records will be available for inspection at all times. Results, comprising a full description and preliminary classification of features or materials revealed, will be recorded on *pro-forma* context sheets, and will be accompanied with sufficient pictorial record to identify and illustrate individual features. Sections will be generated and features will be planned accurately at appropriate scales. An indexed photographic record, utilising archivable monochrome print and digital imaging, will be undertaken simultaneously and all frames will include a visible, graduated metric scale. The site archive will include both a photographic record and accurate large scale plans and sections at an appropriate scale (1:50, 1:20 and 1:10). All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current IfA guidelines (2008a)) in order to minimise deterioration.
- 4.4.9 **Treatment of finds:** all finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines. All identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the recipient museum's archive curator.

- 4.4.10 **Treasure:** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft.
- 4.4.11 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. LCAS and the local Coroner will be informed immediately. If removal is essential, the exhumation of any funerary remains will require the provision of a Ministry of Justice licence, under section 25 of the Burial Act of 1857. It is likely that the discovery of human remains will necessitate a revision to this project design and to the present agreed resources. The removal of human remains will be carried out with due care and sensitivity under the environmental health regulations.
- 4.4.12 **Environmental sampling for plants, faunal remains, technological remains and artefacts:** the recovery of adequate samples of environmental material can provide useful information for an understanding of processes acting upon the site and for placing the site within a wider ecological context. Bulk sediment samples of *c* 40 litres will be collected from any suitable (undisturbed, uncontaminated and of non-modern origin) deposits or features of demonstrable anthropological origin for the recovery of plant and faunal remains.
- 4.4.13 **Samples for absolute dating:** should deposits, or material within deposits, suitable for radiocarbon assay be encountered, samples will be taken wherever possible. These would include well-stratified artefacts and ecofacts, but also suitable material collected from environmental samples through flotation and, in the case of ceramics, from any bulk sieving, wet sieving and hand-collection.
- 4.4.14 **Contingency plan:** in the event of significant archaeological features being encountered during the watching brief, discussions will take place with the Planning Archaeologist or his representative, as to the extent of further works to be carried out. All further works would be subject to a variation to this project design. In the event of environmental/organic deposits being present on site, it would be necessary to discuss and agree a programme of palaeoenvironmental sampling and or dating with the Planning Archaeologist.

4.5 REPORT

- 4.5.1 Unless there is a requirement for more detailed excavation and subsequent programme of post-excavation work, which is beyond the scope of this project design, a bound copy of the final report, together with a digital copy on CD, will be submitted to the client within approximately eight weeks of the completion of the fieldwork. One digital copy will be forwarded to LCAS. The report will include:
- a site location plan related to the national grid;
 - a front cover to include the planning application number and the NGR;
 - a concise, non-technical summary of the results;
 - the dates on which each phase of the programme of work was undertaken;
 - an explanation to any agreed variations to the brief, including any justification for any analyses not undertaken;
 - a description of the methodology employed, work undertaken and results obtained;
 - plans and sections at an appropriate scale showing the location and position of deposits and finds located;
 - monochrome and colour photographs as appropriate;

- a list of and dates for any finds recovered and a description and interpretation of the deposits identified;
- a description of any the results obtained;
- a summary of the impact of the development on any archaeological remains and, where possible, a model of potential archaeological deposits within as-yet unexplored environmental or other specialist work undertaken and areas of the development site;
- a copy of this project design, and indications of any agreed departure from that design;
- the report will also include a complete bibliography of sources from which data has been derived;
- a summary of the archive.

4.5.2 This report will be in the same basic format as this project design; a copy of the report can be provided on CD, if required. Recommendations concerning any subsequent mitigation strategies and/or further archaeological work following the results of the field evaluation will be provided in a separate communication.

4.5.3 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.

4.6 ARCHIVE

4.6.1 The results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (1991). The project archive will include summary processing and analysis of all features, finds, which will be catalogued by context.

4.6.2 The deposition of a properly ordered and indexed project archive in an appropriate repository is essential and archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the Lancashire HER, Preston (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects with the appropriate Record Office (in this instance, that at Preston).

4.6.3 All artefacts will be processed to MAP2 standards and will be assessed by our in-house finds specialists. The deposition and disposal of any artefacts recovered in the evaluation will be agreed with the legal owner and an appropriate recipient museum. Discussion regarding the museum's requirement for the transfer and storage of finds will be conducted prior to the commencement of the project, and LCAS will be notified of the arrangements made.

4.6.4 **OASIS:** an OASIS form will be completed as part of the works.

5 WORK TIMETABLE

5.1 STAGE 1

5.1.1 **Strip and map fieldwork:** the duration of the first phase of site work is likely to be approximately two to three days, with the second phase concerning the refuse storage area, to be agreed with the groundwork contractors.

5.1.2 **Consultation:** following the fieldwork, one to two weeks will be required to a) draw up the digital plan of the archaeological features, which will be used during b) consultation with LCAS as to the second phase of site work, recording the necessary features. Monitoring meetings will be established with the Client and the archaeological curator at the outset of the

project. Monitoring of the project will be undertaken by LCAS, who will be afforded access to the site at all times.

5.2 STAGE 2

5.2.1 **Sample excavation and recording of features:** the time required to investigate any archaeological features is not possible to predict presently, given that the quantity and nature of any below ground remains is not currently known.

5.2.2 **Reinstatement:** should it be required to reinstate the area covered by the first stage of the fieldwork, this element is anticipated to take approximately one to two days (the costs for this option reflect both). The subsoil and topsoil will be replaced in the correct order and the area roughly graded with a machine (no further reinstatement has been costed for).

5.2.3 **Report and archive:** approximately eight weeks will be required for the compilation of the report and archive following the completion of the fieldwork, unless more detailed excavation has been undertaken. In which case a programme of post-excavation will be necessary. An interim statement on any salient results can be produced sooner, if required. The archive will be submitted within approximately six months.

5.2.4 **Lead-in time and mobilisation:** OA North can execute projects at very short notice once an agreement has been signed with the Client.

6 STAFFING PROPOSALS

6.1 OA NORTH STAFF

6.1.1 The project will be under the overall charge of **Emily Mercer** (OA North project manager) to whom all correspondence should be addressed. The fieldwork will be undertaken under the direction of an OA North project officer who will be a highly experienced field archaeologist, used to working within on-site plant, and capable of running sites of all sizes. Due to scheduling requirements it is not possible to provide these details at the present time. All OA North field staff hold CSCS cards and the vast majority are qualified to degree and often, to post-graduate level.

6.1.2 Health and Safety advice will be provided by **Murray Cook** (OA North Project Manager) who is NEEBOSH training.

6.1.3 Assessment of any finds from the excavation will be undertaken by OA North's in-house finds specialist **Christine Howard-Davis** (OA North Finds Manager). Christine has extensive knowledge of all finds of all periods from archaeological sites in northern England, and is a recognised expert in the study of post-medieval artefacts.

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APPENDIX 2: CONTEXT LIST

CONTEXT	TYPE	DESCRIPTION
100	Structure	North/south-aligned sandstone wall
101	Structure	North/south-aligned brick wall
102	Structure	East/west-aligned brick wall
103	Structure	Sandstone flag floor
104	Deposit	Make up layer beneath floor 103
105	Deposit	Overburden over the northern part of the site
106	Deposit	Overburden over the southern part of the site
107	Deposit	Topsoil
108	Deposit	Natural geology
109	Structure	East/west-aligned sandstone wall