



February 2000

LOWER VIADUCT ESTATE
CARLISLE
Cumbria

Assessment Report

Lower Viaduct Estate, Carlisle
Cumbria

Archaeological Assessment Report

Report no 1999/2000/052/AUA8962

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© Lancaster University Archaeological Unit
Storey Institute
Meeting House Lane
Lancaster
LA1 1TH

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SUMMARY

An archaeological assessment of land at Lower Viaduct Estate, Carlisle (NY 3995 5560) was undertaken by Lancaster University Archaeological Unit, and was commissioned by Taylor and Hardy on behalf of Lowther Manelli Properties Limited. It was undertaken in order to inform a planning application for a superstore development and was carried out in December 1999 and January 2000. The study area is located against the eastern bank of the River Caldew, and is to the west of the medieval town of Carlisle, which stands on a promontory above it.

This report presents the results of a documentary study, as a preliminary to the implementation of an evaluation by trial trenching of the site. The documentary survey involved an examination of historic maps and plans, and secondary (published) sources.

The results of the documentary study suggest that prior to the nineteenth century the study area was unoccupied, being outside the Roman and medieval towns; it was low-lying, poorly drained ground and possibly served as water meadows. In the mid-nineteenth century the main railway line was constructed immediately to its north, and at the end of that century railway sidings and associated buildings occupied the study area. The sidings fell out of use in the twentieth century and the site is currently occupied by a car showroom and council offices.

Although the assessment has not identified a significant archaeological resource within the study area, this is based purely on documentary sources. There is a potential that sub-surface remains exist, possibly reflecting rural activity, and it is recommended that a limited number of trial trenches be excavated to examine the sub-surface stratigraphy.

ACKNOWLEDGEMENTS

LUAU extends its thanks to the staff of the Cumbria Record Office at Carlisle Castle, to Bette Hopkins of the Sites and Monuments Record, and Helena Smith the Assistant Archaeologist for Cumbria County Council, and to the staff of Carlisle Library, the Robinson Library, University of Newcastle upon Tyne, and the Literary and Philosophical Society, Newcastle upon Tyne.

The desktop assessment was undertaken by Jo Bell. The report was written by Jo Bell, and was edited by Jamie Quartermaine and Rachel Newman. The project was managed by Jamie Quartermaine.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 An archaeological assessment has been carried out at Lower Viaduct Estate, Carlisle, by Lancaster University Archaeological Unit (LUAU), for Taylor Hardy on behalf of Lowther Manelli Properties Limited, and in accordance with planning requirements as specified in a brief supplied by the Assistant Archaeologist for Cumbria, Ms Helena Smith.
- 1.1.2 The proposed development is to be at NY 3995 5560 (Figs 1 and 7), on a thin spur of land between the railway line and the River Caldew, which lies at the foot of a steep scarp overlooked by Carlisle Castle, with the Roman town and medieval walled city, which largely coincided in area, immediately to the north-east. The proposed development would involve the building of a superstore with associated parking and structures, which would be likely to damage any sub-surface archaeological deposits. Since the area is near the edge of historic Carlisle, it was considered that it should be the subject of an archaeological assessment and evaluation in order to inform the planning process.
- 1.1.3 In view of Carlisle's long and varied history, it is possible that previously unrecorded archaeological remains may survive within the study area. In particular, the possibility of Roman occupation beyond the fort at Carlisle, or medieval evidence associated with the Blackfriars monastery close to the study area, cannot be overlooked.

2. METHODOLOGY

2.1 SITES AND MONUMENTS RECORD

- 2.1.1 The county Sites and Monuments Record (SMR) held at the County Offices in Kendal was consulted. The SMR aims to preserve a written record for every site of archaeological interest in the county, these records being typically a brief entry of one or two paragraphs including a grid reference, simple description and a record of any archaeological work carried out on the site. In addition, the SMR office has a collection of aerial photographs which are sometimes useful in identifying archaeological sites.
- 2.1.2 No SMR records were identified that related directly to the study area; however, Site 4 records the findspot of a Roman coin dating to the late first century AD in the vicinity of the study area. The approximate location of the find was NY 3996 5570, approximately 100m to the south.
- 2.1.3 No aerial photographs were judged to be relevant to the present study.

2.2 CUMBRIA RECORD OFFICE, CARLISLE

- 2.2.1 The Record Office at Carlisle Castle was visited. This archive is the repository for archives belonging to the former county of Cumberland; archives stored here include primary documents, such as wills, rentals and private papers, as well as a collection of historic maps, and secondary sources such as county histories. No aerial photographs are held here, with the exception of two large-scale photographs of Carlisle which were not useful in the present study.
- 2.2.2 Secondary sources were consulted: notes were taken, and the information was incorporated into the historical background (*Section 3.2*).

2.3 THE LITERARY AND PHILOSOPHICAL SOCIETY, NEWCASTLE

- 2.3.1 The library of the Literary and Philosophical Society holds a substantial collection of historical material, including the *Victoria History of the county of Cumberland* and other useful secondary sources, such as McCarthy *et al* (1990) which provides a concise summary of the history of Carlisle. These were consulted, and notes made which were incorporated into the historical background (*Section 3.2*).

3. ASSESSMENT RESULTS

3.1 INTRODUCTION

3.1.1 The historical background below is compiled mainly from secondary sources, and is intended only as a brief summary of historical developments around the study area. This has naturally led to an emphasis on the development of Carlisle, although the study area lies outside the boundaries of the medieval walled city. Results from primary documents, notably maps, are then presented according to the archive at which they were consulted.

3.2 TOPOGRAPHICAL BACKGROUND

3.2.1 Carlisle is located on the valley floor of the River Eden, and the city developed between the river, and its tributaries, the Caldew and the Petteril. The study area is on the flood plain of the River Caldew, below and to the west of a marked scarp slope marking the edge of the Caldew's valley. The site lies to the east of the medieval walled city, the city walls being positioned along the top of this scarp slope.

3.2.2 The Roman and medieval towns of Carlisle stand on raised boulder clay glacial drift deposits, which overlie the alluvial silts and clays of the Eden and Caldew rivers. The study area, being off to the west of the main raised plateau of the town, is on the alluvium deposits of the River Caldew (Young 1990, 2-4).

3.3 HISTORICAL BACKGROUND

3.3.1 **Prehistory:** Carlisle is '*seated upon an eminence, surrounded by a fertile plain of rich meadows*' (Whellan 1860, 83). The town is located on the Solway Plain, an area that is characterised by a relatively large number of prehistoric settlement sites, many apparently dating to the Iron Age, which took advantage of the relatively fertile soils (Bewley 1994). There seems to have been some evidence of occupation of the area in the Bronze Age, as Bronze Age collared urns have been found on the Garlands Hospital site in 1861 (Perriam 1992, 3). The promontory on which Carlisle stands has been used as a defended settlement probably since at least the Iron Age: the *Victoria History of the County of Cumberland* suggests that the castle site may have been a pre-Roman *dun* (Doubleday 1901, 285).

3.3.2 **Roman:** Carlisle occupies a naturally well-defined promontory between the Eden and Caldew rivers, and this topography was exploited by the establishment of a Roman fort in the early AD 70s (McCarthy *et al* 1990). The town of *Luguvalium* grew up to the south of the fort, and excavations have identified extramural settlement from the Flavian period, which was centred on the line of the Roman road which extended south-east from the fort following the line of Castle Street, Blackfriars Street and Botchergate and a north/ south road that follows in part the line of present day Scotch Street and led towards a bridge over the River Eden. All the identified Roman civilian settlement was located on the promontory, occupying a similar extent as the later medieval town, although, as was customary in Roman settlement, burials extended along Botchergate, beyond the edge of the settlement. By the late Roman period *Luguvalium* acquired the status of a *Civitas* capital, as

Civitas Carvetiorum, which demonstrates the importance and significance of this urban centre (Charlesworth 1978, 123). The fort was abandoned in the AD 330s and the evidence would suggest that civilian settlement also decayed during the fourth century (McCarthy 1982).

- 3.3.3 **Early Medieval:** as is the case throughout Cumbria, evidence for early medieval activity is extremely limited. McCarthy notes 'Roman' activity at Blackfriars Street (McCarthy 1990) which seems to extend beyond the traditional end of Roman government, but much of the town would seem to have decayed. At Blackfriars Street the later 'Roman' layers were succeeded by features which have been identified as 'Anglian', although close dating is impossible (*ibid*). Documentary evidence suggests that some elements of urban life were still in existence in the seventh century when, according to Bede (Colgrave 1940), St Cuthbert saw water systems in use. In addition, Bede records a nunnery and possibly also a monastery within the town (*ibid*), which is perhaps to be associated with St Cuthbert's, a church that clearly precedes the development of the cathedral precinct from the twelfth century (McCarthy 1990). St Cuthbert's would seem to be aligned on the Roman Road system, rather than a more exact east/west orientation, and it is notable that the limited indications of mainly artefactual evidence extend mainly along the line of the former north-west/south-east Roman road (McCarthy *et al* 1992); this includes coins which date between the eighth and eleventh centuries.
- 3.3.4 Nothing concrete is known of settlement in the town in the ninth to eleventh centuries, although metalwork of this period has been found to the west of the present cathedral (Gaimster *et al* 1989). The Danes, however, are recorded as having overrun the region in 875 (Earle and Plummer 1892).
- 3.3.5 **Medieval:** according to the Anglo-Saxon Chronicle, William Rufus in 1092 restored the town and erected the castle (Earle and Plummer 1892). Rufus garrisoned the town and '*sent a number of labourers from the south of England to settle in and around Carlisle, to reclaim the neighbouring lands and to bring them into cultivation*' (Whellan 1860, 84).
- 3.3.6 In 1135 the town was granted to the Scots as part of a wider political deal between England and Scotland, but Henry II re-established English control by 1157 (McCarthy *et al* 1990). Scottish kings continued to lay claim to many parts of Northern England, throughout the rest of the twelfth century and in 1173 William the Lion attempted to take the town (*op cit*, 126). In 1216 it fell to the Scots but in the following year was restored to the English rule once more. It was not until the mid thirteenth century that the dispute between the kingdoms was settled, with the Pope decreeing that Northumberland and Cumberland were part of England.
- 3.3.7 The visit of Henry I in 1122 prompted not only a major period of building at the castle, but also the foundation of an Augustinian Priory, which served as the seat of a bishopric, established in 1133 (McCarthy *et al* 1990) The thirteenth century saw the foundation of two further monastic establishments by the Dominicans (Blackfriars) and Franciscans, one of which (Blackfriars) was close to the present study area (Summerson 1993, 103).
- 3.3.8 In the fourteenth century, Carlisle was subject to numerous raids and skirmishes during the Wars of Independence, and in 1391 was sacked and burnt by the Scots. The impact of this attack was long felt: a late seventeenth century writer recounted that the city '*was never able to recover itself from soe many desolations and even*

at this day the scarrs of those dreadful wounds are yett aparent for ye town is so thin and empty of Inhabitants that it looks like a country village well walld about rather than a citty' (Todd 1690, np).

- 3.3.9 From the late fifteenth century onwards a state of anarchy developed along the border line, which led to the development of the border reivers (MacDonald Fraser 1971). Control over the area was attempted through the establishment of wardens of three marches defined along each side of the border, and Carlisle was the centre of the Wardenry of the West March (*ibid*). Following the unification of the crowns in 1603, the border was pacified, and Carlisle's influence declined. The Civil War also affected the town, Carlisle being held for a while by the Royalists but was recaptured by Parliament in 1645 (McCarthy *et al* 1990).
- 3.3.10 Following disturbances caused by the Jacobite rebellions of 1715 and 1745, the later eighteenth and first half of the nineteenth centuries saw the development of industry in Carlisle, led by the 'first factory' in the town in 1724 - a woollen mill on English Dam Side (Site 5). Particularly important were textiles, mainly woollen manufacture, and a number of '*wonderful biscuit manufactories, the fame of whose productions has been wafted across the sea to the ends of the earth*' according to the sweet-toothed historian Whellan (1860, 97). Industrial growth was steady rather than meteoric, as in some other cities - Carlisle has been rightly cited as '*a good instance of what may be called the normal growth of an English town. It owes nothing to mineral wealth and has made no sudden stride, but merely responded to the industrial impulse in proportion to its position as a chief town of a large district and a place which was accessible as a centre of distribution*' (Creighton 1889, 192).
- 3.3.11 The latter role was helped by the arrival of the railway in the mid nineteenth century. The railway was laid before 1853 (Asquith 1853), and several sidings were later constructed within the study area (*Section 3.4.8*). The twentieth century has seen the site developed, and at present it is occupied by a car showroom and County Council offices.

3.4 SITES AND MONUMENTS RECORD

- 3.4.1 No SMR records were found within the study area, although, a Domitianic denarius (AD 94), was reported as having been found to the immediate east of the study area (Site 4), which is not an unexpected find considering the proximity of a major Roman settlement. A further entry (Site 5) was the site of Carlisle's 'first factory', which was reported as being on the opposite side of the railway from the study area, but the precise location is not known. The factory comprised a fulling mill and dye house for the production of woollen goods and was run by the Gulicker brothers, dating from 1724 to 1740, when the factory became bankrupt (Jones 1985). The buildings were still in place in 1749 when a board of Ordnance Survey map of Carlisle's fortifications (CRO DX 452), was drawn up, but thereafter the fate of the mill is not known. A further mill developed near the study area in the first decade of the nineteenth century, to the south of English Gate, which was later adapted as a metal box manufactory for the biscuits referred to by Whellan (*Section 3.3.10*) (LUAU 1997). This mill was established on a previously undeveloped site, as shown on the 1790 map of Carlisle (Hutchinson 1794, 584).

3.5 CUMBRIA RECORD OFFICE, CARLISLE

- 3.5.1 Several maps and plans were consulted at the Cumbria Record Office, which are presented below in chronological order.
- 3.5.2 A map of the city of Carlisle (BL Cotton Ms AugI,i,13) by an unknown cartographer, which is approximately dated to 1560, shows a schematic layout of the walled city of Carlisle, but makes no attempt to depict detail outside the walls.
- 3.5.3 A map (1685: Stafford Record Office, D (W) 1778/0/5) by James Richards, which is a copy of an earlier map by Martin Beckman (1672: BL Add Ms 16371e), shows the layout of the walled city and its surrounds but shows no structures or features between the city walls and the River Caldew. Significantly fields are shown to the east of the city, but not to the south within the study area. This map is the first to show a watercourse, referred to as the 'Corporation Dam', which at least in part a man-made feature. Summerson (1993, 333-4) records that in 1382 and 1427 disputes arose due to the interference with *'the banks of a stream running through the lands and waste of the lordship of Blackhall to the ditch of the city of Carlisle and to a mill called "le Castel mylne" by that city'.....so that the course of the stream is impeded, and the mill cannot be worked for want of water'*. The 'stream' follows a line that is parallel and close to the line of the River Caldew and its course must have been to some extent diverted.
- 3.5.4 A 1744 engraving by Buck, showing Carlisle from the south-west (unreferenced at Carlisle Record Office), shows the riverside largely undeveloped except for clusters of housing around the gates to the walled city. One small structure at the river's edge, which is shown only partially but seems to be a shed, may fall within the study area.
- 3.5.5 A 1746 plan of Carlisle by G Smith (CRO(C)) shows the study area completely unoccupied by structures or boundaries, and names it as 'Low Meadows by Cauda [Caldew]'.
- 3.5.6 An Ordnance map of 1749, intended to examine the defences of the city following the Jacobite Rebellion, shows the fulling mill buildings to the east of the study area, but the area is again shown as unoccupied.
- 3.5.7 An 1821 plan of Carlisle by John Wood (CRO(C)) shows the study area completely empty.
- 3.5.8 No tithe map is available for the study area. Such maps were drawn up in the 1830s and 1840s to assist in the monetary evaluation of tithes paid to the church, which were nominally paid in kind. They provide details of land use and ownership, and can supply valuable information, but in this case the study area, which lies very close to the city itself, was not included in the tithe survey.
- 3.5.9 An 1853 map by Richard Asquith (CRO(C)), at a scale of 10ft to 1 mile, shows only the eastern part of the study area. It remains devoid of features. Immediately to its south-east is a complex of public and industrial buildings including a 'purifying house', gas works, retort house and marble works. The main railway line is shown in place for the first time, immediately north of the study area.
- 3.5.10 The Ordnance Survey First Edition (1865) 25" to 1 mile (Cumberland sheets 23.3, 23.7) shows the site empty except for a regular network of paths. The gas works, marble works and retort house remain in place. 'Luguvallium (site of)' is marked

immediately to the east of the study area. No bridges or other features are shown in the vicinity of the site, and as yet no viaduct is in place.

- 3.5.11 The Ordnance Survey Second Edition (1901) 25" to 1 mile (Cumberland sheets 23.3, 23.7) shows the Victoria viaduct in place to the south of the site. The study area itself is dominated by railway sidings and associated features, including a goods station and grain shed. The gas works to the south-east remains in place.
- 3.5.12 The Ordnance Survey Third Edition (1925) 25" to 1 mile (Cumberland sheets 23.3, 23.7) shows the study area unchanged since the previous edition.

4. CONCLUSIONS

- 4.1 Useful map evidence is only available for the study area from the late seventeenth century (*Section 3.4*). All available maps suggest that the study area was consistently unoccupied from that time until the late nineteenth century, when a system of railway sidings was constructed.
- 4.2 The study area lies on the east bank of the River Caldew, potentially a promising site for early occupation and land use. However, its topography as a narrow flood-prone strip of land immediately below a steep scarp may have made it less attractive than other riverside areas, particularly as there was an easily defensible area immediately to the north. The earliest available evidence which relates directly to the study area, the Richards map of 1685, shows it as wholly unoccupied, and the 1746 Smith plan shows it as meadowland. The Ordnance map of 1749 shows fulling mill buildings to the east of the study area, but again nothing within the study area. It seems likely that the site, which lies very close to the walled city but in an area whose topography made it relatively unattractive for occupation, had always been used as pastoral land or water meadow.
- 4.3 The only archaeological evidence known from the immediate vicinity of the study area is a Roman coin of AD94 which may have been found within 100m of the site (Site 4), possibly on the opposite riverbank. As a single coin it may have been lost by its owner, and as such is not unsurprising so close to a major Roman settlement.

5. IMPACT AND RECOMMENDATIONS

5.1 IMPACT

- 5.1.1 The assessment has demonstrated that, despite the proximity of the site to the historic centre of Carlisle, the study area contains no known significant archaeological resource, and that the only documented activity relates to its use for sidings and rail sheds. Because of its generally low-lying and relatively poorly drained topography, it is possible that it has, for the most part, served as a water meadow during the medieval period, but even in this respect the evidence would suggest that it was not enclosed, as the 1685 map (Richards 1685) shows fields to the east of the town, but not to the south, within the study area. As, however, the documented record is biased towards recent history, and there has been no archaeological excavation within the study area, this is not a reliable indicator of earlier land use. By virtue of its proximity to the historic core of Carlisle, there is a limited possibility that there were associated extramural features within the study area, such as evidence of agricultural activity and it is even possible that there was pre-Roman activity within this area.

5.2 RECOMMENDATIONS

- 5.2.1 Although the documentary assessment has not identified any historic activity within the study area there is a possibility that sub-surface archaeological remains may exist. It is therefore recommended that a small number of archaeological trenches be excavated in order to establish the character of the stratigraphy, the level of any truncation, and the potential for archaeological survival. Subject to the results of this trenching there may be a requirement to undertake further recording.

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APPENDIX 1
PROJECT BRIEF

APPENDIX 2
PROJECT DESIGN

**Lancaster
University
Archaeological
Unit**

November 1999

**LOWER VIADUCT ESTATE CARLISLE
CUMBRIA

ARCHAEOLOGICAL ASSESSMENT**

Proposals

The following project design is offered in response to a request from Taylor and Hardy for an archaeological evaluation at Lower Viaduct Estate, Carlisle.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

1.1.1 Lancaster University Archaeological Unit (LUAU) has been invited by Taylor and Hardy to submit a project design and costs for an archaeological evaluation of land at the Lower Viaduct Estate, Carlisle, Cumbria, in advance of a superstore development. The archaeological work is undertaken to inform a planning application, and is in line with Planning Policy Guidance Note 16; the project design has been prepared in accordance with a project brief prepared by the Assistant Archaeologist, Cumbria County Council.

1.1.2 **Archaeological Background:** Carlisle became a major settlement in the Roman period, with a fort, occupied from the early AD70s onwards, located to the north of the development site. A large settlement developed outside the fort, which, at its greatest extent, was approximately the same size as the medieval town; it extended south along Botchergate, which runs parallel to the Viaduct Estate road, with evidence for cemeteries beyond the settlement in the area of St Nicholas Street. The Roman settlement had achieved the status of a *Civitas Capital* (regional administrative centre) by the third century AD, despite the proximity of Hadrian's Wall. There is some evidence for continued occupation beyond the end of formal Roman rule, and the Venerable Bede recorded that during a visit by St Cuthbert, in AD685, running fountains were seen. Following the Norman Conquest of the area in 1092, a castle was built at the western extent of the Roman fort, and a town grew in the same area as that occupied by the Roman town, centred on the Augustinian Abbey, the seat of the bishop from 1133. The development site is immediately adjacent to the medieval friary precinct at Blackfriars, and was on the south-western edge of the medieval town. The site has archaeological potential, and as a consequence it has been recommended that a sub-surface evaluation be undertaken to investigate the survival of the below ground archaeological resource. However, the site is situated on the flood plain of the River Caldew, and there is also the possibility that settlement from the Roman or Medieval periods did not extend beyond the lip of the scarp slope of the river terrace; if there were settlement remains in this area there may also be considerable silting deposits in top. Initial borehole testing by the Cumbria County Council has demonstrated made-up ground between the surface and depths of between 1.2-3.0m, this included loam and fragments of brick, suggesting a relatively recent deposition date. Below the made-up ground was a brown sandy gravel deposit, which were possibly natural sub-soils.

1.3 LANCASTER UNIVERSITY ARCHAEOLOGICAL UNIT

1.3.1 LUAU has considerable experience of the evaluation and excavation of sites of all periods, having undertaken a great number of small and large scale projects during the past 18 years. Evaluations and assessments have taken place within the planning process, to fulfil the requirements of clients and planning authorities, to very rigorous timetables. LUAU has undertaken a major archaeological excavation of the of the leper hospital site at St Nicholas Street, Carlisle and LUAU, along with the Archaeological Practice, is undertaking a large excavation at the Cumbria College of Art and Design, which is on the line of Hadrian's Wall, adjacent to Stanwix Roman Fort. LUAU has the professional expertise and resource to undertake the project detailed below to a high level of quality and efficiency. LUAU and all its members of staff operate subject to the Institute of Field Archaeologists (IFA) Code of Conduct, and LUAU is a registered organisation with the IFA (No 27).

2. OBJECTIVES

2.1 The following programme has been designed in accordance with a brief provided by Helena Smith of Cumbria County Council to provide an accurate archaeological evaluation of the designated area, within its broader context. The principal purpose of the evaluation is to collate information about the archaeology of the site, and to investigate the quality, extent and significance of sub-surface remains. This will enable an assessment of the significance of the identified archaeological resource and from this recommendations for any further archaeological investigation will be made. The required stages to achieve these ends are as follows:

2.2 *Desk Top Survey*

To accrue an organised body of data to inform the evaluation.

2.3 **Interim Report**

An interim report to present the results of the first stage of the programme, in anticipation of access becoming available on the site to enable trial trenching.

2.4 **Trial Trenching**

A programme of trial trenching to examine *c* 5% of the development area.

2.5 **Evaluation Report**

A written evaluation report will assess the significance of the data generated by this programme within a local and regional context. It will advise on the requirements for further mitigative recording as necessary.

3. **METHODS STATEMENT**

3.1 The following work programme is submitted in line with the stages and objectives of the archaeological work summarised above.

3.2 **DESK- BASED STUDY**

3.2.1 The following will be undertaken as appropriate, depending on the availability of source material. The level of such work will be dictated by the timescale of the project.

3.2.2 **Documentary and cartographic material:** this work will rapidly address the full range of potential sources of information. It will include an appraisal of the Cumbria Sites and Monuments Record, as well as appropriate sections of County histories, early maps, and such primary documentation (tithes and estate plans etc.) as may be reasonably available. Particular emphasis will be upon the early cartographic evidence which has the potential to inform post-medieval occupation and land-use of the area. Any photographic material lodged in either the County Sites and Monuments Record or the County Record Offices will also be studied. Published documentary sources will also be examined and assessed. This work will involve visits to the County Record Office in Carlisle.

3.2.3 **Aerial photography:** a brief survey of the extant air photographic cover will be undertaken. This would provide an indication of recent land-use, but is not likely to significantly inform the archaeological potential of the site. The Cumbria Sites and Monuments Record has a considerable aerial photographic collection and some photographic records are held by the Cumbria County Record Office. Aerial photographic work may entail liaison with the Royal Commission on the Historical Monuments (England), although, within the timescale available, it is unlikely that prints will be forthcoming from this body for inclusion in this report.

3.2.4 **Physical environment:** a rapid desk-based compilation of geological (both solid and drift), pedological, topographical and palaeoenvironmental information will be undertaken. This will not only set the archaeological features in context but also serves to provide predictive data, that will increase the efficiency of the field inspection.

3.3 **INTERIM REPORT**

3.3.1 It is anticipated that there will be a delay between the implementation of the desk-based study, and the initiation of the trial trenching programme, as the site is still in current use. As a consequence an interim report will be prepared following the completion of the desk-based study. This will present the results of the desk-based study, and will incorporate the presentation of all cartographic evidence. The results of the interim will be incorporated within the final evaluation report.

3.4 **EVALUATION TRENCHING**

3.4.1 The programme of trenching will establish the presence or absence of any archaeological deposits and, if established, will then briefly test their date, nature, and quality of preservation. This element of the work is invaluable in order to assess those parts within the proposed study area

where there is a potential for archaeological deposits to survive which are not visible on the surface.

- 3.4.2 The study area encompasses 15,000 sqm, and as 5% of this is required to be evaluated, 750sqm of trenching will be cut (equivalent to 18 10m x 4m trenches). It is recommended that the trenches be up to 4m wide, to allow for the stepping in of the trenches if deep deposits are encountered. The locations of the trenches will be subject to the results of the assessment and discussions with the Assistant Archaeologist, Cumbria County Council.
- 3.4.3 **Methodology:** to maximise the speed and efficiency of the operation the removal of tarmac surfaces and overburden will be undertaken by machine, where accessible, under careful archaeological supervision (with a standard five foot toothless ditching bucket), and may require the use of a pecker as required. The mechanical excavation will be undertaken in level spits down to the level of the highest significant archaeological horizon, and below that level excavation will be by manual techniques. If further mechanical excavation proves necessary it will be subject to agreement with the Assistant Archaeologist. The sections and trench floors will be manually cleaned prior to undertaking any manual excavation.
- 3.4.4 Manual excavation will examine all sensitive deposits, and will enable an assessment of the nature, date and survival of deposits. The deposits will be investigated sufficiently to establish their character but the full depth of the deposits to natural will not necessarily be established across the whole trench. All trenches will be excavated in a stratigraphical manner, whether by machine or by hand. All features exposed will be sample excavated, which typically would involve the excavation of 50% of discrete features and 25% of linear features. No feature or structure will be wholly excavated as the intention is simply to evaluate only the archaeological resource at this stage. Similarly structures or features worthy of preservation will not be unduly excavated.
- 3.4.5 The initial borehole work suggests a considerable deposit of modern made ground, which if confirmed by the evaluation would require only minimal manual excavation. The present costings assume only a low level of manual excavation, with the proviso that if significant archaeological deposits are identified then there will be a recourse to contingency funding in order to provide an appropriate standard of manual excavation.
- 3.4.6 **Environmental Sampling:** environmental sampling will be undertaken in accordance with guidance by the LUAU environmental specialist. Subject to the organic survival of the sub-surface deposits, and agreement with the client and the Assistant Archaeologist, an initial assessment of the samples will be undertaken by the LUAU environmental specialist. This would involve drawing on contingency funding (*Section 3.6.6*). Pollen samples would be prepared chemically so that an assessment of the pollen content can be made. The samples will be examined microscopically and a minimum of one hundred pollen grains will be counted and identified where possible. Pollen preservation will be assessed and recorded. From this data it will be possible to provide evidence of the type of vegetation and possible changes occurring during the period that the soil was forming.
- 3.4.7 **Evaluation Recording:** all elements of the work will, as a matter of course, be recorded in accordance with current English Heritage guidelines (*Management of Archaeological Projects, 2nd edition 1991*) and the best practices formulated by English Heritage's Central Archaeology Service. All excavation, by whatever method, will be recorded by the compilation of context records, and of object records for any finds, and the production of manually drawn accurately scaled plans and section drawings (probably at scales of 1:20 and/or 1:10). A photographic record will be maintained within 35mm black and white and colour transparency formats and a photographic gazetteer will be maintained. The stratigraphy of all trenches will be recorded irrespective of whether archaeological deposits have been identified. Trenches will be accurately located with respect to the original LUAU survey control, by use of a total station survey instrument, and the trenches will be depicted on a digitised 1:2,500 OS map of the area. All archaeological features within the trenches will be planned by manual techniques.
- 3.4.8 **Finds Processing:** finds recovery and sampling programmes will be in accordance with best practice (current IFA guidelines for finds work). All typologically significant and closely datable finds will be contextually recorded. All artefacts and ecofacts will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration. Finds storage during fieldwork and any post-excavation assessment and analysis (if appropriate) will follow professional guidelines (UKIC). Emergency access to conservation facilities is maintained by LUAU. Any discard policy for finds should be formulated

with care, and with advice from the Cumbria County Council. All finds will be washed, marked and packaged as appropriate. Small finds will be individually packaged, in a manner appropriate to the find type.

- 3.4.9 The artefact assemblage will be examined by the LUAU finds specialist, and the potential for further examination will be assessed. A summary report on the significance, character and date range of the assemblage will be generated.

3.5 EVALUATION REPORT

- 3.5.1 **Archive:** the results of Stages 3.1-3.4 above will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of archaeological projects*, 2nd edition, 1991). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. The deposition of a properly quantified, ordered, and indexed project archive in an appropriate repository is considered an essential and integral element of all archaeological projects by the Institute of Field Archaeologists in that organisation's Code of Conduct. This archive will be provided in the English Heritage Central Archaeology Service format, as a printed document, and a synthesis (the evaluation report and index of the archive) will be submitted to the relevant Sites and Monuments Record. The archive will be deposited with the County SMR within 6 months of the end of the fieldwork.

- 3.5.2 The archive will be formed of all the primary documentation, including the following:

- Survey Information
- Context Records
- Finds Records
- Sample Records
- Field / Inked Drawings and digital copies of CAD data
- Photographic negatives, prints and colour transparencies
- Written report
- Administrative records

- 3.5.3 **Report:** two copies of a written synthetic report will be submitted to the client and a further copy to the SMR. The report will present, summarise, and interpret the results of the programme detailed in Stages 3.1-3.4 above, and will include an index of archaeological features identified in the course of the project, with an assessment of the sites development. It will incorporate appropriate illustrations, including a location map, copies of the site plans and section drawings, and the trench location plan all reduced to an appropriate scale. The report will consist of an acknowledgements statement, list of contents, executive summary, introduction summarising the brief and project design and any agreed departures from them, methodology, interpretative account of the archaeological stratigraphy and details of the features and stratigraphy recorded from each trench, table of contexts, a complete bibliography of sources from which data has been derived, and a list of further sources identified during the programme of work. The report will be in the same basic format as this project design. A copy of the report can be provided on 3.5" floppy disk in either ASCII or Word for Windows format and the drawings can be provided as DXF or DWG files if required.

- 3.5.4 **Proposals:** the report will make a clear statement of the likely archaeological implications of the intended development. It will seek to achieve, as a first option, the preservation *in situ* of all significant archaeological features, and possible strategies for the mitigation of the development, including design modifications, will be considered. Where conservation is neither possible, nor practical, it may be appropriate to recommend a further stage of archaeological work in order to mitigate the effects of development.

3.6 GENERAL CONDITIONS

- 3.6.1 **Access:** it is understood that there will be unrestricted access for pedestrian and plant traffic to the site.

- 3.6.2 **Health and Safety:** full regard will, of course, be given to all constraints (services) during the survey, as well as to all Health and Safety considerations. The LUAU Health and Safety Statement conforms to all the provisions of the SCAUM (Standing Conference of Unit Managers) Health and Safety manual. Risk assessments are undertaken as a matter of course for all projects. The Unit Safety Policy Statement will be provided to the client, if required. Trenches will be excavated up to one metre away from any standing walls to present any risk of destabilisation of structures.
- 3.6.3 Because of former gas storage containers on the site there is a risk of contamination by hydrocarbons, although it is understood that this will only become serious once the groundwaters are exposed at a depth of c 3m below surface. A contingency cost is provided for protective masks and clothing if the contamination is identified as a real risk.
- 3.6.4 **Confidentiality:** The report is designed as a document for the specific use of the client for the particular purpose as defined in this project design, and should be treated as such. Any requirement to revise or reorder the material for submission or presentation to third parties or for any other explicit purpose can be fulfilled, but will require separate discussion and funding.
- 3.6.5 **Project Monitoring:** any proposed changes to this project design will be agreed with the client, and the Assistant Archaeologist, Cumbria County Council. If required a meeting with the archaeological curator and the client can be established at the outset of the project.
- 3.6.6 **Insurance:** the insurance in respect of claims for personal injury to or the death of any person under a contract of service with the unit and arising out of an in the course of such person's employment shall comply with the employers' liability (Compulsory Insurance) Act 1969 and any statutory orders made there under. For all other claims to cover the liability of LUAU, in respect of personal injury or damage to property by negligence of LUAU or any of its employees, there applies the insurance cover of £2m for any one occurrence or series of occurrences arising out of one event.
- 3.6.7 **Contingencies:** a contingency cost is submitted to cover the possibility of environmental analytical work, and provides for a basic level of analysis of two samples. In the unlikely event of burials being identified, should removal be required this will be subject to a variation.
- 3.6.8 The costs assume that the archaeological deposits will not be deeper than 2m from the surface, and can therefore be excavated within health and safety guidelines by stepping in the trenches. If there are no significant archaeological deposits it will be possible to excavate to a depth of 3m by machine, in order to explore for natural deposits, as long as no one enters the trench. If, however, archaeological deposits are deeper than 2m then there will be a requirement for box shoring and the costs will have to be reconsidered subject to discussions with the Assistant Archaeologist, Cumbria County Council and the client.
- 3.6.9 **Reinstatement:** it is understood that the requirement for the reinstatement of the ground following the trenching, will be for backfilling only. It is assumed that the client will implement the reapplication of tarmac, should that be required.

4. WORK TIMETABLE

- 4.1 It is envisaged that the various stages of the project outlined above would follow on consecutively, where appropriate. The phases of work would comprise:
- i* **Desk-Based Assessment**
4 days (on site)
 - ii* **Interim Report**
2 days
 - iii* **Evaluation Trenching**
5 days (on site)
 - iv* **Evaluation Report**
6 days (desk-based).

- 4.2 LUAU can execute projects at very short notice once an agreement has been signed with the client. The desk-based study is scheduled for completion within three weeks from the completion of the field work. The times assume that modern made up ground will be identified; if significant archaeology is identified then there will be a requirement for an additional eight days on site.
- 4.3 The project will be under the project management of **Jamie Quartermaine, BA Surv Dip MIFA** (LUAU Project Manager) to whom all correspondence should be addressed. All Unit staff are experienced, qualified archaeologists, each with several years professional expertise.

APPENDIX 3 SITE GAZETTEER

Site number 01
Site name Carlisle Town Walls
NGR SD 3967 5598
Site type Town Wall
Period Medieval
Source SMR 5058; McCarthy 1980
Description A section of wall, which had traces of the town ditch on the open space in front. Excavations in 1979 exposed and identified parts of the wall foundations and a ramp possibly leading to the English Gate.
Assessment The site lies to the north-west of the study area.

Site number 02
Site name Abbey Street
NGR SD 3970 5800
Site type Frontier Defences
Period Roman; Medieval
Source SMR 6415; Caruana 1991
Description An area of the Roman and medieval town of Carlisle. The site includes remnants of the Roman fort, the ramparts, extramural structures, buildings of the later Roman town, remains of the medieval town. There is a considerable depth of surviving deposits which are very well preserved.
Assessment The site lies to the north-west of the study area.

Site number 03
Site name Carlisle Cathedral
NGR SD 3990 5593
Site type Cathedral Precinct
Period Roman; Medieval; Post-medieval
Source SMR 5309; Pevsner 1967, 88-96; Perriam 1987; McCarthy 1987; Keevil forthcoming
Description Carlisle Cathedral, associated buildings and precinct. The site was within the Roman town (first to fourth centuries), and excavations to the west of the present Cathedral have revealed both Roman and pre-Norman activity. An Augustinian priory was founded in 1122, and became a cathedral priory in 1133, but was dissolved in 1540. Excavations in the 1970s - 1980s have established that there are extant well-preserved Roman deposits, and medieval / post-medieval deposits relating to its ecclesiastical history. Excavations in 1985 of the nave and choir area by the Carlisle Archaeological Unit examined deposits against the nave walls, and identified a burial dating from c750.
Assessment The site lies to the north of the study area.

Site number 04
Site name English Damside
NGR SD 3996 5570
Site type Coin
Period Roman
Source SMR 18938; Shotter 1986
Description A coin found in English Damside, but the precise location is unknown. It was a Domitianic Denarius (AD 94).
Assessment The site lies to the north-east of the study area.

Site number 05

Site name	English Damside
NGR	SD 40000 55675
Site type	Woollen Factory
Period	Post-medieval
Source	SMR 18983; (Jones 1985, 187-191)
Description	The site of Carlisle's 'first factory'. It was a 'woollen' mill run by the Gulicker brothers from 1724 until 1740. It included dyeing and weaving sheds and included looms.
Assessment	The site lies to the east of the study area.

ILLUSTRATIONS

- Fig 1 Lower Viaduct Location Map
- Fig 2 Richards Plan and prospect of Carlisle (1685)
- Fig 3 Smith plan of the City of Carlisle (1746)
- Fig 4 Wood plan of the City of Carlisle (1821)
- Fig 5 Ordnance Survey first edition 25" to 1 mile map (1865)
- Fig 6 Ordnance Survey second edition 25" to 1 mile map (1901)
- Fig 7 Ordnance Survey third edition 25" to 1 mile map (1925)
- Fig 8 General Site Plan

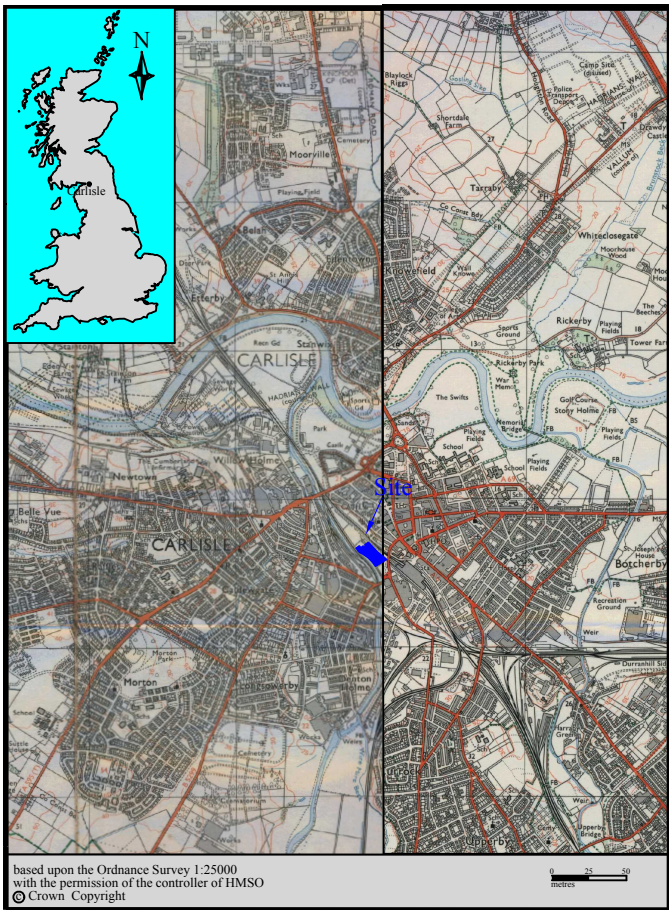


Fig 1: Lower Viaduct Location Map

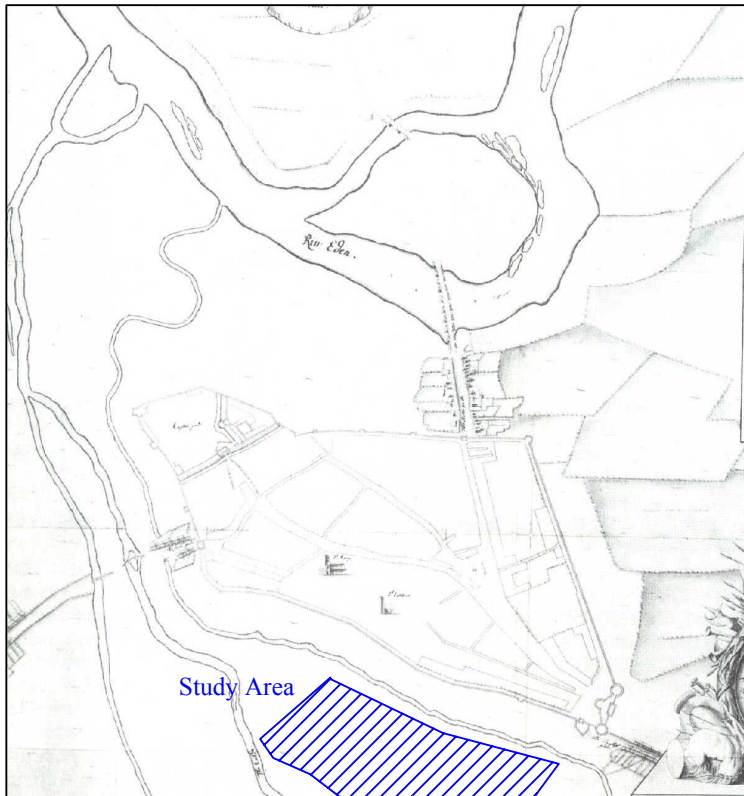


Fig 2 Richards' Plan and prospect of Carlisle (1685)

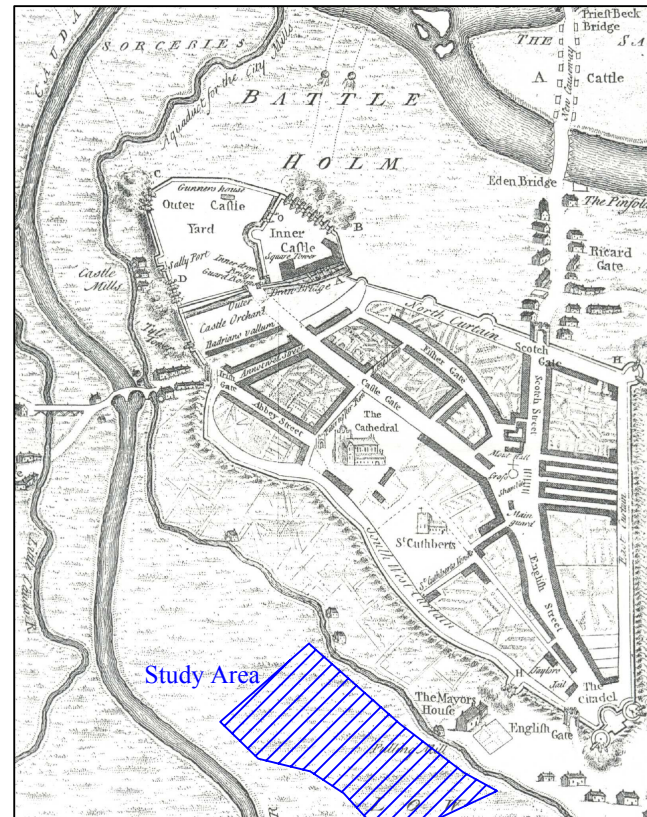


Fig 3 Smith plan of the City of Carlisle (1746)

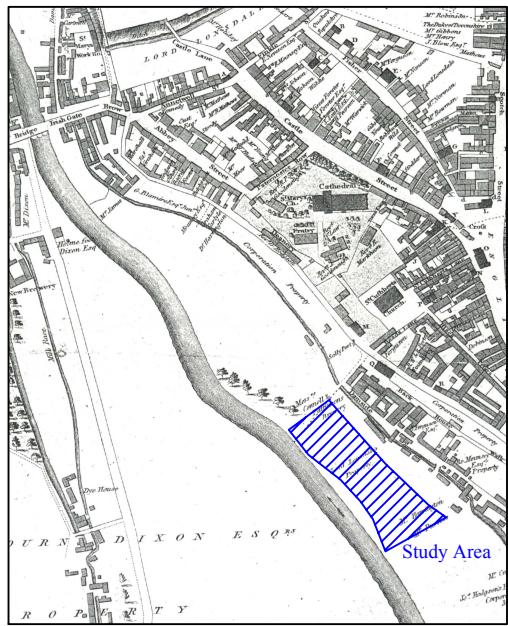


Fig 4 Wood plan of the City of Carlisle (1821)

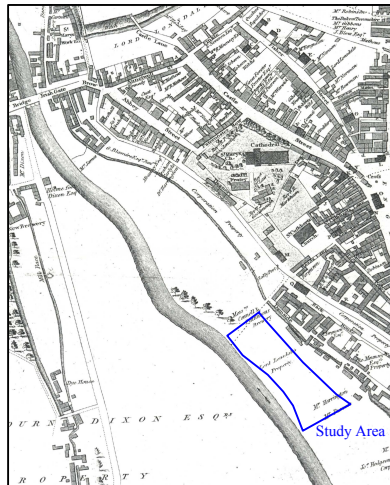


Fig 4 Wood plan of the City of Carlisle (1821)

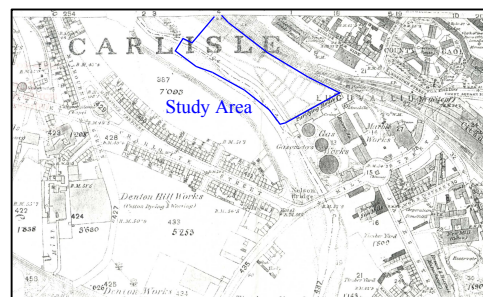


Fig 5 Ordnance Survey first edition 25" to 1 mile map (1865)

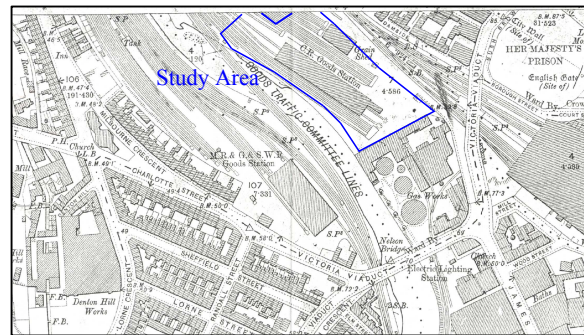


Fig 6 Ordnance Survey Second edition 25" to 1 mile map (1901)

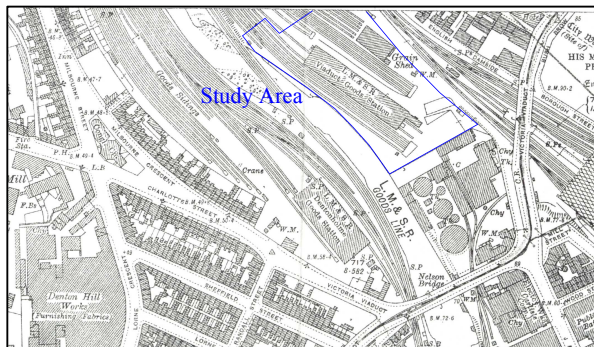


Fig 7 Ordnance Survey third edition 25" to 1 mile map (1925)

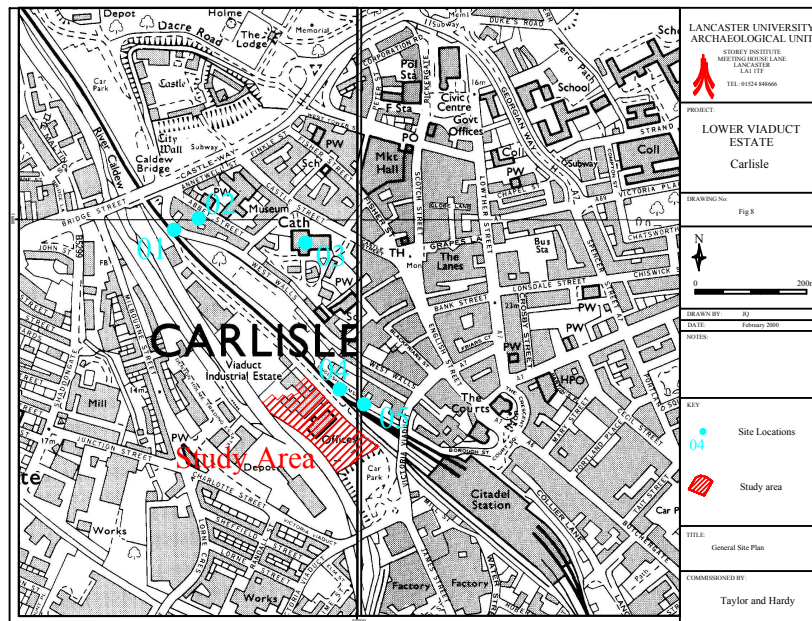


Fig 8: Lower Viaduct Estate Site Plan