

Lancaster Science Park



Lancaster City Council

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Archaeological and Cultural Heritage Desk-Based Assessment

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1.0 INTRODUCTION

This Archaeological and Cultural Heritage Desk Based Assessment has been prepared by Kirsten Holland, Senior Archaeologist, WYG on behalf of Lancaster City Council in support of an outline planning application for a Science Park (Use Class B1) with the details of means of access off A6, internal spine road and structural landscaping also provided. All other matters are reserved. The site occupies an area of 11.4 hectares.

The proposal will allow for the development of a high quality landscaped science park incorporating 34,000sq m of B1 floorspace. It is intended that the Science Park will become an internationally significant centre of excellence for knowledge based companies, knowledge and technology transfer, innovation, and commercialisation of intellectual property and know how. The site will include a purpose built Innovation Centre to support new and expanding knowledge based businesses, along with additional serviced sites and space.

1.1 AIMS AND OBJECTIVES

This study examines the cultural heritage potential of the proposed development site and the surrounding area. The aim of the study is to:

- Identify recorded cultural heritage sites within the site boundary
- Identify the potential for previously unrecorded sites to be present within the site
- Identify potential impacts and mitigation strategies where appropriate
- Make recommendations for further work where required.

Cultural heritage within this context includes all buried and upstanding archaeological remains, built heritage sites, historic landscapes and any other features that contribute to the archaeological and historic interest of the area.

In accordance with the IfA Standard definition of a Desk-Based Assessment (IfA 1994 rev 2001), this report seeks to identify and assess the known and potential historic resource within a specified area ('the site'), collating existing written and graphic information and taking full account of the likely nature and extent of previous impacts on the site, in order to identify the likely character, extent, quantity and worth of that resource in a local, regional and national context as appropriate.

The purpose of the desk-based assessment is to enable the cultural heritage resource to be assessed within its context and allow the formulation of one or more of the following:

- Formulation of a strategy to ensure the recording, preservation or management of the resource
- Formulation of a strategy for further investigation to permit a mitigation strategy or other response to be devised, where existing evidence is insufficient
- Formulation of proposals for further assessment work within a framework of research.



This desk-based assessment considers the cultural heritage potential within the site itself and the surrounding area. This assessment does not attempt to plot and review every archaeological find and monument; rather it aims to examine the distribution of evidence and to use this to predict the archaeological potential of the study area and the likely significance of the development proposals on those remains.

2.0 METHODOLOGY

2.1 ASSESSMENT METHODOLOGY

Impact assessment has been carried out through the consideration of baseline conditions in relation to the elements of the scheme that could cause cultural heritage impacts. Baseline conditions are defined as the existing environmental conditions and in applicable cases, the conditions that would develop in the future without the scheme. In accordance with best practice this report assumes that the scheme will be constructed, although the use of the word 'will' in the text should not be taken to mean that implementation of the scheme is certain.

No standard method of evaluation and assessment is provided for the assessment of impact significance upon cultural heritage, therefore a set of evaluation and assessment criteria have been developed using a combination of the Secretary of State's criteria for Scheduling Monuments (PPG16, Annex 3), Design Manual for Roads and Bridges, Volume 11, Part 3, Section 2, HA 208/07 and Transport Analysis Guidance (TAG Unit 3.3.9, Heritage of Historic Resources Sub-Objective). Professional judgement is used in conjunction with these criteria to undertake the impact assessment. The full assessment methodology can be seen in Appendix A.

The well established and applied principles of the impact assessment methodology rest upon independently evaluating the value of the cultural heritage resource and the predicted magnitude of impact (both positive and negative) upon the resource. By combining the value of the cultural heritage resource with the predicted magnitude of impact, the significance of the impact can be determined. The impact significance can be beneficial or adverse. The evaluation of magnitude of impact and impact significance is undertaken both before and after mitigation measures are proposed.

2.2 SOURCES CONSULTED

A study area of approximately 1.5km radius from the approximate centre of the proposed development site has been examined to assess the nature of the surrounding cultural heritage sites and place the recorded sites within their context.

This study has been undertaken taking into consideration the historical and archaeological background of the proposed development area. The sources consulted were:

- Lancashire Historic Environment Record (HER)



- National Monuments Record (NMR)
- English Heritage for designated sites
- Lancaster City Council for Conservation Areas
- Geological maps
- Geotechnical site investigation logs
- Historic mapping including relevant Ordnance Survey Maps
- Aerial photographs
- Appropriate documentary sources and archaeological journals, where available.

In addition to the above a site walkover survey was undertaken on 21st December 2008.

3.0 SITE DESCRIPTION

The proposed development site is located between the University of Lancaster to the south and Scotforth in the north. The site is centered on SD 4815 5810 (E:348150 N:45810) and is at approximately 50m above Ordnance Datum. The proposed development area is approximately 11.4ha. A site location plan can be seen in Appendix B (WYG Figure 01). Photographs of the site can be seen in Appendix C. The proposed development site is bounded to the west by the A6, to the south and east by agricultural land and to the north by Bailrigg Lane. The site is currently in agricultural use and is under pasture which is used for sheep grazing.

The proposal will allow for the development of a high quality landscaped science park incorporating 34,000sq m of B1 floorspace. It is intended that the Science Park will become an internationally significant centre of excellence for knowledge based companies, knowledge and technology transfer, innovation, and commercialisation of intellectual property and know how. The site will include a purpose built Innovation Centre to support new and expanding knowledge based businesses, along with additional serviced sites and space.

4.0 GEOLOGY

The underlying solid geology of the site is predominantly shaley siltstone and mudstone with interbedded sandstone and siltstone beds (Capita, 2003). This solid geology is overlain by stoney, clayey silt (Glacial Till) across the majority of the site. The far east of the site is occupied by Laucastine Deposits of silt and clay with silty layers, and the road and railway corridor in the west of the site is composed of Older Alluvium deposits of silt, sand and gravel (BGS, 1995). Two drumlins (elongated mounds of glacially deposited material) occupy the site trending in a north-south direction. Site investigations were undertaken by Capita in 2003 and the results are discussed in Section 11.



5.0 LEGISLATION AND PLANNING POLICY CONTEXT

5.1 ANCIENT MONUMENTS AND ARCHAEOLOGICAL AREAS ACT 1979

Scheduled Monuments are designated by the Secretary of State for Culture, Media and Sport on the advice of English Heritage as selective examples of nationally important archaeological remains. Under the terms of Part 1 Section 2 of the Ancient Monuments and Archaeological Areas Act 1979 it is an offence to damage, disturb or alter a Scheduled Monument either above or below ground without first obtaining permission from the Secretary of State. This Act does not allow for the protection of the setting of Scheduled Monuments.

5.2 PLANNING (LISTED BUILDINGS AND CONSERVATION AREAS) ACT 1990

The Act outlines the provisions for designation, control of works and enforcement measures relating to Listed Buildings and Conservation Areas. Section 66 of the Act states that the planning authority must have special regard to the desirability of preserving the setting of any Listed Building that may be affected by the grant of planning permission. Section 72 of the Act states that special attention shall be paid to the desirability of preserving or enhancing the character or appearance of Conservation Areas.

5.3 PLANNING POLICY GUIDANCE 16: PLANNING AND ARCHAEOLOGY - 1990

PPG16 sets out the government's policy with respect to archaeology and planning. If development is likely to impact upon archaeological remains the guidance stresses the need for early consultation between developers and planning authorities plus the need for an archaeological assessment to be carried out early on in the process. Where nationally important remains, whether scheduled or not, and their setting are adversely affected by proposed development there should be a presumption in favour of their preservation. Where important archaeological remains may exist, field evaluation can help to define the character and extent of the remains and so assist in identifying potential options for minimising or avoiding damage. In cases involving archaeological remains of lesser importance the planning authority will need to weigh the relative importance of the archaeology against other factors, including the need for the proposed development. Where it is not feasible to preserve remains, an acceptable alternative may be to arrange prior excavation and recording of archaeological remains and the publication of the results by means of granting planning permission subject to a negative condition.

5.4 PLANNING POLICY GUIDANCE 15: PLANNING AND THE HISTORIC ENVIRONMENT - 1994

PPG15 emphasises the importance that the Government gives to preserving and enhancing Conservation Areas, Listed Buildings and their settings and other aspects of the historic environment including Registered Parks and Gardens, World Heritage Sites and the wider historic landscape.

5.5 REGIONAL POLICY AND GUIDANCE

The Regional Spatial Strategy for the North West of England contains one policy relevant to heritage. Policy EM1 (C) states a commitment to protecting, conserving and enhancing heritage and supporting heritage led regeneration. The full text of the policy can be seen in Appendix D.

5.6 LOCAL POLICY AND GUIDANCE

The Lancaster District Local Plan (adopted April 2004) contains several policies relating to heritage:

- E32, E33 and E34 Listed Buildings;
- E35, E36, E37, E38 and E39 Conservation Areas;
- E44, E45 and E46 Archaeological Remains.

The proposals will not directly affect any Listed Buildings or Conservation Areas therefore these policies are not considered further. The full text of the policies relating to archaeological remains can be seen in Appendix D.

The local plan does not include a specific policy relating to the preservation setting of Listed Buildings, however the plan does state the Council will seek to preserve the setting of Listed Buildings through appropriate control of factors such as design, use of land, traffic management and retention of landscape features. The proposals will affect the setting of Bailrigg House, a Grade II Listed Building. The impacts and mitigation are considered in Sections 12 and 13.

The Local Development Framework Core Strategy (adopted July 2008) contains one policy with relevance to cultural heritage. Policy E1 seeks to improve the District's environment, including through the preservation, conservation and promotion of Listed buildings, conservation areas, archaeological remains and areas of historic character. The full text of the policy can be seen in Appendix D.

Supplementary planning guidance has been adopted for the proposed development site (known as the Bailrigg Business Park site in the document). Within this document it states that whilst there are no recorded archaeological remains on the site there is recorded archaeology in the vicinity of the site. The SPG states that the County Archaeology Service will be consulted on proposals and that the development will have to satisfy the requirements of local plan policies E44-E46.

6.0 CONSULTATION

Consultation was undertaken with the Lancashire Historic Environment Record, English Heritage and Lancashire Archives for the provision of data for this report. Further consultation was undertaken with Lancashire County Council Archaeology Service (Doug Moir, 12/02/09) regarding the proposed development, its impact upon cultural heritage and mitigation strategies in their role as Archaeological Advisor to the local planning authority. The results of these consultations are integrated into the report as appropriate.

7.0 BASELINE DATA

7.1 DESIGNATED SITES

There are no World Heritage Sites, Scheduled Monuments, Registered Parks and Gardens, Registered Battlefields, Registered Common Land or Conservation Areas within the study area.

There are twelve Listed Buildings within the 1.5km radius study area. The buildings include three bridges, three boundary or milestones and six residential and farmhouses. All of the buildings are designated as Grade II Listed features. Details of these buildings can be seen in Appendix E and their locations are shown on WYG Figure 02.

7.2 ARCHAEOLOGICAL AND HISTORIC BACKGROUND

The National Monuments Record holds details for thirteen sites and Lancashire Historic Environment Record hold details for a further 26 sites within the study area. Further details of these sites can be seen in Appendix E and on WYG Figure 02.

7.2.1 Prehistoric (up to 43AD)

The study area would not have been inhabitable before approximately 10,000BC when the last glaciation came to an end. The glaciation is largely responsible for the landscape form where retreating glaciers left elongated mounds of glacial sands, gravels and clays known as drumlins which dominate the study area and wider region. During the Mesolithic period the region is anticipated to have been a tundra landscape which was inhabited by hunter-gatherers moving between different environments in search of game and natural resources to exploit. The majority of the archaeological evidence from this period has been recorded in locations where different environments and ecosystems converge (Winchester, 2006). Environmental evidence indicates woodland clearance in the Neolithic in the coastal areas of Lancashire was less intense than much of the region and therefore impacts upon the landscape less noticeable. This has partly been ascribed to lower population levels than some of the surrounding region (Winchester, 2006). There are no recorded archaeological sites from the early prehistoric period in the study area, however this may be due to occupation being at levels which are not archaeologically visible, rather than a lack of occupation.

There is a record of a possible Bronze Age logboat having been recovered during the construction of Blea Tarn Reservoir in 1897 (Site 15). The boat was formed of a hollowed out single tree and the remains of a rudder were also recorded. There is also circumstantial evidence of a Bronze Age barrow as a group of fields and former settlement are named as "Burrow" on the 1841 tithe map (Site 46), however this has not been confirmed through field investigation.

Research in the wider region indicates that there was extensive occupation of upland areas in the early Bronze Age, but a deteriorating climate in the late Bronze Age pushed settlement back into the lowland areas (Winchester, 2006). The lack of other Bronze Age sites in the area may be as a result of low

occupation levels, or that occupation has not been recorded due to the relatively lack of modern, archaeologically monitored development.

During the Iron Age the region fell within the domain of the Brigantian tribal area. There is evidence from across the region of widespread deforestation which is assumed to correlate with an increase in population (Winchester, 2006). Within the study area there is excavated evidence of an enclosure with a cobbled surface, which although probably dating to the Roman period, may have earlier origins. There is an Iron Age field system which is considered likely to have continued in use into the Roman period at the same site (Site 17). There is also evidence of a potential Iron Age or Romano-British farmstead identified from cropmark evidence (Site 26). The cropmark is sub-circular and appeared to have been divided by banks.

7.2.2 Roman/Romano British (43AD to c.450AD)

The density of Roman settlement within the region surrounding the study area is relatively low (Ordnance Survey, 1994). There was a Roman fort at Lancaster and the road to Preston from the fort passes through the study area (Site 23 and 40), although the exact alignment of the road is unknown. Two Roman milestones have been recorded within the study area (Site 19) and the findspot of a coin may represent a casual loss (Site 18).

There are two potential settlement sites within the study area from the Roman period. One site has been identified from cropmark evidence but has not been excavated and therefore its interpretation and date remains uncertain. It may have had its origins in the Iron Age (Site 26).

The other potential settlement site is an excavated enclosure with a cobbled surface. This has an associated Iron Age field system with it which may indicate a farmstead which continued in use from the Iron Age (Site 17). It has been suggested as a potential mausoleum due to its location close to the line of the Roman road. This interpretation has also been supported by the recovery of four over life-size human heads, a female statue and two 'lions' during construction of the Lancaster Canal in the late 18th century (Site 13), although there has been debate over whether the reported location of their recovery was accurate.

7.2.3 The Early Medieval Period (c.450AD to 1066AD)

There is a general lack of information relating to the early medieval period in the north-west region. This is exemplified by the study area where there is no recorded evidence for archaeological occupation. There is environmental evidence that there was substantial regeneration of woodland after the collapse of Roman rule which may indicate a decrease in population. It is likely that, until the 7th century when much of the region was absorbed by the kingdom of Northumbria, the area was occupied by British tribal groups of kingdoms (Winchester, 2006).

It can be inferred that the settlement at Scotforth has early medieval origins as the village is recorded in the Domesday Book as *Scozford*. This is derived from the Old English *Scot* and *ford* meaning 'ford used



by the Scots'. There may also be an Old Scandinavian element of *sk-* which could indicate that there were influences from this group as well (Mills, 2003). It is probable that settlement and occupation of the study area and immediate region continued through the early medieval period, however it is likely that this was in the form of isolated farmsteads which are yet to be identified in the archaeological record.

7.2.4 Medieval Period (1066 AD to c.1540AD)

The manor of Scotforth was assessed as being two plough lands when it was granted to Roger de Poitou after the Norman invasion. It later passed to the Lancaster family and was passed through successive generations, but was eventually split up between smaller landowners. Bailrigg was a hamlet in the township of Scotforth in the medieval period and was partly owned by Cockersand Abbey.

Ashton Hall is located outside of the study area to the west, however its deer park and grounds stretch into the study area (Site 16), although they do not encompass the proposed development site. There may be features associated with this deer park such as boundaries and land management evidence. The only other recorded archaeological site in the study area is the findspot of a lead case which contained a hoard of silver pennies dated 1154 (Site 22). This is likely to have been buried for safekeeping and never retrieved.

7.2.5 Post Medieval (c.1540AD to 1900AD) and Modern (1900AD to present)

The recorded heritage of the study area is dominated by remains of the post-medieval period. These remains have been largely identified from historic mapping and incorporated into the Historic Environment Record.

Several field names have been recorded from the tithe map of the area which may indicate former landuses. Amongst these are Wind Mill Hill (Site 44), Killen Close which may indicate the site of a kiln (Site 47) and Sandy Dyke Meadow indicating drainage features (Site 27) and Pit Field indicating quarrying (Site 42). These potential landuses have not been confirmed through field survey. Analysis of historic mapping has also led to the identification of numerous quarries and gravel pits (Sites 33, 37, 38 and 42) within the study area representing small scale extraction to satisfy what was probably a local economic need. A number of mileposts (Site 36), milestones (Sites 5 and 39) and parish boundary stones (Sites 6 and 10) are also documented, some of which are designated as Listed Buildings.

Transport connections improved within this area in the post-medieval period. The Lancaster and Preston railway (Site 24) passed through the study area, but the nearest station was at Galgate (Site 35). Whilst the railway may have acted as a catalyst for development in Galgate, it did not have a significant effect upon the proposed development site or its immediate surroundings. The Liverpool canal (Site 25) was constructed in the late 18th and early 19th century, but closed in the 20th century and now remains largely as an earthwork.

A number of earthworks have been assigned a post-medieval origin in the study area. These include ridge and furrow (Site 49) and quarry features (31). Other earthworks have not been assigned to a

specific period but may also be of post-medieval date including a former copse or enclosure (Site 30) and cultivation terraces and field boundaries (Site 32).

The remaining post-medieval sites are largely built heritage remains. These include the Listed Buildings which are primarily residential houses (Sites 2, 3, 8, 9, 11 and 12) and bridges (Sites 1, 4, 7 and 50), the Bowling Green Hotel (Site 14) and other boundary walls and ruins (Sites 48 and 51).

There are no significant heritage features of modern date within the study area. The study area has remained largely rural in the modern period with the greatest alteration being the construction of the University of Lancaster to the south of the proposed development site.

8.0 HISTORIC MAPPING SURVEY

Extracts of selected historic maps can be seen in Appendix F with the location of the proposed development site indicated. Some Ordnance Survey maps show few changes and have therefore not been reproduced in this report. The earliest mapping examined was Saxton's map of Lancashire (1577). Scotforth was shown on the map as *Scotforde*, and Ashton Park was depicted, however the scale of map meant that no detail could be identified regarding the site or its immediate surroundings. The map of the County Pallatine of Lancaster, Described and Divided into Hundreds (1610) was also at a scale that means no detail regarding the site could be identified, although Scotforth and Ashton Park were both depicted.

The Enclosure map for Scotforth (1809) was examined, however the map covered an area to the north-east of the proposed development site. Scotforth Commons were located in the vicinity of Blea Tarn reservoir and Langthwaite. It is unclear whether the proposed development site therefore lay in an area of land which was already enclosed, or whether it was enclosed at a later date outside of the Enclosure Act procedures.

The Scotforth tithe map (1841) depicted the proposed development site and its surrounding area. The western and northern boundaries of the site are the same, however the modern southern and eastern field boundaries do not correlate with this field layout. The WYG walkover survey identified denuded earthworks which appear to broadly correlate with the field boundaries indicated on this map. Ou Beck broadly followed its current alignment through the development site. The village of Bailrigg was extant and the Lancaster and Preston railway is also shown.

The location of the existing pond and woodland to the south of the proposed development area is shown. This field was known as Pit Field and therefore it appears that the small scale quarry pit was already disused by this date. None of the other field names provide information that may indicate a previous land use in antiquity. The tithe apportionment indicated that the study area was utilized for a mix of pasture, meadow and arable cultivation. Whilst most of the proposed development site was recorded as meadow the south-west of the site was under arable cultivation.

The first edition 6" to 1 mile Ordnance Survey mapping (1848) shows few changes to the proposed development site and study area compared to the tithe mapping. The mapping for both 25" to 1 mile (1891) and 6" to 1 mile (1895) also demonstrates few changes have occurred to the site and study area through the remainder of the 19th century.

The most significant change to the proposed development site had occurred by the early 20th century when the former field layout was removed and the extant field pattern was established. Hatching of the proposed development area and scattered trees, on the 6" to 1 mile OS map indicated that the proposed development site formed part of the park and gardens to Bailrigg House which had been built on the ridge to the south-east of the site. Unfortunately this hatching is not clear on the mapping which could be reproduced in this report (Appendix F).

A tennis court was shown on OS mapping of 1932 date in the north-western corner of the site. This tennis court had been removed by 1938 and the substation had been constructed. Relatively few changes occurred in the study area over the next twenty years with the exception of the urban growth of Scotforth in the north which started to expand south. The late 1960s and early 1970s witnessed further urban growth of Scotforth in the north and the establishment of the University of Lancaster and associated sports fields to the south of the development area. Bailrigg House has been incorporated into the University campus.

9.0 AERIAL PHOTOGRAPHS

A selection of aerial photographs, held by the National Monuments Record, covering the proposed development site were examined. A list of the photographs can be seen in the Bibliography. Modern satellite imagery was also examined (www.maps.google.co.uk). No sites or features of potential archaeological interest were identified from the historical photographs or the modern satellite image. The photographs demonstrate that the area has remained under pasture since the 1940s and that the substation in the west of the main field has been present since this period.

The earthwork features observed during the WYG walkover survey were not visible on the aerial photographs examined. This may be due to the denuded nature of the earthworks, which would not be visible on aerial photographs except under optimum conditions.

10.0 SITE WALKOVER SURVEY

A site walkover survey was undertaken on 22nd December 2008. The weather was dry and overcast. Photographs of the site can be seen in Appendix C. The site currently under pasture and used for grazing sheep. The field boundaries are a mix of hedgerows, a short section of wall adjacent to the A6, woodland strip and post and wire fences. There is a modern substation located on the west boundary of the proposed development area.



Evidence of former field boundaries and ridge and furrow remains were identified within the proposed development site during the walkover survey. The former field boundaries and ridge and furrow are visible as denuded earthworks in the western field. The ridge and furrow was aligned east-west and respected the field boundaries visible as earthworks indicating that they are contemporary. The earthworks were most visible when viewed from across the field becoming less visible once among them. These earthworks demonstrate a broad correlation with the identified field layout on the tithe and first edition Ordnance Survey mapping.

No evidence of archaeological features was identified within the eastern field of the development site. Ou Beck runs through the site. There is evidence that the sides of the beck have been stabilized in the past as hardcore material is visible in the sides of the banks in several locations.

The character of the proposed development site can be described as containing features typical of open parkland associated with a country house. Despite the topography the site generally feels open and the scattered mature trees are typical of a parkland character. The historic mapping indicates that the proposed development site once formed part of the parkland associated with Bailrigg House. There is still a visual and contextual connection with Bailrigg House on the ridge to the south-east the proposed development site.

Much of the surrounding area is used for agriculture, predominantly under pasture for grazing. There are sports pitches located to the south of the proposed development which form part of the University of Lancaster campus. The village of Bailrigg is located to the north-east of the proposed development area.

11.0 GEOENVIRONMENTAL INVESTIGATION RESULTS

Geoenvironmental site investigations were undertaken by Capita in 2003 (Capita, 2003) and the results are summarised here. Seven test pits were excavated across the proposed development area. Two of the test pits (TP01 and TP06) were located on the pavement to the west of the site to aid in the location of services. A plan (prepared by Capita) showing the location of the site investigations can be seen in Appendix G.

Across the proposed development site the results generally indicate the presence of silty topsoil from depths below ground level of 0.15m to 0.25m. Made ground was recorded in the test pits located on the pavement. The topsoil is underlain by glacial till (largely silty sands and silty clays with gravel inclusions).

| Trial pit | Depth of topsoil (mbgl) | Depth of made ground (mbgl) | Depth of glacial till (mbgl) |
|-----------|-------------------------|-----------------------------|------------------------------|
| 1 | Not encountered | 1.15 | Not encountered |
| 2 | 0.20 | Not encountered | 0.20 – 3.20 |
| 3 | 0.25 | Not encountered | 0.25 – 2.60 |
| 4 | 0.15 | Not encountered | 0.15 – 3.20 |
| 5 | 0.20 | Not encountered | 0.20 – 3.40 |
| 6 | Not encountered | 0.32 | 0.32 – 1.10 |
| 7 | 0.15 | Not encountered | 0.15 – 3.00 |

Whilst the test pits were not archaeologically monitored the test pits logs do not record any inclusions which may indicate archaeological artefacts or features were present.

12.0 ARCHAEOLOGICAL POTENTIAL AND IMPACT ASSESSMENT

The only recorded archaeological sites within the proposed development area are the earthwork remains of former field boundaries and ridge and furrow identified during the walkover survey. The date of these remains is uncertain, although they correlate with the documented field pattern in the mid 19th century. It is possible that the layout dates from the medieval or early post-medieval period. These remains are considered to be of importance only in a local context and therefore of low archaeological value. It is probable that any development on the site would remove these remains representing a substantial negative impact. The significance of this impact without mitigation would be considered intermediate-minor adverse.

The proposed development area retains much of the character of its previous incarnation of parkland associate with Bailrigg House. The site retains scattered parkland trees and a visual connection can still be made with Bailrigg House on the ridge to the south-west of the site. Whilst the site is no longer directly associated with the house and divorced from it by the University sports fields, the overall context and association can still be understood. It is considered that the historic landscape and setting of Bailrigg House, a Grade II Listed Building, is considered to be of medium cultural heritage value. The nature of the impact can not be identified confidently as there are currently no firm proposals with regard to the site layout, massing, materials or design. It is anticipated at this stage that the development within the site would have a moderate or slight negative impact upon the setting and context of the historic landscape character. The significance of impact without mitigation measures would be intermediate to minor adverse.

There is a moderate potential that previously unrecorded archaeological remains may be discovered within the proposed development site. These remains are most likely to date from the late prehistoric (i.e. Bronze or Iron Age) or Roman periods. This assessment is based upon the presence of other sites in the study area, particularly to the west of the proposed development site. The type of site is most likely

to be field patterns or other agricultural remains associated with the documented settlement sites in the study area. Further settlement sites can not however be ruled out. It is not anticipated that sites of early medieval and later date will be recorded within the site as the location of settlement sites is predicted to have been focused upon the extant villages and the possible deserted settlement of Great Skelsborough (Site 45). The value and magnitude of impact upon unrecorded archaeological remains can not be quantified, however it is anticipated any remains may be of medium to low value and the impact upon them without mitigation could be substantial negative.

13.0 EVALUATION AND MITIGATION

The principles of this evaluation and mitigation strategy have been agreed with Doug Moir, Lancashire County Archaeologist (12/02/09).

It is proposed that a programme of evaluation is implemented for the proposed development site to reduce the potential of discovering previously unrecorded archaeological remains and allow an informed mitigation strategy for the site to be implemented. This programme of evaluation and mitigation should be undertaken at the reserved matters stage or prior to the submission of a full planning application for the development. Where archaeological remains are identified consideration will be given to the potential to preserve remains *in situ* through mitigation embedded in the development design, such as altering the design layout, foundation design etc. although this is not always possible due to other factors.

The variable geology on the site and the extant earthworks means that geophysical survey may not be suitable as archaeological remains underlying the earthworks may be masked (TS Harrison, *pers. comm.*). It is proposed in the first instance that a trial magnetometer survey of the site be undertaken to determine whether a full survey of the site will be an effective evaluation method. This trial survey should examine several areas of the site to investigate local variation in geology, topography and earthwork coverage.

The results of subsequent evaluation will be dependent upon the results of the trial survey. Should it be an effective method of evaluation, a full geophysical survey of the proposed development site is recommended. This should allow the remains of extant earthworks to be recorded, buried remains of ridge and furrow and field boundaries that are no longer visible and archaeological remains which underlie this phase of archaeological use.

Subsequent to a geophysical survey further evaluation and mitigation may be required on the proposed development site. This may include targeted evaluation excavations to characterise geophysical anomalies and to check whether archaeological remains are present in areas which appeared to be 'blank' on the geophysical survey. Should geophysical survey not be an appropriate method of evaluation a greater proportion of the site may have to be subject to evaluation excavation to adequately reduce the potential for unrecorded archaeological remains to be discovered and enable an appropriate mitigation strategy to be formulated. These evaluation excavations would also excavate and record



selected areas of the extant earthworks and any associated buried remains of the 19th century field system.

The final mitigation strategy for the site may include, but not be limited to, excavation of selected areas in advance of construction where previously unrecorded archaeological remains have been identified, or a watching brief during the initial construction phases where it is considered there is still a potential for previously unrecorded archaeological remains to be discovered. This programme of evaluation and mitigation may reduce the magnitude of impact to slight negative, and therefore the significance of impact may be reduced to minor adverse to neutral. The programme of evaluation and mitigation will be determined by the results of each phase.

It is also recommended that as the design of the proposed development progresses that consideration is given to designing a development which minimises the potential impact upon the setting of the historic landscape character and setting of Bailrigg House. This may be achieved through identifying materials, density of development and layout which are not at odds with the landscape character. The proposed landscape masterplan includes planting proposals along the eastern boundary of the site which would partially screen the development and which reduces the potential magnitude of impact. It is also currently proposed that no buildings will be located to the south or east of Ou Beck. It is anticipated that the landscape design will reduce the potential magnitude of impact to slight negative, reducing the significance of impact to minor adverse. It is not anticipated that the impacts can be completely mitigated or removed.

All evaluation and mitigation measures should be developed in consultation with the County Archaeology Service. All archaeological fieldwork should be undertaken in accordance with a Written Scheme of Investigation agreed in advance with the County Archaeology Service.



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Historic Mapping

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- Scotforth Enclosure Map and Award, 1809 Ref: AE 5/11
- Scotforth Tithe Map and Award, 1841 Ref: DRB 1/173
- Ordnance Survey Mapping 25" to 1 mile/1:2500 1891, 1912, 1932, 1938, 1957, 1994
- Ordnance Survey Mapping 6" to 1 mile/1:10,560 1848, 1895, 1914, 1933, 1955, 1962
- Ordnance Survey Mapping 1:10,000 1973, 1983, 2001, 2008

Aerial Photographs

| Sortie number | Library number | Frame number | Centre point | Run | Date | Scale 1: |
|------------------|----------------|--------------|--------------|-----|-------------|----------|
| RAF/106G/UK/1487 | 280 | 4379 | SD 483 588 | 29 | 09 MAY 1946 | 10000 |
| RAF/CPE/UK/2610 | 839 | 4016 | SD 483 594 | 10 | 26 APR 1948 | 12000 |
| RAF/58/B/28 | 893 | 5193 | SD 482 586 | 10 | 10 MAY 1948 | 5000 |
| MAL/67069 | 4627 | 146 | SD 481 582 | 1 | 20 JUL 1967 | 3000 |
| OS/75048 | 9803 | 37 | SD 481 583 | 2 | 27 APR 1975 | 7500 |
| OS/68153 | 11340 | 138 | SD 485 580 | 8 | 29 MAY 1968 | 7500 |



Appendix A – Assessment Methodology

Cultural Heritage Impact Assessment Methodology

No standard method of evaluation and assessment is provided for the assessment of significance of effects upon cultural heritage, therefore a set of evaluation and assessment criteria have been developed using a combination of the Secretary of State's criteria for Scheduling Monuments (PPG16, Annex 3), Design Manual for Roads and Bridges, Volume 11, Part 3, Section 2, HA 208/07 and Transport Analysis Guidance (TAG Unit 3.3.9, Heritage of Historic Resources Sub-Objective). Professional judgement is used in conjunction with these criteria to undertake the impact assessment.

Value

The table below provides guidance on the assessment of cultural heritage value on all archaeological sites and monuments, historic buildings, historic landscapes and other types of historical site such as battlefields, parks and gardens, not just those that are statutorily designated.

| Value | Examples |
|-----------|---|
| Very High | World Heritage Sites, Scheduled Monuments of exceptional quality, or assets of acknowledged international importance or can contribute to international research objectives Grade I Listed Buildings and built heritage of exceptional quality Grade I Registered Parks and Gardens and historic landscapes and townscapes of international sensitivity, or extremely well preserved historic landscapes and townscapes with exceptional coherence, integrity, time-depth, or other critical factor(s) |
| High | Scheduled Monuments, or assets of national quality and importance or than can contribute to national research objectives Grade II* and Grade II Listed Buildings, Conservation Areas with very strong character and integrity, other built heritage that can be shown to have exceptional qualities in their fabric or historical association. Grade II* and II Registered Parks and Gardens, Registered Battlefields and historic landscapes and townscapes of outstanding interest, quality and importance, or well preserved and exhibiting considerable coherence, integrity time-depth or other critical factor(s) |
| Medium | Designated or undesignated assets of regional quality and importance that contribute to regional research objectives Locally Listed Buildings, other Conservation Areas, historic buildings that can be shown to have good qualities in their fabric or historical association Designated or undesignated special historic landscapes and townscapes with reasonable coherence, integrity, time-depth or other critical factor(s) Assets that form an important resource within the community, for educational |

| Value | Examples |
|------------|---|
| | or recreational purposes. |
| Low | <p>Undesignated assets of local importance</p> <p>Assets compromised by poor preservation and/or poor survival of contextual associations but with potential to contribute to local research objectives.</p> <p>Historic (unlisted) buildings of modest quality in their fabric or historical association</p> <p>Historic landscapes and townscape with limited sensitivity or whose sensitivity is limited by poor preservation, historic integrity and/or poor survival of contextual associations.</p> <p>Assets that form a resource within the community with occasional utilisation for educational or recreational purposes.</p> |
| Negligible | <p>Assets with very little or no surviving cultural heritage interest.</p> <p>Buildings of no architectural or historical note.</p> <p>Landscape and townscape that are badly fragmented and the contextual associations are severely compromised or have little or no historical interest.</p> |

Magnitude

The magnitude of the potential impact is assessed for each site or feature independently of its archaeological or historical value. Magnitude is determined by considering the predicted deviation from baseline conditions. The magnitude of impact categories are adapted from the Transport Assessment Guidance (TAG Unit 3.3.9) and Design Manual for Roads and Bridges, Volume 11, Part 3, Section 2, HA 208/07.

| Magnitude of Impact | Typical Criteria Descriptors |
|---------------------|---|
| Substantial | <p>Impacts will damage or destroy cultural heritage assets; result in the loss of the asset and/or quality and integrity; cause severe damage to key characteristic features or elements; almost complete loss of setting and/or context of the asset. The assets integrity or setting is almost wholly destroyed or is severely compromised, such that the resource can no longer be appreciated or understood. (Negative)</p> <p>The proposals would remove or successfully mitigate existing damaging and discordant impacts on assets; allow for the restoration or enhancement of characteristic features; allow the substantial re-establishment of the integrity, understanding and setting for an area or group of features; halt rapid degradation and/or erosion of the heritage resource, safeguarding substantial elements of the heritage resource. (Positive)</p> |
| Moderate | Substantial impact on the asset, but only partially affecting the integrity; partial loss of, or damage to, key characteristics, features or elements; substantially |

| Magnitude of Impact | Typical Criteria Descriptors |
|------------------------|---|
| | <p>intrusive into the setting and/or would adversely impact upon the context of the asset; loss of the asset for community appreciation. The assets integrity or setting is damaged but not destroyed so understanding and appreciation is compromised. (Negative)</p> <p>Benefit to, or restoration of, key characteristics, features or elements; improvement of asset quality; degradation of the asset would be halted; the setting and/or context of the asset would be enhanced and understanding and appreciation is substantially improved; the asset would be bought into community use. (Positive)</p> |
| Slight | <p>Some measurable change in assets quality or vulnerability; minor loss of or alteration to, one (or maybe more) key characteristics, features or elements; change to the setting would not be overly intrusive or overly diminish the context; community use or understanding would be reduced. The assets integrity or setting is damaged but understanding and appreciation would only be diminished not compromised. (Negative)</p> <p>Minor benefit to, or partial restoration of, one (maybe more) key characteristics, features or elements; some beneficial impact on asset or a stabilisation of negative impacts; slight improvements to the context or setting of the site; community use or understanding and appreciation would be enhanced. (Positive)</p> |
| Negligible / No Change | <p>Very minor loss or detrimental alteration to one or more characteristics, features or elements. Minor changes to the setting or context of the site. No discernible change in baseline conditions (Negative).</p> <p>Very minor benefit to or positive addition of one or more characteristics, features or elements. Minor changes to the setting or context of the site No discernible change in baseline conditions. (Positive).</p> |

Magnitude (scale of change) is determined by considering the predicted deviation from baseline conditions. Quantifiable assessment of magnitude has been undertaken where possible. In cases where only qualitative assessment is possible, magnitude has been defined as fully as possible.

During the assessment any embedded mitigation has been considered in the impact assessment and this is clearly described in this section (cross referring the development description). Therefore, the magnitude of the impacts described herein will be stated before and after additional mitigation has been taken into consideration.

Impacts may be of the following nature and will be identified as such where relevant:

- Negative or Positive.
- Direct or indirect.
- Temporary or permanent.
- Short, medium or long term.
- Reversible or irreversible.
- Cumulative.

Significance

By combining the value of the cultural heritage resource with the predicted magnitude of impact, the significance of the effect can be determined. This is undertaken following the table below. The significance of effects can be beneficial or adverse.

| Significance of Effects | Magnitude of Impact | | | |
|-------------------------|----------------------|----------------------|----------------------|------------------------|
| | Substantial | Moderate | Slight | Negligible / No Change |
| Very High | Major | Major – Intermediate | Intermediate | Minor or Neutral |
| High | Major – Intermediate | Intermediate | Intermediate – Minor | Neutral |
| Medium | Intermediate | Intermediate | Minor | Neutral |
| Low | Intermediate – Minor | Minor | Minor – Neutral | Neutral |
| Negligible | Minor | Minor – Neutral | Neutral | Neutral |

Significance should always be qualified as in certain cases an effect of minor significance could be considered to be of great importance by local residents and deserves further consideration. To aid in the assignment of significance the following significance criteria have been developed to enable effective and transparent discrimination between categories.

The significance of effect is considered both before and after additional mitigation measures proposed have been taken into account.

Level of Confidence

Given that predictions can only be as accurate as the data they are based on it is important to attribute a level of confidence to which the significance of cultural heritage effects has been assessed. The table below defines the confidence levels referred to in this report.



| Confidence Level | Description |
|------------------|---|
| High | The significance of the cultural heritage effect is an informed estimate likely to be based on reliable data or subjective judgement with reference to similar schemes. Further information would not result in any change to assessment of significance. |
| Low | The significance of the cultural heritage effect is a best estimate likely to be based on subjective judgement without reference to similar schemes. Further information would be needed to confirm assessment of significance. |



Appendix B – Site Location Plan



FILENAME: I:\PROJECTS\A050877\A050877-1401-597-01 SITE LOCATION PLAN.DWG | PLOTTED BY: PAUL CHAPLIN | PLOTTED DATE: 14 January 2023 15:23:23

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| 1 | PMNC | 14/01/23 | KRH | 14/01/23 | PH |
| 1 | Project No. | Office | Type | Drawing No. | Revision |
| 1 | A050877 | 4104 | 597 | 01 | |

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Client:
LANCASTER CITY COUNCIL

Project: A050877
LANCASTER UNIVERSITY
DESK-BASED CULTURAL
HERITAGE ASSESSMENT

Drawing Title:
SITE LOCATION PLAN



Appendix C – Site Photographs



Photograph 1: East-west aligned ridge and furrow in west of proposed development site



Photograph 2: Fieldbank and ridge and furrow in west of proposed development site



Photograph 3: Ou Beck facing south-west



Photograph 4: Central area of site with ridge and furrow and former fieldbanks, facing north-west



Photograph 5: Central area of the site with ridge and furrow remains, facing north-east



Photograph 6: Eastern area of the site, facing south-east



Photograph 7: Modern electricity sub-station



Appendix D – Planning Policies

North West of England Plan. Regional Spatial Strategy to 2021

Policy EM1 (C): Historic Environment

Plans, strategies, proposals and schemes should protect, conserve and enhance the historic environment supporting conservation-led regeneration in areas rich in historic interest, and in particular exploiting the regeneration potential of:

- the maritime heritage of the North West coast including docks and waterspaces, and coastal resorts and piers;
- the Pennine textile mill-town heritage that exists in East Lancashire and Greater Manchester; and the textile mill-town heritage of East Cheshire;
- Victorian and Edwardian commercial developments in Liverpool and Manchester city centres;
- the traditional architecture of rural villages and market towns of Cumbria, Cheshire and Lancashire;
- the historic Cities of Carlisle, Chester and Lancaster; and
- the Lake District Cultural Landscape.

Lancaster District Local Plan Strikethrough Edition, 2008

Policy E44

In determining applications for development, the City Council will take into account archaeological considerations and the need to safeguard important sites from damage or destruction.

Development proposals which would have an adverse impact on the site or setting of a Scheduled Ancient Monument or other monument of national importance will not be permitted

Policy E45

The City Council will protect other sites of archaeological significance.

When development affecting such sites is acceptable in principle, the Council will seek to ensure mitigation of damage through preservation of the remains in situ as a preferred option.

When in situ preservation is not justified, the developer will be required by planning condition or legal agreement to make adequate provision for investigation and recording before or during development

Policy E46

Where development proposals affect sites of known or possible archaeological interest, the City Council will require an archaeological assessment and/or evaluation to be submitted as part of the planning application.

Planning permission will not be granted without adequate assessment of the nature, extent and significance of the remains present and the degree to which the proposed development is likely to affect them

Lancaster District Core Strategy, Facsimile Edition ,July 2008.

Policy E1 Environmental Capital

Purpose; To improve the District's Environment ;

The Council will safeguard and enhance the District's Environmental Capital by applying national and regional planning policies and;

- Protecting and enhancing nature conservation sites, urban greenspaces, allotments, landscapes of national importance, listed buildings, conservation areas and archaeological sites;
- Protecting the North Lancashire Green Belt;



- Encouraging development which makes the minimum and most efficient use of finite natural resources including land, buildings soil, non-renewable energy, water and raw materials;
- Resisting development in places where environmental risks including from flooding cannot be properly managed;
- Taking full account of the needs and wishes of communities and, in particular, vulnerable and disadvantaged groups such as the elderly, young people and people with disabilities;
- Using all practicable means to make places more pleasant and liveable with safer, cleaner, more legible and more attractive streets and spaces;
- Resisting development which would have a detrimental effect on environmental quality and public amenity;
- Ensuring that development in the city of Lancaster and other historic areas conserves and enhances their sense of place;
- In areas where environmental quality is unsatisfactory such as Poulton and the West End of Morecambe, seeking development of a quality which will raise standards and help to deliver a step change in their environmental quality and sense of place;
- Identifying how habitats in urban and rural areas will be protected and, where possible, enhanced in extent and in their diversity of wildlife species;
- Directing development to locations, where previously developed land can be recycled and re-used, dereliction cleared and contamination remediated;
- Conserving and enhancing landscapes.



Appendix E– Recorded Cultural Heritage Sites



Listed Buildings (English Heritage)

| Site No. | Identifier | Grid Reference | Description | Grade |
|----------|------------|----------------|--|-------|
| 1 | 182269 | SD 47240 57917 | Burrow Beck Bridge. Bridge over the Lancaster Canal opened 1797. Punched sandstone blocks with a single elliptical arch and keystone. | II |
| 2 | 383036 | SD 47932 59341 | Laburnum Cottage and attached store to right, 71 Ashford Road. Farmhouse and attached stable dating to mid 18th century and altered 20th century. Painted sandstone random rubble with ashlar dressings and quoins. Slate roof. | II |
| 3 | 182250 | SD 48611 58214 | Bailrigg Farmhouse. House dated to 1718 built of slobbered sandstone rubble with a slate roof. | II |
| 4 | 182268 | SD 47268 57389 | Brantbeck Bridge over the Lancaster Canal, late 18th century. Sandstone ashlar, tall with elliptical arch. The bridge is flanked by attached round piers. | II |
| 5 | 182290 | SD 48101 57116 | Milestone, A6. Early 19th century milestone. Sandstone with cast iron plates and triangular in plan. | II |
| 6 | 182255 | SD 48063 57343 | Boundary Stone, A6. Triangular plan made of sandstone and dating to the early 19th century. Inscribed with 'Scotforth' and 'Ashton with Stodday'. | II |
| 7 | 383057 | SD 47132 58562 | Carr Lane Bridge, Broken Back Lane. Road bridge over the Lancaster Canal opened in 1797. The band which falls in the centre of the bridge indicates that the arch may have been broken which may have given rise to the name Broken Back Bridge. | II |
| 8 | 182251 | SD 47543 57904 | 1 and 2 Burrow Heights Cottages. Pair of late 17th century houses built of slobbered rubble with slate roof. | II |
| 9 | 182176 | SD 48395 56717 | Barker House Farmhouse, Green Lane. House c.1800 with 17th century remains. Built of slobbered rubble with slate roof. | II |



| Site No. | Identifier | Grid Reference | Description | Grade |
|----------|------------|----------------|--|-------|
| 10 | 182162 | SD 48112 56998 | Boundary Stone, A6. Triangular plan made of sandstone and dating to the early 19th century. Inscribed with "Ashton with Stodday' and Ellel. | II |
| 11 | 383156 | SD 48074 59351 | 20 Hala Road. 17th century with early 19th century remodelling. Rendered rubble with coped gables, gable stacks and a slate roof. | II |
| 12 | 493878 | SD 48494 57935 | Bailrigg House, Bailrigg Lane. A house, now offices built 1899-1902 in the Arts and Crafts style. Mostly brick with sandstone dressings under a roof of flat tiles with carved wooden barge boards and multiple tall chimneys. | II |

Recorded Cultural Heritage Sites (NMR and HER)

| Site No. | Identifier | Grid Reference | Period | Description |
|----------|------------|----------------|---------------|---|
| 13 | NMR40981 | SD 4720 5830 | ?Roman | A group of four over-life size human heads, two small 'lions' and a 2 foot full length female figure were found during the construction of the Lancaster Canal in 1794. The finds are in Lancaster City Museum. The origin of the figures is uncertain and may be either part of a family tomb or Mithraic. |
| 14 | NMR1383002 | SD 4802 4943 | Post-Medieval | Bowling Green Hotel. Probably a former 17th-18th century farmhouse, in use as a public house since at least the late 19th century. It is constructed from coursed stone rubble, now painted, with a slate roof which has been covered with bituminous felt. The building is of three storeys in three bays. Windows have been largely replaced and the third storey ones blocked. |



| Site No. | Identifier | Grid Reference | Period | Description |
|----------|----------------------------------|----------------|------------------------------|---|
| 15 | NMR40972 | SD 493 585 | Bronze Age | A logboat was found during the construction of a reservoir at Blea Tarn, near Lancaster, in 1897. It is comprised of a hollowed-out single tree with two holes and two loose boards, thought to have been washboards. There was also reported to be part of a rudder remaining. |
| 16 | NMR40969 | SD 46316 57833 | Medieval | Ashton Park. Possible 14th century deer park. The limits of the park are unknown. It was probably associated with the 14th century Ashton Hall and centred on the existing park (now a golf course). |
| 17 | NMR40991; PRN2521- MLA2521 | SD 47749 58242 | Iron Age / Romano-British | Excavation of a rectangular enclosure uncovered a cobbled surface and a possible Roman sherd, possibly a Romano-British enclosed settlement. All that is now visible are the remains of an Iron Age/Romano-British field system. The area has been ploughed and cultivated removing most of the visible remains. The enclosure may have been a mausoleum given its location close to the Roman road and finds of statutory in the area. |
| 18 | NMR887071 | SD 47601 58200 | Roman | Roman coin of Claudius II (268-70 AD), found in 1981 on the northern slope of Burrow Heights, Scotforth. |
| 19 | NMR40986; PRN501- MLA501 | SD 475 585 | Roman | Two Roman 3rd century milestones found in 1811 and 1834. The milestones are quadrangular and formed of millstone grit and sandstone. These may have been associated with a Roman road and enclosure in the area. |
| 20 | NMR40983 | SD 485 595 | Unknown | St Mary's Well. The alleged site of a holy well near the brook at Scotforth. No visible traces of this well or further information is available. |



| Site No. | Identifier | Grid Reference | Period | Description |
|----------|------------------------------------|----------------|----------------------------------|---|
| 21 | NMR40987 | SD 485 595 | ?Post-Medieval | Site of a cross documented as extant in 1776 and in 1896, however no further information about the cross or visible remains are present. |
| 22 | NMR40988 | SD 485 595 | Medieval | Lead case containing a hoard of silver pennies of Henry II, 1154. |
| 23 | NMR1325829 | SD 59562 44607 | Roman | Roman road running from Preston to Lancaster (RR70d). |
| 24 | NMR1372586; PRN5575- MLA5574 | SD 50525 46076 | Post-Medieval | The Lancaster and Preston Junction Railway was opened in 1840, having been authorised in 1837. A number of bridges are extant along the route. |
| 25 | NMR1036041 | SD 47678 55727 | Post-Medieval | Lancaster Canal built 1792-1819 from Kendal to Wigan, partly leased to Leeds & Liverpool Canal. Closed to commercial traffic in 1947. Partly abandoned in 1955. Largely still surviving as an earthwork and structures. |
| 26 | PRN243- MLA243 | SD 47904 58817 | ?Prehistoric / Romano-British | A sub-circular enclosure identified from aerial photographs on a ridge between the A6 and railway line at Scotforth. The enclosure is c.50m in diameter and appears to be formed by a wide bank, subdivided internally into unequal parts by a similar bank. Possible late prehistoric or Romano-British farmstead. |
| 27 | PRN2563- MLA256 | SD 4770 5850 | Post-Medieval | Sandy Dyke Meadow fieldname indicates former drainage. |
| 28 | PRN2564- MLA2564 | SD 4740 5820 | ?Roman / ?Post- Medieval | Stone Close fieldname from the 1844 Tithe Award Plan which may be associated with the Roman road in the vicinity. |
| 29 | PRN 2565- MLA2565 | SD 4780 5810 | Post-Medieval | Milestone Paddock fieldname from the 1844 Tithe Award. It was conjectured that this was related to the findspot of Roman milestones, but these were found in a different location. |



| Site No. | Identifier | Grid Reference | Period | Description |
|----------|--------------------|----------------|---------------|--|
| 30 | PRN2780-MLA2780 | SD 4762 5799 | Unknown | A faint low oval earthwork ditch and bank on the summit of Burrow Heights which may be an enclosure but may also equally well be an old copse. |
| 31 | PRN2973-MLA2973 | SD 47930 58570 | Post-Medieval | A low banked feature seen on aerial photographs. A quarry is shown on historic mapping at this point. |
| 32 | PRN3923-MLA3923 | SD 4760 5800 | Unknown | Former cultivation terraces and associated field boundaries identified from aerial photographs. |
| 33 | PRN5385-MLA5384 | SD 47850 85660 | Post-Medieval | Site identified as 'gravel bank' on the first edition OS mapping. Possibly a gravel pit or bank associated with the railway. |
| 34 | PRN5387-MLA5386 | SD 4747 5790 | Post-Medieval | Two wells shown on the first edition OS mapping. |
| 35 | PRN30012-MLA26460 | SD 47598 58463 | Post-Medieval | A ruined building built into the side of a hill. Two faces survive on the east and north sides with a lintel or door jamb lying on the ground. |
| 36 | PRN22245-MLA2203 | SD 47825 58714 | Post-Medieval | A milepost marked on the 1894 OS mapping. Annotated as "Preston 19" and still extant. |
| 37 | PRN22246-MLA22204 | SD 48059 58465 | Post-Medieval | A gravel pit identified on the first edition OS mapping. Still extant. |
| 38 | PRN22247-MLA22205 | SD 48054 58715 | Post-Medieval | A gravel pit identified on the first edition OS mapping. No longer extant. |
| 39 | PRN22296-MLA22251 | SD 47976 58698 | Post-Medieval | A milestone recorded on the first and second edition OS maps and still extant. Annotated as "Lancaster 2, Garstand 8 3/4" |
| 40 | PRN 25026-MLA24387 | SD 47727 58222 | Roman | A resistivity survey in 2001 located a possible position for the Roman road but as a point feature only. |



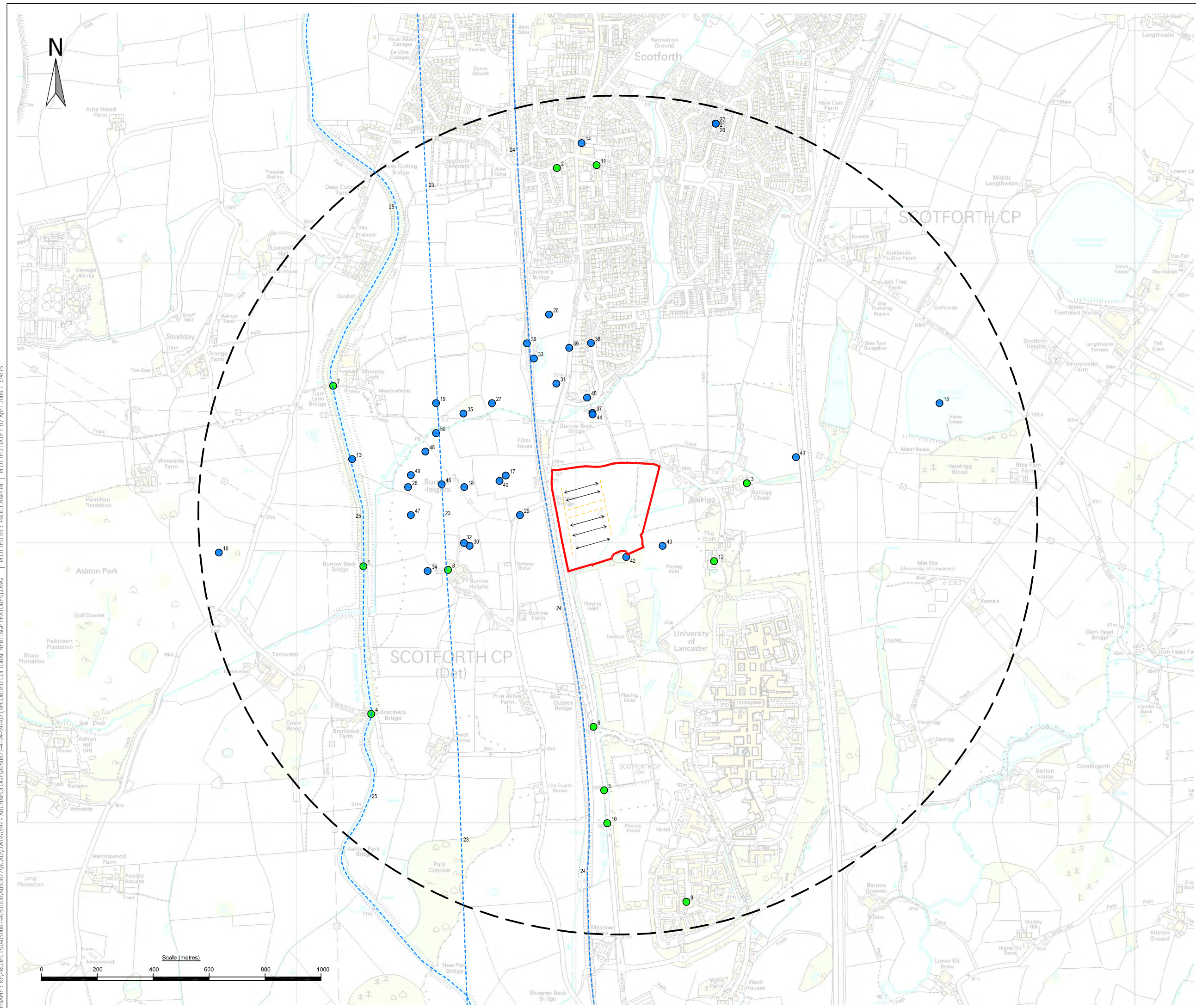
| Site No. | Identifier | Grid Reference | Period | Description |
|----------|--------------------|----------------|------------------------------|--|
| 41 | PRN 15148-MLA26185 | SD 48787 58307 | Post-Medieval | A watching brief during replacement of a 1.1.km stretch of gas pipeline was undertaken. The watching brief recorded post-medieval domestic finds likely to be midden material and the base of a stone field boundary wall. |
| 42 | PRN 26499-MLA26447 | SD 4818 5795 | Post-Medieval | Field name of pit field from the 1841 tithe map which may indicate former quarrying. |
| 43 | PRN30000-MLA26448 | SD 48310 57990 | Modern | An earthwork of three concentric circles anticipated to be connected to sports use at the University. |
| 44 | PRN30001-MLA26449 | SD 4806 5846 | Post-Medieval | Group of fields referred to as Wind Mill Hill which may indicate a former site of a windmill. |
| 45 | PRN30002-MLA26450 | SD 4804 5852 | Unknown | Group of fields referred to as great Skelsborough on the 1841 tithe map, possibly indicating the site of a settlement of unknown date. |
| 46 | PRN30003-MLA26451 | SD 47520 58210 | ? Bronze Age / Post-Medieval | Group of fields named Burrow on the 1841 tithe map and the site of a significant 17th-18th century settlement. Name of settlement may indicate a former Bronze Age barrow. |
| 47 | PRN30004-MLA26452 | SD 4741 5810 | Post-Medieval | A group of fields named Killen Close on the 1841 tithe map possibly indicating the site of a kiln. |
| 48 | PRN30009-MLA26457 | SD 47462 58327 | Post-Medieval | A post-medieval stone wall made up of nine courses of mortared stone work orientated north-south. Situated at the south side of Burrow Beck terminating at a gatepost near to a field boundary. |
| 49 | PRN30010-MLA26458 | SD 47410 58243 | Post-Medieval | Earthwork remains of post-medieval ridge and furrow orientated east-west. |
| 50 | PRN30011-MLA26459 | SD 47500 58393 | Post-Medieval | A small stone hump back bridge over Burrow Beck made up of rectangular blocks with a spring arch. Two courses and the arch remain. |

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

KEY

- SITE BOUNDARY
- LISTED BUILDING
- CULTURAL HERITAGE SITE
- EARTHWORK REMAINS OF FIELD BOUNDARY
- EARTHWORK REMAINS OF RIDGE AND FURROW

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Client:
LANCASTER CITY COUNCIL

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Project: A050877

LANCASTER SCIENCE PARK
DESK-BASED CULTURAL HERITAGE ASSESSMENT

Drawing Title:
RECORDED CULTURAL HERITAGE FEATURES

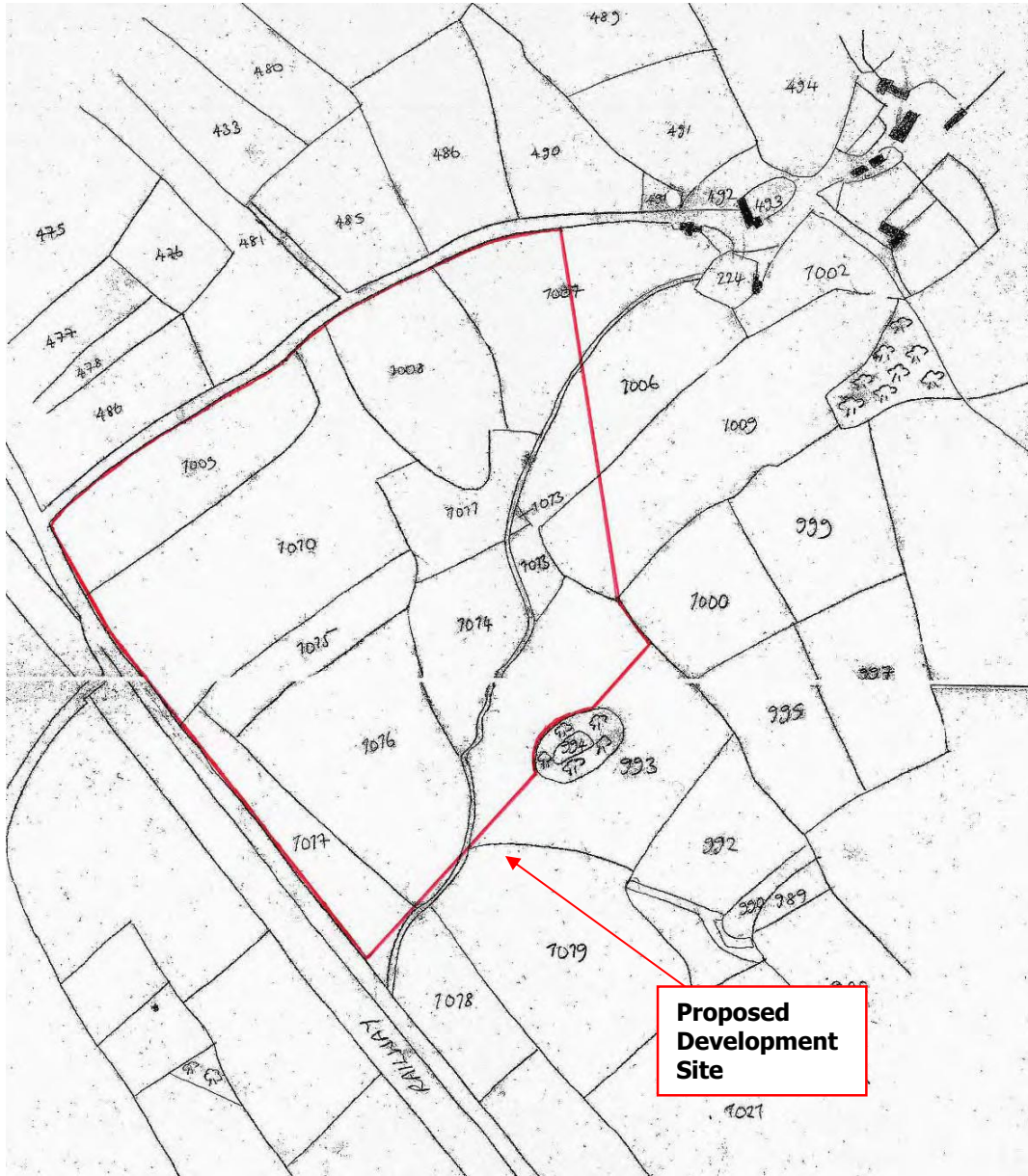
| Scale @ A3 | Drawn | Date | Checked | Date | Approved | Date |
|-------------|--------|----------|-------------|----------|----------|----------|
| 1:12,500 | PMC | 14.01.09 | KRH | 14.01.09 | PH | 14.01.09 |
| Project No. | Office | Type | Drawing No. | Revision | | |
| A050877 | 4104 | 597 | 02 | | | |



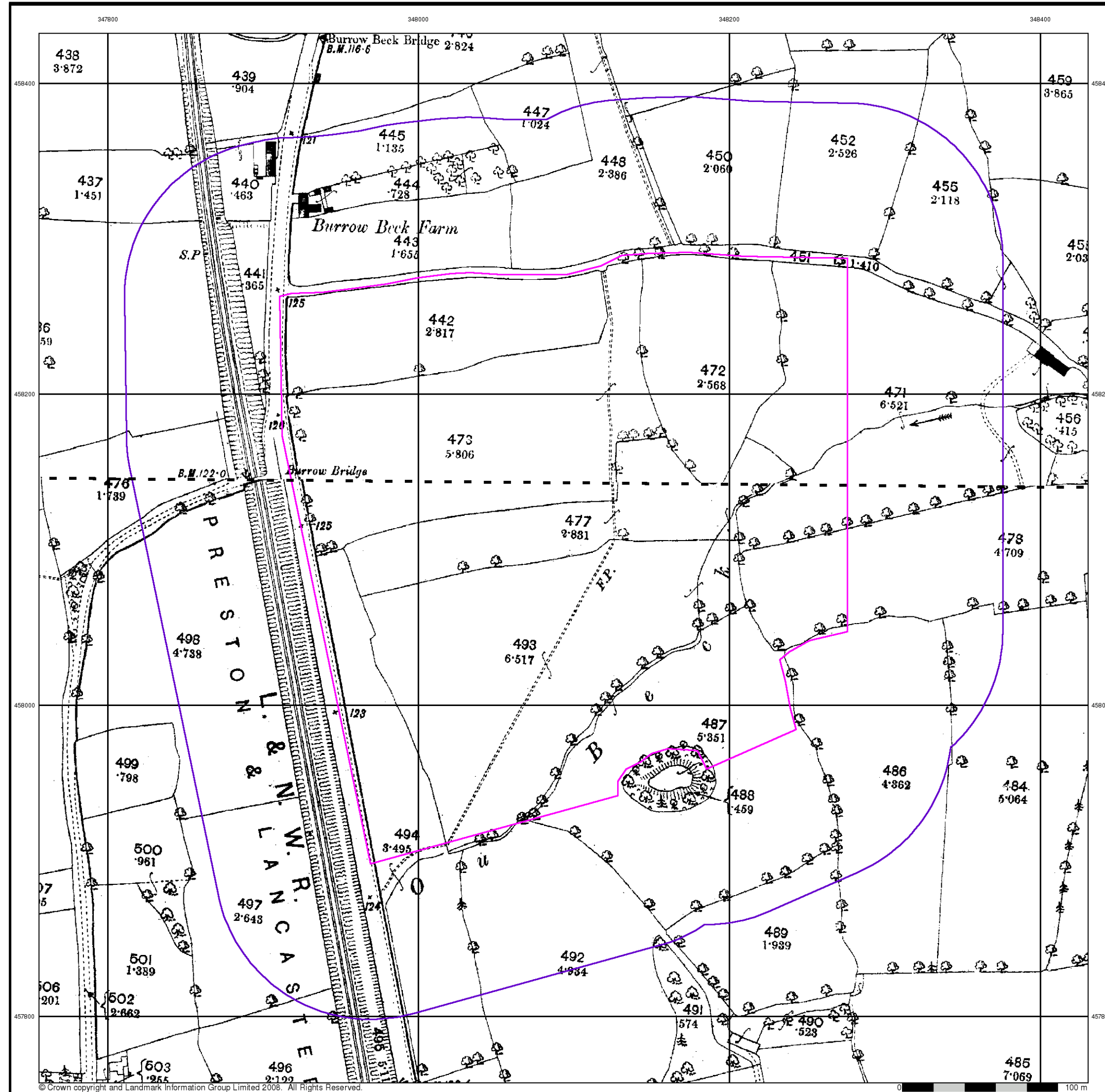
Appendix F – Historic Mapping

1841-1973

All Mapping Reproduced from the Ordnance Survey Map with the Permission of Her Majesty's Stationary Office,
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Scotforth Tithe Map, 1841



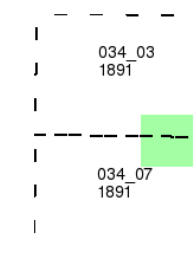
Lancashire And Furness

Published 1891

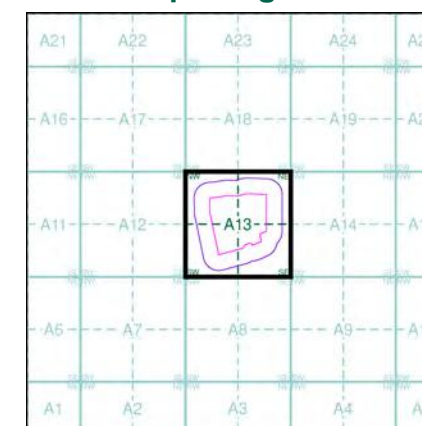
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

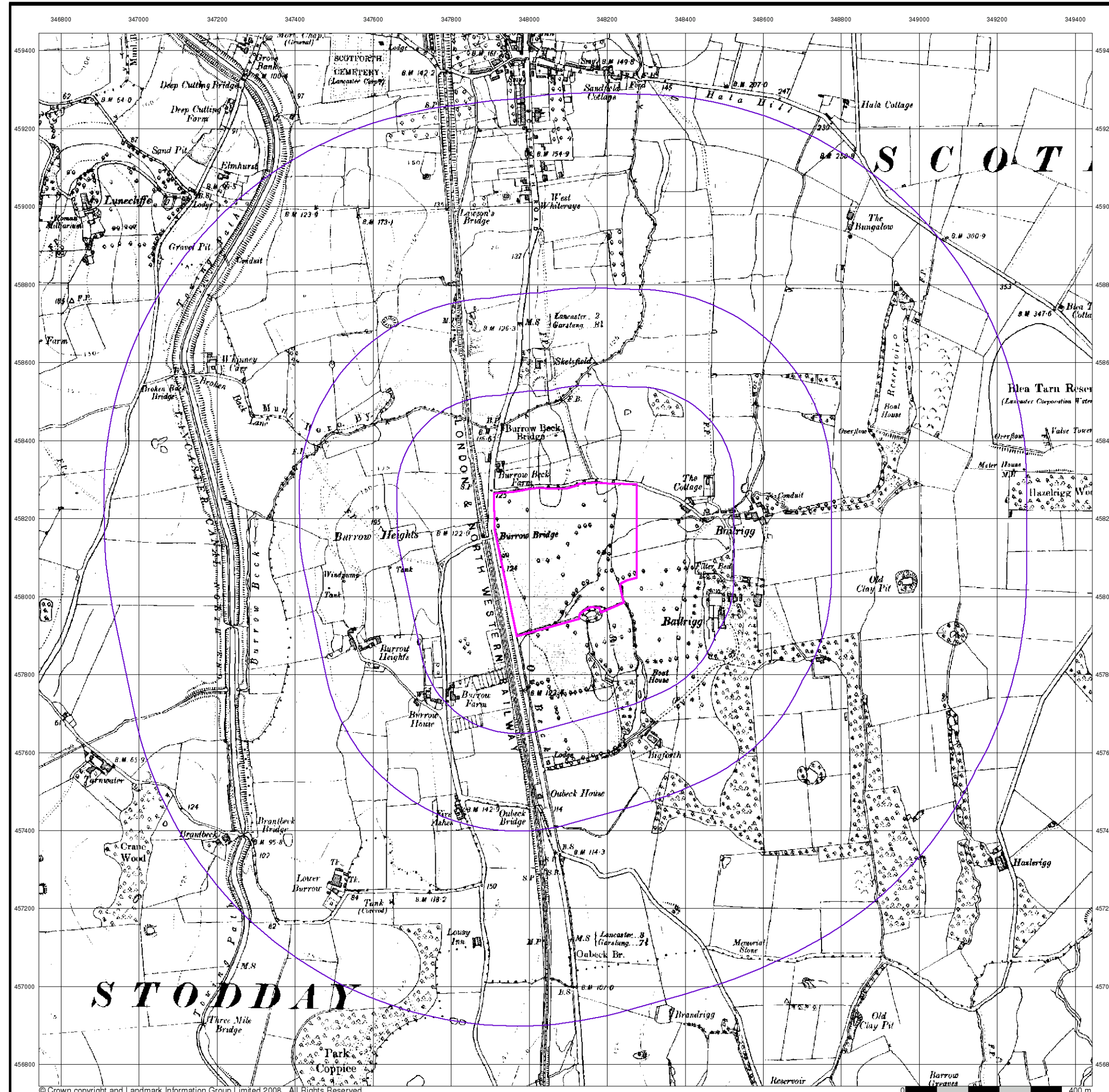
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Customer Ref: A50877
National Grid Reference: 348090, 458120
Slice: A
Site Area (Ha): 11.45
Search Buffer (m): 100

Site Details

Site at, Bailrigg, Lancashire



Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



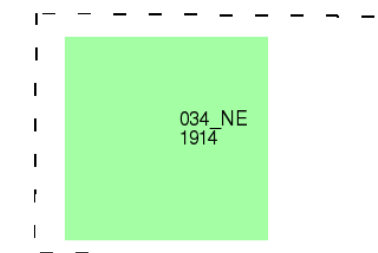
Lancashire And Furness

Published 1914

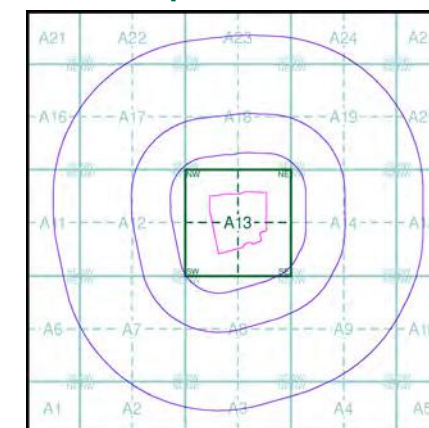
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

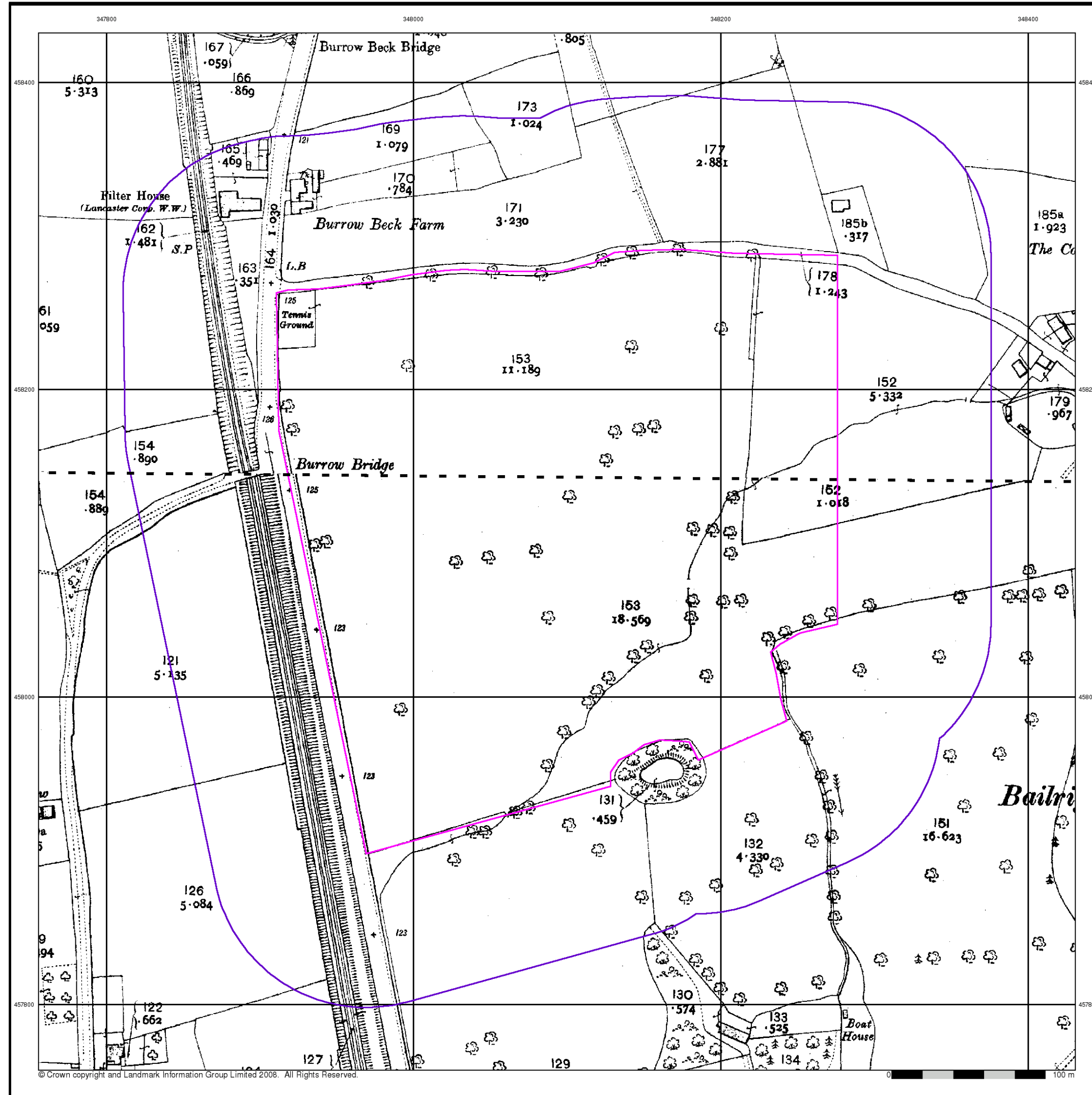
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Search Buffer (m): 1000

Site Details

Site at, Bailrigg, Lancashire



Tel: 0844 844 9952
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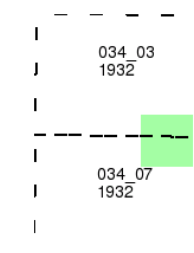
Lancashire And Furness

Published 1932

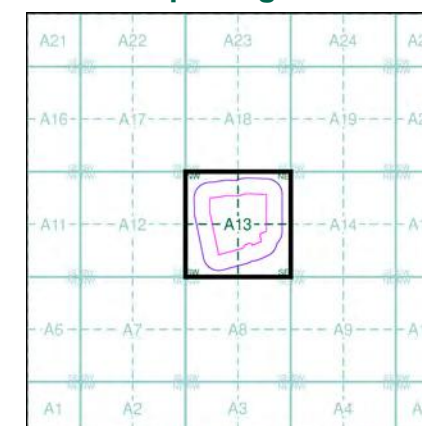
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number: 26947729_1_1
Customer Ref: A50877
National Grid Reference: 348090, 458120
Slice: A
Site Area (Ha): 11.45
Search Buffer (m): 100

Site Details

Site at, Bailrigg, Lancashire

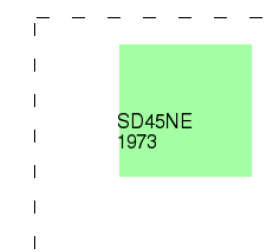


Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

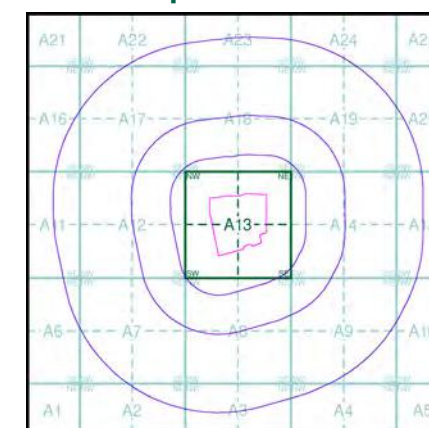


The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number: 26947729_1_1
Customer Ref: A50877
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Site Details

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Fax: 0844 844 9951
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Appendix G – Site Investigation Trial Pit Location



Appendix H – Report Conditions

Cultural Heritage Desk-Based Assessment, Lancaster Science Park (Environmental Assessment)

This report is produced solely for the benefit of Lancaster City Council and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to WYG. In time improved practices, fresh information or amended legislation may necessitate a re-assessment. Opinions and information provided in this report are on the basis of WYG using due skill and care in the preparation of the report.

This report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times.

This report is limited to those aspects reported on, within the scope and limits agreed with the client under our appointment. It is necessarily restricted and no liability is accepted for any other aspect. It is based on the information sources indicated in the report. Some of the opinions are based on unconfirmed data and information and are presented as the best obtained within the scope for this report.

Reliance has been placed on the documents and information supplied to WYG by others but no independent verification of these has been made and no warranty is given on them. No liability is accepted or warranty given in relation to the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report.

Whilst skill and care have been used, no investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather related conditions.

Although care is taken to select monitoring and survey periods that are typical of the environmental conditions being measured, within the overall reporting programme constraints, measured conditions may not be fully representative of the actual conditions. Any predictive or modelling work, undertaken as part of the commission will be subject to limitations including the representativeness of data used by the model and the assumptions inherent within the approach used. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions.

The potential influence of our assessment and report on other aspects of any development or future planning requires evaluation by other involved parties.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors

November 2008

WYG Environment Planning Transport Ltd

WYG Environment part of the **WYG Group**

creative minds safe hands

Lancaster Science Park, Archaeological and Cultural Heritage Desk-Based Assessment
N:\Projects\A050001-A051000\A050877\reports\Archaeology\Cultural Heritage DBA_v1.doc
Date April 2009