

# PROPOSED CAR PARK AT ACORN BANK ESTATE, TEMPLE SOWERBY CUMBRIA

## Archaeological Assessment Report



Oxford Archaeology North

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## SUMMARY

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Oxford Archaeology North was invited by the National Trust to undertake an historic landscape survey of the Acorn Bank property, at Temple Sowerby, in Cumbria, which is 0.75 sqkm in extent (NY 617 283; Fig 1). The initial survey was conducted in order to record and evaluate the archaeological and historical features in the area and so that this information could then be used to inform and guide future management of the estate (OA North 2014b).

There is a recognised need for additional car parking for visitors to the property; the existing car park facility can not be adequately expanded and there is a proposal to create a new car park within the estate. Three outline options (blue, red and green), have been submitted by the National Trust for the proposed location of the new car park (Fig 2). The present assessment is required to examine the impact on the identified archaeological resource and to make recommendations for the adoption of options that have the least impact on the heritage of the estate.

Given the potential impact of the other two options, it is considered that the green option presents the least impact to the identified heritage of the park and the setting of the house, by comparison with the other two options, and would be the preferred option.

## ACKNOWLEDGEMENTS

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Oxford Archaeology North would like to thank Jamie Lund at the National Trust for commissioning the project. We would also like to thank Sara and Chris Braithwaite at Acorn Bank, for their considerable involvement and support during the project.

The archaeological assessment was undertaken by Peter Schofield, who also produced the illustrations. The project was managed by Jamie Quartermaine, who also edited the report.

## 1. INTRODUCTION

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### 1.1 CIRCUMSTANCES OF THE PROJECT

- 1.1.1 Oxford Archaeology North was invited by the National Trust to undertake an historic landscape survey of the Acorn Bank property, at Temple Sowerby, in Cumbria, which is 0.75 sqkm in extent (NY 617 283; Fig 1). The survey was conducted in order to record and evaluate the archaeological and historical features in the area, so that this information could then be used to inform and guide future management of the estate (OA North 2014b). The field survey was undertaken between the 11<sup>th</sup>-13<sup>th</sup> and on the 18<sup>th</sup> of December 2013.
- 1.1.2 The survey results are urgently required to help guide and inform a potential relocation of the visitor access route and car park at the property. This is in response to a recognised need for additional car parking for visitors to the property; the existing car park facility cannot be adequately expanded and as a consequence there is a proposal to create a new car park within the estate. Three outline options have been submitted by the National Trust for the proposed location of the new car park (Fig 2). The present assessment is required to examine the impact of these proposals on the identified archaeological resource and to make recommendations for the implementation of the option that have the least impact on the heritage of the estate.

### 1.2 IMPACT ASSESSMENT

- 1.2.1 The study has examined the extent to which the proposed development will impact upon any documented structure or extant surface features on the property. This report presents all the archaeological and documentary data for the immediate environs of the proposed development. The report defines the impact of the proposed development on the observed physical remains, and makes an assessment of the likely impact on remains, which are documented, but not extant on the surface. On the basis of the anticipated impact, recommendations have been made for further archaeological work and / or mitigation. Such work may entail a programme of evaluation to establish the below ground survival of the remains, and any mitigation recommendations may, as a consequence, be dependant upon this additional phase of work.

## 2. PROPOSED CAR PARK IMPACT ASSESSMENT

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### 2.1 INTRODUCTION

- 2.1.1 There is a recognised need for additional car parking for visitors to the property; the existing car park facility can not be adequately expanded and there is a proposal to create a new car park within the estate. Three outline options have been submitted by the National Trust for the location of the proposed new car park (Fig 1). The present assessment is required to examine the impact on the identified archaeological resource and to make recommendations for the adoption of options that have the least impact on the heritage of the estate. As these are outline proposals there is scope for the adjustment of the areas to minimise the impact and to adopt working methodologies that might help reduce the impact on individual sites of importance. The options are presently defined by their colours on the attached map (Fig 2); the blue option is a small area at the eastern end of the main drive, edged to the east by the gateway to the house. The green option is an area of parkland to the north of the driveway and immediately to the east of the mill. The red option is to the north of Birk Sike and which is to the south-west of the house.
- 2.1.2 **Blue Option:** the blue option for the car park is at the end of the main drive, and an expansion of car parking in this area would affect the eastern part of the historic drive (Site *I*), and, as the area is adjacent to the end of the drive, would directly affect the setting of the approach to the house, which is defined by a stone pillared gateway (Site *107*). Immediately adjacent to the south-eastern corner of the proposed car park area is an historic iron gate on the line of a fence boundary, but this will not be directly affected by the present proposals. The area of proposed car park will impact an area of broad ridge and furrow (Site *75*), that is up to 6m wide (ridge to ridge); it is on the same alignment as a further section of ridge and furrow that is near to the mill, which is 12m in width.
- 2.1.3 The view of the car park from the Grade I Listed house (*Appendix 4*) would, to an extent, be screened by a band of parkland trees; however, in winter, when the trees are not in leaf the screening would be reduced. The closest point of the proposed car park would be *c* 23m from the house and there is the potential that, despite the screening, the car park would affect the visual setting of the listed building.
- 2.1.4 **Green Option:** the green option is located to the north of the main drive, which presently is an area of grassed parkland. It would directly impact an area of very broad ridge and furrow, which is up to 12m in width, and is aligned north-west/south-east, and, although the orientation is similar to that of the drive, it is not precisely so and it would appear that the drive was superimposed onto the cultivation features. The broad ridge and furrow has the characteristics of oxen ploughing, which is most typical of medieval ploughing.
- 2.1.5 The proposed Green Option is in close proximity to the Grade II Listed Acorn Bank Mill (*Appendix 4*), but does not directly impact any mill features that have been identified to date. While there is the potential for underlying buried mill features, the presence of the probable medieval ridge and furrow, would suggest

that any such buried features predated the ridge and furrow, as otherwise there would be evidence of disturbance to the ridge and furrow (which there is not).

- 2.1.6 **Red Option:** the red option is adjacent to Birk Sike, and is removed from the main drive and would entail, it is presumed, the construction of an access road from the Milburn Road exploiting the existing crossing of the Birk Sike on the line of the historic access track / former drive (Site 20). The car park and the presumed new access road would impact on the line of the access route between Acorn Bank and Temple Sowerby village which has early, and possibly medieval, origins. The alternative to this would be to construct a new route from the car park through the south-western part of the park/ former demesne to link with the existing drive,
- 2.1.7 North of, and parallel with, Birk Sike is an historic culvert (Site 45) which was probably used to drain the boggy land downslope of Acorn Bank prior to the canalisation of Birk Sike (Site 8) and is likely to be a formal estate feature of the eighteenth century. This extends through the area of the proposed new car park and would potentially be impacted by the ground works for the park areas. Development in this area is also likely to require the replacement / enhancement of the existing culvert crossing of Birk Sike. While the existing crossing is modern (Site 46), comprising an earthen bank over a culverted pipe, there exists the potential for sub-surface remains of a former bridge, either over the canalised Birk Sike, or even across the original erratic line of the water channel.
- 2.1.8 The car park would also impact upon part of an area of broad ridge and furrow (Site 2), which is 12m in width from ridge to ridge, and which was probably a product of oxen ploughing.
- 2.1.9 The proposed new car park would potentially impact the outward vista from the main facade of the Grade 1 Listed house (Appendix 4), and particularly from the upper windows; however, this would need to be confirmed by a process of viewshed analysis.

## 2.2 CONCLUSION

- 2.2.1 The blue option for the car park would, by virtue of its proximity to the house, affect the setting of the Grade 1 Listed house and more significantly would affect the approach to the house. While the identified earthworks that would be directly impacted are of only local archaeological significance, the setting of the house is of much greater import and it is recommended that this should not be the preferred option.
- 2.2.2 The red option has the potential to cause considerable direct impact to the historic access route between Acorn Bank and Temple Sowerby, an historic estate culvert and a potential former crossing of Birk Sike. In addition it would potentially entail the construction of a new access route from Milburn Road, which would require crossing Birk Sike, or a new route through the south-western part of the park/ former demesne to link with the existing drive. Because of the considerable impact on the identified resource, it is recommended that this should not be the preferred option.
- 2.2.3 The green option would impact upon an area of broad ridge and furrow (Site 75), but otherwise would only result in impact on the main drive itself. It is sufficiently removed from the house to not have a direct visual impact on it, but is in close



proximity to the mill, and would affect its setting. Although there would be impact upon the ridge and furrow, this is of local significance, and can be subject to detailed earthwork recording in advance of development to mitigate its loss.

- 2.2.4 Given the potential impact of the other two options, it is considered that the green option presents the least impact to the identified heritage of the park and the setting of the house, by comparison with the other two options, and would be the preferred option from a heritage perspective.

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### ***Ordnance Survey***

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## APPENDIX 1: PROJECT BRIEF

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### **Brief for a Historic Landscape Survey of Acorn Bank, near Temple Sowerby, Cumbria**

#### ***1 Introduction***

The National Trust is inviting tenders to conduct a Historic Landscape Survey of its property at Acorn Bank located near Temple Sowerby, Cumbria. The boundary of the property owned and managed by the National Trust is contiguous with the boundary of the study area highlighted on the attached map (see appendix 1).

Previous investigations by the National Trust have established that the property contains many important archaeological and historic features including; a) parkland features such as tree banks, drives and railings, b) buildings and structures, c) relict landscape features associated with past agriculture and land management and d) features associated with industry, including historic gypsum mining to the east of the house. Of these elements only the history of the gypsum mining has been explored and recorded in any detail (Tyler, I. 2000).

The Historic Landscape Survey of Acorn Bank would therefore represent the first significant attempt to survey, record and interpret the historic landscape. The proposed investigations combine archaeological fieldwork, undertaken to identify and record all sites of historic and archaeological interest on the property, with an analysis of parkland features and field boundaries in order to understand the character, development and significance of the landscape. The Historic Landscape Survey will also require documentary and cartographic research to be undertaken in order to identify sites and features no longer evident on the ground and to better understand the character of previous phases of parkland management and design.

The Trust anticipate that the Historic Landscape Survey will provide them with a comprehensive understanding of the historic landscape at Acorn Bank. This information is urgently required to help guide and inform the potential relocation of the visitor access route and car park at the property. The contractor is asked to retain an awareness of the purpose of the investigations and present information in a format that will assist this process.

The aims of the Historic Landscape Survey are as follows:

- Undertake an archaeological survey of the property to identify and record all visible sites, features and landscape elements of archaeological or historic interest and afterward produce a catalogue of information in the form of an archaeological gazetteer.
- To assess the condition of the archaeological resource and make recommendations for its future conservation and management.
- To recognise and interpret changes in the character and appearance of the property through study and comparison of historic maps and estate plans in order to develop a chronological framework for the development of the parkland and surrounding agricultural land.
- Collate and interpret any other relevant documentary or archive material evidence (including both primary and secondary source material) that might assist in the understanding of land-use, enclosure, settlement and industry on the property.
- Produce a written and illustrated report that presents the results of the Historic Landscape Survey in a meaningful way and is able to be used as a tool for future property management. This report should also include a clear historic narrative for the property, from the prehistoric to the present day.

#### ***2 Background***

The National Trust property at Acorn Bank, near Temple Sowerby, consists of a house, an adjacent garden, a watermill (NTSMR 20456) and some 75ha of estate land. The red sandstone house (NTSMR 20279) has parts dating back to the 1600s and has been extended and altered throughout the Post Medieval period. The house features a number of architectural styles and features. The most significant renovations were completed around 1745, during which the front of the house was developed in a Georgian style and a grand, stone staircase was created.

The seventeenth century walled garden, with a fruit orchard, herb garden and ornamental pond has been open to the public since the 1950s. The watermill lies a short distance to the west of the house and is believed to have been built on the site of an earlier mill (NTSMR 26038). The Crowdundle Beck, part of the Eden River SSSI, runs north of the house. Water is extracted from it to power the watermill, which has been used as a cornmill and also to power the machinery for the nineteenth century gypsum mines, some remains of which lie on the estate. The watermill, unique in the area as it once had 3 waterwheels, has been partially restored.

The house has early associations with the Knights Templars, and was owned by the Dalston/Boazman family from 1600 to the 1930s. Later, By Dorothy Una Ratcliffe, a wealthy writer with links to the Arts and Crafts Movement, acquired the property. After renovating and improving the property, Ratcliffe gave it to the National Trust in 1950. Since 1950 the house has been leased to tenants, most recently to the Sue Ryder Foundation as a nursing home until 1996. After this time the National Trust took it back in hand, completed extensive repairs and developed holiday accommodation in the Chapel Wing.

The house is a Grade I Listed Building. The mill, miller's house, barn, pigstys, sundials, garden walls and entrance arches all designated as Grade II Listed Buildings.

Recent geophysical survey of an area south-west of the house has revealed a number of previously unknown archaeological sites including; a denuded cobbled surface (NTSMR 28286), cultivation features (NTSMR 28287) and a possible building platform (NTSMR 28287). The survey also highlight the potential survival more ephemeral historic garden features.

A rectilinear cropmark was once spotted situated in the grounds of Acorn Bank close to Crowdundle Beck (NTSMR 20457). This feature is not visible on any aerial photographs.

### **3 Methodology**

The methodology for this project can be broken down into three components: field survey, boundary recording and documentary research.

#### **3.1 Field Survey**

The required level of field survey would involve a complete walkover survey of all land owned and managed by the National Trust at Acorn Bank to identify and record all features of archaeological and historic interest. This exercise will result in the creation of a comprehensive gazetteer of sites and monuments. Each gazetteer entry should be accompanied by a photograph of the particular site, monument or feature to aid identification on the ground. The recorded information should be plotted onto a series of digital maps at an appropriate scale for presentation in the survey report.

The field survey should include/ produce:

- accurate survey of all sites, features, buildings and landscape elements identified as being of either archaeological or historic interest, it is recommended that the survey be undertaken using accurate GPS.
- a gazetteer of recorded sites, features and landscape elements ready for entry on the National Trust Sites and Monuments Record (NTSMR). The gazetteer will include the following mandatory description fields: NTSMR number, survey reference number, site name, NGR, site description, monument type (using the English Heritage site thesaurus or similar), period, condition, threats, management recommendations and photo ref. A block of NTSMR numbers will be allocated by the National Trust archaeologist for use during the survey prior to the start of fieldwork.
- sites that are already listed on the NTSMR at Acorn Bank should be included in the gazetteer to create a comprehensive list of known sites and monuments, existing descriptions should be edited or added to as appropriate.
- features identifiable from documentary sources or aerial photographs but not evident on the ground shall be plotted and described as far as possible in order that these features may be given a gazetteer entry and later recorded on the NTSMR.



### 3.2 *Boundary Recording*

No comprehensive study of the sequence of land development and enclosure in the area of Acorn Bank has yet been undertaken. Therefore a program of boundary analysis for all land owned and managed by the National Trust is required as part of the investigations. It falls to the contractor to decide how to investigate the boundaries on the estate and specify an approach in their tender, although a combination of rapid survey and cartographic analysis is perhaps likely to be most appropriate.

The recorded information should be appear in the form of a written narrative outlining the history of enclosure on the property within the body of the written report. This explanation should be accompanied by a series of digital maps that present an analysis of the boundaries on the property and wherever possible show the phased development of the landscape through time.

### 3.3 *Documentary research*

*As part of this project the contractor will be required to undertake a desk based assessment of the study area to support and inform the archaeological fieldwork. The contractor will need to obtain good quality digital copies of all historic maps, estate plans and other documents considered particularly important to the project and reproduce them within the body of the report (or as a separate appendix if appropriate).*

Records relating to the property are believed to be held at the county public records office in Carlisle. It is not known if other records are held at other public record offices and this possibility will need to be investigated as part of the project. It is suggested that the contractor identifies those archives and repositories that contain relevant information prior to submitting a cost so that this figure can include an appropriate amount to cover the time required.

A reasonable effort should also be made to contact local groups or individuals who are likely to have significant knowledge (CATMHUS, Cumbria Industrial History Society, Ian Tyler etc) as part of the project. The contractor should also expect to set aside time to talk to staff and volunteers at Acorn Bank who have knowledge of the estate. In particular the contractor should set aside time to walk the property with National Trust staff Chris and Sara Braithwaite who have a deep knowledge of the property.

## 4 *Reporting*

On the completion of archaeological fieldwork and documentary research a draft report should be completed and passed to the National Trust. The draft report should include copies of all maps, photographs and other illustrations that will appear in the final report. The draft report will then be examined by the National Trust archaeologist and property team and comments returned to the contractor including any suggested amendments. Please note that the contractor should budget for significant editing of the draft report.

## 5 *Survey outputs*

At the conclusion of the investigations, the contractor will provide the following to the National Trust:

Seven bound paper copies of the report. Each copy should be accompanied by a set of paper plans if not included in the bound report.

Four separate CDs containing digital copies of the complete report in complete and ready to print Word and PDF formats should also be supplied. The survey data should be provided to the National Trust as three separate shapefile layers; point data, lines and polygons (compatible with MapInfo Version 7) to assist with entry of the survey information onto the National Trust Sites and Monuments Record.

All digital images from the archaeological survey and documentary research will be collated on a CD or DVD in a series of labelled folders clearly identifying the source. All photographs taken during the archaeological survey should be labelled with the relevant NTSMR number to aid entry onto the National Trust Sites and Monuments Record.

Digital copies of all key maps, plans and documents should also be included as part of the digital archive. Individual maps and documents should be clearly labelled and saved as a Tiff or J.Pegs to enable them to be utilised by the National Trust in the future.

The National Trust regional office will act as the repository for all original recording materials for the duration of this project. The National Trust reserve the right to deposit the complete archive, or a copy of the archive in the appropriate public record office at a later date.

## **6 Site conditions**

The majority of land within the study area is managed by farm tenants on behalf of the National Trust. Other areas are managed by the National Trust as in hand land. The majority of this land is woodland in and around Nether Wasdale.

Certain access restrictions will apply to enclosed land as a result of the requirements of the various farm businesses and an overall agreement for access will be negotiated by the National Trust on behalf of the contractor prior to the start of fieldwork. The remaining land including the open fell is permanently open for public access. Contractors do not require formal permission from the National Trust to enter this area, although a courtesy should be made ahead of fieldwork commencing.

## **7 Previous research**

The National Trust already possesses basic Vernacular Building Surveys for all of the farms and buildings within the study area. These surveys were undertaken in the mid-1980s and represent a useful, if basic, record of the buildings. The existing reports will be passed on before survey begins. Please note that there is no survey for the house at Acorn Bank.

Ian Tyler undertook both fieldwork and documentary research likely to be relevant to this project while researching his book 'Gypsum in Cumbria' published in 2000.

The National Trust is likely to have reports and documents that might assist the contractor. As such the contractor should expect to visit the National Trust regional office in Grasmere and property office at Acorn Bank at the start of the project and copy documents/ photograph or scan original material.

## **8 General terms**

The National Trust will retain copyright over the resulting report and all associated archival material (including all digital maps and photographic material), and shall have absolute control over the use and dissemination of that information. The National Trust fully recognises the originator's moral right to suitable accreditation in any publication of the results.

It is the policy of the National Trust to deposit copies of all surveys undertaken on its land with the appropriate regional archives, authorities and organisations. The National Trust will deposit a copy of the updated Sites and Monuments Record with the Archaeological Data Service based in York.

The project will be undertaken by the contractor acting on an independent basis. Staff working on the project will not be deemed employees of the National Trust. Tenders should reflect this fact and more specifically the Contractor will take sole responsibility for the payment of tax, National Insurance contributions, etc. If VAT is payable, this too should be indicated in the bid.

Further information about the National Trust's guidelines for archaeological survey is contained in 'Archaeology and the Historic Environment: Historic Landscape Survey Guidelines' (National Trust, 2000) – available to download from the National Trust website.

We highlight that the property has holiday cottages on-site that would provide suitable accommodation for the contractor during fieldwork.

## **8 Timescale**

The National Trust has funding to undertake this work within the financial year 2013/14. Please note that the National Trust's financial year ends at the end of February, rather than March 2014.

It is critical that the Historic Landscape Survey is completed and a final payment to the contractor made before the end of February 2014 as the funding cannot be carried over into the new financial year. As such it is critical that contractors only submit a tender for the work if they are sure they can deliver the project within this deadline.

We recommend that the archive research along with all other preparation should take place in October in order to inform the programme of subsequent fieldwork. Fieldwork should then be undertaken in November

after the vegetation has started to die back and conditions are more suitable. A draft report can then be prepared by early January, allowing sufficient time for review and editing in January and February. The Contractor should indicate their availability for carrying out this work within the timescale indicated above as part of their bid.

## **9 Costing**

We ask that contractors provide the client with a detailed break down of costs as part of the tender including travel, accommodation, report writing and production etc.

The contractor should feel free to add in costs for any other task that they believe worthwhile in the context of the project. This will create a 'shopping list' of items that can then be incorporated into the project or held in abeyance until funding is available in the future.

Project costs should be set to undertake the work according to the timetable in the brief.

Please return tenders before the end of September to:

Jamie Lund (Archaeologist)  
The National Trust  
North-West Regional Office  
The Hollens  
Grasmere  
Cumbria  
LA22 9QZ  
Tele: 01539 463825

E-mail: [jamie.lund@nationaltrust.org.uk](mailto:jamie.lund@nationaltrust.org.uk)

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## APPENDIX 2: PROJECT DESIGN

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### 1. INTRODUCTION

#### 1.1 TENDER BACKGROUND

- 1.1.1 The National Trust has invited Oxford Archaeology North to submit proposals for a historic landscape survey of the Acorn Bank property, Temple Sowerby, Cumbria; this is intended to record and evaluate the archaeological and historical features, which will inform the management of the estate. The aim of the survey is to identify the landscape character and significance of the designed landscape, the development of the agricultural landscape as well as the industrial landscape relating to the Gypsum works. It will examine the archaeological history and landscape development as part of this process and will present the results of the survey, allowing the National Trust a comprehensive understanding of the overall landscape. Acorn Bank is owned by the National Trust and is 0.75 sqkm in extent.
- 1.1.2 The following project design sets out the objectives of the project, provides a method statement demonstrating how these can be met and defines the resource implications of the method statement.

#### 1.2 ARCHAEOLOGICAL BACKGROUND

- 1.2.1 The property has considerable archaeological potential, with the seventeenth century sandstone house at its heart (Grade 1 listed); it includes an ornamental garden walled kitchen garden and a designed landscape, but also includes industrial features such as a waterwheel for a corn mill and gypsum works. Despite its potential, no systematic ground survey has ever been undertaken, and the proposed survey will address these deficiencies and enable an understanding of the heritage resource to inform the interpretation of the property.

#### 1.3 OXFORD ARCHAEOLOGY NORTH

- 1.3.1 Oxford Archaeology North (OA North), formerly Lancaster University Archaeological Unit, has considerable experience of the archaeological survey of sites and monuments of all periods, having undertaken a great number of small and large projects during the past 29 years. OA North employs a qualified archaeological and landscape surveyor (Jamie Quartermaine BA DipSurv MIFA) who has over 29 years experience of surveying buildings and landscapes, having worked closely with the National Trust and the Lake District National Park Authority on numerous projects. OA North has particular experience in the recording and analysis of park landscapes and formal gardens. Garden surveys of most relevance include an extensive archaeological study was undertaken of the formal and nursery gardens of Lyme Park, Cheshire, for the National Trust (LUAU 1996a and 1997), in 1996 a survey and evaluation was undertaken of the walled garden at Bostock Hall, in Cheshire (LUAU 1996b) and in 1999 an evaluation and survey was undertaken of the Astley Hall Gardens (LUAU 2001), a survey of Lowther Gardens (OA North 2007), and Allen Bank, Cumbria (OA North 2012) and a survey and evaluation of Chatsworth Gardens, Peak District (OA North 2008). OA North has also undertaken a detailed survey of a complex garden at Rectory Wood Gardens Heysham Head again for the National Trust (LUAU 1999).
- 1.3.2 Archaeological surveys and archaeological studies of parklands include those at Lyme Park, Cheshire, Lowther Park, Cumbria, East Riddlesden, Sizergh Estate, Lathom Park and Rufford Park, both Lancashire. The Lyme Park programme involved a comprehensive documentary and archaeological survey of all elements of the large (6 sqkm) parkland, looking at the formative processes of the park and its buildings which was intended to provide the basis for the restoration and management of this extremely important site. Lowther Park involved a detailed documentary and surface survey of one of the more significant and sizeable parks in Cumbria, and examined both the development of the park and its associated deer park, but also recorded the extensive Roman and prehistoric pre-park remains. Lathom Park, was the seat of the Stanley family, and was at one time the most powerful seat in the North-West. OA North is involved in an on-going programme of excavation, survey, documentary study, and fabric survey intended to identify the evidence for the fourteenth century palace and investigate the development of the park.
- 1.3.3 Projects have been undertaken to fulfil the different requirements of various clients and planning authorities, and to very rigorous timetables. OA North is accustomed to undertaking projects to strict timetables, and to fulfil a wide variety of requirements. OA North is one of the bodies endorsed by the

IFA (Institute of Field Archaeologists) (No. 17) and has both the expertise and resources to undertake this project to the highest standards.

## **2. OBJECTIVES**

### **2.1 NATIONAL TRUST BRIEF**

2.2.1 The primary purpose of the project is to build an understanding of the development of the property landscape, with reference to the designed elements such as the planting, garden, and park, but also the agricultural and industrial elements of the landscape. It will also serve to inform the future management of the wider estate, and the gardens. The requirements of the project are set out in the brief prepared by The National Trust and are as follows:

- Undertake an archaeological survey of the property to identify and record all visible sites, features and landscape elements of archaeological or historic interest and afterward produce a catalogue of information in the form of an archaeological gazetteer.
- To assess the condition of the archaeological resource and make recommendations for its future conservation and management.
- To recognise and interpret changes in the character and appearance of the property through study and comparison of historic maps and estate plans in order to develop a chronological framework for the development of the parkland and surrounding agricultural land.
- Collate and interpret any other relevant documentary or archive material evidence (including both primary and secondary source material) that might assist in the understanding of land-use, enclosure, settlement and industry on the property.
- Produce a written and illustrated report that presents the results of the Historic Landscape Survey in a meaningful way and is able to be used as a tool for future property management. This report should also include a clear historic narrative for the property, from the prehistoric to the present day.

## **3. METHODS STATEMENT**

3.1 The following work programme is submitted in line with the objectives of the archaeological work summarised above, and defines only those tasks that will be undertaken by OA North. The tasks for the National Trust volunteer team are defined within the project brief.

### **3.2 DOCUMENTARY STUDY**

3.2.1 The aim of the documentary study is to collate and build on extensive archive work which has already been undertaken for the Sizergh Estate.

3.2.2 *Documentary and cartographic material:* the data generated during the desk-based study will serve as a guide to the archaeological potential of the property, and will provide a basis from which historical narratives for the study area can be constructed. An archive search of the full range of potential sources of information will be undertaken for cartographic and documentary records relating to Acorn Bank. It is understood that there are no relevant documentary sources held at the property though there may be some at the regional office. The main intention of the documentary study will be to identify cartographic or engraving sources that may inform the landscape survey.

3.2.3 The work will also involve visiting Cumbria Records Office (Carlisle), and also the record office in Kendal, where there are records relating to the property. A rapid search will be made for archives held by other record offices. An investigation will also be made of the Penrith Local Studies Library. The archive at the National Trust regional office, where it is understood that there are copies of estate maps. Published secondary sources that might assist in the understanding of past land-use, enclosure, settlement and industrial activity on the estate will also be examined.

3.2.4 *CHER:* A search will be made of all pertinent records from the Cumbria HER, the HER database records and aerial photography. In addition a search will be made on all records held by National Trust SMR. These will often point to useful secondary sources. A copy of the building survey report by Adam Menuge (2010) will provide a useful starting point for the present study, as it comprehensively documents the family history as well as the building history.

3.2.5 Ian Tyler has studied the gypsum mining as part for a book on Gypsum in Cumbria, and the study will draw upon the published record and also primary archival material. This will entail contacting local

organisations such as CATMHUS and Ian Tyler, for any detailed information on the site as well as general contextual information on the Cumbria gypsum industry. Other local groups and private sources may also hold additional information and this possibility would be explored and followed up as part of the research work.

- 3.2.6 *Geology and Topography*: a rapid compilation of geological (both solid and drift), pedological, topographical, and palaeoenvironmental information will be undertaken, using information available from the Ordnance Survey and ADAS. This will not only set any archaeological features in context but also serves to provide predictive data, that will increase the efficiency of the field investigation.
- 3.2.7 *Aerial Photography*: a survey of the extant air photographic cover will be undertaken. Aerial photographic collections to be consulted will include any obliques and verticals held by the Cumbria HER, the NMR, and the National Trust.
- 3.2.8 *Map Processing*: the historic mapping will be incorporated into a GIS system (ArcMap). Initially the historic maps will be scanned and adjusted with respect to the 1:2500 OS base map. By this process it will be possible to obtain, as accurately as possible, the locations of historic features or plantings which no longer survive within the landscape but which are shown on the historic estate maps.
- 3.2.9 *LiDAR*: there is the availability of 0.5m resolution LiDAR for the study area and an examination of the raster data would add to the quality of the survey output, both in terms of the final mapping and in terms of the ability to be able to define and record subtle earthworks. In particular it would show features and structures within the woodland, and the recording of these would be more precise and detailed than can be achieved with a GPS.
- 3.2.10 *Gazetteer*: existing known sites within the study area, held by the National Trust SMR, will form the basis of the gazetteer. New sites discovered through the documentary and cartographic research will then be added to the gazetteer. The results will be presented as a GIS map linked to a database incorporating the gazetteer, which can then be used during the archaeological survey.
- 3.2.11 *Archive*: as part of the documentary research a file containing copies of all relevant documents will be collated. The file will also have a comprehensive catalogue page, listing its contents. Secondary source material will also be listed in the file.

### 3.3 FIELD SURVEY METHODOLOGY

- 3.3.1 The survey will be undertaken as an enhanced Level 1 type survey (details of OA North's survey levels are contained in *Appendix 1*). The survey study areas are as defined in the project brief and encompasses 0.75sqkm. The sites already identified on the Cumbria HER and NT SMR will be checked and recorded at the same level of consistency as other newly discovered monuments. The survey will involve four elements: Reconnaissance, Mapping, Description and Photography.
- 3.3.2 *Reconnaissance*: the reconnaissance will consist of close field walking, varying from 10m to 20m line intervals dependent on visibility and safety considerations. The survey will aim to identify, locate and record archaeological sites and features on the ground and thus all sites noted will be recorded. The extent of any areas where there is no access will be defined on maps and depicted on the CAD mapping. All sites identified from the Historic Environment Record and also the National Trust SMR, and OS first edition maps will be investigated. Sites already on the NTSMR will be included in the resultant site gazetteer.
- 3.3.3 *Survey mapping*: a Satellite Global Positioning System (GPS) will be utilised to satisfy the Level 1 survey requirements. GPS uses electronic distance measurement along radio frequencies to satellites to enable a positional fix in latitude and longitude which can be converted mathematically to Ordnance Survey national grid. The GPS is a Leica differential system and uses a base station in conjunction with a roving station to correct the raw data and thereby achieve much greater accuracies than can be achieved with a hand held GPS. The accuracy of the OA North GPS system is capable of +/- 0.02m and provides for a quick and effective means of recording the position and extent of sites. The technique will work in areas of woodland, albeit with reduced accuracy, but where a site is in an area that has dense canopy cover and there is not adequate satellite reception, then a bearing and distance measurement will be obtained from a nearby location which does have adequate reception. The GPS techniques will be used to record the extent of the site.
- 3.3.4 *Site Description and Assessment*: it is proposed that the data be directly input on site into a palm computer, which is within a weatherproof case. The data will be incorporated into an Access 97

compatible database. The data will be backed up daily onto a portable computer running Access 97. The proposed system has the advantage that it can be input in adverse weather conditions, unlike conventional pro-forma sheets, and saves on the subsequent transcription of the data into the database; however, it is slightly slower to create the entry in the field by comparison with a conventional pro-forma. The data format will be consistent with the NTYSMR, using their mandatory fields, and will use a block of NTSMR numbers. Sites identified from documentary sources, but not identified on the ground will be incorporated into the gazetteer. The input into the system will be guided by a proforma to ensure uniformity and consistency of input, and will provide input for the following fields.

- Location
- Land use
- Extent
- Character
- Period
- Condition
- Fragility
- Potential
- Rarity
- Documentation
- Group value
- Diversity
- Significance

3.3.5 Each category will be categorised for their significance as defined below:

- Grade 1: Archaeological sites of the highest importance, and will include Scheduled Ancient Monuments and sites of national importance.
- Grade 2: Archaeological Sites of regional significance
- Grade 3: Archaeological Sites of local significance
- Grade 4: Non extant sites or sites which are not authentic

3.3.6 The description will incorporate a provisional interpretation of the function and purpose of a site, where possible, and similarly will provide a provisional interpretation of the site's chronology where possible.

3.3.7 **Photographic Survey:** a photographic archive will be generated in the course of the field project, comprising landscape and detailed photography. Detailed photographs will be taken of all sites using a scale bar. All photography will be recorded on photographic pro-forma sheets which will show the subject, orientation and date. The photography will be primarily undertaken with a digital camera (at least 12 megapixels).

### 3.4 BOUNDARY SURVEY

3.4.1 In addition to the identification survey it is required that a boundary survey be undertaken for the enclosed lands within the estate holdings. This will be a desk-based study in conjunction with a rapid field survey and will reflect a process of analysis of historic mapping, followed by a process of ground truthing to check key boundary relationships. The boundary analysis will examine all areas of historic field system within the extent of the study area.

3.4.2 The first stage will be a detailed map regression, which will include examination of all maps that have boundary detail and a process of analysis will then establish the dating of the boundaries where evident from the maps and the results will be incorporated within the GIS to define the relative phasing on the basis of the relatively recent maps. The second stage will entail detailed cartographic analysis based primarily on the phase of boundaries determined from the earliest map evidence. This will seek to establish the development of pre-map boundaries based on the evident cartographic relationships and will attempt to define the primary intake boundaries, park boundaries or a ring garth and then establish the development of the later boundaries extending out from the primary boundaries. This will ultimately aim to build up a chronological framework for the development of the whole estate lands. The results will be interpreted using a GIS system and maps of the results will be produced, which can be taken out on the archaeological survey. It is recognised that boundary relationships will be fundamental to the analysis, and it is therefore intended that a process of ground

truthing be undertaken to check that the walls at the pertinent junction have not been rebuilt and then to establish the relevant phasing.

### 3.5 REPORT AND ARCHIVE

3.5.1 **Archive:** the results of the management programme will form the basis of a full archive to professional standards, in accordance with current English Heritage guidelines (2006). The project archive represents the collation and indexing of all the data and material gathered during the course of the project. This archive will be provided in the English Heritage Central Archaeological Services format. A synopsis (normally the index to the archive and the report) should be placed in the Cumbria HER and also the National Trust SMR. The archive will include the raw survey digital data in GIS shape file format.

3.5.2 **Landscape Assessment:** following completion of the surveys, a process of landscape assessment will be undertaken, drawing together the results of the survey work. The assessment will examine the chronological development of the estate lands, it will describe the evidence for the history of the wider site, the character and development of the parklands, and the changes that have been made to them. The report will identify areas of archaeological importance, and will examine their level of preservation and fragility.

3.5.3 **Report:** the report will present, summarise, and interpret the results of the programme detailed in Stages 3.1-3.4 above, and will include a full index of archaeological features identified in the course of the project. The reports will consist of an acknowledgements statement, lists of contents, summary, introduction summarising the brief and project design and any agreed departures from them. The report will identify the significance of the archaeological and architectural evidence and will include the following:

- A geomorphological and historical background of the property, examining its origins and development.
- An assessment of changes to settlement patterns across the area, looking at the development of farms, and abandoned settlements.
- It will present the results of the boundary survey demonstrating how the field system has developed.
- A map regression will be compiled to show the growth and decline of the property based on historic maps and plans.
- Results of the archaeological survey, presented in conjunction with survey mapping. This will examine evidence for design features visible in the landscape furniture and also the vernacular architecture and elements within the landscape.
- An interpretative account of the development of the historic landscape from its inception to the present.
- The report will highlight those elements of the original design that have either been lost or severely degraded.

3.5.4 The report will also include a complete bibliography of sources from which the data has been derived, and a list of further sources identified during the programme of work. There will be an appendix gazetteer of sites which will be based directly upon the project database (which will be compatible with the NTSMR).

3.5.5 The report will incorporate appropriate illustrations, including copies of the site plans, landscape survey mapping, all reduced to an appropriate scale. The site mapping will be based upon the GIS and CAD base. The report will be accompanied by photographs and historic illustrations illustrating the principal elements of the landscape.

3.5.6 The mapping will highlight areas of high and low archaeological sensitivity, which will inform the design of the proposed car and access route.

3.5.7 **Editing and submission:** the report will be subject to the OA North's stringent editing procedure and then a draft will be submitted to the National Trust for consultation. Following acceptance of the



report six bound and one unbound copies of the report will be submitted. In addition to the paper copies of the report two digital copies of the report and drawings will be submitted.

#### **4. OTHER MATTERS**

##### **4.1 HEALTH AND SAFETY**

4.1.1 Full regard will, of course, be given to all constraints (services) during the survey, as well as to all Health and Safety considerations. The OA North 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, and will anticipate the potential hazards arising from the project. In particular action will be taken to protect against eye injury from working in low, dense woodland undergrowth.

##### **4.2 INSURANCE**

4.2.1 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 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 OA North in respect of personal injury or damage to property by negligence of OA North or any of its employees there applies the insurance cover of £10m for any one occurrence or series of occurrences arising out of one event.

##### **4.3 CONFIDENTIALITY**

4.3.1 The report is designed as a document for the specific use of The National Trust, 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.

##### **4.4 PROJECT MONITORING**

4.4.1 Any proposed changes to this project design will be agreed with the National Trust. It is anticipated that there will be an initial site meeting at the outset of the project, a further meeting at the completion of the site surveys to define the format of the Landscape assessment report and to discuss the implication for the restoration proposals. Finally there will be a meeting to discuss the draft plan. Any edits to the report by the client should be passed back to OA North within two months following submission of the draft report.

#### **5. WORK TIMETABLE**

5.1 The phases of work will comprise the following elements. The days quoted are the duration for each individual task rather than the number of man-days.

- i) **Documentary Study**  
12 days
- ii) **Boundary Survey (desk-based)**  
2.5 days
- iii) **Boundary Survey (ground truthing)**  
1 day
- iv) **Field Survey**  
3 days
- v) **Report Production**  
15 days
- vi) **Report Editing**  
10 days

## 6. RESOURCES

### 6.1 PROJECT TEAM

- 6.1.1 The documentary research will be carried out by Alastair Vannan (Project Officer) and the survey will be undertaken by Peter Schofield (Project Officer), under the close guidance of the project manager, Jamie Quartermaine. The report writing and analysis will be split between Peter and Alastair.
- 6.1.2 **Project Management:** the project will be under the project management of **Jamie Quartermaine, BA Surv Dip MIFA** (OA North Project Manager) to whom all correspondence should be addressed. Jamie is a very experienced landscape surveyor, who has undertaken or managed literally hundreds of surveys throughout Northern England since 1984, and has considerable experience of working on similar projects to that proposed. He has managed a major recording programme of Lyme Park, Cheshire, and also a survey of the Rectory Wood Gardens, Heysham Head, both for the National Trust. He has also undertaken surveys of Lowther Park, Cumbria, Rufford Park, Lancashire and also a structural survey of Rufford Old Hall, he has also managed the recording programme of Lathom Hall and Park, Lancashire. He has been a project manager since 1995 and has managed over 400 very diverse projects since then, which are predominantly survey orientated, but of all periods from Palaeolithic to twentieth century.
- 6.1.3 **Project Director:** the survey will be directed by **Peter Schofield** (OA North Project Officer) who presently works full time on landscape surveys across the north-west. He has undertaken surveys at Hardknott Forest, Cumbria, Hartley Fold Estate, Cumbria, Ennerdale Valley, West Cumbria, a major programme of landscape survey across six upland areas in North Wales, Little Asby Common for the Friends of the Lake District, and a survey at Lowther Park. With the exception of Jamie Quartermaine, he is our most experienced landscape archaeologist.
- 6.1.4 **Documentary Specialist:** the documentary research will be carried out by **Alastair Vannan, MA AIFA** (OA North Project Officer) who has considerable experience in documentary studies and landscape studies. He also has considerable experience of documentary work and undertook both the documentary study for the recent Holwick community and the Windermere Reflections surveys. Alastair would undertake the documentary study for the proposed study. Alastair has been leading a number of community excavations, which included the major excavation of Lathom House (nr Ormskirk), and also the excavations of Stocks Church, Forest of Bowland.

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## APPENDIX 3: SELECTED GAZETTEER

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The following comprises a selection of the full gazetteer from the historic landscape survey report (OA North 2014b), and incorporates only those entries within the immediate environs of the proposed car park options.

**Site Number** 1  
**Site Name** Drive, Acorn Bank, Temple Sowerby  
**NGR** NY 61452 28290  
**Site Type** Drive  
**Period** Post-Medieval  
**Sources** Walkover Survey, Estate Map 1824

**Description**

Formal carriage drive sweeping through the parkland, and around the southern and western sides of the house from the lane to the south-west of Acorn Bank. It measures approximately 520m long and is embanked slightly on the eastern end by the house. It is depicted on the earliest estate mapping (1824).

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**Site Number** 2  
**Site Name** Broad Ridge and Furrow, Acorn Bank, Temple Sowerby  
**NGR** NY 61605 28137  
**Site Type** Broad Ridge and Furrow  
**Period** Medieval to Post-Medieval  
**Sources** Walkover Survey, LiDAR

**Description**

An extensive area of broad ridge and furrow cultivation surviving as shallow earthworks on the western side of Acorn Bank park. The full area measures approximately 320m by 215m. It is orientated roughly north-east/south-west and measures 12m wide by only 0.2m high. The full extent is only visible on LiDAR mapping. The cultivation extends further to the south-east but is visible only as slight lynchets (Sites 55 and 84).

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**Site Number** 8  
**Site Name** Drainage Ditch, Acorn Bank, Temple Sowerby  
**NGR** NY 61579 27941  
**Site Type** Drainage Ditch  
**Period** Post-Medieval  
**Sources** Walkover Survey

**Description**

**Sources** Walkover Survey, Estate Map 1824

**Description**

The curvilinear canalised drainage ditch named Birk Syke, located at the south-west end of the parkland at Acorn Bank. It is depicted on the earliest estate mapping as 'The Stell' (1824), and measures over 1100m long by over 6m wide and 3m deep.

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**Site Number** 20  
**Site Name** Drive, Acorn Bank, Temple Sowerby  
**NGR** NY 61499 28018  
**Site Type** Drive  
**Period** Post-Medieval  
**Sources** Walkover Survey, Estate Map 1824

**Description**

A relict carriage drive running south-west/north east from a T-junction of Milburn Road and running towards the south-west side of Acorn Bank. It survives on the south end as a well-defined embanked trackway, up to 3m wide by 0.3m high. This section is 160m long to the south of a culverted bridge (Site 46). The alignment continues upslope to the north towards the house as two slight cut trackways, one going straight upslope as a

footpath and one going diagonally upslope further to the east. The drive predates the earliest estate mapping (1824) which only depicts the route as a footpath.

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**Site Number** 45  
**Site Name** Culvert, Acorn Bank, Temple Sowerby  
**NGR** NY 61628 27925  
**Site Type** Culvert  
**Period** Eighteenth Century to nineteenth Century  
**Sources** Walkover Survey

**Description**

A probable subterranean culvert used to drain the boggy land downslope of Acorn Bank prior to the canalisation of Birk Syke (Site 8). It is aligned roughly north-west/south-east and is at least 380 in length. Both visible ends have elaborate sandstone manholes with wrought iron covers (Sites 5 and 5I), and there a further three possible sites for manholes located along its length, although these have been removed leaving only small sub-rectangular depressions in the ground. The feature is likely to be a formal estate feature of the eighteenth century.

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**Site Number** 46  
**Site Name** Culvert, Acorn Bank, Temple Sowerby  
**NGR** NY 61511 28028  
**Site Type** Culvert  
**Period** Twentieth Century  
**Sources** Walkover Survey

**Description**

A modern earth bank over a culverted pipe located in Birk Syke (Site 8). The site may have originally contained a small bridge taking the relict driveway over the syke and towards the south side of Acorn Bank (Site 20).

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**Site Number** 75  
**Site Name** Ridge and Furrow, Acorn Bank, Temple Sowerby  
**NGR** NY 61552 28314  
**Site Type** Ridge and Furrow  
**Period** Medieval to Post-Medieval  
**Sources** Walkover Survey

**Description**

A large area of relict ridge and furrow cultivation located on the north side of the main carriage drive (Site I) and on the edge of the tree line at Acorn Bank. The cultivation is orientated roughly east-south-east/west-north-west and the main section, measures 190m by 45m is up to 6m wide by only 0.25m high. There is a smaller section located on the west end, near the corn mill. This section (approximately 135m by 20m in extent) is on the same alignment, but survives up to 12m wide by 0.3m high.

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**Site Number** 107  
**Site Name** Gateway, Acorn Bank, Temple Sowerby  
**NGR** NY 61680 28213  
**Site Type** Gateway  
**Period** Eighteenth Century to nineteenth Century  
**Sources** Walkover Survey

**Description**

The gateway located between the main avenue (Site I) and the grounds of the house. It consists of a pair of ashlar sandstone gate piers with pyramidal coping.

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**APPENDIX 4: DESIGNATION STATUS**


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<b>Name</b>	<b>Site Number</b>	<b>HER Number</b>	<b>Listed Building Number</b>	<b>Listed Status</b>	<b>Monument Description</b>
Acorn Bank Mill	96	2796	1226706	II	Bank Barn
Acorn Bank Mill	95	2796	1265959	II	Mill House
Acorn Bank Mill	97	2796	1265726	II	Watermill
Acorn Bank Mill	98	2796	1226230	II	Pigsty
Millrigg, Culgaith		42157		II	Barn (mid/late 19th C)
Millrigg, Culgaith		42157		II*	Farmhouse (dated 1597)
Millrigg, Culgaith		42157		II	Sundial (1846)
Acorn Bank House	99	43179	1226225	I	Mansion House
Acorn Bank House	100	43179	1226229	II	Sundial
Acorn Bank House	60-1, 92, 138, 140, 151, 152	43179	1265761	II	Garden Walls
Acorn Bank House	108-9	43179	1265701	II	Gate Piers
Acorn Bank House	102-3	43179	1226549	II	Ha-ha, Railings
Acorn Bank House	150	43179	1265958	II	Dovecote
Acorn Bank House	101	43179	1265958	II	Entrance Arch

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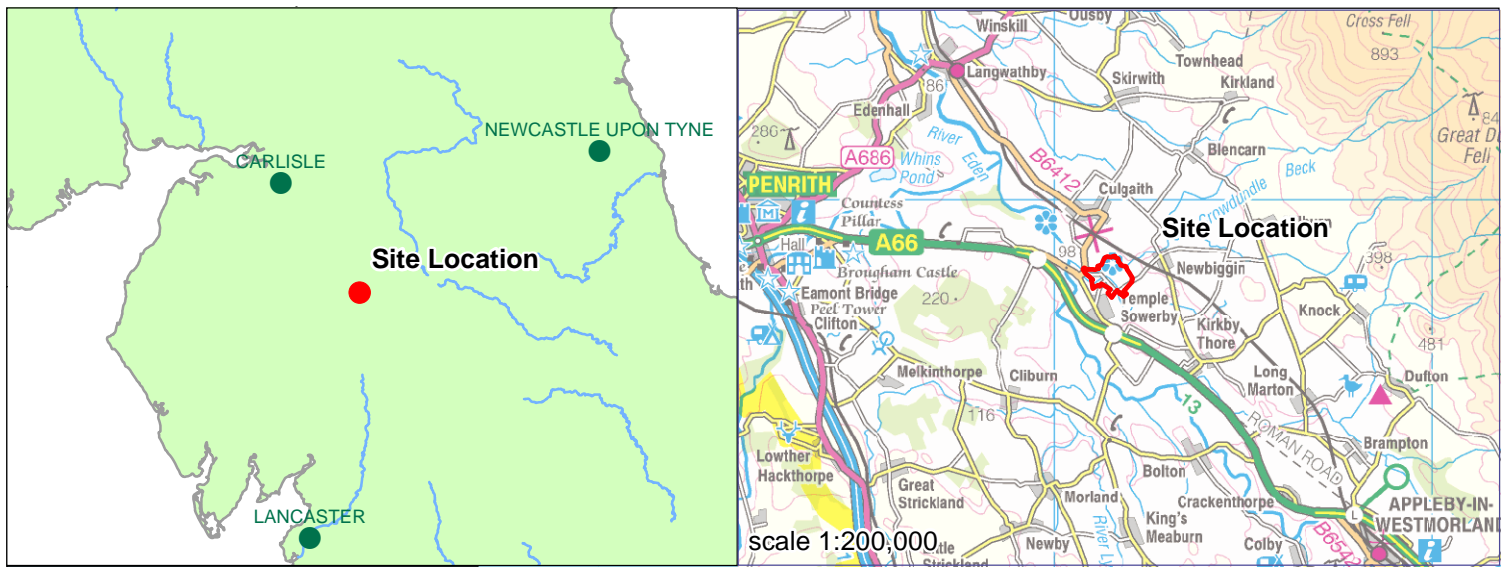
## ILLUSTRATIONS

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### **LIST OF FIGURES**

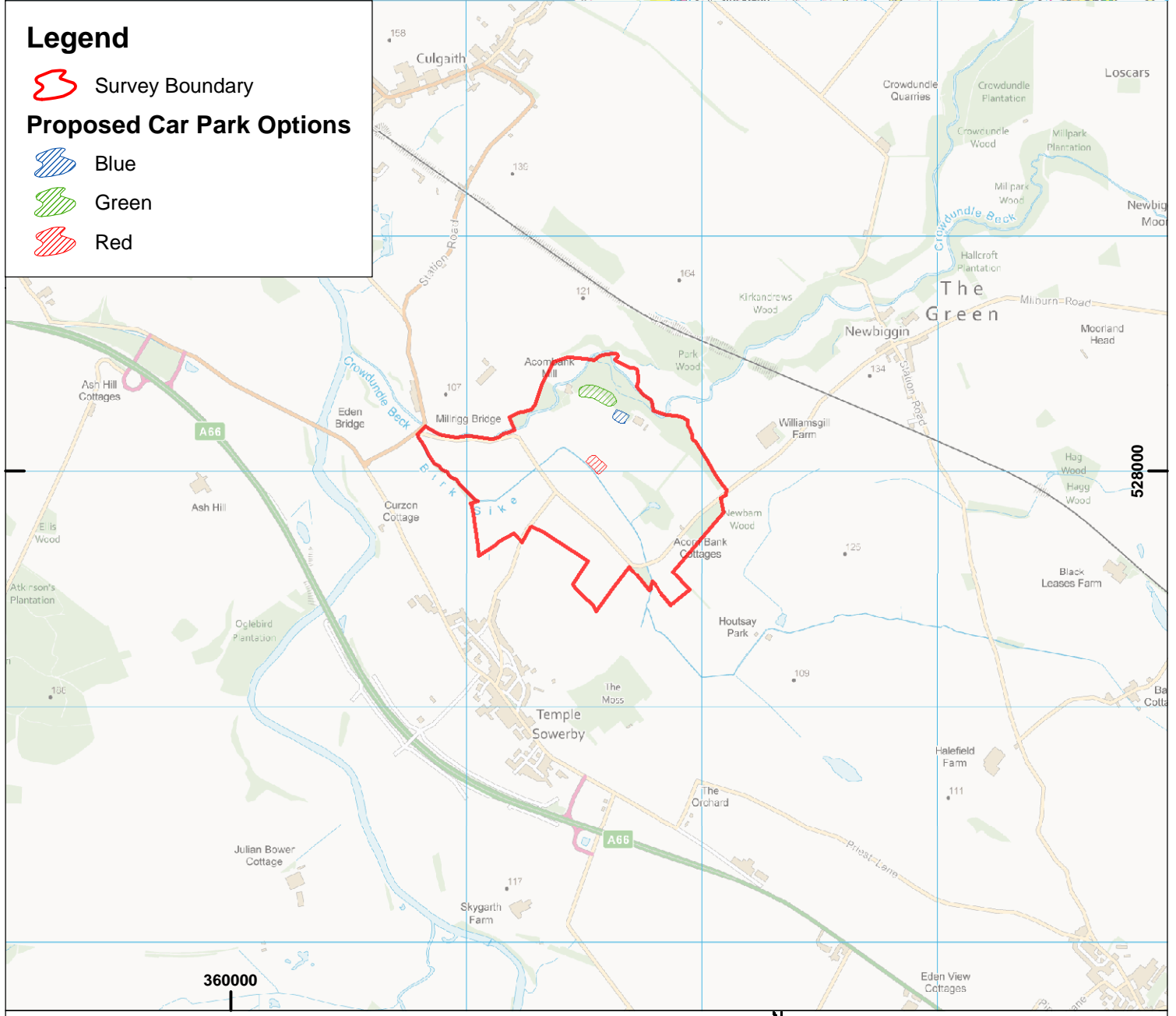
Figure 1: Site Location

Figure 2: Potential impacts of each proposed car park extension option at Acorn Bank-  
1:2500 OS map (1972)



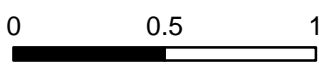


**Legend**

-  Survey Boundary
- Proposed Car Park Options**
-  Blue
-  Green
-  Red



Based on the Ordnance Survey 1:25,000 with the permission of the controller of HMSO © Crown Copyright License number: AL100005569

Kilometres  
1:25,000 @ A4

Figure 1: Site Location

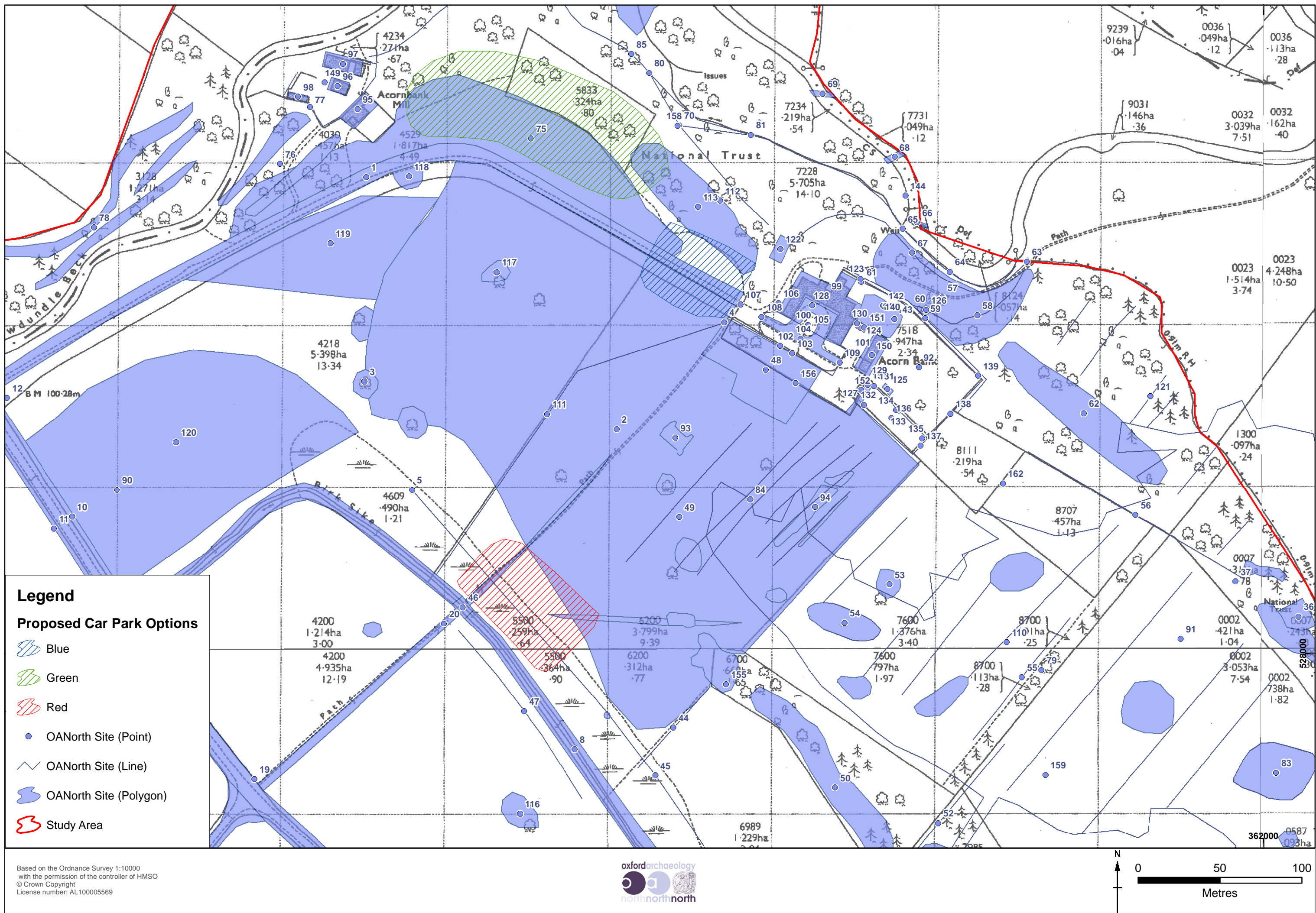


Figure 2: Potential impacts of each proposed car park extension option at Acorn Bank- 1:2500 OS map (1972)