



DESK-BASED ASSESSMENT  
AND  
GEOPHYSICAL SURVEY

HEMLINGTON NORTH  
MIDDLESBROUGH  
TEESSIDE

prepared for  
Middlesbrough Council

NAA 18/49  
July 2018

QUALITY ASSURANCE	
Project Number	1446
Report Number	18-49
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<i>Draft v1</i>	10/07/18

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Grid Ref NZ 50086 14327  
OASIS Ref northern1-321848  
Date of Fieldwork 21st June 2018

**HEMLINGTON NORTH, MIDDLESBROUGH**  
**DESK-BASED ASSESSMENT AND GEOPHYSICAL SURVEY REPORT**

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**FIGURE LIST**

Figure 1: site location

Figure 2: heritage assets

Figure 3: 1857 six-inch Ordnance Survey Map

Figure 4: 1915 25-inch Ordnance Survey Map

Figure 5: 1929 25-inch Ordnance Survey Map

Figure 6: 1947 six-inch Ordnance Survey Map

Figure 7: grid location

Figure 8: unprocessed greyscale and processed plots of gradiometer survey results

Figure 9: processed greyscale plot and interpretation of gradiometer survey results

## **PLATE LIST**

Plate 1: current view of the PDA looking north

### **Disclaimer**

The results of geophysical survey may not reveal all potential archaeology and do not provide a comprehensive map of the sub-surface, but only responses relative to the environment. Geological, agricultural and modern responses may mask archaeological features. Short-lived features may not give strong responses. Only clear features have been interpreted and discussed in this report.

# HEMLINGTON NORTH, MIDDLESBROUGH

## DESK-BASED ASSESSMENT AND GEOPHYSICAL SURVEY REPORT

### **Summary**

*Northern Archaeological Associates Ltd was commissioned by Middlesbrough Council to undertake an archaeological assessment and geophysical survey on land to the south of Stainton Way, Hemlington, Middlesbrough (NGR: NZ 50086 14327). The assessment works were required to assess the archaeological potential of the site in support of a planning application for a residential development.*

*This assessment has collated data from a number of sources, including the Middlesbrough Council Historic Environment Record, published and unpublished documentary sources, historic mapping, geotechnical investigations, a site visit, and geophysical survey. These have been used to create a baseline data set against which to assess the potential impact of the development proposals on heritage assets, including archaeological remains, within a radius of 0.5km of the site.*

*Hemlington medieval village was located directly to the south-east of the PDA, and is defined in the late post-medieval period as buildings centred on a crossroads of Gunnergate Lane (now partially extant as Hemlington Village Road) and an unnamed road that was developed into the B1365. The area surrounding Hemlington Village was composed of agricultural land ordered by a dispersed network of farmsteads.*

*The baseline data has been reviewed to ascertain the potential for previously unrecorded archaeological assets to be present within the site. The assessment has found that there are no previously recorded archaeological or heritage assets within the PDA. In the local environ of the PDA the last remnants of Hemlington village are the Gables Public House, formerly called the Bluebell Public House, and the partial remains of Haddersgate Farm, which has been converted into the Evergreens Retirement Home.*

*A geophysical survey over 0.5 hectares was completed on the 21st June 2018 to assess the potential for previously unrecorded buried remains within the PDA. The results of the geophysical survey showed that the PDA contained a high level of magnetic disturbance, which is to some extent likely to be caused by debris and other material relating to the former buildings recorded on early 20th century historic maps as being located within the PDA.*

*The assessment has found that the effects of the construction phase of the proposed development are likely to have a significant impact upon any unknown archaeological remains that may be present within the site. This report has found the weight of the evidence suggests a low to moderate potential for any archaeological remains beyond local significance within the site.*

*In order to mitigate against the loss of potential archaeological remains that may be disturbed during the proposed development works, it is recommended that further archaeological works are undertaken in the areas affected by ground works. A watching brief with periodic inspections of ground works should be sufficient in assessing the archaeological potential of the PDA and inform the requirement, if any, for further mitigation should buried archaeological features be discovered within the site. Provision should be made for the monitoring archaeologist to have sufficient time to adequately record any archaeological deposits or features encountered during the watching brief phase and subsequent trenching operations. This might result in short delays to the construction program.*

*The extent and timing of any ground work should be agreed with the Middlesbrough Council prior to its commencement.*

## **1.0 INTRODUCTION**

- 1.1 Northern Archaeological Associates Ltd (NAA) was commissioned by Middlesbrough Council to undertake a desk-based assessment and geophysical survey on land to the south of Stainton Way, Hemlington, Middlesbrough, Teeside (NGR: NZ 50086 14327). The survey was required to assess the archaeological potential of the site in support of a planning application for a residential development.
- 1.2 The report describes the location of the Proposed Development Area (hereafter PDA) and its environs, and sets out the methodology and the information sources used for the study. It assesses the potential for the proposed development to cause any harm or loss to heritage assets or the setting in relation to intersite visibility of Listed Buildings with the PDA and whether the proposals would comply with national and local planning policy as this relates to heritage.

## **2.0 LOCATION, TOPOGRAPHY AND GEOLOGY**

### **Location and land-use**

- 2.1 The proposed development area (PDA) comprised an informal rectangular area of grassland in the south-east of the Hemlington suburb of Middlesbrough (NGR: NZ 50086 14327, Fig. 1).
- 2.2 The PDA was located in land directly to the south-east of the roundabout joining Stainton Way, the B1365 and the north of Hemlington Village Road. Directly to the west of the PDA was an isolated residential building, and to the south-east were the Gables Inn Public House and the Evergreens Retirement Home. Residential areas were located to the north-west and south-east. During the site inspection, land directly to the south of the PDA was in the process of being developed for housing, but prior to this had belonged to the agricultural hinterland to the south of Hemlington.

### **Topography**

- 2.3 The PDA was located on a raised platform to the south of Stainton Way. The north of the site lay at approximately 49m above Ordnance Datum (aOD), the centre of the site was approximately 50m aOD, and the south-west of the PDA was 51m aOD.

### **Geology and soils**

2.4 The solid geology of the survey area consists of mudstone of the Mercia Mudstone Group with superficial deposits of Devensian till (BGS 2018). The soils are mapped as Dunkeswick (Soil Survey of England and Wales 1983), consisting primarily of stagnogley soils in greyish brown drift (Jarvis *et al.* 1984, 145).

## **3.0 PLANNING CONTEXT**

### **Legislation and Policy**

3.1 The legislation, policy and guidance against which development would be considered are:

- Ancient Monuments and Archaeological Areas Act 1979;
- Planning (Listed Building and Conservation Areas) Act 1990;
- National Planning Policy Framework (NPPF) (2012); and
- Middlesbrough Local Development Framework Core Strategy (2008).

### **Ancient Monuments and Archaeological Areas Act 1979**

3.2 Statutory protection for archaeological sites and historic structures of national importance is provided by the Ancient Monuments and Archaeological Areas Act 1979.

3.3 The Act states that any works affecting a scheduled monument require permission, in the form of scheduled monument consent, from the Secretary of State.

### **Planning (Listed Building and Conservation Areas) Act 1990**

3.4 Statutory protection for built heritage is principally provided by the Planning (Listed Building and Conservation Areas) Act 1990.

3.5 In considering whether to grant planning permission for development that affects a Listed Building or its setting, Sections 16 and 66 of the Act require authorities to have special regard to the desirability of preserving the Listed Building or its setting or any features of special architectural or historic interest which it possesses.

### **National Planning Policy Framework (NPPF) 2012**

3.6 The NPPF sets out the Government's planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of



sustainable development (para. 14). There are three dimensions to sustainable development: economic, social and environmental. The purpose of the planning system is to encourage sustainable development that makes a positive contribution to the quality of the built, natural and historic environment and contributes to the overall quality of people's lives (paras 14 and 9). To this end, economic, social and environmental gains should be sought jointly and simultaneously through the planning system (para. 8).

- 3.7 **Policy 7** addresses the importance of good design of new structures and features, in relation to the pre-existing environment. Paragraphs 60 to 63 require the local authority to *'respond to local character and history, and reflect the identity of local surroundings and materials, while not preventing or discouraging appropriate innovation'* when making planning decisions.
- 3.8 **Policy 12: Conserving and enhancing the historic environment** sets out the framework for local planning authorities to make informed decisions on developments which affect heritage assets. Paragraphs 128–141 set out the information requirements and policy principles in relation to heritage assets.
- 3.9 Paragraph 132 states that *'when considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation [...] significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting'*. The NPPF defines setting as *'the surroundings in which a heritage asset is experienced'*. Any harm to an asset's significance and setting requires clear and convincing justification and must be weighed against the public benefits resulting from the proposal.
- 3.10 Paragraphs 137–138 address the principles to be followed relating to development affecting a World Heritage Site. Paragraph 137 states that *'local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites and within the setting of heritage assets to enhance or better reveal their significance'*. It is clarified that *'not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance. Loss of a building (or other element) which makes a positive contribution to the significance of the Conservation Area or World Heritage Site should be treated either as substantial harm under paragraph 133 or less than substantial harm under paragraph 134, as appropriate'* (Paragraph 128).

3.11 Details of other NPPF paragraphs relevant to this site are set out in Appendix A.

**Middlesbrough Local Development Framework Core Strategy (2008)**

**Table 1: Middlesbrough Local Development Framework Core Strategy (2008) policies relevant to the site**

Middlesbrough Core Strategy (adopted 2008)	
<b>CS4: Sustainable Development</b>	<p>All developments will be required to contribute to achieving sustainable development principles by, where appropriate:</p> <ul style="list-style-type: none"> <li>a. Contributing to achieving sustainable economic development to support efficient, competitive and innovative business, commercial and industrial sectors;</li> <li>b. The creation of inclusive communities reducing deprivation and the disparities between the poorer and wealthier sections of the town;</li> <li>c. Respecting the diverse needs of communities;</li> <li>d. Ensuring everyone has access to the health, education, jobs, shops, leisure and other community and cultural facilities that they need in their daily lives;</li> <li>e. Contributing to raising the hope, aspirations and achievement of young people and adults;</li> <li>f. Promotion of a healthier and safer community for all;</li> <li>g. Being located so that services and facilities are accessible on foot, bicycle, or by public transport. Reliance on the private car must be reduced or minimised and the use of sustainable forms of transport encouraged;</li> <li>h. Making the most efficient use of land, with priority being given to development on previously developed land, in particular vacant and derelict sites and buildings, ensuring that there is a sufficient supply of land of a suitable quality in the right locations to meet the development needs of the people of Middlesbrough;</li> <li>i. Locating developments that attract large numbers of people in those locations which are accessible by sustainable forms of transport and will contribute most to achieving social inclusion;</li> <li>j. Ensuring that biodiversity assets, geodiversity assets, wildlife species, natural habitats, water resources, landscape character, green infrastructure, air quality and water quality; within and outside Middlesbrough are protected. Where possible such assets should be enhanced;</li> <li>k. Protecting and enhancing Middlesbrough’s historic heritage and townscape character;</li> <li>l. Delivering development of a high quality design that contributes to improvements in the quality of the townscape;</li> <li>m. Ensuring that inappropriate development is not carried out in the floodplain and that sustainable methods of surface drainage are used. This should include the incorporation of Sustainable Drainage Systems in new developments to mitigate against localised flooding, promote water conservation and help protect water quality;</li> <li>n. Minimising the generation of waste and maximising the use of recycled materials;</li> <li>o. Contributing to reducing the causes and impacts of climate change; and</li> <li>p. Incorporating within developments of 10 dwellings, or a floor space of 1,000 sq.m, or more onsite renewable energy facilities or energy saving technologies (for example combined heat and power systems, photovoltaic cells and wind turbines) that provide as a minimum 10% of energy requirements. There should be no demonstrable harm to biodiversity interests or on visual or residential amenities or by way of pollution generation. Where such harm is likely it will be necessary to demonstrate that this is outweighed by the benefits contributing to diverse and sustainable energy supplies and reducing carbon emissions; provision should be made to mitigate or compensate for any such harm.</li> </ul> <p>Where necessary development will be phased to ensure the delivery of sustainable communities and adherence to the principles of sustainable development.</p>

<b>CS20: Green Infrastructure</b>	<p>The Council will work with partners to ensure the successful creation of an integrated network of green infrastructure. This will be delivered through a planned network of multifunctional green space and inter-connecting links which are designed, developed, and managed to meet the environmental, social, and economic needs of communities across Middlesbrough and the wider Tees Valley city region. It will be set within, and contribute to, a high quality natural and built environment and will be required to enhance the quality of life for present and future residents and visitors, deliver liveability for sustainable communities, and contribute to the Middlesbrough Biodiversity Action Plan.</p> <p>At a strategic level this network will include the following open spaces:</p> <ul style="list-style-type: none"><li>i Green Blue Heart;</li><li>ii Middlesbrough's green lung;</li><li>iii beck valleys;</li><li>iv green wedges;</li><li>v green flag parks;</li><li>vi River Tees frontage; and</li><li>vii South Middlesbrough country park.</li></ul>
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3.12 Policy CS20, section 11.7 of the Core Strategy addresses how development will contribute to the environment. This policy is set out in Table 1 (above). The articles relevant to the study area are as follows:

Development will be required to contribute to the delivery and implementation of this network by, where appropriate, providing green infrastructure that:

- a) contributes to the management, conservation and improvement of the local landscape;
- b) contributes to the protection, conservation and management of historic landscape, archaeological and built heritage assets; and
- c) is managed and funded in urban areas to accommodate nature, wildlife and historic and cultural assets, and provide for sport and recreation.

#### **4.0 ASSESSMENT METHODOLOGY**

4.1 The study area comprised a 0.5km buffer zone that extended from the proposed development boundary (Fig. 2). The assessment included a comprehensive desk-based review of published and readily accessible documentary, cartographic, aerial photographic evidence, LiDAR evidence and on-line resources, together with a site walk-over inspection and geophysical survey.

4.2 This assessment has been prepared in accordance with the following guidance:

- NPPF Planning Practice Guidance (2014): *Conserving and Enhancing the Historic Environment* (<http://planningguidance.planningportal.gov.uk>);
- Historic England (2015a) *Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment*;
- Historic England (2015b) *Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets*;
- English Heritage (2008a) *Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment*;
- English Heritage (2011) *Seeing the History in the View: A Method for Assessing Heritage Significance with Views*;
- Chartered Institute for Archaeologists (2017) *Standard and Guidance for Historic Environment Desk-Based Assessment*;
- Design Manual for Roads and Bridges Volume II, Section 3, Part 2 Annex 5 (2007) *Cultural Heritage Sub-Topic Guidance: Archaeological Remains*; and
- Petts and Gerrard (2006) *Shared Visions: The North-East Regional Research Framework for the Historic Environment* (NERRF).

### **Aims and Objectives**

4.3 The principal objectives of the archaeological assessment were to:

- identify all recorded archaeological sites, finds and buildings/structures within the study area;
- identify those features that should be retained and/or enhanced because of their intrinsic importance;
- identify those features or areas which require further evaluation in order to fully establish either importance or likely development impact;
- assess the potential effects of the proposals in terms of the construction and operational impacts on the archaeological resource;
- recommend appropriate design amendment, mitigation and/or enhancement that could be taken to prevent, reduce or remedy any adverse effects identified; and
- assess the degree of conflict and/or compliance with regional and local plan policies relevant to the archaeological resource.

### **Information Sources**

4.4 The following repositories and data sources were consulted:

- **Middlesbrough Council HER:** the Historic Environment Record (HER), previous archaeological assessments, evaluations and excavations;
- **Teesside Archives:** cartographic and documentary sources;
- **Hartlepool Central Library local studies section:** local/county histories;
- **Historic England:** National Record of the Historic Environment (NRHE) and the National Heritage List for England (NHLE); and
- **Online sources:** historic and modern maps, landscape assessment, Google Earth, Environment Agency LiDAR coverage, historical and archaeological studies, the Middlesbrough planning policy site, and Historic England conservation, heritage, archaeology and urban design site.

4.5 This report focuses on the PDA and only discusses heritage assets in the wider vicinity insofar as they are directly relevant in a holistic approach to assessing the PDA. A catalogue of heritage assets within the wider area that are discussed within the report is found within Appendix C of this report and are denoted in brackets. Numerous other archaeological interventions and findspots recorded by the HER within the study area but not directly relevant to the proposed development and not mentioned within the text are listed in Appendix D.

### **Additional Sources**

#### ***Archaeological investigations***

4.6 Several archaeological investigations have taken place within the PDA and the surrounding 0.5km study area, and one intrusive archaeological investigation has been undertaken within the study area.

4.7 In 2002, GeoQuest undertook a geophysical survey on Coulby Newham Secondary School playing fields. The survey totalled 4ha and identified anomalies suggested to be of modern, agricultural and geological natures including ridge and furrow, buried utilities, and a network of palaeochannels (GeoQuest 2002). A subsequent trial trench evaluation in 2002 by Tees Archaeology largely confirmed the results of the geophysical survey, with anomalies being revealed as relating to periglacial processes associated with modern drainage (Tees Archaeology 2002).

- 4.8 Two trial trenches were excavated in 2007 to the rear of Evergreens Retirement Home (approximately 80m to the south of the PDA). Features were found to largely be of a modern nature, with only one piece of late medieval pottery being recovered from the topsoil (Stephen Sherlock Services 2007).
- 4.9 In 2013, URS produced a heritage statement for a proposed development at Hemlington Grange, which comprises of 56.65ha of land to the south of Stainton Way, including the PDA assessed as part of this report. The results of the assessment suggested that activity dated to the prehistoric period was limited to enclosures recorded as cropmarks on aerial photographs to the north of Stainton Way. A 4th-century Romano-British farmstead was identified near Larchfield Farm (approximately 0.91km to the south of the PDA) during trial trenching in 1984. During the medieval period, the site belonged to agricultural land surrounding the medieval settlement of Hemlington. By the end of the post-medieval period, the PDA and its local environment was transformed from open to countryside into a mixed use urban landscape. The most rapid period of development occurring in the mid-20th century, with the erection of buildings that evolved Hemlington village into a sizeable township (URS 2013).
- 4.10 In 2016, a geophysical survey was completed over numerous fields to the south-west of the PDA, within the area formerly assessed by URS in 2013. The interpretation of the geophysical survey results suggested that anomalies were considered to be of an agricultural, geological, modern, or unknown origin (Phase Site Investigations Ltd 2016).

#### ***LiDAR***

- 4.11 Available Environment Agency LiDAR coverage was examined at both 1m and 2m resolution, and no archaeological features were identified.

#### ***Geotechnical***

- 4.12 No geotechnical information available is relevant for the PDA.

#### ***Site Inspection***

- 4.13 The objectives of the site inspection were to:
- understand the current context, character, land use and ground conditions of the proposed development site;
  - understand its relationship to nearby previously recorded heritage assets;

- understand the significance of any heritage asset which may be affected by the proposals;
- understand the setting of designated assets and historic landscape character; and
- identify additional unrecorded heritage assets or the potential for these.

### **Geophysical Survey**

- 4.14 The aim of the geophysical survey was to map and record potential buried features located within the proposed development area. Through detailed analysis of the results of the geophysical survey, NAA aimed to provide a detailed interpretation that assessed the archaeological potential of the site and will inform subsequent archaeological mitigation strategies.
- 4.15 The objectives of the survey were to:
- undertake a geophysical survey across areas deemed suitable for data collection within the proposed development area;
  - attempt to identify and record any subsurface remains within the survey boundary;
  - characterise the nature of identified anomalies, and where possible suggest the nature of feature they potentially relate to;
  - assess the archaeological significance of identified anomalies;
  - identify possible concentrations of past activity in order to inform the requirement for any further archaeological investigation at the site; and
  - produce a detailed report including illustrations of the results of the geophysical survey.
- 4.16 All survey work was completed to appropriate standards as outlined by existing guidelines (English Heritage 2008b; ClfA 2014). The gradiometer survey used a Bartington Grad601-2 dual magnetic gradiometer system with data logger. Readings were recorded at a resolution of 0.01nT and data was collected with a traverse interval of 1m and a sample interval of 0.25m. The survey data was collected with reference to a site survey grid comprised of individual 30m x 30m squares. The grid was established using Real Time Kinematic (RTK) differential GPS equipment and marked out using non-metallic survey markers. All grid nodes were set out with a positional accuracy of at least 0.1m and could be relocated on the ground by a third

party. The base lines used to create the survey grids are shown on Figure 7 and further details are available in Appendix E.

- 4.17 The processing was undertaken using Geoplot 3.0 software and consisted of standard processing procedures. Details of processing steps applied to collected data are provided in Appendix F.
- 4.18 On the greyscale plots, positive readings are shown as increasingly darker areas and negative readings are shown as increasingly lighter areas (Fig. 8 and Fig. 9, left). Due to the high level of magnetic disturbance within the site, processed data has been plotted with a range of -20nT to 30nT (Fig. 8, left) and -2nT to 3nT (Fig. 9, right). By showing the data at a broader range of values, it is possible to depict concentrations of disturbance or possible features. It should be noted that strong responses, often of a dipolar or bipolar form, are generally considered to denote modern activity, whereas infilled archaeological features are composed of much weaker increases in magnetic response, depending on the magnetic susceptibility of the material that they comprise. Consequently, it is possible for weaker responses of buried archaeological features to be masked by modern features composed of much stronger increases in magnetic response.
- 4.19 Interpretation of identified anomalies is generally achieved through analysis of anomaly patterning and increases in magnetic response, and is often aided through examining supporting information. The interpreted data uses colour coding to highlight specific readings in the survey area (Fig. 9, right). Appendix G details the terminology and characterisation of anomalies used for interpreting data.

## **5.0 DESIGNATED HERITAGE ASSETS**

### **World Heritage Sites**

- 5.1 There are no World Heritage Sites within the PDA or within 0.5km of the PDA. The nearest World Heritage Site is in Durham, approximately 36km to the north-west.

### **Scheduled Monuments**

- 5.2 There are no Scheduled Monuments within the PDA or within the 0.5km buffer zone study area.



- 5.3 The nearest Scheduled Monuments are the Tunstall shrunken medieval settlement located in Hambleton, which is approximately 5.6 km to the south-east of the PDA, and the Stainsby medieval village and open field system, which is approximately 6.4km to the north-west of the PDA.

### **Listed Buildings**

- 5.4 There are no Listed Buildings within the PDA or its surrounding 0.5km buffer area.
- 5.5 The nearest Listed Buildings include:
- Grade II listed walls enclosing a carpark, c.30m south-west of Coulby Manor (approximately 0.89km to the north-west of the PDA);
  - Grade II listed Coulby Manor Farm (approximately 0.92km to the north-west of the PDA);
  - Grade II listed Stainton Grange and garden walls (approximately 1.16km to the south-west of the PDA);
  - Grade II listed Stable and cart shed circa 20m east of Hemlington Hall Farmhouse (approximately 1.31km to the north-west of the PDA);
  - Grade II listed Hemlington Hall Farmhouse, farm cottage and garden wall (approximately 1.33km to the north-west of the PDA);
  - Grade II listed Gunnergate Farmhouse and farm cottage (approximately 1.45km to the north-east of the PDA); and
  - a Grade II listed barn and stable, located 15m east of Gunnergate Farmhouse (approximately 1.48km to the north-east of the PDA).

### **Conservation Areas**

- 5.6 There are no conservation areas within the PDA or 0.5km study area.
- 5.7 There are eight conservation areas within the township of Middlesbrough. The nearest conservation area is the Stainton and Thoresby Conservation Area, which is located approximately 1.9km to the south-east of the PDA.

### **Historic Parks and Gardens**

- 5.8 There are no Historic Parks or Gardens within the PDA or 0.5km study area.

- 5.9 The nearest Historic Park is the Grade II listed Albert Park, which is located approximately 4.57km to the north of the PDA.

### **Registered Battlefields**

- 5.10 There are no Registered Battlefields within the PDA and 0.5km study area, or its wider environ.

## **6.0 BASELINE HISTORIC ENVIRONMENT DATA**

- 6.1 Specific heritage assets recorded within the study area and described within this report are listed in Appendix C and archaeological interventions are listed in Appendix D. Their locations are shown on Figure 2. Heritage assets described within this report are identified by a unique reference number denoted in brackets particular to this text. These are cross-referenced in Appendices C and D with the Middlesbrough Council Historic Environment Record (HER) numbers as appropriate.
- 6.2 There are no previously recorded designated heritage assets within the PDA or 0.5km study area. Furthermore, there is an absence of archaeological remains in the PDA and limited evidence of archaeological sites pre-dating the post-medieval period in the wider 0.5km search area. Historic maps from the 19th century show the PDA lying within an agricultural landscape to the north of Hemlington Village until the mid-20th century. The modern township of Hemlington emerged during the second half of the 20th century, and transformed the area into urbanscape with little connection to its former rural character. During this period, buildings were erected within the PDA, although they were short lived, and by the end of the 20th century the PDA was returned to open grassland.
- 6.3 The Middlesbrough HER classifies the site as lying in an area of medium-sized fields of a semi-irregular pattern, which belonged to piecemeal enclosed land dated to the post-medieval period (AD1540 to 1750).

### **Archaeological remains (non-designated heritage assets)**

- 6.4 The following section sets out details of the archaeological sites that are recorded within the study. It then discusses the potential for additional unrecorded archaeological remains to be present within the PDA, based on the evidence available

from the wider study area. The dates of the various periods referred to in the following text are defined in Table 2.

**Table 2: period definitions**

Prehistory	Palaeolithic	800,000 to 12,000BC
	Mesolithic	12,000to 4,000BC
	Neolithic to Early Bronze Age	4,000 to 1,500BC
	Middle Bronze Age to Iron Age	1,500BC to AD78
Roman		AD78 to 410
Early Medieval		AD410 to 1066
Later Medieval		AD1066 to 1536
Post-Medieval		AD1536 to 1900
Modern		AD1900 to present

***Prehistoric (Palaeolithic to Iron Age)***

- 6.5 There are no previously recorded assets dated to the prehistoric period within the PDA.
- 6.6 Aerial photos from 1972 identified two rectangular cropmarks within the 0.5km search area to the north of Stainton Way, which were suggested to possibly relate to prehistoric enclosures (**O1** and **O2**). Residential development, which has occurred on both sites since the acquisition of the aerial photograph in the 1970s, is likely to have destroyed both cropmarks to some extent (URS 2013). As a consequence, detailed analysis of the significance, if any, of these features is not possible.
- 6.7 A further possible cropmark (**O3**) of either prehistoric or Roman date was recorded approximately 0.46km to the south of the PDA (URS 2013). Although not identified in the interpretation, subsequent geophysical survey completed in 2016 detected numerous anomalies that possibly correspond to this feature.

***Roman***

- 6.8 No finds or features of Romano-British date have been definitively discovered within the PDA or the 0.5km surrounding study area. As noted in Section 6.7, it is possible a

cropmark to the south of the PDA (**O3**) denotes a Roman enclosure, but no conclusive evidence has been identified to confirm the phasing of this potential feature.

- 6.9 The nearest evidence of Roman activity is located near Larchfield Farm, approximately 0.91km to the south of the PDA, which comprises a possible Romano-British Farmstead that was discovered through trial trenching in 1984 (**O4**; URS 2013).

### ***Early medieval/Anglo-Saxon***

- 6.10 No finds or features have been discovered within the PDA or the 0.5km surrounding study area which date to the early medieval/Anglo-Saxon period.
- 6.11 The etymology of Hemlington suggests that the place name is of Anglo-Saxon origin and describes an enclosed settlement ('*-ton*') that was connected with Hemela ('*Hemling~*') (University of Nottingham 2018).

### ***Medieval***

- 6.12 Hemlington is first recorded in the Domesday Book (AD1086) as a small village in the North Riding of Yorkshire that contained 1.6 households, 22 ploughlands (totalling three carucates) and a church under the administration of Earl Hugh's manor of Acklam (Powell-Smith 2018).
- 6.13 During the later medieval period, Hemlington belonged to the parish of Stainton and was located within a landscape of scattered farms and houses, including Grade II listed Hemlington Hall (approximately 1.33km to the north-west of the PDA), non designated Grange Manor Farm (approximately 1.40km to the south-west of the PDA), and Grade II listed Coulby Manor Farm (approximately 0.92km to the north-west of the PDA).
- 6.14 In 1353 and 1570, Hemlington is recorded as being composed of a '*capital messuage*', and so was likely to have consisted of a farmstead with an attached yard, outbuildings and surrounding plots of agricultural land (Page 1923, 293–300). The centre of Hemlington is recorded as being directly to east of the B1365 Road (**S1**), and so it is likely that the PDA lay in agricultural lands in the direct vicinity of Hemlington Medieval Village.

***Post-medieval***

- 6.15 The first detailed map of Hemlington is the 1849 Tithe Map (not reproduced), within which the village is depicted as a series of buildings centred on the crossroads of Hemlington Village Road and an unnamed road that generally follows the current route of the modern B1365. Numerous farmsteads are depicted on the Tithe Map, including Hagersgate Farm (**S2**), which appears as a small scatter of farm buildings, 'U-Shaped' farmsteads Belle Vue Farm (**S3**), Sunny Side Farm (**S4**), Viewley Hill Farm (**S5**), and the small farmstead of Coulby Manor Farm (**S6**).
- 6.16 The 1857 First Edition six-inch Ordnance Survey (OS) map shows the PDA belonging to agricultural lands to the north-west of Hemlington, which continues to exist as a small settlement clustered on a crossroads. The modern Hemlington Village Road is shown to have formerly been part of the much longer Gunnergate Lane, which ran on an informal east-west alignment between Stainton and Guisborough. By the publication of the 1857 OS map, Hagersgate Farm had grown into a nucleated farmstead entitled Haggeas Gate (**S2**). Further buildings appear in the eastern and western quadrants of the crossroads, in particular the Blue Bell Public House (**O4**) is identified in the western quadrant of the crossroad to the north of Gunnergate Lane (Fig. 3).
- 6.17 The wider environs of the PDA continues to be characterised by a series of farmsteads that administered and cultivated the patchwork of irregularly shaped enclosed fields. The 1857 OS map shows Belle Vue Farm (**S3**) and Sunny Side Farm (**S4**) to have retained their 'U-shaped' form, appearing as fairly small farm complexes located adjacent to roads leading to Hemlington from the west and north. Viewley Hill Farm (**S5**) is depicted as a fairly substantial complex that comprised two contiguous quadrant buildings located directly to the west of the road running to the north of Hemlington. Coulby Manor Farm (**S6**) has a rectangular quadrant form and, unlike the other farmsteads, is not positioned in proximity to the two roads leading to Hemlington (Fig. 3).

***Modern***

- 6.18 The rural character of the landscape appears largely unaltered between the 1857 and 1947 six-inch OS maps. During the first half of the 20th century, numerous extensions and alterations occurred to the various farmsteads in the area surrounding the PDA, so

that by the 1947 OS map they all appear substantially enlarged from their first recorded extents.

- 6.19 'Sewage Beds' are depicted in the south-west of the study area on the 1915 25-inch OS map, and subsequently recorded as 'Sewage Filter Beds' on the 1929 25-inch and 1947 six-inch maps (Figs 4 and 5).
- 6.20 The 1915 OS map shows the erection of numerous buildings directly to the north of the PDA along a newly erected field boundary, and the PDA is labelled as being a Nursery (Fig. 4). By the 1929 OS map, the scatter of buildings has grown so that they extend into the PDA (Fig. 5). The majority of these buildings were relatively short lived having been largely demolished by the 1970–1973 1:10,000 OS map.
- 6.21 At the end of the 20th century, the township of Hemlington grew to the north-west of the PDA, changing the focus of settlement away from the original centre of Hemlington Village. Furthermore, the construction of Stainton Way to the north of the PDA moved the meeting point of the crossroads from being located to the south-east of the PDA to its current location to the north-east. During this period, the former farmsteads of Belle Vue Farm (**S3**), Sunny Side Farm (**S4**), Viewley Hill farm (**S5**), and Coulby Manor Farm (**S6**) were demolished and, with the exception of the site of Belle Vue Farm, which became undeveloped land, were replaced with modern housing. Hagersgate Farm was transformed into The Evergreens Retirement Home and during its conversion most of the structures that comprised the farmstead were replaced by modern buildings, so that only the northern farm buildings are still extant. Also of note is the Blue Bell Public House, which still survives in the modern landscape as the Gables Inn Public House.

### **Site Walkover**

- 6.22 A site walkover was undertaken on 21st June 2018 (Plate 1). The aim of the walkover was to establish the existing condition of the land, topographical features and the potential for heritage constraints within and surrounding the site.
- 6.23 The PDA was composed of one field, which was bounded by trees and hedgerow to the east, west and south. The north of the PDA did not have a physical boundary, and was instead defined by the edge of a public footpath running adjacent to Stainton Way (Fig. 2). At the time of the site inspection, the field contained recently cut grass.

- 6.24 A small island of overgrown grass was located centrally to the site. It was noted that the PDA belonged to raised ground to the south of Stainton Way. This may be indicative of made ground or landscaping.
- 6.25 The site inspection did not identify any previously unrecorded heritage assets within or close to the site. Plate 1 shows the condition of the PDA at the time of inspection.

## **7.0 GEOPHYSICAL SURVEY RESULTS**

- 7.1 The geophysical survey was carried out on 21st June 2018 and covered an area of approximately 0.5 hectares.
- 7.2 The majority of the site appears to be saturated with magnetic disturbance or ‘noise’. During the 20th century, several buildings were located in the PDA, and it is likely that the dipolar and bipolar responses are caused, to some extent, by the highly magnetically susceptible building material and debris of these former structures.
- 7.3 If archaeological features are extant within the site that pre-date the post-medieval and modern periods, their responses have been masked by the much stronger responses of the 20th century buildings. Conversely, it should be noted that there is a high potential for the former building activity to have to some extent truncated or destroyed features relating to an earlier phase of human activity.

## **8.0 ASSESSMENT OF SIGNIFICANCE AND IMPACT**

- 8.1 This section discusses the significance of those heritage assets which could be affected by the development proposals either during the construction or operational phases and the potential impact of the proposals on this significance.

***Table 3: inter-related heritage values***

<b>Value</b>	<b>Definition</b>
Evidential Value	The potential capacity of an asset to yield primary evidence about past human activity (including potential archaeological remains)
Historical Value	The potential capacity of an asset to form a connection between the present and the past through association with people, events and aspects of life
Aesthetic Value	The potential for people to derive sensory and intellectual stimulation from a place, through design, art, character and setting
Community Value	The potential for people to relate to a site in terms of a collective experience of memory (often closely related to historical and aesthetical values)

- 8.2 The importance of the remains is assessed against the criteria set out in Appendix B, Table B1. The criteria for understanding the significance of heritage values according

to the four key themes (evidential, historical, aesthetic and communal) is provided in Table 3. The criteria for assessing the magnitude of impact is set out in Table B2 and the criteria to assess the significance of effects of impact is provided in Table B3.

### **Development Description**

- 8.3 The current archaeological assessment was stimulated by Middlesbrough Council proposing new housing development.
- 8.4 Although the exact development proposals were not available at the time of writing this report, a presumption has been made that development works are unlikely to exceed 10m from finished floor levels. With this in mind, and given the built-up nature of the immediately surrounding area, the development is considered unlikely to affect any long-distance views of its local environ. If development or associated works do exceed 10m from finished floor levels then mitigation will be required to assess the impact on designated assets within the PDA and, if affected, wider study area.

### **Construction Activities**

- 8.5 It is possible that any subsurface archaeological remains, if present, could be harmed through these activities. The degree to which this may occur would depend on a number of factors, including presence of archaeological remains, depth of works and extent of any previous truncation.
- 8.6 Site stripping in preparation for ground works, compound and the construction phase will have the potential to reveal any archaeological remains that are close to the surface. The location of the contractors' compound should be agreed when discharging planning conditions.
- 8.7 Ground preparation and excavation of service trenches would occur. All of these are likely to have the potential to impact on archaeological remains if present.
- 8.8 The sub-surface remains revealed by the geophysical survey are likely to relate to modern 20th-century buildings. It is possible that the geophysical survey has been unable to detect features relating to an earlier phase of activity. However, it should be noted that, if such features were extant, they are likely to have been destroyed or truncated by the foundations of the 20th-century structures.



### **Potential Impacts**

- 8.9 There are no designated Heritage assets within the PDA or its wider 0.5km study area; and relatively few non-designated heritage assets or sites that are still extant within the modern urban landscape.
- 8.10 Three possible cropmarks have been identified in the 0.5km study area. One of these cropmarks is potentially still extant to the south of the PDA.
- 8.11 The medieval heart of Hemlington Village is suggested to have been located to the east of the PDA. However, it is uncertain if any buried remains survive relating to the medieval settlement at Hemlington and what their extent may be.
- 8.12 The form of the post-medieval village has been captured on historic maps and is shown to have focused on a crossroads where Gunnergate Lane met Stokesley Road (which generally follows the current route of the modern B1365). The erection of Stainton Way to the north of the PDA resulted in the abandonment of Gunnergate Lane, which survives in this area as Hemlington Village Road, to the south of the PDA.
- 8.13 During the 19th and part of the 20th century, the area surrounding the PDA was defined by dispersed farmsteads that were surrounded by agricultural fields. The desk-based assessment identified five farmsteads in the local environ of the PDA. Of these, only Haggergate Farm is still partially extant, although it was converted into a retirement home at end of the 20th century.
- 8.14 Also of note, but not listed within the HER data, is the Gables Inn Public House, which appears on mid-19th century historic maps as the Bluebell Public House.

### ***Unrecorded archaeological remains***

- 8.15 The results of the archaeological assessment have not conclusively identified any significant assets or substantial evidence of settlement activity dated to the prehistoric or Roman periods. Consequently, it is suggested that there is a low potential for unknown sub-surface remains of prehistoric or Roman date within the PDA, although their presence cannot be entirely discounted.
- 8.16 Given the proximity of medieval and post-medieval settlements to the PDA, the potential for other unrecorded archaeological remains to be present within the PDA cannot be totally discounted, although on the basis of the existing information this is

low to moderate. The potential for the survival of unrecorded remains will also be dependent upon the extent to which the area has suffered ground disturbance as a result of previous activities such as the 20th-century buildings that were formerly located within the PDA.

### **Operational impacts**

- 8.17 The operational phase of the development would see the construction of new residential dwellings on the site. However, given the suburban and primarily residential nature of the surrounding area, the increase in building numbers is not considered to materially affect the landscape to a significant degree, and especially not to an extent greater than that caused by development during the late 20th and early 21st centuries.
- 8.18 The proposed development is considered to have a low effect on other non-designated heritage assets in the PDA and its local environ. Furthermore, given the modern nature of settlement in Hemlington, any proposed development is unlikely to have a greater effect on the few remnants of historic buildings than that already caused by the modern development already undertaken in Hemlington.
- 8.19 Consequently, there is no anticipated impact from the proposed development on designated or non-designated heritage assets or the historic landscape during the operational phase.

### **Regional Research Framework**

- 8.20 The proposed development has potential to contribute towards a number of objectives set out within the North-East Regional Research Framework for the Historic Environment (Petts and Gerrard 2006). The following two research themes were considered the most pertinent to the baseline information accrued within the PDA and its immediate local environ:
- medieval and post-medieval settlement; and
  - medieval and post-medieval agriculture.

## **9.0 MITIGATION**

- 9.1 Mitigation measures can be incorporated at various stages during the design, construction and operation of the development and should be adopted in the following hierarchy:

- firstly, avoid adverse impacts as far as possible by use of preventative measures including scheme design;
- secondly, minimise or reduce adverse impacts to ‘as low as practicable’ levels; and
- thirdly, remedy or compensate for adverse impacts which are unavoidable and cannot be reduced further.

9.2 Mitigation should take into account the assessment of significance, assessment of impact and tolerance of the asset to change. There are presently no known heritage assets within the site. There is, however, the potential for medieval or post-medieval agricultural remains of low to moderate importance to be present; prehistoric evidence can also not be wholly discounted. The following mitigation recommendations are based on the possibility of such remains being present.

### **Consultation**

9.3 As part of the pre-application phase, NAA were commissioned to undertake a desk-based assessment to review the possible impact on the historic environment arising from any redevelopment, and to assess the potential for buried archaeological remains through the use of geophysical survey.

### **Mitigation**

9.4 The PDA is shown on historic maps to have belonged to agricultural land to the north of Hemlington village until the mid-20th century, when for a short period it housed residential buildings before returning to grassland at the end of the 20th century.

9.5 The assessment has not identified any potential impact on previously recorded heritage or archaeological assets.

9.6 No prehistoric or Roman heritage assets have been identified in the PDA or its direct vicinity, and there is limited evidence of prehistoric or Roman activity within the local environ of the PDA. It is suggested that there is a negligible impact on the few still extant heritage assets features and a low potential for the presence of previously unrecorded remains dating to these periods.

9.7 Although potential assets of medieval or post-medieval date have not been identified within the PDA, the proposed development lies to the immediate north-west of Hemlington Medieval village. This may suggest that there is a low to moderate

potential for archaeological remains of a medieval or post-medieval date to be present within the site boundary.

9.8 OS maps have documented the presence of numerous buildings in the PDA during the mid- to late 20th century. It should therefore be noted that there is a high potential for building activity in the 20th century to have destroyed or truncated earlier activity within the PDA.

9.9 Given the results of the geophysical survey undertaken within the PDA, it is recommended that a programme of archaeological monitoring work in the form of a watching brief is undertaken in the areas affected by ground works. The methodology of initial mitigation works should be sufficient in assessing the archaeological potential of disturbed areas and, if archaeological remains are identified, inform the requirement for further mitigation strategy.

#### ***Interpretation and Engagement***

9.10 Paragraph 141 of the NPPF states that there is a requirement for *'developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible'*. As part of this, public engagement and interpretation should be considered to advance the public understanding and appreciation of the historic environment. Due to the likely absence of any sub-surface archaeological remains within the PDA, there is no need for further public engagement as it pertains to archaeology.

## **10.0 CONCLUSIONS**

10.1 This report has sought to identify any heritage assets, whose significance could potentially be affected by the development proposals for residential houses, and has assessed the potential for previously unrecorded heritage assets to be affected by the proposal (NPPF paras 128, 129, 131, 132; Middlesbrough Local Development Framework Core Strategy (adopted 20th February 2008) CS4, CS20).

10.2 The PDA does not pose any threat to known archaeological assets.

10.3 The PDA lies to the north-east of the medieval village of Hemlington, which is recorded on historic maps during the late post-medieval period as being composed of a scatter of building centred on a crossroads. Of these buildings, only a public house

and part of Haggarsgate Farm are still extant. The wider environ of the PDA is shown to comprise an agricultural landscape ordered by a dispersed network of farmsteads, none of which survive in the modern urbanscape.

- 10.4 It is possible that remains associated with the medieval and post-medieval settlement activity at Hemlington may be present within the PDA. However, late 20th-century building activity is likely to have destroyed earlier remains to some extent.
- 10.5 The results of the geophysical survey were dominated by magnetic disturbance considered likely to relate to building material and debris associated with the former 20th-century buildings. Consequently, if there are any buried archaeological features within the site, their responses have been masked by the stronger responses caused by modern activity.
- 10.6 The proposed development consists of the construction of residential houses along with necessary infrastructure such as access roads and services.
- 10.7 This document has identified all the recorded, and the potential for previously unrecorded, heritage assets within a 0.5km boundary study area of the PDA that may be affected by the proposed development. It has assessed the significance of these assets and the potential impact to them from the proposed development. The effects of the construction phases are likely to have a moderate impact upon any archaeological remains that may be present within the PDA, and the assessment has determined that the potential for these is low to moderate. Consequently, an archaeological watching brief is recommended in areas affected by ground works. This initial stage of monitoring should be used in order to assess presence/absence of any such remains across the site and, if present, inform the requirement of further mitigation strategy.
- 10.8 The Ancient Monuments and Archaeological Areas Act 1979 and the Listed Buildings and Conservation Areas Act 1990 are not applicable in the case of this development, as it does not affect any Scheduled Monuments and there are no Listed Buildings within the study area.
- 10.9 The extent and timing of any work should be agreed with between all parties prior to its commencement (NPPF paras 141 and 203).

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Old Maps - [www.old-maps.co.uk](http://www.old-maps.co.uk)

Google Earth - <http://earth.google.co.uk>

Magic (DEFRA) - <http://magic.defra.gov.uk/MagicMap.aspx>

NPPF Planning Practice Guidance - <https://www.gov.uk/government/collections/planning-practice-guidance>

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**APPENDIX A: RELEVANT NPPF POLICIES**

<b>National Planning Policy Framework (NPPF) (2012)</b>	
<b>Paragraph 128</b>	“In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets’ importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum, the relevant historic environment record should have been consulted and heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation”.
<b>Paragraph 129</b>	“Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset’s conservation and any aspect of the proposal.”
<b>Paragraph 131</b>	In determining planning applications local authorities should take account of: the desirability of sustaining and enhancing heritage assets and putting them to a viable uses consistent with their conservation the positive contribution that preservation of heritage assets can make to sustainable communities including their economic vitality the desirability of new development to making a positive contribution to local character and distinctiveness
<b>Paragraph 132</b>	<i>When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset’s conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of a grade II Listed Building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, grade I and II* listed buildings, grade I or II* registered parks and gardens and World Heritage Sites, should be wholly exceptional.</i>
<b>Paragraph 133</b>	Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply: the nature of the heritage asset prevents all reasonable uses of the site; and no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation; and conservation by grant funding or some form of charitable or public ownership is demonstrably not possible; and the harm or loss is outweighed by the benefit of bringing the site back into use
<b>Paragraph 134</b>	<i>Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits, including securing its optimum viable use.</i>
<b>Paragraph 135</b>	<i>The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset</i>
<b>Paragraph 137</b>	Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites and within the setting of heritage assets to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably.
<b>Paragraph 138</b>	Not all elements of a World Heritage Site or Conservation Area will necessarily contribute to its significance. Loss of a building (or other element) which makes a positive contribution to the significance of the Conservation Area or World Heritage

<b>National Planning Policy Framework (NPPF) (2012)</b>	
	Site should be treated either as substantial harm under paragraph 133 or less than substantial harm under paragraph 134, as appropriate, taking into account the relative significance of the element affected and its contribution to the significance of the Conservation Area or World Heritage Site as a whole.
<b>Paragraph 139</b>	Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.
<b>Paragraph 141</b>	Local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible.* However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted *Copies of evidence should be deposited with the relevant Historic Environment Record, and any archives with a local museum or other public depository.

### **NPPF Glossary:**

This glossary sets out the definitions for heritage and archaeological issues which should be treated as a material consideration in the planning process. Those definitions of relevance to the current application are:

#### ***Historic environment:***

- All aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity (whether visible, buried or submerged), as well as landscaped areas and planted or managed flora.

#### ***Heritage assets:***

- A building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Heritage asset includes designated heritage assets and assets identified by the LPA (including local listing).

#### ***Archaeological interest:***

- There will be archaeological interest in a heritage asset if it holds, or potentially may hold, evidence of past human activity worthy of expert investigation at some point. Heritage assets with archaeological interest are the primary source of evidence about the substance and evolution of places, and of the people and cultures that made them.

#### ***Setting of a heritage asset:***

- The surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance, or may be neutral.

***Significance (for heritage policy):***

- The value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting.

***Historic environment record:***

- Information services that seek to provide access to comprehensive and dynamic resources relating to the historic environment of a defined geographic area for public benefit and use.

**APPENDIX B: ASSESSMENT CRITERIA**

**Table B1: Criteria for Establishing Sensitivity and Importance of Archaeological Remains (Modified from DMRB Table 5.1)**

<b>Very High/International</b>	<ul style="list-style-type: none"> <li>• World Heritage Sites (including nominated sites).</li> <li>• Assets of acknowledged international importance.</li> <li>• Assets that can contribute significantly to acknowledged international research objectives.</li> </ul>
<b>High/National</b>	<ul style="list-style-type: none"> <li>• Scheduled Ancient Monuments (including proposed sites).</li> <li>• Undesignated assets of schedulable quality and importance.</li> <li>• Upper tier Archaeological Priority Areas, where used by LPA</li> <li>• Assets that can contribute significantly to acknowledged national research objectives</li> </ul>
<b>Medium/Regional</b>	<ul style="list-style-type: none"> <li>• Designated or undesignated assets that contribute to regional research objectives.</li> <li>• Remaining tier Archaeological Priority Areas, where used by LPA</li> </ul>
<b>Low/Local</b>	<ul style="list-style-type: none"> <li>• Designated and undesignated assets of local importance.</li> <li>• Assets compromised by poor preservation and/or poor survival of contextual associations.</li> <li>• Assets of limited value, but with potential to contribute to local research objectives.</li> </ul>
<b>Negligible</b>	<ul style="list-style-type: none"> <li>• Assets with very little or no surviving archaeological interest.</li> </ul>
<b>Unknown</b>	<ul style="list-style-type: none"> <li>• The importance of the resource has not been ascertained</li> </ul>

## Magnitude of impact

'Impact' refers to a predicted change to the baseline environment arising from either the construction or operation of the scheme. Impacts can be both negative or positive, and reversible or irreversible. Table B2 below sets out the criteria adopted for this assessment and is based on the criteria set out in the DMRB cultural heritage guidance Tables 5.3.

**Table.B2: Factors in the Assessment of the Magnitude of Impact on Archaeological Remains (Modified from DMRB Table 5.3)**

<b>Major Change</b>	Change to most or all key/fundamental archaeological materials, such that the resource is totally altered. Where adverse, this would equate to destroyed or left completely illegible. Comprehensive changes to setting.
<b>Moderate</b>	Changes to many key archaeological materials, such that the resource is clearly modified, if adverse, it would be substantial harm or loss of legibility. Considerable changes to setting that affect the character of the asset.
<b>Minor</b>	Changes to key archaeological materials, such that the asset is slightly altered. In terms of adverse impact. This would be minor or less than substantial harm or loss to the asset or slight loss of legibility. Slight changes to setting.
<b>Negligible</b>	Very minor changes to archaeological materials, or setting.
<b>No Change</b>	No change to fabric or setting of historic building

### Significance of effect of impact

The significance of the impact of the proposals on heritage assets is determined by the interaction of receptor value/sensitivity and impact magnitude. Impacts can be positive (i.e. enhance the heritage asset) or negative (i.e. detrimental to the resource). Table B3 below sets out the criteria adopted for this assessment and is based on the criteria set out in the DMRB cultural heritage guidance Tables 5.4.

**Table B3: Archaeological Remains: Significance of Effects Matrix (based on DMRB Table 5.4)**

<b>VALUE/ SENSITIVITY</b>	<b>Very high</b>	Neutral	Minor	Moderate/ Substantial	Substantial	Substantial
	<b>High</b>	Neutral	Minor	Moderate/Minor	Moderate/ Substantial	Substantial
	<b>Medium</b>	Neutral	Negligible	Minor	Moderate	Moderate/ Substantial
	<b>Low</b>	Neutral	Negligible	Negligible	Minor	Minor/ Moderate
	<b>Negligible</b>	Neutral	Neutral	Negligible	Negligible	Minor
	<b>No change</b>	<b>Negligible</b>	<b>Minor</b>	<b>Moderate</b>	<b>Major</b>	
	<b>MAGNITUDE OF IMPACT</b>					

**APPENDIX C: GAZETTEER OF SITES MENTIONED IN THE TEXT**

NAA ref	HER no. or list entry	Description	Period	Grid Reference
<b>Middlesbrough HER</b>				
S1	928	<p><i>Hemlington Village</i></p> <p>Hemlington is first recorded in the Domesday Book of 1086 AD as 'Himeligetun' or 'Himelintun' (Ref. 1). The place name means 'Hemela's Farm'. The medieval ownership of the village is detailed in the Victoria County History (Ref. 2). The village is described by Reverend Graves in 1808 as 'a small township...contains only about 50 inhabitants occupied solely in husbandry' (Ref. 3). The settlement is shown on the Tithe Map of 1849 (Ref. 4) and the first edition Ordnance Survey plan of 1856 (Ref. 5) as several buildings clustered around the crossroads of Hemlington Village Road and Stokesley Road. Amongst these buildings are the 'Blue Bell Public House' and 'Haggers Gate' (Ref. 5). The village remained in this form until at least the 1940s when aerial photographs show a similar layout. In the late 1960s/early 1970s this area was heavily urbanised with housing estates to the north-west and north-east. Hemlington Village Road was by-passed with 'Stainton Way'.</p>	Medieval	NZ 50200 14310
S2	7936	<p><i>Haggersgate Farm</i></p> <p>Haggersgate Farm was situated in the centre of the medieval village of Hemlington (SMR 928) on the crossroads of the B1365 and Stainton Way. It is first noted as an unnamed spread of small farm buildings forming one large farmstead on the 1849 Tithe map of Hemlington (Ref 1). It appears on the 1857 1st Edition OS map as 'Haggers Gate' (Ref 2). Today, only the northern-most building survives in part, converted into one of several nursing homes called 'The Evergreens'.</p>	Post Medieval	NZ 50192 14291
S3	7932	<p><i>Belle Vue Farm, Hemlington</i></p> <p>Belle Vue farm lay within the fields to the south of modern day Stainton Way just to the west of the Medieval village of Hemlington (SMR 928). Medieval field systems immediately south of the farmstead (SMR 3266) represent the long term agricultural use of the land around Belle Vue farm. It is first noted on the 1849 Tithe map of Hemlington as a large 'U' shape farmstead (Ref 1), but is not formally titled Belle Vue until the OS 1895 Yorkshire 2nd Edition (Ref 2). A large building has been recently demolished which may have been the original farmhouse. The site is now open land.</p>	Post Medieval	NZ 49910 14180
S4	7940	<p><i>Sunny Side Farm, Hemlington</i></p> <p>Sunny Side Farm was situated 0.4km north of Hemlington just off the east side of Stokesley Road (B1365). It is first noted on the 1849 Tithe map of Hemlington as a large 'U' shaped farmstead (Ref 1). It next appears on the 1857 1st Edition OS map as 'Sunny Side', as a large quadrangle with outbuildings to north, south and west, with a larger farmhouse to the east (Ref 2). Smaller, separate outbuildings appear on subsequent OS maps (Ref 3) until it is demolished in the 1980s to make room for housing development. The actual site of the farm has since been left as part scrubland, part recreational grassland.</p>	Post Medieval	NZ 50045 14647

NAA ref	HER no. or list entry	Description	Period	Grid Reference
S5	7943	<i>Viewley Hill Farm, Hemlington</i>  Viewley Hill Farm was located within fields immediately west of Stokesley Road (B1365), approximately 0.8km north of Hemlington. It is first noted on the 1849 Tithe map of Hemlington as two adjoining 'U' shape buildings (Ref 1). Upon close inspection of the 1857 1st Edition OS map, 'Viewley Hill' may have been two separate farmsteads, or just one exceptionally large one (Ref 2). By the 1895 2nd Edition OS map, 'Viewley Hill Farm' appears to be one consolidated farmstead, with the possibility of a farm cottage to the south (Ref 3). It was demolished in the late 20th century and replaced by road development. It is now the site of a large roundabout on Stokesley Road (B1365), and Viewley Hill Avenue.	Post Medieval	NZ 49733 14922
S6	7935	<i>Coulby Manor Farm</i>  Coulby Manor Farm lay within fields approximately 0.5km south east of Coulby Manor. It is first noted as a small unnamed farmstead on the 1849 Tithe map of Hemlington (Ref 1). It appears on the 1857 1st Edition OS map as 'Coulby Farm' (Ref 2). This later extends to 'Coulby Manor Farm' (Ref 3), presumably either representing new owners, or to avoid name confusion with Coulby (SMR 7934). The farmstead was demolished c.1980 and the land developed into a housing estate.	Post Medieval	NZ 50361 14943
<b>Other Sources</b>				
O1		Possible prehistoric Enclosure recorded as a cropmark on aerial photographs from 1972 (URS 2013)	Prehistoric	
O2		Possible prehistoric Enclosure recorded as a cropmark on aerial photographs from 1972 (URS 2013)	Prehistoric	
O3		Possible prehistoric or Roman Enclosure recorded as a cropmark on aerial photographs from 1972 (URS 2013)	Unknown (possibly prehistoric or Roman)	
O4		Two ditches containing 4th-century pottery, and a beehive quern suggested to have belonged to a Romano-British farmstead identified through trial trenching in 1984 to the south of Larchfield Farm.	Roman	



**APPENDIX D: GAZETTEER OF EVENTS MENTIONED IN THE TEXT**

NAA Ref	HER no. and list entry	Description	Grid Reference
<b>Assessments</b>			
E4	Event 896	<p>Hemlington Grange Heritage Assessment completed by URS in 2013. The assessment covered 56.65ha of land to the south of Stainton Way. The HER summary states:</p> <p>This heritage assessment was undertaken to determine the potential for the presence of heritage assets within the site and immediate area. Methodology used was Middlesbrough Council HER database, cartographic and written sources; and a site visit conducted. Evidence shows prehistoric activity existing in the form of crop mark enclosures to the north of Stainton way; and close to Larchfield Farm there is evidence of Roman settlement with a small enclosure located to the north of the former hospital. There is a possibility that Roman features may extend into the site given the presence of roman archaeology recorded immediately to the south and the presence of an enclosure near to the site of the former hospital. It is recommended that a geophysical survey be undertaken to further determine this.</p>	NZ 50153 14259
<b>Geophysical Survey</b>			
E1	Event 646	<p>Geophysical Survey completed by GeoQuest in 2002 of 4 ha at Coulby Newham Secondary School. The HER summary states:</p> <p>This geomagnetic survey took place to evaluate an area of sports playing fields attached to Coulby Newham Secondary School. The survey area covered approx. 4 hectares, the results of which were mainly negative. Some possible ridge and furrow ploughing trends were identified, together with one or more buried pipes, a culverted channel and possible evidence of a network of silted palaeochannels. The work was followed by trial trenching evaluation (Event 645) which confirmed these observations.</p>	NZ 50400 14580
E5		<p>Geophysical Survey of partial coverage of the Hemlington Grange site (21.7ha) previously assessed by URS in 2013. Results of the geophysical survey were interpreted as largely being of a modern, agricultural or geological nature.</p>	NZ 50153 14259
<b>Intrusive works</b>			
E2	Event 645	<p>Trial trenching by Tees Archaeology in 2002 following geophysical survey completed by GeoQuest (NAA ref: E1). The HER summary states:</p> <p>A total of ten trial trenches were opened across the development area targeting geomagnetic anomalies (Event 646). No significant archaeological features or deposits were identified. The geomagnetic anomalies were identified as periglacial features of modern drainage.</p>	NZ 50401 14580
E3	Event 476	<p>Trial Trench evaluation by Stephen Sherlock Services in 2007. The HER summary states:</p> <p>Two trial trenches were excavated to the rear of Evergreens, to establish the presence or absence of archaeological deposits prior to development. All features were found to be modern. A single sherd of late medieval green glazed pottery was recovered from topsoil (Ref. 1).</p>	NZ 50153 14259

## APPENDIX E: TECHNICAL INFORMATION

### GRADIOMETER SURVEY

Magnetic surveys measure distortions in the earth's magnetic field caused by small magnetic fields associated with buried features (Gaffney and Gater 2003, 36) that have either remanent or induced magnetic properties (Aspinal *et al.* 2008, 21–26). Human activity and inhabitation often alters the magnetic properties of materials (Aspinal *et al.* 2008, 21) resulting in the ability for numerous archaeological features to be detected through magnetic surveys. Intensive burning or heating can result in materials attaining a thermoremanent magnetisation; examples of which include kilns, ovens, heaths and brick structures (Gaffney and Gater 2003, 37; Aspinal *et al.* 2008, 27). When topsoil rich with iron oxides, fills a man-made depression in the subsoil, it creates an infilled feature, such as a pit or ditch, with a higher magnetic susceptibility compared to the surrounding soil (Gaffney and Gater 2003, 22–26; Aspinal *et al.* 2008, 37–41). Magnetic surveys can also detect features with a lower magnetically susceptibility than the surrounding soil, an example of which is a stone wall.

### LIMITATIONS

Poor results can be due to several factors including short lived archaeological occupation/use or sites with minimal cut or built features. Results can also be limited in areas with soils naturally deficient in iron compounds or in areas with soils overlying naturally magnetic geology, which will produce strong responses masking archaeological features.

Overlying layers, such as demolition rubble or layers of made ground, can hide any earlier archaeological features. The presence of above ground structures and underground services containing ferrous material can distort or mask nearby features.

Particularly uneven or steep ground can increase the processing required, or distort results beyond the capabilities of processing. It is also possible in areas containing dramatic topographical changes that natural weathering, such as hillwash, often in combination with intensive modern ploughing, will reduced the topsoil on slopes and towards the peaks of hills and possibly destroy or truncate potential archaeological features. Conversely features at the bottom of slopes may be covered by a greater layer of topsoil and so if buried features are present they appear faint within the results, if at all.

Over processing of data can also obscure or remove features, especially if there are on the same orientation as the direction of data collection. Consequently, where possible, attempts are made to ensure data is not collected on the same orientation as known potential features and that data quality is sufficient to minimise the required data processing.

### INSTRUMENTATION

The data was collected using handheld Bartington Grad 601-2 fluxgate gradiometers. The Bartington 601-2 is a single axis, vertical component fluxgate gradiometer comprising a data logger battery cassette and two sensors. The sensors are Grad-01-1000L cylindrical gradiometer sensors mounted on a rigid carrying frame; each sensor contains two fluxgate magnetometers with 1m vertical separation.

The difference in the magnetic field between the two fluxgates in each sensor is measured in nanoTesla (nT). NAA gradiometer data is recorded with a range of  $\pm 100$ nT, which equates to a resolution of 0.01nT. It should be noted that the actual resolution is limited to 0.03nT as a consequence of internal instrumental noise (Bartington Instruments Ltd n.d., 23).

The gradiometer records two lines of data on each traverse, the grids are walked in a zig-zag pattern amounting to 15 traverses. The gradiometers are calibrated at the start of every day and recalibrated whenever necessary.

## SURVEY DETAILS

**Table A1: Survey summary**

	Survey
Grid size	30mx30m
Traverse interval	1m
Reading interval	0.25m
Direction of 1st traverse	N
Number of Grids	13
Area covered	0.5ha

**Table A2: Baseline co-ordinates (baseline is shown on Fig. 2)**

Grid point (gp) A	Grid point (gp) B
NGR: 450077.4861 514314.8131	NGR: 450107.4861 514314.8131

**Table A3: Site information and conditions**

Item	Detail
Geology	Mudstone of the Mercia Mudstone Group
Superficial deposits	Diamicton of Devensian till
Soils	Dunkeswick
Topography	50m aOD
Land use	Grassland
Weather / conditions prior to and during survey	Sunny

**APPENDIX F:**

**DATA PROCESSING INFORMATION**

Gradiometer survey data is downloaded using the Bartington Grad 601 software and the processing was undertaken using Geoplot 3.0 software.

**Table B1: Commonly applied techniques**

Process	Effect
Zero mean traverse	Removes stripping which can occur as a consequence of using multi sensor arrays or a 'zigzag' data collection method by setting the mean reading for each traverse to zero.
Destagger	Removes stagger in the data introduced through inconsistency data collection pace and often exacerbated through the 'zig-zag' methodology.
Clip	Clips data above or below a set value to potentially enhance potential weaker anomalies.
Despike	Removes random spikes or high readings to reduce the appearance of dominant readings, often created by modern ferrous objects that can distort the results.
Low pass filter	Removes low frequency waves or broad anomalies such as those caused by strong or large gradual variations in the soil's magnetic susceptibility often caused by geological or natural changes in the substrata.
Interpolation	Used to smooth or reduce the blocky appearance of data by improving the spatial density and balance the quantity of data points in the X and Y directions.

**Table B2: Processing steps**

Minimal Processing	Increased Processing
<ul style="list-style-type: none"> <li>• Zero mean traverse +5/-5</li> <li>• Destagger:                             <ul style="list-style-type: none"> <li>- All: 3</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Low Pass Filter</li> <li>• Interpolate Y, Expand - Linear, x2</li> </ul>

**APPENDIX G:  
DATA VISUALISATION INFORMATION**

**FIGURES**

The data was used to produce a series of images to demonstrate the results of surveys these are detailed below:

- Greyscale/Colourscale Plot: this visualised the results as a shaded drawing with highest readings showing as black, running through different shades to lowest showing as white.
- XY-trace Plot: this creates a line drawing showing the peaks and troughs of the readings as vertical offset from a centreline.
- Interpreted Plot: through detailed analysis, anomalies have been interpreted and possible features identified. Interpretation drawings are used to show potential features and in particular to reinforce and clarify the written interpretation of the data. Anomalies have been characterised using the terminology detailed in the following section, and have been assigned colour coding outlined in keys found on the relevant figures associated with this report.

**MAGNETIC ANOMALIES AND TERMINOLOGY**

*Table C1: Lexicon of terminology*

Terminology	Detail
Anomaly	Any outstanding high or low readings forming a particular shape or covering a specific area with the survey results.
Feature	A man-made or naturally created object or material that has been detected through investigation works and has sufficient characteristics or supporting evidence for positive identification.
Magnetic susceptibility	The ability of a buried feature to be magnetically induced when a magnetic field is applied
Magnetic response	The strength of the changes in magnetic values caused by a buried feature with either a greater or lesser ability to be magnetised compared with the soil around it.  Anomalies are considered to either have strong / weak or positive / negative responses.  The strength of magnetic response (along with patterning) can be essential in determining the nature of an anomaly, but it should be noted that the size or strength of the magnetic response does not correlate with the size of the buried feature.
Patterning of an anomaly	The shape or form of an individual anomaly
Thermoremanence	The affect caused when a material has been magnetically altered through a process of heating. Thermoremanent magnetisation occurs when an object or material is heated passed the Curie Point and acquires a permanent magnetisation that is associated with the magnetic field that they cooled within (Gaffney and Gater 2003, 37)

Different anomalies can represent different features created by human, agricultural or modern activity, or natural pedological or geological changes in the substrata.

Anomalies interpreted with a 'greater' categorisation are considered more likely to be of the interpreted characterisation; whereas a more tentative interpretation is applied to those with a 'lesser' categorisation as a consequence of weaker increases in magnetic response or the anomalies incomplete patterning or irregular form.

The strength and size of anomalies can vary depending on the magnetic properties of the feature, the magnetic susceptibility of the soil, the depth to which the feature is buried, and the state of preservation.

**Table C2: Characterisation of anomalies**

<b>Characterisation</b>	<b>Detail</b>
Archaeology	
Linear anomaly (archaeology)	<p>Linear anomalies with a positive or negative magnetic responses, and composed of a patterning or shape that is suggestive of a buried archaeological feature. These are often indicative of structural remains or infilled features such as ditches.</p> <p>The strength of anomaly signal can be suggestive of the properties of the feature. Negative linear anomalies represent upstanding or infilled features that are less magnetically susceptible than background readings, for example structures or ditches composed of a non-igneous stone material. Bipolar linear anomalies considered to be of an archaeological nature are indicative of material with a high magnetic susceptibility, such as a brick wall.</p>
Isolated anomaly (archaeology)	<p>Isolated anomalies or anomalies with a more amorphous form possibly represent infilled features or thermomagnetic features such as areas of heating/burning of an archaeological origin.</p> <p>Unless associated with conclusively identified archaeological remains, such as linear anomalies, absolute identification of positive responses can be problematic as it is often not possible to decipher if they are of an archaeological, modern or agricultural origin. Consequently, isolated positive responses are not shown within the interpretation unless composed of a broad form or belonging to a series of isolated positive responses.</p> <p>Bipolar responses considered likely to be of an archaeological are also interpreted as isolated anomaly (archaeology). These are considered to relate to material with a very strong magnetic susceptibility or thermoremanent magnetisation.</p>
Isolated anomaly (mining)	<p>Isolated anomalies often composed of a bipolar response that is indicative of mining activity such as pits and shafts. A more conclusive interpretation is given to linear anomalies that correspond with the location of field boundaries recorded on historic maps.</p>
Trends	<p>Weak and diffuse anomalies with an uncertain origin are denoted by trends. It is possible that these belong to archaeological features, but given their weak signatures or incomplete patterning it is equally plausible that they relate to agricultural features or natural soil formations.</p>

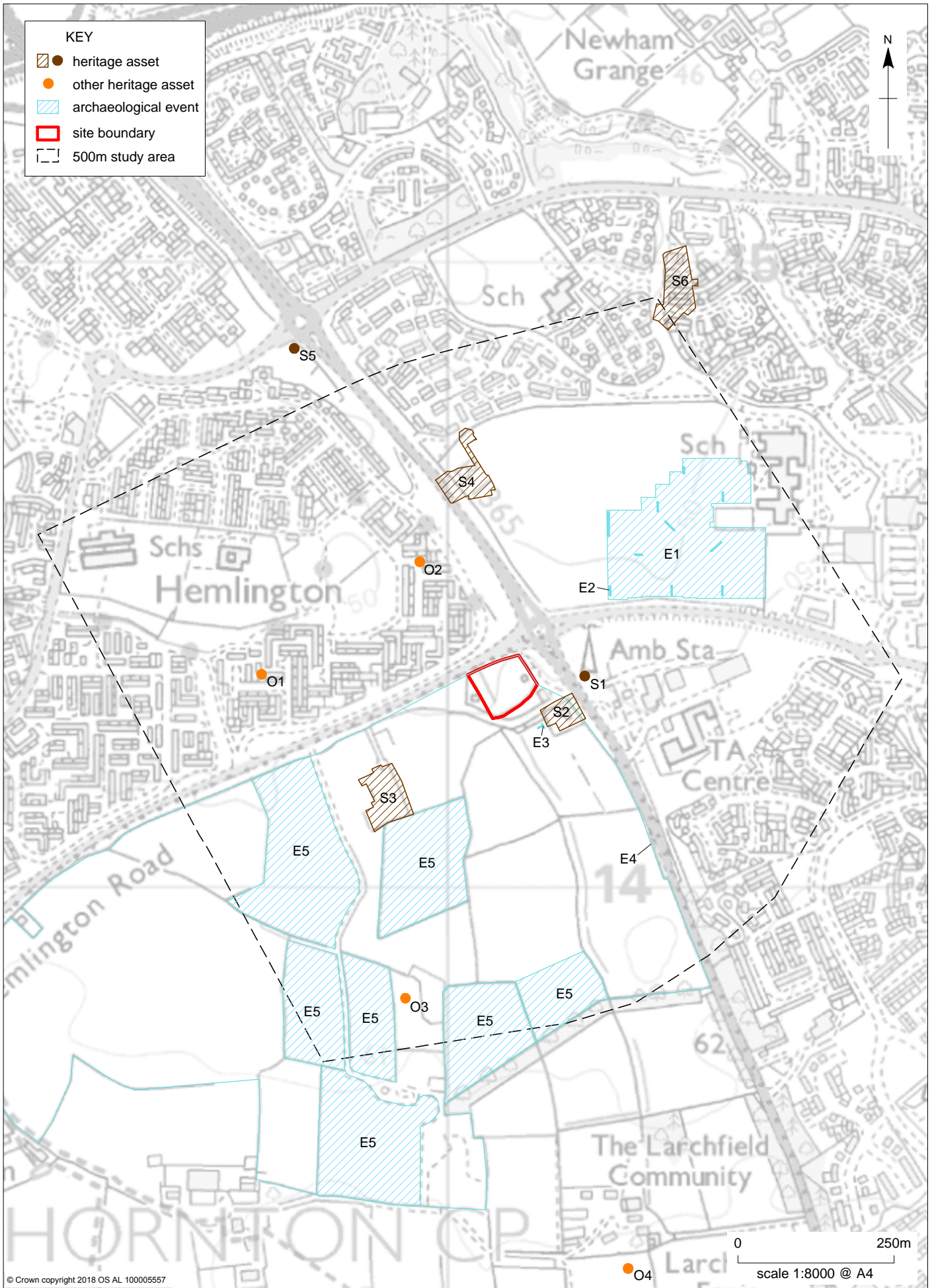
<b>Characterisation</b>	<b>Detail</b>
Modern	
Area of increased magnetic response	Areas of increased magnetic response denote areas of disturbance containing a high concentration of dipolar and / or bipolar responses. These are generally considered to be caused by modern debris in the top soil, although it is possible that the disturbance is in part also caused by isolated archaeological material or geological or pedological changes in the substrata.



Hemlington North, Middlesbrough: site location

Figure 1





Hemlington North, Middlesbrough: heritage assets

Figure 2





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Hemlington North, Middlesbrough: 1915 25-inch Ordnance Survey map

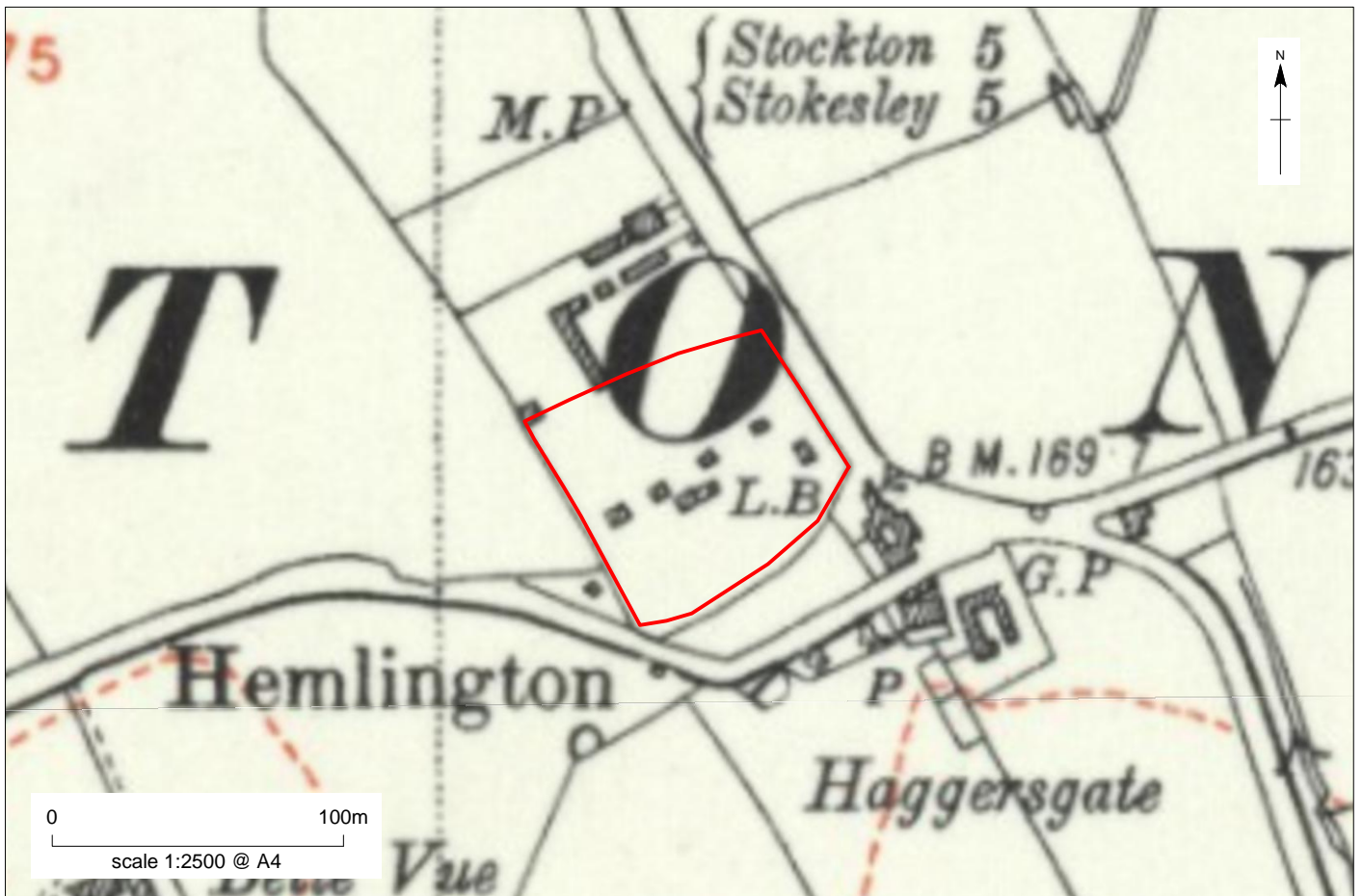
Figure 4



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Hemlington North, Middlesbrough: 1929 25-inch Ordnance Survey map

Figure 5



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Hemlington North, Middlesbrough: 1947-1950 6-inch Ordnance Survey map

Figure 6

# NAA

Heritage Consultants

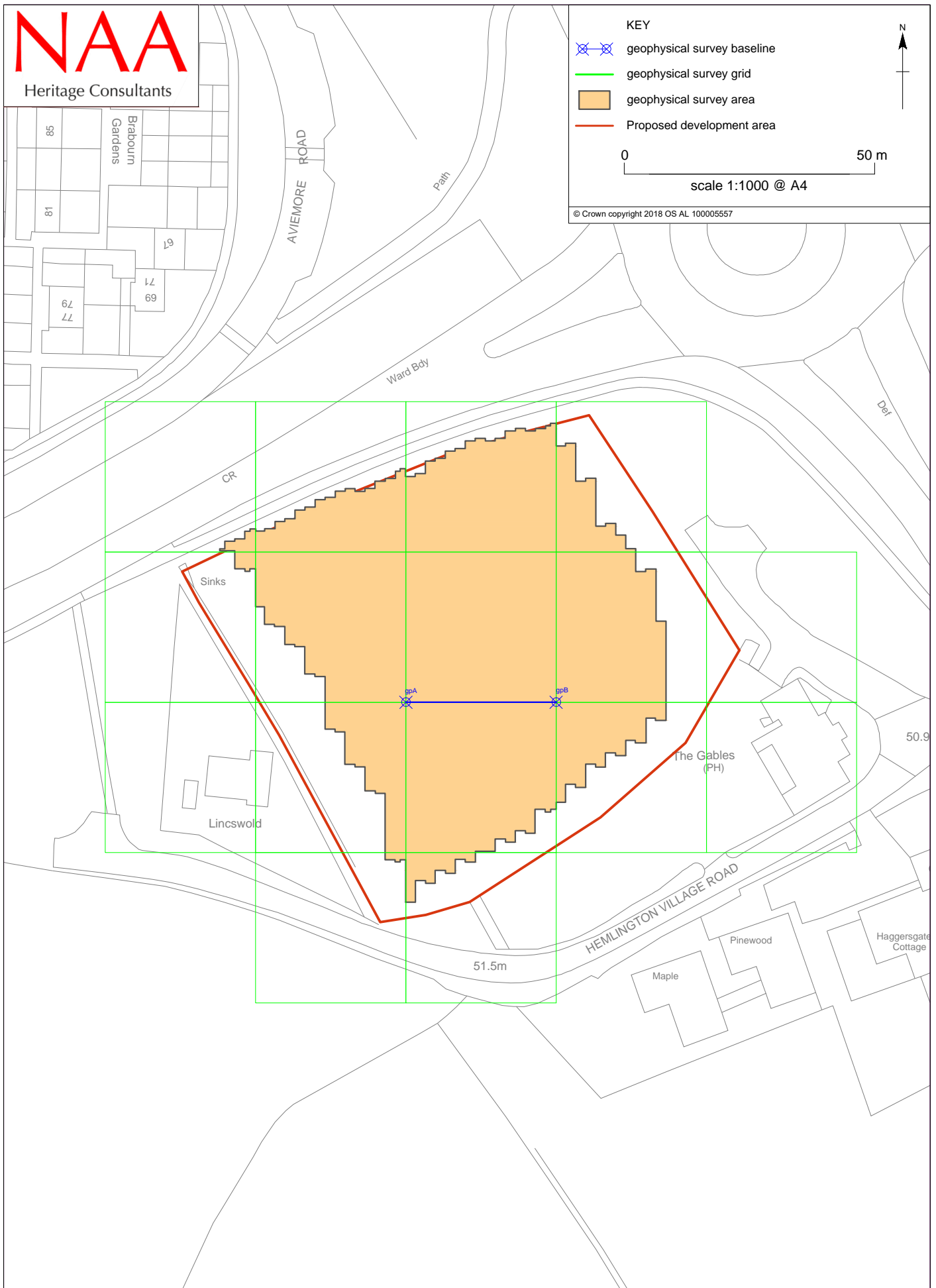
### KEY

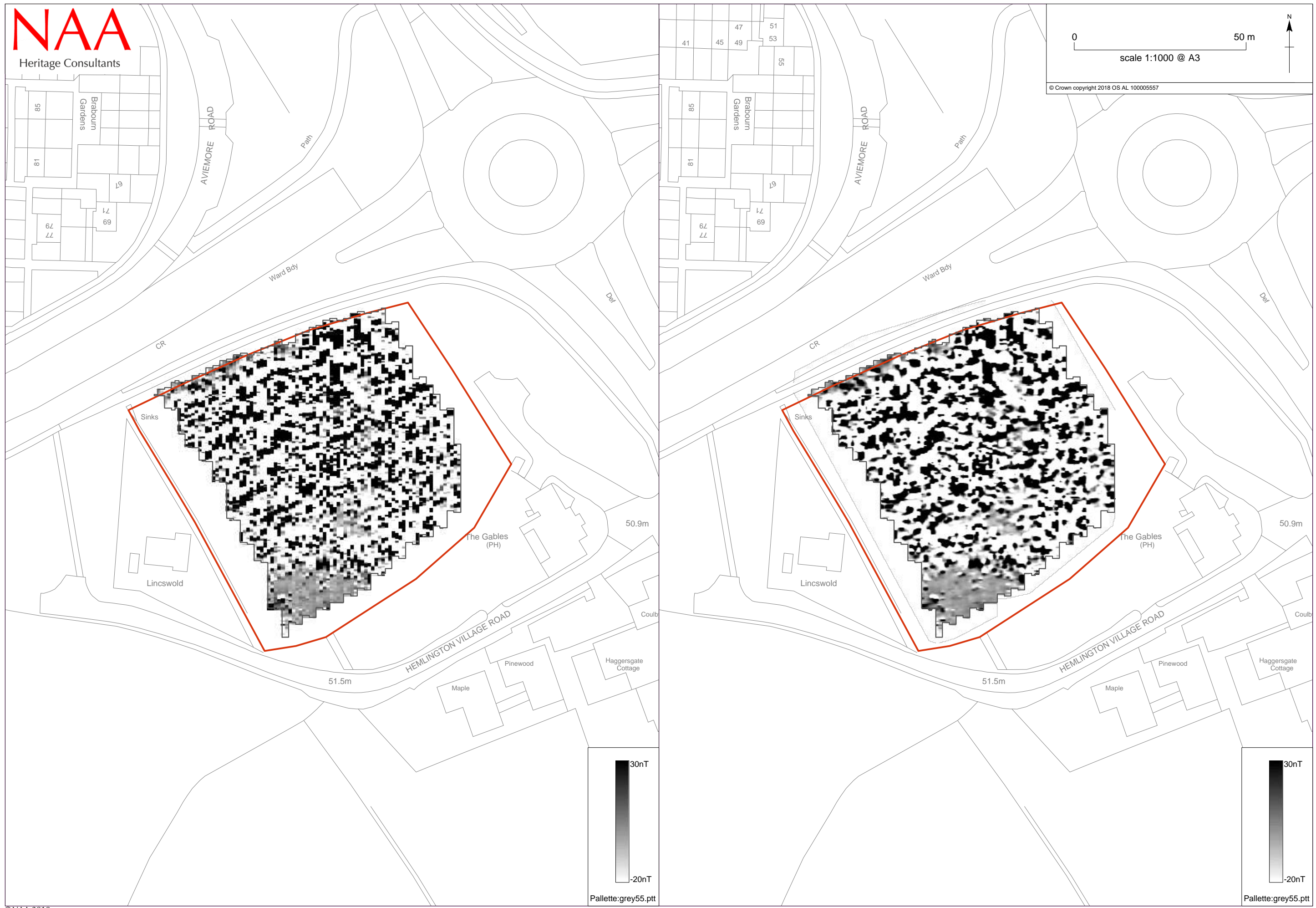
-  geophysical survey baseline
-  geophysical survey grid
-  geophysical survey area
-  Proposed development area

0 50 m

scale 1:1000 @ A4

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*Hemlington North, Middlesbrough: current view of the PDA  
looking north*

*Plate 1*