

LAND AT WOODGATE CENTRE, OAK TREE LANE, WOODGATE, PO20 3GU
DESK-BASED HERITAGE ASSESSMENT
PYE HOMES
JULY 2021



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1 Introduction

- 1.1 This report provides a desk-based heritage assessment of Land at Woodgate Centre, Oak Tree Lane, Woodgate, West Sussex, PO20 3GU, prepared by Terence O'Rourke Ltd on behalf of Pye Homes. It describes the known terrestrial archaeological resource and the built heritage assets of the site and study area, that could be affected by future housing development. The proposed development area (PDA) lies within the strategic allocation SD5 Barnham/Eastergate/Westergate (Arun Local Plan 2011-2031), which provides land for 2,300 new homes. The local plan sets out a range of requirements for development proposals in the allocation (H SP2 / H SP2c), including the integration of the proposal within its locality and the consideration of potential effects on the natural environment, landscape and biodiversity
- 1.2 This report presents an assessment of the likely potential effects of the development on the known and suspected heritage resource within the site and a 1km study area. The consideration of the heritage resource has supported the design evolution to date and has ensured both that heritage assets and historic landscape character are not harmed, and that the benefits of the historic environment and advantages for the sense of place are recognised and reflected in the master plan.
- 1.3 This desk-based assessment examines the potential for the discovery of as yet unknown features of archaeological interest and considers the implications of the proposed development. The conclusions of this assessment will form the starting point for any further survey work required, including intrusive investigations at the reserved matters stage, if necessary. The report sets out the baseline, potential and significance of all the known and recorded heritage assets, both designated (scheduled monuments, listed buildings, conservation areas and registered parks and gardens) and non-designated (archaeological sites, and locally important historic buildings or landscapes) for the site and study area. It also considers the evidence of timedepth as shown in the historic landscape character across the site and in the surrounding area.
- 1.4 ***Planning background***
The PDA has been the subject of several previous planning applications. A brief summary of the planning history is provided below:
- *AL/118/18/OUT, Turnbull Land at Oak Tree Lane P020 3GU, refused on 23 July 2019*
Outline application for the demolition of existing buildings and erection of 10 no. dwellings comprising one 3 bedroom detached, two 3 bedroom semi-detached, four 4 bedroom semi-detached and three 4 bedroom detached houses with associated access and parking.
Refusal on grounds of being premature in terms of the detailed masterplan and delivery of the strategic allocation SD5, insufficient proposed access, failure to give sufficient regard to the existing trees and failure to contribute towards the infrastructure needed to support the development
 - *AI/15/17/PL*
Outline Planning Application with all matters reserved for 249 No. dwellings

with access & associated works on 15.06 ha of land.

Refusal on grounds that the application affects the character & appearance of the Eastergate (Church Lane) Conservation Area, the setting of Listed Buildings, Public Rights of Way & is a Departure from the Development Plan

- *AL/106/12, Builtform Developments Ltd, refused 28 March 2013 and appeal dismissed 30 October 2013 at Oak Tree Lane, PO20 3GU*
Outline application for 2.85ha of residential development of up to 60 open market dwellings and up to 25 affordable dwellings. Refusal due to absence of legal agreement to secure financial contributions and affordable housing, poor level of sustainability with insufficient access to local services
- *AL/69/11, Builtform Developments Ltd, refused 29 September 2011 and appeal dismissed 20 June 2012 at Oak Tree Lane, PO20 3GU*
Outline application for up to 100 dwellings. Refusal due to a poor level of sustainability and adverse impact on the Woodgate Road Junction and the need for pedestrian and cycle route improvements

- 1.5 The current PDA forms part of the strategic allocation for the wider Barnham, Eastergate and Westergate (BEW) masterplan. As part of this masterplan an application has been submitted to the Arun District Council for 350 homes on a site to the north of Woodgate Centre.

Site location and description

- 1.6 The PDA is located in Woodgate, Arun District, south of the main railway line (Southern). It measures approximately 7.17 hectares in area and is proposed to be accessed solely via Woodgate Road, that directly connects to the A29 (Lidsey Road). The site is currently occupied by a mixed use premises collectively called the Woodgate Centre. This comprises of a number of small businesses based in poor quality buildings and a horse stables with a number of paddocks around the site. The northern and eastern boundaries of the site are bordered by farm land. To the western boundary there are a number of single storey bungalows that have rear gardens adjoining the site. To the south of the site is the Willows Caravan Park where a number of park homes back onto the site.
- 1.7 The surrounding land to the south and west of the site predominantly comprises of residential dwellings that vary between one and two storeys in scale. The site topography falls from the west with a level of 9.28 Ordnance Datum (OD) at the entrance of the site falling to 1.10 OD along the eastern boundary where the site meets a watercourse (Lidsey Rife).

2 Legislation, policy and planning background

- 2.1 National policy recognises the value and significance of cultural heritage, and the public interest in the preservation of particular assets, and sets out mechanisms to ensure that it is taken into account in planning decision-making. Sites and features of identified interest are protected under the Ancient Monuments and Archaeological Areas Act 1979 as amended, and the Town and Country Planning (Listed Buildings and Conservation Areas) Act 1990. Section 66(1) of the 1990 act states that, in considering whether to grant planning permission for development that affects a listed building or its setting, the local planning authority or Secretary of State “*shall have special regard to the desirability of preserving the*

building or its setting or any features of special architectural or historic interest which it possesses". Section 72(1) in respect of conservation areas states that special attention shall be paid to the desirability of preserving or enhancing the character or appearance of that area. A finding of harm to a conservation area or to a listed building or its setting is a consideration to which the decision-maker must give *"considerable importance and weight"*.

- 2.2 National planning policy guidance on conserving and enhancing the historic environment is contained within the National Planning Policy Framework (NPPF), the online National Planning Practice Guidance, and the Good Practice Advice published by Historic England (GPA1 Local plan making, GPA2 Managing significance in decision-taking in the historic environment (2015) and GPA3 The setting of heritage assets (2017)). Heritage assets are an irreplaceable resource, and should be conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations (NPPF, paragraph 184).

- 2.3 Paragraph 192 of the NPPF states that in determining planning applications,

*"Local planning authorities should take account of:
The desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
The positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and
The desirability of new development making a positive contribution to local character and distinctiveness."*

- 2.4 Local planning authorities are required to take the significance of an asset into account when considering proposals, in order to avoid or mitigate conflict between any aspects of the proposals and the conservation of the asset (paragraph 190), and *"great weight"* should be given to the objective of conserving designated heritage assets (paragraph 193). All harm to heritage assets, from demolition to harm through development within the setting, requires *"clear and convincing justification"* (paragraph 194).

- 2.5 The principal objective is to avoid harm to designated heritage assets, but detailed policies define the justification required in cases of harm, based on public benefits that outweigh the harm, taking account of the weight to be given to conservation, and consideration of whether the conflict between the provision of such public benefits and heritage conservation is necessary (paragraphs 195 and 196).

- 2.6 The National Design Guide: Planning practice guidance for beautiful, enduring and successful places, 2019, provides the following guidance at C2 in relation to context:

"Value heritage, local history and culture

45 *When determining how a site may be developed, it is important to understand the history of how the place has evolved. The local sense of place and identity are shaped by local history, culture and heritage, and how these have influenced the built environment and wider landscape.*

46 *Sensitive re-use or adaptation adds to the richness and variety of a*

scheme and to its diversity of activities and users. It helps to integrate heritage into proposals in an environmentally sustainable way.

- 47 *Well-designed places and buildings are influenced positively by: the history and heritage of the site, its surroundings and the wider area, including cultural influences; the significance and setting of heritage assets and any other specific features that merit conserving and enhancing; the local vernacular, including historical building typologies such as the terrace, town house, mews, villa or mansion block, the treatment of façades, characteristic materials and details – see Identity.”*

- 2.7 Setting is not a heritage asset or a designation in itself, and its importance lies in what it contributes to the significance of the heritage asset. The approach to identifying those heritage assets likely to be affected by a development proposal is given in the guidance by Historic England, which states that, “*The setting of a heritage asset is ‘the surroundings in which a heritage asset is experienced’ (NPPF, Annex 2: Glossary). Where that experience is capable of being affected by a proposed development (in any way) then the proposed development can be said to affect the setting of that asset.*” (GPA3, paragraph 20). The guidance aims for a consistent approach to the assessment of setting and the range of historic, visual and functional relationships that can define the contribution of adjoining land to the significance of any single asset or group of assets. These include physical attributes and perceptual values, depending on the nature of an asset and its past and present surroundings. Potentially significant views can be deliberately designed or incidental, or the result of later changes.

Local planning policies

- 2.8 The relevant development plan policies in regards to heritage and archaeology are also outlined in the Arun District Council Local Plan (2011 - 2031) (July 2018) Part 16: Building Conservation & Archaeological Heritage, policies HER DM1-4 and policy HER DM5 (Archaeological Heritage). Appendix 3 provides a summary of the relevant policies from the Local Plan.

3 Methodology

Context

- 3.1 The West Sussex Historic Environment Record (HER) was consulted¹ for information on known archaeological features and designated assets within the site, and a 1 km radius. The data also included the historic landscape characterisation (HLC) information. A full list of the data sources consulted is provided at the end of this document.
- 3.2 The HER data and designation information are given on figure 1, which shows the non-designated archaeological sites and findspots, information on past archaeological assessments and evaluations, and the nationally designated structures and other built heritage assets. The gazetteers in appendix 1 list the sites and archaeological events and provide extracts from the HER and the National Heritage List for England. Figure 2 illustrates the Historic Landscape Characterisation data for the study area. Figures 3a-b reproduce historic Ordnance Survey maps of the land to illustrate change over time, and figure 4 is

¹ Data received by email on 14 January 2020

an aerial photograph of the site to provide context. Figure 5 shows a range of site photographs taken around the application site². Appendix 2 provides SUMO's geophysical survey report; appendix 3 outlines the detail of the local plan policies for Building Conservation and Archaeological Heritage; appendix 4 provides a desk-based heritage assessment checklist while a glossary of specific technical terms is also included as appendix 5.

Scope of the study

- 3.3 The study was undertaken with reference to the Chartered Institute for Archaeologists code of conduct and appropriate standards (2008, updated 2014).

Limitations of the study

- 3.4 The report's conclusions are limited by the extent and quality of existing information and therefore its usefulness in predicting the extent and definitive location of the archaeological resource must be qualified. A geophysical survey has been produced (appendix 2), but no intrusive investigations have taken place.

Assessment of effects

- 3.5 This report aims to give an overall assessment of the components, qualities and level of importance or value of the heritage assets within the study area, including above and below ground archaeology and structures and their settings. It also covers historic landscape character and the legibility of time depth. A judgement is made of the value of known archaeological features or deposits and the probability of discovering currently unknown remains, and their likely importance.

4 Baseline

- 4.1 The evidence is presented in chronological order in broadly accepted chronological periods such as Palaeolithic – Neolithic. The HER data provided by West Sussex County Council lists 25 non-designated sites or features within the study area, none of which lie within the site boundary.

Geology

- 4.2 Geology and topography can provide an indication of suitability for early human settlement and of former ground levels which might have implications on the potential for archaeological survival.
- 4.3 A number of trial pits were excavated in the PDA as part of ground investigation works prior to development (T & P Regeneration, 2019). These works established the geological sequence across the site, summary of which is presented below.
- 4.4 The BGS Geology map and the Ground Investigation Report (GIR) indicate that the PDA is located on London Clay Formation bedrock, with Alluvium deposits overlaying the Clay around the watercourse (known as Lidsey Rife) to the east. The map also shows a band of Raised Beach Deposits next to the Alluvium and along Lidsey Rife's 'valley' course though the majority of the superficial geology is part of the River Terrace Deposits of sand, silt and clay which are typical for this part of the southern coast of Britain.

² Site visit undertaken in November 2020

- 4.5 The general OD level in the PDA is 9.28 Ordnance Datum (OD) at the entrance of the site to the west (nearer to A29) sloping to 1.10 OD along the eastern boundaries of the site near the watercourse.

The known archaeological resource

Prehistoric

- 4.6 During the wider Palaeolithic period (800,000–10 000 BC) the area of the West Sussex coastal plains remained relatively unaffected by glaciation which would have allowed occupation of this part of Sussex when warmer interglacial periods occurred (ASE, 2018). The study of the Palaeolithic period is related to the question of superficial geology and mainly the raised beaches and their associated deposits. The BGS map indicates that Raised Beach Deposits are present along the Lidsey Rife watercourse on the eastern parts of the site but the local HER contains no information on any Palaeolithic period finds from within this area or the wider landscape.
- 4.7 During the Mesolithic period (10,000- 4000 BC) the river valleys and coast would have been favoured in providing predictable source of food and water, as well as means of transport and communication. A flint working site dating to the Mesolithic period has been established at Croft Cottages at Westergate, approximately 600m north-west of the PDA (TOR 15). West of this site at Nyton Spinney another similar flint working site was identified, which falls outside of the study area of the PDA. The flint assemblage included scrapers, cores, core rejuvenation, waste flakes and blades and was defined by an area of flintwork concentration in a plough field in 2004 (DAS, 2017).
- 4.8 There are no records from within the study area in the HER of artefacts or earthworks associated with the Neolithic period (4000- 2000 BC) and only a single entry for finds from the Bronze Age (2000- 800 BC); a hoard of eight celts³ found at Barnham to the east of the PDA during the construction of the Barnham and Bognor branch railway in the 19th century (TOR 10). Archaeological evaluation work north of the study area at Westergate has identified two pits possibly dating to the Neolithic period with flints and scrapers also found at Fontwell Avenue approximately 2km north of the PDA (WSP, 2020). Evidence of the Neolithic period in the wider landscape includes three Neolithic scrapers and 26 waste flakes found on the surface of a ploughed field to the north of the site (ibid).
- 4.9 Archaeological excavation and evaluation work at the site of Lidsey Landfill, situated towards the western limits of the study area, established a wide range of features dating to the later prehistoric periods, including the Bronze and Iron Age (800 BC- 43 AD) (TOR 22-23, TOR 25, EVF & G). These features ranged from ditches, pits, gullies and post-holes, to enclosures and a trackway clearly indicating human activity in the area throughout these periods. A large evaluation was carried out at this site in 2005 (nearly 100 trenches excavated) by Thames Valley Archaeological Services which established the depth of the archaeological potential ranging from the Middle/ Late Bronze Age to the Late Iron Age and into the Roman period (43 AD- 410 AD) (TVAS, 2005). The evaluation concluded that human occupation and in particular land management (in the form of extensive

³ Bronze Age period axe

field systems) might be traced right back to the Bronze Age and continuing well into the Roman period.

Roman period (43- 410 AD)

- 4.10 The PDA lies approximately 5km west of the important Roman settlement and port at Chichester (*Noviomagus Reginorum*) and south of the Roman road that run from that city to Arundel in the north-west.
- 4.11 The West Sussex coastal plain is considered rich in archaeological deposits from the Roman period, however the HER data show only one entry of that date in the study area; the possible site of a Roman villa recorded at Eastergate in the fields to the east of the PDA (TOR 8). A 1925 aerial photograph shows a cropmark possibly indicating the site of a Roman building, with finds including sherds of Roman pottery, roof tile, animal bones and oyster shells alongside a scatter of medieval pottery sherds (TOR 9). However, archaeological investigations near this spot in 2000 failed to identify any further evidence for the presence of the reputed Roman villa (TOR 14), (ASE, 2000). Roman pottery and ceramic building material has also been uncovered at Fontwell c. 1km north of the study area.
- 4.12 Fragments of Roman roof tile have also been noted in the fabric of the nearby grade II* parish church of St. George at Eastergate (LB5). Sherds of Roman pottery have been recorded at Westergate School to the north of the study area in 1975 and cremation burial at nearby Nyton to the north-west (DAS, 2017). None of this evidence falls near the PDA and all is outside of the study area.
- 4.13 While this assessment takes into consideration the depth of the archaeological potential for remains dating to the Roman period in the wider landscape there is nothing to suggest that extensive Roman remains may be present in the area of the application site.

Early medieval

- 4.14 The study area contains limited record for early medieval archaeological remains. Although Saxon Sussex has been described in the Anglo- Saxon Chronicle there are very few direct historical references to Sussex, and in particular to West Sussex, from this period, until its conversion to Christianity (ASE, 2018). A sequence of archaeological evaluations between 1996- 2000 at the Westergate Community College, on the edge of the study area to the north, revealed some remains of early medieval date such as pottery sherds and possible cut features (TOR 20).
- 4.15 The Saxons kept clear of Roman settlements while the vast majority of the locations of manors or placenames mentioned in the Domesday survey survived to become the villages of today⁴.

Historic development

- 4.16 Prior to the Norman Conquest in AD 1066, the Manor of Gate was held by King Harold.
- 4.17 The Domesday Survey in 1086 mentions that the manor of Eastergate (or Gate) was held by that time by St. Martin of Sees Abbey⁵. There is also a reference in

⁴ <https://www.british-history.ac.uk/vch/sussex/vol4/pp134-138>

⁵ <https://www.british-history.ac.uk/vch/sussex/vol5/pt1/pp148-160>

the Domesday entry to a church (St. George's) at Eastergate, which remained a rectory ever since. The focus of settlement was centred around this church with a manor house recorded at Eastergate in 1379. The place name itself is thought to derive from the Old English *geat* or *gate*. Having been situated within the Hundred of Avisford, this name may refer to the gate in the area which led onto common land.

- 4.18 The place name of the nearby settlement of Westergate derived from the same source as Eastergate. This place name was used to distinguish the two settlements. Later medieval documentary sources variously refer to this settlement as Westgate and as Westregate (DAS, 2017). The nearby place name/settlement of Woodgate also has a topographical derivation and is derived from the Old English *wudu* and *geat* or 'the gate leading into a wood'
- 4.19 It is likely that the PDA remained as open farmland throughout the medieval period away from the nearby growing settlements (mainly Eastergate and Westergate). The HER records a medieval chapel at Lidsey to the south of the PDA of which documentary references exist as early as 1282 AD, however the chapel was out of use by 1583⁶.
- 4.20 From at least the medieval period date the parish church of St. George at Eastergate situated to the north of the PDA (LB 5, grade II*) formed the core of Church Lane, Eastergate⁷. The building is largely Norman in origin, but it was much restored, especially during the 19th century. The church has Norman walling, which includes fragments of Roman roof tile built into the south wall of the nave. The chancel is of 13th century date. Windows in the nave are of 14th and 15th century date. Also in the conservation area are located a c. 16th century timber framed Manor House (LB 7, grade II) with the adjacent granary and outbuildings (LB6, grade II) and the c. 17th century barn and cart shed (LB1, grade II). Archaeological investigation from within the conservation area established the presence of two adjacent north-south ditches, the more substantial of which contained pottery of 11th- 13th century date (TOR 14). Two further parallel linear features aligned east-west confirmed the position of a post- medieval field boundary
- 4.21 The remaining listed buildings in the study area are located at Westergate to the north/ north-west of the PDA and form the historic core of that settlement. The Old Manor House is located at Westergate Street and is a two storey 17th century building of flints with red brick with tiled roof and casement windows (LB 2, grade II, TOR 6). Also listed is the c. 16th century timber framed and thatched cottage located south of the Old Manor Farmhouse along Westergate Street (LB3, grade II) and the Milliards Manor Farmhouse, a c. 18th century two storey building with a wide 19th century porch (LB4, grade II).
- 4.22 The HER also holds information for a range of locally designated buildings including the Woodgate Farm (TOR 7), the historic farmhouses at Old Farm in Westergate (TOR 2), and Manor Farm at Eastergate (TOR 4) and the site of Small Field historic outfarm, situated to the south of the PDA (TOR 5). All of these locally designated heritage assets are linked to the increase of wealth through farming and land management during the later medieval and post- medieval periods.

⁶ <https://www.british-history.ac.uk/vch/sussex/vol4/pp134-138>

⁷ <https://barnhamandeastergate-pc.gov.uk/about-barnham-and-eastergate/conservation-area-at-eastergate/>

- 4.23 The area of the PDA continued to be employed as arable/ farming land during the post- medieval period. The site of the former 19th century Headhone Farm, which is shown on the 1st Edition OS map occurs to the east of the present Headhone Farm to the south of the PDA (TOR 16-17). The farmstead shifted to the west in the late 19th century. This later Headhone Farm site has been identified as an historic farmstead of late 19th century origin and is locally designated heritage asset. This farmstead is set around a regular 'U'-shaped courtyard with additional detached elements. The farmhouse is detached and set away from the yard. The site was in an isolated location and is extant.
- 4.24 At the mainline railway (opened in 1845) which extends through Woodgate is the site of Woodgate Railway Station (TOR 12). The single storey station building dated 1846 survives.
- 4.25 The consulted Ordnance Survey map dating to the late 19th century shows the PDA as a series of enclosures with little change in its rural context and appearance (Figure 3a).
- 4.26 The Third Edition six inch map of 1914 shows that by this time several further minor alterations had taken place to the PDA. This consisted of the addition of two further field boundaries with the first to the east of Westergate and the second, within the south-eastern portion of the PDA. By 1941 some residential development could be seen in the area of the PDA along Woodgate Road and south of the mainline.
- 4.27 The closest HER entry to the PDA is the site of the former brickworks of the Woodgate Brick Company situated just across Woodgate Road to the south (TOR 11), dating to the late 1930s and now occupied by the modern caravan park. The site closed in 1950.
- 4.28 A number of changes to the local landscape within the PDA may be traced on historic maps from the second half of the 20th century (Figure 3b) including the removal of a number of field boundaries to create larger enclosures and the private housing development along Woodgate Road to the west and Oak Tree Lane to the north of the application site.

Historic landscape characterisation

- 4.29 The historic landscape characterisation data (HLC) (figure 2) shows the time depth of the present landscape. The plan illustrates the development of the landscape within and around the proposed site area. The HLC map identifies the area of the PDA as mainly Informal Fieldspaces ranging in date from the Post- medieval through to modern times. Parts of the central northern area of the site are shown on the plan as Non-historic isolated which reflects the current land use of premises comprising of small businesses of mixed use based in poor quality modern buildings with no historical or heritage value. To the immediate south and west of the PDA are identified Post-medieval to modern Expansions of Woodgate including interwar Expansion along the A29. To the east the PDA abuts an area indicated as Informal Field spaces of possible medieval and Post-medieval origins. The Historic core of the nearby settlement is shown on the map to the west and north/ north-east of the PDA and reflects the historical development of Westergate and Eastergate respectively.

Previous archaeological investigations

- 4.30 There are no known archaeological investigations in the area of the application site. For the comprehensive understanding of the archaeological/ cultural heritage resource of the wider area the results of several archaeological evaluations are summarised below:

An Archaeological evaluation on land to the rear of 23-27, Ivy Lane, Westergate, 2007, (TOR 20, EVA), (ASE, 2007)

- 4.31 Within one trench, a series of medieval features dating from the 11th-14th centuries were found. A curvilinear gully/ditch was traced and a terminal end was observed. To the south, a layer of possible occupation debris was found which sealed another possible ditch/gully and a large pit. One pit yielded a worked flint of late Mesolithic-Early Bronze Age date and a single sherd of Bronze Age pottery, while the remaining pits produced sherds of medieval pottery. Other archaeological features dating to the Saxo-Norman and later medieval periods were found, including a large ditch, five linear features, four pits and five postholes, along with refuse pits and an occupation layer. Other finds included further sherds of medieval pottery dating from the 12th-early 13th centuries, one sherd of Roman pottery and a residual sherd of prehistoric pottery.

An Archaeological Evaluation of Land Adjacent to St George's Church, Church Lane, Eastergate, West Sussex, 2000, (TOR 14), (ASE, 2000)

- 4.32 Two evaluation trenches revealed the presence of two adjacent north-south ditches, the more substantial of which contained pottery of 11th- 13th century date. Two further parallel linear features aligned east-west confirmed the position of a post- medieval field boundary. The presence of burnt and worked flint including a leaf- shaped arrowhead, indicated probably prehistoric activity in the vicinity. However, no features were found which related to the presence of a Roman villa, thought to exist close to the site.

- 4.33 *An Archaeological Evaluation on Land West of Westergate, West Sussex, (TOR 19, EVC), (ASE, 2015)*

An archaeological evaluation of 17 trenches was undertaken at the site. A small quantity of residual struck flint suggests some activity of Neolithic to Late Bronze Age date in the vicinity of the site. However, much of the archaeological activity recorded appears to be related to a large sub-rectangular enclosure of probable Middle-Late Iron Age date, with a range of associated internal features indicative of occupation, including pits, ditches, gullies and postholes. Medieval activity is limited to a single pit of possible 13th to 14th century date. Post-medieval features comprised field boundary ditches, some of which are present on some 19th century Ordnance Survey maps.

Geoarchaeological Watching Brief at Lidsey Well Site, Lidsey, West Sussex, 2011 (TOR 3, EVB), (ASE, 2011)

- 4.34 Groundworks ahead of the construction of an oil well, were initiated across the 4x4m area of the cellar construction to a depth of 1.1m to the basal limit of the made ground. At this level a stepped 3x3 metre area was taken down to 2.2 metres to the water table whereupon a sheeting wall was constructed around the walls of the cellar to prevent collapse. A sequence comprising made ground, alluvium and disturbed marine deposits was recorded and sampled for palaeoenvironmental evidence. The sediments lacked microfossils but contained a pollen assemblage indicating a Mid-Late Holocene age for the deposits. The

marine deposits may relate to the MIS 5e Pagham Raised Beach. The disturbed nature of the alluvial sediments and the poor degree of palaeoenvironmental preservation has led to the conclusion that further analysis of the samples would not be productive.

Geophysical survey results

- 4.35 A detailed magnetometer survey was conducted over on the site on 11 November 2020 (SUMO, 2020). The geophysical survey report is available in the Appendix section (2). A summary of the results is presented below:

The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. Several linear trends, a curvilinear trend, an isolated discrete response and areas of increased response have been recorded and categorised as being of uncertain origin. They are likely to be a result of modern agricultural processes or natural processes. The routes of service pipes have also been marked in several of the survey areas. The large number of ferrous responses and magnetic disturbance within the dataset is likely to reflect the current land use.

5 Heritage value and significance

- 5.1 The categories of heritage values that may be attached to a place were outlined in the English Heritage document Conservation principles: policies and guidance for the sustainable management of the historic environment, 2008, and the revised draft published by Historic England in 2017. These definitions are included in the NPPG, July 2019:

“The National Planning Policy Framework definition further states that in the planning context heritage interest may be archaeological, architectural, artistic or historic. This can be interpreted as follows:

- *archaeological interest: As defined in the Glossary to the National Planning Policy Framework, there will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.*
- *architectural and artistic interest: These are interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved. More specifically, architectural interest is an interest in the art or science of the design, construction, craftsmanship and decoration of buildings and structures of all types. Artistic interest is an interest in other human creative skill, like sculpture.*
- *historic interest: An interest in past lives and events (including pre-historic). Heritage assets can illustrate or be associated with them. Heritage assets with historic interest not only provide a material record of our nation’s history, but can also provide meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity.” Paragraph: 006 Reference ID: 18a-006-20190723.*

- 5.2 Some or all of these values can be attributed to the known and recorded heritage resource present within the development site boundary and in the study area.

Archaeology

- 5.3 The nature and potential of possible archaeological survival in the area of the proposed development is summarised here, taking into account the levels of natural geology and the level and nature of land disturbance.
- 5.4 The site does not possess or lie close to a nationally designated scheduled monument and does not lie within an archaeological priority area, as defined by the LPA and has no recorded HER findspots or sites anywhere within the site area. The site however falls within the western extent of an Archaeological Notification Area 1- Possible Roman Villa Site at Eastergate⁸. The evidence for this villa date back to a 1925 aerial photograph showing the location of a cropmark possibly indicating the site of a Roman building and the more recent discovery of finds including sherds of Roman pottery, roof tile, animal bones and oyster shells. Archaeological investigations near this spot in the year 2000 found no further evidence of the reputed Roman villa. The PDA lies at a considerable distance from the possible Roman villa site but nonetheless it might have formed part of its agricultural landscape, as evidenced in other examples from across Britain.
- 5.5 There is low potential for Prehistoric remains in the PDA. There are limited findspots in the study area indicative of any prehistoric activity except probably the Lidsey Landfill to the west of the PDA. A sequence of Bronze Age through to Roman period activity was established there during archaeological investigation works that suggest potential for prehistoric field systems and other activity in the wider area, however, none of this evidence falls within the site itself and it is located on the edge of the 1km study area. The significance of any remains would depend on their nature and extent but would potentially be low to medium.
- 5.6 There is limited potential for archaeological remains dating to the Roman or early medieval periods. The West Sussex coastal plains are known for their abundance of material dating to the Romano-British period, with the local capital of Roman Chichester located approximately 5km to the west of the PDA. Numerous finds of Roman pottery sherds have been discovered in the wider landscape including at the site of the potential Roman villa in Eastergate to the east of the PDA, in the fabric of the parish church there and at Westergate School to the north-west of the PDA. These findings are important for the understanding of the Roman period occupation of this part of the coastal plains but the nature and extent of the recorded evidence is considered to be limited and is not an indicator of wider landscape exploitation in the immediate surroundings of the PDA or on the application site itself.
- 5.7 During the medieval and later periods the PDA remained outside of the known settlements may have been utilised as an agricultural/ farming landscape from an earlier date. Some isolated findings such as ditches and gullies related to medieval and later farming might be present on the site but their significance would be of low local value depending on their state of preservation and the nature of the archaeological material.
- 5.8 Therefore, based on the assessment of the recorded archaeological resource in the study area, it is unlikely that the archaeological resource, which is currently unknown due to the lack of site specific surveys or investigations, would represent

⁸ <https://www.westsussex.gov.uk/land-waste-and-housing/landscape-and-environment/historic-environment-record/archaeological-notification-areas-1/>

a primary risk or constraint to the development i.e. in terms of a requirement for preservation in situ of significant remains.

Built heritage and historic landscape

- 5.9 The built heritage assets in the study area are mainly grade II listed post-medieval houses, farmhouses and associated buildings, with the single higher grade building of the parish church of St. George in the Church Lane conservation area at Eastergate.
- 5.11 The closest designated assets to the site is the group at Westergate with the locally designated Old Farm and The Old Manor House historic farmsteads. This group of buildings appears as a local landmark and reflects the historical development of the settlement during the post- medieval period.
- 5.12 The cluster of listed buildings at Eastergate is part of Church Lane conservation area and forms a distinctive group of buildings focused around the parish church of St. George (grade II*). The church implies a wider landscape setting and is the focal point of the conservation area preserving the historical fabric of the earlier Norman church, heavily altered during the 19th century.
- 5.13 The heritage value of the listed buildings lies principally in the architectural and historic value of the fabric and appearance, and the legibility of the functional connections. These assets currently have no direct historic, physical or visual relationship to the site. The PDA does not form part of the setting of the listed buildings and there is no potential for effects as a result of the proposed development

6 Brief description of the potential sources of impacts

- 6.1 The description of the proposed development for a full planning application on land at Woodgate Centre, Oak Tree Lane, Woodgate:

“Demolition of the Woodgate Centre buildings (including no.3 residential dwellings) and the construction of 180 residential dwellings, with the creation of new vehicular access with footways and cycleways and ancillary road infrastructure and emergency access arrangements, associated parking, public open space, including children’s play space, landscape planting, surface water attenuation and drainage and other associated infrastructure.”

- 6.2 The physical impacts on buried non-designated heritage assets within the PDA would arise from any activity associated with ground disturbance, for example site works, remediation, landscaping, balancing/attenuation ponds and the construction of new roads and preparatory foundations for the proposed houses.
- 6.3 The assessment has shown how the PDA is located away from the known areas of occupation in the wider landscape. The study area is some distance away from any known prehistoric sites or find spots, which are confined to residual finds in the wider coastal area to the south. Roman and early medieval remains have not been discovered in the immediate vicinity of the PDA but this should not be seen

as confirmation of the PDA being devoid of material. Therefore the potential for any archaeological features related to these periods is considered to be low.

- 6.4 During the medieval and later periods the area of the PDA was some distance away from the nearby settlements and it was utilised as an agricultural landscape. It is possible that some evidence of this usage of the land may be present in the archaeological record but it's significance would be of a low local value.

7 Conclusions and recommendation

Archaeology

- 7.1 This assessment has outlined the archaeological potential of the PDA and its study area and examined the effects of any historic or existing impacts and as far as is possible, the effects of the proposed impacts upon that potential. However, in the absence of any archaeological surveys within the PDA a definitive statement on the presence or absence of archaeological deposits cannot be given, as it must be acknowledged that a site assessed as having low potential may still contain unsuspected archaeological deposits.
- 7.2 Consultation with James Kenny, Arun District Council archaeology advisor in December 2020 confirmed that the paucity of clearly identifiable probable or possible archaeological sites/features in the geophysical survey undertaken across the site did not require further evaluation prior to the submission of this planning application⁹.
- 7.3 Depending on the finalised details and extent of the proposed ground disturbance associated with the residential parcels, required attenuation and access roads, any archaeological work deemed necessary could be carried out under the terms of a standard archaeological planning condition set out with the granting of planning consent. This is in line with the aforementioned consultation response.

Built heritage and historic landscape

- 7.4 The listed heritage assets lie at considerable distance from the PDA and it is therefore considered unlikely that the development will cause any harm to their fabric or historical value or cause any change to the character or qualities of their setting.

⁹ Email received from James Kenny 17.12.20

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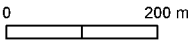
<https://mapapps.bgs.ac.uk/geologyofbritain/home.html> for BGS map

Figures



- Site boundary
- 1km study area
- Events
- HER building
- HER point
- HER lines
- HER areas
- ANAs
- Conservation areas
- Listed building

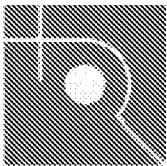
**Woodgate
Pye Homes**



**Figure 1: Heritage assets within
the site and 1 kilometre study area**

Dwg no/174103B	Revision
Status	23 June 2021
Scale: 1:10,000 @A3	Drawn by: JC Checked by: JT

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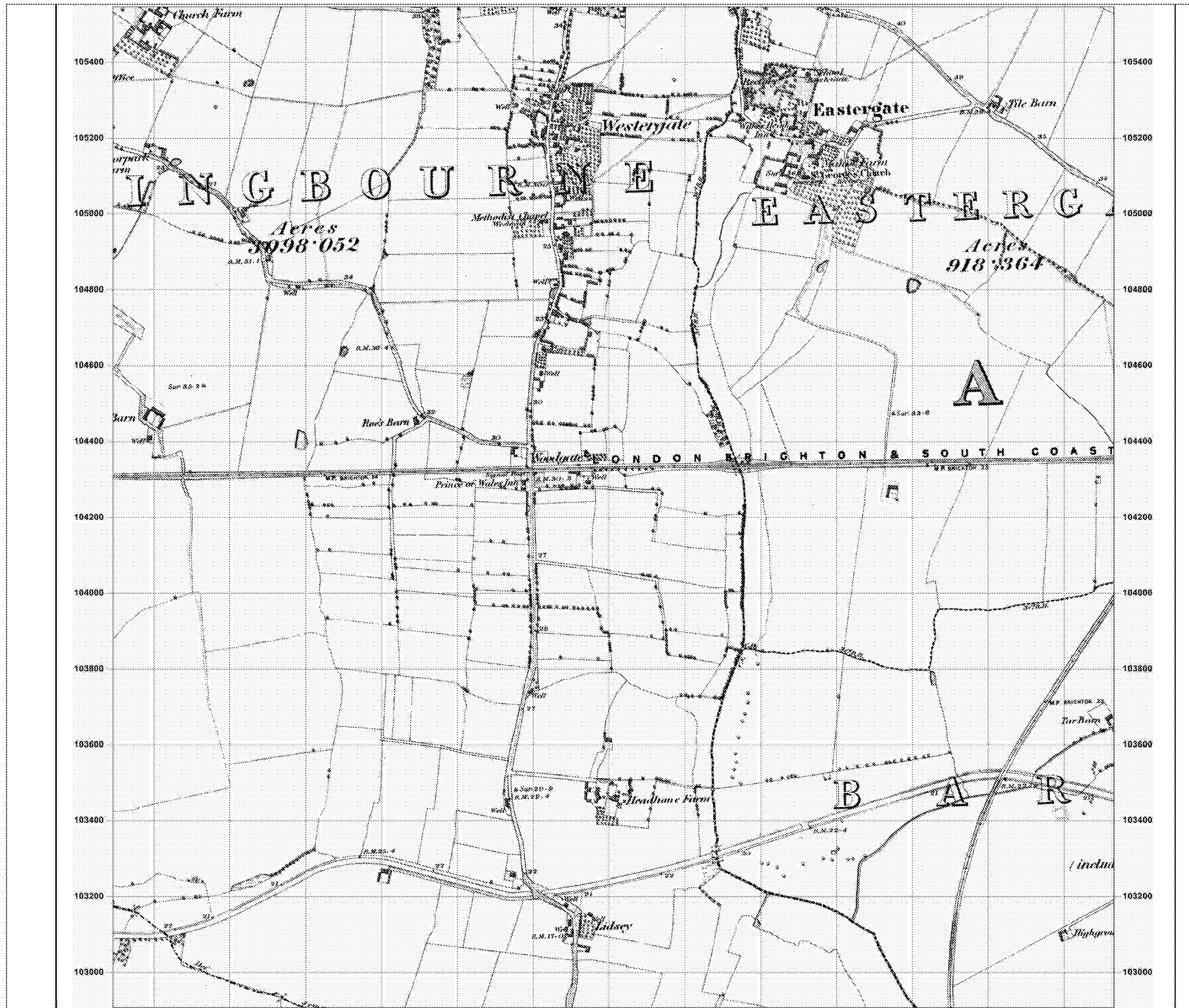
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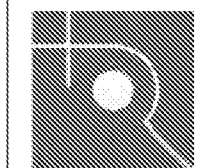


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Figure 3a: Ordnance Survey
1:10,560 map of 1876

Dwg no/174103B	Revision
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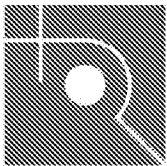
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Figure 3b: Ordnance Survey Map 1952

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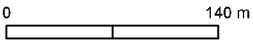
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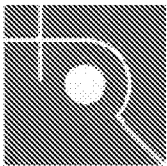


**Figure 4: Aerial photograph showing
detail of the application site**

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View location plan



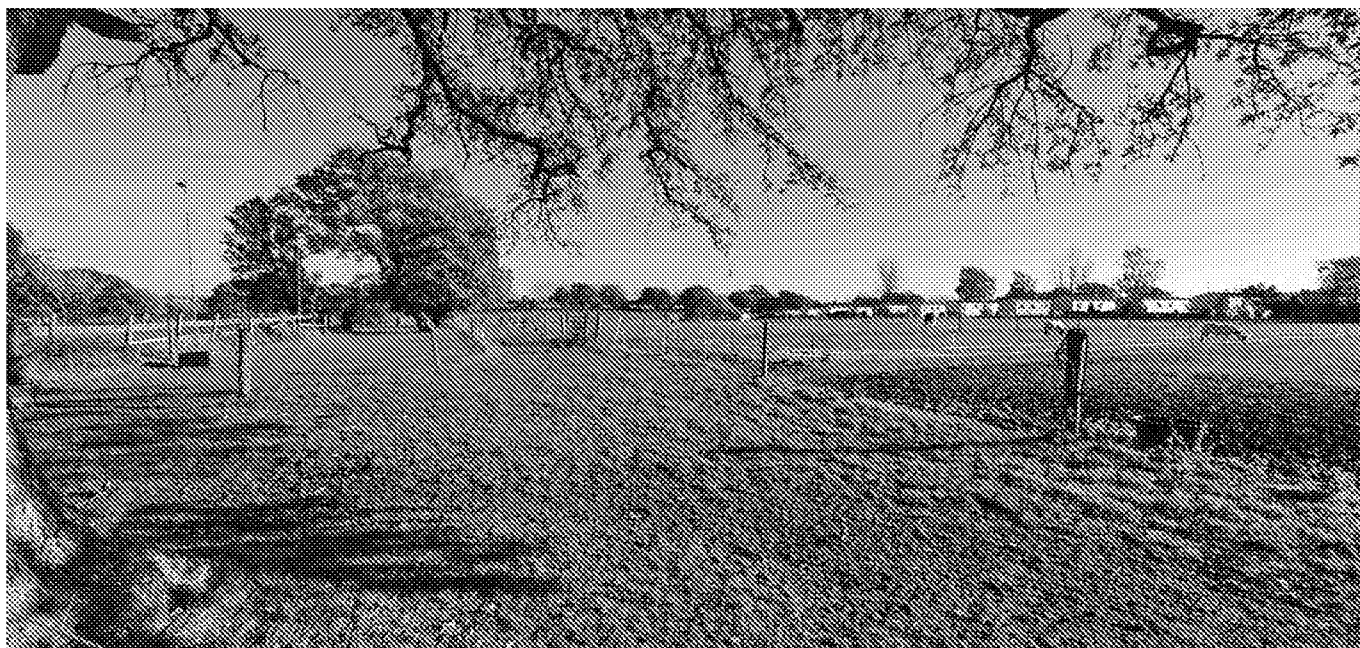


View 1. Looking south across field parcel east of proposed access



View 2. Looking west, showing arrangement of pony paddocks





View 3. Looking south east showing static caravans outside southern site boundary

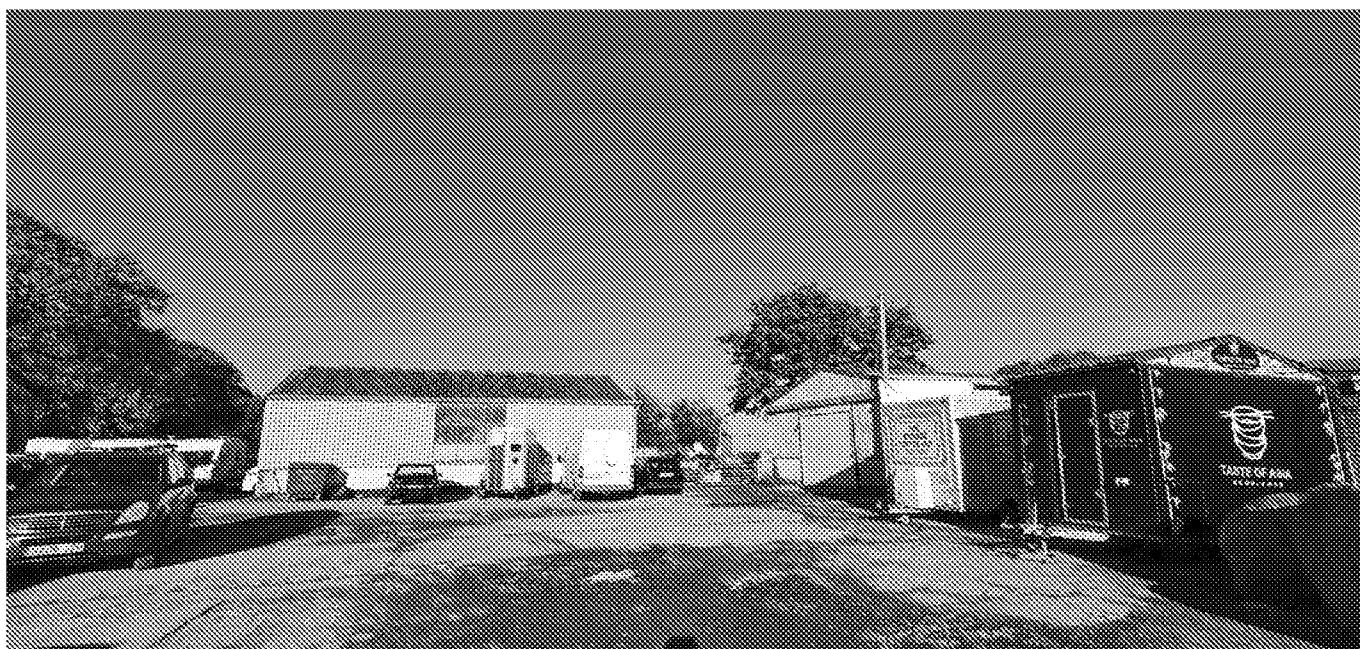


View 4. Looking east across numerous pony paddocks





View 5. Looking east across paddocks towards eastern extent of site

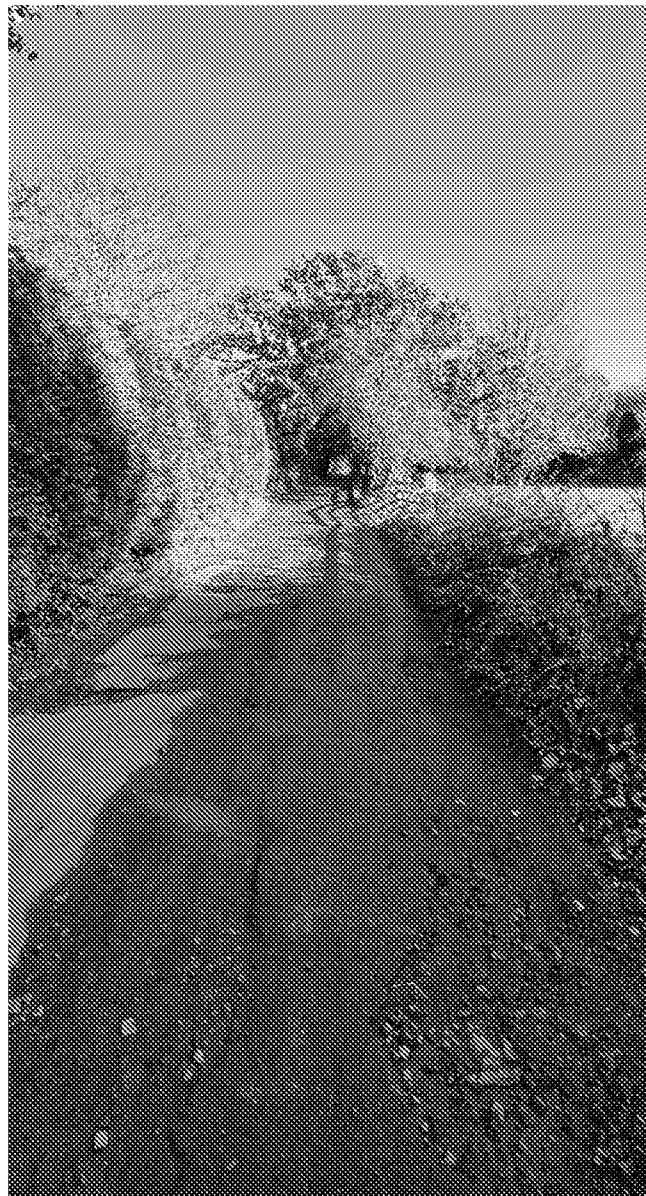


View 6. Looking north at current industrial units





View 7. Detailed view of numbers 1 and 2 Lodge bungalows



View 8. Looking east along current access track off Oaktree Lane



View 9. Looking towards south east corner of site



View 10. Looking towards north west corner of site





View 11. Looking east at area of unsurveyable ground



View 12. Looking south east across area of unsurveyable ground



APPENDIX 1: GAZETTEERS OF HERITAGE ASSETS IN THE 500M STUDY AREA

Non-designated heritage assets

TOR ID	MONUMENT ID	DESCRIPTION
1	MWS13727	The Homestead Historic Farmstead, Aldingbourne
2	MWS13733	The Old Farm Historic Farmstead, Aldingbourne
3	MWS11450	Lidsey Well Site, Lidsey Road, Aldingbourne: Geoarchaeological Assessment Report.
4	MWS12317	Manor Farm Historic Farmstead, Eastergate
5	MWS13572	Site of Small Field Historic Outfarm, East of Headhone Farm, Barnham
6	MWS13736	The Old Manor House Historic Farmstead, Aldingbourne
7	MWS14028	Woodgate Farm Historic Farmstead, Aldingbourne
8	MWS2364	Possible site of a Roman Building, Eastergate
9	MWS2365	Medieval pottery - Eastergate
10	MWS2396	Bronze Age Hoard - Barnham
11	MWS4705	Woodgate Brick Co.
12	MWS5682	Woodgate Railway Station
13	MWS5839	Chapel - Lidsey
14	MWS6997	Church Lane - archaeological intervention, DITCH
15	MWS7101	Flint working site, 1 Croft Cottages, Westergate
16	MWS8025	Site of former Headphone Farm
17	MWS11289	Headphone Farm Historic Farmstead, Aldingbourne
18	MWS12470	New Barn Historic Outfarm, Eastergate
19	MWS13955	Land West of Westergate, Aldingbourne – Evaluation, Square enclosure; Ditch; Pit; Post hole; Gully; Field boundary; Ditch; Trackway, Pit; Field Boundary; Ditch; Ditch
20	MWS9493	Land to the Rear of 23-27 Ivy Lane, Westergate - Post Excavation Assessment, Square enclosure; Ditch; Pit; Post hole; Gully; Field boundary; Ditch; Trackway, Pit; Field Boundary; Ditch; Ditch; Linear feature; Post hole
21	MWS10205	Site of Farmstead (unnamed) Historic Farmstead, Aldingbourne,
22	MWS14730	Lidsey Landfill, Aldingbourne, Pit; Post hole; Gully; Midden?; Pit cluster; Round house (domestic); Ditch; Rectangular enclosure; Field system; Ring ditch; Gully; Field boundary; Ditch; Pit; Gate pier?; Gully; Gully; Gully; Annexe enclosure; Gully; Ditch; Pit; Field Boundary; Trackway
23	MWS14730	Lidsey Landfill, Aldingbourne, Pit; Post hole; Gully; Midden?; Pit cluster; Round house (domestic); Ditch; Rectangular enclosure; Field system; Ring ditch; Gully; Field boundary; Ditch; Pit; Gate pier?; Gully; Gully; Gully; Annexe enclosure; Gully; Ditch; Pit; Field Boundary; Trackway
24	MWS5754	Portsmouth - Arundel Canal, CANAL; BRIDGE
25	MWS14730	Lidsey Landfill, Aldingbourne, Pit; Post hole; Gully; Midden?; Pit cluster; Round house (domestic); Ditch; Rectangular enclosure; Field system; Ring ditch; Gully; Field boundary; Ditch; Pit; Gate pier?; Gully; Gully; Gully; Annexe enclosure; Gully; Ditch; Pit; Field Boundary; Trackway

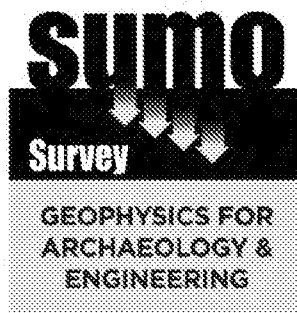
Archaeological Events

TOR ID	Event ID	Description
A	EWS1127	Land to the Rear of 23-27 Ivy Lane, Westergate, West Sussex,
B	EWS1282	Lidsey Well Site, Lidsey Road, Aldingbourne: Geoarchaeological Assessment Report.
C	EWS1765	Land West of Westergate, Aldingbourne - Evaluation
D	EWS1798	Westergate Phase 1, Aldingbourne - Desk Based Assessment
E	EWS1837	Land at Eastergate (Three Villages), Eastergate - Desk Based Assessment
F	EWS1890	Lidsey Landfill, Woodgate, Aldingbourne
G	EWS1891	An Archaeological Evaluation at Lidsey Landfill, Woodgate, Aldingbourne

Listed Buildings – designated heritage assets

TOR ref	Description
LB1	BARN AND CART SHED AT MANOR FARM TO THE SOUTH WEST OF THE FARMHOUSE, CHURCH LANE, Eastergate, EASTERGATE, Arun, West Sussex, II Barn and Cart-shed at Manor Farm to the south west of the Farmhouse. One building. Possibly C17. The east wall is of red brick with a diaper pattern of grey headers. The remainder of the exterior is faced with flints and appears later. Stone steps up to the entrance on the north side. The west half of the building forms the cart-shed with the lower portion open and weather-boarded above. Corrugated iron roof to the whole.
LB2	THE OLD MANOR HOUSE, WESTERGATE STREET, Aldingbourne, WESTERGATE, Arun, West Sussex, II C17. Two storeys. Four windows. Ground floor faced with flints with red brick dressings and quoins, above red brick and grey headers. Tiled roof. Casement windows.
LB3	TIMBERS, WESTERGATE STREET, Aldingbourne, WESTERGATE, Arun, West Sussex, II C16 timber-framed cottage with flint infilling, now white-washed. Thatched roof with two "eyebrows". Casement windows. Two storeys. Four windows.
LB4	MILLIARDS MANOR FARMHOUSE, WESTERGATE STREET, Aldingbourne, WESTERGATE, Arun, West Sussex, II C18. Two storeys. Two windows. Stuccoed. Tiled roof. Glazing bars intact. Wide C19 porch.
LB5	THE PARISH CHURCH OF ST GEORGE, CHURCH LANE, Eastergate, EASTERGATE, Arun, West Sussex, II* Chancel, nave with shingled bell-turret at west end and north vestry. Largely Norman, much restored with later windows. Vestry C19.
LB6	GRANARY/OUTBUILDING AT MANOR FARM TO THE NORTH WEST OF THE FARMHOUSE, CHURCH LANE, Eastergate, EASTERGATE, Arun, West Sussex, II Granary/Outbuilding at Manor Farm to the north west of the Farmhouse (formerly listed as Outhouse with Manor Farmhouse) II C17 timber-framed building with red brick infilling standing on staddle-stones. Half-hipped tiled roof.
LB7	MANOR FARMHOUSE, CHURCH LANE, Eastergate, EASTERGATE, Arun, West Sussex, II C16 timber-framed building of half H-plan with infilling of red brick, plaster and flints. Tiled roof. Casement windows. Two storeys. Three windows. Modern portion added to west end of south wing.

Appendix 2: Geophysical survey report, SUMO November 2020



GEOPHYSICAL SURVEY REPORT

Land at Woodgate, Westergate, West Sussex

Client

Terence O'Rourke

For

Pye Homes

Survey Report

16812

Date

November 2020



Survey Report 16812: Land at Woodgate, West Sussex

Survey dates 11 – 12 November 2020

Field co-ordinator Robert Knight BA

Field Team Liam Brice-Bateman BA
James Lorimer BA

Report Date 30 November 2020

CAD Illustrations Thomas Cockcroft MSc

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Report approved Dr John Gater BSc DSc(Hon) MCIfA FSA

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6	DATA APPRAISAL & CONFIDENCE ASSESSMENT	3
7	CONCLUSION	3
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Appendix B Technical Information: Magnetic Theory

Figure 01	NTS	Site Location
Figure 02	1:1500	Magnetometer Survey – Area Numbers
Figure 03	1:1500	Magnetometer Survey - Greyscale Plots
Figure 04	1:1500	Magnetometer Survey - Interpretation
Figure 05	1:1500	Minimally Processed Data - Greyscale Plots

Detailed magnetic survey (magnetometry) was chosen as the most efficient and effective method of locating the type of archaeological anomalies which might be expected at this site.

Bartington Grad 601-2 Traverse Interval 1.0m Sample Interval 0.25m

3 SUMMARY OF RESULTS

- 3.1 A magnetometer survey of 6ha of land at Land at Woodgate, Westergate has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. Linear and curvilinear responses, and discrete anomalies plus areas of increased response are visible in the magnetic data. They have been categorised as *uncertain* and they are likely to be due to modern agricultural or natural processes. The routes of four service pipes have also been recorded.

4 INTRODUCTION

- 4.1 **SUMO Geophysics Ltd** were commissioned to undertake a geophysical survey of an area outlined for residential development. This survey forms part of an archaeological investigation being undertaken by **Terence O'Rourke** on behalf of **Pye Homes**.

4.2 Site details

NGR / Postcode	SU 94131 04118 / PO20 3ST
Location	The site is located 4.7km north of Bognor Regis and 7km east of Chichester. The survey area is bounded to the south by Willows Caravan Park and to the west by houses off Woodgate Close.
HER	West Sussex County Council
District	Arun
Parish	Aldingbourne Civil Parish
Topography	Mostly flat
Current Land Use	Horses pasture
Geology (BGS 2020)	Bedrock: London Clay Formation - clay, silt and sand Superficial: River Terrace Deposits (undifferentiated) - sand, silt and clay; Raised Beach Deposits, 1 - sand and gravel
Soils (CU 2020)	Soilscape 22: Loamy soils with naturally high groundwater.
Archaeology (TOR 2020)	No designated heritage assets or scheduled monuments are recorded within the survey area. 900m east of the survey area a Bronze Age hoard (MWS23960) which contained eight bronze celts was uncovered around 1864. 400m north-east of the site fragments of Roman pottery, some animal bone and oyster shells have been identified in field walking. A 1925 aerial photograph shows a crop mark where the finds were made which could possibly indicate the site of a Roman building. A post-medieval brickworks (MWS4705) is recorded in the HER located due south of the survey area.
Survey Methods	Magnetometer survey (fluxgate gradiometer)
Study Area	6 ha

4.3 Aims and Objectives

To locate and characterise any anomalies of possible archaeological interest within the study area.

5 RESULTS

The survey has been divided into 23 survey areas (Areas 1-23). One area in the survey was unsurveyable, the western part of this area was being used as car parking / vehicle storage but the majority of the area is taken up by spoil heaps (of varying sizes with briars), nettles and dumped material which is likely to be of recent origin.

5.1 ***Probable / Possible Archaeology***

- 5.1.1 No magnetic responses have been recorded that could be interpreted as being of definite archaeological interest.

5.2 ***Uncertain***

- 5.2.1 A couple linear trends, a curvilinear trend, an isolated discrete responses and areas of increased response have been recorded in the survey. The anomalies lack context and do not display sufficient patterning to support an interpretation of archaeological origin. They are likely to be due to modern agricultural or natural processes. Therefore, the responses have been assigned to the category of *Uncertain*.

5.3 ***Service Pipe***

- 5.3.1 Several linear dipolar ferrous responses have been recorded in Areas 4, 5, 8, 9, 10 and 17. these mark the routes of service pipes.

5.4 ***Ferrous / Magnetic Disturbance***

- 5.4.1 Magnetic disturbance has been recorded in Areas 6 and 7 which is likely to be due to modern processes. it could possibly be associated with the construction of the surrounding agricultural buildings / horse menage. Ferrous responses within the survey areas are due to the presence of debris, fences, gates and are likely to be a by-product of the modern land usage. Smaller scale ferrous anomalies ("iron spikes") are present throughout the data and are characteristic of small pieces of ferrous debris (or brick / tile) in the topsoil; they are commonly assigned a modern origin. Only the most prominent of these are highlighted on the interpretation diagram.

6 DATA APPRAISAL & CONFIDENCE ASSESSMENT

- 6.1 Historic England guidelines (EH 2008) Table 4 states that the typical magnetic response on the local soils / geology is variable. The results from this survey indicate the presence of linear trends and discrete responses; as a consequence, there is no *a priori* reason why archaeological features would not have been detected.

7 CONCLUSION

- 7.1 The magnetometer survey has not recorded any magnetic responses that could be interpreted as being of definite archaeological interest. Several linear trends, a curvilinear trend, an isolated discrete response and areas of increased response have been recorded and categorised as being of uncertain origin. They are likely to be a result of modern agricultural processes or natural processes. The routes of service pipes have also been marked in several of the survey areas. The large number of ferrous responses and magnetic disturbance within the dataset is likely to reflect the current land use.

8 REFERENCES

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- TOR 2020 Land at Woodgate, Westergate: Archaeological Desk-Based Assessment. Terence O'Rourke

Standards & Guidance

This report and all fieldwork have been conducted in accordance with the latest guidance documents issued by Historic England (EH 2008) (then English Heritage), the Chartered Institute for Archaeologists (CIfA 2014) and the European Archaeological Council (EAC 2016).

Grid Positioning

For hand held gradiometers the location of the survey grids has been plotted together with the referencing information. Grids were set out using a Trimble R8 Real Time Kinematic (RTK) VRS Now GNSS GPS system.

An RTK GPS (Real-time Kinematic Global Positioning System) can locate a point on the ground to a far greater accuracy than a standard GPS unit. A standard GPS suffers from errors created by satellite orbit errors, clock errors and atmospheric interference, resulting in an accuracy of 5m-10m. An RTK system uses a single base station receiver and a number of mobile units. The base station re-broadcasts the phase of the carrier it measured, and the mobile units compare their own phase measurements with those they received from the base station. This results in an accuracy of around 0.01m.

Technique	Instrument	Traverse Interval	Sample Interval
Magnetometer	Bartington Grad 601-2	1m	0.25m

Instrumentation: Bartington Grad 601-2

Bartington instruments operate in a gradiometer configuration which comprises fluxgate sensors mounted vertically, set 1.0m apart. The fluxgate gradiometer suppresses any diurnal or regional effects. The instruments are carried, or cart mounted, with the bottom sensor approximately 0.1-0.3m from the ground surface. At each survey station, the difference in the magnetic field between the two fluxgates is measured in nanoTesla (nT). The sensitivity of the instrument can be adjusted; for most archaeological surveys the most sensitive range (0.1nT) is used. Generally, features up to 1m deep may be detected by this method, though strongly magnetic objects may be visible at greater depths. The Bartington instrument can collect two lines of data per traverse with gradiometer units mounted laterally with a separation of 1.0m. The readings are logged consecutively into the data logger which in turn is daily down-loaded into a portable computer whilst on site. At the end of each site survey, data is transferred to the office for processing and presentation.

Data Processing

Zero Mean	This process sets the background mean of each traverse within each grid to zero.
Traverse	The operation removes striping effects and edge discontinuities over the whole of the data set.
Step Correction (De-stagger)	When gradiometer data are collected in 'zig-zag' fashion, stepping errors can sometimes arise. These occur because of a slight difference in the speed of walking on the forward and reverse traverses. The result is a staggered effect in the data, which is particularly noticeable on linear anomalies. This process corrects these errors.

Display

Greyscale/ Colourscale Plot	This format divides a given range of readings into a set number of classes. Each class is represented by a specific shade of grey, the intensity increasing with value. All values above the given range are allocated the same shade (maximum intensity); similarly, all values below the given range are represented by the minimum intensity shade. Similar plots can be produced in colour, either using a wide range of colours or by selecting two or three colours to represent positive and negative values. The assigned range (plotting levels) can be adjusted to emphasise different anomalies in the data-set.
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Presentation of results and interpretation

The presentation of the results includes a 'minimally processed data' and a 'processed data' greyscale plot. Magnetic anomalies are identified, interpreted and plotted onto the 'Interpretation' drawings.

When interpreting the results, several factors are taken into consideration, including the nature of archaeological features being investigated and the local conditions at the site (geology, pedology, topography etc.). Anomalies are categorised by their potential origin. Where responses can be related to other existing evidence, the anomalies will be given specific categories, such as: Abbey Wall or Roman Road. Where the interpretation is based largely on the geophysical data, levels of confidence are implied, for example: Probable, or Possible Archaeology. The former is used for a confident interpretation, based on anomaly definition and/or other corroborative data such as cropmarks. Poor anomaly definition, a lack of clear patterns to the responses and an absence of other supporting data reduces confidence, hence the classification Possible.

Interpretation Categories

In certain circumstances (usually when there is corroborative evidence from desk-based or excavation data) very specific interpretations can be assigned to magnetic anomalies (for example, *Roman Road, Wall*, etc.) and where appropriate, such interpretations will be applied. The list below outlines the generic categories commonly used in the interpretation of the results.

<i>Archaeology / Probable Archaeology</i>	This term is used when the form, nature and pattern of the responses are clearly or very probably archaeological and /or if corroborative evidence is available. These anomalies, whilst considered anthropogenic, could be of any age.
<i>Possible Archaeology</i>	These anomalies exhibit either weak signal strength and / or poor definition, or form incomplete archaeological patterns, thereby reducing the level of confidence in the interpretation. Although the archaeological interpretation is favoured, they may be the result of variable soil depth, plough damage or even aliasing as a result of data collection orientation.
<i>Industrial / Burnt-Fired</i>	Strong magnetic anomalies that, due to their shape and form or the context in which they are found, suggest the presence of kilns, ovens, corn dryers, metal-working areas or hearths. It should be noted that in many instances modern ferrous material can produce similar magnetic anomalies.
<i>Former Field Boundary (probable & possible)</i>	Anomalies that correspond to former boundaries indicated on historic mapping, or which are clearly a continuation of existing land divisions. Possible denotes less confidence where the anomaly may not be shown on historic mapping but nevertheless the anomaly displays all the characteristics of a field boundary.
<i>Ridge & Furrow</i>	Parallel linear anomalies whose broad spacing suggests ridge and furrow cultivation. In some cases, the response may be the result of more recent agricultural activity.
<i>Agriculture (ploughing)</i>	Parallel linear anomalies or trends with a narrower spacing, sometimes aligned with existing boundaries, indicating more recent cultivation regimes.
<i>Land Drain</i>	Weakly magnetic linear anomalies, quite often appearing in series forming parallel and herringbone patterns. Smaller drains may lead and empty into larger diameter pipes, which in turn usually lead to local streams and ponds. These are indicative of clay fired land drains.
<i>Natural</i>	These responses form clear patterns in geographical zones where natural variations are known to produce significant magnetic distortions.
<i>Magnetic Disturbance</i>	Broad zones of strong dipolar anomalies, commonly found in places where modern ferrous or fired materials (e.g. brick rubble) are present.
<i>Service</i>	Magnetically strong anomalies, usually forming linear features are indicative of ferrous pipes/cables. Sometimes other materials (e.g. pvc) or the fill of the trench can cause weaker magnetic responses which can be identified from their uniform linearity.
<i>Ferrous</i>	This type of response is associated with ferrous material and may result from small items in the topsoil, larger buried objects such as pipes, or above ground features such as fence lines or pylons. Ferrous responses are usually regarded as modern. Individual burnt stones, fired bricks or igneous rocks can produce responses similar to ferrous material.
<i>Uncertain Origin</i>	Anomalies which stand out from the background magnetic variation, yet whose form and lack of patterning gives little clue as to their origin. Often the characteristics and distribution of the responses straddle the categories of <i>Possible Archaeology / Natural</i> or (in the case of linear responses) <i>Possible Archaeology / Agriculture</i> ; occasionally they are simply of an unusual form.

Where appropriate some anomalies will be further classified according to their form (positive or negative) and relative strength and coherence (trend: weak and poorly defined).

Appendix B - Technical Information: Magnetic Theory

Detailed magnetic survey can be used to effectively define areas of past human activity by mapping spatial variation and contrast in the magnetic properties of soil, subsoil and bedrock. Although the changes in the magnetic field resulting from differing features in the soil are usually weak, changes as small as 0.1 nanoTeslas (nT) in an overall field strength of 48,000 (nT), can be accurately detected.

Weakly magnetic iron minerals are always present within the soil and areas of enhancement relate to increases in *magnetic susceptibility* and permanently magnetised *thermoremanent* material.

Magnetic susceptibility relates to the induced magnetism of a material when in the presence of a magnetic field. This magnetism can be considered as effectively permanent as it exists within the Earth's magnetic field. Magnetic susceptibility can become enhanced due to burning and complex biological or fermentation processes.

Thermoremanence is a permanent magnetism acquired by iron minerals that, after heating to a specific temperature known as the Curie Point, are effectively demagnetised followed by re-magnetisation by the Earth's magnetic field on cooling. Thermoremanent archaeological features can include hearths and kilns; material such as brick and tile may be magnetised through the same process.

Silting and deliberate infilling of ditches and pits with magnetically enhanced soil creates a relative contrast against the much lower levels of magnetism within the subsoil into which the feature is cut. Systematic mapping of magnetic anomalies will produce linear and discrete areas of enhancement allowing assessment and characterisation of subsurface features. Material such as subsoil and non-magnetic bedrock used to create former earthworks and walls may be mapped as areas of lower enhancement compared to surrounding soils.

Magnetic survey is carried out using a fluxgate gradiometer which is a passive instrument consisting of two sensors mounted vertically 1m apart. The instrument is carried about 30cm above the ground surface and the top sensor measures the Earth's magnetic field whilst the lower sensor measures the same field but is also more affected by any localised buried feature. The difference between the two sensors will relate to the strength of a magnetic field created by this feature, if no field is present the difference will be close to zero as the magnetic field measured by both sensors will be the same.

Factors affecting the magnetic survey may include soil type, local geology, previous human activity and disturbance from modern services.

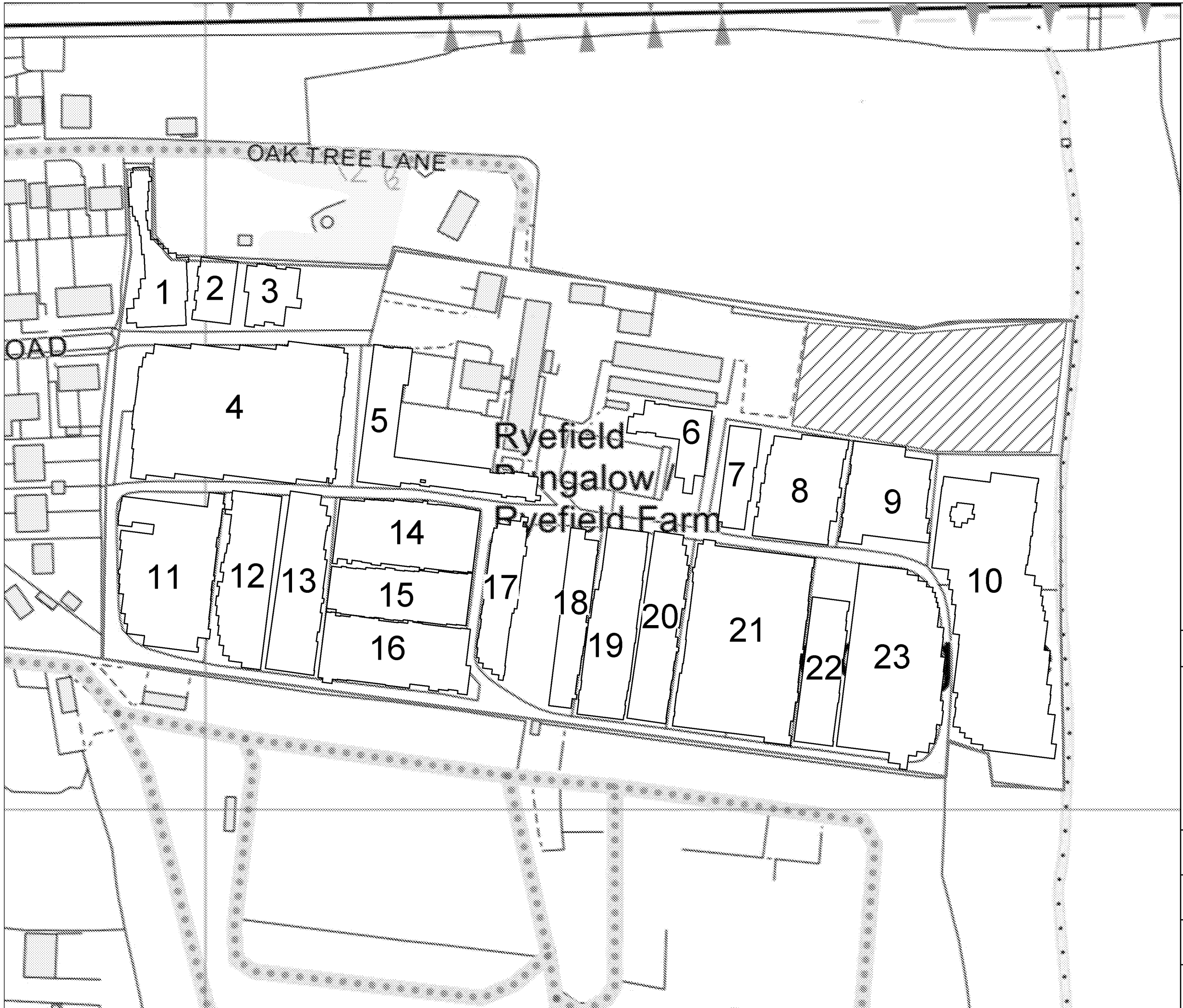


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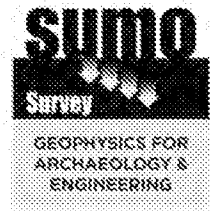
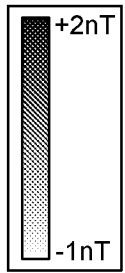
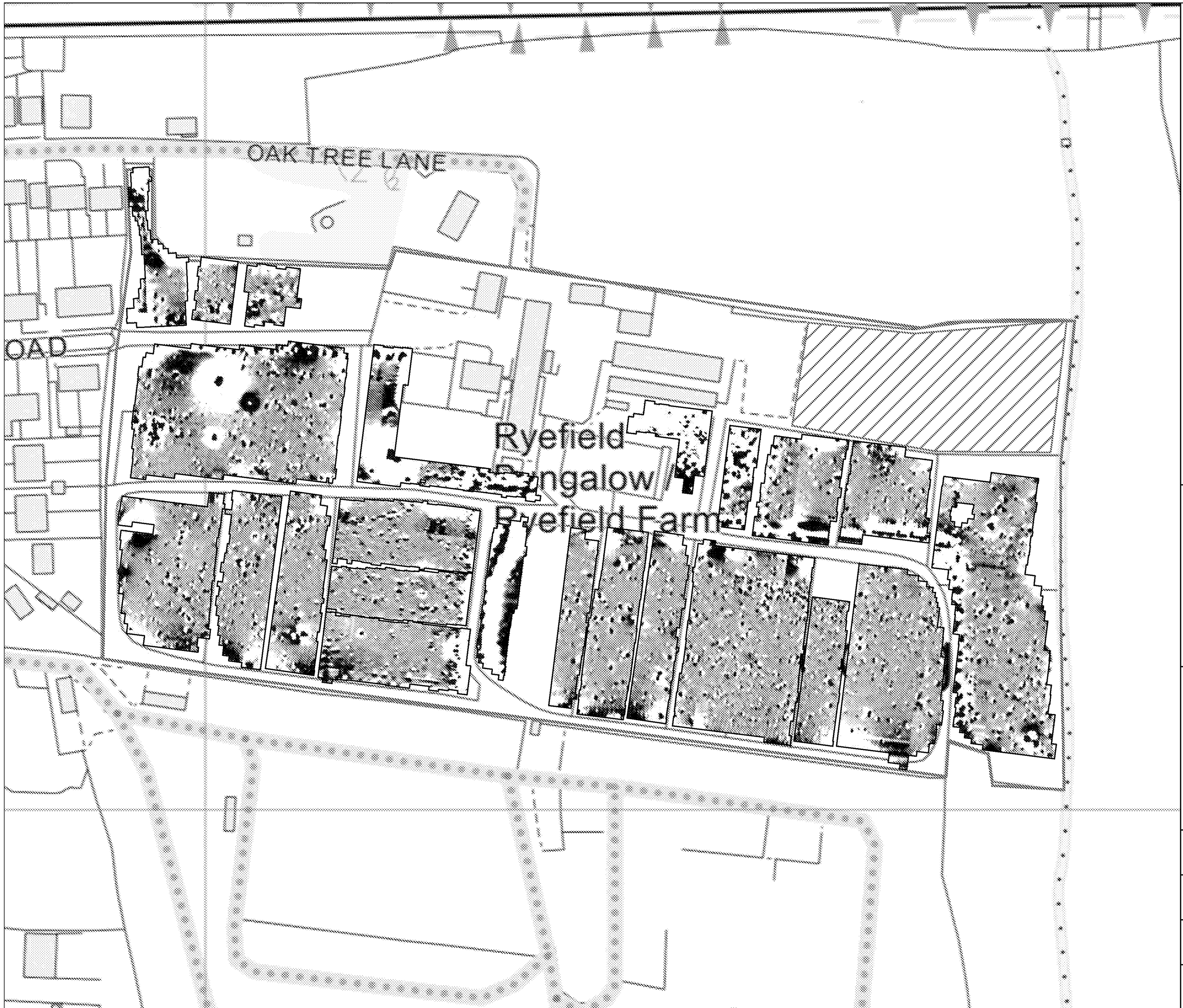
	Unsurveyable land
	Site Location
	Survey Areas



Title: Site Location	
Client: Terence O'Rourke	
Project: 16812 - Land at Woodgate, Westergate, West Sussex	
Scale: NOT TO SCALE	Fig No: 01



	Survey Areas
Title: Magnetometer Survey - Area Numbers	
Client: Terence O'Rourke	
Project: 16812 - Land at Woodgate, Westergate, West Sussex	
Scale: 0 metres 75 1:1500 @ A3	Fig No: 02



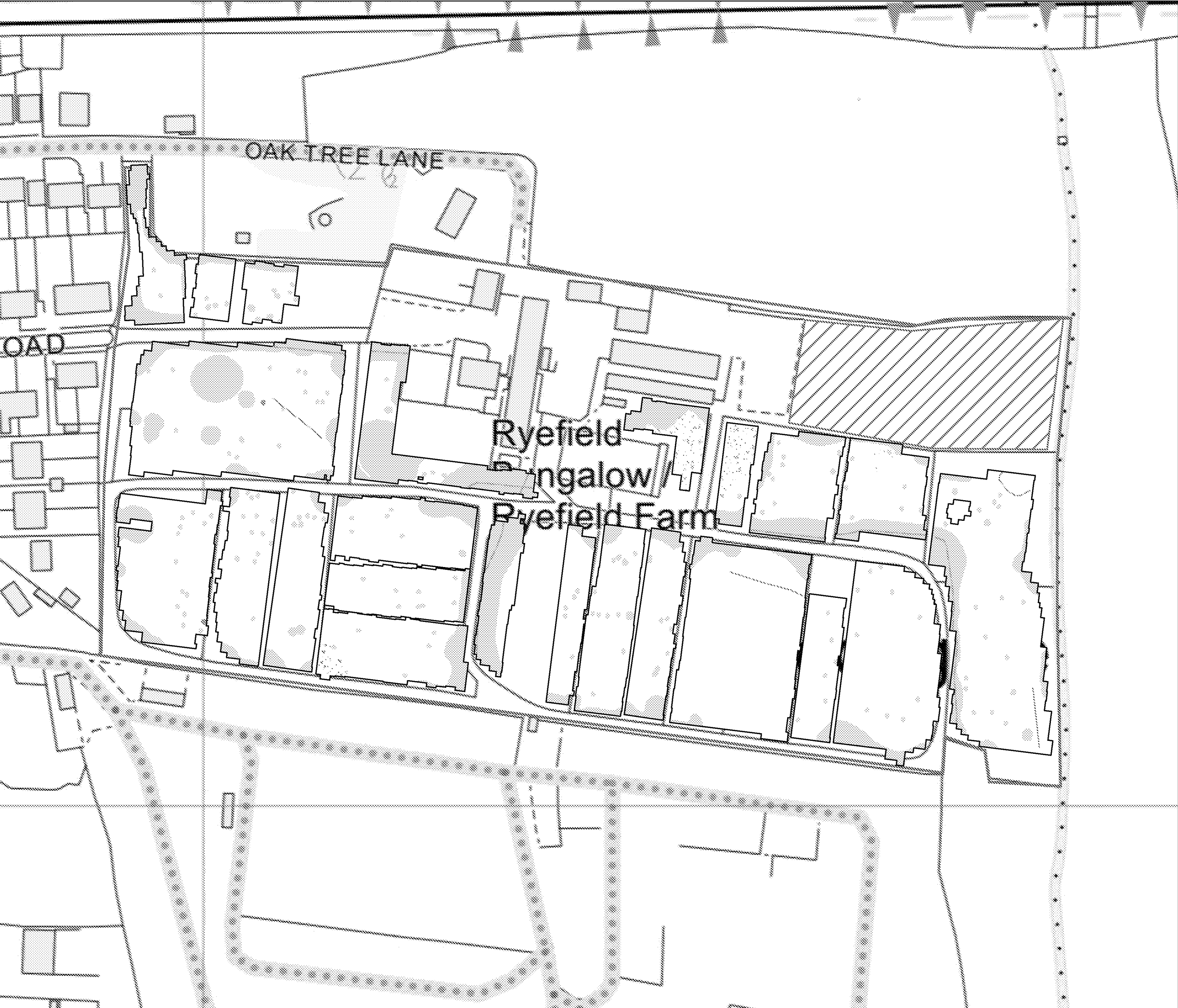
Title:
Magnetometer Survey - Greyscale Plots

Client:
Terence O'Rourke

Project:
16812 - Land at Woodgate, Westergate, West
Sussex

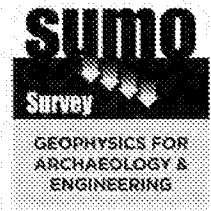
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Fig No:
03

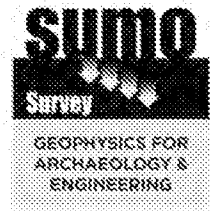
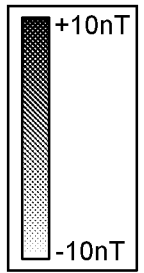
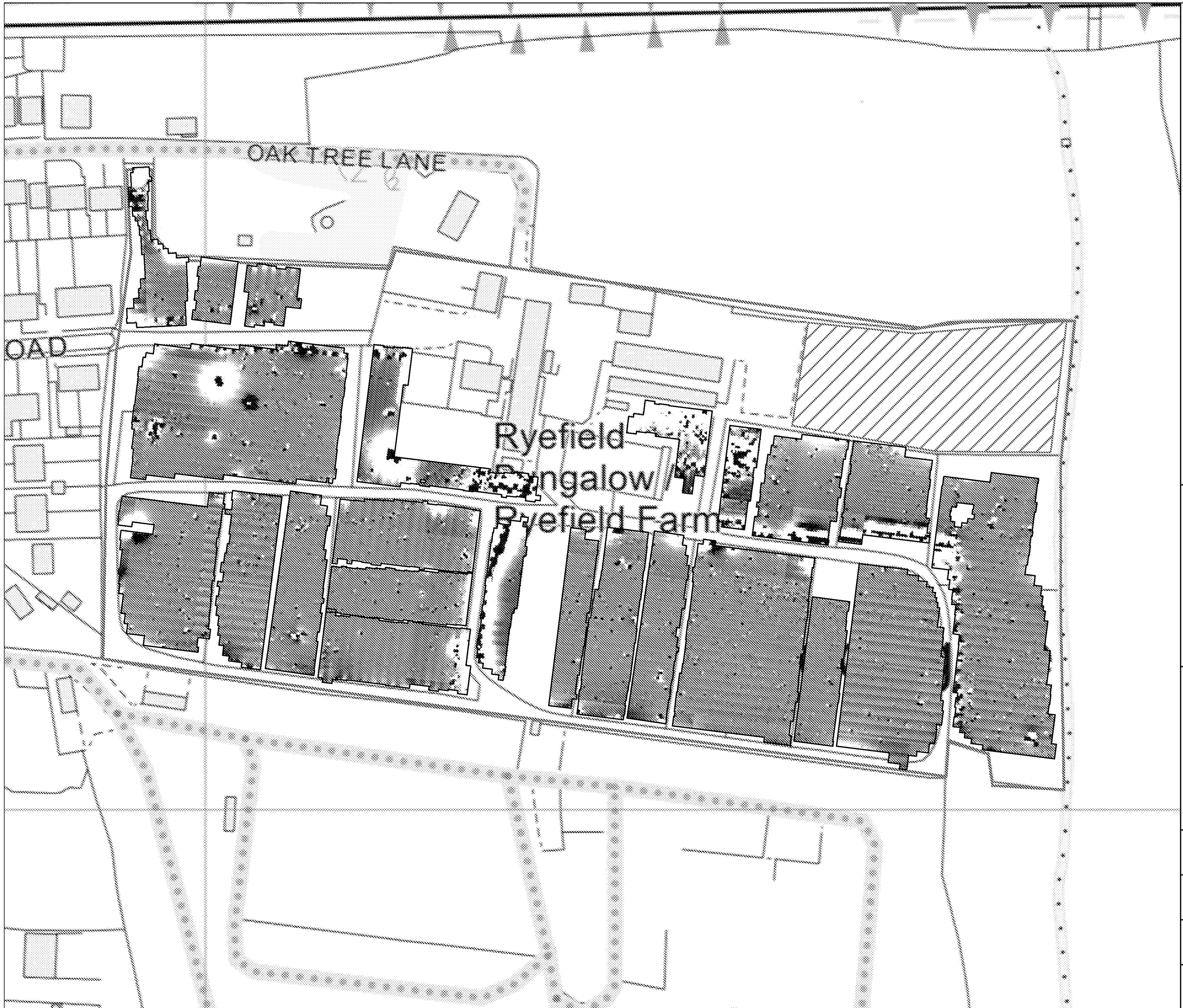


KEY

	Uncertain Origin (Discrete / Trend / Area of Increased Response)
	Magnetic disturbance
	Service Pipe
	Ferrous



Title: Magnetometer Survey - Interpretation	
Client: Terence O'Rourke	
Project: 16812 - Land at Woodgate, Westergate, West Sussex	
Scale: 0 metres 75 1:1500 @ A3	Fig No: 04



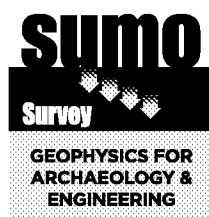
Title:
Minimally Processed Data - Greyscale Plots

Client:
Terence O'Rourke

Project:
16812 - Land at Woodgate, Westergate, West
Sussex

Scale:
0 metres 75
1:1500 @ A3

Fig No:
05



- Archaeological
- Geophysical
- Laser Scanning
- Measured Building
- Topographic
- Utility Mapping

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Appendix 3: Summary of relevant Building Conservation & Archaeological Heritage policies (Arun District Council Local Plan 2-11-2031)

- **Policy HER DM1: Listed Buildings**

Proposals affecting statutory Listed Buildings will be required to:

- a. Preserve or enhance the historic character, qualities and special interest of the buildings;*
- b. Be necessary and not detrimental to the architectural and historical integrity and detailing of a Listed Building's exterior;*
- c. Protect the architectural and historical integrity and detailing of a Listed Building's interior;*
- d. Protect the special interest of buildings of architectural or historic interest; and*
- e. Protect, and where possible enhance the setting of the building.*

- **Policy HER DM2: Locally Listed Buildings or Structures of Character**

The Local Planning Authority will continue to identify and compile a list of locally important buildings and structures which make a positive contribution to local distinctiveness using the following criteria:

- a. Buildings of outstanding design, detailing, appearance or special interest because of the use of materials;*
- b. Buildings which are extremely good examples of traditional or established style, or of unusual type;*
- c. In special cases, buildings or structures which contribute towards the local townscape or have important historical or social associations;*
- d. All buildings must be largely intact and not adversely affected by later extensions or alterations;*
- e. Preferably, although not exclusively, they should make a positive contribution to their surroundings or the street scene.*

Applications will only be granted for development which results in the loss of existing Locally Listed Buildings or Structures of Character when it can be demonstrated that the building or structure cannot be put to a beneficial use or re-use. Replacement structures will need to be of a high quality design. There may be circumstances where the public benefit from the proposed development outweighs any proposed harm, in such circumstances, the proposal will need to be justified as appropriate.

Proposals for the alteration or extension of buildings on the Local List will be expected to relate sensitively to the building or structure and its setting and respect its architectural, landscape or historic interest. The Local Planning Authority will seek to preserve features of such buildings which contribute to that interest.

- **Policy HER DM3: Conservation Areas**

In order to preserve or enhance the character or appearance of the Conservation Area, planning permission or relevant consent will normally be granted for proposals within or affecting the setting of a Conservation Area, provided that:

- a. New buildings and structures acknowledge the character of their special environment in their layout, form, scale, detailing, use of materials, enclosure and the spaces created between buildings;*
- b. Alterations or additions to existing buildings are sensitively designed, constructed of appropriate materials and are sympathetic in scale, form and detailing and retain or emphasise the features and qualities of the existing buildings, townscape or streetscape in the area;*
- c. Traditional features such as shop fronts, walls, railings, paved surfaces and street furniture are retained and restored;*
- d. Unsympathetic features are removed and missing features are restored or reinstated;*
- e. It retains historically significant boundaries, important open spaces and other elements of the area's established pattern of development, character and historic value, including gardens, roadside banks and verges;*
- f. It does not harm important views into, out of or within the Conservation Area.*

- **Policy HER DM4: Areas of Character**

Within Areas of Character, as defined on the Proposals Map, planning permission or relevant consent will be granted subject to:

- a. The retention of buildings and other features such as boundary walls, hedges, trees, railings, open spaces, etc. which make positive contributions to the special character of the areas;*
- b. The maintenance of an appropriate mix of uses where this is an important element in the character of an area;*
- c. New development preserving, and where possible, enhancing the special character of these areas, particularly with regard to the characteristics identified by the Local Planning Authority.*

- **Policy HER DM 6: Archaeological Heritage**

There will be a presumption in favour of the preservation of scheduled and other nationally important monuments and archaeological remains. Where proposed developments will have either a direct impact on sites or where developments will have an indirect impact on the settings of those sites, or where a site on which development is proposed has the potential to include heritage assets with archaeological interest (having consulted the Historic Environment Record) permission will only be granted where it can be demonstrated that development will not be harmful to the archaeological interest of these sites.

In all such instances:

- a. Applicants must arrange for a desk based archaeological assessment of the proposed development site to be undertaken by a suitably qualified person. The archaeological assessment will take the form of a factual review of the known information on historic assets and an appraisal of these assets. This information shall accompany the planning application, and, where not supplied, will be required before any planning application is determined*. Where the Planning Authority has reason to believe, either from the archaeological assessment as above, or from other evidence sources, that significant archaeological remains may exist, further assessment in the form of a field evaluation*

will be required to be carried out before the planning application is determined. Any field survey undertaken shall be carried out by a professionally qualified archaeological organization or consultant only. All stages of archaeological fieldwork shall be subject to a Written Scheme of Investigation approved by the local planning authority. No development shall take place on the proposed development site until the applicant, or their agents or successors in title, is in receipt of a Written Scheme of Investigation that has been approved by the Local Planning Authority;

or

b. A field evaluation as above, which shall include a historic environmental record of the archaeological site without the requirement to undertake a separate desk based archaeological assessment.

c. Preservation in situ of archaeological sites or remnants of such sites, is the preferred option. However, where the assessment, which shall be subject to a Written Scheme of Investigation, shows that the preservation of archaeological remains in situ is not justified, conditions may be attached to any permission granted that development will not take place until provision has been made by the developer for a programme of archaeological investigation and recording. Any such programme shall be carried out prior to the commencement of the development.

d. Whenever practicable, opportunities should be taken for the enhancement and interpretation of archaeological remains left in situ. Developers shall record any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and possible impact, and to make this evidence (and any archive generated) publicly accessible.

e. Where development is to be phased the presumption would normally be that the whole site should be recorded as one project in order to maintain the continuity of the archaeological record.

f. Developments shall also be consistent with all other Local Plan Policies.

Appendix 4: Desk-based heritage assessment checklist

Cultural heritage information checklist		Yes/ no
Information from client	Site boundary	Yes
	Development description	Yes
Site/study area walkover /visit	Accompanying photographs and/or description	Yes
Mapping	Modern OS (ideally 1:10k raster) map data (larger sites with have 1:25/1:50k base mapping)	Yes
	*Historic OS map pack (see possible overlap with acquisition of Envirocheck report below)	No
	Estate maps; title maps; other where available and produced – area dependent if available online	Yes
Geological site data	BGS website research (bgs.ac.uk)	Yes
	Previous geotechnical site information, if such exists	Yes
	*Envirocheck/Landmark reports – if purchased for engineering purposes within project team	No
Consultation	Request for HER data for an agreed study area: LPA historic environment dept. & date received	Yes
Basic review of available information that informed the assessment		
Online research	National designation information	Yes
	Search of national and local records of England's historic sites and buildings (heritagegateway.org.uk; pastscape.org.uk)	Yes
	Literature review Archaeology data service (ads.ahds.ac.uk) to review 'grey literature' of previous archaeological site reports	Yes
	Medieval and modern history of British Isles: British history online (british-history.ac.uk) provides Victoria County History series	Yes
Detailed review of primary and secondary source material		
Baseline research - not all elements are required for all sites	Public libraries: local archival research; local relevant publications	No
	National libraries: NMR, Swindon	No
	Local societies – journal review	Yes
	Review of aerial photographs: LPA HER archive; NMR, Swindon & LiDAR/Google Earth	Yes

Cultural heritage constraints checklist		Yes /no
Scheduled monument	Within the development site boundary	No
	Within 250m of the site	No
	Within the study area and/or zone of visual influence	No
Listed building	Within the development site boundary	No
	Within 500m of the site	Yes
	Within the study area and/or zone of visual influence	Yes
World heritage site	Development lies within a world heritage site	No
	Development lies within the defined management plan area/buffer zone	No
Historic England Register of parks and gardens of special historic interest	Development lies within a nationally designated park and garden	No
	Development lies within 500m of a nationally designated park and garden	No
	Development lies within zone of visual influence	No

Historic England Register of Historic Battlefields	Development lies within a registered battlefield	No
	Development lies within 500m of a battlefield	No
Conservation area	Development lies within a conservation area	No
	Development lies within 250m of a conservation area	No
	Within the study area and/or zone of visual influence	No
Identified non-designated heritage assets		
Local list (where present)	Within the development site boundary	No
	Within 50m of the development site	No
	Within the study area	Yes
Inventory of local gardens (where present)	Development lies within a locally significant park and garden	No
	Development lies within 500m of a locally significant park and garden (on the HER)	No
Area of high archaeological potential (defined in LPA local plan)	Within the development site boundary	No
	Within 250m of the development site	No
	Within the study area	Yes
HER sites	Within the development site boundary	No
	Within 250m of the development site	Yes
	Within 500m of the development site	Yes
	Within the study area	Yes
Other	Known aerial photograph anomalies present on site (includes Google Earth & LiDAR)	No
	Study area has been subject of recent archaeological site evaluation/excavation	Yes
	Study area contains non-designated feature listed on Historic England at Risk register	No
	Study area has significant archaeological artefact(s) discovered through the Portable Antiquities Scheme	No

Appendix 5: Glossary of specific technical terms

Alluvium	Sediment laid down by a river. Can range from sands and gravels deposited by fast flowing water and clays that settle out of suspension during overbank flooding. Other deposits found on a valley floor are usually included in the term alluvium (e.g. peat).
Archaeological Priority Area (APA)	Area of archaeological priority, significance, potential or other title, designated by the local authority.
Bronze Age	2,000 – 600 BC
Cut feature	Archaeological feature such as a pit, ditch or well, which has been cut into the then-existing ground surface.
Early medieval	AD 410 – 1066. Also referred to as the Saxon period.
Evaluation (archaeological)	A limited programme of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area.
Excavation (archaeological)	A programme of controlled, intrusive fieldwork with defined research objectives which examines, records and interprets archaeological remains, retrieves artefacts, ecofacts and other remains within a specified area. The records made and objects gathered are studied and the results published in detail appropriate to the project design.
Findspot	Chance find/antiquarian discovery of artefact. The artefact has no known context, is either residual or indicates an area of archaeological activity.
Geotechnical	Ground investigation, typically in the form of boreholes and/or trial/test pits, carried out for engineering purposes to determine the nature of the subsurface deposits.
Heritage asset	A building, monument, site, place, area or landscape positively identified as having a degree of significance meriting consideration in planning decisions. Heritage assets are the valued components of the historic environment. They include designated heritage assets and assets identified by the local planning authority (including local listing).
Historic Environment Record (HER)	Archaeological and built heritage database held and maintained by the local planning authority. Previously known as the Sites and Monuments Record
Iron Age	600 BC – AD 43
Later medieval	AD 1066 – 1500
Made Ground	Artificial deposit. An archaeologist would differentiate between modern made ground, containing identifiably modern inclusion such as concrete (but not brick or tile), and undated made ground, which may potentially contain deposits of archaeological interest.
Mesolithic	12,000 – 4,000 BC
National Monuments Record (NMR)	National database of archaeological sites, finds and events as maintained by English Heritage in Swindon. Generally not as comprehensive as the country SMR/HER.
Neolithic	4,000 – 2,000 BC
Ordnance Datum (OD)	A vertical datum used by Ordnance Survey as the basis for deriving altitudes on maps.
Palaeolithic	700,000–12,000 BC
Post-medieval	AD 1500 – present
Preservation by record	Archaeological mitigation strategy where archaeological remains are fully excavated and recorded archaeologically and the results published. For remains of lesser significance, preservation by record might comprise an archaeological watching brief.

Preservation in situ	Archaeological mitigation strategy where nationally important (whether Scheduled or not) archaeological remains are preserved in situ for future generations, typically through modifications to design proposals to avoid damage or destruction of such remains.
Residual	When used to describe archaeological artefacts, this means not in situ, i.e. Found outside the context in which it was originally deposited.
Roman	AD 43 – 410
Scheduled Monument	An ancient monument or archaeological deposits designated by the Secretary of State as a 'Scheduled Ancient Monument' and protected under the Ancient Monuments Act.
Study area	Defined area surrounding the proposed development in which archaeological data is collected and analysed in order to set the site into its archaeological and historical context.
Truncate	Partially or wholly remove. In archaeological terms remains may have been truncated by previous construction activity.