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Land south of Smugglers Lane, Barns Green, Horsham, West Sussex

ARCHAEOLOGICAL DESK BASED ASSESSMENT

September 2025

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Summary

TCMS Heritage has prepared an Archaeological Desk Based Assessment for the Site known as Land south of Smugglers Lane, Barns Green, Horsham, West Sussex. The assessment is to consider the archaeological potential of the Site and to establish any potential archaeological constraints in advance of development.

In terms of relevant nationally significant designated heritage assets no Scheduled Monuments, World Heritage Sites, Historic Wrecks or Historic Battlefields lie within the Site or in its immediate vicinity.

In terms of local designations, the Site does not lie within an Archaeological Notification Area (ANA), but it is adject to Barns Green Village Historic Core (Horsham 179).

Based on available information, the Site is anticipated to have a moderate to high potential for evidence of Post Medieval field boundaries, land management and localised activity, of which some might have originated in the Medieval period. A low potential is anticipated for all other periods of human activity. On current evidence, if encountered, any of the remains would likely be considered of low (local) significance.

A Geophysical Survey was undertaken at the Site in July 2025. The survey revealed anomalies likely to represent former Post Medieval field boundaries, as seen on 19th – 20th century historic maps, along with other anomalies, not previously known, that might represent a possible single ditch enclosure and a few possible refuse/extraction pits.

As none of these remains, if present, would likely be considered of such a significance that might preclude development, it is considered that any further work, if required, could follow the granting of planning consent and be secured by an appropriately worded condition.

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Quality Management

Version	Status	Authored by	Review by	Review date
01	First issue	Serena Ranieri Associate Director TCMS Heritage	Matthew Smith Director TCMS Heritage	18.08.2025
02	Second issue	Serena Ranieri Associate Director TCMS Heritage	Matthew Smith Director TCMS Heritage	04.09.2025
03	Third issue	Serena Ranieri	Matthew Smith	17.09.2025
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1. Introduction

Scope of Report

1.1. Miller Homes have commissioned TCMS Heritage to prepare a Desk Based Assessment to consider the archaeological potential of the Site and to establish any potential archaeological constraints in advance of development.

1.2. The Site, known as Land south of Smugglers Lane, Barns Green, Horsham, West Sussex, includes one plot of land used for grazing livestock, centred at National Grid Reference TQ 12465 27036, within the administrative area of Horsham District Council (Figure 1).

1.3. The current planning application proposes the creation of 68 dwellings with vehicular and pedestrian accesses, public open space, hard and soft landscaping and associated works including supporting foul and surface water drainage works, and works to existing culverted watercourse on site (Figure 9).

1.4. The methodology employed during this assessment was based upon relevant professional guidance, including the Chartered Institute for Archaeologists' Standard and guidance for historic environment desk-based assessment (revised October 2020).

1.5. The Archaeological Desk Based Assessment will comprise an examination of evidence form the West Sussex Environment Records (HER) within a 1km radius of the Site, and other sources, including the results of a comprehensive map regression exercise. A Site visit was carried out in July 2025 (Plates 1 to 6).

Geology, Topography and Site Description

1.6. The Site is roughly rectangular in shape and measures *circa* 3.2ha. It is defined on three sides by existing tree belts/hedges, and it is bordered by a public bridleway to the north (Smuggler's Way), by Chapel Road to the east, a public footpath to the west and new dwelling and areas of green space to the south. The site gently slopes down form the east to west from *circa* 39-37m AOD to 33m AOD along Chapel Road. There nearest natural watercourse is the Rye Farm Gill which flows just a few meters away from the southern end of the Site.

1.7. The British Geological Survey (BGS Online 2024) shows the underlying bedrock geology as part of the Weald Clay Formation - Mudstone. Sedimentary bedrock formed between 133.9 and 126.3 million years ago during the Cretaceous period. There are no superficial geological deposits recorded at the Site.

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2. Legislative and Planning Policy Framework

National Planning Policy

2.1. The NPPF is supported by the National Planning Practice Guidance (NPPG), which was published online 6th March 2014, with the guidance on Conserving and Enhancing the Historic Environment last updated December 2024. (https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment). It sets out the government's planning policies for England and how these are expected to be applied. Protecting and enhancing the historic environment is an important component of the National Planning Policy Framework's drive to achieve sustainable development (as defined in Section 2 'Achieving sustainable development').

2.2. The NPPF recognises that heritage assets are an irreplaceable resource, and that effective conservation delivers wider social, cultural, economic and environmental benefits. Section 16 of the NPPF, entitled 'Conserving and enhancing the historic environment', sets out the principal national guidance on the importance, management and safeguarding of heritage assets within the planning process (paragraphs 207-214).

2.3. The NPPF and NPPG are additionally supported by three Good Practice Advice (GPA) documents published by Historic England: GPA 1: The Historic Environment in Local Plans; GPA 2: Managing Significance in Decision-Taking in the Historic Environment (both published March 2015). The second edition of GPA3: The Setting of Heritage Assets was published in December 2017.

Local Planning Policy

Horsham District Planning Framework

2.4. The Horsham District Local Plan 2014-2029 approved on November 2015. The plan contains the following policy relevant to archaeology:

Policy 34. Cultural and Heritage Assets

The Council recognises that heritage assets are an irreplaceable resource, and as such the Council will sustain and enhance its historic environment through positive management of development affecting heritage assets. Applications for such development will be required to:

1. *Make reference to the significance of the asset, including drawing from research and documentation such as the West Sussex Historic Environment Record;*
2. *Reflect the current best practice guidance produced by English Heritage and Conservation Area Character Statements;*
3. *Reinforce the special character of the district's historic environment through appropriate siting, scale, form and design; including the use of traditional materials and techniques;*
4. *Make a positive contribution to the character and distinctiveness of the area, and ensuring that development in conservation areas is consistent with the special character of those areas;*
5. *Preserve, and ensure clear legibility of, locally distinctive vernacular building forms and their settings, features, fabric and materials;*
6. *Secure the viable and sustainable future of heritage assets through continued preservation by uses that are consistent with the significance of the heritage asset;*
7. *Retain and improves the setting of heritage assets, including views, public rights of way, trees and landscape features, including historic public realm features; and*

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8. *Ensure appropriate archaeological research, investigation, recording and reporting of both above and below-ground archaeology, and retention where required, with any assessment provided as appropriate.*

Horsham Emerging Local Plan (Regulation 19)

2.5. The emerging Local Plan for Horsham District Council 2023 – 2040 has reached Regulation 19, and contains the following policy relevant to the Historic Environment:

Strategic Policy 21: Heritage Assets and Managing Change within the Historic Environment

1. *The Council will preserve and enhance its historic environment through positive management of development affecting designated and non-designated heritage assets, and their settings. Applications for such development will only be supported if they:*

   a) *Make reference to, and show an understanding of, the significance of the asset, including drawing from research and documentation such as the West Sussex Historic Environment Record;*

   b) *Take account current best practice guidance produced by Historic England and Conservation Area Character Statements, Appraisals and Management Plans;*

   c) *Make a positive contribution to the character and distinctiveness of the area, and ensure that development in conservation areas is consistent with the special character of those areas;*

   d) *Preserve, and ensure clear legibility of, locally distinctive vernacular building forms and their settings, including traditional architectural form, proportion, detailing, materials and, where appropriate, landscape features including trees;*

   e) *Demonstrate that the use(s) proposed are consistent with the significance of the heritage asset whilst securing its viable and sustainable future and continued preservation, especially any assets on Historic England's At Risk Register. Changes of use must be compatible with, and respect, the special architectural or historic interest of the asset and setting; and*

   f) *Demonstrate that any proposal in the vicinity of a heritage asset with, or has the potential to include, archaeological interest is accompanied by appropriate archaeological research, including the investigation, recording and reporting of both above and below-ground archaeology. This will, as a minimum, include a deskbased assessment, and where deemed necessary by the Council, a field evaluation will also be required. If necessary, the Council will require assets to be preserved in situ or excavated.*

2. *Proposals which affect a heritage asset, or the setting of a heritage asset, will only be supported where accompanied by a Heritage Statement.*

3. *Proposals which would cause substantial harm to, or loss of, a heritage asset will not be supported unless it can be demonstrated that the substantial public benefits gained would outweigh the substantial harm or total loss of the asset and that any replacement scheme makes an equal contribution to local character and distinctiveness. Applicants must show an understanding of the significance of the heritage asset to be lost, either wholly or in part, and demonstrate how the heritage asset has been recorded.*

4. *Proposals which would lead to less than substantial harm to the significance of the heritage asset should be weighed against the public benefits of the proposal and will only be supported where public benefit is considered to outweigh the harm.*

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2.6. The examining inspector for the emerging plan has written to HDC recommending the withdrawal of the plan from examination, principally due to concerns about the Council's compliance with the Duty to Cooperate.

2.7. In line with relevant planning policy and guidance, this desk-based assessment seeks to clarify the Site's archaeological potential and the need or otherwise for additional mitigation measures.

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3. Archaeological and Historical Background

3.1. This section comprises a review of the known archaeological assets within a 1km radius of the Site, also referred to as the study area, held on the West Sussex Historic Environment Record (HER), as shown on Figure 2a and 2b. This also considers any previous archaeological work at the Site and surrounding areas, together with a historic map regression exercise charting the development of the study area from the eighteenth century onwards until the present day.

3.2. In terms of relevant, nationally significant designated heritage assets, no Scheduled Monuments, World Heritage Sites, Historic Wrecks or Historic Battlefields lie within the Site or in its immediate vicinity.

3.3. In terms of local designations, the Site does not lie within an Archaeological Notification Area (ANA), but it is adject to Barns Green Village Historic Core (Horsham 179; Figure 2a). Four more Archaeological Notification Areas (ANAs) can be found within the remnant of the study area and are mostly associated with Medieval and Post-Medieval farm buildings (Horsham 175, 177, 178, 180, 181).

Previous Archaeological Work

Geophysical Survey July 2025

3.4. A programme of Geophysical Survey was carried out at Site in July 2025 and produced good, reliable data (Cura Terrae 2025; Appendix 1). These include anomalies (3 -4) that are highly likely to represent former field boundaries that once lay at the Site, as seen on the 1839 Tithe Map (Figure 3) and 1876 -1911 Ordnance Survey Maps (Figure 4 to 6). Other anomalies represent a possible ditch enclosure (1), which shares the same orientation of the field boundaries, and several sub-circular anomalies which could be mineral extraction or refuse pits, although localised geological variation cannot be completely excluded.

3.5. The remaining anomalies present within the dataset refer to modern land drains and various quantities of modern ferrous material.

Archaeological investigations within the study area

3.6. No previous archaeological investigations have been undertaken at the Site to date; however, a series of archaeological works have been carried out within the study area and the results are summarised here:

- **Sumners Pond, Barns Green, just south of the Site (EWS2209: MWS15453; Figure 2b):** The archaeological evaluation included the opening of five trial trenches. The stratigraphic sequence in all trenches consisted of Weald Clay overlain by an undisturbed horizon of light-brown silty-clay subsoil and light greyish-brown silty clay topsoil. The presence of an intact subsoil horizon, in all trenches, suggests that there has been no truncation in the evaluated areas; however, no archaeological finds or features of any period were revealed during the archaeological works.
- **Itchingfield Primary School, *circa* 200m north-east of the Site (EWS1245; MWS11248 Figure 2b):** An archaeological evaluation, followed by a localised programme of archaeological excavation, exposed an area of Medieval activity characterised by post holes, pits and a gulley which lay along the course of Two Mile Ash Road, a road believed to have originated in the Medieval period.
- **Land at Barns Green, Two Miles Lane, *circa* 350m north-east of the Site (MWS11247; EWS1165; EWS1244; Figure 2b).** An archaeological field evaluation took place at the Land at Barns Green, Two Miles Lane. A modest number of archaeological features were recorded with the majority being identified in the western half of the site. A pit and ditch

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dating to the Medieval period were also identified, as were the remains of a 19th century farm track. A single prehistoric flint was also retrieved from a ditch which has remained undated.

Early Prehistory (Palaeolithic and Mesolithic)

3.7. During the Palaeolithic, known for its climate instability, archaeological remains are typically found within Pleistocene geological deposits and usually comprise stone tools, faunal remains and paleoenvironmental data. When assets are encountered are often residual and *in situ* sites of tool manufacture or butchery are consequently very important, but rare (Wymer 1968). The HER contains no record entries in association with this period from within the study area.

3.8. With climatic improvement at the end of the last glaciation (c 18,000 BC), during the Mesolithic, mobile hunter-gatherer communities developed new exploitation strategies and thus different tools, including axes and tiny projectile points or microliths. Evidence of human activity is largely characterised by finds of flint tools and waste, and possibly faunal remains. During this period, the Weald would have been thickly covered with glacial primary forest, with localised clearance undertaken at this time, possibly to encourage game (ASE 2013).

3.9. One of the most relevant discoveries carried out within the wider landscape surrounding the Site, relates to evidence of a short stay 'occupation" exposed at Wickhurst Green in Broadbridge Heath, *circa* 4km to the north of the Site. The flint assemblages recovered, contained numerous tools which suggest that a broader range of activities was occurring, such as hide preparation, as well hunting/fishing and resource gathering (ASE 2013). However, no record entries associated with the Mesolithic period is contained in the HER in relation to the 1km study area.

3.10. Therefore, based on a total lack of evidence of the Early Prehistoric periods in the HER from within the study area, a low potential for the Palaeolithic and the Mesolithic is anticipated at the Site.

Late Prehistoric (Neolithic, Bronze Age and Iron Age)

3.11. During the Late Prehistory, settlements continue to favour areas within the river valleys, with a steady increase of woodland clearance and agricultural exploitation, especially from the Bronze Age onwards.

3.12. The Weald is characterised by historically high densities of settlement dispersion, likely linked to the prevalence of woodland, unrewarding soils and a history of pastoralism rather than arable farming. There is very little evidence of Neolithic and Bronze Age activity within the wider area around the Site and any "occupation" would have largely been on a seasonal basis and perhaps, would have included mostly hunting (ASE 2013). As in the Mesolithic period, the region's rivers may have provided highways into the interior from the coast.

3.13. In the Iron Age, however, this region became to be more utilised and more stable occupation began to appear. A large-scale excavation undertaken along the course of the River Arun, at Wickhurst Green in Broadbridge Heath, has shown evidence of a Mid-Late Iron Age settlement formed of roundhouses and enclosures, including a spiral gully-structure, possibly in use as workshop and/or livestock shed (ASE 2013). Evidence of another Mid to Late Iron Age settlement was also observed during archaeological investigations at Billinghurst, *circa* 2.7km south-west of the Site (ASE 2015).

3.14. The West Sussex HER contains no record entries for this period from the study area, although a single Bronze Age - Neolithic flint was found redeposited within a Medieval ditch fill during archaeological investigations at Land at Barns Green, *circa* 350m north-east of the Site (MWS11247; EWS1165; EWS1244; Figure 2b). Therefore, based on almost a total lack of archaeological evidence of the Late Prehistoric periods in the HER from the study area, a low potential for the Neolithic, Bronze Age and Iron Age is anticipated at the Site.

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Roman

3.15. The emerging settlement pattern of the Weald in the 1st-century AD seems to be one of a dispersed nature. Small rectilinear enclosures existed in either low-lying or slightly elevated positions with access to watercourses, routeways and long-distance boundaries. The post-Roman Conquest landscape appears to have been a direct continuation of preceding Late Iron Age patterns. Apart from roadside settlements and rare villas, rural Roman activity largely consisted of the modification of landscape features founded during the preceding phase, with the land mainly utilised for organised pastoral and arable activity. This pattern would appear to gradually decline after the 1st century AD (Margetts 2018).

3.16. The alignment of Stane Street, the Roman Road from London to Chichester runs *circa* 3km to the west of the Site, roughly following the course of the A29, which retains the same name. Archaeological remains of the former Roman road were identified during archaeological works in 1984 and 2004 in proximity of Billinghurst, and Roman coins, pottery and *tesserae* were found along Billingshurst High Street, which follows the line of the former Roman Stane Street. Evidence of a Late Iron Age-Roman settlement, which underwent two major phases of reorganisation between the 1st and 2nd century AD, and later in the 3rd century, was also observed just outside Billingshurst, *circa* 2.7km south-west of the Site (ASE 2015).

3.17. The West Sussex HER contains no record entries for this period in relation to the study area. It is likely that the Site lay away from any settlement occupation and any major roadways, which along with a lack of archaeological evidence from nearby investigations at Barns Greens, would suggest that the Site has a low potential for any evidence of the Roman period.

Early Medieval / Saxon - Medieval

3.18. The are no record-entries associated with any activity or finds from the Early Medieval-Saxon period in the HER from within the study area. The Domsday Book of 1086 does not record the presence of a settlement at Barns Green. It is likely that a small, rural settlement formed over the course of the Medieval period, along today's Chapel Road, with its core located in proximity of Little Slaughterford and Slaughterfood Farms, which lie just to the south of the Site (MWS12074; Figure 2b); with more village buildings, including the village public house (The Queen's Head) and the Blackmith Cottage, both dating back to the 15th century, located slightly further to the north on Chapel Road.

3.19. Some of the farmsteads located within the wider rural landscape are also believed to have originated in the Medieval period such as Possesionhouse Farm (MWS12881; Figure 2b) and Rye Farm (MWS12913; Figure 2b).

3.20. Archaeological investigations undertaken at Itchingfield Primary School, *circa* 200m north-east of the Site (EWS1245; MWS11248 Figure 2b) and at Land at Barns Green, Two Miles Lane, *circa* 350m north-east of the Site (MWS11247; EWS1165; EWS1244; Figure 2b) have revealed evidence of Medieval activity in the form of pitting, gullies, ditches and post holes, whilst also reinforcing the idea that the existing Two Mile Ash Road might have originated in the Medieval period. As a result of this, this whole area of Barns Green has been locally designated by the LPA as an Archaeological Notification Area (ANA) associated with Barns Green Village Historic Core (Horsham 179; Figure 2a). The later 1839 Tithe Map (Figure 3) can be regarded as a good indicator of the settlement distribution across Barns Green in the Late Medieval - Post Medieval period, and this shows no buildings within the Site. Furthermore, no archaeological evidence of any period was exposed during archaeological works undertaken immediately to the south (Sumners Pond, Barns Green; EWS2209: MWS15453; Figure 2b).

3.21. On this basis, it appears that during the Medieval period, the Site lay just outside any areas of occupation/activity, which is likely to have been localised to the south and to the east/north-east of the Site, where the historic core of Barn Greens is proposed to have been located. Accordingly,

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the Site is believed to have a low potential for settlement evidence of this period, but evidence of land management, field boundaries and localised activity can be expected as suggested by the results of the recent Geophysical Survey (Appendix 1). A low to nil potential is expected for any evidence of the Saxon period.

Post Medieval and Modern

3.22. A number of HER records within the study area refer to Post Medieval and Modern archaeological remains which are not discussed in detail here unless relevant to the study site.

3.23. During the later Post Medieval and Modern periods, our understanding of settlement, land-use and the utilisation of the landscape is enhanced by cartographic and documentary sources, which can give additional detail to data contained within the HER.

3.24. The Itchingfield Tithe Map of 1839 (Figure 3) and associated Tithe Awards are the first detailed records on the Site. According to these, the Site falls across five plots of land (445 to 449), all under arable use, except for 449 which was in use as pasture. The fields belonged to Sir Timothy Shelley and were managed by Mary Burdfield, who also owned and occupied respectively the Little Slaughterford Yard and House to the south (plots 451 and 452). The predecessor of Smuggler's Lane can be seen bordering the northern end of the Site following the same route as today. During this period, the settlement at Barns Green is still largely constituted by farmhouses and cottages straddling along todays' Chapel Road and Two Miles Ash Road, with most of the buildings lying opposite the Site (Figure 3).

3.25. Between 1876 and 1993, as seen on Ordnance Survey Maps (Figures 5 to 7), no obvious changes occurred at the Site except for the loss of internal field boundaries from the 1970s onwards, along with development expansion across the surrounding areas, especially across the fields opposite the Site. The 2025 Google Satellite imagery shows the Site largely unchanged (Figure 8).

3.26. Based on available evidence, during the Post Medieval and early Modern period, the Site was likely under cultivation, although over recent years, it has been used for pasture. Accordingly, the Site is believed to have a low potential for archaeological settlement evidence of these periods, but a moderate to high potential for evidence of Post Medieval field boundaries, land management and localised activities can be anticipated. This conclusion is supported by the results of a recent Geophysical Survey, carried out at the Site in July 2025 (paragraph 3.4 and 3.5; Appendix 1), which revealed anomalies that are likely to represent former field boundaries showing the same orientation as those on the 1839 Tithe Map (Figure 3) and 1876 -1911 Ordnance Survey Maps (Figure 4 to 6). Other anomalies observed at the Site by the survey, represent a possible single ditch enclosure and a few possible refuse/extraction pits, which, if confirmed, could potentially pre-date the 19th century field boundaries and represent activity of earlier periods.

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4. Assessment of Potential and Significance

4.1. Existing national policy guidance for archaeology (the NPPF as referenced in section 2) enshrines the concept of the 'significance' of heritage assets. Significance as defined in the NPPF centres on the value of an archaeological or historic asset for its 'heritage interest' to this or future generations.

4.2. Based on available information, the Site is anticipated to have a moderate to high potential for evidence of Post Medieval field boundaries, land management and localised activity, of which some might have originated in the Medieval period. A low potential is anticipated for all other periods of human activity. On current evidence, if encountered, any of the remains would likely be considered of low (local) significance.

4.3. A Geophysical Survey was undertaken at the Site in July 2025. The survey revealed anomalies likely to represent former Post Medieval field boundaries, as seen on 19th – 20th century historic maps, along with other anomalies, not previously known, that might represent a possible single ditch enclosure and a few possible refuse/extraction pits.

4.4. As identified by this assessment, archaeological potential by period and the likely significance of any archaeological remains which may be present is summarised in the table below. The significance of those remains that may be present, would be derived from their evidential value and contributions that could be made towards local, regional and national research agendas.

Period:	Identified Archaeological Potential and Likely Significance (if present):
Prehistoric (Palaeolithic and Mesolithic)	**Low potential; Low (Local) Significance.**
Later Prehistoric (Neolithic, Bronze Age & Iron Age)	**Low potential; Low (Local) Significance.**
Roman	**Low potential; Low (Local) Significance.**
Saxon & Medieval	**Low/nil potential for evidence of the Saxon period.** **Low potential for settlement evidence of the Medieval period,** although evidence of land management, field boundaries and localised activity can be anticiapted as hinted by the result of the Geophysical Survey**; Low (Local) Significance.**
Post Medieval and Modern	**Moderate to High potential** for evidence of **Post Medieval** land management and field boundaries and localised activity, as seen on historic maps, along with the results of the recent Geophysical Survey; Low potential for settlement evidence**; Low (Local) Significance.** Presence of localised Modern disturbance, such as land drains, is to be anticipated, as suggested by the results of the recent Geophysical Survey.

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5. Proposed Development and Review of Potential Development Impacts

Proposed Development

5.1. The Site includes a single, undeveloped land parcel which appears to have been used for agricultural farming during the Post Medieval period up to recently, when it changed into pasture (Figure 1). Past agricultural practices would have had widespread, but very shallow impacts on any potential, underlying archaeological remains.

5.2. Overall, the results of the recent Geophysical Survey (Appendix 1) have shown a good level of archaeological survival across at the Site.

Review of Potential Development Impacts

5.3. The current planning application proposes the creation of 68 dwellings with vehicular and pedestrian accesses, public open space, hard and soft landscaping and associated works including supporting foul and surface water drainage works, and works to existing culverted watercourse on site (Figure 9).

5.4. Based on available information, including the results of the recent Geophysical Survey, if any archaeology survives at the Site, this is likely to be associated with Post Medieval field boundaries, land management and localised activity, of which some cannot be excluded to have originated in the Medieval period. A low potential is anticipated for all other periods of human activity. On current evidence, if encountered, any of these remains would likely be considered of low (local) significance.

5.5. As none of these remains, if present, would likely be considered of such significance to preclude development, it is considered that any further work, if required, could follow the granting of planning consent and be secured by an appropriately worded condition.

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6. Conclusions

6.1. TCMS Heritage has prepared an Archaeological Desk Based Assessment for the Site known as Land south of Smugglers Lane, Barns Green, Horsham, West Sussex. The assessment is to consider the archaeological potential of the Site and to establish any potential archaeological constraints in advance of development.

6.2. In terms of relevant, nationally significant designated heritage assets, no Scheduled Monuments, World Heritage Sites, Historic Wrecks or Historic Battlefields lie within the Site or in its immediate vicinity.

6.3. In terms of local designations, the Site does not lie within an Archaeological Notification Area (ANA), but it is adject to Barns Green Village Historic Core (Horsham 179).

6.4. Based on available information, the Site is anticipated to have a moderate to high potential for evidence of Post Medieval field boundaries, land management and localised activity, of which some might have originated in the Medieval period. A low potential is anticipated for all other periods of human activity. On current evidence, if encountered, any of the remains would likely be considered of low (local) significance.

6.5. A Geophysical Survey was undertaken at the Site in July 2025. The survey revealed anomalies likely to represent former Post Medieval field boundaries, as seen on 19th – 20th century historic maps, along with other anomalies, not previously known, that might represent a possible single ditch enclosure and a few possible refuse/extraction pits.

6.6. As none of these remains, if present, would likely be considered of such a significance that might preclude development, it is considered that any further work, if required, could follow the granting of planning consent and be secured by an appropriately worded condition.

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7. Sources Consulted

General

West Sussex Historic Environment Record (HER)

Online

British Geological Survey – http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html

British History Online – http://www.british-history.ac.uk/

Domesday Online – http://www.domesdaybook.co.uk/

Historic England: The National Heritage List for England http://www.historicengland.org.uk/listing/the-list/

Historic England: https://researchframeworks.org/

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Historic England Historic Environment Good Practice Advice in Planning: 3 The Setting of Heritage Assets December 2017 unpublished document

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Cartographic

1839 Tithe Map
1876 Ordnance Survey Map
1911 Ordnance Survey Map
1977 Ordnance Survey Map
1993 Ordnance Survey Map
2025 Aerial Photograph (Google Satellite Imagery)

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FIGURES

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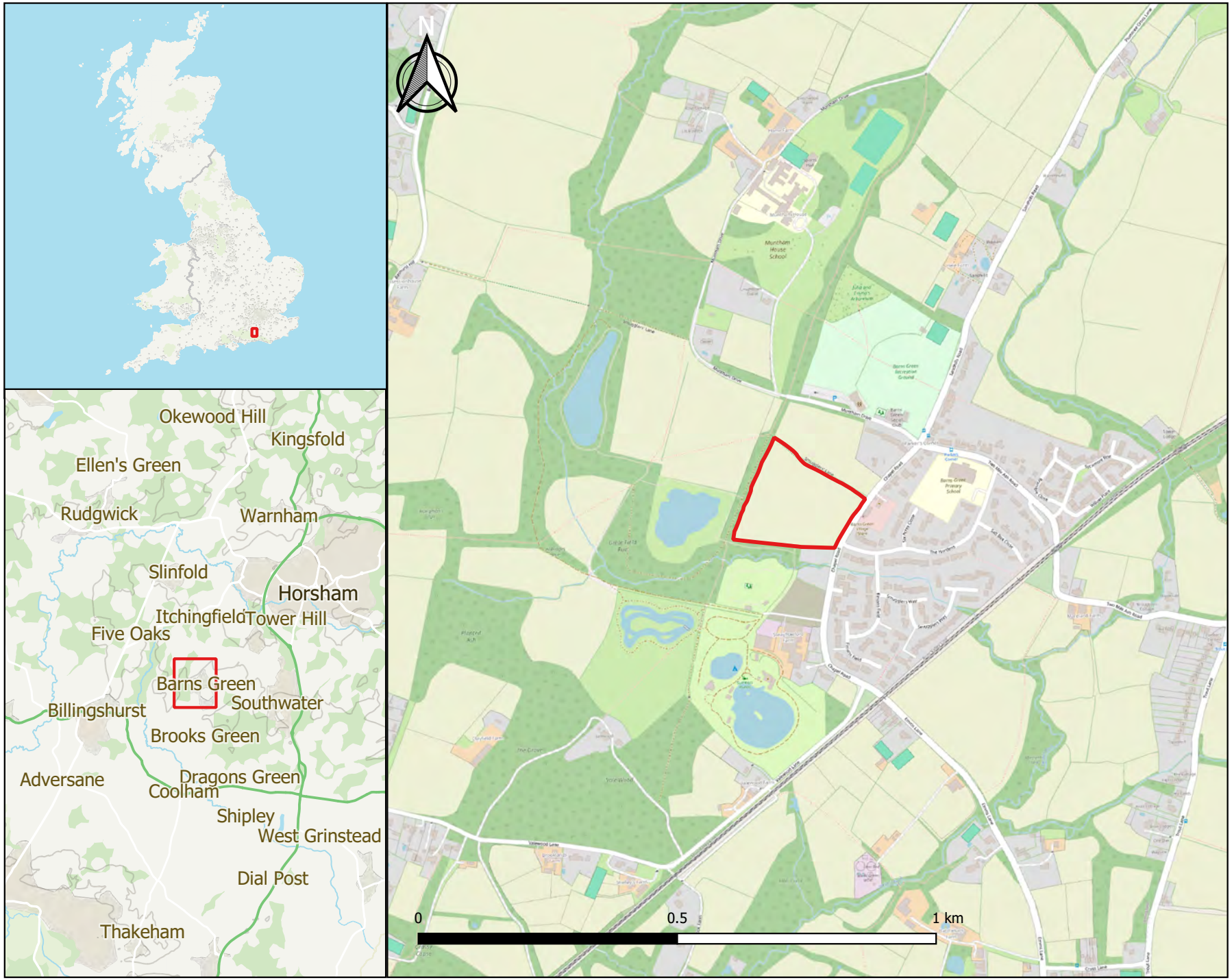


Figure 1
Site Location

Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors.

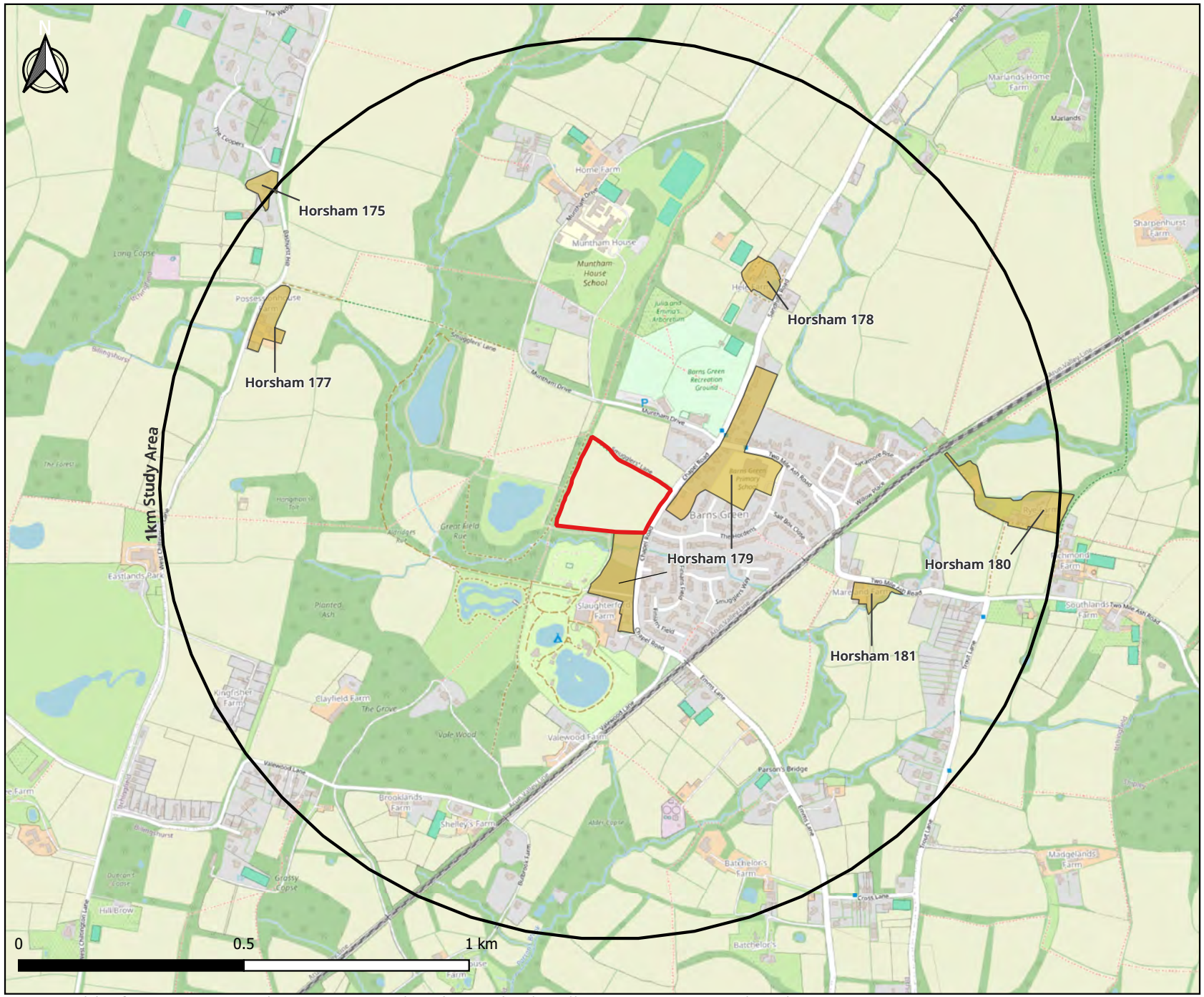
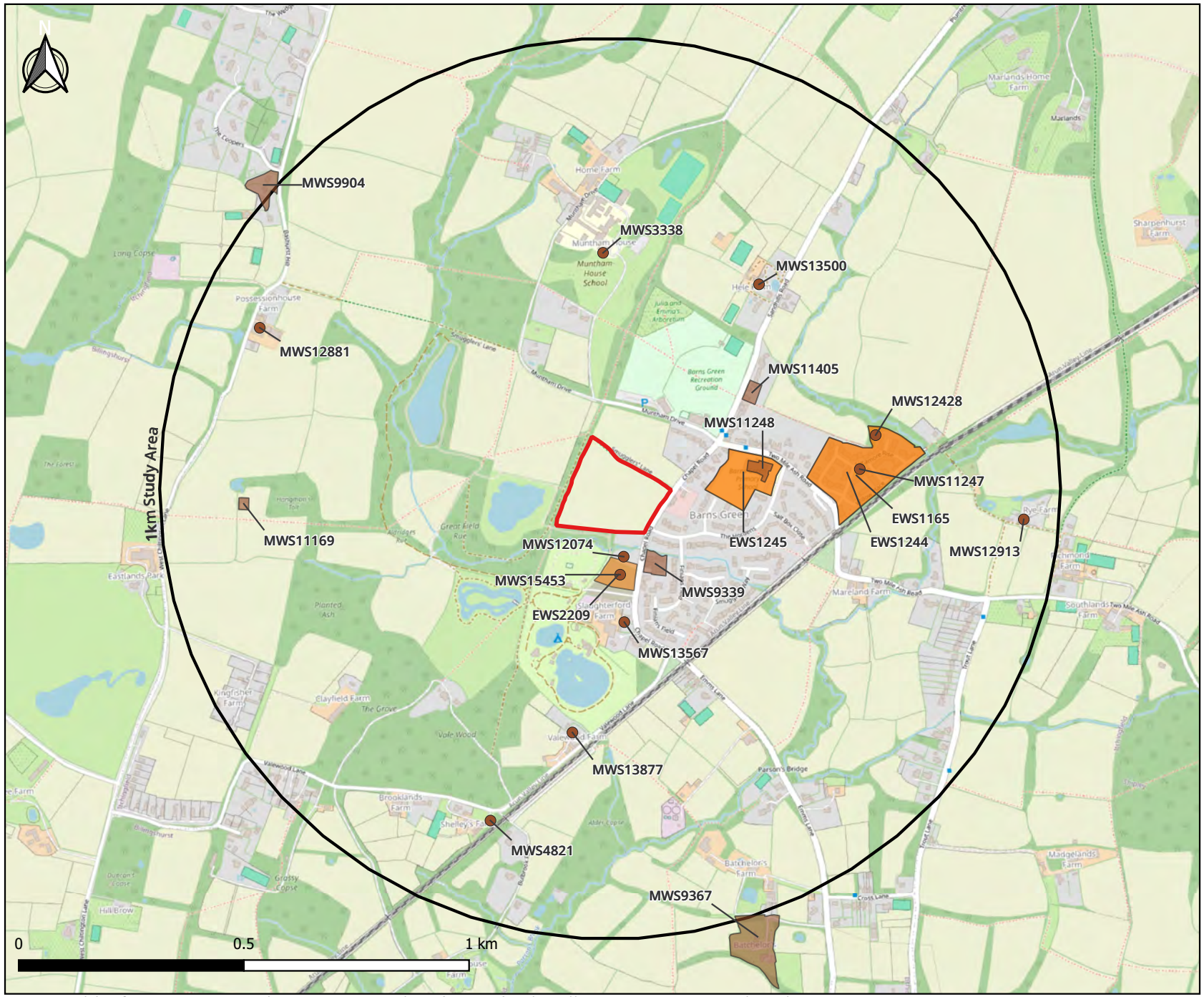


Figure 2a
Archaeological Notification Areas

Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors.



Base map and data from OpenStreetMap and OpenStreetMap Foundation (CC-BY-SA). © https://www.openstreetmap.org and contributors.

Figure 2b
HER Data: Monuments and Events

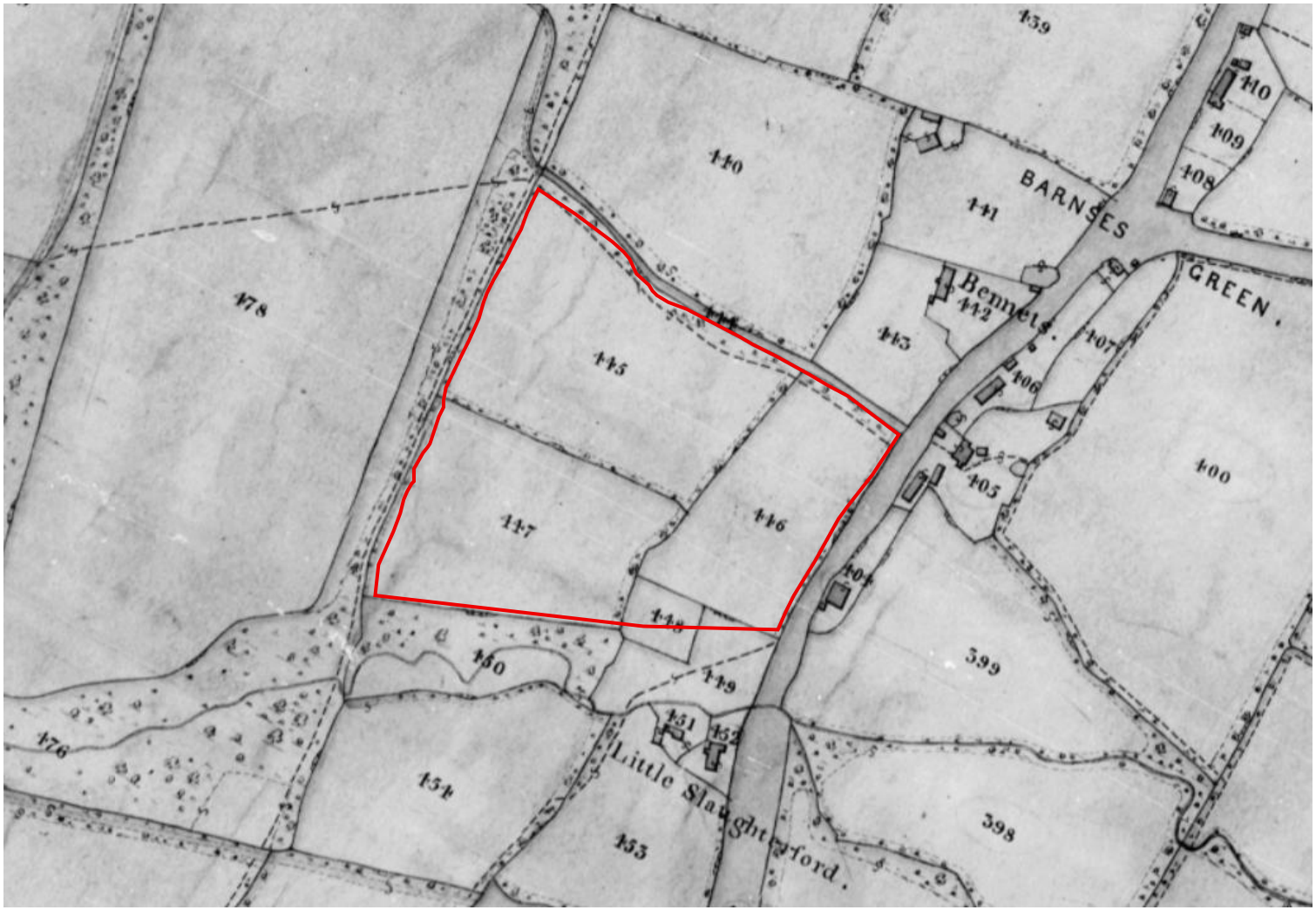


Figure 3 1839 Tithe Map (approx. Site location in red)

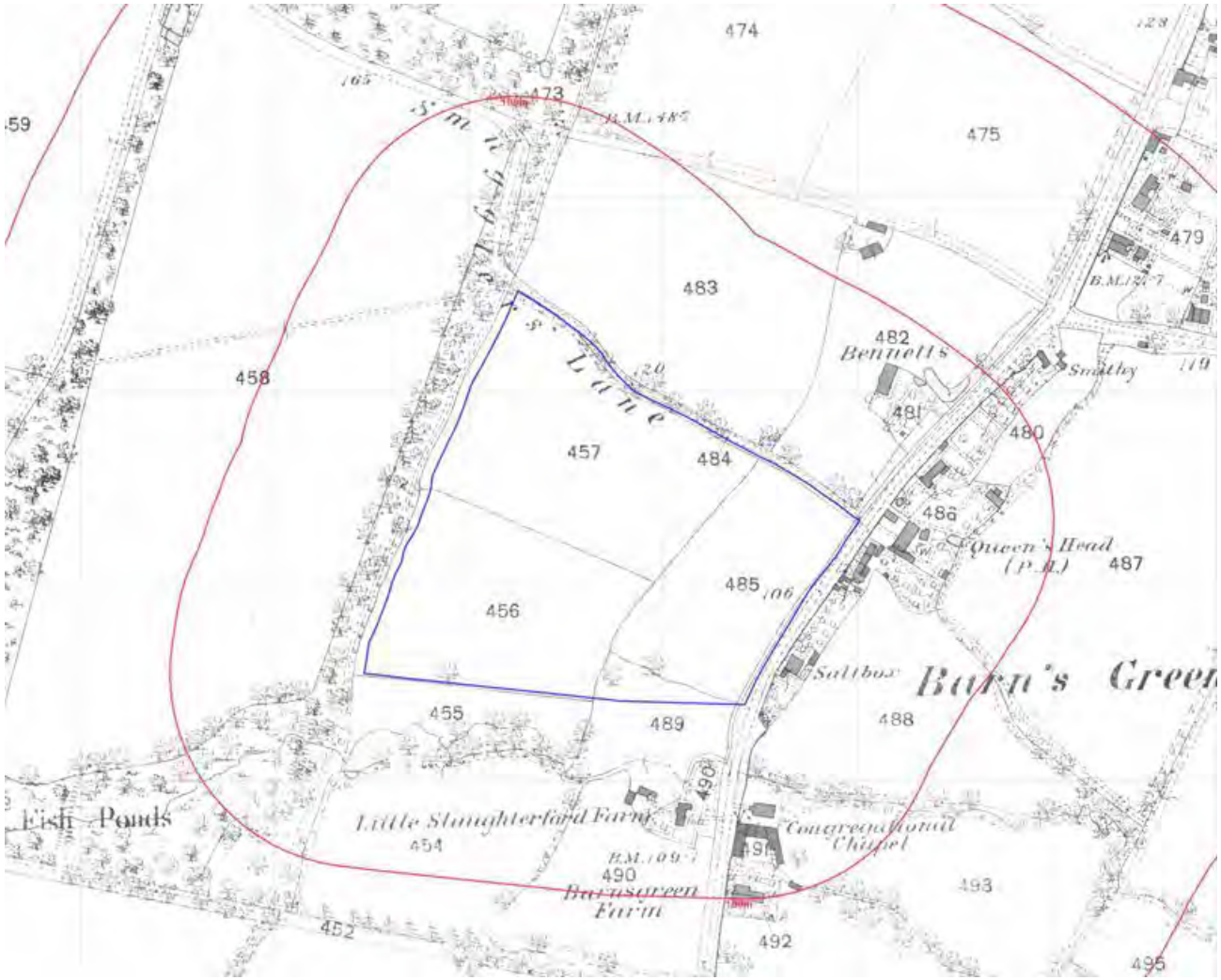


Figure 4 1876 OS Map

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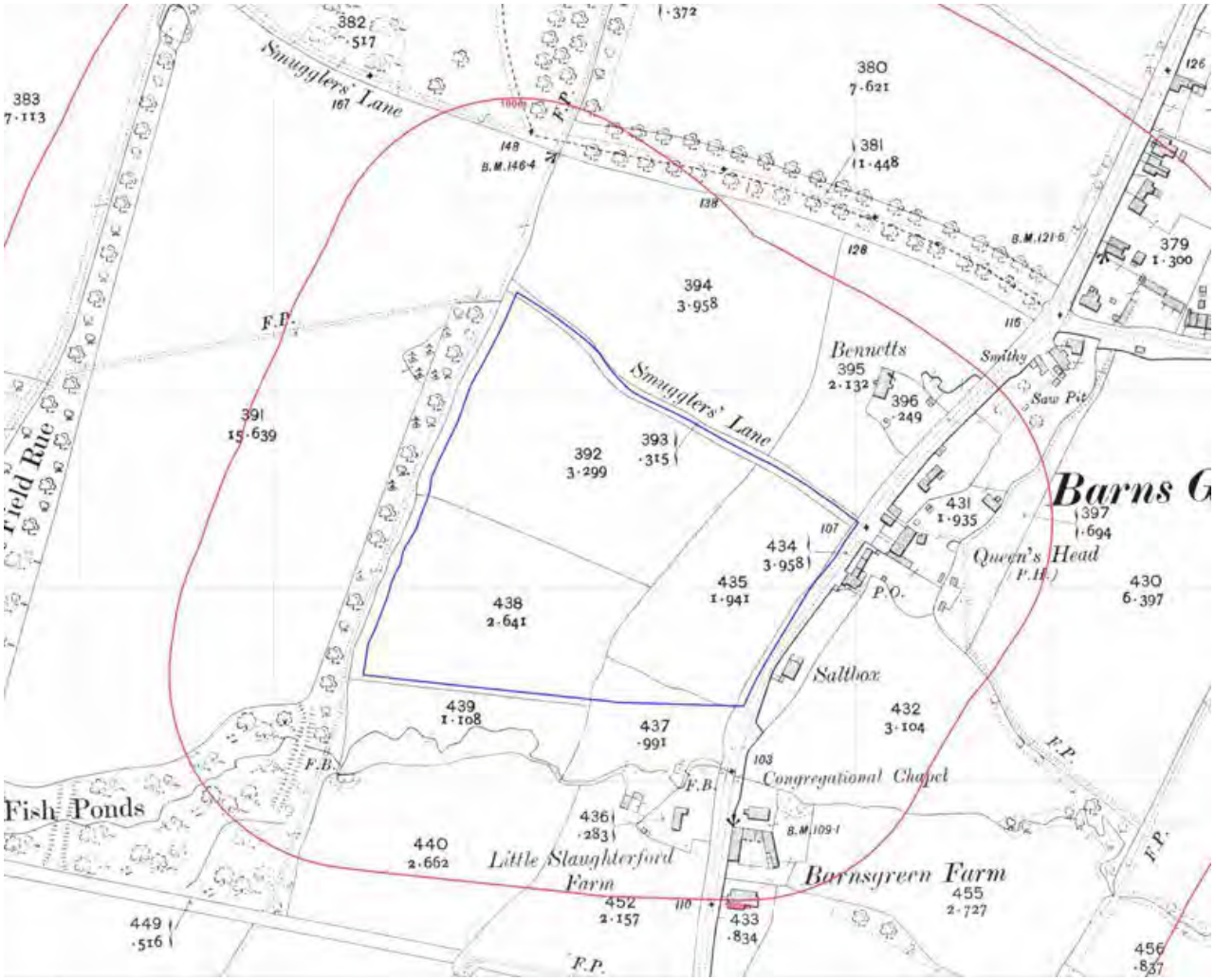

Figure 5 1911 OS Map

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Figure 6 1977 OS Map

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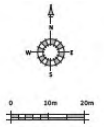
Figure 7 1993 OS Map

© Crown copyright and database rights 2024 Ordnance Survey 100035207

Figure 8 2025 Google Satellite Imagery

Map Data: Google, Airbus



architecture

Coloured Site Layout
Barns Green, Horsham

24088 / C101

Scale 1:500 @ A1 September 2025

Figure 9 Proposed development plan

PLATES

Plate 1. View of the Site looking north-west from the southern border

Plate 2. View of the Site looking west from the north-eastern border

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Plate 3. View of the Site looking east from its north-western border

Plate 4. View of the Site looking south from the north-western corner

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Plate 5. View of the Site looking south-east from the north-western corner

Plate 6. View of the Site looking north-west from the south-eastern corner

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APPENDIX 1

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Land West of Chapel Road, Barns Green, Horsham: Geophysical Survey Report

Miller Homes

Date: August 2025

Prepared by: Matthew Fay

Ref: 25507

Report to: Miller Homes
Report Title: Land West of Chapel Road, Barns Green, Horsham: Geophysical Survey Report
Version: V1.0
Issue Date: August 2025
Report Ref: 25507

Originated By:

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Version	Author	Description	Date
V0.1	MF	First draft	31/07/2025
V0.2	DY	QA1	12/08/2025
V0.3	DY	Amendments following QA1	13/08/2025
V0.4	AS	QA2	13/08/2025
V1.0	AS	Issue for client comment	13/08/2025

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Executive Summary

Cura Terrae were instructed by Miller Homes to undertake an archaeological geophysical survey at land west of Chapel Road, Barns Green, Horsham in July 2025. The survey produced good data throughout and highlighted some anomalies that are of tentative archaeological origin.

A weakly positive rectilinear linear anomaly located in the southeast of the Site, is characteristic of a small enclosure of potential post-medieval origin. The response is on the same alignment as the historic pattern of land division recorded on 19th Century Ordnance Survey (OS) maps. Several of these former boundaries have also been identified within the survey results.

In addition, several small, weakly positive sub-circular anomalies are noted which may represent pit-like features in the underlying deposits. These could indicate localised extraction or waste disposal pits. However, these may equally be evidence of localised variation in the magnetic susceptibility of the underlying topsoil or geological deposits and natural in origin.

The remaining anomalies include prominent land drains across the whole dataset which appear to respect several former boundaries as well as various quantities of probable modern ferrous material and debris likely to be associated with agricultural activity.

1. Introduction

1.1 Project Background

1.1.1 Cura Terrae were instructed by Miller Homes to undertake an archaeological geophysical survey ahead of a forthcoming planning application for development of land west of Chapel Road, Barns Green, Horsham (hereafter 'the Site'). The Site is centred on National Grid Reference (NGR) TQ 12469 27029 (Figure 1).

1.2 Location, Topography and Geology

1.2.1 The Site is c. 3.1 ha in size and is comprised of a single field. It is situated directly west of the village of Barns Green, West Sussex.

1.2.2 The survey area is bounded by trees, hedgerows and fencing on all sides. Beyond the eastern boundary of the Site lies the village of Barns Green with further built-up land present to the south. Further agricultural land is located to the north and west of the Site, as well as small areas of woodland.

1.2.3 The Site lies between 41 m and 33 m above Ordnance Datum (aOD), gently sloping down towards the south-east.

1.2.4 The underlying geology of the Site consists of Mudstone of the Weald Clay Formation. No superficial deposits are recorded in this area (British Geological Survey 2025).

2. Archaeological and Historical Background

2.1 Introduction

2.1.1 Below is a summary of archaeological and heritage data compiled from publicly available Historic Environment Records (online) within an approximate 1 km search radius of the Site. While not exhaustive, this section aims to present a summary of findings considered relevant to the interpretation of the geophysical survey data collected.

2.1.2 There are 14 Grade II Listed Buildings located within the 1 km search area, primarily consisting of post-medieval dwellings, farm buildings and commercial premises located in and around the village of Barns Green.

2.1.3 No past archaeological work has taken place at the Site.

Prehistoric

2.1.4 Excavations at Two Mile Ash Lane, 550 m to the north-east of the Site, recovered a single flint believed to be of Prehistoric origin, although the linear feature it was found within could not be dated (HER MWS1147).

Medieval

2.1.5 A 2014 archaeological evaluation carried out at Itchingfield Primary School, 300 m to the north-east of the Site, recorded a pit and gully of medieval origin, along with undated post holes (ADS 1605596). Eighty sherds of medieval pottery were located during the course of the evaluation, further suggesting potential medieval settlement in the area (HER MWS11248).

2.1.6 A year prior, the archaeological evaluation at Two Mile Ash Lane, 550 m to the north-east of the Site, had also unearthed a pit and ditch of late medieval date (ADS 1585193).

Post Medieval/Modern

2.1.7 The Site lies within a historic agricultural landscape, and is surrounded by farms, both extant and defunct, which began operating during the 19th century and even prior (HER MWS12337; HER MWS12428).

3. Geophysical Survey Methodology

3.1.1 All survey work was completed to appropriate standards, as outlined by existing guidance (CIfA 2020a; 2020b; 2020c, 2022; and Schmidt et al. 2015).

3.1.2 This geophysical survey was completed using a Bartington Grad601-2 system. Readings were recorded at a resolution of 0.01 nT and data collected with a traverse interval of 1 m and a sample interval of between 0.16 - 0.25 m.

3.1.3 Data was collected by traversing the survey area in 4 m increments using a hand-pushed non-magnetic cart system to achieve the best possible results.

3.1.4 Real Time Kinematic (RTK) differential GPS equipment (Carlson BRX7 GNSS Smart Antenna) was used to accurately determine the position of the survey equipment and survey monitor data.

3.1.5 The data processing was undertaken using TerraSurveyor64 software and consisted of a 'DeStripe' process. This process determines the average of the datapoints in each track, and subtracts that value from all the datapoints along each survey track.

3.1.6 Illustrations were created using QGIS software. Interpretation of identified anomalies was achieved through analysis of anomaly patterning and increases in magnetic response and was aided by examining the available supporting information, including but not limited to Greyscale plots, Colourscale plots and XY Trace plots. The interpretations follow Cura Terrae colour coding and categorisations of anomalies and attempt, where possible, to suggest the nature of buried features.

3.1.7 Further details of geophysical survey methodology can be found in Appendix A.

4. Mitigating Factors

4.1.1 The results of geophysical survey may not reveal all potential archaeology within a survey area, and geological, agricultural, and modern features may limit the detection of weaker archaeological responses.

4.1.2 At the time of survey, the Site conditions were dry and firm underfoot with ground cover comprised of grassland throughout.

4.1.3 Field boundaries comprised hedgerows, metal fences and drainage ditches. Where necessary, a 2 m buffer was observed along metal fences although some interference is still noted at the survey periphery. The buffer was observed to minimise the effects or magnetic interference on the survey and to help to reduce as far as is reasonably practicable any non-detection of potential buried features.

5. Results and Interpretation

5.1.1 Anomalies found within the survey data are listed in Table 1 and illustrated on Figure 3.

Table 1: Survey Anomalies

Anomaly Number	Anomaly Type	Description	Interpretation
1. Field 1, Figure 3	Possible Archaeology	Weak positive, northeast to southwest oriented rectilinear anomaly 40 x 23 m, located in the southeast of Field 1.	This anomaly is characteristic of a small ditch enclosure, possibly related to the probable post-medieval boundaries located adjacent on the same alignment. It is weak and diffuse precluding a definitive interpretation however, with a geological or modern agricultural origin also plausible.
2. Field 1, Figure 3	Possible Archaeology	Three strong positive, sub-circular anomalies measuring between 3m - 5 m in diameter, located in the south and centre of Field 1.	These anomalies may represent pits associated with mineral extraction or waste disposal, although it is equally likely to be the product of localised geological variation.
3. Field 1, Figure 3	Former Boundary	Positive, northwest to southeast oriented linear anomaly 89 m in length, located in the west of Field 1.	This anomaly corresponds to the location of a former boundary illustrated in historical OS maps (1888 – 1915) of the Site.
4. Field 1, Figure 3	Former Boundary	Positive, northeast to southwest oriented linear anomaly, 194 m in total length, located in the east of Field 1.	This anomaly corresponds to the location of a former boundary visible illustrated in historical OS maps (1888 – 1915) of the Site.

Anomaly Number	Anomaly Type	Description	Interpretation
NA Field 1, Figure 3	Land Drain	Positive, linear anomalies of varying lengths and orientations largely concentrated in the west of the Site.	These anomalies represent modern land drains.
NA Field 1, Figure 3	Ferrous Disturbance	Several amorphous anomalies exhibiting strong dipolar response concentrated around the edges of the Site.	These anomalies represent larger quantities of modern ferrous material.
NA Field 1, Figure 3	Ferrous "Spikes"	Numerous, small dipolar anomalies scattered across the Site.	These anomalies represent isolated modern ferrous material within the subsoil.

6. Discussion

6.1.1 The geophysical survey produced good data throughout and revealed some weak anomalies that may tentatively be archaeological in origin. The first is a positive rectilinear anomaly (1) located in the east of Field 1. This is characteristic of a small ditch enclosure feature, possibly contemporary to recorded likely post-medieval boundaries (3 - 4) on a shared orientation. Its weak magnetic response however precludes a definitive interpretation, and a modern agricultural provenance is also plausible.

6.1.2 Several, sub-circular positive anomalies (2) are also noted as of potential archaeological origin and are located in the centre of Field 1. These may represent areas of mineral extraction or refuse pits. Although, again, it may well be the product of localised geological variation, or natural features.

6.1.3 Positive linear anomalies relating to recorded former boundaries are present in both the west (3) and east (4) of Field 1. Both correspond to the location of now removed field boundaries illustrated in historical OS maps (1888 – 1915) of the Site.

6.1.4 Other anomalies present within the dataset refer to modern land drains and various quantities of modern ferrous material.

7. Curation and Storage

7.1.1 The archive will be prepared in accordance with national guidelines (CIfA 2020b). The integrity of the primary field record will be preserved. Security copies will be maintained where appropriate. Digital records of the geophysical survey and its collected data will be held by Cura Terrae

7.1.2 An OASIS form has been created on the results of the works under the following reference number: curaterr1-535816. Following approval of the report, a pdf version of the final version will be submitted within three months to the Archaeology Data Service via the OASIS form.

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CuraTerrae

Key

Site Boundary

0 30 60 90 120 150 m

West of Chapel Road, Barns Green

Figure 1
Site Location

A	21.07.25	PFP	-
Rev	Date	Drawn by	Checked by

Site centred on:	TQ 12466 27024

Contains OS data © Crown copyright and database rights [2025]

August 2025 | Scale: 1:3,000 @A4 | Drg.Ref: 25507 - GEO - 1 - A

CuraTerrae

Key

- Site Boundary
- Survey Extent

0 10 20 30 40 50 m

West of Chapel Road, Barns Green

Figure 2
Greyscale Plot - Field 1

A	21.07.25	PFP	-
Rev	Date	Drawn by	Checked by

Site centred on:	TQ 12466 27024

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August 2025 | Scale: 1:1,500 @A4 | Drg.Ref: 25507 - GEO - 2 - A

Cura Terrae

Key

- Site Boundary
- Survey Extent
- Possible Archaeology
- Former Boundary
- Land Drain
- Ferrous Spike
- Ferrous Disturbance

0 10 20 30 40 50 m

West of Chapel Road, Barns Green

Figure 3
Interpretation Plot - Field 1

A	21.07.25	PFP	-
Rev	Date	Drawn by	Checked by

Site centred on:	TQ 12466 27024

Contains OS data © Crown copyright and database rights [2025]

August 2025 | Scale: 1:1,500 @A4 | Drg.Ref: 25507 - GEO - 3 - A

Appendix A: Technical Information

Gradiometer Survey

Magnetic surveys measure distortions of variable strength in the earth's magnetic field caused by magnetic fields associated with buried features (Gaffney and Gater 2003, 36) that have either remnant or induced magnetic properties (Aspinal *et al*. 2008, 21–26). Human activity and inhabitation often alter 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 also result in materials attaining a thermoremanent magnetisation; examples of which include kilns, ovens, heaths, and brick structures (Aspinal *et al*. 2008, 27; Gaffney and Gater, 2003, 37). However, there is also no way to always confidently assert from the results of Gradiometer surveys alone, whether burned material is in situ or has been redeposited within, for example, a refuse pit.

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 (Aspinal *et al*. 2008, 37–41; Gaffney and Gater 2003, 22– 26). 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, but not limited to, short lived archaeological occupation and land use, or sites with minimal cut or built features. Results can also be limited in areas where the natural geology is of a similar composition to the fills of cut archaeological features such as ditches, or where soils are naturally deficient in iron compounds. Poor results can also be caused by areas with soils overlying naturally magnetically enhanced geological deposits, which can produce strong or variable responses limiting the detection of earlier archaeological features.

Overlying layers, such as demolition rubble or layers of made ground such as during landscaping works, can also limit the detection of earlier archaeological features. The presence of above ground structures within, or in the near vicinity of, the survey area as well as underground services containing ferrous material such as pipelines or electricity cables can distort survey results, further limiting the detection of earlier archaeological features.

Particularly uneven or locally variable elevation in topography can increase the data processing required, and/or distort results beyond the capabilities of processing. It is also possible in areas containing dramatic topographical changes that natural weathering, such as hill wash, often in combination with intensive modern ploughing or other natural geological deposits, will reduce the topsoil on slopes and towards the peaks of hills and possibly destroy or truncate potential archaeological features as a result.

Conversely features at the bottom of slopes may be covered by a greater layer of topsoil or other deposits, and so if buried features are present, they appear faint or are entirely limited in their detection.

Over-processing of data can also obscure, remove or artificially enhance or create anomalies, 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

Bartington Grad601-2

The Bartington 601-2 is a single axis, vertical component fluxgate gradiometer comprising a data logger battery cassette and two sensors. The sensors are mounted on a rigid carrying frame; each sensor contains two fluxgate magnetometers with 1 m vertical separation.

The difference in the magnetic field between the two fluxgates in each sensor is measured in nano Tesla (nT). The gradiometer data is recorded with a range of ±100 nT. It should be noted that the actual resolution is limited because of potential internal instrumental noise. The gradiometers are calibrated at the start of every day and recalibrated whenever necessary.

This system records four lines of data on each traverse, with traverses walked in a zig-zag pattern until all the survey area is covered.

Appendix B: Data Visualisation and Further Information

Visualisation

The survey data collected was used to produce a series of images to demonstrate the results of surveys. These are outlined below:

- Greyscale plot – This method visualises the survey data as a shaded drawing, with highest readings showing as black, running through different shades to lowest showing as white. Plotting parameters can be adjusted to aid interpretation of geophysical survey data.
- XY Trace plot – This is an alternative method of data visualisation, plotting the magnitude of responses on a scaled XY trace. The stronger the response, the sharper the rise in the trace. This type of plot can be used to differentiate the origin of an anomaly and is best used in conjunction with an alternative method of interpretation.
- Interpretation plot – Through detailed analysis, anomalies have been interpreted and possible features identified. Interpretation drawings are used to show potential features and 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, which is outlined in keys on figures associated with this report.

Magnetic Anomalies

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

Anomalies interpreted as 'stronger' are considered more likely to be of the interpreted characterisation; whereas a 'weaker' categorisation represents a more tentative interpretation applied to those anomalies with lesser increases in magnetic response or if the anomaly has 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 at which the feature is buried, and the state of preservation.

Terminology

- Anomaly - Any outstanding high or low magnetic response forming a particular shape or covering a specific area within the survey results.
- Feature - A man-made or naturally created object, material or deposit that has been detected through the site 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 response. The strength of magnetic response (along with patterning) can be essential in determining the nature of a buried feature, but it should be noted that the size or strength of the magnetic response does not always correlate with the size of the buried feature.
- Morphology - 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).

Characterisation of Anomalies & Interpretation Categories

Archaeological or Historical Anomalies

- Archaeology – Linear, rectilinear, or curvilinear anomalies with a positive and/or negative magnetic response, composed of a patterning or shape that is suggestive of a buried archaeological feature. These are often indicative of structural remains or infilled cut features such as ditches. The strength of the 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 such as a ditch-bank, or a cut ditch containing a fill 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. 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. 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 such as those indicating pit-features, are not always shown within the Interpretation plot(s) unless composed of a broad form or belonging to a series of isolated positive responses. Bipolar responses considered likely to be of an archaeological origin are also interpreted as isolated anomaly (archaeology). These are considered to relate to material with a very strong magnetic susceptibility or thermoremanent magnetisation.
- Possible archaeology – This categorisation is applied where anomalies are weaker or more diffuse in response, resulting in a less certain origin. It is possible that these belong to archaeological features but given their weaker responses or incomplete patterning it is equally plausible that they relate to other sources, such as agricultural features or natural soil formations or geological variations.
- Former Boundary - Linear anomalies, sub/irregular-rectilinear anomalies either with positive or negative magnetic responses, that correspond with the location of former field boundaries, ponds or buildings recorded on historic maps, Aerial photos and/or LiDAR coverage of the site.

- Ridge and Furrow - Broadly spaced linear anomalies or trends that are likely to be indicative of earlier forms of agricultural practice, such as ridge and furrow. These often correspond with the location of earthworks visible on the ground during the survey, or can be identified on aerial or LiDAR survey imagery.

Strongly Magnetic / Bipolar / Dipolar

- Modern Service – Highly magnetic, typically dipolar linear anomalies with an stronger area of variably decreasing ferrous response depending on the vicinity of the survey instrumentation to the buried or extant feature.
- Increased magnetic response – Isolated bipolar responses of a typically modern nature that are likely to relate to buried ferrous material, building debris, or objects, such as magnetically enhanced agricultural debris. If a trend is noted in the alignment or spacing of isolated bipolar responses, it is possible that they are indicative of ferrous fittings or connectors used on buried non-magnetic buried utilities, although occasionally an archaeological origin cannot be ruled out. Also, areas of increased magnetic response denote areas of disturbance containing a high concentration of dipolar or bipolar responses. These are generally considered to be caused by modern debris in the topsoil, including agricultural 'green waste'. It is also possible that the disturbance is in part also caused by isolated archaeological material or geological or pedological changes in the substrata.
- Ferrous disturbance - Areas of magnetic disturbance, often along the edges of survey areas, or surrounding Modern Services caused by highly ferrous material such as standing metal structures like fencing and buildings. Modern Agricultural Anomalies.

Modern Agricultural

- Agricultural Trend - Ploughing trend tends to be regularly spaced linear anomalies, often with a narrower spacing, that conform with ploughing regime at the time of survey, or a recent regime recorded on aerial photos of the site. The response and distribution of land drains varies depending on the composition of the land drain and associated ditch or channel. Consequently, land drains can be composed of weak / strong positive / negative magnetic responses and are identified as a product of either their variance in magnetic values or positioning compared with regularly spaced linear anomalies considered to relate to modern ploughing. Land drains can be located within former agricultural regimes, such as ridge and furrow.
- Land drain – Weakly positive, and/or dipolar, regularly broadly spaced linear trends in a typically parallel or 'herringbone' formation. These are generally modern in origin, although earlier post-medieval ceramic drains are often plausible but cannot be determined.
- Uncertain Trend – Generally positive, although sometimes negative, isolated and weak linear or curvilinear trends. This category is applied where multiple origins can be asserted to a barely detected anomaly.

Land south of Smugglers Lane, Barns Green, Horsham, West Sussex

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