



Land at Tollgate Road, Colney  
Heath

## Archaeology & Heritage Assessment

Prepared by  
CSA Environmental

on behalf of  
Vistry Group

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## EXECUTIVE SUMMARY

Residential development is proposed at Land at Tollgate Road, Colney Heath, for which outline planning permission is sought.

CSA Environmental was instructed by Vistry Group to undertake an Archaeology & Heritage Assessment for the proposed development. This report presents the combined results of a desk-based assessment, prepared by CSA Environmental, and geophysical survey, undertaken by Magnitude Surveys. It provides a review of the known and potential heritage resource, including archaeology, built heritage and historic landscape. It assesses the significance of the heritage resource which may be affected, and the potential impact of proposals on that significance.

There is limited evidence of prehistoric and Roman period activity in the study area. The possible route of a Roman road crosses to the north of the Site and the HER records cropmarks potentially associated with a Roman building c. 100m south-east of the Site. The Site was likely in agricultural use from the medieval period. Geophysical survey did not identify any anomalies of likely archaeological interest although some discrete anomalies of uncertain origin were recorded. No further archaeological works are suggested to inform the determination of an outline planning application.

The Site is part of the wider agricultural setting to the Grade II listed Colney Heath Farmhouse. Based on current design plans, it is anticipated that any harm to Colney Heath Farmhouse would be negligible at most, which is to say less than substantial harm at the very lowermost end of this harm spectrum. The assessment also identified very limited intervisibility with North Mymms Park House, c. 1.4km south of the Site. Harm to North Mymms Park House is anticipated to be negligible at the very most, in the event of new built form being visible from the northern elevation, reducing to no harm once new screening vegetation is established along the south-eastern Site boundary.

## 1.0 INTRODUCTION

- 1.1 This Archaeology & Heritage Assessment has been prepared by CSA Environmental on behalf of Vistry Group, for the proposed development at Land at Tollgate Road, Colney Heath (hereafter 'the Site'). It presents the combined results of desk-based assessment (DBA), prepared by CSA Environmental, and geophysical survey, undertaken by Magnitude Surveys. Residential development is proposed at the Site, for which outline planning permission is sought.
- 1.2 This assessment provides a review of the known and potential heritage resource, including archaeology, built heritage and historic landscape. It assesses the significance of the heritage resource which may be affected and the potential impact of proposals on that significance.
- 1.3 The Site occupies an area of c. 7.82ha and is located around central grid reference TL 2086 0548. It mainly consists of horse paddock, extending through two fields, with stables located in the northern part of the Site. It also includes No. 42 Tollgate Road and associated garden, and extends onto Tollgate Road (see Figure 1: Site Location Plan).
- 1.4 This assessment aims to:
- determine, as far as possible from existing records, the nature, extent and significance of the heritage resource within the Site;
  - identify any heritage assets located beyond the Site which may be impacted by the proposals through alteration to setting; and
  - assess the impact of the proposals on the heritage resource.
- 1.5 The DBA was prepared with reference to the guidelines in the Standard and Guidance for Historic Environment Desk-based Assessment issued by the Chartered Institute for Archaeologists (CIfA 2017) and the Historic England guidance Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning: 2. Historic England (HE 2015a).

## 2.0 LEGISLATION, PLANNING POLICY AND GUIDANCE

2.1 This assessment has been prepared in the context of current heritage legislation, planning policy and guidance, including:

- Ancient Monuments and Archaeological Areas Act (1979)
- Planning (Listed Buildings and Conservation Areas) Act (1990)
- English Heritage (now Historic England) *Conservation Principles, Policies and Guidance* (2008)
- Historic England *Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning Note 2* (2015)
- Historic England *The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition)* (2017)
- The National Planning Policy Framework (MHCLG 2021)
- The Planning Practice Guidance (MHCLG 2019)

2.2 Further information is provided in Appendix B.

### National Planning Policy

2.3 The National Planning Policy Framework (NPPF; MHCLG 2021) sets out the government planning policies for England and how they should be applied. Chapter 16: Conserving and Enhancing the Historic Environment, is of particular relevance to this report as it relates to heritage assets. Accompanying guidance is published in the Planning Practice Guidance (PPG; MHCLG 2019) which expands on how the historic environment should be assessed within the National Planning Policy Framework. Further details are provided in Appendix B.

### Local Planning Policy

2.4 Local planning policy is contained within the St Albans City and District Development Plan. Relevant policies relating to heritage are summarised in Table B.1 of Appendix B.

### Guidance

2.5 Historic England have prepared a number of guidance documents including Good Practice Advice notes (GPAs) designed to provide supporting information on good practice and how national policy and guidance can be applied. These include GPA2, *Managing Significance in Decision-Taking in the Historic Environment* and GPA3, *The Setting of Heritage Assets*. Further details are provided in Appendix B.

## 3.0 METHODOLOGY

### Sources of Information and Study Area for the Desk-Based Assessment

3.1 The report involved consultation of publicly available archaeological and historical information including heritage databases and documentary, cartographic and aerial photographic sources. The major sources of information included:

- The National Heritage List for England (NHLE), maintained by Historic England, for details of designated heritage assets
- The Historic Environment Record (HER), for details of recorded heritage assets and previous archaeological works (data received 15/02/2022; HER request number 210/22)
- Historic Maps and documentary sources held at the Hertfordshire Archives and Local Studies Library
- Aerial photographs held at the Historic England Archives, Swindon
- Historic maps, documentary sources and aerial photographs available online, including Tithe and Ordnance Survey mapping and historic satellite imagery
- Online sources including the Local Authority website for information on conservation areas and the Environment Agency for LIDAR data.
- A site walkover undertaken on 22 February 2022. Selected designated heritage assets in the vicinity were also visited at this time, as far as public access allowed

3.2 HER data was obtained for a 1km buffer from the Site, the 'study area'. Designated heritage assets for a wider area were assessed as professional judgement deemed appropriate. Where appropriate a setting assessment is included in Section 5.

### Geophysical Survey

3.3 Detailed magnetometry geophysical survey was undertaken across suitable areas of the Site. A WSI for the geophysical survey was provided to the archaeological advisor to the LPA in advance. A detailed methodology is provided in the geophysical survey report, reproduced in Appendix D (Magnitude Surveys 2022).

### Assessment of Significance

3.4 A heritage asset is "a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions because of its heritage interest". This interest may be archaeological, architectural, artistic or historic. Significance may derive from physical remains and also from setting, that is "the surroundings in which a heritage asset is experienced" (NPPF).



- 3.5 Heritage assets include designated heritage assets and non-designated heritage assets. Designated heritage assets include world heritage sites, scheduled monuments, listed buildings, protected wreck sites, registered parks and gardens, registered battlefields and conservation areas. Of these, world heritage sites, scheduled monuments, Grade I and II\* listed buildings, protected wreck sites, and Grade I and II\* registered parks and gardens are of the highest significance.
- 3.6 Non-designated heritage assets may include those identified by the local authority, such as local listings or assets recorded on a Historic Environment Record, or assets identified during the course of an application (HE 2015). They are generally of lesser significance than designated heritage assets. However, non-designated archaeological assets may at times be of a significance commensurate to a scheduled monument, such as where they are not of a type suitable for designation or have not yet been formally assessed. Assessment of the significance of archaeological assets refers to criteria for scheduling monuments outlined by DCMS (2013), including period, rarity, documentation, group value, survival/condition, fragility/vulnerability, diversity and potential (DCMS 2013), as well as the Historic England Scheduling Selection Guides.
- 3.7 An assessment of significance will consider archaeological, historic, architectural and artistic interest of an asset, its fabric and its setting. In order to further understand significance, an assessment may also refer to the heritage values identified in *Historic England's Conservation Principles* (2008), namely evidential, historical, aesthetic and communal values. An assessment of significance should also seek to identify the nature, extent and level of significance for a particular heritage asset (HE 2015).

#### Assessment of Impacts

- 3.8 Change may preserve, enhance or harm the significance (value) of a heritage asset. In order to understand the impact of change it is necessary to first understand the significance of a heritage asset, and how this significance will be altered, both in terms of direct physical change, and change to setting (HE 2015). Assessment of impacts may also consider how an asset might be enhanced, or how loss of significance might be offset (ClfA 2017).
- 3.9 Guidance on the process for assessing impacts is also provided in *Principles of Cultural Heritage Impact Assessment in the UK* (IEMA, IHBC, ClfA 2021). Assessment of impacts through change to setting will reference the Historic England Guidance, *The Setting of Heritage Assets* (GPA3; HE 2017), discussed further in Section 5 and Appendix B.
- 3.10 With reference to the NPPF, harm may be expressed in terms of 'substantial harm' or 'less than substantial harm'. Substantial harm "is a

*high test, so it may not arise in many cases...It is the degree of harm to the asset's significance rather than the scale of the development that is to be assessed"* (PPG).

## 4.0 BASELINE HERITAGE CONDITIONS

4.1 This section reviews the recorded heritage resource within and around the Site with reference to the heritage databases, historic maps, aerial photographs and a site visit. A gazetteer of the recorded heritage resource is included in Appendix A and sites are illustrated on Figs. 1 (designated heritage assets) and 2 (historic environment record data). CSA reference numbers, as detailed in the gazetteer, are referenced in bold in the text. The chronology used in preparing this report refers to the Historic England Periods List (HE 2015b). The main categories are summarised in Table 4.1.

Table 4.1 Periods

Palaeolithic	950,000 – 10,000 BC	Roman	43 AD - 410
Mesolithic	10,000 – 4,000 BC	Early Medieval	410 – 1066
Neolithic	4,000 BC – 2,200 BC	Medieval	1066 - 1540
Bronze Age	2,600 BC – 700 BC	Post Medieval	1540 – 1901
Iron Age	800 BC – 43 AD	Modern	1901 - present

### Site Conditions

4.2 The Site mainly comprises horse paddock, situated across two fields, with associated stables (Plate 1, Plate 2). It also includes No. 42 Tollgate Road and its associated garden (Plate 3, Plate 4), and extends onto Tollgate Road. The Site is bounded by paddock to the north-west, residential properties and Tollgate Road to the north-east, fields/paddock to the east/south-east, and by the River Colne and woodland to the south-west. Boundaries on Site are a combination of fence, hedgerow and woodland.



Plate 1: View from within the Site, view to north-west



Plate 2: Stables within the Site, view to south-west



Plate 3: No. 42 Tollgate Road north-east elevation, view to south-west



Plate 4: View of rear of No. 42 Tollgate Road, view to north

## Designated Heritage Assets

4.3 No designated heritage assets are located within the Site. Designated heritage assets in the vicinity comprise listed buildings, namely:

- The Grade II listed Colney Heath Farmhouse and associated Grade II listed 'Barn on North Side of Farmyard', located c. 190m to the north-west of the Site (LB1)
- The Grade II Queen's Head Public House, now a private dwelling, located c. 220m to the north-west of the Site (LB11)
- Two London Coal Duty Markers located c. 200m and 270m to the north-west of the Site respectively (LB12, LB13)
- The Grade II listed Mill at Mill House, c. 190m to the west of the Site (LB2)
- The Grade II listed 68 Roestock Lane, c. 430m to the north-east of the Site (LB3)
- A Grade II listed Coal Duty Marker, c. 460m to the south-west of the Site (LB4)
- Three Grade II listed buildings at the High Street c. 690m to the north-west of the Site: The Crooked Billet Public House; Apsley Cottage and 94 High Street (LB5)
- A Grade II listed barn, c. 720m to the south-west of the Site (LB6)
- A Grade II listed London Coal Duty Marker, c. 900m to the north-west of the Site (LB7)
- Listed buildings within North Mymms Park between c.1.4km and 1.5km to the south-east of the Site, including the Grade I listed North

Mymms Park house (LB8); the Grade II\* listed Church of St Mary the Virgin (LB9), and the Grade II listed main gates and lodges (LB10)

- 4.4 Designated heritage assets are discussed in further detail in the period summaries below and the Setting Assessment section, where relevant.

#### Non-designated Heritage Assets

- 4.1 No non-designated heritage assets are recorded within the Site. No. 42 Tollgate Road was constructed c. 1930, with later alterations, and is not of any notable heritage interest. Non-designated heritage assets in the vicinity include the Locally Registered Park and Garden, North Mymms Park, located c. 300m to the south of the Site (17). Non-designated heritage assets are discussed in further detail in the period summaries below and the Setting Assessment section, where relevant.

#### Previous Archaeological Investigations

- 4.2 No previous archaeological works are recorded within the Site. Previous archaeological works recorded in the study area include:

- Fieldwalking survey along the route of a proposed pipeline which crosses the study area from north to south, c. 380m to the west of the Site at its closest point. This recorded worked flint and small amounts of pottery along the northern parts of the pipeline route and around Weathampstead, north of the study area (1)
- A review of aerial photographs which identified a squared ditched enclosure and linear ditches adjacent to Walsingham Wood, c. 540m to the south of the Site (2-5)
- A watching brief at Coursers Farm, c. 800m to the south-west of the Site, which recovered a sherd of medieval pottery but no significant archaeological features (6)
- A programme of archaeological works including geophysical survey, trial trench evaluation and aerial photograph review, c. 970m to the south-west of the Site, which recorded a Bronze Age barrow and medieval features possibly associated with a manorial site (7)
- Fieldwalking survey along the route of the proposed Stanborough-Roestock A1 improvement loop, c. 1km to the north of the Site at its closest point (8)
- A photographic survey of the Grade II listed Mill at Mill House, c. 190m to the west of the Site (LB2)

- 4.3 The results of these investigations are discussed further in the period summaries below, where relevant.

#### Geology, Topography and the Palaeoenvironment

- 4.4 The Site is situated on a gentle west-facing slope, immediately east of the (canalised) River Colne. Ground level at the highest point is around 75m AOD. The solid geology is mapped as Cretaceous Lewes Nodular

Chalk and Seaford Chalk Formation, overlain by superficial deposits of Lowestoft Formation diamicton, and Kesgrave Catchment Subgroup sand and gravel in the central/western area of the Site. Alluvial deposits are mapped along the River Colne at the south-western Site boundary (BGS 2022). There is some inherent potential for deposits of paleoenvironmental interest to be sealed within alluvium.

#### Prehistoric and Romano-British

- 4.5 There is limited evidence of prehistoric activity in the study area. A Mesolithic flint tranchet axe was recovered in 1973 during works on a pipeline at Colney Heath. The HER gives two locations for the find, the closest of which is c. 310m to the north-west of the Site, the other is further west (9 and 10; presumably either end of the pipeline). A Bronze Age round barrow is recorded immediately outside of the study area, c. 1km to the south-west of the Site at Coursers Farm (18).
- 4.6 The Site is located c. 7km east of the Roman settlement of Verulamium. The Roman Rural Settlement project suggests a Roman road may have run east from Verulamium, crossing the northern part of the study area, north of the Site (Allen *et al.* 2016; not on the HER). A cropmark recorded c. 100m to the south-east of the Site has been suggested as a possible Roman building (11; HER description). No cropmarks likely to represent a Roman building were visible on aerial photographs viewed at the Historic England Archives or online. A copy of the photograph listed as the HER source has been requested from the Verulamium Museum but was not available at the time of preparing this report.
- 4.7 Geophysical survey within the Site did not identify any anomalies suggestive of prehistoric or Roman period activity (Magnitude Surveys 2022, Appendix D).

#### Early Medieval and Medieval

- 4.8 The Site is located within the historic parish of North Mymms. The 14<sup>th</sup> century Church of St Mary the Virgin is located c. 1.5km to the south-east of the Site (LB9). Medieval activity is likely to have been focused around the church. Earthworks and cropmarks identified at Coursers Farm, c. 740m to the south-west of the Site, potentially relate to a medieval manor (6). Colney Heath Common, c. 200m to the north-west of the Site, may have been established during the medieval period (12).

#### Post-medieval and Modern

- 4.9 In the 19<sup>th</sup> century the Site was part of the North Mymms Estate and is recorded on an estate sales map of 1819 (Plate 5). The North Mymms Estate focused on North Mymms Park house (LB8), set within associated park (17). The Site was part of Tollgate Farm, with the associated farmstead located to the east of the Site (15). The Site itself extended

across three fields, in use as arable and pasture, part of lot 2 (Tollgate Farm).

- 4.10 No major changes are recorded within the Site on the mid-19<sup>th</sup> century Tithe survey. The site remained situated across three fields, described as grass, arable and furze (Plate 6). At this time the majority of the Site was under same occupancy as the Grade II listed Colney Heath Farmhouse (LB1).



Plate 5: Extract from the 1819 North Mymms Estate map (© Hertfordshire Archives and Local Studies)

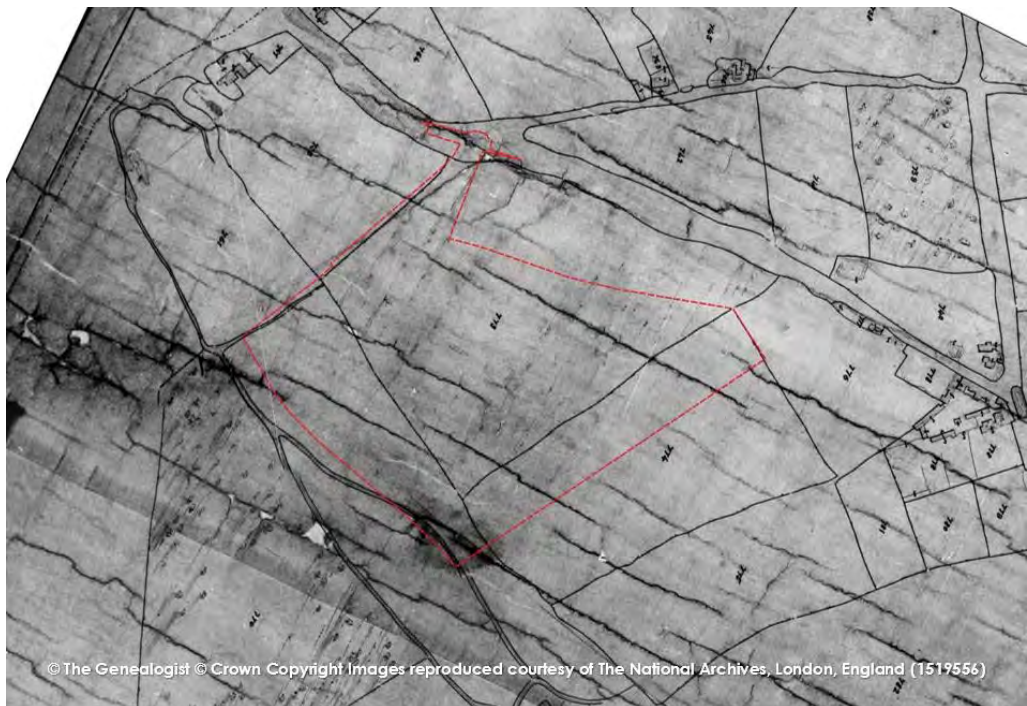


Plate 6: Extract from the 1844 North Mimms parish Tithe map



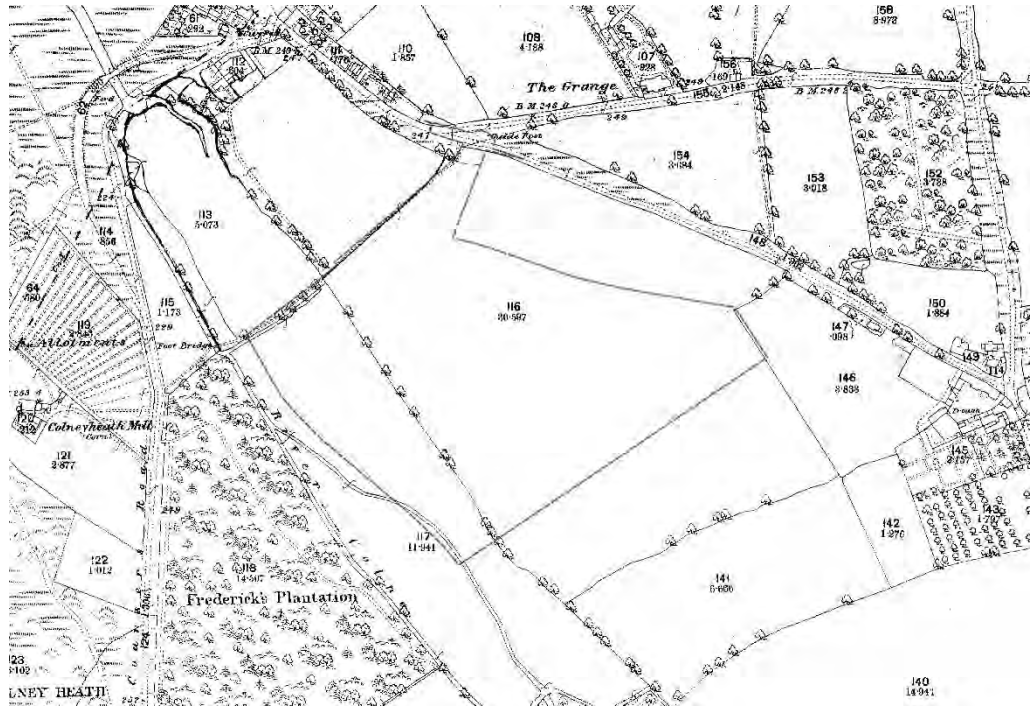


Plate 7: Extract from the 1880 First Edition Ordnance Survey map

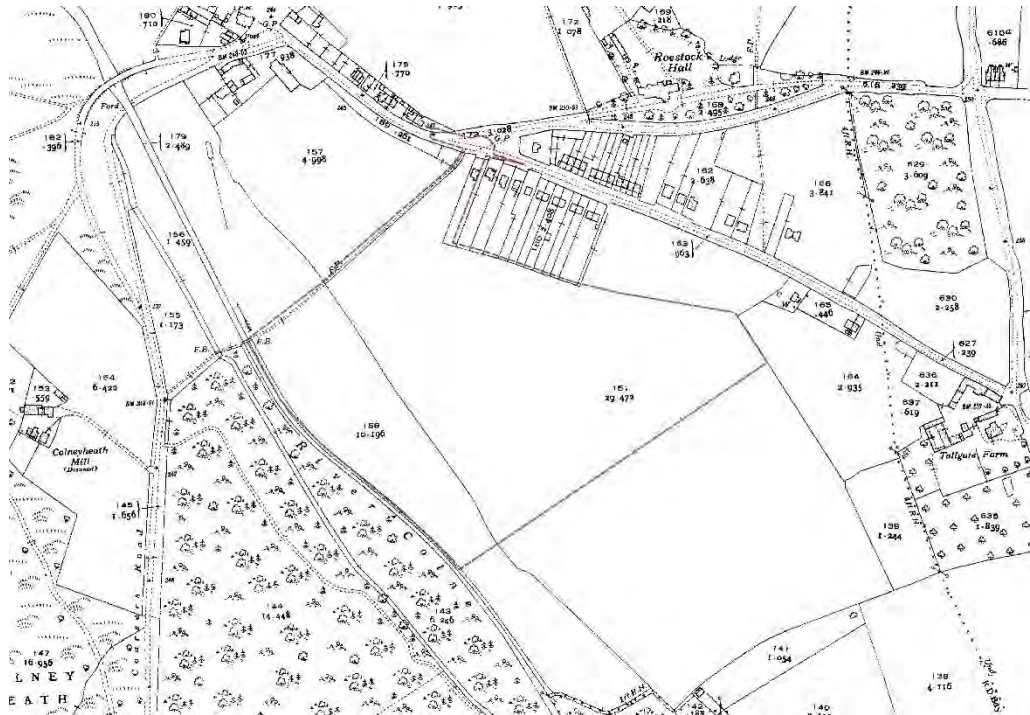


Plate 8: Extract from the 1939 Third Edition Ordnance Survey map



Plate 9: Extract from recent satellite imagery

- 4.11 Further boundary loss is recorded on the 1889 First Edition Ordnance Survey mapping (Plate 7). A row of detached properties, including No. 42 Tollgate Road, was constructed sometime between 1927 and 1939 (Plate 8). No. 42 Tollgate Road is a fairly typical detached 1930s dwelling, with later alterations, and is not of any notable heritage interest (Plate 3, Plate 4). Changes in the later-20<sup>th</sup> century include the establishment of stables and an associated riding arena in the northern area of the Site (Plate 9).

#### The wider area

- 4.12 North Mymms Park non-designated park and garden is located c. 300m to the south of the Site at its closest point (17). The park is associated with the Grade I listed North Mymms Park house (Fig 1, LB8). The house is dated c. 1600 and the park is recorded on mid-18<sup>th</sup> century maps. Other listed buildings within the park include the Grade II\* Church of St Mary the Virgin, a 14<sup>th</sup> century church, and The Old Vicarage, a post-medieval building (LB9). The post medieval park and the house are currently under private ownership.
- 4.13 As noted above, Tollgate Farm is located c. 180m to the east of the Site (15). Buildings are recorded here on the 19<sup>th</sup> century mapping, some of which remain extant. A tollgate was located on Tollgate Road to its east, opposite the junction with Bullen's Green Lane. Little Tollgate Farm was located to the north.
- 4.14 Undated cropmarks including a square ditched enclosure and linear ditches are recorded within North Mymms Park, c. 880m to the south of the Site (13). A cropmark/soilmark located c. 870m to the west of the Site is suggested as the location of a former building, or alternatively may be

associated with motorway construction (14). A 19<sup>th</sup>-century letter box is recorded at Roestock Green, c. 915m to the north-east of the Site (16).

## 5.0 SETTING ASSESSMENT

- 5.1 This section follows the methodology detailed in the Historic England Guidance *The Setting of Heritage Assets* (HE 2017). This recommends a stepped approach, as detailed in Appendix B.
- 5.2 In line with step 1 of the guidance, consideration was given to which heritage assets in the vicinity of the Site include the Site as part of their setting, and which may therefore be affected by the proposed development.
- 5.3 The site visit identified intervisibility between the Site and the Grade II listed buildings Colney Heath Farmhouse and associated barn, c. 180m to the north of the Site (LB1). There is also some limited intervisibility with the Grade II listed **Queen's Head Public House**, c. 220m to the north of the Site (LB11). These are considered in further detail below. Grade II listed Coal Duty Markers to the north-west of the Site (LB12, LB13) are not considered to be sensitive to adverse impacts as a result of residential development of the Site.
- 5.4 The site visit also identified limited intervisibility with the Grade I listed North Mymms Park house (LB8), c. 1.4km south of the Site, which is located within associated non-designated park, c. 300m south of the Site at its closest point (17). Land within the Site was historically associated with Tollgate Farm, c. 200m east of the Site (15), part of the wider North Mymms Park estate holding. These assets are discussed in further detail below.
- 5.5 A review of other heritage assets in the wider area, taking into account factors including intervisibility, distance and historic association, did not identify any considered sensitive to adverse impacts as a result of residential development of the Site.

### Colney Heath Farmhouse

- 5.6 The Grade II listed *Colney Heath Farmhouse and Attached Barn*, and associated Grade II listed *Barn on North Site of Farmyard At Colney Heath Farm* (hereafter 'Colney Heath Farmhouse' and 'barn') are located c. 180m to the north of the Site. The farmhouse is a timber-framed, late-17<sup>th</sup> century building, with later alterations (Plate 10). The detached barn is late 18<sup>th</sup> century, also with later alterations. At the time of the 1844 Tithe survey the majority of the Site was under the same occupancy at Colney Heath Farm, although had previously been associated with Tollgate Farm (see above).
- 5.7 The immediate setting of Colney Heath Farmhouse and detached barn comprises adjacent garden and yards. The buildings are located to the south of Courser Road. The White Barn, an earlier-20<sup>th</sup> century barn, is located immediately to the east, with Tollgate Road beyond. The setting

to the south and west comprises adjacent paddock, with the Site beyond, and the River Colne. The site visit identified views to Colney Heath Farmhouse and the associated barn from within the Site (Plate 11, Plate 12, Plate 13). There will be corresponding views towards the Site from the southern side of the listed buildings, including from upper floors, and their adjacent plots.



Plate 10: View of Colney Heath Farmhouse from adjacent road, view to south-east



Plate 11: View to Colney Heath Farmhouse and barn from the north-western Site boundary, view to north-west



Plate 12: View to Colney Heath Farmhouse from the north-western area of the Site, view to north



Plate 13: View to Colney Heath Farmhouse the southern part of the Site, looking north-west

- 5.8 The Grade II listed Colney Heath Farmhouse and associated detached barn are designated heritage assets. The Farmhouse principally derives its significance from its historic interest as an example of a 17<sup>th</sup> century timber-framed farmhouse, and the corresponding evidential and historic value. Associated historic barns also contribute to its significance. The barn also derives its significance from its historic interest as an example of an 18<sup>th</sup>-century barn, although principally from its association with the farmhouse. The relationship between the historic buildings contributes to their significance. Immediately adjacent

agricultural land to the south forms the historic setting and associated historic landholding and contributes to the significance of the farmhouse. More distant agricultural land within the Site has a looser historic connection, although can still be considered to make some minimal contribution to the significance of the farmhouse as part of its wider historic agricultural setting.

- 5.9 Development of the Site will alter agricultural land to the south of the listed buildings to residential built form with associated open space. Immediately adjacent agricultural land would be unchanged. The alteration of the wider agricultural setting to residential built form and open space would potentially result in some limited adverse impact to the significance of Colney Heath Farmhouse. However, given the retention of intervening paddock, and the limited historic association, it is anticipated that harm will be negligible at most, which is to say less than substantial harm at the very lowermost end of this harm spectrum.

### **Queen's Head Public House**

- 5.10 The Grade II listed Queen's Head Public House, located c. 220m to the north of the Site, dates from the late 17<sup>th</sup> century, with later extensions and alterations. It is a timber-framed building with painted brick casing. The canted bay at the front was reportedly used for the collection of coal tax. The building has been converted to a private dwelling.
- 5.11 The immediate setting of the former Queen's Head Public House includes the adjacent roads and junction, and surrounding buildings. There are views to the south gable of the listed building from within the Site, looking across intervening paddock (Plate 11). Ground level views towards the Site from the road adjacent to the listed building are screened by intervening buildings and vegetation.
- 5.12 The Grade II listed former Queen's Head Public House is a designated heritage asset. It principally derives its significance from its historic interest as an example of a 17<sup>th</sup>-century public house, and the corresponding evidential and illustrative value contained in its built fabric. Its road-side location is associated with its function. Given its reported association with coal tax collection, nearby coal duty markers may also be considered to contribute to its significance. Agricultural land within the Site does not contribute to the significance of the listed building and distant views towards the southern gable from within the Site are not key views.
- 5.13 Development of the Site will alter agricultural land to the south of the former Queen's Head Public House to residential built form with associated open space, located beyond intervening paddock. The relationship of the former public house with the road to the east and nearby coal duty markers will remain. Residential development of the

Site would not adversely impact the significance of the Grade II listed former Queen's Head Public House.

#### Tollgate Farm

- 5.14 Tollgate Farm is located c. 200m to the east of the Site. It is recorded on the HER and historic buildings at the farm can be considered non-designated heritage assets (15). The farm is recorded on the 1819 North Mymms estate sales map, and the Site was part of the same lot at this time (Plate 5). By the time of the 1844 Tithe the Site was under separate ownership/occupancy. The farm is shown on historical maps with an informal courtyard layout around the triangular yard. The farmstead reportedly managed the adjacent tollgate.
- 5.15 The immediate setting of the farm includes its associated farmyard and the immediately adjacent agricultural fields. The site visit identified limited views from the southern part of the Site, towards the farm, although largely screened by modern agricultural silos and vegetation (Plate 14).



Plate 14: View towards Tollgate Farm from the southern edge of the Site, looking east

- 5.16 Historic buildings at Tollgate Farm principally derive their significance from their modest historic interest as an example of a late post medieval farmstead, and also through their association with the post-medieval toll road. The Site forms part of its wider setting to a limited extent but given the loose historic connection, limited intervisibility, and distance, it is not anticipated that development of the Site would adversely impact the significance of historic buildings at Tollgate Farm.



## North Mymms Park

- 5.17 The Grade I listed North Mymms Park house is located c. 1.4km to the south of the Site. The house dates from c. 1600, with 19<sup>th</sup>-century extensions and alterations. It is two-storey plus attic, in red brick with ashlar dressings, and has a H-shaped plan. The north-western main elevation has projecting outer gable ends and a large central gabled oriel window. The late 19<sup>th</sup> century extension to the south-east wing added a loggia.
- 5.18 North Mymms Park house is located within the non-designated North Mymms Park. The park, c. 300m south of the Site at its closest point, forms the surrounding designed setting to the house and includes a number of other listed buildings. The wider setting includes surrounding agricultural land, as well as settlement and infrastructure.
- 5.19 In the early-19<sup>th</sup> century, the Site was part of the North Mymms Park estate; the Site was not park but was part of the wider agricultural landholding (see above). The Site visit identified filtered views from the south-eastern area of the Site towards North Mymms Park house (Plate 15). These are winter views and would be further screened in summer. The house was not visible from other accessible areas of the Site. Trees within the park are also visible from the eastern area of the Site (Plate 16).



Plate 15: View to North Mymms Park house from the south-eastern corner of the Site, looking south



Plate 16: View to trees within North Mymms Park from the eastern part of the Site, looking south

- 5.20 The Grade I North Mymms Park house is a designated heritage asset of the highest significance. It principally derives its significance from the architectural and historic interest associated with its built form. Its associated park contributes to the significance of the house and forms its designed setting. North Mymms Park Locally Registered Park is a non-designated heritage asset. It principally derives its significance from its association with North Mymms Park house, and also from the historic interest of its designed layout. Agricultural land within the Site was part of the wider estate in the early-19<sup>th</sup> century and forms a small part of the wider historic agricultural setting to North Mymms Park house and park, with some limited intervisibility in the eastern area. Agricultural land within the Site makes at most a very minimal contribution to the significance of North Mymms Park house.
- 5.21 Development of the Site has the potential to result in an adverse impact to the significance of the Grade I listed North Mymms Park house and associated non-designated park, though the introduction of new built form in their wider, historically associated, agricultural setting. Formulation of design plans have taken into account the limited intervisibility with North Mymms Park house and include for open space in the south-eastern corner of the Site, and enhanced screening along the south-eastern boundary. Given the distance, and in the context of existing built form to the north of the Site, it is anticipated that any harm to the significance of North Mymms Park house would be negligible at the very most, in the event that new built for is visible from the northern elevation, reducing to no harm once new screening vegetation is

established along the south-eastern Site boundary. No harm is anticipated to the park.

## 6.0 CONCLUSIONS

- 6.1 There is limited evidence of prehistoric and Roman period activity in the study area. The possible route of a Roman road crosses to the north of the Site and the HER records cropmarks potentially associated with a Roman building c. 100m south-east of the Site. The Site was likely in agricultural use from the medieval period. Geophysical survey did not identify any anomalies of likely archaeological interest although some discrete anomalies of uncertain origin were recorded. No further archaeological works are suggested to inform the determination of an outline planning application.
- 6.2 The Site is part of the wider agricultural setting to the Grade II listed Colney Heath Farmhouse. Based on current design plans, is anticipated that any harm to Colney Heath Farmhouse would be negligible at most, which is to say less than substantial harm at the very lowermost end of this harm spectrum. The assessment identified very limited intervisibility with North Mymms Park House, c. 1.4km south of the Site. Harm to North Mymms Park House is anticipated to be negligible at the very most, in the event of new built form being visible from the northern elevation, reducing to no harm once new screening vegetation is established along the south-eastern Site boundary.

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Appendix A  
Heritage Data Gazetteers

Designated Heritage Assets

CSA Ref.	NHLE Ref.	Name/Designation
LB1	1103019	Grade II Listed Building COLNEY HEATH FARMHOUSE AND ATTACHED BARN
	1103020	Grade II Listed Building BARN ON NORTH SIDE OF FARMYARD AT COLNEY HEATH FARM
LB2	1296524	Grade II Listed Building MILL AT MILL HOUSE
LB3	1172857	Grade II Listed Building 68, ROESTOCK LANE
LB4	1103022	Grade II Listed Building LONDON COAL DUTY MARKER ON SOUTH EAST SIDE OF ROAD AT SOUTHERN BOUNDARY OF PARISH
LB5	1261870	Grade II Listed Building THE CROOKED BILLET PUBLIC HOUSE
	1172854	Grade II Listed Building APSLEY COTTAGE
	1103027	Grade II Listed Building 94, HIGH STREET
LB6	1175132	Grade II Listed Building BARN ABOUT 60 METRES NORTH WEST OF COURSERS FARM HOUSE
LB7	1103017	Grade II Listed Building LONDON COAL DUTY MARKER ON NORTH SIDE OF RIVER COLNE, 15 METRES FROM LANE
LB8	1100946	Grade I Listed Building NORTH MYMMS PARK WITH ADJOINING GARDEN WALLS AND HA HA
	1100948	Grade II Listed Building ICE HOUSE AT NORTH MYMMS PARK
	1100947	Grade II Listed Building THE STABLE BLOCK AT NORTH MYMMS PARK
LB9	1100951	Grade II* Listed Building CHURCH OF ST MARY THE VIRGIN
	1174919	Grade II Listed Building THE OLD VICARAGE
	1348196	Grade II Listed Building GATE AND SCREEN TO NORTH EAST ENTRANCE TO NORTH MYMMS PARK ADJOINING CHURCHYARD
	1174206	Grade II Listed Building KEMBLE TOMB IN CHURCHYARD OF CHURCH OF ST MARY THE VIRGIN
	1100952	Grade II Listed Building GAUSSEN TOMB IN CHURCHYARD OF CHURCH OF ST MARY THE VIRGIN
	1348197	Grade II Listed Building TOMB ON SOUTH SIDE OF CHANCEL OF CHURCH OF ST MARY THE VIRGIN
	1100953	Grade II Listed Building CHURCH COTTAGE
	1174212	Grade II Listed Building TOMB SOUTH EAST OF CHURCH OF ST MARY THE VIRGIN, NEAR CHURCH COTTAGE



LB10	1100950	Grade II Listed Building BRIDGE TO MAIN ENTRANCE TO NORTH MYMMS PARK
	1100949	Grade II Listed Building MAIN GATES, OCTAGONAL LODGE, WALLS, EAST LODGE AND SERVICE GATES TO NORTH MYMMS PARK
LB11	1172848	Grade II Listed Building QUEEN'S HEAD PUBLIC HOUSE
LB12	1103021	Grade II Listed Building LONDON COAL DUTY MARKER ADJOINING SOUTH CORNER OF GARDEN TO QUEENS HEAD PUBLIC HOUSE
LB13	1103026	Grade II Listed Building LONDON COAL DUTY MARKER ON COLNEY HEATH, 20 METRES FROM ROAD, OPPOSITE COCK INN

HER data

CSA Ref./Summary	HER No.	HER Description
1	EHT4113	Fieldwalking survey of the Peters Green to South Mimms pipeline, 1997
2	EHT1887	AIR PHOTO OF A SQUARE DITCHED ENCLOSURE AND LINEAR DITCHES, ADJ. TO WALSINGHAM WOOD, NORTH MYMMS
3	EHT1894	AIR PHOTO OF A SQUARE DITCHED ENCLOSURE AND LINEAR DITCHES, ADJ. TO WALSINGHAM WOOD, NORTH MYMMS
4	EHT1888	AIR PHOTO OF A SQUARE DITCHED ENCLOSURE AND LINEAR DITCHES, ADJ. TO WALSINGHAM WOOD, NORTH MYMMS
5	EHT2646	AIR PHOTO OF A SQUARE DITCHED ENCLOSURE AND LINEAR DITCHES, ADJ. TO WALSINGHAM WOOD, NORTH MYMMS
	EHT2027	AIR PHOTO OF A SQUARE DITCHED ENCLOSURE AND LINEAR DITCHES, ADJ. TO WALSINGHAM WOOD, NORTH MYMMS
6	EHT4920	Watching brief at Coursers Farm, near Colney Heath, 2000
	MHT18087	CROPMARKS OF POSSIBLE CIRCULAR FEATURES AND DITCHES, COURSERS ROAD, RIDGE
	MHT11527	EARTHWORKS, COURSERS FARM, RIDGE
	MHT18186	UNDATED DITCH AND POSSIBLE BANK, COURSERS FARM, RIDGE
	MHT6214	POSSIBLE MANORIAL SITE, COURSERS FARM
7	EHT7214	Evaluation at Coursers Farm, Tyttenhanger, 2011
	EHT7213	Geophysical survey of land at Coursers Farm, Tyttenhanger, 2011
	EHT2852	AIR PHOTO OF EARTHWORKS AT COURSERS FARM, RIDGE
8	EHT7866	Fieldwalking on the proposed Stanborough-Roestock A1 improvement loop, 1974
9	MHT1884	MESOLITHIC FLINT AXE, COLNEY HEATH, ST ALBANS
10	MHT1883	MESOLITHIC FLINT AXE, COLNEY HEATH, ST ALBANS

11	MHT1180	CROPMARK OF RECTILINEAR ENCLOSURE, COLNEY HEATH
12	MHT12454	COLNEY HEATH COMMON, COLNEY HEATH
13	MHT11528	CROPMARKS OF SQUARE DITCHED ENCLOSURE AND LINEAR DITCHES, BY WALSINGHAM WOOD, NORTH MYMMS
14	MHT18088	SOILMARK OF POSSIBLE BUILDING, EAST OF TOLLGATE WOOD, DELLSOME LANE, SOUTH HATFIELD
15	MHT30699	SITE OF LITTLE TOLLGATE FARM, BULLEN'S GREEN LANE, NORTH MYMMS
	MHT30698	TOLLGATE FARM, TOLLGATE ROAD, NORTH MYMMS
	MHT30697	SITE OF TOLL BAR, TOLLGATE ROAD, NORTH MYMMS
16	MHT5277	LETTER BOX, ROESTOCK GREEN, COLNEY HEATH
17	MHT9593	NORTH MYMMS PARK, DEERPARK AND GARDEN, NORTH MYMMS
See LB1	MHT13647	COLNEY HEATH FARM, COURSERS ROAD, COLNEY HEATH
	MHT5732	LONDON COAL DUTY MARKER, COLNEY HEATH
	MHT5731	LONDON COAL DUTY MARKER, COURSERS ROAD/HIGH STREET, COLNEY HEATH
	MHT13645	QUEEN'S HEAD PUBLIC HOUSE, HIGH STREET, COLNEY HEATH
	MHT13646	THE COCK INN, 18 HIGH STREET, COLNEY HEATH
See LB2	EHT7448	Photographic recording of the mill tower, Coursers Road, Colney Heath, 2012
	MHT5828	COLNEYHEATH MILL, COURSERS ROAD, COLNEY HEATH
See LB4	MHT5733	LONDON COAL DUTY MARKER, NEAR COURSERS FARM, COLNEY HEATH
See LB6	MHT17539	COURSERS FARM, COURSERS ROAD, COLNEY HEATH
See LB7	MHT5734	LONDON COAL DUTY MARKER, PARK LANE, COLNEY HEATH

## Appendix B

### Legislation, Policy and Guidance

The Ancient Monuments and Archaeological Areas Act (1979) forms the principal legislation for designated archaeological sites. It relates to Scheduled Monuments and designated Areas of Archaeological Importance (the historic city centres of Canterbury, Chester, Exeter, Hereford and York). The 1979 Act does not contain any requirements relating to the setting of designated archaeological assets.

The Planning (Listed Buildings and Conservation Areas) Act 1990 (the 1990 Act) sets out legislation relating to listed buildings and conservation areas. With regards to listed buildings, Section 66 (1) of the 1990 Act states that *"in considering whether to grant planning permission for development which affects a listed building or its setting, the Local Planning Authority or, as the case may be, 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"*. With regards to conservation areas, Section 72 (1) of the 1990 Act states that *"...with respect to any building or other land in a conservation area...special attention shall be paid to the desirability of preserving or enhancing the character or appearance of that area"*.

National Planning Policy Framework (2021) (NPPF) sets out the government planning policies for England and how they should be applied. With regards to the historic environment, Chapter 16: Conserving and Enhancing the Historic Environment highlights that **heritage assets** *"are an irreplaceable resource, and should be conserved in a manner appropriate to their significance"* (NPPF paragraph 189).

A **heritage asset** is defined as *"a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions because of its heritage interest. Heritage assets include designated heritage assets and assets identified by the local planning authority (including local listing)"* (NPPF Annex 2). **Heritage significance** is defined as *"The value of a heritage asset to this and future generations because of its heritage interest. The interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting."* **Setting** is defined as *"the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve. Elements of a setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance or may be neutral"*.

With regards to the level of information to be provided, paragraph 194 of the NPPF states that *"In determining planning applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation"*.

With regards to considering impacts the NPPF states that *“great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance”* (paragraph 199).

With regards to impacts to designated heritage assets, *“Any harm to, or loss of...should require clear and convincing justification”*, substantial harm to or loss of designated heritage assets of the highest significance should be *“wholly exceptional”*, and for grade II designated heritage assets should be *“exceptional”* (paragraph 200). Less than substantial harm to a designated heritage asset *“should be weighed against the public benefits of the proposal”* (paragraph 202). Footnote 68 clarifies that *“non-designated heritage assets of archaeological interest, which are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets”*.

With regards to non-designated heritage assets *“a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset”* (paragraph 203).

Where heritage assets will be lost as a result of development *“Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact”* (paragraph 205).

Advice on enhancing and conserving the historic environment is also published in the Planning Practice Guidance (2019) (PPG) which expands on how the historic environment should be assessed within the National Planning Policy Framework. This recognises that *“the conservation of heritage assets in a manner appropriate to their significance is a core planning principle, Heritage assets are an irreplaceable resource and effective conservation delivers wider social, cultural and economic and environmental benefits”*.

Local Planning Policy is contained within the St Albans City and District Development Plan including the District Local Plan Review 1994 'Saved' policies. St Albans City and District Council are preparing a new Local Plan 2020-2038.

The Historic England document Conservation Principles, Policies and Guidance (2008) sets out the recommended approach making decisions about the historic environment. It defines 'conservation' as *“the process of managing change to a significant place in its setting in ways that will best sustain its heritage values, while recognising opportunities to reveal or reinforce those values for present and future generations”* (Principle 4.2). In order to understand significance, it recommends consideration of four heritage 'values', evidential, historical, aesthetic and communal in relation to a 'place'. Conservation Principles uses the term 'place' to mean *“any part of the historic environment that can be perceived as having a distinct identity”*. Evidential value *“derives from the potential of a place to yield evidence about past human activity”*, derives from the physical remains or genetic lines that have been inherited from the past. The ability to understand and interpret the evidence tends to be diminished in proportion to the extent of its removal or replacement”. Historical value *“derives from the ways in which past people, events and aspects of life can be connected through a place to the present”*. Historical value is often

'illustrative', i.e. visible remains may illustrate an aspect of the past, or 'associative', i.e. may be associated with a notable family, person, event or movement. Aesthetic value "derives from the ways in which people draw sensory and intellectual stimulation from place" and may be associated with conscious design or 'fortuitous' development. **Communal value** "derives from the meanings of a place for the people who relate to it, or for whom it figures in their collective experience or memory". Communal value is closely related to historical associative value and aesthetic value but tends to have additional aspects such as commemorative, symbolic, social or spiritual values. Conservation Principles recommends that assessment of significance should also consider setting and context. Setting being "the surroundings in which a place is experienced, its local context, embracing present and past relationships to the adjacent landscape", with the clarification that "definition of the setting of a significant place will normally be guided by the extent to which material change within it could affect (enhance or diminish) the place's significance". Context relates to the "relationship between a place and other places". In the context of managing change to significant places Conservation Principles highlights that "Change to a significant place is inevitable, if only as a result of the passage of time, but can be neutral or beneficial in its effect on heritage values. It is only harmful if (and to the extent that) significance is eroded".

Historic England have prepared a series of advice notes including Good Practice Advice notes (GPAs) and Historic England Advice Notes (HEANs). The GPAs include Managing Significance in Decision-Taking in the Historic Environment: Historic Environment Good Practice Advice in Planning Note 2 (2015) which includes guidance relating to the assessment of significance through understanding the nature, extent and level of significance.

The IEMA, IHBA and ClfA guidance Principles of Cultural Heritage Impact Assessment in the UK details two principles and six analytical stages recommended for impact assessment, specifically:

A. Understanding cultural heritage assets:

1. describing the asset;
2. ascribing cultural significance; and
3. attributing importance.

B. Evaluating the consequences of change:

1. understanding change.
2. assessing impact; and
3. weighting the effect.

The Historic England guidance The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition) (2017) (GPA3) details the recommended approach to assessing setting and potential harm to heritage assets through alteration to setting. This clarifies that "setting is not itself a heritage asset...its importance lies in what it contributes to the significance of the heritage asset or to the ability to appreciate that significance". Historic England recommends that assessment of setting covers five broad steps:

Step 1: Identify which heritage assets and their settings are affected.

Step 2: Assess the degree to which these settings and views make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated.

Step 3: Assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it.

Step 4: Explore ways to maximise enhancement and avoid or minimise harm.

Step 5: Make and document the decision and monitor outcomes.

Step 1 should consider whether proposals have the potential to affect the setting of any heritage assets. Where appropriate this may utilise a 'search area' and 'Zone of Theoretical Visibility', as well as the nature of proposals. Step 2 should consider the assets physical surroundings and its relationship with other heritage assets, intangible associations with surroundings and patterns of use, the contribution made by factors such as noise and smell, as well as the ways in which views allow the significance of the asset to be appreciated. A non-exhaustive checklist of potential attributes is given on page 11 of GPA3, including items such as: topography, aspect, definition of surrounding spaces, formal design, orientation, historic materials, greenspace, vegetation, openness, functional relationships, history, change over time, surrounding character, views, intentional intervisibility, visual dominance, vibration, tranquillity, busyness, enclosure, land use, accessibility, patterns of movement, degree of interpretation, rarity, associations, artistic representations and traditions. Step 3 is informed by step 2 and considers the effects of the proposed development with reference to factors including location, siting, form, appearance and permanence. Minimising harm in Step 4 may include design alterations or the implementation of mitigating factors such as screening. Step 5 includes documenting steps 1-4, but also reviewing a scheme following its implementation.

## Appendix C

### Figures

Figure 1: Site Location Plan & Designated Heritage Assets

Figure 2: Historic Environment Record Data





-  Site Boundary
-  Grade II Listed Buildings
-  Grade I Listed Buildings
-  Registered Parks and Gardens
-  Grade II\* Listed Buildings



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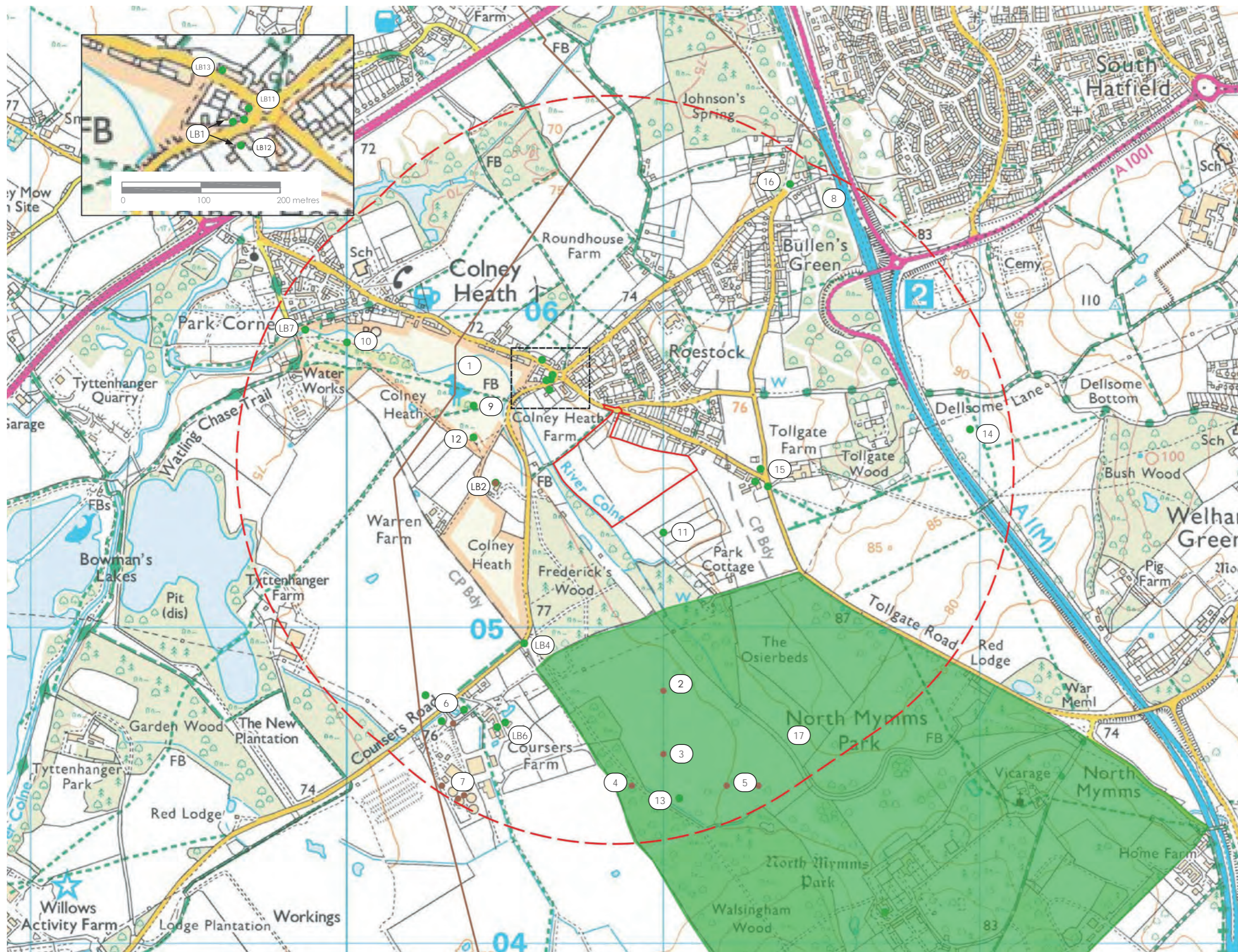
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**Project** Land of Tollgate Road, Colney Heath

**Drawing Title** Figure 1: Site Location Plan & Designated Heritage Assets

**Client** Vistry Group

<b>Drawing No.</b> CSA/3925/110	<b>Rev</b> A
<b>Scale @ A4</b> 1:25,000	<b>Drawn</b> FS
<b>Date</b> June 2022	<b>Checked</b> RM



- Site Boundary
- Study Area
- HER 'events' point\*
- HER 'events' line\*
- HER 'monuments' point\*
- HER 'monuments' polygon\*

\*(after Hertfordshire HER)



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Project	Land at Tollgate Road, Colney Heath	Date	June 2022	Drawing No.	CSA/3925/110
Drawing Title	Figure 2: Historic Environment Record data	Scale @ A3	1:12,500	Rev	A
Client	Vistry Group	Drawn	FS	Checked	RM

Appendix D

Geophysical Survey

Magnitude Surveys 2022. *Geophysical Survey Report: Land at Tollgate Road, Colney Heath*



**magnitude  
surveys**

**Geophysical Survey Report  
Land at Tollgate Road, Colney Heath**

**For  
CSA Environmental**

**On Behalf Of  
Vistry Group**

**Magnitude Surveys Ref: MSTL1258**

**OASIS Number: TBC**

**June 2022**



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**Issue Date:**

21 June 2022

## **Abstract**

A fluxgate gradiometer survey was successfully carried out over a c. 7.8ha survey area. No anomalies suggestive of significant archaeological features were identified; however, anomalies were detected that are of undetermined classification. Agricultural activity within the area has been identified as former ploughing trends. Anomalies resulting from natural processes have been identified as related to changes in underlying geology and soil, as well as possible extraction of chalk bedrock and gravel deposits. The impact of modern activity on the results was limited and corresponds with magnetic disturbance along field edges and along the route of a buried surface.

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## 1. Introduction

- 1.1. Magnitude Surveys Ltd (MS) was commissioned by CSA Environmental on behalf of Vistry Group to undertake a geophysical survey over a c. 7.8ha area of land at Tollgate Road, Colney Heath, St Albans, Hertfordshire (TL 20857 05492). An area of approximately 1ha including the stables, horse arena and garden of 42 Tollgate Road was not surveyed.
- 1.2. The geophysical survey comprised hand-carried GNSS-positioned fluxgate gradiometer survey. Magnetic survey is the standard primary geophysical method for archaeological applications in the UK due to its ability to detect a range of different features. The technique is particularly suited for detecting fired or magnetically enhanced features, such as ditches, pits, kilns, sunken featured buildings (SFBs) and industrial activity (David *et al.*, 2008).
- 1.3. The survey was conducted in line with the current best practice guidelines produced by Historic England (David *et al.*, 2008), the Chartered Institute for Archaeologists (CifA, 2020) and the European Archaeological Council (Schmidt *et al.*, 2015).
- 1.4. It was conducted in line with a WSI produced by MS (Garst, 2022).
- 1.5. The survey commenced on 06/06/2022 and ended on 07/06/2022.

## 2. Quality Assurance

- 2.1. Magnitude Surveys is a Registered Organisation of the Chartered Institute for Archaeologists (CifA), the chartered UK body for archaeologists, and a corporate member of ISAP (International Society for Archaeological Prospection).
- 2.2. The directors of MS are involved in cutting edge research and the development of guidance/policy. Specifically, Dr Chrys Harris has a PhD in archaeological geophysics from the University of Bradford, is a Member of CifA and is the Vice-Chair of the International Society for Archaeological Prospection (ISAP); Finnegan Pope-Carter has an MSc in archaeological geophysics and is a Fellow of the London Geological Society, as well as a member of GeoSIG (CifA Geophysics Special Interest Group); Dr Paul Johnson has a PhD in archaeology from the University of Southampton, is a Fellow of the Society of Antiquaries of London and a Member of CifA, has been a member of the ISAP Management Committee since 2015, and is currently the nominated representative for the EAA Archaeological Prospection Community to the board of the European Archaeological Association.
- 2.3. All MS managers, field and office staff have degree qualifications relevant to archaeology or geophysics and/or field experience.

## 3. Objectives

- 3.1. The objective of this geophysical survey was to assess the subsurface archaeological potential of the survey area.



## 4. Geographic Background

4.1. The survey area was located c. 750m south-east of Colney Heath (Figure 1). Gradiometer survey was undertaken across 3 fields under pasture. The survey area was bordered by a horse paddock to the north west, residential properties and Tollgate Road to the north, open fields to the south and east, and woodland and the River Colne to the south west (Figure 2). An area of c. 1ha including the stables, horse arena and garden of 42 Tollgate Road were not surveyed.

4.2. Survey considerations:

Survey Area	Ground Conditions	Further Notes
1	The survey area consisted of horse pasture gently sloping south-west.	Metal wire fences surrounded all sides of the field, with woodland bordering the western section of the survey area.
2	The survey area comprised of horse pasture gently sloping south-west.	Metal wire fences bordered the northern, western, and southern edges of the survey area, with hedgerows and residential properties present at the eastern border. Horse stables also bordered the northern boundary. Additionally, horse hurdles were located to the north-east of the survey area.
3	The survey area consisted of horse pasture slightly sloping south-west.	The field was bordered by hedgerows to the north and metal wire fences to the northern, western and eastern boundaries. Horse stables were present immediately to the east of the survey area.

4.3. The underlying geology comprises undifferentiated chalk of the Lewes Nodular Formation and Seaford Formation. Superficial deposits in the area included sedimentary diamicton of the Lowestoft Formation to the east, sand and gravel of the Kesgrave Catchment in the centre and alluvium- clay, silt, sand and gravel to the west (British Geological Survey, 2022).

4.4. The soils consist of freely draining slightly acid loamy soils (Soilscapes, 2022).

## 5. Archaeological Background

5.1. The following is a summary of a Heritage Desk Based Assessment produced and provided by CSA Environmental (CSA, Forthcoming).

5.2. There is limited evidence for prehistoric activity in the vicinity. A Mesolithic flint tranchet axe was recovered in 1973 during works on a pipeline at Colney Heath. A Bronze Age round barrow is recorded c. 1km south-west of the survey area.

5.3. The survey area is located c. 7km east of the Roman settlement of Verulamium. A Roman road may have run east from Veulamium, crossing the north of the site. The HER records a cropmark c. 100m south-east of the survey area, suggestive of a possible Roman building.

5.4. The survey area is located within the historic parish of North Mymms. Medieval activity is likely to have been focused around the 14<sup>th</sup>-century Church of St Mary the Virgin, located c. 1.5km

south-east of the survey area. Earthworks and cropmarks which potentially relate to a medieval manor have been identified at Coursers Farm c. 740m south-west of the survey area.

- 5.5. In the 19<sup>th</sup>-century the survey area was part of the North Mymms Estate. An 1819 sales catalogue records it as part of Tollgate Farm. No. 42 Tollgate Road was constructed at some time between 1927 and 1939, with the stables and associated riding area added in the later-20<sup>th</sup> century.

## 6. Methodology

### 6.1. Data Collection

6.1.1. Magnetometer surveys are generally the most cost effective and suitable geophysical technique for the detection of archaeology in England. Therefore, a magnetometer survey should be the preferred geophysical technique unless its use is precluded by any specific survey objectives or the site environment. For this site, no factors precluded the recommendation of a standard magnetometer survey. Geophysical survey therefore comprised the magnetic method as described in the following section.

6.1.2. Geophysical prospection comprised the magnetic method as described in the following table.

6.1.3. Table of survey strategies:

Method	Instrument	Traverse Interval	Sample Interval
Magnetic	Bartington Instruments Grad-13 Digital Three-Axis Gradiometer	1m	200Hz reprojected to 0.125m

6.1.4. The magnetic data were collected using MS' bespoke hand-carried GNSS-positioned system.

6.1.4.1. MS' hand-carried system was comprised of Bartington Instruments Grad 13 Digital Three-Axis Gradiometers. Positional referencing was through a multi-channel, multi-constellation GNSS Smart Antenna RTK GPS outputting in NMEA mode to ensure high positional accuracy of collected measurements. The RTK GPS is accurate to 0.008m + 1ppm in the horizontal and 0.015m + 1ppm in the vertical.

6.1.4.2. Magnetic and GPS data were stored on an SD card within MS' bespoke datalogger. The datalogger was continuously synced, via an in-field Wi-Fi unit, to servers within MS' offices. This allowed for data collection, processing and visualisation to be monitored in real-time as fieldwork was ongoing.

6.1.4.3. A navigation system was integrated with the RTK GPS, which was used to guide the surveyor. Data were collected by traversing the survey area along the longest possible lines, ensuring efficient collection and processing.

## 6.2. Data Processing

6.2.1. Magnetic data were processed in bespoke in-house software produced by MS. Processing steps conform to the EAC and Historic England guidelines for 'minimally enhanced data' (see Section 3.8 in Schmidt *et al.*, 2015: 33 and Section IV.2 in David *et al.*, 2008: 11).

Sensor Calibration – The sensors were calibrated using a bespoke in-house algorithm, which conforms to Olsen *et al.* (2003).

Zero Median Traverse – The median of each sensor traverse is calculated within a specified range and subtracted from the collected data. This removes striping effects caused by small variations in sensor electronics.

Projection to a Regular Grid – Data collected using RTK GPS positioning requires a uniform grid projection to visualise data. Data are rotated to best fit an orthogonal grid projection and are resampled onto the grid using an inverse distance-weighting algorithm.

Interpolation to Square Pixels – Data are interpolated using a bicubic algorithm to increase the pixel density between sensor traverses. This produces images with square pixels for ease of visualisation.

## 6.3. Data Visualisation and Interpretation

6.3.1. This report presents the gradient of the sensors' total field data as greyscale images, as well as the total field data from lower sensors (Figure 3). The gradient of the sensors minimises external interferences and reduces the blown-out responses from ferrous and other high contrast material. However, the contrast of weak or ephemeral anomalies can be reduced through the process of calculating the gradient. Consequently, some features can be clearer in the respective gradient or total field datasets. Multiple greyscale images of the gradient and total field at different plotting ranges have been used for data interpretation. Greyscale images should be viewed alongside the XY trace plot (Figure 6). XY trace plots visualise the magnitude and form of the geophysical response, aiding anomaly interpretation.

6.3.2. Geophysical results have been interpreted using greyscale images and XY traces in a layered environment, overlaid against open street maps, satellite imagery, historical maps, LiDAR data, and soil and geology maps. Google Earth (2022) was also consulted, to compare the results with recent land use.

6.3.3. Geodetic position of results – All vector and raster data have been projected into OSGB36 (ESPG27700) and can be provided upon request in ESRI Shapefile (.SHP) and Geotiff (.TIF) respectively. Figures are provided with raster and vector data projected against OS Open Data.

## 7. Results

### 7.1. Qualification

7.1.1. Geophysical results are not a map of the ground and are instead a direct measurement of subsurface properties. Detecting and mapping features requires that said features have properties that can be measured by the chosen technique(s) and that these properties have sufficient contrast with the background to be identifiable. The interpretation of any identified anomalies is inherently subjective. While the scrutiny of the results is undertaken by qualified, experienced individuals and rigorously checked for quality and consistency, it is often not possible to classify all anomaly sources. Where possible, an anomaly source will be identified along with the certainty of the interpretation. The only way to improve the interpretation of results is through a process of comparing excavated results with the geophysical reports. MS actively seek feedback on their reports, as well as reports from further work, in order to constantly improve our knowledge and service.

### 7.2. Discussion

7.2.1. A fluxgate gradiometer survey was undertaken across 3 pasture fields, with an area of land c. 1ha including the stables, horse arena and garden of 42 Tollgate Road not surveyed. The geophysical results are presented in combination with satellite imagery and historical maps (Figure 7).

7.2.2. The fluxgate gradiometer survey has responded well to the environment of the survey area and has detected agricultural, natural, and undetermined anomalies. Magnetic disturbance is localised to field boundaries and a buried service.

7.2.3. Agricultural activity was detected in the form of parallel linear trends characteristic of ploughing regimes, suggesting a previous agricultural use of the land. This is further substantiated by ploughing trends visible on satellite imagery.

7.2.4. Variations in the underlying geology and soils have been identified. This is visible in the data as broad banding caused by natural drainage and discreet spreads. Within these area of natural variations some localised extraction may have been detected, possibly demonstrating utilisation of the chalk bedrock and gravel superficial deposits, that has naturally been backfilled.

7.2.5. Anomalies characterised as 'Undetermined' have been classified as such, due to the ambiguity surrounding their morphology, context, and pattern. While these may have been caused by agricultural, natural, or modern processes, an archaeological origin cannot be entirely ruled out.

### 7.3. Interpretation

#### 7.3.1. General Statements

7.3.1.1. Geophysical anomalies will be discussed broadly as classification types across the survey area. Only anomalies that are distinctive or unusual will be discussed individually.

- 7.3.1.2. **Ferrous (Spike)** – Discrete dipolar anomalies are likely to be the result of isolated pieces of modern ferrous debris on or near the ground surface.
- 7.3.1.3. **Ferrous/Debris (Spread)** – A ferrous/debris spread refers to a concentration of multiple discrete, dipolar anomalies usually resulting from highly magnetic material such as rubble containing ceramic building materials and ferrous rubbish.
- 7.3.1.4. **Magnetic Disturbance** – The strong anomalies produced by extant metallic structures, typically including fencing, pylons, vehicles and service pipes, have been classified as ‘Magnetic Disturbance’. These magnetic ‘haloes’ will obscure weaker anomalies relating to nearby features, should they be present, often over a greater footprint than the structure causing them.
- 7.3.1.5. **Undetermined** – Anomalies are classified as Undetermined when the origin of the geophysical anomaly is ambiguous and there is no supporting contextual evidence to justify a more certain classification. These anomalies are likely to be the result of geological, pedological or agricultural processes, although an archaeological origin cannot be entirely ruled out. Undetermined anomalies are generally distinct from those caused by ferrous sources.

### 7.3.2. Magnetic Results – Specific Anomalies

- 7.3.2.1. **Agricultural (Trend)** – Across the survey area a series of parallel linear anomalies have been detected which exhibit a much weaker magnetic signal, most notable in the Total Field (Figure 3). These are very closely spaced and only a few indicative linear trends have been picked out to give an idea of direction and presence across the site. The orientation is well matched with modern cultivation visible in satellite imagery and are interpreted as agricultural trends caused by ploughing (Figure 7).
- 7.3.2.2. **Natural (Weak/Spread)** – The underlying geology across the survey area consists of chalk and free flowing loamy soils, which combined with the topography, means unimpeded water flows down through the site. This process is visible through the presence of wide positive bands. Areas with concentrations of discrete anomalies with an elevated magnetic signal have been detected, and are interpreted as natural spreads of material that reflect the geological variations within the survey area. Anomalies [1a & 2a] are characterised by a change in background consistency (Figures 3 & 4). This may indicate extraction of the chalk bedrock or gravel deposits that has been backfilled through natural processes. There is no indication of historical mapping of quarrying within the survey area but chalk and gravel pits are depicted in the surrounding area on the 1182-1918 OS mapping (Figure 7).
- 7.3.2.3. **Undetermined (Weak)** – The survey has identified weak, positive linear and curvilinear anomalies in the south-east of Area 1 and across Area 2. These magnetic responses have been classified as having an undetermined origin, because they lack any distinctive pattern, diagnostic morphology or corroborative evidence which would allow for a more confident interpretation.

It is possible that the anomalies are a result of modern, natural, or agricultural processes; however, an archaeological origin cannot be wholly ruled out.

- 7.3.2.4. **Service** – A strong dipolar linear response has been detected running along the western boundary of the survey area indicating the path of a buried service. This interpretation is based on the strong positive XY response along the course of this anomaly (Figure 6).

## 8. Conclusions

- 8.1. A fluxgate gradiometer survey was successfully carried out over a c. 7.8ha survey area, with c. 1ha of land including the stables, horse arena and garden of 42 Tollgate Road not surveyed. The geophysical survey has detected anthropogenic features of agricultural origin. In addition, anomalies of undetermined origin have been interpreted where a specific origin or date is uncertain. The anomalies ascribed an 'Undetermined' classification lack any distinctive archaeological shape or pattern; as such, no anomalies indicative of significant archaeological activity has been identified. Modern activity in the form of magnetic disturbance is generally limited to the boundaries of the survey area abutted by housing and the presence of an underground service.
- 8.2. Agricultural activity within the area has been identified in the form ploughing trends, more evidently in historical satellite imagery.
- 8.3. The survey has detected anomalies of natural origin, caused by changes in geology and soil properties or by possible extraction of chalk bedrock and gravel deposits.

## 9. Archiving

- 9.1. MS maintains an in-house digital archive, which is based on Schmidt and Ernenwein (2013). This stores the collected measurements, minimally processed data, georeferenced and un-georeferenced images, XY traces and a copy of the final report.
- 9.2. MS contributes reports to the ADS Grey Literature Library upon permission from the client, subject to any dictated time embargoes.

## 10. Copyright

- 10.1. Copyright and intellectual property pertaining to all reports, figures and datasets produced by Magnitude Services Ltd is retained by MS. The client is given full licence to use such material for their own purposes. Permission must be sought by any third party wishing to use or reproduce any IP owned by MS.

## 11. References

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## 12. Project Metadata

MS Job Code	MSTL1258
Project Name	Land at Tollgate Road, Colney Heath
Client	CSA Environmental
Grid Reference	TL 20857 05492
Survey Techniques	Magnetometry
Survey Size (ha)	7.8ha
Survey Dates	2022-06-06 to 2021-06-07
Project Lead	Leigh A. Garst BFA MSc
Project Officer	Leigh A. Garst BFA MSc
HER Event No	TBC
OASIS No	TBC
Report Version	1.0

## 13. Document History

Version	Comments	Author	Checked By	Date
0.1	Initial draft for Project Lead to Review	MC	LAG	13 June 2022
02	Draft following Correction from Project Lead	BH	LAG	14 June 2022
0.3	Draft following Director Correction	BH	LAG	15 June 2022
1.0	Minor Corrections from Client. Report Issued as Final	CA	CA	21 June 2022






MSTL1258- Land at Tollgate Road, Colney Heath

Figure 1 - Site Location

1:25,000 @ A4


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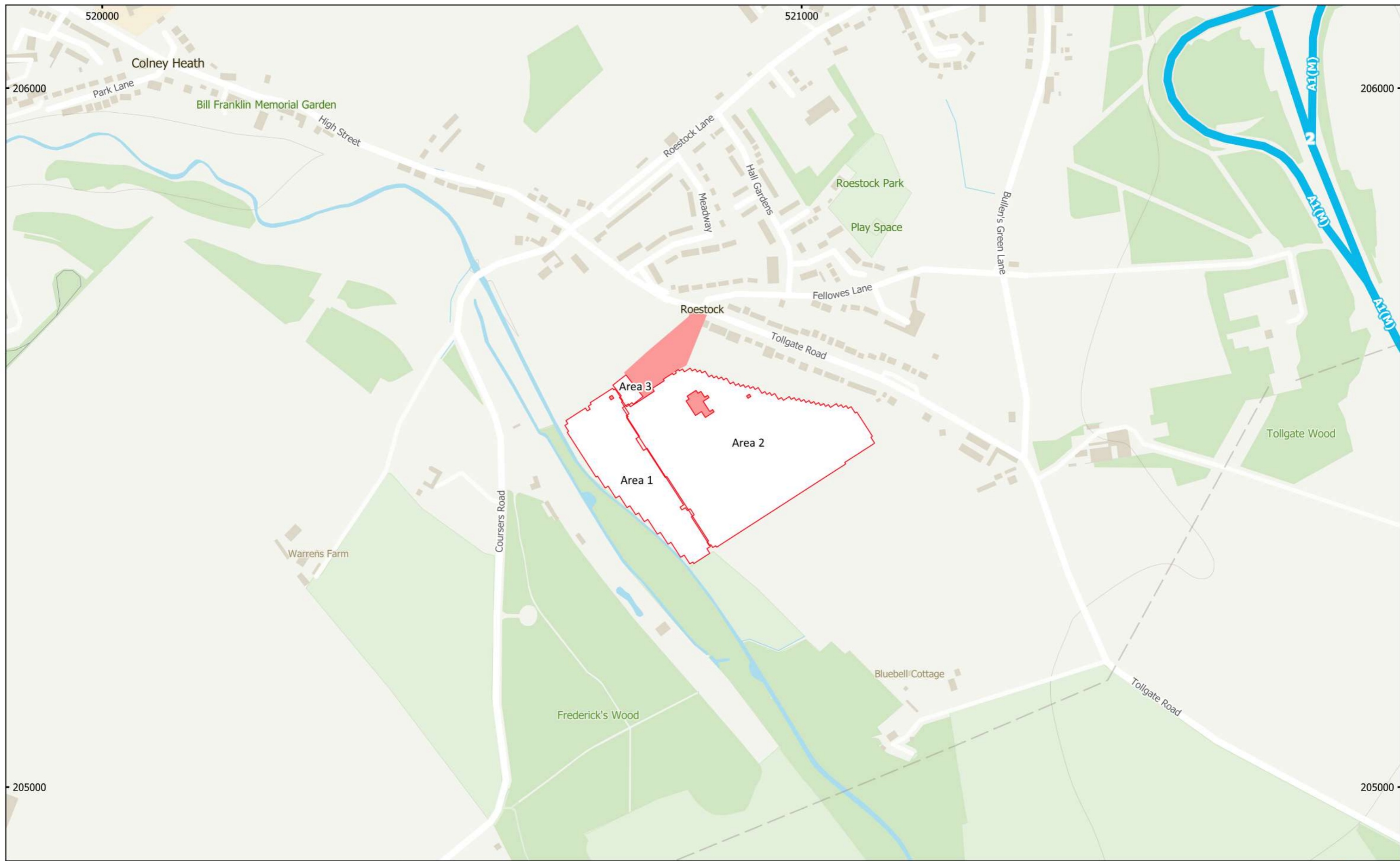
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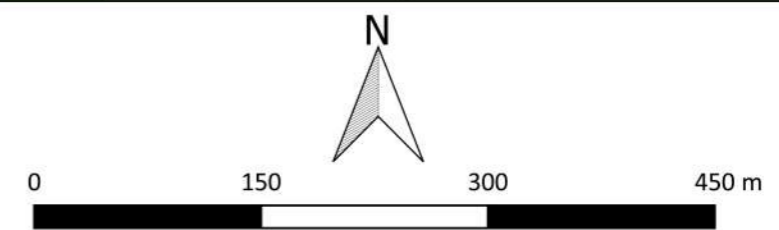



**magnitude**  
surveys



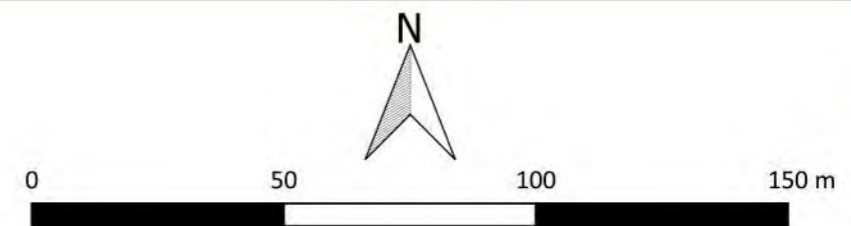
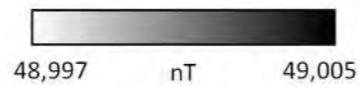
MSTL1258- Land at Tollgate Road, Colney Heath  
 Figure 2 - Location of Survey Areas  
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- Survey Extent
- Area Not Surveyed



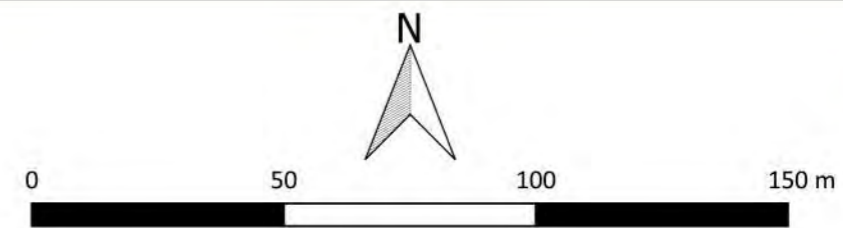


MSTL1258- Land at Tollgate Road, Colney Heath  
 Figure 3 - Magnetic Total Field (Lower Sensor)  
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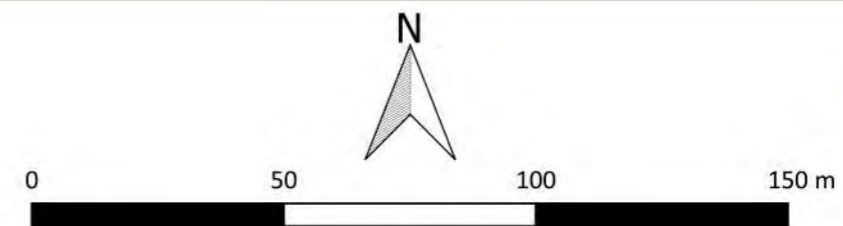
MSTL1258- Land at Tollgate Road, Colney Heath  
Figure 4 - Magnetic Gradient  
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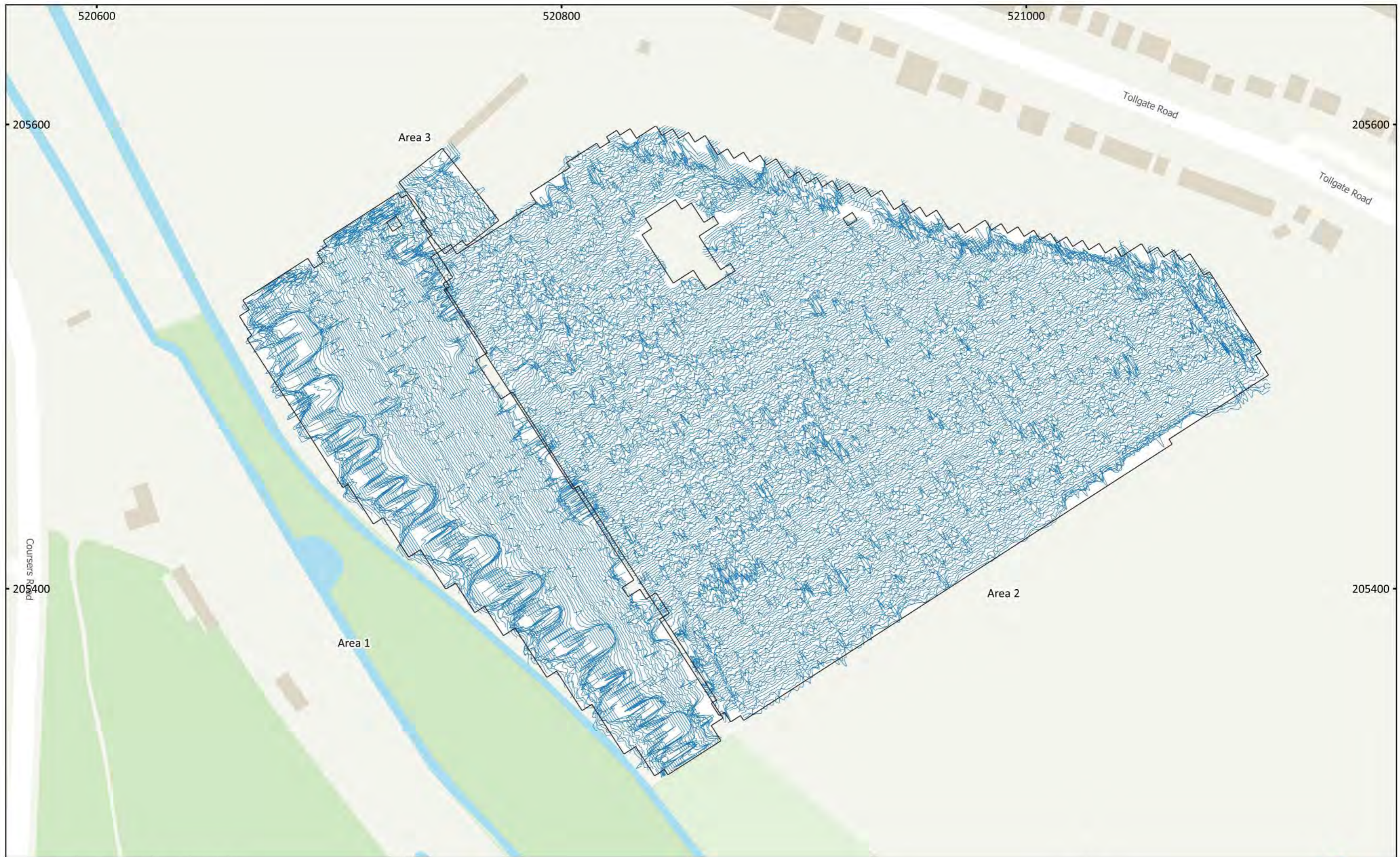




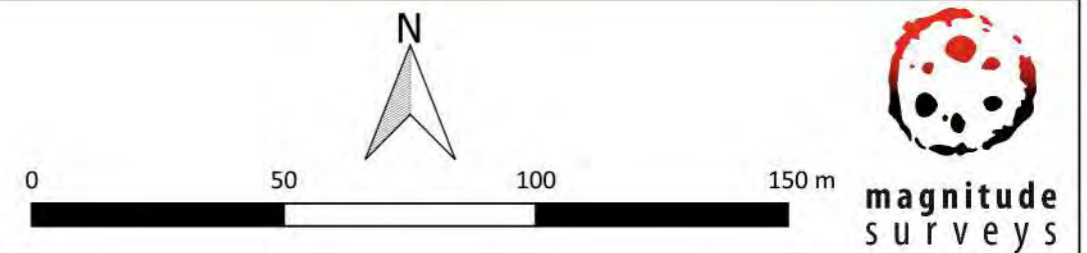
MSTL1258- Land at Tollgate Road, Colney Heath  
 Figure 5 - Magnetic Interpretation  
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- |  |   |
|--|---|
|  Natural (Strong)     |  Ferrous/Debris (Spread) |
|  Natural (Weak)       |  Agricultural (Trend)    |
|  Natural (Spread)     |  Service                 |
|  Undetermined (Weak)  |  Ferrous (Spike)         |
|  Magnetic Disturbance |   |



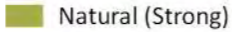
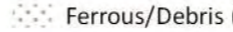
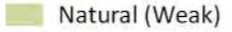
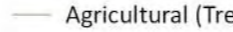
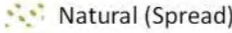
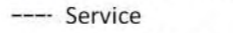
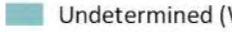
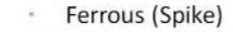
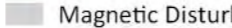


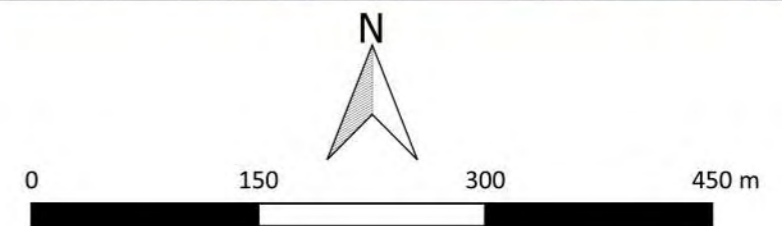
MSTL1258- Land at Tollgate Road, Colney Heath  
Figure 6 - XY Trace Plot  
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MSTL1258- Land at Tollgate Road, Colney Heath  
 Figure 7 - Magnetic Interpretation Over Historical Maps and Satellite Imagery  
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 Contains historical mapping © CLS Data 2022: Ordnance Survey, 6" 2nd  
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- |   |   |
|---|---|
|  Natural (Strong)     |  Ferrous/Debris (Spread) |
|  Natural (Weak)       |  Agricultural (Trend)    |
|  Natural (Spread)     |  Service                 |
|  Undetermined (Weak)  |  Ferrous (Spike)         |
|  Magnetic Disturbance |   |





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