

Land at Sawmills Field, Dartington, South Hams, Devon

Centred on SX 7844 6201

Historic Environment Assessment

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AC archaeology

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CONTENTS

	<i>Summary</i>	
1.	Introduction	1
2.	Aims and methodology	1
3.	Legislation and guidance	2
4.	Heritage assets	4
5.	Geophysical survey results	8
6.	Historical development of the area	8
7.	Site visit	9
8.	Assessment of significance	10
9.	Archaeological potential	11
10.	Conclusions	11
11.	Acknowledgements	12
12.	Sources consulted	12

List of figures

- Fig. 1: Location of site
- Fig. 2: Location of heritage assets
- Fig. 3: Geophysical survey interpretation
- Fig. 4: Historic Landscape Characterisation

List of plates

- Plate 1: View towards the application area from Dartington Primary School (sites B16 & B17), taken from the east
- Plate 2: View across the application area, taken from the southwest

Appendix 1: Summary of heritage assets

- Table 1: Summary of designated heritage assets
- Table 2: Summary of non-designated heritage assets

Appendix 2: Geophysical survey full report

Appendix 3: Historic map extracts

- Map 1: Extract from the Old Series Ordnance Survey Map sheet 22, surveyed 1809
- Map 2: Extract from County Map of Devon, surveyed by Greenwood 1827
- Map 3: Extract from the Dartington tithe map, 1840, with field names added from the apportionment of 1839
- Map 4: Extracts from the six-inch 1st edition Ordnance Survey Devon map sheets 120 NE & 121NW surveyed in 1885 & 1887 and published in 1890

Summary

An historic environment assessment and geophysical survey undertaken in support of a forthcoming planning application for residential development on land at Sawmills Field, Dartington, South Hams, Devon (centred on SX 7843 6201), has been carried out by AC archaeology and Substrata during April 2013. The site occupies approximately three hectares of mainly agricultural land and straddles the A385 road, on the northwest side of Dartington.

The main archaeological interest in the site is the presence of a probable prehistoric settlement enclosure recorded as a cropmark from aerial photographs. The presence of this feature appears to have been confirmed by the geophysical survey carried out as part of this assessment. In addition, the survey has identified a possible associated ring ditch or roundhouse, as well as a series of linear anomalies probably relating to former field boundaries. Some of the linear anomalies are likely to be post-medieval in date as they are shown on 19th century and later maps, while others are not depicted and potentially relate to earlier land division or drainage.

1. INTRODUCTION

- 1.1** This historic environment assessment has been prepared in support of a forthcoming planning application for residential development on land at Sawmills Field, Dartington, South Hams, Devon (centred on SX 7844 6201). It has been prepared by AC archaeology during April 2013 on behalf of Cavanna Homes. The location of the site is shown in Fig. 1.
- 1.2** The proposed development will comprise new housing and associated infrastructure including roads, garages, parking areas and services.
- 1.3** The application area is situated to the northwest of the centre of Dartington, on the north side of the main A385 running through the town towards Totnes to the southeast. The area of proposed development extends over an area of c. 3 hectares and comprises mainly the eastern part of a larger agricultural field. To the southeast, the application area boundary partly extends alongside the A385 road and to the south into an area currently occupied by light industrial units.
- 1.4** The underlying solid geology consists of sedimentary mudstone, siltstone, sandstone and limestone of the Norden Formation. These were laid down between 364 and 391 million years ago in an environment dominated by deep seas.

2. AIMS AND METHODOLOGY

- 2.1** The scope of the study has included designated heritage assets (World Heritage sites, Scheduled Monuments, Listed Buildings, Conservation Areas, Battlefield Sites, Registered Parks and Gardens) and non-designated assets (archaeological sites and finds, historic buildings, other historic landscape features or locally-designated features, or areas, of cultural heritage significance).
- 2.2** The information derived from the study has been used:
 - To assess the significance of the currently recorded archaeological resource of the study area;
 - To assess the potential for the discovery of additional sites of archaeological or cultural heritage interest within the boundaries of the proposed application area;
 - To identify possible effects of the proposed development, whether adverse or positive, and;
 - To allow a consideration of survey methods that might be used to more fully identify the archaeological and cultural heritage resource.

- 2.3** The study does *not* attempt to provide a detailed assessment of impacts of development on the identified and potential resource, nor provide any detailed mitigation proposals at this stage. A provisional overview of *possible* impacts of development on the principal heritage assets, however, does form part of this report.
- 2.4** The study has consisted of a desk-based assessment, as defined by the Institute for Archaeologists *Standard and Guidance for Historic Environment Desk-Based Assessment* (1994, revised 2011) and the *National Planning Policy Framework* (Department for Communities and Local Government 2012). The study area has comprised a zone of up to a 1km radius around the proposed application area, for both designated and non-designated heritage assets, as well as events.
- 2.5** The following data sources have been examined:
- Archaeological records, historic building information, aerial photographs and other relevant cultural Heritage data held at the Devon County Council Historic Environment Record (HER);
 - Historical cartographic, photographic and documentary information held at the Devon Heritage Centre, Exeter;
 - Heritage Gateway website;
 - British Geological Survey online database; and
 - Other relevant published or unpublished information.
- 2.6** A site inspection and walkover survey was undertaken on 24 April 2013. In addition, following consultation with the Devon County Council Archaeology Officer, the presence of a possible cropmark enclosure on the site (see below) meant that a geophysical survey was undertaken on the site. The results of this are summarised in section 5 below and included as Appendix 3.

3. LEGISLATION AND GUIDANCE

3.1 Relevant protection, guidance and policies relating to the protection, maintenance and enhancement of archaeological sites and other aspects of cultural Heritage that are relevant to this scheme may be summarised as follows:

3.2 Scheduled monuments

Scheduled monuments, as defined under the *Ancient Monuments and Archaeological Areas Act* (1979) are sites which have been selected by a set of non-statutory criteria to be of national importance. These criteria comprise period, rarity, documentation, group value, survival/condition, fragility/vulnerability, diversity, and potential. Where scheduled sites are affected by development proposals there is a presumption in favour of their physical preservation. There is also a presumption against developments which have a significant impact on the integrity of the setting of scheduled monuments. Any works, other than activities receiving class consent under *The Ancient Monuments (Class Consents) Order* 1981, as amended by *The Ancient Monuments (Class Consents) Order* 1994, which would have the effect of demolishing, destroying, damaging, removing, repairing, altering, adding to, flooding or covering up a Scheduled Monument require consent from the Secretary of State for the Department of Culture, Media and Sport.

3.3 National policy

General policy and guidance for the conservation of the historic environment are now contained in Chapter 12 of the new *National Planning Policy Framework* (Department for Communities and Local Government 2012). Archaeological sites, buildings, parks and gardens, conservation areas, battlefields or other aspects of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are now

considered heritage assets under a revised policy system. The relevant policies are listed below:

Paragraph 128

In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and 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.

Paragraph 129

Local planning authorities should identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the impact of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal.

Paragraph 132

When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, any harm or loss should require clear and convincing justification. Substantial harm to or loss of a Grade II listed building, park or garden should be exceptional. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, Grade I and II listed buildings, Grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.*

Paragraph 133

Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

- *the nature of the heritage asset prevents all reasonable uses of the site;*
- *no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation*
- *conservation by grant-funding or some form of charitable or public ownership is demonstrably not possible;*
- *the harm or loss is outweighed by the benefit of bringing the site back into use.*

Paragraph 134

Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal, including securing its optimum viable use.

Paragraph 135

The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that affect directly or indirectly non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

Paragraph 137

Local planning authorities should look for opportunities for new development within Conservation Areas and World Heritage Sites and within the setting of heritage assets to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to or better reveal the significance of the asset should be treated favourably.

Paragraph 139

Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets.

3.4 Historic hedgerows

Hedgerows of historic importance are afforded protection under *The Hedgerow Regulations 1997*, section 97 of the *Environment Act 1995*. The scheme has come into effect as of 1 June 1997 and any hedgerow which is defined, at that date, as being of historical or ecological importance requires grant of consent by the local planning authority prior to removal.

3.5 Local authority plan and district policies

3.5.1 South Hams District Council Core Strategy adopted 2006

The objectives outlined in the South Hams District Council Core Strategy that are relevant to this scheme are as follows:

SO20

Conserve and enhance the historic, architectural, and archaeological character and features of the district.

3.5.2 South Hams District Council Local Plan adopted 1996, saved 2010

Several policies were saved in 2010 that were first adopted in 1996. The policy that is relevant to this scheme is as follows:

Policy DP6: Historic Environment

The quality of all archaeological sites and Scheduled Ancient Monuments will be conserved and enhanced. Development that adversely affects the site or setting of a Scheduled Ancient Monument or other nationally important archaeological site will not be permitted. Development should not harm archaeological remains of local importance, except where the benefits of the development are considered to outweigh the value of the remains.

4. HERITAGE ASSETS

4.1 Designated heritage assets

A total of 23 designated heritage assets is recorded in the Devon HER as being located within the study area of 1km. Nineteen of these are situated within 500m of the application area. The majority of these assets are Grade II listed buildings, although there are also three Grade II* listed structures and one scheduled monument. The assets are tabulated in detail in Appendix 1, Table 1 and shown on Fig. 2.

4.1.1 Scheduled monuments located within the study area

Site B20 - Dartington Hall deer park was first enclosed in the early 14th century and later extended to the east to a total of 315 acres.

4.1.2 Grade II* listed structures located within the study area

Site B21 - The parish Church of St Mary was built between 1878 and 1880 reusing some of the material from the medieval church. The altar, originally from the old church, is made from the roof timbers of the former hall at Dartington Hall.

Site B22 - Old Postern was formerly the Parsonage. It has 15th century origins with later extensions and alterations. It was the temporary home of the Elmhursts during the restoration of Dartington Hall.

Site B23 High Cross Hill House was built in 1932 for the headmaster of Dartington School by W E Lescaze of Howe & Lescaze of America.

4.1.3 **Grade II listed structures within the study area**

Site B1 - Yarner Farmhouse: farmhouse with early 16th century origins.

Site B2 - Barn at Yarner Farm: barn of probable 17th century date.

Site B3 - Milestone south of Yarner Farm: granite milestone located to the south of Yarner Farm of early 19th century date.

Site B4 - Droridge Farm: early 16th century farmhouse.

Site B5 - Loward Cottage: cottage with 15th century origins.

Site B6 - Knoddy: house with 16th century origins.

Site B7 - Cott Inn: public house with early 17th century origins.

Site B8 - Bluebell Cottage: house of early 18th century date.

Site B9 - Cott Court: house, now converted into a row of cottages, with probably 16th century origins.

Site B10 - Newhouses with pigsty: row of seven cottages with pigsty of late 17th century date.

Site B11 - Smithy and adjoining outbuilding: house incorporating part of demolished smithy, probably 18th century origins.

Site B12 - Forder Cottage: former farmhouse, now divided into two cottages. Probably early 16th century date.

Site B13 - Office of the Dartington Hall Estate: built in 1935 by American architect W E Lescaze.

Site B14 - Spedding Cottage: row of three former almshouses, dated 1835.

Site B15 - Shinner's Bridge Cottages: terrace of three cottages built c.1840.

Site B16 - Pair of gate piers: located at the entrance to Dartington Church of England Primary School.

Site B17 - Dartington Church of England Primary School: built c. 1860-1870.

Site B18 - Shinner's Bridge House: former house, now converted to shops and offices. Probably has an early 17th century origin.

Site B19 - Pair of disused limekilns: probable medieval limekilns located at Shinner's Bridge Quarry.

4.2 **Non-designated heritage assets**

A total of 12 non-designated heritage assets has been identified within the study area that have been previously recorded in the Devon County HER (A1-A12) and from the site visit. These are tabulated in detail in Appendix 1, Table 2 and shown on Fig. 2.

4.2.1 **Palaeolithic** (c. 500,000 BC – c.10,000 BC)

In Devon the majority of the finds date from the Lower Palaeolithic. Middle and Upper Palaeolithic finds are restricted to the limestone cave sites of South Devon and Torbay. There are no sites of this period located within the 1km study area.

4.2.2 **Mesolithic** (c. 10,000 BC – c. 4,300BC)

Mesolithic sites are often identified through concentrations of flintwork and isolated pits, rather than by a number of diagnostic archaeological features relating to an inferred settlement site. There are no sites of Mesolithic date recorded within the 1km study area.

4.2.3 **Neolithic** (c. 4,300 BC – c. 2,300BC)

A fragment of polished Neolithic axe was found on the east side of Dartington (beyond the study area) at Foxhole Woods. This had been heat affected. There are no sites of known Neolithic sites within the 1km study area.

4.2.4 **Bronze Age - Sites A6 and A8** (c. 2,300 BC – c. 600 BC)

There are two sites located within the study area that is likely to be Bronze Age in date. A small probable ring ditch, approximately 10m in diameter, was identified through aerial photography in 1984 (site A6). A flint flake was also recovered as a surface find at Broom Park, to the north of the site which is also likely to date to the Bronze Age (site A8).

4.2.5 Iron Age - ?Site A9 (c. 600 BC – c. AD 43)

A square double ditched enclosure was identified through aerial photographs, situated to the west of Huxham's Cross, to the northwest of the study area. This is likely to be later prehistoric in date but no related earthworks are visible. A similar enclosure was also identified above a spring near Shinner's Bridge measuring c. 40m by 30m.

There are no certain sites of known Iron Age date within the 1km study area, although a probable settlement enclosure recorded on site itself (A9) might date to this period. The feature was partly identified during the geophysical survey (see section 5 below and Appendix 2).

4.2.6 Romano-British (c. AD 43 – c. AD 410)

The road aligned northwest-southeast between Totnes and Dartington, formerly known as Longcause, and what is now called Barrack Hill, it though to possible be the course of a former Roman road.

There are no sites of known Romano-British date located within the 1km study area

4.2.7 Early medieval (c. AD 410 – AD 1066)

Dartington is first mentioned in documentary sources in a royal charter of 833 as *Deretunehomm*. The elements that make up the name relate to the farm located on the bend of the River Dart (Gover *et al* 1931, Hemery 1982). The Martin family are known to have owned the manor of Dartington from the early 12th century until 1384 (Hoskins 1954). A Norman defensive site is thought to have existed to the east of Dartington, between the town and the River Dart, close to Nellies Wood.

There are no sites located within the 1km study area that are considered to be of early medieval date.

4.2.8 Medieval - Sites A1 and A2 (AD1066 – c. AD 1540)

In the Domesday survey of 1086 Dartington was referred to as *Dertrintone* and was part of the land that belonged to William de Falaise:

*William himself holds Dertrintone. Alwine held it in the time of King Edward, and it paid geld for 1 virgate of land. There is land for 15 ploughs, 9 slaves, 13 villans and 7 bordars with 8 ploughs and 2 swineherds rendering 21 pigs. There are 100 acres of pasture, woodland half a league long and 2 and half furlongs broad, and 30 acres of scrubland. Formerly, as now, worth £4.5s (Williams *et al* 2003).*

The manor of Dartington was held by the Martin family until 1384, when King Richard II granted it, along with other lands, to his half-brother John Holland who became Earl of Huntingdon and later Duke of Exeter. He made Dartington his principal seat in the county and much of the remaining medieval building at Dartington Hall was created by him between 1388 and 1400. Excavations at Dartington Hall have revealed the remains of the 13th century house occupied by the Martin family. The medieval church within the town was originally located adjacent to Dartington Hall.

The settlement at Yarnar, located to the west of the application area, is first mentioned in 1333 as *Yornere*. The place name elements for this suggest that it refers to an 'eagle slope or bank'. Droridge, located to the southwest, is first mentioned in 1330 as *Dryerugge* which means 'dry ridge'. The settlement at Week is also mentioned during the medieval period as *Wike*. The name element has been suggested to relate to Sarra atte Wyke who rented this area in 1330. However, due to the proximity to the River Dart, it may relate to salt production in this region. *La Wike* is also mentioned in 1403 when Agatha Maioun left her cottage and garden for use as

a church house. Medieval , as well as post-medieval pottery, have also been recovered from two field located to the west of Huxham's Cross.

There are two sites located within the study area of medieval date. Both are at Yarner Farm which is situated around 300m to the west of the application area. The farmstead at Yarner (site A1) is known to have medieval origins. A house located at Yarner is thought to have early-mid 16th century origins (site A2).

4.2.9 Post medieval - Sites A3 and A11 (c. AD1540 to AD 1900)

Throughout the medieval and post-medieval periods, Dartington was involved in the woollen industry which continued on a small scale into the 20th century. A document from 1579 mentions three mills within Dartington, all belonging to the manor. In 1559, the manor was bought by Sir Arthur Champernowne. Sir Arthur was Vice Admiral in the West for Queen Elizabeth I and he set about renovating the Hall at Dartington. A local landmark known as Yarner Beacon was constructed in 1586 as a response to the threat from the Spanish Armada; its construction was recorded in the churchwarden's accounts. The Champernowne family owned the manor until the 20th century, although many of the building of the estate were neglected and fell into ruin during the late 19th and 20th century as the agricultural depression of the 1870's hit the family's interests hard.

The original church of Dartington stood next to the hall and was mainly demolished in 1837, except for the tower which was left standing and became the memorial to the Champernowne family. The dimensions and style of the old church were transferred to the new church which was completed in 1880. The font, pulpit, roof and chancel screen were all re-used in the new church (Hoskins 1954).

There are two sites located within the study area that are of post-medieval date. Site A3 consists of a series of farm buildings including a shippon, threshing barn and root house at Yarner. Staple Cottages are located to the southeast of the site and are likely to have 17th century origins (site A11).

4.2.10 Modern - Sites A4 and A10 (AD 1901 to present)

In 1925 the Elmhurst family purchased the hall and 1,000 acres of the estate at Dartington and set about restoring the buildings and went about creating an experiment of the reconstruction of rural life, now known as the Dartington Hall Trust.

There are two sites located within the application area that are modern in date. Site A4 is a dairy and calthouse at Yarner Farm that were constructed during the middle of the 20th century. A sawmill is located immediately to the south of the application area at site A10. The historic map evidence suggests that the sawmill was constructed between 1904 and 1932.

4.2.11 Undated - Sites A5, A7 and A12

There are three sites located within the study area, the origins and nature of which are uncertain. The significance of these assets is therefore unknown but may change if further information about them becomes available. Site A7 is the location of several linear features recorded as cropmarks which are likely to be ditches. One is thought to be the line of a recently removed field boundary and another may be a former mill leat. Site A12 is the location of an old ford at Shinner's Bridge. Shinner's Bridge quarry (A5) is undated.

4.2.12 Previous fieldwork within the study area

Previous archaeological work carried out within the study area includes a milestone survey that was conducted from South Brent to Paignton between 2003 and 2008. An assessment was carried out for a pipeline route from Fishacre to Lyneham, as well as a fieldwalking survey. The results of the assessment and fieldwalking survey are unknown as they are not recorded in the Devon HER.

5. GEOPHYSICAL SURVEY RESULTS (Fig. 3 and Appendix 2)

- 5.1 A gradiometer survey was undertaken within the application area during April 2013. The results of this survey identified a series of anomalies that have the potential to be archaeological features. The full report is included as Appendix 2, with the results summarised below and on Fig. 3.
- 5.2 A total of 19 groups of anomalies was recorded. These comprise the lines of two former field boundaries, running northeast-southwest (4 and 12 on Fig. 3). These boundaries are present on the tithe map of 1840 and were removed during the 20th century. Two groups of anomalies (1 and 2) have been identified in the north part of the site which correspond with the location of a square enclosure recorded on the Devon HER (Site A9), which is visible on aerial photographs. A circular feature (16) was also identified within the south part of the application area that has been interpreted as a possible ring ditch or roundhouse type feature. As well as these, a series of possible linear features were identified running across the site (3, 5-11, 13-19). These are mostly clustered in the south and northeast parts. These possible linear features have been interpreted as likely being related to land management activities.

6. HISTORICAL DEVELOPMENT OF THE AREA

6.1 Introduction

This section of the report is based on a map regression exercise undertaken on a sequence of historic maps relating relevant to a single land parcel in the ancient parish of Dartington. Research has been conducted at the Devon Heritage Centre in Exeter, and online. Extracts of relevant maps are included here as Appendix 3.

6.2 Old Series Ordnance Survey map, 1809 (Appendix 3, Map 1)

This map is not of sufficient scale to show a large amount of detail, but it does show the main roads and rivers in the area as well as contours depicting the areas of higher ground. Farmstead settlements are labelled at Week, Knoddy, Staple and Cott. The area of enclosed deer park at North Wood is depicted to the north of the application area. The main part of the current A385 road running adjacent to the application area does not exist at this time. There are no buildings or features depicted within the application area.

6.3 Map of the County of Devon surveyed by Greenwood, 1827 (Map 2)

This map is also of an insufficient scale to show a large amount of detail; it is broadly the same as the previous map.

6.4 Dartington parish tithe map, 1840 and tithe apportionment, 1839 (Map 3)

The Dartington parish tithe map of 1840 shows the area in greater detail including individual fields and buildings. It shows the main part of the application area as at this time comprising all or parts of four fields. The details from the tithe apportionment of 1839 determine that the land was part of a tenement called *Lownard* which was part of the land holding belonging to Lounard Farm. The land was owned by Henry Champernowne Esquire, who owned the Dartington estate at this time. The tenant occupier of the land was Charles Helins and all of the fields were under arable cultivation. The fields were named Long Land, Lower Long Land, Lownard Ball and Higher Long Land.

The field names mostly relate to the length of the plots or their position in relation to Lounard Farm. The only one that is indicative of archaeological sites or features is the field name element *Ball*, which is suggestive of boundary mounds (Field 1989).

On the southeast side of the application area the main road is present at this time, with the scheme boundary extending into fields named on the apportionment as Dry Meadow, Forda Park and Little Orchard.

- 6.5 Six-inch 1st edition Ordnance Survey Devon map sheets 120NE & 121NW 1885 (Map 4)**
This edition of the Ordnance Survey map shows the area in a large amount of detail. The application area is depicted much as it is shown on the tithe map. A quarry is now shown to the west at *Lownard*.
- 6.6 Six-inch 2nd edition Ordnance Survey map, 1904 (not reproduced)**
This map shows the area with slight alterations from the earlier edition. The application area is now depicted as two main fields.
- 6.7 Twenty five inch Ordnance Survey map, 1954 (not reproduced)**
This edition of the Ordnance Survey map shows that the application area is now depicted as one large field with a large plantation illustrated across the entire field, probably representing an orchard.
- 6.8 Historic Landscape Characterisation (Fig. 4)**
The Devon Historic Environment Record (HER) has characterised the land within the application area as *Modern enclosures adapting post-medieval fields*. This is characterised by *Modern enclosures that have been created by adapting earlier fields of probable post-medieval date*.
- 6.9 Aerial photographic evidence**
Two aerial photographs were examined for this scheme. These first comprised a vertical RAF photograph taken in July 1946. This shows the town of Dartington surrounded by an area of mostly regular shaped fields and patched of woodland. The application area is shown as one large field with a plantation of trees, which may represent an orchard. It was not possible to identify any surface features or cropmarks within the application area due to the presence of the trees. This aerial photograph does not appear to show any features within the surrounding fields. A Devon Aerial Photograph (DAP) was also consulted. This is an oblique photograph taken in the summer of 1984. It shows a probable square enclosure within the north part of the application area (site A9).

7. SITE VISIT (Plates 1-2)

7.1 Introduction

A site visit was undertaken on 24 April 2013 to establish the presence of unrecorded archaeological features within the site, to review the locations of previously recorded features that may be affected by the development, as well as to consider the general archaeological potential of the area. Land use, topography and boundary types were also recorded. The overhead conditions at the time of the visit were overcast with sunny intervals and good visibility.

7.2 Results

The application area is mainly located on the north side of the main A385 road connecting Dartington with Totnes. It comprises the northeast side of a sub semi-circular field, with a dense plantation of trees situated in the northwest part of the site. A footpath runs along the east boundary and a roadway runs along the west boundary of the field. The topography of the field slopes up moderately towards the northwest and north. The field was under a seedling crop at the time of the site visit. The boundaries on all sides of the field consist of earthen banks of c. 1m in height, with hedge vegetation on top. There were not obvious earthwork or any other feature visible during the site visit.

To the southeast the application area boundary partly extends alongside the A385 road and to the south into an area currently occupied by light industrial units.

8. ASSESSMENT OF SIGNIFICANCE

- 8.1 This assessment has provided a summary of all recorded heritage assets within the study area as a result of a search of a range of archaeological databases. Each source has its own limitations, and national and county databases are also limited in that they only provide a record of *known* archaeological data.
- 8.2 The assessment of the significance (value) of heritage assets uses non-metrical criteria set out in *Conservation Principles* (English Heritage 2008) and the resulting significance described using a six-point scale of significance derived from the *Design Manual for Roads and Bridges*, (DMRB 2 Volume 11, 2001). The scale of values used to assess the relative significance of the heritage assets is presented below and included in Appendix 1.

SIGNIFICANCE (VALUE)		FACTORS FOR ASSESSING THE SIGNIFICANCE (VALUE) OF HERITAGE ASSETS
A	Very High	<ul style="list-style-type: none"> World Heritage Sites (including nominated sites); Assets of acknowledged international importance; and Assets that can contribute significantly to acknowledged international research objectives.
B	High	<ul style="list-style-type: none"> Scheduled Monuments (including proposed sites); Grade I and II* Listed Buildings; Undesignated heritage assets of schedulable or exceptional quality and importance; Conservation Areas containing very important buildings; and Assets that can contribute significantly to acknowledged national research objectives.
C	Medium	<ul style="list-style-type: none"> Designated or undesignated assets that have exceptional qualities or contribute to regional research objectives; and Grade II Listed Buildings.
D	Low	<ul style="list-style-type: none"> Designated and undesignated heritage assets of local importance; Assets compromised by poor preservation and/or poor survival of contextual associations; and Assets of limited value, but with potential to contribute to local research objectives.
E	Negligible	<ul style="list-style-type: none"> Assets with very little or no surviving archaeological interest.
F	Unknown	<ul style="list-style-type: none"> The importance of the resource has not been ascertained.

Table 2: Grading of the significance (value) after DMRB 2001.

8.3 Heritage assets of Very High Significance

There are no heritage assets located within the study area that are considered to be *Very High Significance*.

8.4 Heritage assets of High Significance (Sites B20-B23)

There are four designated heritage assets that are thought to be of *High Significance*. These comprise a scheduled monument and three Grade II* Listed buildings. These assets are considered to have a *High Significance* due to their regional, historical and architectural value.

8.5 Heritage assets of Medium Significance (Sites B1-B19 and Site A9)

There are 20 heritage assets located within the study area that are considered to be of *Medium Significance*. Sites B1 to B19 are Grade II Listed buildings, which have a local historical or architectural value.

Based on present evidence Site A9 the possible prehistoric enclosure is considered a Medium Significance heritage asset. It has been identified as a cropmark from aerial photographs and by the recent geophysical survey carried out on the site. An associated possible ring ditch was also identified by the geophysics. These features potentially represent well-preserved buried early settlement remains and, as they show clearly on air photographs geophysics, it potentially indicates that they lie on land which appears to have been subject to little

disturbance or development. They are, therefore, likely to retain great evidential value in the form of well preserved features, environmental information and finds.

8.6 Heritage assets of Low Significance (Sites A1-A8 and A10-A11)

There are 10 heritage assets located within the study area that are considered to be of *Low Significance*. Sites A6-A7 comprise cropmark features which may represent settlement and agricultural activity of an early date, while Site A8 is a findspot of a single prehistoric flint flake.

Non-designated heritage assets A1-A5 and A10-A12 are either extant structures or recorded from cartographic/documentary sources. These sites are considered to be of some importance within the local context and can contribute to a number of aspects of the local heritage resource.

8.7 Heritage assets of Negligible Significance

There are no heritage assets situated within the study area that are thought to be of *Negligible Significance*.

8.8 Heritage assets of Unknown Significance (Site A12)

There is one non-designated heritage assets within the study area that is considered to be of *Unknown Significance*. This is due to the fact that the origins or nature of the asset is unknown or uncertain. If future investigations confirm date and form then its significance value may be greatly enhanced.

9. ARCHAEOLOGICAL POTENTIAL

9.1 The main archaeological interest in the site is the presence of a possible prehistoric enclosure identified from aerial photographs and confirmed by geophysical survey. The latter survey also identified a possible associated ring ditch or roundhouse, as well as a series of linear anomalies probably relating to former field boundaries. Some of the linear anomalies are likely to be post-medieval in date as they are shown on 19th century and later maps, while others are not depicted and potentially relate to earlier land division or drainage.

9.2 Based on historic map evidence and current land use, it is likely that the site has for the most part been agricultural land and has never been developed. While ploughing may have impacted on any below ground archaeological remains, there is potential based on the cropmark and geophysics evidence for good survival. There is, however, no evidence on the site for upstanding remains in the form of earthworks or other surface features.

10. CONCLUSIONS

10.1 This historic environment assessment has identified that there no designated heritage assets located within the application area. There are however, a total of 23 designated heritage assets situated within the study area of 1km around the site. These include a scheduled ancient monument (site B20), in the form of the medieval deer park associated with Dartington Hall, three Grade II* Listed structures, including the parish Church of St Mary (site B21), and the medieval houses at Old Postern (site B22) and Hill Cross Hill House (site B23). The designated heritage assets also include 19 Grade II Listed structures.

10.2 There are a total of 12 non-designated heritage assets located within the study area. One of these has been identified as being located within the application area. This is a cropmark of part of a small rectangular ditched enclosure (site A9), the presence of which appears to have been confirmed by a recent geophysical survey. Other anomalies of probable archaeological origin were identified by the geophysics.

- 10.3** The significance of the heritage assets has been evaluated and they have been found to be of either *High, Medium, Low* or *Unknown Significance*. The offices of the Dartington Hall Estate (site B13) are located immediately adjacent to the application area. The setting of this *Medium Significance* heritage asset may be considered to be susceptible to visual intrusion by the new development, although, it should be taken into consideration that the offices are already surrounded by modern developments.

11. ACKNOWLEDGEMENTS

- 11.1** The assessment was commissioned on behalf Cavanna Homes by David Green. The documentary research was carried out by Kerry Kerr-Peterson, with the report illustrations prepared by Sarnia Blackmore and Elisabeth Patkai. The geophysical survey was carried out by Substrata. We are grateful to the staff of the Devon Historic Environment Service and the Devon Heritage Centre for their assistance.

12. SOURCES CONSULTED

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County map of Devon surveyed by Greenwood, 1827

Dartington parish tithe map, 1840 and apportionment, 1839

Devon Historic Environment Service

1947 RAF aerial photograph 54/43

Devon Aerial Photograph BS-06

Historic Environment Record data to 1km site centre

Internet Sources (consulted April 2013)

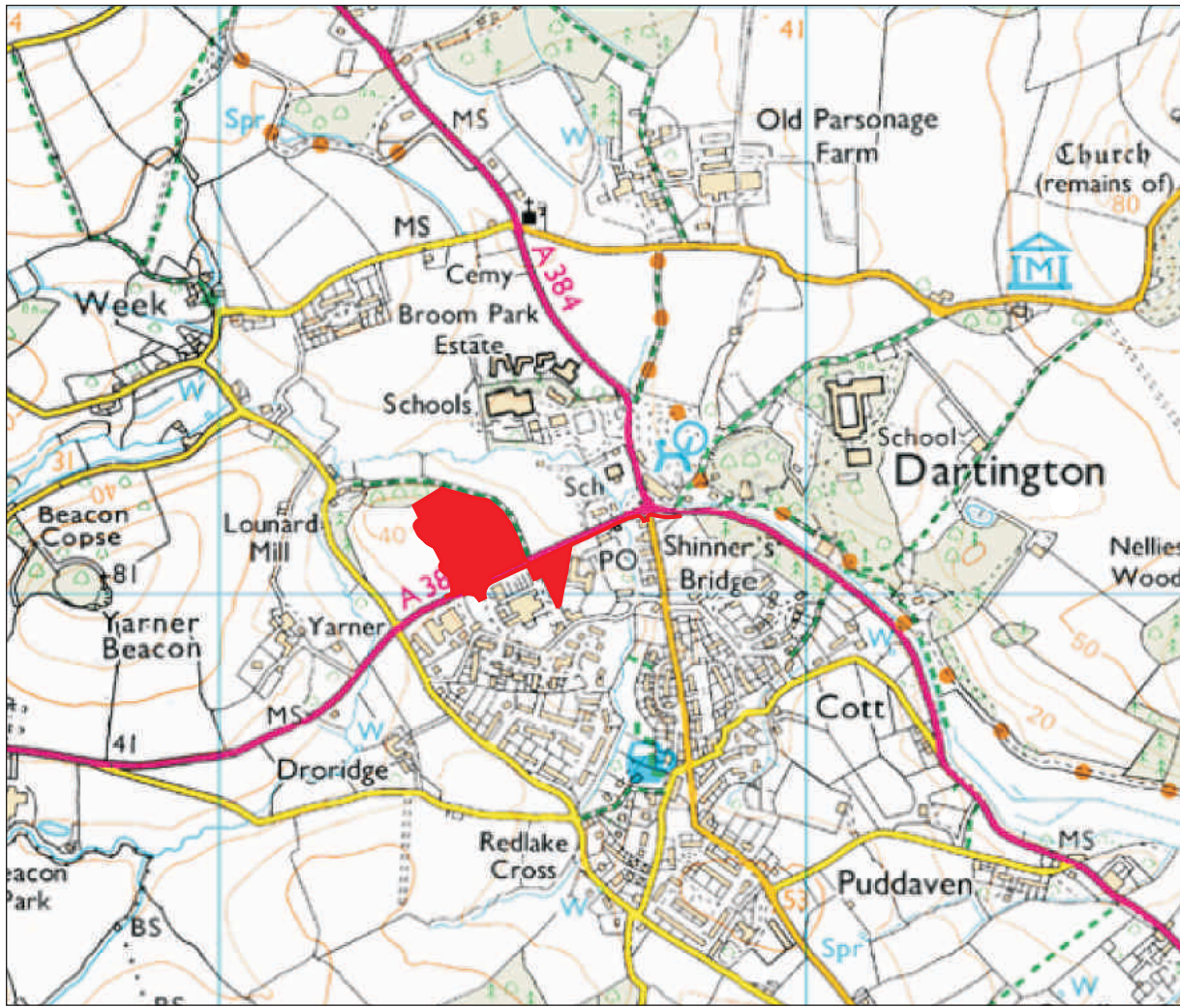
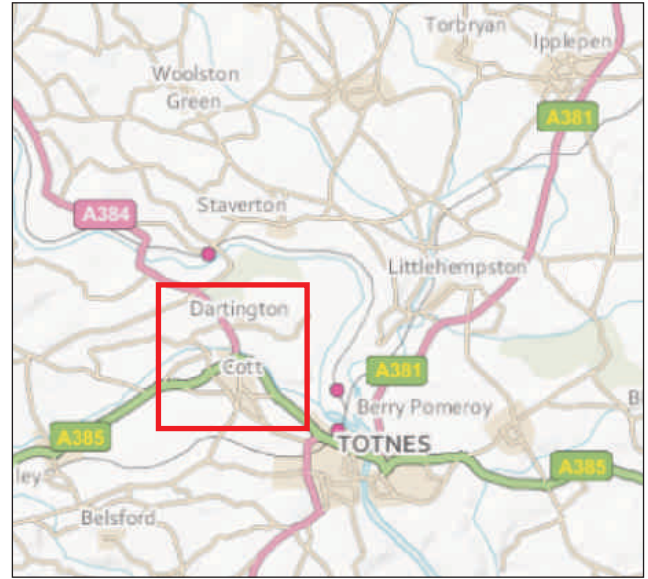
British Geological Survey

English Heritage List for England

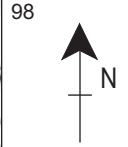
Heritage Gateway


Old Maps Repository

South Hams District Council website



Reproduced from the Ordnance Survey 1:25,000 map with the permission of the Controller of Her Majesty's Stationery Office
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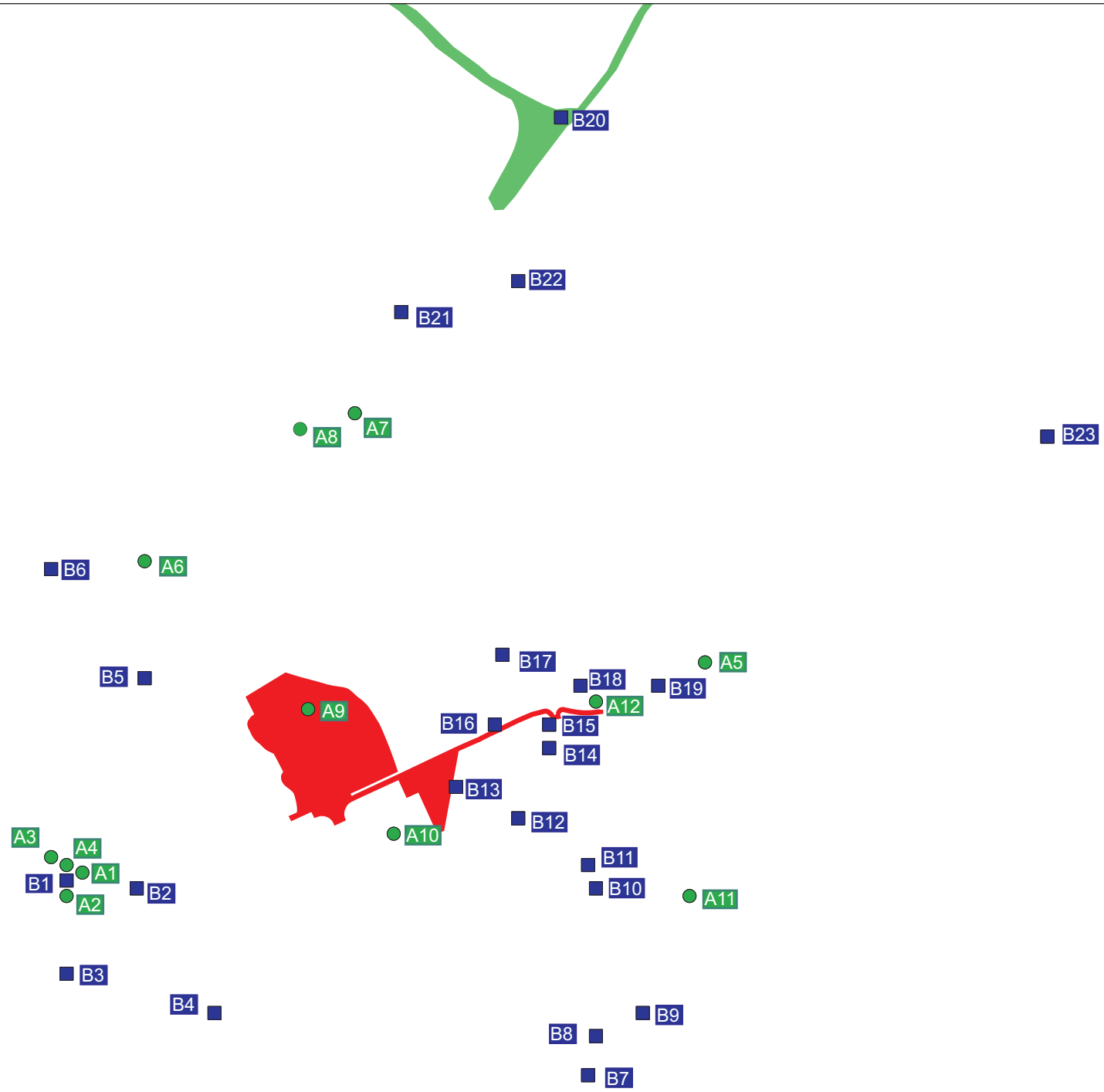


 Area containing site

PROJECT
 Sawmills Field, Dartington, Devon

TITLE
 Fig. 1: Location of site





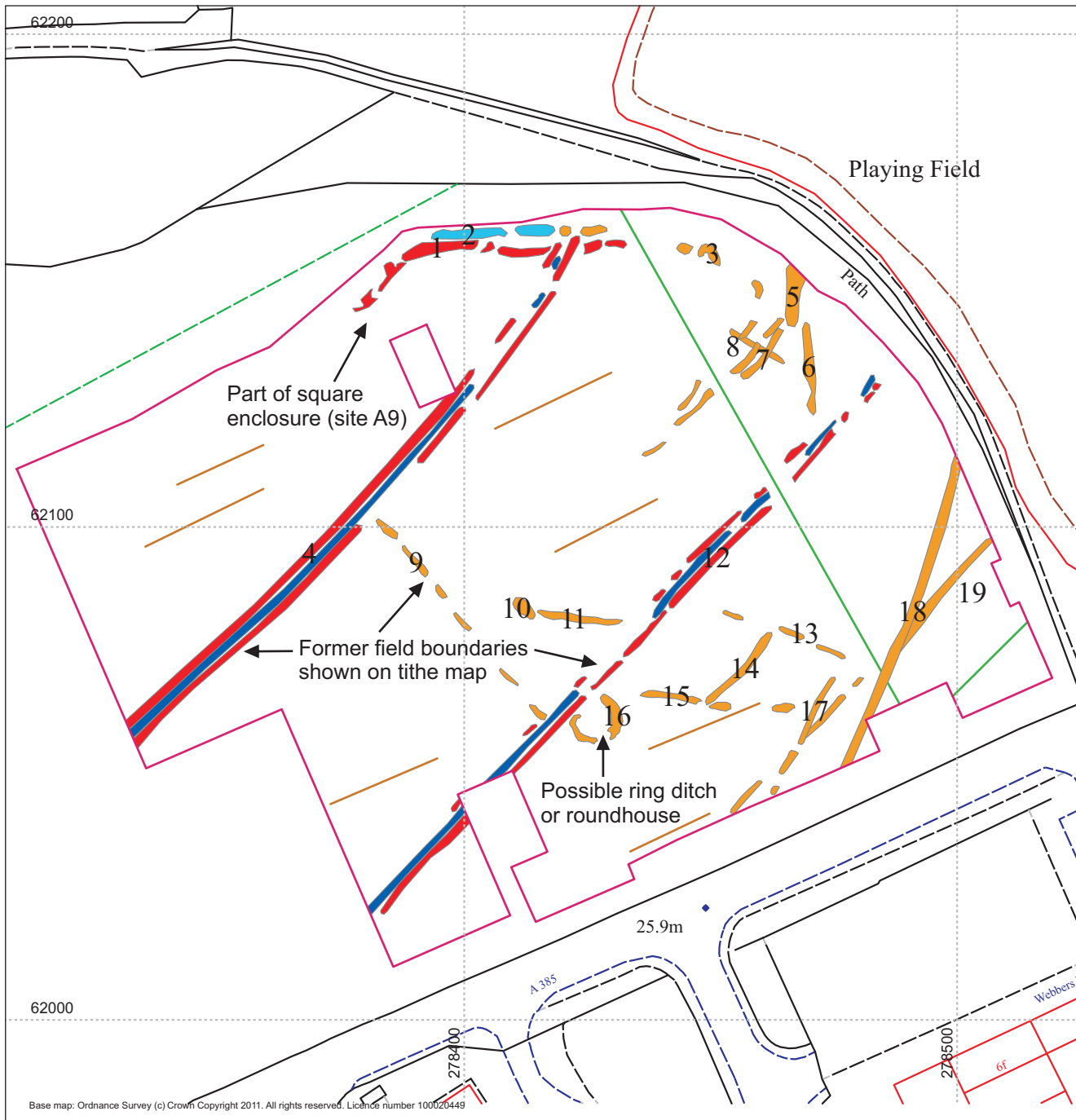
Key

- B1 Designated heritage assets
- A1 Non-designated heritage assets
- Dartington Hall Deer Park
- Application area

PROJECT
Sawmills Field, Dartington, Devon

TITLE
Fig. 2: Location of heritage assets





15 Horizon View, Bath Hotel Road, Westward Ho!
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 Email: geophysics@substrata.co.uk
 Mob: 07788627822
 Web: www.substrata.co.uk



An archaeological gradiometer survey
 Land at Sawmills Field, Dartington, South Hams, Devon
 National grid coordinates: 278479, 62037(point)
 Report: 130425

Legend

- gradiometer survey area
- gradiometer potential archaeology**
- likely archaeology, positive anomaly (4)
- likely archaeology, negative anomaly (4)
- possible archaeology, positive anomaly
- possible archaeology, negative anomaly
- possible archaeology, ploughing traces (2)
- gradiometer possible services**
- possible service, ferrous cable, pipe or drain

Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. Representative of trends; only anomalies relevant to potential archaeology are recorded.
3. Anomalies likely to represent very recent ground disturbance are not highlighted.
4. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and/or visible earthworks.

While accurate, this figure is intended for use as a reference in the accompanying report and not as a source of positional information.

It is recommended that accurate positional information be obtained from the georeferenced GIS project or AutoCAD plan of the survey interpretation found on the accompanying CD-ROM.



PROJECT

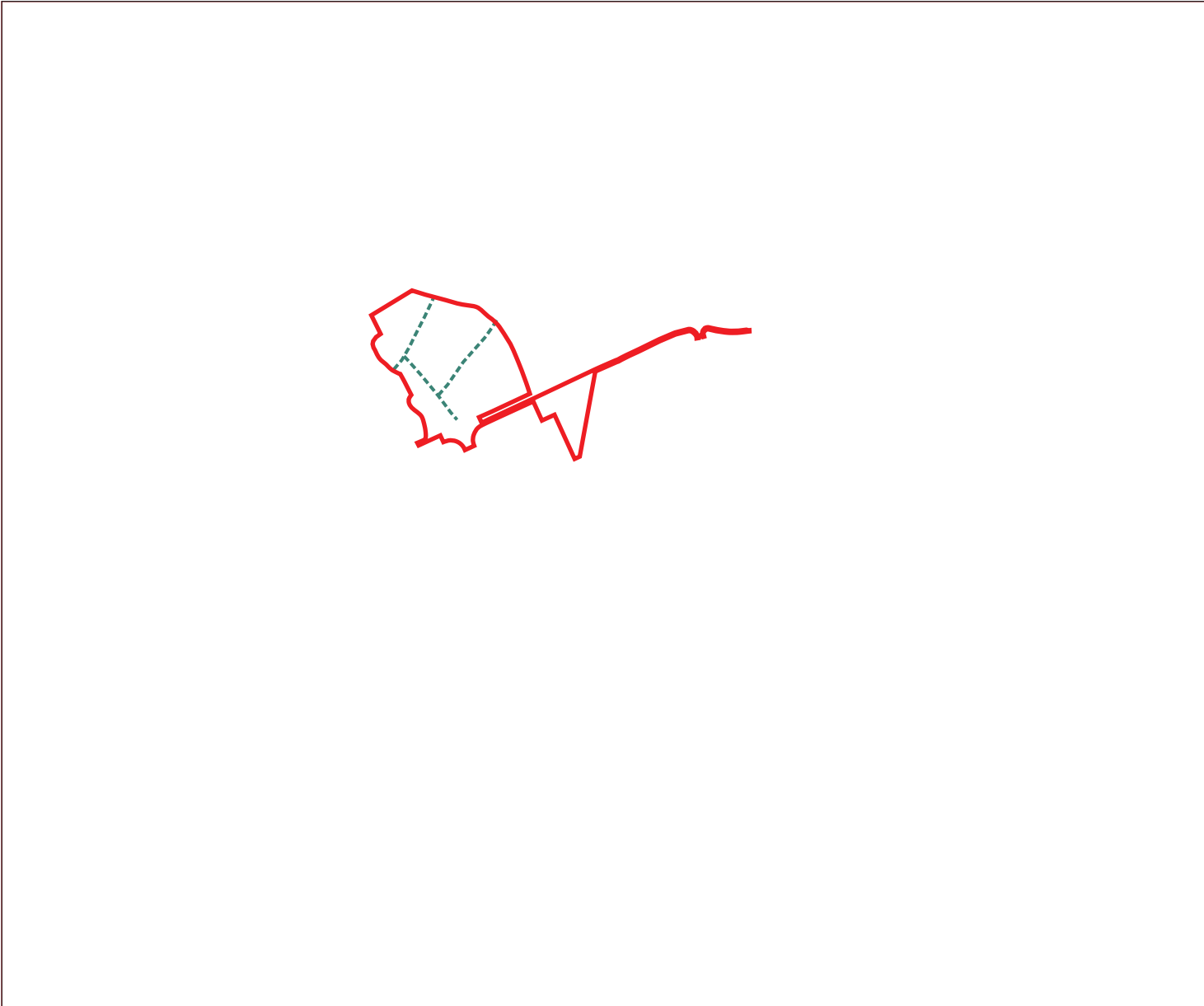
Sawmills Field, Dartington, Devon

TITLE










Fig. 3: Geophysical survey interpretation

Base map: Ordnance Survey (c) Crown Copyright 2011. All rights reserved. Licence number 100020449





Key

-  Barton Fields
-  Medieval enclosures, based on strip fields
-  Post-medieval enclosure/orchard lost in 20th century
-  Modern enclosures, adapting medieval/post-medieval fields
-  Woodland
-  Modern settlement
-  Public Complex
-  Application area
-  Former field boundaries (depicted on the tithe map)

0 250m
Scale 1:7,500@A4

PROJECT

Sawmills Field, Dartington, Devon

TITLE

Fig. 4: Historic Landscape
Characterisation



Plate 1: View towards the application area from Dartington Primary School (sites B16 and B17), taken from the east



Plate 2: View across the application area, taken from the southwest

Appendix 1

Summary of heritage assets

Appendix 1: Land at Sawmills Field, Dartington

Site No.	Devon HER ref..	List Ref/Monument No.	NGR	Form	Period	Summary	Status	Grading of significance	Approx distance from application area
B1	MDV90684	1219465	SX 7810 6192	Farmhouse	Medieval	Yarner Farmhouse. Probably early 16th century origins, remodelled and extended in early to mid - 17th century and extended again circa mid to late 17th century and again in the early 18th century with alterations in the 19th century and 20th century. Roughcast rendered stone rubble construction.	Grade II	C	c. 300m to the west
B2	80390	1108349	SX 7819 6191	Barn	Post-medieval	Barn at Yarner. Probable 17th century barn converted into a house in the early 1930s for the Dartington Hall estate. Rendered local limestone rubble construction with thatched roof.	Grade II	C	c. 300m to the west
B3	92483	1108346	SX 7810 6180	Milestone	Post-medieval	Milestone south of Yarner. Early 19th century. Granite monolith. Triangular on plan with rounded tops to the 2 sides facing the road inscribed "2 Miles to Totnes" and "21 Miles to Plymouth" in upper and lower case lettering with serifs. The top of the stone is slightly damaged. Also under 47044.	Grade II	C	c. 300m to the west
B4	90683	1219278	SX 7829 6175	House	Medieval	Droridge. Circa early 16th century with circa mid - 17th century and late 17th century rear wings; restored late 20th century. Roughcast stone rubble. Delabole slate roof. Also under 331199.	Grade II	C	c. 300m to the southwest
B5	90682	1210665	SX 7820 6218	House	Medieval	Lownard Cottage. 15th century origins, remodelled in 17th and 18th century, extended in 20th century. Whitewashed stone rubble and cob construction with thatched roof.	Grade II	C	c. 200m to the northwest
B6	92488	1108339	SX 7808 6232	House	Medieval	Knoddy. 16th century origins with 17th century parlour wing and 20th century alterations and minor additions. Local limestone rubble construction with delable slate roof.	Grade II	C	c. 300m to the north
B7	92467	1291403	SX 7877 6167	Public House	Post-medieval	Cott Inn. Early 17th century or earlier origins, remodelled probably later 17th century and with later alterations and extensions. White painted rendered stone rubble construction and possibly with some cob. Thatched roof originally.	Grade II	C	c. 300m to the southeast

Table 1: Summary of designated heritage assets

Appendix 1: Land at Sawmills Field, Dartington

B8	92473	1324959	SX 7878 6172	House	Post-medieval	Bluebell Cottage. Circa early 18th century, converted to 2 cottages in circa 19th century and reunited in 20th century. Plastered cob above stone rubble construction with thatched roof.	Grade II	C	c. 300m to the southeast
B9	92472	1324958	SX 7884 6175	Cottages	Medieval	Cott Court. House, converted into a row of cottages. Probably 16th century, remodelled in late 17th century or 18th century and extended probably in 18th century. Roughened stone rubble construction. No 3 to the west has slate roof with half-hipped end. Nos 1 and 3 have roof at slightly higher level with gabled ends and asbestos slates.	Grade II	C	c. 300m to the southeast
B10	90035	1219580	SX 7878 6191	Cottages	Post-medieval	Newhouses including pigsty. Row of seven cottages, with pigsty. Circa late 17th century, converted into 3 cottages and extended at east end in 20th century. Local limestone rubble construction with steeply pitched slate roof.	Grade II	C	c. 300m to the southeast
B11	92391	1108352	SX 7877 6194	House & Outbuilding	Post-medieval	The Smithy including adjoining outbuilding. The house possibly incorporates part of a demolished blacksmiths shop. Probably 18th century, extended in circa early and mid- 19th century. Rendered stone rubble; cob below eaves at rear; stone on west end has slate hung first storey with asbestos slate roof.	Grade II	C	c. 250m to the southeast
B12	92389	1108328	SX 7868 6200	Farmhouse	Medieval	Forder Cottage. divided into two cottages. Probably early 16th century, remodelled in circa mid to late 17th century. Local limestone rubble construction with roughcast to first floor and thatched roof.	Grade II	C	c. 175m to the southeast.
B13	92466	1324982	SX 7860 6204	Offices	Modern	Offices of the Dartington Hall Estate. Built in 1935 by W E Lescaze of Howe and Lescaze of America, assisted by R Hening; later alterations. Whitewashed rendered brick cavity walls with concrete coping to the parapets concealing flat roofs.	Grade II	C	c. 85m to the southeast
B14	92390	1108351	SX 7872 6209	Cottages	Post-medieval	Spedding Cottages. Row of 3 almshouses. Dated 1835, extended at rear of No 2 in 20th century. Local limestone rubble construction, with dressed stone quoins and chamfered rendered plinth and slate roof.	Grade II	C	c. 200m to the southeast
B15	90034	1219540	SX 7872 6212	Cottages	Post-medieval	Shinner's Bridge Cottages. Terrace of 3 cottages. Circa 1840 with late 19th century additions at rear. Local limestone rubble with steeply pitched slate roof.	Grade II	C	c. 200m to the southeast

Table 1: Summary of designated heritage assets

Appendix 1: Land at Sawmills Field, Dartington

B16	92387	1108326	SX 7865 6212	Gate Piers	Post-medieval	Pair of gate-piers to playground entrance of Dartington Church of England Primary School. Circa 1860-70, fountain added in 1902. Dressed random grey Devonian limestone with moulded stone caps. Square on plan. The west pier incorporates a fountain which consists of 2 round-headed niches, one over the other the top one had a basin and originally a water spout. Above the fountain a plaque inscribed "The fountain was erected by the Parishioners of Dartington to commemorate the Coronation of King Edward VII and Queen Alexandra 1902".	Grade II	C	c. 100m to the northeast
B17	92386	1108325	SX 7866 6221	School	Post-medieval	Dartington Church of England Primary School. Circa 1860-70 with later 19th century additions. Grey Devonian limestone rubble with dressed limestone quoins and Bathstone dressings with slate roof. Also under 47815.	Grade II	C	c. 100m to the northeast
B18	92388	1108327	SX 7876 6217	Shops & Office	Post-medieval	Shinner's Bridge House. Former house, now shops and offices. Probably 17th century, extended probably in 19th century and much altered in 1928-9 by Rex Gardner, Darting Hall estate architect, for Roger Morel. Local limestone rubble construction with slate roof.	Grade II	C	c. 245m to the west
B19	92474	1324983	SX 7886 6217	Limekilns	Medieval	Pair of attached disused limekilns. Limestone rubble. Pair of attached lime-kilns built into bank with access at higher level at rear for loading. There is a masonry joint on the front wall between the two kilns as evidence that they are not coeval; the smaller kiln to the right is likely to be the earlier. The deep circular kilns are open at the top and tapered towards the bottom. Also under 8135 where they are described as medieval.	Grade II	C	c. 300m to the east
B20	8134	1020870	SX 78527 63076	Deerpark	Medieval	Dartington Hall deer park. In the early 14th century, a chase of about 90 acres was enclosed in North Wood, being extended to the east several times to create a complex of parks of approximately 315 acres. At its greatest extent there were two wooded chases, a semi-wooded coursing park at the east end, and two open pastures.	Scheduled Ancient Monument	B	c. 1km to the north

Table 1: Summary of designated heritage assets

Appendix 1: Land at Sawmills Field, Dartington

B21	90033	1219488	SX 7853 6265	Church	Post-medieval	Church of St Mary. Built 1878-80 by J L Pearson, reusing some material from the medieval church. Snecked grey limestone ashlar construction with Bathstone dressings and slate roofs. The altar from the old church was installed in 1838 by Archdeacon Froude and is made from timber from Dartington Halls's hall roof.	Grade II*	B	c. 630m to the north
B22	90031	1219732	SX 7868 6269	House	Medieval	Old Postern. Formerly the parsonage, now an educational establishment. 15th century origins remodelled and extended in late 16th or early 17th century, some early 18th century alterations, extended in early 19th century, and remodelled and extended again in circa 1860 by William White; altered and restored in 1928-9 by Rex Gardner as a temporary house for the Elmhursts before the restoration of Dartington Hall was completed. Rendered stone construction with stone dressings, exposed lime stone rubble at the rear and slate roofs.	Grade II*	B	c. 640m to the north
B23	44114	1220922	SX 7936 6249	House	Modern	High Cross Hill House. Built in 1932 by W E Lescaze of Howe and Lescaze of America for W B Curry, the headmaster of Dartington School. Whitewashed rendered brick cavity walls. Originally the front (North) block was painted blue and the south block painted white in contrast.	Grade II*	B	c. 1km to the northeast

Table 1: Summary of designated heritage assets

Appendix 1: Land at Sawmills Field, Dartington

Site No.	Devon HER reference No.	NGR	Form	Period	Summary	Grading of significance	Approx distance from application area
A1	MDV80387	SX 7812 6193	Documentary	Medieval	Farmstead at Yarmer. Yarmer is first mentioned in 1333 as <i>Yomere</i> . The name may mean <i>Eagle slope</i> or <i>bank</i> .	D	c. 300m to the west
A2	33120	SX 781 619	Extant Structure	Medieval	House at Yarmer. Probably early to mid-16th century house of roughcast, rubble masonry construction. The wide door might indicate a former agricultural use, probably originally divided.	D	c. 300m to the west
A3	80379	SX 7808 6195	Extant Structure	Post-medieval	Shippon, threshing barn & root house at Yarmer. Late 18th early -19th century bank barn comprising a shippon and root store on the ground floor with a threshing barn over.	D	c. 300m to the west
A4	80384	SX 7810 6194	Extant Structure	Modern	Dairy & Calfhouse at Yarmer. Mid- 20th century dairy built on the site of earlier building. Of stone construction with brick dressings under a corrugated iron roof under 80384. 20th century calf house of random rubble stone construction with brick dressings and concrete lintels. Now converted. Also under 80385.	D	c. 300m to the west
A5	47811	SX 7892 6220	Cartographic	Unknown	'Shinner's Bridge Quarry' is indicated on the Ordnance Survey maps.	D	c. 300m to the east
A6	28878	SX 7820 6233	Cropmark	Prehistoric	Small probable ring ditch, with a diameter of about 10m, was recorded as cropmark July 1984 via aerial photographs.	D	c. 350m to the north
A7	28879	SX 7847 6252	Cropmark	Unknown	Linear features, likely to be ditches, were recorded as cropmarks on aerial photographs. Inspections revealed that one is the line of a recent hedge. Nothing visible. The other is thought to be a possible leat channel.	D	c. 400m to the north
A8	32111	SX 784 625	Findspot	Prehistoric	Flint flake surface find at Broom Park.	D	c. 450m to the north
A9	28880	SX 7841 6214	Cropmark	Unknown	Part of small rectangular ditched enclosure, length at least 40m, width about 30m. Recorded as crop mark July 1984 on aerial photograph. Identified also by geophysical survey April 2013.	C	Within the application area
A10	47816	SX 7852 6198	Extant Structure	Modern	Sawmill shown from 1932 edition OS onwards.	D	c. 175m to the south
A11	22096	SX 789 619	Extant Structure	Post-medieval	Staple Cottages 1 and 2. Pair of cottages, possibly 17th century in origin with modernised features. Rubble construction, part thatched, part slated roof.	D	c.460m to the southeast
A12	8150	SX 7878 6215	Extant feature	Unknown	The site of the old ford can be seen at Shinner's Bridge.	D	c. 245m to the east

Table 2: Summary of non-designated heritage assets

Appendix 2

Geophysical survey full report

Substrata

Archaeological Geophysical Surveyors

An archaeological gradiometer survey

Land at Sawmills Field, Dartington,
South Hams, Devon
National grid coordinates: 278479, 62037

Report: 130425
Ross Dean BSc MSc MA MifA
25 April 2013

Substrata
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Westward Ho!
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Contents

1. Survey description and summary	1
2. Site description	2
3. Results, discussion and conclusions	3
4. Disclaimer and copyright	7
5. Acknowledgements	7
6. References	7
Appendix 1 Supporting plots.....	9
Appendix 2 Methodology.....	11
Appendix 3 Data processing.....	12
Appendix 4 Geophysical survey techniques.....	13

Figures

Figure 1: survey interpretation.....	5
Figure 2: shade plot of processed data.....	10

Tables

Table 1: gradiometer data analysis, field 1.....	4
Table 2: methodology	11
Table 3: processed gradiometer data metadata	12

Accompanying CD-ROM

Report.....	Adobe PDF format
Copies of report figures.....	Adobe PDF format
Data files	grid files generated using DW Consulting TerraSurveyor3
Minimal processing data plots and metadata.....	Adobe PDF format
GIS project, shape files and classification schema	
GIS project and shape files.....	ESRI standard
GIS classification schema.....	Adobe PDF format
AutoCAD version of the survey interpretation	AutoCAD DWG

1 Survey description and summary

Type of survey: twin-sensor fluxgate gradiometer

Date of survey: 22 April 2013

Area surveyed: 2ha.

Lead surveyor: Ross Dean BSc MSc MA MifA

Client

AC Archaeology Ltd, 4 Halthaies Workshops, Bradninch, Nr Exeter, Devon EX5 4QL

Location

Site: Land at Sawmills Field

Parish: Dartington

District: South Hams

County: Devon

NGR: SX 784 620

NG coordinates: 278479, 62037 (point)

OASIS number: substrat1-148996

Archive: At the time of writing, the archive of this survey will be held by Substrata but this will change during 2013. There is a forthcoming requirement from Devon County Council Historic Environment Service that all project such as this have a digital archive held by a recognised archiving service. Please contact Substrata to find details of which service was chosen for this and future surveys.

Summary

This report was commissioned by AC Archaeology Ltd on behalf of clients and was produced by Substrata in preparation for submission of a forthcoming planning application.

The magnetic contrast across the survey areas was sufficient to be able to differentiate between anomalies representing possible archaeological features and background magnetic responses. A total of 19 magnetic anomaly groups were identified as pertaining to potential archaeology.

Two of the anomaly groups are likely to represent former Devon banks mapped as field boundaries on the 1889 Ordnance Survey 1st edition map of the area and subsequently removed. Two anomaly groups coincide with the location of a small sub-rectangular enclosure recorded in the Devon County Council Historical Environment Record (entry MDV28880). A further group may represent a sub-circular archaeological structure such as a ring ditch or round house although the data is disrupted by buried ferrous material and so this interpretation is open to question. The remaining anomaly groups may relate to archaeological linear features, such as field boundaries or other enclosures, from more than one phase of past land management.

Survey aims

1. Define and characterise and detectable archaeological remains on the site.
2. Inform any future archaeological investigation of the area.

Survey Objectives

1. Complete a gradiometer survey across agreed parts of the survey area.
2. Identify any magnetic anomalies that may be related to archaeological deposits, structures or artefacts.
3. Within the limits of the techniques and dataset, archaeologically characterise any such anomalies or patterns of anomalies.

4. Accurately record the location of the identified anomalies.
5. Produce a report based on the survey that is sufficiently detailed to inform any subsequent development on the site about the location and possible archaeological character of the recorded anomalies.

Standards

The standards used to complete this survey are defined by the Institute for Archaeologists (2011). The codes of approved practice that were followed are those of the Institute for Archaeologists (2008 and 2009) and Archaeology Data Service/Digital Antiquity Guides (undated). The document text was written using the house style of the Institute for Archaeologists (Institute for Archaeologists, undated).

2 Site description

Landscape

The survey area comprises part of one relatively flat field lying at between 25m and 30m O.D. The area is bounded by the A385 to the south, the remainder of the field to the west, woodland and a disused quarry to the north and a stream and field boundary to the east.

Land use at the time of the survey

Grass pasture.

Geology

The site is located on a solid geology of Devonian Torbay Group Nordon Formation which comprises mudstones, siltstones limestones and sandstones (British Geological Survey, undated1; undated 2). The disused quarry to the northeast of the site exploited a Devonian to Carboniferous microgabbro.

Soils

The soils are of the Denbigh1 association which comprise fine loamy typical brown earths on solid or shattered rock within 0.8m depth (Soil Survey of England and Wales, 1983; Findley et al, 1983: 103 and 196).

Historic Landscape Characterisation

Modern enclosures adapting post-medieval fields: modern enclosures that have been created by adapting earlier fields of probable post-medieval date (Devon County Council, undated)

Known archaeological sites in the survey area

There is one Historical Environment Record (HER) entry within the survey area:

MDV28880: Enclosure, (between) Prehistoric - 698000BC to 42 AD, Shinner's bridge; part of a small rectangular ditched enclosure at least 40m by 30m. Recorded as a cropmark from an aerial photograph. Location centred on SX 7841 6214

Previous fieldwork within the survey area

No formal programmes of archaeological work are recorded in the HER that directly relate to the survey area.

3. Results, discussion and conclusions

This survey was designed to record magnetic anomalies. The anomalies themselves cannot be regarded as actual archaeological features and the dimensions of the anomalies shown do not represent the dimensions of any associated archaeological features. The analysis presented below attempts to identify and characterise anomalies and anomaly groups that may pertain to archaeological deposits and structures.

The reader is referred to section 4.

3.1 Results

Figure 1 (this section) shows the interpretation of the survey and table 1 is an extract from a detailed analysis of the survey data provided in the attribute tables of the GIS project on the accompanying CD-ROM.

Figure 1 and table 1 comprise the analysis and interpretation of the survey data.

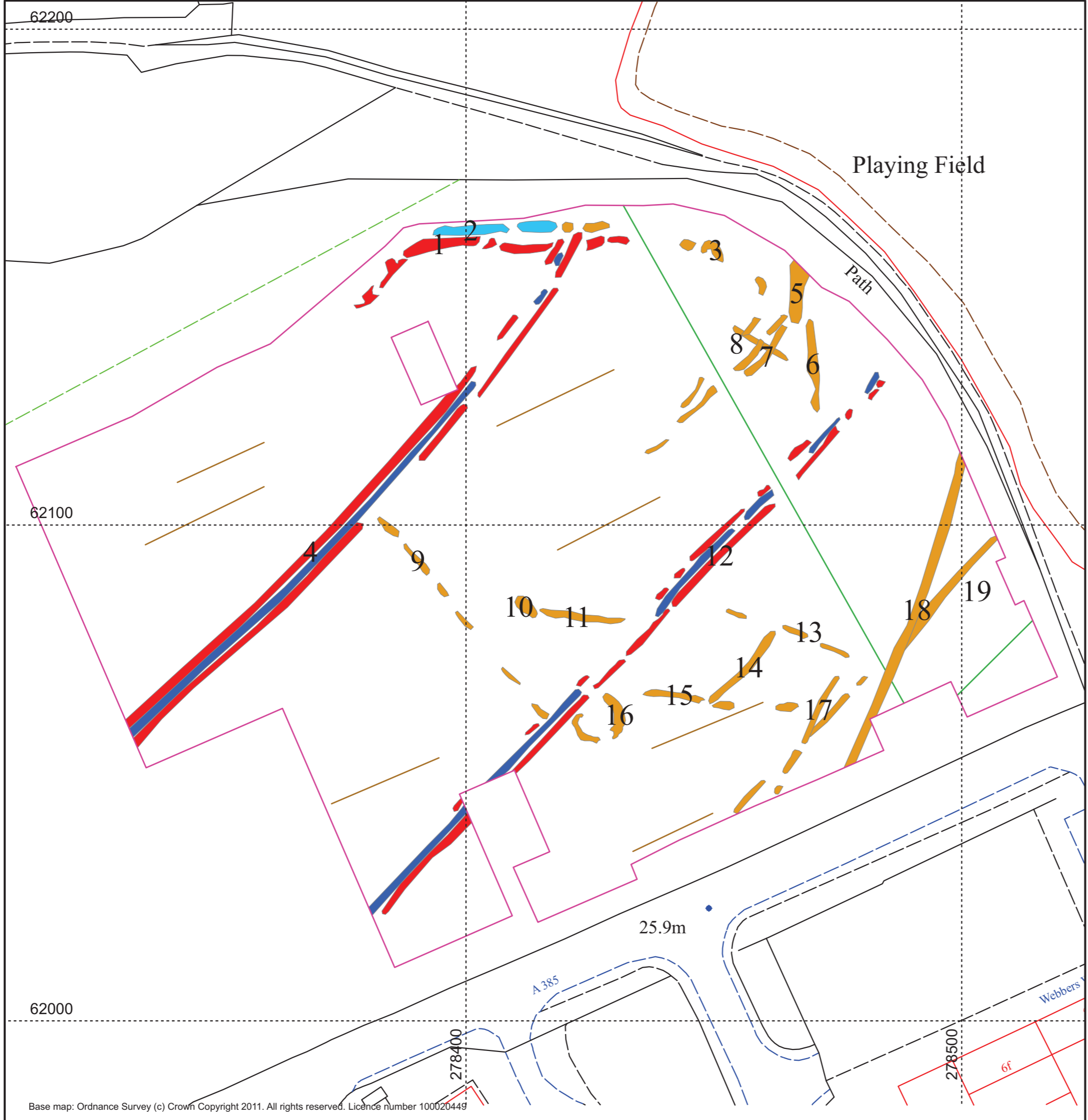
The processed gradiometer data is presented in figure 2, appendix 1.

Survey data analysis

Site: An archaeological gradiometer survey
 Land at Sawmills Field, Dartington, South Hams, Devon
 National grid coordinates: 278479, 62037 (point)
 Report: 130425

anomaly group	characterisation certainty	anomaly class	anomaly form	additional archaeological characterisation	comments	supporting evidence
1	likely	positive	curvilinear	enclosure boundary	anomaly group corresponds to shape and location of northern boundary of HER entry MDV28880; a rectangular enclosure approx 40m by 30m	DCCHER entry MDV28880
2	possible	negative	linear	enclosure boundary	anomaly group corresponds to shape and location of northern boundary of HER entry MDV28880; a rectangular enclosure approx 40m by 30m - may be negative shadow anomaly	DCCHER entry MDV28880
3	possible	positive				
4	likely	positive/negative/positive	linear	Devon bank field boundary	anomaly group corresponds with a field boundary mapped on the OS 1889 1st edition and later editions - gone by 1954	Ordnance Survey 1889 1st edition and later OS maps
5	possible	positive	linear			
6	possible	positive	linear			
7	possible	positive	linear			
8	possible	positive	linear			
9	possible	positive	linear			
10	possible	positive	linear			
11	possible	positive	linear		anomaly group may denote a linear feature disrupted by later cultivation	
12	likely	positive/negative/positive	linear	Devon bank field boundary	anomaly group corresponds with a field boundary mapped on the OS 1889 1st edition and later editions - gone by 1905	Ordnance Survey 1889 1st edition and later OS maps
13	possible	positive	linear		anomaly group may denote a linear feature disrupted by later cultivation	
14	possible	positive	linear		anomaly group may denote a linear feature disrupted by later cultivation	
15	possible	positive	linear		anomaly group may denote a linear feature disrupted by later cultivation	
16	possible	positive	sub-circular		anomaly group may represent a disrupted sub-circular feature	
17	possible	positive	linear			
18	possible	positive	linear			
19	possible	positive	linear			

Table 1: data analysis



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An archaeological gradiometer survey
Land at Sawmills Field, Dartington, South Hams, Devon
National grid coordinates: 278479, 62037(point)
Report: 130425

N

Legend

- gradiometer survey area
- gradiometer potential archaeology**
- █ likely archaeology, positive anomaly (4)
- █ likely archaeology, negative anomaly (4)
- █ possible archaeology, positive anomaly
- █ possible archaeology, negative anomaly
- possible archaeology, ploughing traces (2)
- gradiometer possible services**
- possible service, ferrous cable, pipe or drain

Notes:

1. All interpretations are provisional and represent potential archaeological deposits.
2. Representative of trends; only anomalies relevant to potential archaeology are recorded.
3. Anomalies likely to represent very recent ground disturbance are not highlighted.
4. Anomalies designated "likely archaeology" have supporting evidence e.g. historical maps and/or visible earthworks.

While accurate, this figure is intended for use as a reference in the accompanying report and not as a source of positional information.

It is recommended that accurate positional information be obtained from the georeferenced GIS project or AutoCAD plan of the survey interpretation found on the accompanying CD-ROM.



Figure 1: survey interpretation

Base map: Ordnance Survey (c) Crown Copyright 2011. All rights reserved. Licence number 100020449

3.2 Discussion

Refer to figures 1 (this section) and 2 (appendix 1).

Not all anomalies or anomaly groups identified in the survey dataset are discussed below. All identified anomaly groups are recorded in the GIS project on the accompanying CD-ROM. Those anomaly groups possibly representing archaeological deposits are included in data analysis table 1.

Data related to historical maps and other records

Anomaly groups **1** and **2** coincide with the northern boundary of a small rectangular ditched enclosure recorded in the Devon County Council Historic Environment Record (entry MDV28880, summarised in section 2 of this report).

Groups **4** and **12** relate to former field boundaries mapped on the Ordnance Survey 1:2500 1st edition map of 188-89. Group 12 was not recorded on the Ordnance Survey map of 1905. Group 4 had been removed by the time the Ordnance Survey map of 1954 was published.

Data with no previous provenance

Anomaly group **16** is distorted by anomalies resulting from at least two deposits of ferrous material but may represent a sub-circular archaeological structure such as a ring ditch or round house.

Group **3** are a linear arrangement of discrete anomaly groups that may relate to one or more linear features disrupted by ploughing.

Groups **10**, **11**, **14** and **15** are relatively vague but are indicative of possible disrupted archaeological linear features.

The remaining anomaly groups are more clearly defined and may represent linear archaeological features, possibly field boundaries or other enclosures, demonstrating more than one phase of past land management.

3.3 Conclusions

The magnetic contrast across the survey areas was sufficient to be able to differentiate between anomalies representing possible archaeological features and background magnetic responses. A total of 19 magnetic anomaly groups were identified as pertaining to potential archaeology.

Two of the anomaly groups are likely to represent former Devon banks mapped as field boundaries on the 1889 Ordnance Survey 1st edition map of the area and subsequently removed. Two anomaly groups coincide with the location of a small sub-rectangular enclosure recorded in the Devon County Council Historical Environment Record (entry MDV28880). A further group may represent a sub-circular archaeological structure such as a ring ditch or round house although the data is disrupted by buried ferrous material and so this interpretation is open to question. The remaining anomaly groups may relate to archaeological linear features, such as field boundaries or other enclosures, from more than one phase of past land management.

4 Disclaimer and copyright

The description and discussion of the results presented in this report are the authors, based on his interpretation of the survey data. Every effort has been made to provide accurate descriptions and interpretations of the geophysical data set. The nature of archaeological geophysical surveying is such that interpretations based on geophysical data, while informative, can only be provisional. Geophysical surveys are a cost-effective early step in the multi-phase process that is archaeology.

The evaluation programme of which this survey is part may also be informed by other archaeological assessment work and analysis. It must be presumed that more archaeological features will be evaluated than those specified in this report.

Ross Dean, trading as Substrata, will assign copyright to the client upon written request but retains the right to be identified as the author of all project documentation and reports as defined in the Copyright, Designs and Patents Act 1988 (Chapter IV, s.79).

5 Acknowledgements

Substrata would like to thank John Valentin of AC Archaeology Ltd for commissioning us to complete this survey.

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Appendix 1 Supporting plots

General Guidance

The anomalies represented in the survey plots provided in this appendix are magnetic anomalies. The apparent size of such anomalies and anomaly patterns are unlikely to correspond exactly with the dimensions of any associated archaeological features.

A rough rule for interpreting magnetic anomalies is that the width of an anomaly at half its maximum reading is equal to the width of the buried feature, or its depth if this is greater (Clark, 2000: 83). Caution must be applied when using this rule as it depends on the anomalies being clearly identifiable and distinct from adjacent anomalies. In northern latitudes the position of the maximum of a magnetic anomaly will be displaced slightly to the south of any associated physical feature.



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An archaeological gradiometer survey
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 Report: 130425

Legend

gradiometer processed data (nT)

High : 6
 Low : -6

N

While accurate, this figure is intended for use as a reference in the accompanying report and not as a source of positional information.

It is recommended that accurate positional information be obtained from the georeferenced GIS project or AutoCAD plan of the survey interpretation found on the accompanying CD-ROM.



Figure 2: shade plot of processed data

Base map: Ordnance Survey (c) Crown Copyright 2011. All rights reserved. Licence number 100020449

Appendix 2 Methodology

Table 2: methodology	
<p>Documents Project design: Dean (2013)</p>	
<p>Methodology</p> <ol style="list-style-type: none"> 1. The work was undertaken in accordance with the project design. The geophysical (gradiometer) survey was undertaken with reference to standard guidance provided by the Institute for Archaeologists (2011) and Archaeology Data Service/Digital Antiquity Guides (undated). 2. The survey grid location information and grid plan was recorded as part of the project in a suitable GIS system. 3. Data processing was undertaken using appropriate software, with all anomalies being digitised and geo-referenced. The final report included a graphical and textual account of the techniques undertaken, the data obtained and an archaeological interpretation of that data and conclusions about any likely archaeology. 	
<p>Grid <i>Method of Fixing:</i> DGPS set-out using pre-planned survey grids and Ordnance Survey coordinates. <i>Composition:</i> 30m by 30m grids <i>Recording:</i> Geo-referenced and recorded using digital map tiles.</p>	
<p>Equipment <i>Instrument:</i> Bartington Instruments grad601-2 <i>Firmware:</i> version 6.1</p>	<p>Data Capture <i>Sample Interval:</i> 0.25-metres <i>Traverse Interval:</i> 1 metre <i>Traverse Method:</i> zigzag <i>Traverse Orientation:</i> GN337</p>
<p>Data Processing, Analysis and Presentation Software DW Consulting TerraSurveyor3 ArcGIS 9.3 Microsoft Corp. Office Publisher 2003.</p>	

Appendix 3 Data processing

Table 3: gradiometer survey - processed data metadata	
Software: TerraSurveyor Version: 3.0.19.16	
Stats	
Max:	265.33
Min:	-254.79
Std Dev:	25.10
Mean:	0.52
Median:	0.00
Processes:	5
1	Base Layer
2	Clip at 1.00 SD
3	De Stagger: Grids: da18.xgd da19.xgd da17.xgd da20.xgd da16.xgd da21.xgd da15.xgd da22.xgd da14.xgd da23.xgd Mode: Both By: -2 intervals
4	De Stagger: Grids: da01.xgd da02.xgd da03.xgd Mode: Both By: -1 intervals
5	DeStripe Median Sensors: All
Note: interpolation match x & y doubled is completed during export from TerraSurveyor to georeferenced ERSI format	

Appendix 4 Geophysical surveying techniques

1 Introduction

Substrata offers magnetometer and earth resistance surveying. We also provide other archaeology-specific geophysical surveys such as ground penetrating radar and resistivity. The particular method or combination of methods used depends on local soil conditions and the survey requirements. These methods are capable of delivering fast and accurate assessments of the archaeology of both large and small sites.

Further details can be found on our website at www.substrata.co.uk

2 Magnetometer surveying

Standard magnetometer surveys are the workhorse of archaeological surveying when speed and cost-effectiveness are important. Identifiable archaeological features include areas of occupation, hearths, kilns, furnaces, ditches, pits, post-holes, ridge-and-furrow, timber structures, wall footings, roads, tracks and similar buried features.

Magnetometer surveying is used to detect and map small changes in the earth's magnetic field caused by concentrations of ferrous-based minerals within the soil and subsoil, and by magnetised materials buried beneath the surface. While most of these changes are too small to affect a compass needle, they can be detected and mapped by sensitive field equipment. During surveys the different magnetic properties of top-soils, sub-soils, rock formations and archaeological features are recorded as variations against a background value. Subsequently magnetic anomalies resulting from potential archaeology can be identified and interpreted.

Bartington grad601-2 gradiometers

A gradiometer is a type of magnetometer and is sensitive to relatively small changes in the earth's magnetic field. Our primary surveying instruments are Bartington Grad601-2 (dual sensor) fluxgate gradiometers with automatic data loggers. They are specifically designed for field use by archaeologists. The Bartington gradiometers provide proven technology in archaeological magnetic surveying and offer fast, accurate set-up and survey rates. They are sensitive to depths of between 0 and 1.5m below ground level, with optimum sensitivity at depths of 1m or less.

Multiple sensor arrays

A technique relatively new to commercial archaeological surveying but well understood in academic circles involves the use of multiple magnetometer sensors towed behind a quad bike or similar vehicle. With multiple sensors and the use of on-board GPS units, it is possible to achieve faster survey rates at competitive commercial rates when compared to the use of multiple instruments and the techniques discussed above provided the ground is suitable for the vehicle and array. Substrata is pleased to announce that we now offer this service on suitable larger sites

3 Earth resistance surveying

Earth resistance surveying is an excellent tool for detecting buried archaeology. Its relatively slow rate of survey compared to magnetometer surveys means that it is usually employed in commercial surveys when a detailed understanding of buried building remains is required. This technique measures changes in the electrical resistance of the ground being surveyed. In practice, the recording of differences in the electrical resistance of near-surface deposits and structures allows the detection and interpretation of masonry and brick foundations, paving and floors, drains and other cavities, large pits, building platforms, robber trenches, ditches, graves and similar buried features.

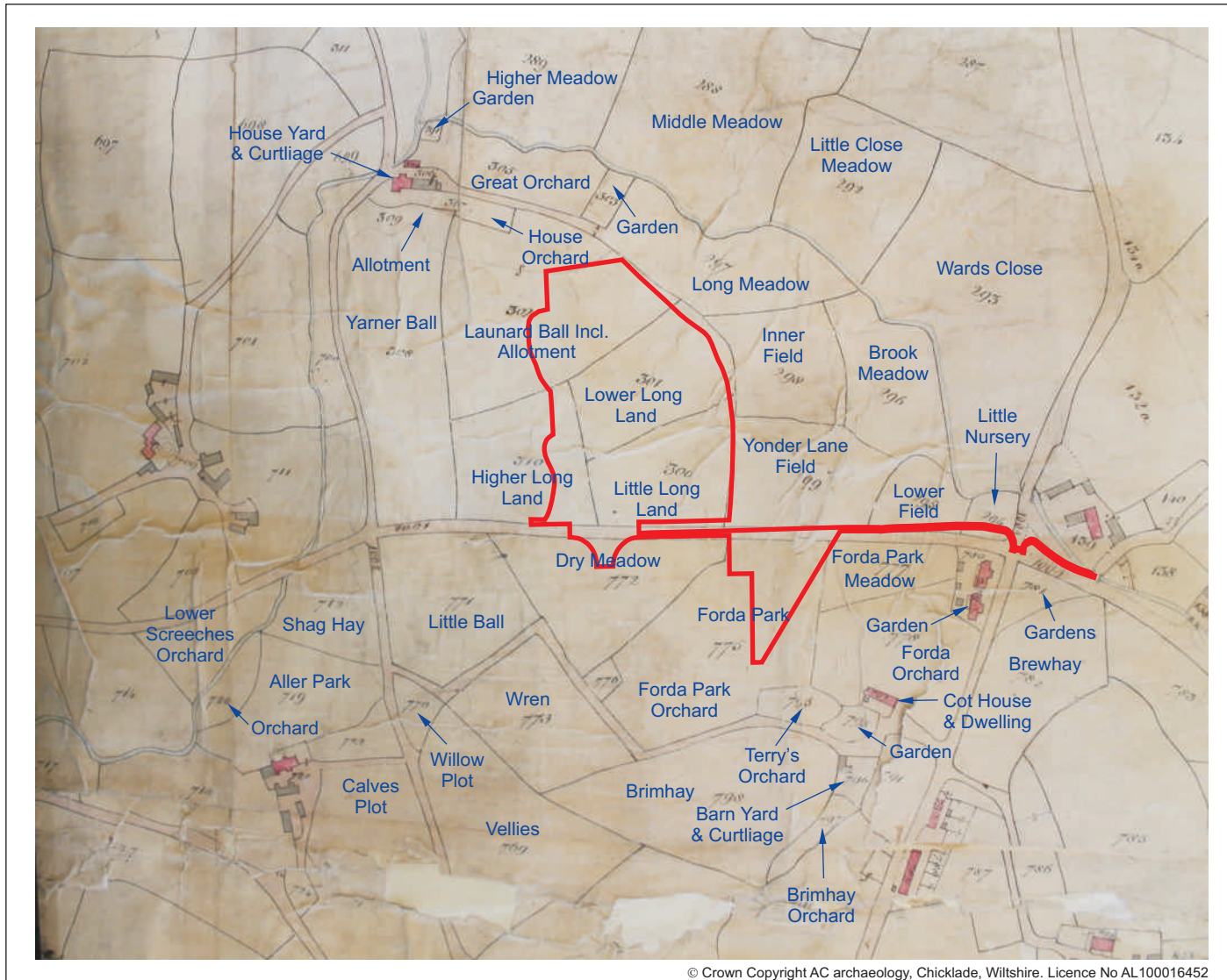
Resistance to electrical current flow in the ground depends on the moisture content and

structure of the soil and other materials buried beneath the surface. For example, the higher the moisture content of a soil, the less resistant it is to electrical current flow. A ditch completely buried beneath the present ground surface is likely to have an infill soil different to that surrounding the ditch in terms of compactness and composition. As a result, the soil filling the buried ditch will retain moisture in a different way to the surrounding soil which means it will have an electrical resistance at variance with the surrounding environment. By passing a small current through the ground it is possible to detect, record, plot and interpret such changes in electrical resistance.


For earth resistance surveying Substrata uses the Geoscan Research RM15 series multi-probe resistance meters and purpose-built automatic data-loggers. The Geoscan MPX15 multiplexer is an integral part to the instrument configuration and facilitates multi-probe arrays which speed up survey area coverage rates and, if required, facilitate simultaneous multiple-depth data collection.

Appendix 3

Historic map extracts



Map 3: Extract from the Dartington tithe map, 1840, with field names added from the apportionment of 1839

 Location of application area



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Location of application area

Map 4: Extract from the six-inch 1st edition Ordnance Survey Devon map sheets 120NE & 121NW, surveyed 1885 & 1887 and published 1890

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