

## **Appendix 8.3**

# **ARCHAEOLOGICAL DESK-BASED ASSESSMENT**



# **Fort Halstead, Sevenoaks District Council, Kent**

## **Archaeological Desk-Based Assessment**

August 2019

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This document has been prepared and checked in accordance with Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS OHSAS 18001:2007)

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## 1. Introduction

Waterman Infrastructure & Environment Ltd ('Waterman') has been commissioned by Merseyside Pension Fund ('the Client') to provide an Archaeological Desk-Based Assessment (ADBA) to determine the potential impacts upon the archaeological resource and the historic landscape arising from the proposed development ('the Development') at Fort Halstead, Sevenoaks District Council (SDC), Kent (henceforth referred to as 'the Site').

The purpose of the assessment is to identify the known archaeological resource present within the Site and study area, to assess likely impacts to archaeological remains and the historic landscape due to the Development, to assess the potential for as yet unknown buried archaeological remains within the Site, to determine the significance of those remains that may be affected by the Development and to make recommendations for any further assessments or investigations to fully understand the risks to any specific heritage asset.

This ADBA builds on the information presented in the previous Environmental Statement (ES)<sup>1</sup> and its supporting Buried Heritage Desk-Based Assessment<sup>2</sup>, both produced by Waterman.

The location of the Site can be seen on **Figure 1** (shown in red) below and **Figures 2 to 5** in **Appendix A**.

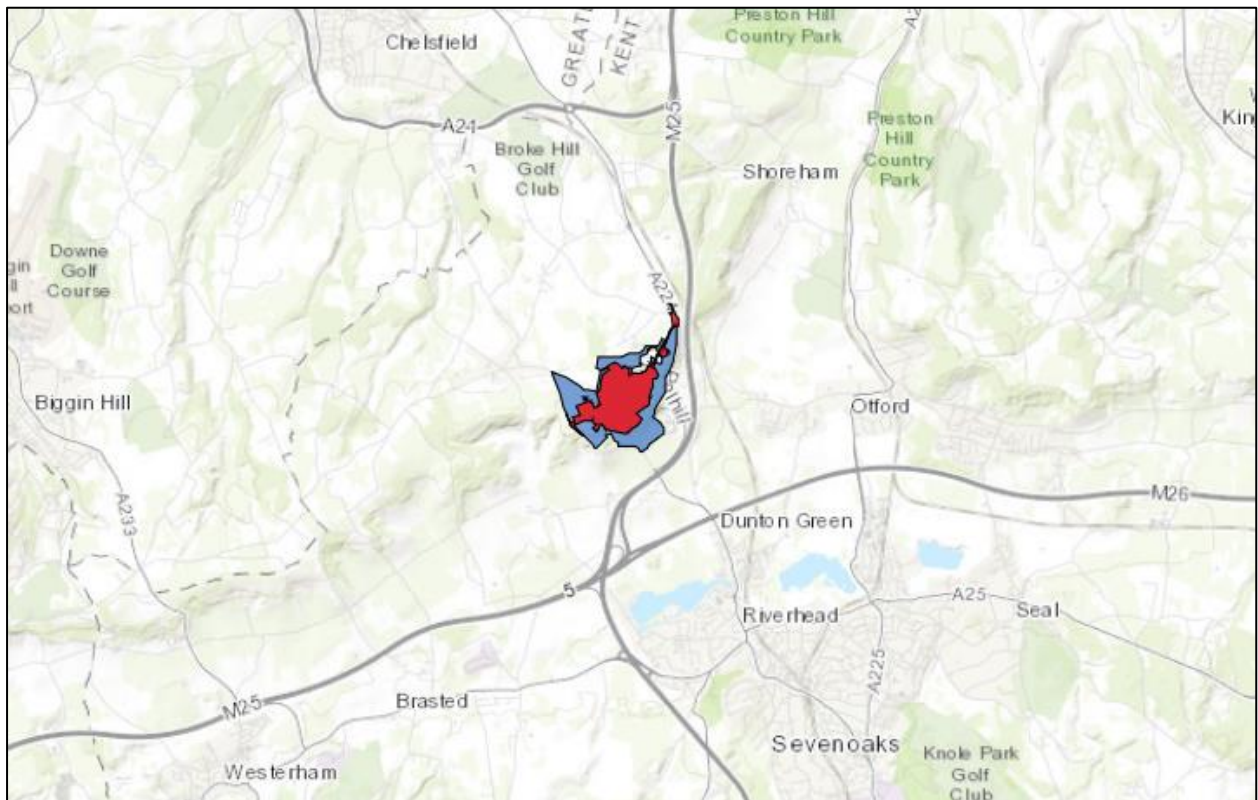


Figure 1: Site Location Plan (Red = Site Boundary / Blue = Ownership Boundary)

(Source: OS Data © Crown Copyright and Database Right 2019 [Accessed via ArcGIS Online, 27<sup>th</sup> June 2019]<sup>3</sup>).

This assessment follows best practice guidance produced by Historic England and by the Chartered Institute for Archaeologists (CIfA) and is intended to meet the requirements of national heritage planning

<sup>1</sup> Waterman, 2015. *Environmental Statement Volume 1: Main Text*, on behalf of Armstrong (Kent) LLP

<sup>2</sup> Waterman, 2015. *Buried Heritage Desk-based Assessment, Fort Halstead, Kent*. 'Appendix 8.1 of the Environmental Statement Volume 4B: Appendices', on behalf of Armstrong (Kent) LLP

<sup>3</sup> ArcGIS Online, accessible via <https://www.arcgis.com/index.html> (Accessed on 27<sup>th</sup> June 2019)

policy contained within the National Planning Policy Framework (NPPF). Relevant legislation, policy and guidance is outlined in **Section 3** and **Appendix E**.

## 1.1 Site Location

The Site, which extends to circa 74.49 hectares (ha), is centred on National Grid Reference (NGR) 549741,159317 and located approximately 4km north-east of Sevenoaks and 8km south-east of Orpington on the edge of the North Downs, within the administrative boundary of SDC.

The Site is owned by the Client and is currently occupied by the Defence Science and Technology Laboratory (DSTL) and QinetiQ on a long lease. Land surrounding the Site also in the Client's ownership is referred to as the 'current ownership boundary' and comprises an additional 56.57 ha (see **Figure 1**). Together, the Site and the current ownership boundary total 131.36 ha.

### 1.1.1 The Proposed Development

The proposed hybrid planning permission comprises the following:

In detail:

- Demolition of existing buildings;
- Change of use and works to buildings Q13 and Q14 (including landscaping and public realm);
- Primary and secondary accesses.

In outline:

- Development of business space (use classes B1 a/b/c) of up to 27,659 sq m GEA;
- Works within the 'X' enclave relating to energetic testing operations, including fencing, access, car parking;
- Development of up to 750 residential dwellings;
- Development of a mixed-use village centre (use classes A1/A3/A4/A5/B1a/D1/D2);
- Development of a one form entry primary school;
- Change of use of Fort Area and bunkers to Historic Interpretation Centre (use class D1) with workshop space;
- Roads, pedestrian and cycle routes, public transport infrastructure, car parking, utilities infrastructure, drainage;
- Landscaping, landforming and ecological mitigation works.

## 1.2 Scope of Report

The aims of this desk-based assessment are:

- To identify any known designated and non-designated archaeological assets present within the Site and surrounding study area;
- To determine the potential for as yet unknown archaeological remains within the Site;
- To assess the significance of archaeological remains and historic landscape character that could be affected by the Development;
- To determine the likely impacts of the Development upon known and potential as yet unknown archaeological remains, including consideration of changes to their setting (where applicable);



- to make recommendations for further assessment and/or field investigations, as appropriate.

## 2. Methodology

Data was sought from the following sources:

- Historic England's *The National Heritage List for England* (NHLE) online database<sup>4</sup> for designated heritage assets within the Site and a 2km study area;
- The Kent Historic Environment Record (KHER) for non-designated heritage assets within the Site and a 2km study area;
- Available secondary sources, including historic mapping information accessed via The British Library<sup>5</sup> and The National Library of Scotland<sup>6</sup>.

A full list of references can be found in **Section 9**.

The Kent History and Library Centre, the Historic England Archive (previously the National Monuments Record) and the National Archives were consulted by Waterman in preparation of the 2015 desk-based assessment. The resultant findings of that research are presented in this assessment where relevant.

In addition to the above, a site walkover survey was undertaken on 4<sup>th</sup> June 2019 to assess known archaeological assets within the Site and to identify any additional features of archaeological interest.

A 2km study area surrounding the Site was considered following the advice received for the 2014 Scoping Opinion provided by Kent County Council Heritage Conservation (KCCHC), historic environment advisor to SDC, where it was recommended that “*a broad view is taken of the archaeological interest of the wider area, not just the proposed development area*”. Therefore, the same study area as for the 2015 assessment has been applied for this assessment.

Heritage assets considered in this assessment include:

### *Designated Heritage Assets*

- World Heritage Sites
- Scheduled Monuments
- Listed Buildings
- Conservation Areas
- Registered Parks & Gardens
- Registered Battlefields

### *Non-Designated Heritage Assets*

- Monuments
- Archaeological sites
- Locally listed or non-designated buildings
- Findspots

Where upstanding heritage assets within the Site or study area, such as Listed Buildings or Conservation Areas, may inform on archaeological potential within the Site through potential associated buried remains, they are also reviewed in this assessment.

Although findspots in themselves are not archaeological assets, as the artefact(s) would have been removed from their original context by this stage, they do nonetheless indicate potential activity or

<sup>4</sup> Historic England, *The National Heritage List for England* (NHLE), accessible via <https://historicengland.org.uk/listing/the-list>

<sup>5</sup> The British Library, accessible via <https://www.bl.uk/>

<sup>6</sup> The National Library of Scotland, accessible via <https://maps.nls.uk/>

settlement in the area and are therefore considered in an evidential context for this assessment.

A gazetteer of all known assets discussed in this assessment is presented in **Appendix B** and a summary can be found in **Section 4**. Assets are referenced by their Waterman ascribed ‘Heritage Reference’ (e.g. ‘H1’) which can be cross referenced to the official NHLE number (seven-digit number) for designated assets or KHER reference (prefixed with ‘MKE’) for non-designated assets. Previous investigations and studies are referenced by their Waterman ‘Event Reference’ (e.g. ‘E1’).

A copy of relevant listing entries for designated heritage assets within the Site can be found in **Appendix D**.

## 2.1 Significance Criteria

The NPPF defines ‘significance’ in the context of heritage policy 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”<sup>7</sup>.*

This assessment ascribes a value to heritage assets (see **Table 1**) to provide an initial framework for determining the significance of individual heritage assets and then combines this with guidance from Historic England<sup>8</sup> which recommends making assessments under the categories of ‘Evidential’, ‘Historical’, ‘Aesthetic’ and ‘Communal’ value (see **Table 2**). This is applied using professional judgement against the current known condition of each asset to provide an overall statement of significance.

Table 1: Statutory Value of Heritage Assets

Value	Type of Heritage Asset
Very High	World Heritage Sites (including nominated sites).
	Scheduled Monuments (including assets of schedulable quality).
	Grade I Listed Building.
	Grade I Registered Parks and Gardens.
	Protected Wrecks.
	Heritage assets of national or international importance.
High	Grade II* and II Listed Buildings.
	Conservation Areas.
	Grade II* and II Registered Parks and Gardens.
	Registered Battlefields.
	Protected heritage landscapes (ancient woodlands or historic hedgerows).
	Heritage assets of regional or county importance.
Medium	Locally listed buildings.
	Heritage assets with a district value or interest.
Low	Heritage assets with a local (e.g. parish) value or interest.
Very Low	Historic environment resource with no significant value or interest.
Unknown	Heritage assets for which current level of understanding is insufficient to allow significance to

<sup>7</sup> Ministry of Housing, Communities & Local Government, 2019. *National Planning Policy Framework*, p. 71 accessible via [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/740441/National\\_Planning\\_Policy\\_Framework\\_web\\_accessible\\_version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/740441/National_Planning_Policy_Framework_web_accessible_version.pdf)

<sup>8</sup> English Heritage, 2008. *Conservation Principles, Policies and Guidance for the sustainable management of the historic environment*, accessible via <https://historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic-environment/conservationprinciplesandguidanceapril08web/>



Value	Type of Heritage Asset
	be determined.

Table 2: Significance of Heritage Values

Heritage Values	Definition
Evidential	Evidential value derives from the potential of a place to yield evidence about past human activity.
Historical	Historical value derives from the ways in which past people, events and aspects of life can be connected through a place to the present. It tends to be illustrative or associative.
Aesthetic	Aesthetic value derives from the ways in which people draw sensory and intellectual stimulation from a place.
Communal	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 values are closely bound up with historical (particularly associative) and aesthetic values but tend to have additional and specific aspects.

### 3. Legislation, Policy and Guidance

This assessment has been produced within the context of relevant legislation, as well as local and national planning policy and considers policies laid out in the NPPF and the local planning policy of SDC.

Additionally, guidance produced by the ClfA and Historic England have also been taken into account as far as practicable and where relevant to this assessment. Relevant legislation, policy and guidance is listed below, and further detail can be found in **Appendix E**.

#### 3.1 Legislation

- Ancient Monuments and Archaeological Areas Act 1979<sup>9</sup>
- Planning (Listed Buildings and Conservation Areas Act) 1990<sup>10</sup>

#### 3.2 National and Local Policy

- *National Planning Policy Framework (NPPF)*, updated 2019, see 'Section 16 Conserving and enhancing the historic environment'<sup>11</sup>
- *Planning Practice Guidance (PPG)*, updated 2019, see 'Section 18 Conserving and enhancing the historic environment'<sup>12</sup>
- Sevenoaks District Council, *Core Strategy*, 2011, see 'Policy SP1'<sup>13</sup>
- Sevenoaks District Council, *Allocations and Development Management Plan*, 2015, see 'Policy EN4' and 'Policy EMP3'<sup>14</sup>
- Sevenoaks District Council, *Local List Supplementary Planning Document*, 2017<sup>15</sup>

It must be noted that SDC is currently preparing the new Local Plan (2015-2035)<sup>16</sup> which is due to be adopted in 2020. Although the policies outlined in the draft cannot be given full weight at present, relevant policies include:

- Policy HEN1 Historic Environment
- Policy HEN2 Heritage Assets

#### 3.3 Guidance

*The Chartered Institute for Archaeologists (ClfA)*

- *Standard and guidance for historic environment desk-based assessment*, 2017<sup>17</sup>

<sup>9</sup> Her Majesty's Stationery Office (HMSO), *Ancient Monuments and Archaeological Areas Act*. 1979, accessible via <https://www.legislation.gov.uk/ukpga/1979/46>

<sup>10</sup> Her Majesty's Stationery Office (HMSO), *Planning (Listed Buildings and Conservation Areas) Act*. 1990, accessible via [www.legislation.gov.uk/ukpga/1990/9/contents](http://www.legislation.gov.uk/ukpga/1990/9/contents)

<sup>11</sup> Ministry of Housing, Communities and Local Government, 2019. *National Planning Policy Framework*.

<sup>12</sup> Ministry of Housing, Communities and Local Government, 2019. *Planning Practice Guidance*, accessible via <https://www.gov.uk/guidance/conserving-and-enhancing-the-historic-environment>

<sup>13</sup> Sevenoaks District Council, 2011. *Core Strategy, Local Development Framework*, accessible via [https://www.sevenoaks.gov.uk/downloads/file/356/core\\_strategy\\_adopted\\_version\\_february\\_2011](https://www.sevenoaks.gov.uk/downloads/file/356/core_strategy_adopted_version_february_2011)

<sup>14</sup> Sevenoaks District Council, 2015. *Allocations and Development Management Plan*, accessible via [https://www.sevenoaks.gov.uk/downloads/download/128/allocations\\_and\\_development\\_management\\_plan](https://www.sevenoaks.gov.uk/downloads/download/128/allocations_and_development_management_plan)

<sup>15</sup> Sevenoaks District Council, 2017. *Local List Supplementary Planning Document*, accessible via [https://www.sevenoaks.gov.uk/downloads/file/1012/local\\_list\\_supplementary\\_planning\\_document](https://www.sevenoaks.gov.uk/downloads/file/1012/local_list_supplementary_planning_document)

<sup>16</sup> Sevenoaks District Council, 2018. *Proposed Submission Version Sevenoaks District Local Plan*, accessible via <https://planningconsult.sevenoaks.gov.uk/consult.ti/PRESUBLP/consultationHome>

<sup>17</sup> Chartered Institute for Archaeologists, 2017. *Standard and Guidance for Historic Environment Desk Based Assessments*, accessible via [https://www.archaeologists.net/sites/default/files/ClfAS%26GDBA\\_3.pdf](https://www.archaeologists.net/sites/default/files/ClfAS%26GDBA_3.pdf)

### *Historic England*

- *Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment*, 2008<sup>18</sup> (published by English Heritage)
- *Historic Environment Good Practice Advice in Planning Note 2 (GPA 2) – Managing Significance in Decision Taking*, 2015<sup>19</sup>
- *Historic Environment Good Practice Advice in Planning Note 3 (2<sup>nd</sup> edition) (GPA 3) – The Setting of Heritage Assets*, 2017<sup>20</sup>

### *Other*

- Kent Downs, *Kent Downs Area of Outstanding Natural Beauty Management Plan*, 2014, see 'Policy HCH1', 'Policy HCH2', 'Policy HCH3', 'Policy HCH4', 'Policy HCH5'<sup>21</sup>

<sup>18</sup> English Heritage, 2008. *Conservation Principles, Policies and Guidance for the sustainable Management of the Historic Environment*

<sup>19</sup> Historic England, 2015. *Managing Significance in Decision Taking in the Historic Environment Historic Environment Good Practice Advice in Planning Note 2*, accessible via <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/>

<sup>20</sup> Historic England, 2017. *Historic Environment Good Practice Advice in Planning Note 3 (2<sup>nd</sup> edition) (GPA 3) – The Setting of Heritage Assets*, accessible via <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/hea9180-gpa3-setting-heritage-assets/>

<sup>21</sup> Kent Downs, 2014. *Kent Downs Area of Outstanding Natural Beauty Management Plan*, accessible via <https://s3-eu-west-1.amazonaws.com/explore-kent-bucket/uploads/sites/7/2018/04/18113849/KDAONB-Management-Plan.pdf>

## 4. Baseline Conditions

### 4.1 Site Conditions

The Site is located within an area dominated by farmland and scattered villages, most notably the villages of Halstead, Knockholt and Knockholt Pound all of which are located to the north/north-west of the Site. Residential properties are located along Crow Drive and Star Hill Road immediately to the north-east and south-west of the Site, respectively. Land within the current ownership boundary adjoins the Site, comprising mainly woodland and grassland.

The main access into the Site is via Crow Drive off the A224 Polhill Road/London Road in the north-eastern part of the Site. The A224 connects to the M25 motorway at Junction 5, which is located approximately 700m south of the Site, although as the M25 motorway continues to the east of the Site in parallel with the A224, the M25 extends within 90m from the Site, at its closest point. Crow Drive leads to Crow Road, which extends through the Site to Star Hill Road to the south-west of the Site.

The land immediately beyond the Site is characterised by mature trees, rough grassland and several wooded areas that screen the Site from external view. The woodland includes plantations and designated ancient woodland.

#### 4.1.1 Geology and Topography

The underlying geology of the Site primarily consists of the Lewes Nodular Chalk Formation, Seaford Chalk Formation and Newham Chalk Formation with dispersed layers of the Holywell Nodular Chalk Formation, New Pit Chalk Formation, West Melbury Marly Chalk Formation and Zig Zag Chalk Formation within its immediate environs<sup>22</sup>.

The Site's superficial deposit consist of Clay-with-flints over its northern and central sections<sup>23</sup>. This layer is seemingly absent on a narrow strip in the east of the Site and in the south-eastern extent of the Site.

Layers of made ground encountered in the developed areas of the Site have typically been recorded to a depth of 1m, with maximum depths of up to 4m, and are described as silty clay with some ash and cobbles of brick<sup>24</sup>. Topsoil coverage is estimated to be between 0.1 to 0.8m depths and consists of dark brown silt with medium to coarse gravel and cobbles of flint<sup>25</sup>.

Topographically, the Site is dominated by a chalk escarpment that extends in a south-west to north-east direction. The Site is located on top of the chalk escarpment ridge and is elevated above the surrounding area. Much of the Site is relatively flat, with ground elevations ranging from approximately 160m above Ordnance Datum (aOD) in the north-eastern part of the Site to 220m towards the western extent of the Site. However, the southern part of the Site slopes steeply from 210m to 180m.

### 4.2 Designated Heritage Assets

There are no World Heritage Sites and Registered Battlefields within the Site or study area.

**Figure 2 (Appendix A)** shows the locations of designated heritage assets within the Site and study area.

#### 4.2.1 Scheduled Monuments

The scheduled Fort Halstead [H1], a post-medieval to modern defensive and research structure, is located within the south-eastern extent of the Site. The fort is polygonal in plan and is surrounded by

<sup>22</sup> British Geological Survey, Geology of Britain Viewer, accessible via <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>

<sup>23</sup> Ibid

<sup>24</sup> Waterman, 2015. *Buried Heritage Desk-based Assessment, Fort Halstead, Kent*, p. 2

<sup>25</sup> Ibid, p.3

earthen ramparts and a deep external moat which is partially covered by car parking at its south-western corner.

The full listing entry for Fort Halstead can be found in **Appendix D** and further historic background of this monument is provided in **Section 5**.

A further Scheduled Monument (a medieval moated site at Filston Hall, [H2]) has been identified approximately 1.7km to the north-east of the Site. Due to the distance of this asset from the Site, it is not considered that associated archaeological remains may extend into the Site, therefore, this monument is not considered further in this assessment aside from where it contextualises the historic environment resource within the study area.

#### 4.2.2 Listed Buildings

There are 3 Listed Buildings (1 Grade II\* and 2 Grade II) within the Site and a further 56 have been identified within the study area. As the Listed Buildings within the study area are not considered to inform the potential for as yet unknown buried archaeological remains within the Site, they are not considered further in this assessment.

The Listed Buildings within the Site are as follows:

- Buildings F16 and F17, Grade II\* listed [H5];
- Building F11, Grade II listed [H4];
- Building Q14, Grade II listed [H3].

The F16/F17 and F11 buildings are situated directly within the scheduled Fort Halstead [H5 and H4] while Q14 [H3] is located c. 40m to the north of the fort within the south-eastern extent of the Site. The buildings are of modern 1930s to 1940s date and were constructed specifically for bomb detonation and rocketry research purposes.

The above Listed Buildings are considered in this assessment due to their potential for associated buried remains that may be present within the Site.

#### 4.2.3 Conservation Areas

No Conservation Areas fall within the Site, however, 4 can be found within the study area as follows:

- Halstead Conservation Area (c. 1.6km north of the Site) [H8];
- Shoreham High Street Conservation Area (c. 1.8km north-east of the Site) [H9];
- Otford Conservation Area (c. 2km east of the Site) [H6]; and
- Chevening Conservation Area (c. 1km south-west of the Site) [H7].

As the above are not considered to provide further significant information to determine the potential for as yet unknown buried archaeological remains within the Site, primarily due to their distance from the Site, they are not considered further in this assessment.

#### 4.2.4 Registered Parks and Gardens

The Grade II\* listed Chevening Registered Park and Garden [H9] is located within the most south-western extent of the study area, c. 600m south-west of the Site.

Due to the distance of this asset to the Site, and the fact that the Site has no direct association with the park, it is considered that it does not contribute to the understanding of the potential for archaeological

remains within the Site. Therefore, this asset is only considered in this assessment where it might inform the development of the historic landscape within the study area.

### 4.3 Non-Designated Heritage Assets

There are 562 non-designated heritage assets within the Site and study area. Sixty-one of these are directly linked to the designated heritage assets described above and shall therefore not be discussed here as they will be assessed under their designated asset remit.

Out of the remaining assets, 364 are findspots predominantly noting the finds of buckles, brooches, coins, copper alloy objects, rings, spindle whorls and weights broadly dating from the Romano-British to the medieval periods.

Within the Site itself, there are 5 known non-designated heritage assets which comprise of a prehistoric trackway (known as Pilgrim's Way) [H50], 2 post-medieval outfarms [H430, H436] and 2 modern buildings (F14 and F18) [H470, H471].

The locations of non-designated monuments and buildings can be seen on **Figure 3 (Appendix A)**.

### 4.4 Historic Landscape

The Kent Historic Landscape Characterisation places the Site within the Western North Downs Historic Landscape Character Area (HLCA) which due to its homogeneity means that "*it is difficult to characterise summarily*"<sup>26</sup>. The HLCA varies according to topography but is predominately dominated by regular field types (some of which display elements of post 1801 settlement), woodland and fields bounded by paths and tracks.

The study area is located within the Kent Downs Area of Outstanding Natural Beauty (AONB) which is noted for its distinctive chalk downland, steep scarps and woodlands. The scarp slope of the escarpment faces both south, across the Kent Weald, and east across, the Darent Valley. The Site is located on the top of the chalk escarpment ridge on relatively flat land on the upper part of the 'dip slope' of the escarpment.

Within the Site itself, the HLC (Historic Landscape Character) data as per KHER notes the presence of the following:

- Pre-1810 woodland;
- Replanted other pre-1810 woodland;
- Pre-1810 scarp and steep valley-sided woodland;
- Small regular field with straight boundaries (parliamentary type enclosure);
- Medium regular field with straight boundaries (parliamentary type enclosure);
- Large regular field with straight boundaries (parliamentary enclosure);
- Post 1810 settlement;
- Post 1810 settlement;
- Downland.

Notably, neither the HLCA nor the HLC refer to the post-medieval to modern military and research activity at Fort Halstead. The above HLC types show that prior to the 19th century development of Fort Halstead, the land immediately surrounding the Site has historically been characterised by woodland. While it is considered that there would have been a lesser tree cover surrounding the southern boundary of the fort following its construction to afford visibility across the landscape to the south, it is assumed that the fort

<sup>26</sup> Oxford Archaeological Unit, 2001. Kent Historic Landscape Characterisation, on behalf of English Heritage and Kent County Council, p.3-3

would have to some extent blended in with its landscape, firstly, because of the rise in topography towards the woodland within the Site from the valley below, and, secondly, because the fort was primarily constructed as a defensive structure. Therefore, while it would have afforded good views of the wider landscape for strategic purposes, it would likely not have immediately stood out as a military structure.

The remnants of Dutchmore Wood and Anisbirches Wood within the Site likely form part of the ancient woodland formerly known as Beaumont Wood which would have bordered the scarp of the chalk ridge until later farming and military developments saw some loss of this woodland. This is based on available historic mapping (see **Section 5**) which suggests that this would have been the case from at least the 17th century onwards.

The Site currently appears to blend in with the landscape in the study area which is primarily due to the presence of surviving woodland coverage at Badgers Mount (to the north of the Site), Sevenoaks (to the south of the Site), Chevening (to the south-west of the Site) and Knockholt (to the north-west of the Site).

#### **4.5 Previous Investigations and Studies**

A total of 27 previous investigations and studies ranging from excavations, evaluations, desk-based assessments and watching briefs have been undertaken within the Site and study area. With the exception of 4 desk-based assessments [E3, E4, E5, E8], these have exclusively been carried out within the study area at Shoreham, Otford and Dunton Green along the most north-eastern, eastern and south-eastern extents of the study area.

Excavations at Pollhill [E13, E24], approximately 450m to the south-east of the Site, found an Anglo-Saxon cemetery in the late 1950s and 1960s.

At Twitton (circa 1.8km east of the Site) a series of excavations [E17, E20, E19, E21, E18, E2] and evaluations [E25, E10, E1] uncovered probable Roman buildings, a cemetery and other seemingly isolated cremation burials, the remains a Roman settlement and ditches (likely representing the outskirts of the settlements), a late medieval domestic structure and various undated features including pits or post holes. Finds of prehistoric worked flint and animal bone and Roman pottery were also noted. Two watching briefs [E26, E27] within the same area noted no archaeological features.

A gazetteer of all previous investigations and studies can be found in **Appendix C** and their locations are presented in **Figure 5 (Appendix A)**.

## 5. Historic and archaeological Background

### Palaeolithic to Iron Age (500,000 BC to AD 43)

Although worked flints, human and animal remains dating from the Lower Palaeolithic have been discovered within the North Downs area, it is thought that human activity at this time coincided with intermittent warm phases during the last glacial period, and that continuous occupation did not occur until after the glaciation when the climate warmed<sup>27</sup>.

Generally, there is substantial evidence of Neolithic activity within the North Downs which is well represented by the sarsen long barrows concentrated in the Medway valley c.25km east of the Site. The prominent position of the study area on the North Downs is likely to have attracted settlement as places such as Sevenoaks were generally formed in sheltered valleys and along the spring line at the foot of the scarp slope.

Within the northern extent of the Site c. 400m north of the fort, the course of a suspected prehistoric trackway referred to as Pilgrims' Way (North Downs Way) [H50] has been identified and forms the only known prehistoric assets within the Site. Although the trackway has not yet been dated, nor has its presence within the Site been confirmed, it may have originated in the prehistoric trackway and was later formalised in the medieval period.

Within the study area the KHER records 33 finds of prehistoric date including a Palaeolithic ovate handaxe [H28], a likely Mesolithic flint scatter [H346], a Neolithic stone hoe [H63], a copper alloy awl, tentatively dated to the Bronze Age [H337], and a number of Iron Age copper alloy coins, brooches and cosmetic mortar [H69, H70, H78, H123, H168, H211, H213, H214, H215, H216, H217, H218, H219, H220, H221, H279, H280, H281, H318, H351, H355, H486, H488, H489, H490, H499] and pottery [H38]. It must be noted that none of these were seemingly associated with features and represent isolated chance finds.

Generally within the study area the known prehistoric activity appears to be concentrated within the eastern extent of the study area, roughly following the line of the River Darent from Shoreham to Dunton Green with the highest concentration to the north-west of Otford. Aside from a ditch containing pottery [H49] uncovered to the north of the M26 c.1.6km south of the Site, there is no further evidence of potential settlement or land management features.

Although there is clear evidence of prehistoric activity within the study area, most of which is represented by isolated finds, the only known prehistoric evidence within the Site is the suspected prehistoric route of Pilgrim's Way. Furthermore, there appears to be a distinct lack of settlement evidence within the study area. It is likely that the Site remained densely wooded at the time, and the trackway may have formed part of a formalised route through the wood. Based on the above, there is considered to be low potential for further as yet prehistoric remains within the Site.

### Romano-British (43 AD to AD 410)

While the KHER records a total of 202 archaeological finds and features of Romano-British date within the study area, none are located directly within the Site and records dating from this period appear to be principally located within or to the north of the cremation cemetery at Frog Farm [H37, H44] located approximately 1.4km east of the Site.

The cremation cemetery has been the subject to several evaluations which have confirmed it to have been in use between the 1st and 4th centuries AD. According to Ward<sup>28</sup> "in the absence of any known

<sup>27</sup> Tuson, D, 2007. *The Kent Downs*, Stroud

<sup>28</sup> Ward, C.P, 1990. *The Romano-British Cremation Cemetery at Frog Farm, Otford, Kent, in the context of contemporary funerary practices in South-East England*



*east-west Roman road through Kent south of Watling Street, it may be assumed that the Pilgrims' Way formed a part of the main communications network of southern Britain" in the Romano-British period.*

Evidence of a settlement site also cluster around Frog Farm [H285], thus indicating that the area may have formed the periphery of the settlement. Floor and roof tiles indicative of a further Roman building were also found at Halstead [H22] to the north of the Site, however, no further associated settlement evidence was recovered at Halstead.

The 193 findspots make up the rest of the known Roman assets and primarily consist of copper alloy coins, silver coins, lead alloy coins and lead allow weights, spindle whorls, brooches, hob nails, mounts, nail cleaners, rings, bracelets and medical implements. The majority of these are located to the north of Frog Farm between the north-western extent of Otford and the River Darent.

Other than the possible settlement site and cremation cemetery, the nearest known Roman site is the scheduled Roman villa at Otford located c. 3.5km to the east of the study area.

Similarly to the prehistoric period, although there is clear evidence of Roman activity within the study area, mostly within its south-eastern extent, the potential for encountering as yet unknown buried remains of Romano-British date within the Site is considered to be low.

#### Early medieval (410 to 1066)

In comparison to the preceding periods, the early medieval period is not very well represented within the study area. The Anglo-Saxon cemetery at Polhill [H40], c. 200m east of the Site's most south-eastern boundary, is one of the only known early medieval assets within the study area.

The cemetery, which has now been entirely excavated, was located to the south-east of the Site beyond the North Downs Business Park until it was removed by the former Dunton Green Lime Works and the construction of the A224 and M25.

Scattered burials were discovered by chance between 1839 and 1964 and in total 162 inhumations were recovered over time. Although up to 14 barrows were present within the cemetery, it was noteworthy for the absence of high status or warrior graves. It may be that the practice of including high status items, such as weapons and personal ornaments, with inhumations had reached an end, with a transition to a more Christianised burial regime<sup>29</sup>. However, it may also suggest that the cemetery catered for a middle ranking population only, or at least the lower and middle ranking parts of the overall population.

Other than at the cemetery, a further 2 concentrations of finds are noted to overlap with previous Roman sites at Sepham Farm and Frog Farm, located c. 600m and 1.2km east of the Site respectively. The finds mainly include copper alloy objects (such as strap fittings, brooches and horse trappings) but also iron horseshoes and silver coins. These suggest continued use of these areas during the Romano-British to early medieval transition period.

Although early medieval settlement evidence is generally rare, the survival of the cemetery indicates that there would have likely been a settlement within the study area, however, no evidence of such has as yet been captured by the KHER. Similarly to the preceding periods, the potential for as yet unknown early medieval remains within the Site is considered to be low.

#### Medieval (AD 1066 to AD 1540)

The medieval period is generally better represented and similar to the preceding periods appears to primarily be present within the eastern extent of the study area. One moated site is present within the study area which is the scheduled moat at Filston Hall [H2, H52] approximately 1.7km to the north-east of the Site. At Shoreham, c. 800m to the north of the moat further medieval evidence includes the sites of

<sup>29</sup> Waterman Energy Environment and Design Ltd, 2008. *Fort Halstead – Kent: Archaeological Assessment*

timber buildings and findspots. The remnants of Otford deer park [H21] are noted to lie c. 1.4km to the east of the Site and the site of a former medieval house (now a Grade II Listed Buildings known as Middle House) is located c. 630m south of the Site.

Furthermore, the KHER records the presence of a medieval feature, called the 'Danes Trench' [H41] within the study area. It comprises a linear bank and ditch on a broadly north-south alignment along the east side of the A224 and is located approximately 250m east of the Site. The earliest documentary reference to this feature dates from 1406, although, the exact reasons behind its construction are unknown. It was likely created to restrict access from the pastoral lands of the river valley on to the wooded hillside. Excavation of the extant earthwork showed that a steep-sided 'V-shaped' ditch had been cut into the natural chalk slope, with the rubble piled on the lower slope to make a bank.

Sixty-five of the remaining medieval records relate to isolated findspots, many of which are concentrated in the 2 areas of known previous occupation sites such as at Sepham Farm and Frog Farm and consist of copper alloy objects (e.g. spindle whorl, harness pendants, hooks, studs, rings), iron objects (horseshoes, keys) and silver coins.

Although it appears as though medieval activity started to reach further westwards that the previous prehistoric to early medieval activity areas, it is likely that the Site would have remained wooded at that time and would have unlikely been a place for settlement. As such, there is considered to be low potential for encountering as yet buried remains of medieval remains within the Site.

#### Post-medieval (AD 1540 to AD 1901)

In general, it is not until the post-medieval period that a distinct rise in settlements and agricultural activity can be noted within the study area. This is displayed on Symonson's 1596 map<sup>30</sup> which shows the amount of settlements that surround the Site (see **Plate 1**).



Plate 1: Extract of Symonson's 1596 map

<sup>30</sup> British Library, Symonson 1596 "A New Description of Kent Divided into the five Lathes", accessible via <http://www.bl.uk/onlinegallery/onlineex/maps/uk/004971854.html>

Shoreham, Otford, Sevenoaks, Morants Court, Chevening, Knockholt and Halstead can be noted within the wider landscape.

The map clearly depicts the escarpment on which the Site is situated. The Site appears to be covered by woodland and although the extent of this cover cannot accurately be determined, it is considered that it might have been extensive.

Pink's 1798 map<sup>31</sup> (see **Plate 2**) provides further indication of woodland cover within the Site and shows that it is covered by Beaumont's Wood. The landscape outside of the wooded areas within the study area primarily appears to be in agricultural use.



Plate 2: Extract of Pink's 1798 map

The earliest available tithe map originally sourced for the 2015 assessments is the Otford Tithe map of 1844 (see **Appendix G**). The map demonstrates that the Site and surrounding area comprised a mixture of woodland, heath and mixed arable and pastoral agricultural land in the mid-19th century.

Although not individually listed as such on the map, the Site would have comprised Anis Birchets and Great Stockhams Woods, together with the Golden Grove, Broadhams, Russets and Broadham fir plantations which were under the ownership of the Polhill family. The field names listed in the tithe awards

<sup>31</sup> British Library, Pink, 1798 "Sevenoaks (Kent) 16", accessible via <http://www.bl.uk/onlinegallery/onlineex/ordsurvdw/s/002osd00000016u00349000.html>



do not provide any evidence for the presence of archaeological remains on the Site and neither are any archaeological features of note depicted.

The 1871<sup>32</sup> OS (see **Plate 3**) shows that the majority of the area was still occupied by woodland at this time (with wooded areas named as Beaumont, Anisbirches, Old Grove and Dutchmore Wood north to south), with only relatively small areas of open land along the southern and western fringes, for instance around Morants Court Hill.

An unknown boundary separates Beaumont Wood, Anisbirches Wood and Dutchmore Wood within the Site and extends both northwards and southwards from where it borders all three woods. The nature of it is marked as 'undefined' ('Und') on the map, however, it is likely that it was created to separate the woodlands which formerly was known as Beaumont Wood.

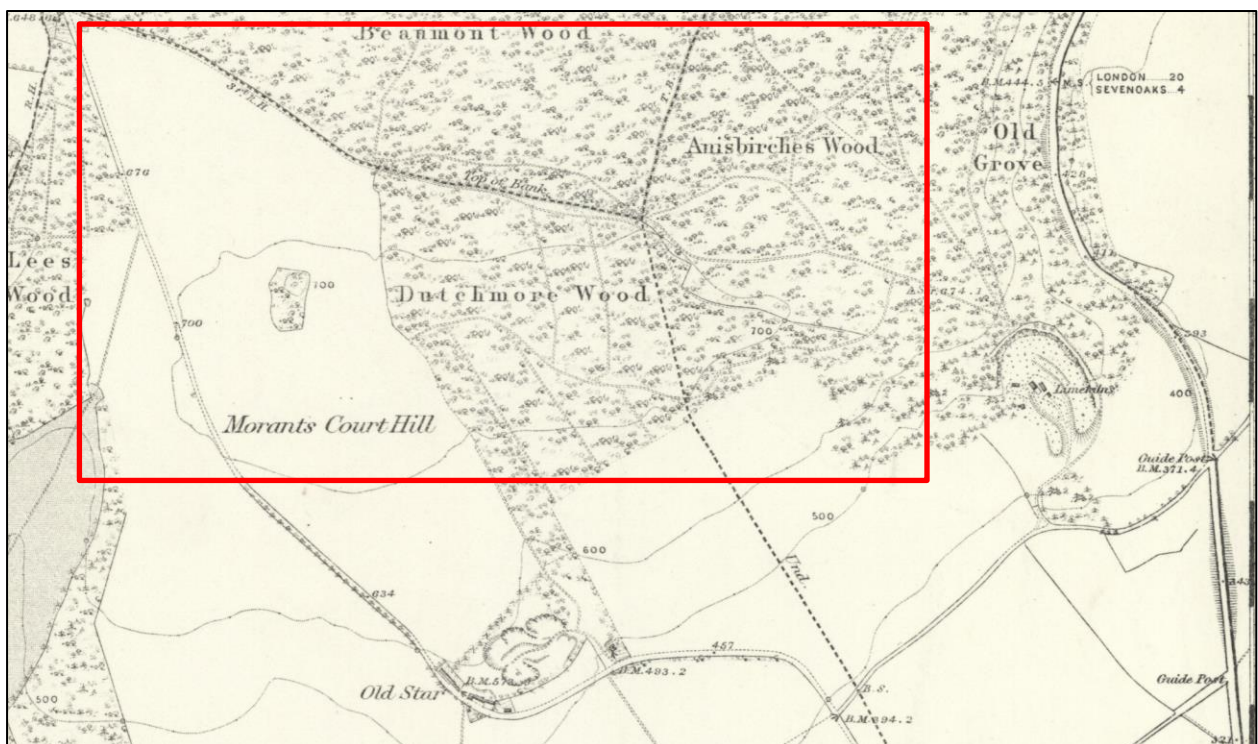


Plate 3: Extract of 1871 OS map

The Ordnance Survey (OS) map of 1898<sup>33</sup> (see **Plate 4**) is one of the first maps produced after the construction of the fort [H1] in 1894 and marks the start of more significant changes within the Site. While it provides an indication of the position of the fort, it is left virtually blank with only a contour line and two small buildings of an unknown function shown in the north-east corner.

The known former post-medieval outfarm [H430] to the north of the fort is described by the KHER as “an outfarm or field barn group consisting of two detached buildings”. This is roughly at the location of Buildings A13 and A14 within the Site which are thought to have been the original caretaker’s cottage and store building catering to Fort Halstead.

If an outfarm did exist at that location before it was replaced by the caretaker’s cottage and storage building it would have only been in existence between c. 1844-1898. However, it is more likely that the KHER record refers to the original caretaker’s cottage and store building itself, meaning that there was unlikely outfarm.

<sup>32</sup> The National Library of Scotland, OS Six-Inch England and Wales, 1842-1952, published 1871, surveyed 1868 to 1869, Kent XXVIII (includes: Orpington), accessible via <https://maps.nls.uk/view/102343516>

<sup>33</sup> The National Library of Scotland, OS Six-Inch England and Wales, 1842-1952, published 1895, surveyed 1898, Kent XXVIII.SE (includes: Brasted; Chevening; Orpington; Sundridge), accessible via <https://maps.nls.uk/view/101428911>

Furthermore, a chalk pit and lime kilns are depicted immediately adjacent to the south-east of the Site [H33] which are thought to later became the Dunton Green Lime Works that existed within the same area until the 1970s.

The remainder of the Site and study area appear unaltered.

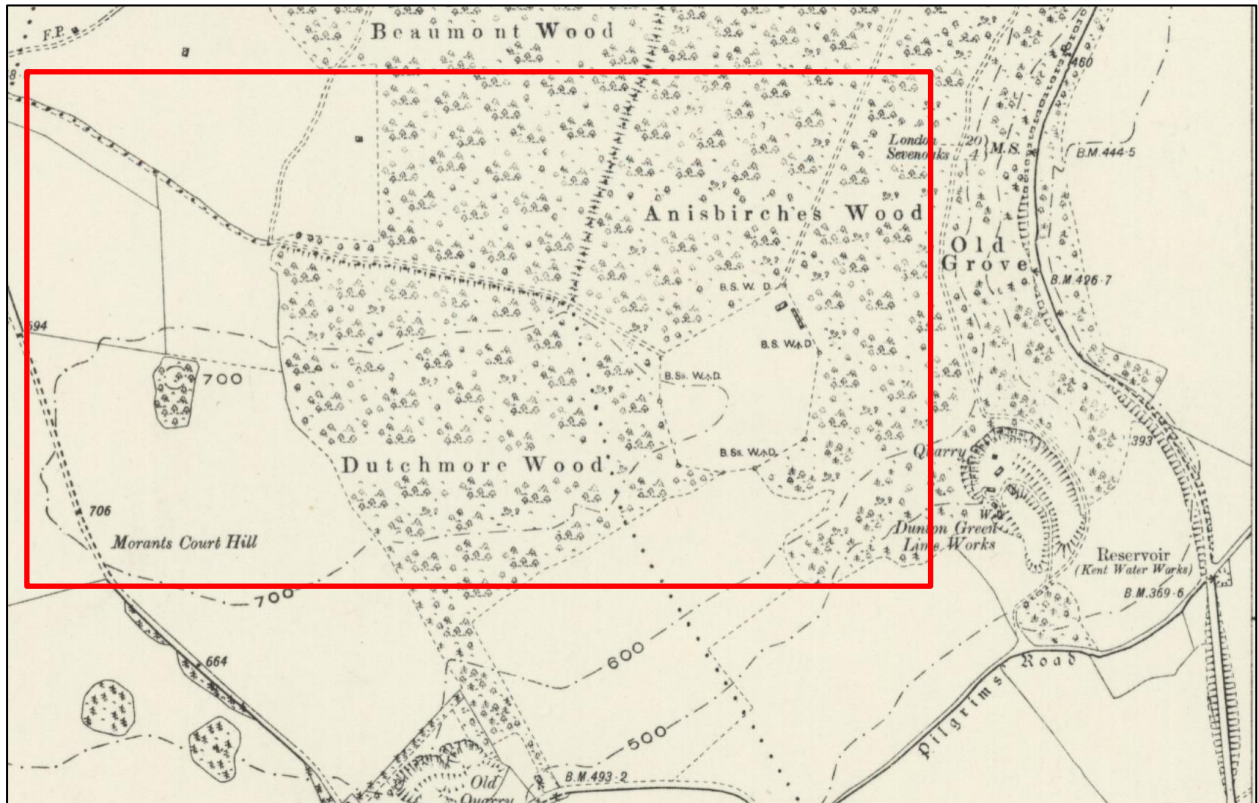


Plate 4: Extract of 1898 OS map

The scheduled fort [H1] comprises the remains of a defensive structure which formed part of a line of similar fortifications designed along the North Downs to defend London from invasion from France and Russia. It was planned that the line of defence would stretch for 72 miles, which would allow interception of forces prior to their arrival in London due to them blocking strategic transport routes.

The defensive structures constructed would combine prepared defensive positions with ammunition storehouses for artillery and a reserve of tools needed to build additional entrenched positions for the infantry<sup>34</sup>. As such the defensive positions were not necessarily 'forts', but rather rallying points where troops and labourers could gather the material required to defend the line.

The fort comprises a polygonal place of arms, or assembly point and store, together with a concrete revetted moat, with vaulted barracks on the western side of the interior and a magazine on the eastern side. If mobilisation was required, forces would muster at the fort to collect arms and munitions to defend London.

The rampart of the monument is divided by several traverses, while the fort itself is divided in two by a central traverse. These traverses would have contained magazines for artillery rounds and casemates, where entrenching tools were stored<sup>35</sup>. Similar to other forts, positions were also provided on the rampart for mounting machine guns, while internal stables were also provided for the horses that were required to pull the field guns<sup>36</sup>.

<sup>34</sup> Saunders, A & Smith, V. 2001. *Kent's Defence Heritage*, Maidstone

<sup>35</sup> Saunders, A & Smith, V. 2001. *Kent's Defence Heritage*, Maidstone

<sup>36</sup> Ibid

The forts constructed as part of the line became largely obsolete by the turn of the 20th century which saw an increased focus on building and developing the naval forces.

Other than the already discussed known non-designated post-medieval assets, there are a wealth of farmsteads, and associated buildings and activity within the study area.

Those nearest to Site, and with potential connections to the history and use of the woodland within the Site are:

- Parkside [H420], approximately 450m west of the Site;
- the Meadows [H416], approximately 800m west of the Site;
- the outfarm adjacent to Beaumont Wood [H431], 60m west of the Site;
- the outfarm outside the Knockholt Pound village [H462, H417, H418, H419], approximately 170m to 470m west of the Site;
- the outfarm West of Stockholme Villa [H458], approximately 200m north-west of the Site;
- Sepham Farm [H461], approximately 630m east of the Site;
- Danes Hollow Farm [H448], approximately 950m east of the Site;
- Morants Court Farm [H429], approximately 720m south of the Site;
- Turvin's Farm [H428], approximately 870m south of the Site.

These records are indicative of the widespread farming activity in the study area during the post-medieval period.

Based on the results of the historic mapping which has shown that the Site started to change from at least the 1870s onwards with more substantial changes to the woodland and the subsequent development of the fort, there is considered to be medium potential for as yet buried archaeological remains to survive within the Site. Such remains would likely be concentrated within known areas of development, such as surrounding the woodland boundary or the fort.

### Modern (AD 1901 to Present)

The modern period saw the rise in research experiments and testing at Fort Halstead which led to the facilities that are currently present within the Site.

The 1910 OS map<sup>37</sup> (see **Plate 5**) does not show any significant changes within the Site or study area and does not depict the two buildings within the blank area which were previously shown. It is possible that these were removed to stop highlighting Fort Halstead as a potential target due to increasing tensions between Britain and Germany on the run up to World War One (WWI).

<sup>37</sup> The National Library of Scotland, OS Six-Inch England and Wales, 1842-1952, published 1910, revised 1907, Kent CCV.III.SE (includes Brasted; Chevening; Orpington; Sundridge), accessible via <https://maps.nls.uk/view/101428908>



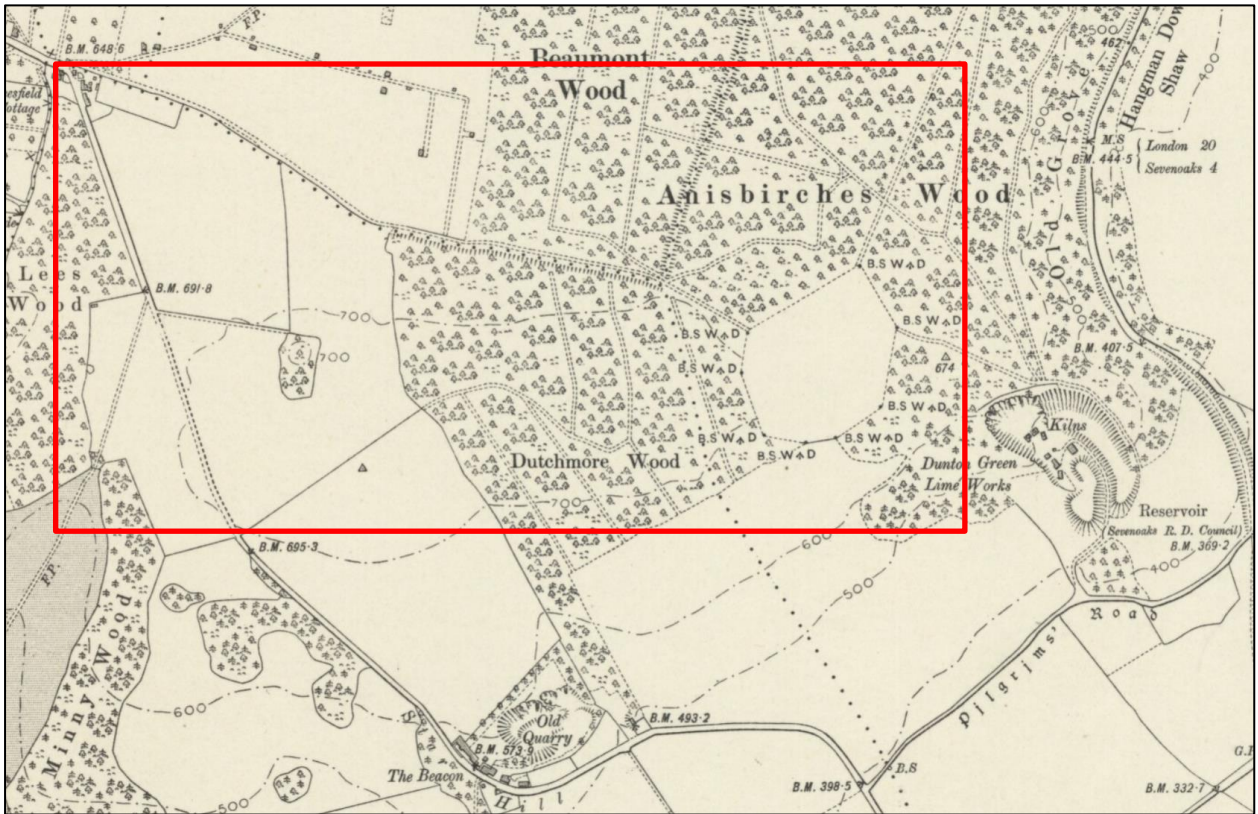


Plate 5: Extract of the 1910 OS map

The fort was used as an ammunition store as part of the London Defence Positions Scheme in 1915 and it is known that it was owned by the War Office until 1922, when it was sold to a Colonel Bradshaw, who lived inside the 1915 ammunitions laboratory until it was later purchased by the government in 1937 to house a facility researching the development of large cordite charges.<sup>38</sup>

During the 1930s the Projectile Development Establishment (PDE) was established on Site. The research focused on developing rockets for anti-aircraft defence, long range attack, air combat and assisted take off<sup>39</sup>.

Although little other changes can be noted within the landscape surrounding the Site, the 1949 OS map<sup>40</sup> (see **Plate 6**) shows the internal divisions of the fort which are thought to originate from the late 1930s. It is considered that the casements and magazines were altered and that additional buildings, including a filing shed for cordite rocket motors, were constructed within the boundary of the fort.

<sup>38</sup> Clive, R, 1997. *Fort Halstead: A Celebration of the First 100 Years*, Sevenoaks

<sup>39</sup> Cocroft, W D, 2010. Fort Halstead, Dunton Green, Sevenoaks, Kent – A brief assessment of the role of Fort Halstead in Britain's early rocket programmes and the atomic bomb project English Heritage, Research Department Report Series no. 49-2010

<sup>40</sup> The National Library of Scotland, OS Six-Inch England and Wales, 1842-1952, published 1949, revised 1936, Kent XXVIII.SE (includes: Brasted; Chevening; Orpington; Sundridge), accessible via <https://maps.nls.uk/view/101428905>

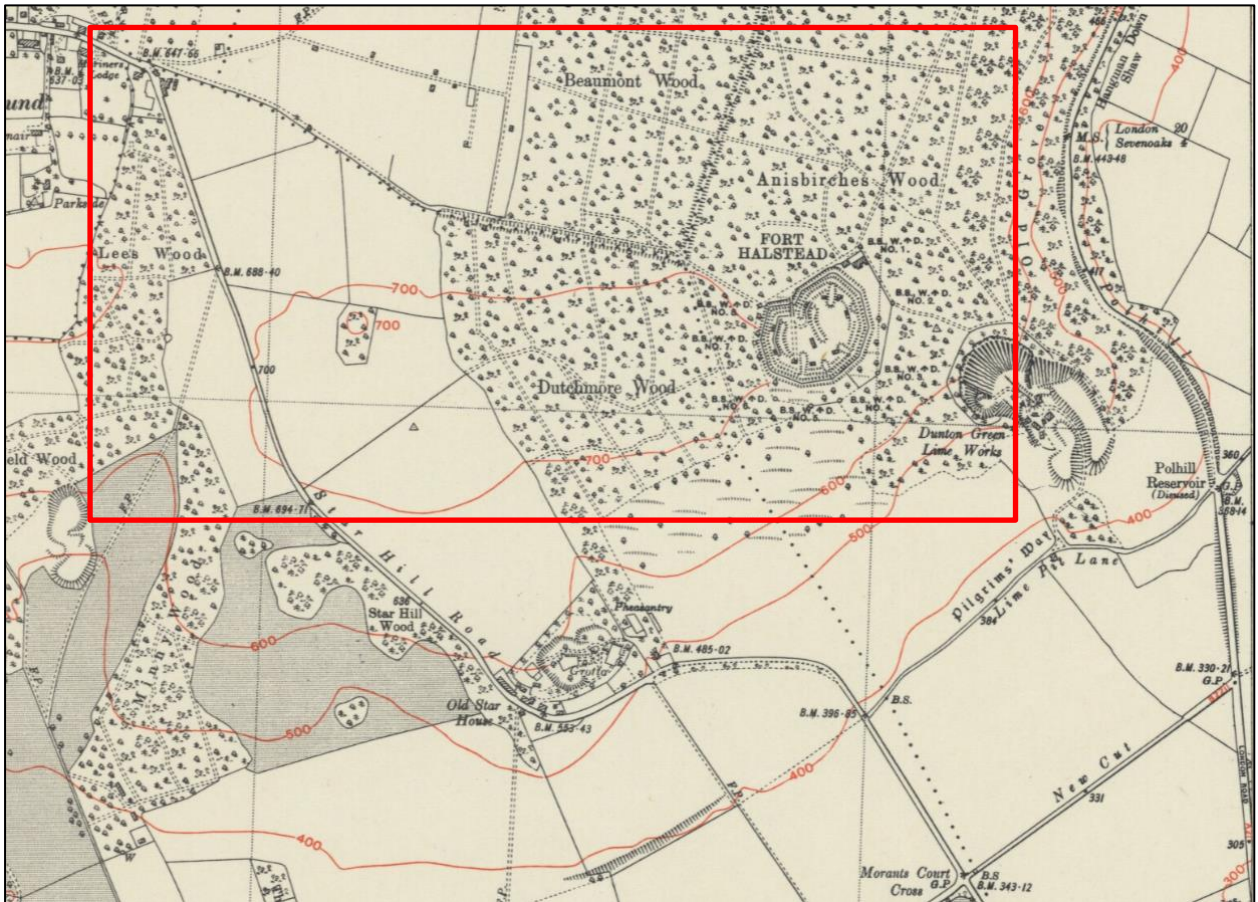


Plate 6: Extract of 1949 OS map

In 1947 research developed by Dr William Penney into the country's first atomic bomb, specifically, the trigger / detonation mechanism started at the Site. The increase in research marked the start of a new development phase at the Site as further buildings were required. The work was named 'High Explosives Research (HER)' to mask the true nature of the experiments. The HER research came to an end 1955 when the unit was transferred to Berkshire.

Nevertheless, the research use of the Site continued which led to another growth in additional development. Aside from explosive testing, the Mirfac computer language was developed on Site in the 1950s and the Royal Armament Research and Development Establishment (RARDE) operated until the 1980s.

An openly accessible satellite imagery platform presents the Site in 1945 and shows that the fort formed the core of the research facility with only a small portion of Anisbirches Wood (to the north of the fort) and Dutchmore Wood (to the west of the fort) developed. Crow Drive appears to have stopped just at the north-western corner of the fort. The image also suggests that there was relatively sparse tree cover surrounding and inside the fort which indicates that there may have historically been some visibility of the fort, albeit limited, from at least Starhill Road and possibly even from the most northern extent of Dunton Green

English Heritage (now Historic England) identified a total of 4 oblique and 157 vertical aerial photographs showing the Site and its immediate environs within their collections held in Swindon. The available aerial photography record spans the period from 1946 to 2003 and was consulted in 2008 as part of a desk-based assessment produced by Waterman. Vertical aerial photographs taken in 1946, 1952 and 1961 clearly show a linear cropmark [H68] to the south-west of the Site which shows up as a kinked linear



cropmark within an arable field and appears to diverge from Old London Road, before heading in a more south-west to north-east direction.

With the exception of this feature, the aerial photographs do not provide evidence for the presence of any as yet unknown archaeological remains within the Site, however, they do show continued use of the Site from WWII onwards.

An aerial photograph (dated May 1961) clearly shows the development of land further north-west across the Site. It also shows a clear intensification of development close to the Scheduled Monument, with obvious expansion noted along the Crow Road / Crow Drive axis. In contrast, the area south-west of the fort is shown to have remained relatively sparsely developed, which possibly reflects the nature of the activities undertaken in this area of the Site. Furthermore, it shows that the fort was still not densely planted with trees in its core, although more trees can be noted along its perimeter. Later photographs, spanning the 1970s, 1980s and 1990s show only a relatively modest expansion in the building stock, although redevelopment within the core area is evident throughout.

While the fort appears to still be in generally good condition today, with some elements of the original fabric behind concrete screeds to protect them from the activities carried out within its confines, one arm of the encircling moat is now not visible, having been sealed beneath a tarmac car park. According to Cocroft *"past experience of filled hollows in research establishments has shown that they were often convenient dumping grounds for discarded objects, which may now be of historic interest."*<sup>41</sup>

Anecdotal evidence gathered for the previous 2015 Waterman assessment (resulting out of a discussion with a Site employee) indicates that the moat surrounding the monument was partially infilled post WWII.

Based on the known modern developments within the Site which saw Fort Halstead and its associated research and laboratory there is considered to be medium to high potential for encountering as yet unknown buried modern archaeological remains within the Site. These would likely consist of former building platforms and associated earthworks (if present).

## 5.1 Site Visit

A walkover survey of the Site was undertaken on 4<sup>th</sup> June 2019. **Appendix F** contains the resultant photographs which are not included in the following sections. Due to the restricted and confidential nature of the works which are currently being undertaken within the Site, some photographs have been edited.

The survey did not identify any potential as yet unknown buried archaeological remains, neither could it successfully see above ground or other evidence of the prehistoric trackway which runs through the northern extent of the Site. However, the survey was useful in determining existing ground conditions and areas of previous disturbance.

The survey showed that the moat surrounding the fort is densely populated with trees and shrubs which restricts visibility of the embankments and into the monument. The presence of the shrubs did not facilitate for measurements of the ditches to be taken but it is estimated that the moat is approximately 10m in depth (in relation to Crow Drive), while the embankment appears to be c. 6m higher to Crow Drive. From the top of the fort embankment there is very limited visibility to the landscape which dramatically opens up beyond the dense tree lines on the periphery of the fort. Considering the density of tree cover, it is thought that even during autumn and winter visibility would still be restricted.

It was confirmed that only one of the magazine stores within the Site has a basement level, however, due to the sensitive nature of the works being undertaken at the fort, its depth could not be assessed.

No evidence of the prehistoric trackway [H50] across the northern extent of the Site could be identified

<sup>41</sup> Cocroft, W D, 2010. *Fort Halstead, Duntun Green, Sevenoaks, Kent – A brief assessment of the role of Fort Halstead in Britain's early rocket programmes and the atomic bomb project*, English Heritage, Research Department Report Series no. 49-2010

either within the north-western fields within the current ownership boundary (to the north of the M5 area), or along its suggested path to the north of the Site where there is potential for it to be undisturbed and not covered by roads.

Various levels were noted across the Site with buildings generally lying lower or at the same level than Crow Drive (especially to the north of the road). **Plate 7** provides an example of such varying levels as the top embankment shown roughly aligns with the height of Crow Drive. This indicates that there are some cases in which there might be an up to 2m difference between the road and ground level. This was primarily noticed to the north of Crow Drive, north-east of Dutchmore Wood, where an open grassed area (historically used for social activities and now used for dog training) gently slopes towards the northern periphery of the Site which is bordered by dense tree lines.

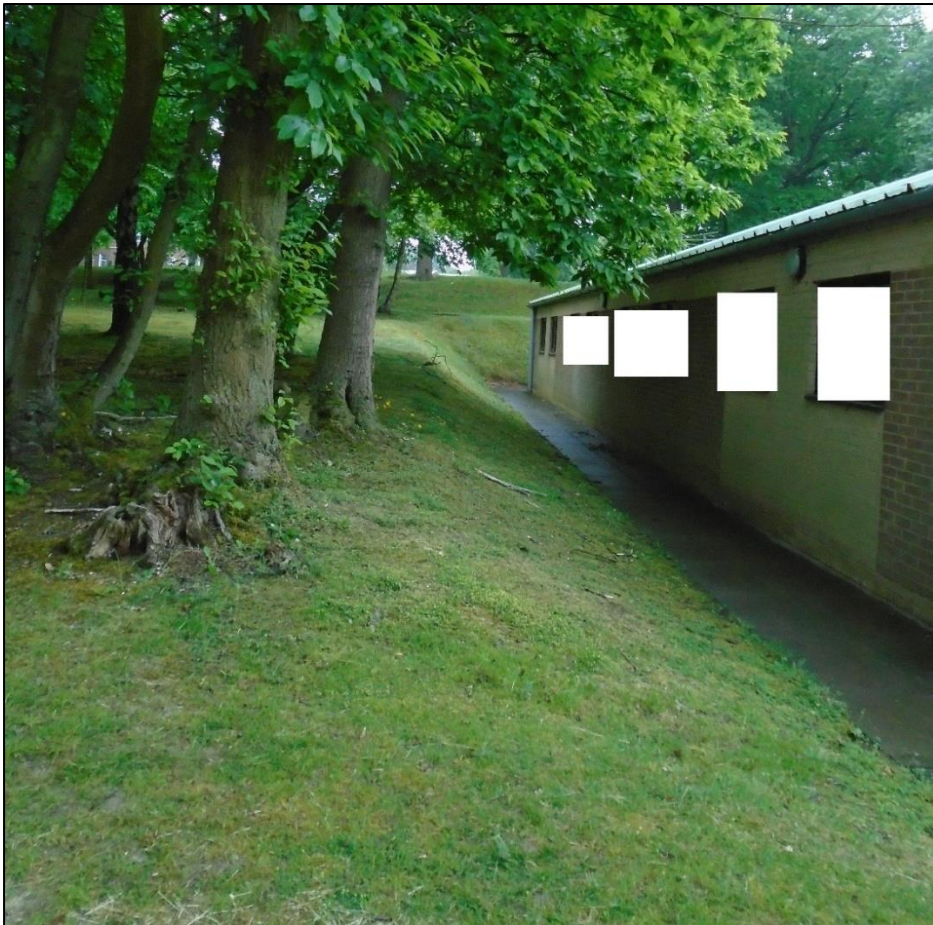


Plate 7: View of an example of varying levels within the northern section of the Site

Substantial gullies for drainage and pipes were also noted, mostly adjacent to roads. Furthermore, no evidence of basements, either of existing buildings or previous buildings (where platforms are still evident) was noted across the Site.

The M area (within the south-western extent of the Site) contains a collection of 4 magazine stores. While bunts (c. 10m in height) were built up around 3 of these to create some level of shielding (in case of explosion), for 1 of them land was cut into the landscape to encircle it with a large embankment of up to 10m depth (see **Plate 8**). This method was unique and is likely to only have been used at Fort Halstead.



Plate 8: View of embankment surrounding one of the bunkers within the M area

Woodland areas within the Site, especially the remains of Dutchmore Wood, currently provide a good level of screening. Existing tree lines on the outskirts of the Site at for example Starhill Road and Crow Drive within the Site's northern extent ensure that there is very limited visibility towards the wider landscape within the study area.

The only location from which good views of the wider landscape are afforded can be found immediately to the south-west of the fort as **Plate 9** shows. This area also holds one of the only extant buildings within the Site which is currently visible from inside the study area at Starhill Road.

Overall, the walkover survey confirmed that there are limited areas which have not been landscaped and/or disturbed, however, areas where material was built up for landscaping purposes, as opposed to those requiring excavation, may still contain potential for archaeological remains.





Plate 9: View towards Chevening and M25 (facing south-west) from the south-west of the fort

## 5.2 Statutory Consultations

As part of the previous HEDBA, consultations with KCC Heritage Conservation (KCCHC) in October 2014 concluded that mitigation could take place post determination and will be secured via planning condition.

Conditions 16, 17, 22, 25 and 34 issued in response to the extant outline planning permission (SE/15/00628) summarise the expected works to be undertaken in regard to the historic environment and highlight the need for archaeological investigations to be undertaken for each phase of development and subject to an approved Written Scheme of Investigations (WSI).

## 6. Statement of Significance

The significance of archaeological remains within the Site and study area that could be affected by future development is assessed below using the criteria set out in **Tables 1** and **2** and through applied professional judgement (see **Section 2**). Archaeological remains considered to be of negligible interest, such as those relating to the more recent developments of Fort Halstead (i.e. from 1980s onwards), are not included in the below assessment.

### 6.1.1 Fort Halstead Scheduled Monument and as yet unknown associated archaeological remains

#### Evidential

The Scheduled Monument is a heritage asset of national significance, and therefore of high evidential value. Such value would similarly be ascribed to as yet buried archaeological remains which are directly associated with the monument. Saunders and Smith note that “... *use of the magazines and casemates for testing and experimental purposes has resulted in some damage to, and alteration of, their structure*”<sup>42</sup>, however, there is potential for as yet unknown surviving archaeological remains to survive within the Site or immediately surrounding it. This could, for example, include any material or debris that may have been buried or discarded in the moat.

#### Historical

The historical value of the Scheduled Monument and potential associated remains is considered to be high. Saunders and Smith classify the monument as being of the highest grade of historic importance and extent of survival as “... *an exemplar of design practice in the final phase of permanent fortification for land fronts in the UK.*”<sup>43</sup> The historical value of the asset is thus linked to its role in the defence of London from the late 1890s to the end of WWII, and its subsequent development as a research facility throughout the 20th century which continues to this day.

#### Aesthetic

The aesthetic value of such remains is likely to be negligible given they will be buried and likely truncated.

#### Communal

Due to its status as a Scheduled Monument and its continued use as a research facility and place of employment since the end of the 19th century, the communal value of the fort is considered to be medium to high.

### 6.1.2 Prehistoric trackway

#### Evidential

Evidence of the prehistoric trackway within the Site would be considered to be of medium value due to its ability to prove the earliest known activity within the Site. Within the eastern extent of the study area prehistoric activity and settlement is well represented and the presence of the trackway would indicate travelling routes of early humans across the wider landscape.

<sup>42</sup> Saunders, A & Smith, V 2001. *Kent's Defence Heritage*, Maidstone

<sup>43</sup> Ibid

#### Historical

The historical value of the trackway would be medium, based on its prehistoric use as a means of connecting various peoples in the surrounding area and possible as part of a network of hunting and trading routes.

#### Aesthetic

The aesthetic value of such remains is likely to be negligible given they would be buried land surface and also likely truncated.

#### Communal

The communal value of the trackway is considered to be negligible given no visible associations remain in the wider landscape of this route that would likely attract particular interest.

### 6.1.3 Unknown archaeological remains (prehistoric to post-medieval, not including the fort development)

#### Evidential

While there is considered to be a low potential for the presence of archaeological remains pre-dating the construction of the fort, due to the woodland cover, should such archaeological remains be recovered within the Site they would be considered to be of low to medium evidential value.

#### Historical

The historical value of such remains would be considered to be low to medium as they would likely be important due to their local and possibly regional links.

#### Aesthetic

The aesthetic value of such remains is likely to be negligible given they would be buried and likely truncated.

#### Communal

The communal value of such remains would be considered to be low considering the development of the fort during the 19th and 20th century would have removed any former associations with earlier land-use.

### 6.1.4 Unknown archaeological remains (modern military and research associated remains)

#### Evidential

The Site has potential to contain surviving remains of various phases of the Site's military development, including as yet unknown structures and building foundations previously removed. Evidence of such development changes, particularly associate with the RARDE research period would be consider of medium value.

#### Historical

The historical value of such remains would be considered to be low to medium given the former use of the Site is well recorded and understood.

#### Aesthetic

The aesthetic value of such remains is considered to be low as these would likely be buried foundations and structural remains that would provide little aesthetic and limited intellectual interest.

#### Communal

The communal value of such remains would be considered to be medium as they would add to the wider understanding of the military and research developments which was present on the Site from the late post-medieval period onwards. As the Site is currently still in use as a research facility, the history of the Site as such is still present in living memory which strengthens its communal value.

### 6.1.5 Historic landscape

#### Evidential

The evidential value of the historic woodland landscape that once covered the Site from at least the 18th century and possibly from the 16th century and earlier has mostly been lost and the surrounding area has likewise lost this character and been replaced with open agricultural fields and exposed chalk downland. As such the value of the historic landscape has been heavily compromised over several periods of development within the Site and is therefore considered to be low.

#### Historical

The historical value of any associated woodland and chalk downland elements would be considered low given the loss of the greater part of these characteristic over the past 100 years of development within the Site.

#### Aesthetic

The aesthetic value of what remains of the historic landscape within the Site is considered to be negligible given its appreciation and ability to read is now very limited.

#### Communal

The communal value of historic landscape features within the Site are considered to be low with significant military development replacing the earlier rural nature of this part of the chalk downlands.

## **7. Potential Impacts from Development**

### **7.1 Types of Impacts**

Developments have the potential to cause direct physical and settings impacts on archaeological assets, which can be temporary or permanent in nature.

Physical impacts during construction related works such as excavation of foundations and service trenching can partially or wholly remove as yet unknown buried archaeological remains, while settings impacts can cause loss of character and integrity of assets such as loss of key sight lines around which they were designed to be visible from and towards.

### **7.2 Potential Impacts on Designated Assets**

The Development is considered to have a physical and setting impacts to the Scheduled Monument of Fort Halstead and the Listed Buildings which are contained within it. Physical impacts would be related to the decommissioning of the research testing which is currently being carried out at the fort which may lead to a loss in associated infrastructure and materials. Secondly, limited physical impacts are anticipated associated with changes to internal partitions for the adaptation of the fort into a new heritage interpretation centre.

The setting of the fort and the Listed Buildings contained within the fort will impacts by a change in the estate to a mixed employment, residential and community use from its original military experimental research character to a mainly residential estate and school.

### **7.3 Potential Impacts on Non-Designated Assets**

The Development is considered to have a physical impact on the suspected alignment of a prehistoric trackway running through the north-eastern extent of the Site.

### **7.4 Potential Impacts on Unknown Archaeology**

With the extent and density of development within the Site, any archaeological survival is likely to be limited to pockets of undisturbed areas for pre-Fort periods and outside of existing building and infrastructure footprints for post-development years. Overall, both elements of archaeological survival is anticipated to be very limited and as such have a low survival potential.



## **8. Conclusion and Recommendations**

This assessment has shown that the Site would have consisted of woodland up to the 1870s when the area for Fort Halstead is understood to have been cleared leading up to its construction in the 1890s onwards. The character of the Site then saw a gradual loss of surrounding woodland over the following centuries, particularly after WWII with the expansion of the RARDE.

While the construction of buildings and landscaping would have led to the truncation and possible loss of any surviving below ground archaeology, the extent of such disturbance is currently not understood due to a lack of previous archaeological investigations within the Site.

Overall, it is considered that the Site has low potential for the presence of archaeological remains in areas of more intense development, other than those which might be directly related to the Scheduled Monument. Nonetheless, there is some potential for as yet unknown buried archaeological remains, most likely ranging from the later prehistoric to post-medieval period, to survive within the Site in areas that have not been the subject of intensive development.

In the light of the low potential for significant archaeological remains to be encountered, it is recommended that a programme of archaeological monitoring is undertaken during intrusive groundworks associated with demolition and development. The scope of such works should be agreed with the KCCHC in advance and subject to an approved Written Scheme of Investigation.

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## **APPENDICES**

### **A. Figures**

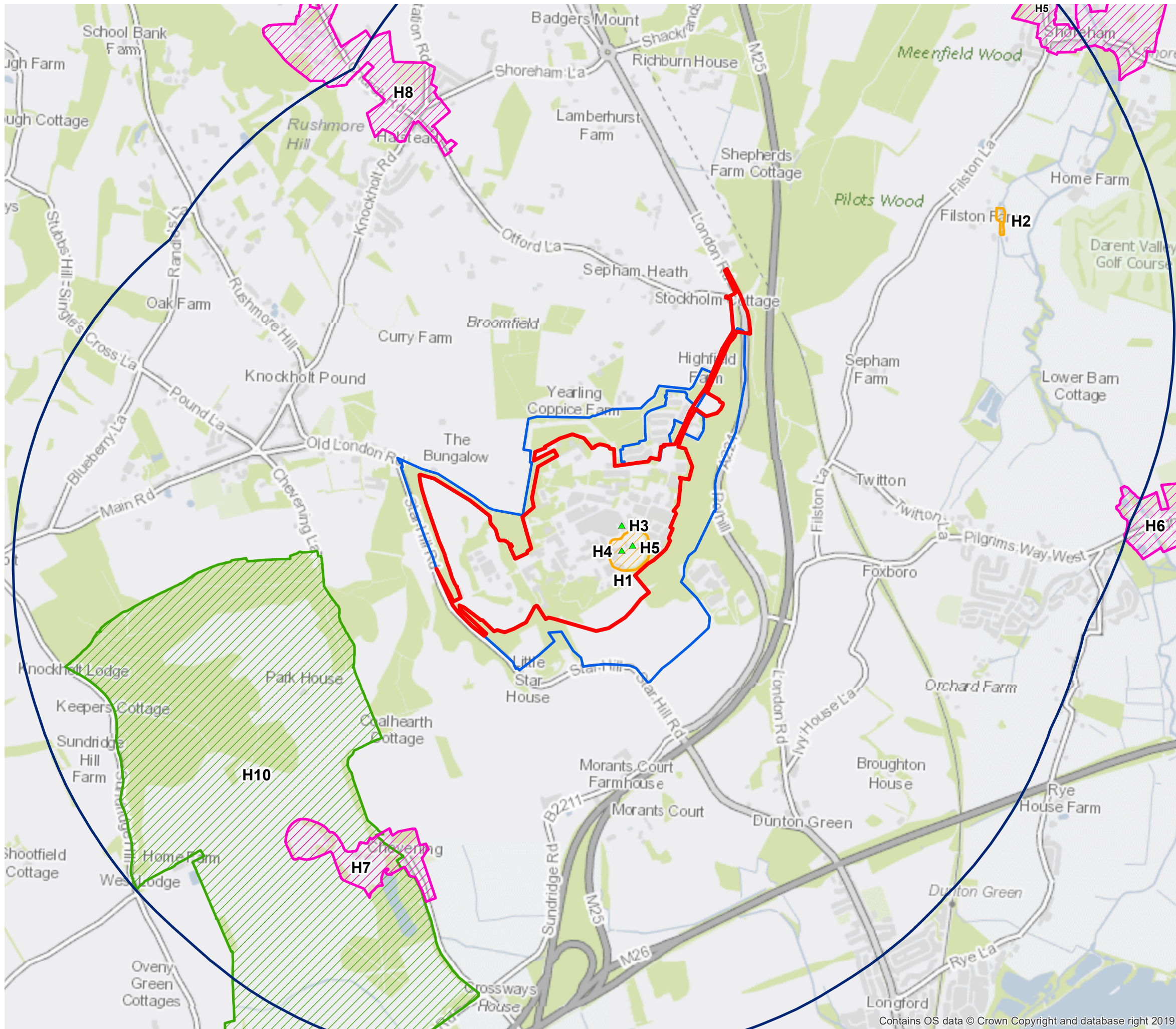
Figure 2: Designated Heritage Assets

Figure 3: Non-Designated Heritage Assets

Figure 4: Historic Landscape Character

Figure 5: Previous Investigations and Studies





- The Site
- Land Ownership Boundary
- 2km Study Area
- Listed Building
- Scheduled Monument
- Conservation Area
- Registered Park and Garden

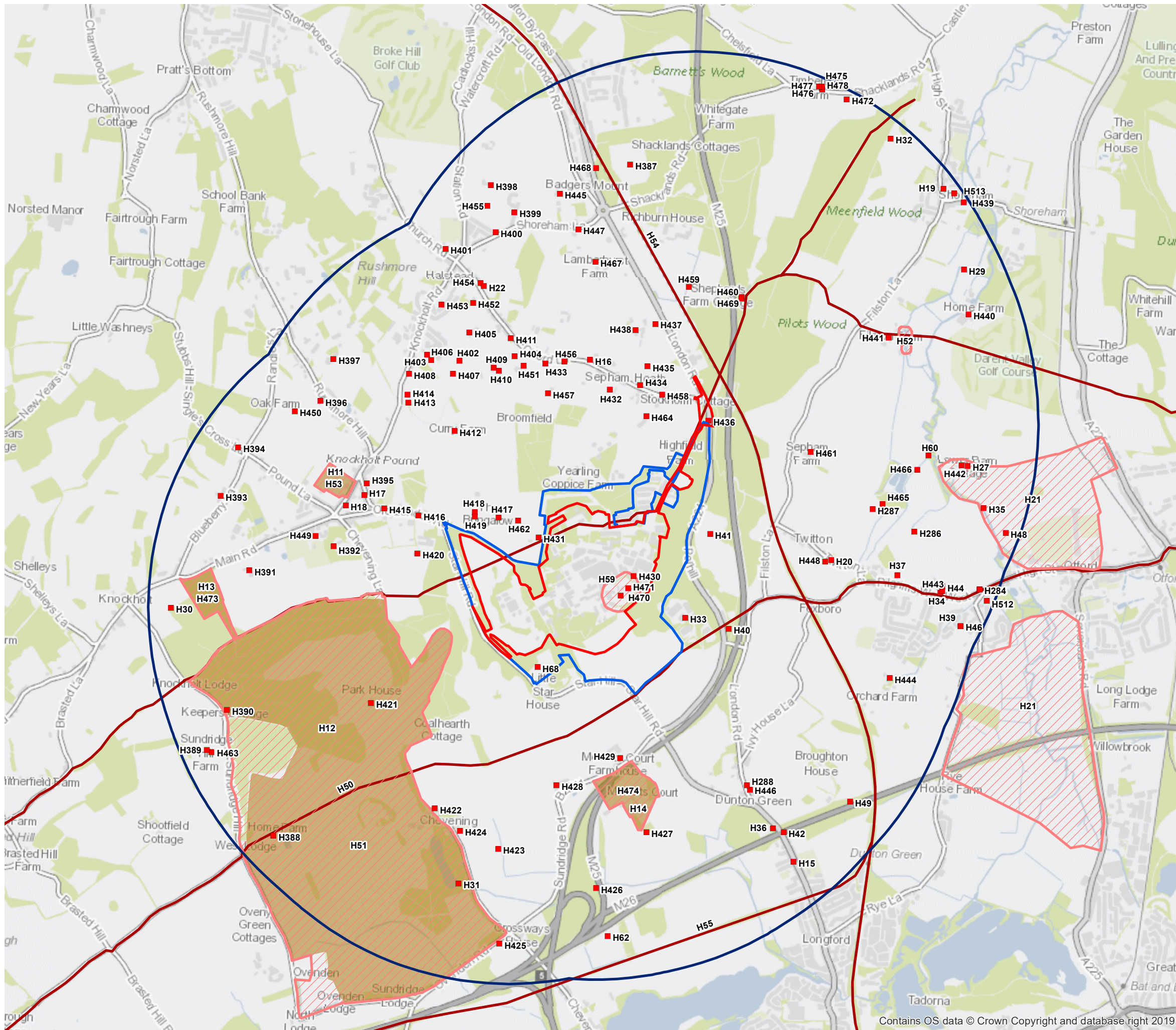


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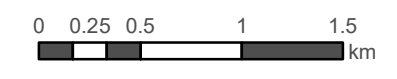
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Figure Ref	WIE14806-103_GIS_HER_2A
Date	August 2019
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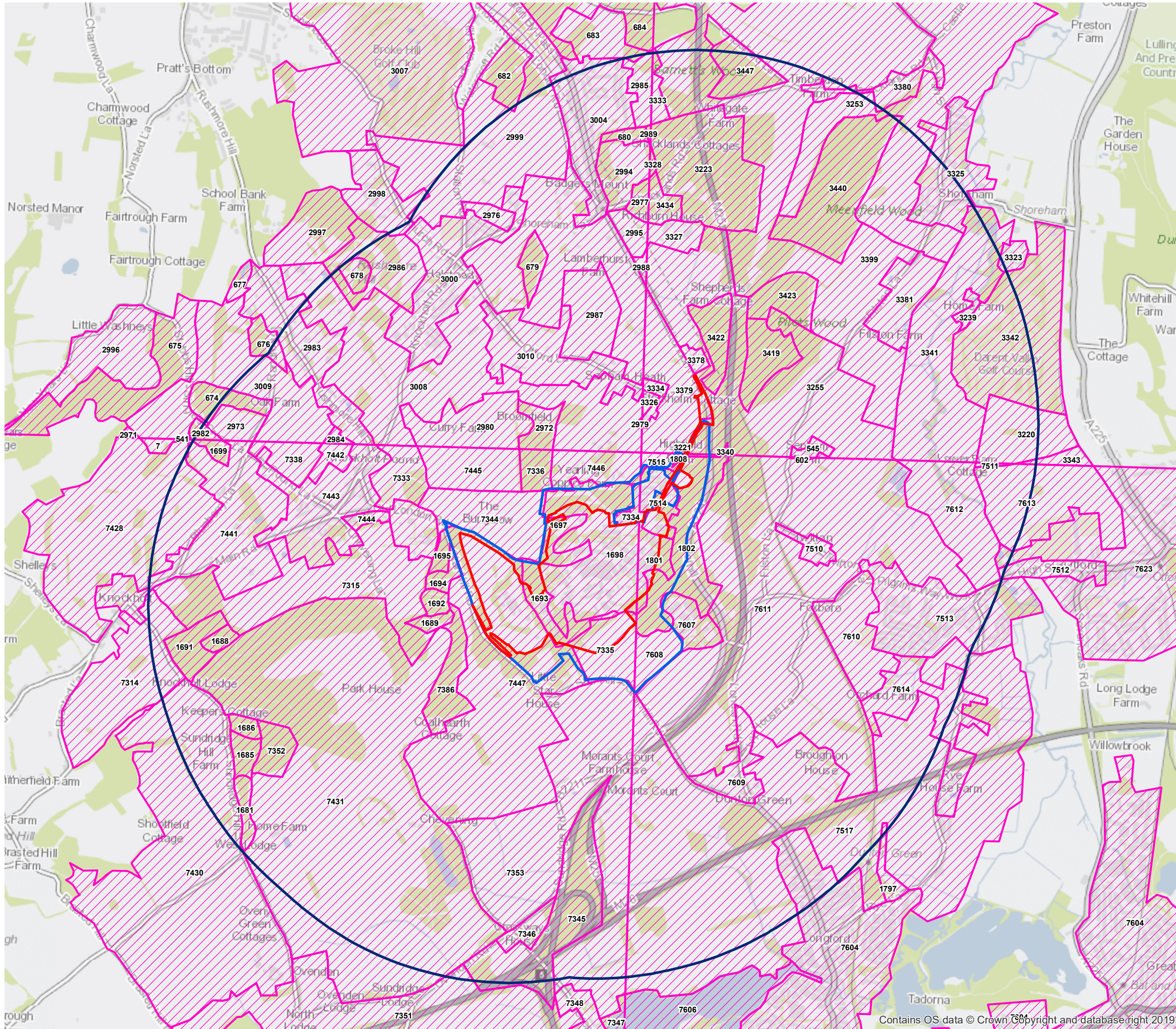
- The Site
- Land Ownership Boundary
- 2km Study Area
- Non-Designated Monument (Point)
- Non-Designated Monument (Polygon)
- Non-Designated Monument (Line)
- Non-Designated Historic Park and Garden



Project Details	WIE14806-103: Fort Halstead
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Figure Ref	WIE14806-103_GIS_HER_3A
Date	August 2019
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-  The Site
-  Land Ownership Boundary
-  2km Study Area
-  Historic Landscape Character (HLC)

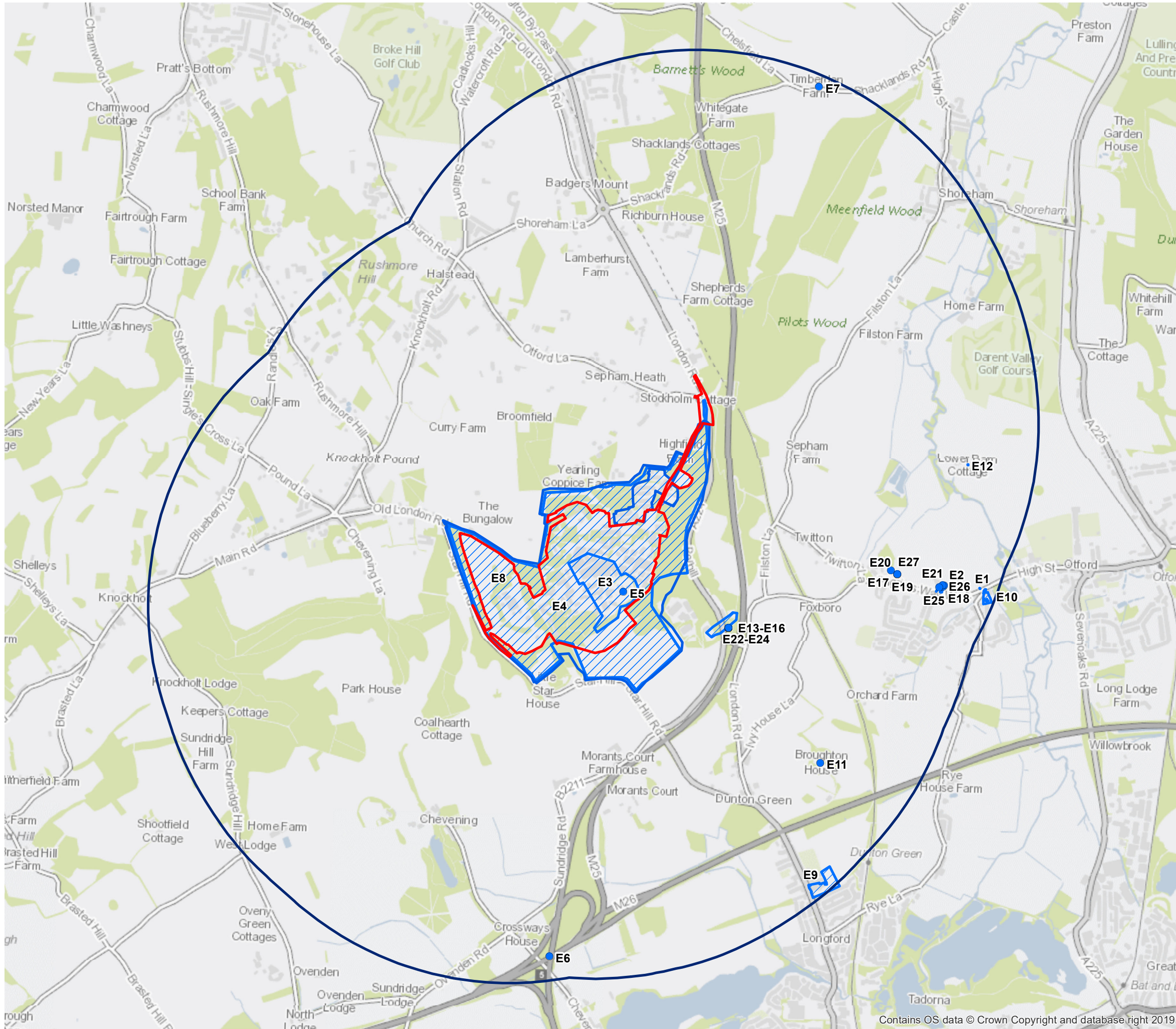


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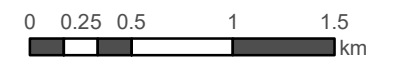
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- The Site
- Land Ownership Boundary
- 2km Study Area
- Event (Point)
- Event (Polygon)



Project Details	WIE14806-103: Fort Halstead
Figure Title	Figure 5: Previous Investigations and Studies
Figure Ref	WIE14806-103_GIS_HER_5A
Date	August 2019
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## B. Gazetteer of Heritage Assets

Waterman ID	Ref	Type	Description	Period
H1	1004214	Scheduled Monument	Fort Halstead	Post-medieval
H2	1013133	Scheduled Monument	Medieval moated site, Filston Hall	Medieval
H3	1396578/MKE54723	Listed Building	BUILDING Q14, FORT HALSTEAD	Modern
H4	1412292/MKE89607	Listed Building	Fort Halstead: Building F11	Modern
H5	1412293/MKE89608	Listed Building	Fort Halstead: Buildings F16 and F17	Modern
H6	191	Conservation Area	Otford	N/A
H7	195	Conservation Area	Chevening	N/A
H8	81	Conservation Area	Halstead	N/A
H9	126	Conservation Area	Shoreham High Street	N/A
H10	1000258	Registered Park & Garden	CHEVENING	N/A
H11	DKE19621	Non-designated park or garden	Ringfield, Knockholt	N/A
H12	DKE19790	Non-designated park or garden	Chevening Park, Sevenoaks	N/A
H13	DKE22452	Non-designated park or garden	Knockholt House historic garden	N/A
H14	DKE22453	Non-designated park or garden	Morants Court historic park and garden	N/A
H15	MKE100281	Non-designated building	Bethel Free Church, London Road, Dunton Green	Post-medieval to Modern
H16	MKE100335	Non-designated building	Former Otford Lane Mission Church, Halstead	Post-medieval to Modern
H17	MKE100363	Non-designated building	Evangelical Church, Old London Road, Knockholt Pound	Post-medieval to Modern
H18	MKE100364	Non-designated monument	Site of former Chapel, Main Road, Knockholt Pound	Post-medieval to Modern
H19	MKE100450	Non-designated monument	Site of former Methodist Chapel, High Street, Shoreham	Post-medieval to Modern
H20	MKE100452	Non-designated	Former Twitton Mission Church,	Post-medieval to

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Waterman ID	Ref	Type	Description	Period
		building	Twitton Lane, Otford	Modern
H21	MKE104540	Non-designated monument	Otford Little Park	Medieval to Post-medieval
H22	MKE110	Non-designated monument	Roman Building	Romano-British
H23	MKE110434	Findspot	Post Medieval iron cannon ball	Post-medieval
H24	MKE110446	Findspot	Early Medieval copper alloy strap end	Early medieval
H25	MKE110531	Findspot	Medieval copper alloy spindle whorl	Medieval
H26	MKE110532	Findspot	Roman copper alloy coin	Romano-British
H27	MKE110645	Non-designated monument	Twentieth century outhouse and soakaway, Otford	Unknown
H28	MKE112	Findspot	Palaeolithic ovate	Palaeolithic
H29	MKE15495	Non-designated monument	Watermeadow at shoreham	Post-medieval
H30	MKE16264	Non-designated monument	Knockholt aircraft factory site	Modern
H31	MKE16303	Non-designated building	Ice house, Cheveing Park, Sevenoaks	Post-medieval
H32	MKE16503	Non-designated monument	Shoreham Cross	Modern
H33	MKE17041	Non-designated monument	Dunton green lime works	Post-medieval
H34	MKE21022	Non-designated monument	Pit or post hole located at Frog Farm, Otford in 2006	Unknown
H35	MKE303	Non-designated monument	Romano-British hut circle	Romano-British
H36	MKE30591	Non-designated building	CHURCH OF ST JOHN THE DIVINE	Post-medieval
H37	MKE306	Non-designated monument	Probable Roman building; cremation	Romano-British
H38	MKE307	Findspot	Iron Age pottery	Iron Age
H39	MKE309	Non-designated monument	Romano-British cremations	Romano-British
H40	MKE319	Non-designated monument	Anglo-Saxon Cemetery at Polhill, Near Sevenoaks	Early medieval
H41	MKE320	Non-designated monument	Boundary bank and ditch	Medieval
H42	MKE32029	Non-designated	LABURNUM COTTAGE	Post-medieval

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Waterman ID	Ref	Type	Description	Period
		monument		
H43	MKE329	Findspot	Looped palstave	Unknown
H44	MKE333	Non-designated monument	Romano-British cemetery, C1st to C4th (?), Frog Farm, Otford, Sevenoaks	Romano-British
H45	MKE343	Findspot	Scraper/Ne - BA	Unknown
H46	MKE345	Non-designated monument	Medieval Roundel	Medieval
H47	MKE349	Findspot	Coin/Iron Age/Potin	Unknown
H48	MKE367	Non-designated monument	Ring ditch/Cropmark	Unknown
H49	MKE369	Non-designated monument	Ditch containing pottery, recorded north of the M25, possibly Iron Age	Iron Age
H50	MKE44049	Non-designated monument	PILGRIM'S WAY / NORTH DOWNS WAY	Palaeolithic
H51	MKE44116	Non-designated monument	Chevening Park, Sevenoaks	Post-medieval to Modern
H52	MKE44120	Non-designated monument	Moat at Filston Farmhouse	Medieval
H53	MKE44165	Non-designated monument	Ringfield	Modern
H54	MKE44249	Non-designated monument	Tonbridge Main Line	Post-medieval to Modern
H55	MKE44250	Non-designated monument	WESTERHAM VALLEY BRANCH RAILWAY	Post-medieval to Modern
H56	MKE58132	Findspot	Medieval copper alloy seal matrix	Medieval
H57	MKE58133	Findspot	Medieval silver coin	Medieval
H58	MKE58134	Findspot	Post Medieval silver coin	Post-medieval
H59	MKE61	Non-designated monument	Fort Halstead, Dunton Green	Post-medieval to Modern
H60	MKE672	Non-designated monument	Romano-British archaeological site	Romano-British
H61	MKE674	Findspot	Romano-British coin (dupondius of Vespasian)	Romano-British
H62	MKE68	Non-designated monument	Linear cropmarks, possibly removed field boundaries	Medieval
H63	MKE686	Findspot	Neolithic stone hoe	Neolithic
H64	MKE698	Findspot	Handaxe/Pa	Unknown
H65	MKE699	Findspot	Microlith/UP	Unknown

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Waterman ID	Ref	Type	Description	Period
H66	MKE704	Findspot	Flint implement/UP	Unknown
H67	MKE709	Findspot	Scraper/UP	Unknown
H68	MKE71	Non-designated monument	Cropmark probably a modern path or removed field boundary	Post-medieval
H69	MKE72037	Findspot	Iron Age copper alloy bow brooch	Iron Age to Romano-British
H70	MKE72047	Findspot	Iron Age copper alloy brooch	Iron Age
H71	MKE72274	Findspot	Early Medieval lead strap fitting	Early medieval
H72	MKE72275	Findspot	Early Medieval copper alloy strap fitting	Early medieval
H73	MKE72276	Findspot	Early Medieval copper alloy strap fitting	Early medieval
H74	MKE72277	Findspot	Medieval copper alloy harness pendant	Medieval
H75	MKE72282	Findspot	Roman copper alloy brooch	Romano-British
H76	MKE72283	Findspot	Medieval copper alloy harness pendant	Medieval
H77	MKE72285	Findspot	Roman gold finger ring	Romano-British
H78	MKE72286	Findspot	Iron Age copper alloy cosmetic mortar	Iron Age to Romano-British
H79	MKE72287	Findspot	Roman copper alloy coin	Romano-British
H80	MKE72288	Findspot	Medieval lead seal matrix	Medieval
H81	MKE72289	Findspot	Medieval copper alloy harness pendant	Medieval
H82	MKE72290	Findspot	Medieval copper alloy harness pendant	Medieval
H83	MKE72291	Findspot	Medieval copper alloy harness pendant	Medieval
H84	MKE72292	Findspot	Medieval copper alloy stud	Medieval
H85	MKE72293	Findspot	Roman copper alloy brooch	Romano-British
H86	MKE72294	Findspot	Roman copper alloy bow brooch	Romano-British
H87	MKE72295	Findspot	Medieval copper alloy hook	Medieval to Post-medieval
H88	MKE72296	Findspot	Early Medieval copper alloy horse trapping	Early medieval
H89	MKE72298	Findspot	Medieval copper alloy purse	Medieval
H90	MKE72299	Findspot	Medieval metal thimble	Medieval
H91	MKE72300	Findspot	Medieval metal thimble	Medieval

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Waterman ID	Ref	Type	Description	Period
H92	MKE72301	Findspot	Medieval copper alloy finger ring	Medieval
H93	MKE72302	Findspot	Medieval copper alloy seal matrix	Medieval
H94	MKE72303	Findspot	Roman copper alloy brooch	Romano-British
H95	MKE72304	Findspot	Medieval iron buckle	Medieval
H96	MKE72305	Findspot	Medieval copper alloy buckle	Post-medieval
H97	MKE72306	Findspot	Medieval copper alloy buckle	Post-medieval
H98	MKE72307	Findspot	Roman copper alloy coin	Romano-British
H99	MKE72308	Findspot	Early Medieval silver coin	Early medieval
H100	MKE72319	Findspot	Medieval silver coin	Medieval
H101	MKE72320	Findspot	Medieval silver coin	Medieval
H102	MKE72321	Findspot	Medieval silver coin	Medieval
H103	MKE72322	Findspot	Medieval silver coin	Medieval
H104	MKE72323	Findspot	PostMedieval copper alloy harness mount	Post-medieval
H105	MKE72324	Findspot	PostMedieval copper alloy dress hook	Post-medieval
H106	MKE72325	Findspot	Medieval copper alloy thimble	Medieval
H107	MKE72326	Findspot	Medieval copper alloy buckle	Medieval to Post-medieval
H108	MKE72345	Findspot	Early Medieval copper alloy strap fitting	Early medieval
H109	MKE72346	Findspot	PostMedieval copper alloy strap fitting	Medieval to Post-medieval
H110	MKE72347	Findspot	PostMedieval copper alloy strap fitting	Medieval to Post-medieval
H111	MKE72348	Findspot	PostMedieval copper alloy strap fitting	Medieval to Post-medieval
H112	MKE72349	Findspot	Early Medieval copper alloy mount	Early medieval
H113	MKE72350	Findspot	Medieval silver coin	Medieval
H114	MKE72351	Findspot	Medieval silver coin	Medieval
H115	MKE72352	Findspot	Medieval silver coin	Medieval
H116	MKE72353	Findspot	Medieval copper alloy hinge	Medieval
H117	MKE72354	Findspot	PostMedieval silver finger ring	Medieval to Post-medieval
H118	MKE72355	Findspot	Medieval silver coin	Medieval
H119	MKE72356	Findspot	Medieval silver coin	Medieval

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Waterman ID	Ref	Type	Description	Period
H120	MKE72357	Findspot	Roman copper alloy harness fitting	Romano-British
H121	MKE72358	Findspot	Roman base silver coin	Romano-British
H122	MKE72359	Findspot	Unknown copper alloy unidentified object	Unknown
H123	MKE72370	Findspot	Iron Age copper alloy coin	Iron Age
H124	MKE72371	Findspot	Post Medieval copper alloy pilgrim badge	Post-medieval
H125	MKE72386	Findspot	Roman copper alloy unidentified object	Romano-British to early medieval
H126	MKE72424	Findspot	Roman copper alloy brooch	Romano-British
H127	MKE72425	Findspot	Roman copper alloy coin	Romano-British
H128	MKE72426	Findspot	copper alloy dress fastener (dress)	Medieval to Post-medieval
H129	MKE72427	Findspot	Roman copper alloy bracelet	Romano-British
H130	MKE72546	Findspot	Early Medieval silver pin	Early medieval
H131	MKE72563	Findspot	Medieval copper alloy handle	Medieval
H132	MKE72575	Findspot	Early Medieval silver coin	Early medieval
H133	MKE72591	Findspot	Roman white metal unidentified object	Romano-British
H134	MKE72611	Findspot	Early Medieval copper alloy brooch	Early medieval
H135	MKE72621	Findspot	Roman copper alloy coin	Romano-British
H136	MKE72622	Findspot	Roman copper alloy coin	Romano-British
H137	MKE72623	Findspot	Roman copper alloy coin	Romano-British
H138	MKE72624	Findspot	Medieval silver coin	Medieval
H139	MKE72625	Findspot	Roman silver coin	Romano-British
H140	MKE72626	Findspot	Roman copper alloy coin	Romano-British
H141	MKE72627	Findspot	Early Medieval silver coin	Early medieval
H142	MKE72631	Findspot	Roman copper alloy coin	Romano-British
H143	MKE72632	Findspot	Roman copper alloy coin	Romano-British
H144	MKE72633	Findspot	Post Medieval copper alloy finger ring	Post-medieval
H145	MKE72634	Findspot	Roman silver coin	Romano-British
H146	MKE72635	Findspot	Roman copper alloy coin	Romano-British
H147	MKE72636	Findspot	Roman copper alloy coin	Romano-British

#### Appendices

Waterman ID	Ref	Type	Description	Period
H148	MKE72637	Findspot	Roman copper alloy coin	Romano-British
H149	MKE72640	Findspot	Post Medieval lead alloy token	Medieval to Post-medieval
H150	MKE72641	Findspot	Roman copper alloy coin	Romano-British
H151	MKE72642	Findspot	Roman copper alloy coin	Romano-British
H152	MKE72643	Findspot	Roman copper alloy coin	Romano-British
H153	MKE72644	Findspot	Post Medieval copper alloy buckle	Post-medieval
H154	MKE72645	Findspot	Post Medieval silver coin	Post-medieval
H155	MKE72646	Findspot	Roman copper alloy coin	Romano-British
H156	MKE72647	Findspot	Roman copper alloy coin	Romano-British
H157	MKE72648	Findspot	Medieval copper alloy buckle	Medieval
H158	MKE72649	Findspot	Post Medieval copper alloy buckle	Post-medieval
H159	MKE72650	Findspot	Roman copper alloy jewellery	Romano-British
H160	MKE72651	Findspot	Roman copper alloy coin	Romano-British
H161	MKE72652	Findspot	Roman copper alloy coin	Romano-British
H162	MKE72653	Findspot	Medieval iron horseshoe	Medieval to Post-medieval
H163	MKE72654	Findspot	Unknown lead alloy spindle whorl	Unknown
H164	MKE72655	Findspot	Unknown lead alloy pot mend	Unknown
H165	MKE72656	Findspot	Medieval iron horseshoe	Early medieval to Post-medieval
H166	MKE72659	Findspot	Post Medieval silver coin	Post-medieval
H167	MKE72660	Findspot	Roman copper alloy brooch	Romano-British
H168	MKE72661	Findspot	Iron Age copper alloy coin	Iron Age
H169	MKE72662	Findspot	Roman copper alloy coin	Romano-British
H170	MKE72663	Findspot	Roman copper alloy coin	Romano-British
H171	MKE72664	Findspot	Roman copper alloy medical implement	Romano-British
H172	MKE72665	Findspot	Early Medieval iron horseshoe	Early medieval to Medieval
H173	MKE72666	Findspot	Roman copper alloy brooch	Romano-British
H174	MKE72667	Findspot	Post Medieval copper alloy weight	Post-medieval
H175	MKE72668	Findspot	Roman copper alloy coin	Romano-British

#### Appendices



Waterman ID	Ref	Type	Description	Period
H176	MKE72669	Findspot	Roman copper alloy coin	Romano-British
H177	MKE72670	Findspot	Roman copper alloy coin	Romano-British
H178	MKE72671	Findspot	Roman copper alloy coin	Romano-British
H179	MKE72672	Findspot	Roman copper alloy coin	Romano-British
H180	MKE72673	Findspot	Roman copper alloy coin	Romano-British
H181	MKE72674	Findspot	Medieval silver coin	Medieval
H182	MKE72675	Findspot	Roman copper alloy brooch	Romano-British
H183	MKE72676	Findspot	Unknown lead alloy weight	Unknown
H184	MKE72677	Findspot	Roman copper alloy coin	Romano-British
H185	MKE72678	Findspot	Roman copper alloy mount	Romano-British
H186	MKE72679	Findspot	Roman copper alloy coin	Romano-British
H187	MKE72680	Findspot	Roman copper alloy coin	Romano-British
H188	MKE72681	Findspot	Roman silver coin	Romano-British
H189	MKE72682	Findspot	Roman copper alloy brooch	Romano-British
H190	MKE72683	Findspot	Roman copper alloy coin	Romano-British
H191	MKE72685	Findspot	Post Medieval silver buckle	Post-medieval
H192	MKE72686	Findspot	Roman copper alloy nail cleaner	Romano-British
H193	MKE72687	Findspot	Roman copper alloy coin	Romano-British
H194	MKE72688	Findspot	Roman silver coin	Romano-British
H195	MKE72689	Findspot	Roman copper alloy coin	Romano-British
H196	MKE72690	Findspot	Roman copper alloy coin	Romano-British
H197	MKE72691	Findspot	Roman copper alloy jewellery	Romano-British
H198	MKE72692	Findspot	Roman copper alloy coin	Romano-British
H199	MKE72693	Findspot	Roman copper alloy coin	Romano-British
H200	MKE72694	Findspot	Roman copper alloy coin	Romano-British
H201	MKE72695	Findspot	Roman copper alloy coin	Romano-British
H202	MKE72696	Findspot	Roman copper alloy coin	Romano-British
H203	MKE72697	Findspot	Roman copper alloy coin	Romano-British
H204	MKE72698	Findspot	Roman copper alloy coin	Romano-British
H205	MKE72699	Findspot	Roman copper alloy coin	Romano-British
H206	MKE72700	Findspot	Roman copper alloy coin	Romano-British
H207	MKE72701	Findspot	Roman copper alloy coin	Romano-British
H208	MKE72702	Findspot	Roman copper alloy coin	Romano-British
H209	MKE72703	Findspot	Roman copper alloy brooch	Romano-British

#### Appendices

Waterman ID	Ref	Type	Description	Period
H210	MKE72714	Findspot	PostMedieval lead alloy token	Medieval to Post-medieval
H211	MKE72849	Findspot	Iron Age copper alloy coin	Iron Age
H212	MKE72862	Findspot	Iron Age copper alloy coin	Iron Age
H213	MKE72863	Findspot	Iron Age gold coin	Iron Age
H214	MKE72864	Findspot	Iron Age gold coin	Iron Age
H215	MKE72865	Findspot	Iron Age copper alloy coin	Iron Age
H216	MKE72866	Findspot	Iron Age copper alloy coin	Iron Age
H217	MKE72867	Findspot	Iron Age copper alloy coin	Iron Age
H218	MKE72868	Findspot	Iron Age copper alloy coin	Iron Age
H219	MKE72869	Findspot	Iron Age copper alloy coin	Iron Age
H220	MKE72875	Findspot	Iron Age copper alloy coin	Iron Age
H221	MKE72883	Findspot	Iron Age copper alloy coin	Iron Age
H222	MKE72887	Findspot	Roman copper alloy coin	Romano-British
H223	MKE72888	Findspot	Medieval copper alloy ring	Medieval to Modern
H224	MKE72889	Findspot	Roman copper alloy coin	Romano-British
H225	MKE72890	Findspot	Roman copper alloy coin	Romano-British
H226	MKE72891	Findspot	Roman copper alloy coin	Romano-British
H227	MKE72892	Findspot	Roman copper alloy coin	Romano-British
H228	MKE72893	Findspot	PostMedieval silver coin	Post-medieval
H229	MKE72894	Findspot	copper alloy brooch pin	Medieval
H230	MKE72895	Findspot	Roman copper alloy unidentified object	Romano-British to Modern
H231	MKE72896	Findspot	Silver coin	Medieval
H232	MKE72897	Findspot	flint lithic implement	Unknown
H233	MKE72898	Findspot	Roman copper alloy coin	Romano-British
H234	MKE72899	Findspot	Roman copper alloy coin	Romano-British
H235	MKE72900	Findspot	copper alloy coin	Romano-British
H236	MKE72901	Findspot	Roman copper alloy coin	Romano-British
H237	MKE72902	Findspot	Roman copper alloy coin	Romano-British
H238	MKE72903	Findspot	Roman copper alloy coin	Romano-British
H239	MKE72904	Findspot	Roman copper alloy coin	Romano-British
H240	MKE72905	Findspot	PostMedieval iron horseshoe	Post-medieval
H241	MKE72906	Findspot	PostMedieval iron horseshoe	Post-medieval

#### Appendices

Waterman ID	Ref	Type	Description	Period
H242	MKE72907	Findspot	PostMedieval copper alloy buckle	Post-medieval
H243	MKE72908	Findspot	Roman copper alloy coin	Romano-British
H244	MKE72909	Findspot	Roman copper alloy coin	Romano-British
H245	MKE72910	Findspot	Roman copper alloy coin	Romano-British to early medieval
H246	MKE72911	Findspot	Roman copper alloy coin	Romano-British
H247	MKE72913	Findspot	PostMedieval iron horseshoe	Medieval to Post-medieval
H248	MKE72914	Findspot	Roman copper alloy brooch	Romano-British
H249	MKE72916	Findspot	PostMedieval iron horseshoe	Post-medieval
H250	MKE72917	Findspot	PostMedieval iron horseshoe	Post-medieval
H251	MKE72918	Findspot	PostMedieval iron horseshoe	Post-medieval
H252	MKE72919	Findspot	PostMedieval iron horseshoe	Post-medieval
H253	MKE72920	Findspot	PostMedieval iron horseshoe	Post-medieval
H254	MKE72921	Findspot	PostMedieval iron horseshoe	Post-medieval
H255	MKE72922	Findspot	Medieval iron horseshoe	Medieval
H256	MKE72923	Findspot	Medieval iron horseshoe	Medieval
H257	MKE72924	Findspot	Medieval iron horseshoe	Medieval
H258	MKE72925	Findspot	PostMedieval iron horseshoe	Post-medieval
H259	MKE72926	Findspot	Medieval iron horseshoe	Medieval
H260	MKE72927	Findspot	PostMedieval iron horseshoe	Post-medieval
H261	MKE72928	Findspot	Roman lead alloy spindle whorl	Romano-British to Post-medieval
H262	MKE72929	Findspot	Roman lead alloy weight	Romano-British to Post-medieval
H263	MKE72930	Findspot	Roman copper alloy coin	Romano-British
H264	MKE72931	Findspot	PostMedieval copper alloy crotal	Post-medieval
H265	MKE72932	Findspot	Medieval copper alloy buckle	Medieval
H266	MKE72933	Findspot	Unknown lead alloy weight	Unknown
H267	MKE72934	Findspot	PostMedieval iron horseshoe	Post-medieval
H268	MKE72935	Findspot	Roman copper alloy brooch	Romano-British
H269	MKE72936	Findspot	Early Medieval iron horseshoe	Early Medieval to Medieval
H270	MKE72937	Findspot	PostMedieval iron horseshoe	Post-medieval
H271	MKE72938	Findspot	PostMedieval copper alloy	Post-medieval

#### Appendices

Waterman ID	Ref	Type	Description	Period
			buckle	
H272	MKE72939	Findspot	Roman copper alloy coin	Romano-British
H273	MKE72940	Findspot	Roman iron hob nail	Romano-British
H274	MKE72941	Findspot	tin or tin alloy unidentified object	Unknown
H275	MKE73003	Findspot	Roman silver coin	Romano-British
H276	MKE73004	Findspot	Roman copper alloy coin	Romano-British
H277	MKE73019	Findspot	Roman silver coin	Romano-British
H278	MKE73020	Findspot	Medieval copper alloy harness ring	Medieval to Post-medieval
H279	MKE73021	Findspot	Iron Age copper alloy harness fitting	Iron Age to Romano-British
H280	MKE73022	Findspot	Roman copper alloy brooch	Iron Age to Romano-British
H281	MKE73023	Findspot	Iron Age copper alloy harness ring	Iron Age
H282	MKE73024	Findspot	Roman copper alloy coin	Romano-British
H283	MKE756	Findspot	Medieval Pottery	Medieval
H284	MKE77301	Non-designated monument	Robbed out Medieval wall cut, located at Bankers Mead, Otford	Medieval to Post-medieval
H285	MKE77302	Non-designated monument	Robbed out Roman wall cut, located at Bankers Mead, Otford	Romano-British to Post-medieval
H286	MKE77304	Non-designated monument	Roman pits, Lympe Field	Romano-British
H287	MKE77375	Non-designated monument	Cropmark of a rectilinear enclosure to the north of Twitton	Unknown
H288	MKE78059	Non-designated building	Milestone	Post-medieval to Modern
H289	MKE79816	Findspot	Post Medieval iron horseshoe	Post-medieval
H290	MKE79817	Findspot	Post Medieval iron horseshoe	Post-medieval
H291	MKE79818	Findspot	Roman lead alloy weight	Romano-British to Post-medieval
H292	MKE79819	Findspot	Roman lead alloy weight	Romano-British to Post-medieval
H293	MKE79820	Findspot	Post Medieval iron horseshoe	Post-medieval
H294	MKE79821	Findspot	Post Medieval iron horseshoe	Post-medieval
H295	MKE79822	Findspot	Roman copper alloy brooch	Romano-British
H296	MKE79823	Findspot	Post Medieval lead alloy token	Post-medieval
H297	MKE79828	Findspot	Post Medieval lead alloy token	Medieval to Post-

#### Appendices

Waterman ID	Ref	Type	Description	Period
				medieval
H298	MKE79829	Findspot	Roman copper alloy unidentified object	Unknown
H299	MKE79830	Findspot	Medieval iron horseshoe	Medieval
H300	MKE79831	Findspot	Medieval iron key (locking)	Medieval to Post-medieval
H301	MKE79832	Findspot	Roman copper alloy coin	Romano-British
H302	MKE79833	Findspot	Post Medieval silver clasp	Post-medieval to Modern
H303	MKE79834	Findspot	Medieval iron key (locking)	Medieval to Post-medieval
H304	MKE79835	Findspot	Roman copper alloy mount	Romano-British
H305	MKE79836	Findspot	Roman lead alloy weight	Romano-British to Post-medieval
H306	MKE79837	Findspot	Post Medieval copper alloy furniture fitting	Post-medieval
H307	MKE79838	Findspot	Roman copper alloy coin	Romano-British
H308	MKE79839	Findspot	Medieval copper alloy harness ring	Medieval to Post-medieval
H309	MKE79840	Findspot	copper alloy harness ring	Medieval to Post-medieval
H310	MKE79841	Findspot	Roman copper alloy harness fitting	Romano-British to Post-medieval
H311	MKE79842	Findspot	Roman copper alloy coin	Romano-British
H312	MKE79843	Findspot	Roman base silver coin	Romano-British
H313	MKE79844	Findspot	Roman copper alloy brooch	Romano-British
H314	MKE79845	Findspot	Roman copper alloy brooch	Romano-British
H315	MKE79846	Findspot	Roman copper alloy coin	Romano-British
H316	MKE79847	Findspot	Roman copper alloy coin	Romano-British
H317	MKE79848	Findspot	Medieval copper alloy unidentified object	Medieval to Post-medieval
H318	MKE79849	Findspot	Iron Age copper alloy brooch	Iron Age to Romano-British
H319	MKE79850	Findspot	Post Medieval lead alloy token	Medieval to Post-medieval
H320	MKE79851	Findspot	Roman silver coin	Romano-British
H321	MKE79852	Findspot	Roman copper alloy coin	Romano-British
H322	MKE79853	Findspot	Roman copper alloy coin	Romano-British

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Waterman ID	Ref	Type	Description	Period
H323	MKE79855	Findspot	copper alloy spur	Post-medieval
H324	MKE79856	Findspot	PostMedieval iron horseshoe	Post-medieval
H325	MKE79862	Findspot	PostMedieval lead alloy token	Medieval to Post-medieval
H326	MKE79863	Findspot	Roman silver coin	Romano-British
H327	MKE79864	Findspot	Roman copper alloy coin	Romano-British
H328	MKE79865	Findspot	Roman copper alloy coin	Romano-British
H329	MKE79866	Findspot	Roman copper alloy coin	Romano-British
H330	MKE79867	Findspot	copper alloy ring	Romano-British to Early medieval
H331	MKE79868	Findspot	Roman copper alloy brooch	Romano-British
H332	MKE79869	Findspot	Roman copper alloy coin	Romano-British
H333	MKE79870	Findspot	copper alloy coin	Romano-British
H334	MKE79871	Findspot	copper alloy coin	Romano-British
H335	MKE79872	Findspot	copper alloy coin	Romano-British
H336	MKE79873	Findspot	copper alloy coin	Romano-British
H337	MKE79874	Findspot	copper alloy awl	Bronze Age to Early medieval
H338	MKE79875	Findspot	Roman lead alloy weight	Romano-British to Post-medieval
H339	MKE79876	Findspot	copper alloy coin	Romano-British
H340	MKE79877	Findspot	PostMedieval tin or tin alloy button	Post-medieval
H341	MKE79878	Findspot	Medieval copper alloy buckle	Medieval
H342	MKE79879	Findspot	Roman lead alloy weight	Romano-British to Post-medieval
H343	MKE79880	Findspot	Medieval copper alloy strap end	Medieval
H344	MKE79881	Findspot	PostMedieval iron horseshoe	Post-medieval
H345	MKE79882	Findspot	Roman lead alloy spindle whorl	Romano-British to Post-medieval
H346	MKE79883	Findspot	Neolithic flint lithic implement	Mesolithic to Iron Age
H347	MKE79891	Findspot	Roman copper alloy coin	Romano-British
H348	MKE79892	Findspot	Roman copper alloy coin	Romano-British
H349	MKE79893	Findspot	Roman copper alloy coin	Romano-British
H350	MKE79894	Findspot	Roman silver coin	Romano-British

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Waterman ID	Ref	Type	Description	Period
H351	MKE79895	Findspot	Roman silver coin	Iron Age
H352	MKE79896	Findspot	Roman copper alloy coin	Romano-British
H353	MKE79897	Findspot	Roman silver coin	Romano-British
H354	MKE79898	Findspot	Roman silver coin	Romano-British
H355	MKE79899	Findspot	Roman silver coin	Iron Age
H356	MKE79900	Findspot	Roman silver coin	Romano-British
H357	MKE79901	Findspot	Roman silver coin	Romano-British
H358	MKE79902	Findspot	Roman silver coin	Romano-British
H359	MKE79903	Findspot	Roman silver coin	Romano-British
H360	MKE79904	Findspot	Roman silver coin	Romano-British
H361	MKE79905	Findspot	Roman copper alloy coin	Romano-British
H362	MKE79906	Findspot	Roman copper alloy coin	Romano-British
H363	MKE79907	Findspot	Roman copper alloy coin	Romano-British
H364	MKE79908	Findspot	Roman copper alloy coin	Romano-British
H365	MKE79909	Findspot	Roman copper alloy coin	Romano-British
H366	MKE79910	Findspot	Roman copper alloy coin	Romano-British
H367	MKE79911	Findspot	Roman copper alloy coin	Romano-British
H368	MKE79912	Findspot	Roman copper alloy coin	Romano-British
H369	MKE79913	Findspot	Roman lead alloy coin	Romano-British
H370	MKE79914	Findspot	Roman copper alloy coin	Romano-British
H371	MKE79915	Findspot	Roman copper alloy coin	Romano-British
H372	MKE79916	Findspot	Roman copper alloy coin	Romano-British
H373	MKE79917	Findspot	Roman copper alloy coin	Romano-British
H374	MKE79918	Findspot	Roman copper alloy coin	Romano-British
H375	MKE79919	Findspot	Roman copper alloy coin	Romano-British
H376	MKE79920	Findspot	Roman copper alloy coin	Romano-British
H377	MKE79921	Findspot	Roman copper alloy coin	Romano-British
H378	MKE79922	Findspot	Roman copper alloy coin	Romano-British
H379	MKE79923	Findspot	Roman copper alloy coin	Romano-British
H380	MKE79924	Findspot	Roman copper alloy coin	Romano-British
H381	MKE79925	Findspot	Roman copper alloy coin	Romano-British
H382	MKE79926	Findspot	Roman copper alloy coin	Romano-British
H383	MKE79927	Findspot	Roman copper alloy coin	Romano-British
H384	MKE79928	Findspot	Roman copper alloy coin	Romano-British

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Waterman ID	Ref	Type	Description	Period
H385	MKE79929	Findspot	Roman copper alloy coin	Romano-British
H386	MKE79930	Findspot	Roman copper alloy coin	Romano-British
H387	MKE80636	Non-designated monument	Former site of Equipment Ammunition Magazines at Badger's Mount	Modern
H388	MKE83542	Non-designated building	Home Farm	Post-medieval
H389	MKE83543	Non-designated building	Sundridge Hill Farm	Post-medieval
H390	MKE83544	Non-designated building	Farmstead north north east of Sundridge Hill	Post-medieval
H391	MKE83545	Non-designated building	Chine Farm (Shine Farm)	Post-medieval
H392	MKE83546	Non-designated building	The Grange	Post-medieval
H393	MKE83547	Non-designated building	Blueberry Farm	Post-medieval
H394	MKE83548	Non-designated building	Farmstead at Single's Cross	Post-medieval
H395	MKE83549	Non-designated building	Outfarm in Knockholt Pound	Post-medieval
H396	MKE83550	Non-designated building	New Stables Farm	Post-medieval
H397	MKE83551	Non-designated building	Park Farm	Post-medieval
H398	MKE83554	Non-designated building	Outfarm north north east of Halstead	Post-medieval
H399	MKE83555	Non-designated building	Outfarm north east of Halstead	Post-medieval
H400	MKE83556	Non-designated building	Farmstead in Halstead	Post-medieval
H401	MKE83557	Non-designated building	Widmore Farm (Widmore House)	Post-medieval
H402	MKE83558	Non-designated building	Outfarm north north west of Curry Farm	Post-medieval
H403	MKE83559	Non-designated building	Outfarm north north west of Curry Farm	Post-medieval
H404	MKE83560	Non-designated building	Outfarm south east of Woodvale	Post-medieval
H405	MKE83561	Non-designated building	Outfarm south west of Hazel Cottages	Post-medieval

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Waterman ID	Ref	Type	Description	Period
H406	MKE83562	Non-designated building	Outfarm south west of Hazel Cottages	Post-medieval
H407	MKE83563	Non-designated building	Outfarm south west of Hazel Cottages	Post-medieval
H408	MKE83564	Non-designated building	Outfarm north west of Curry Farm	Post-medieval
H409	MKE83565	Non-designated building	Outfarm south south west of Woodvale	Post-medieval
H410	MKE83566	Non-designated building	Outfarm south south west of Woodvale	Post-medieval
H411	MKE83567	Non-designated building	Outfarm south east of Woodvale	Post-medieval
H412	MKE83568	Non-designated building	Curry Farm	Post-medieval
H413	MKE83569	Non-designated building	Outfarm north west of Curry Farm	Post-medieval
H414	MKE83570	Non-designated building	Outfarm north west of Curry Farm	Post-medieval
H415	MKE83571	Non-designated building	Outfarm in Knockholt Pound	Post-medieval
H416	MKE83572	Non-designated building	The Meadows	Post-medieval
H417	MKE83573	Non-designated building	Outfarm east of Knockholt Pound village	Post-medieval
H418	MKE83574	Non-designated building	Outfarm east of Knockholt Pound village	Post-medieval
H419	MKE83575	Non-designated building	Outfarm east of Knockholt Pound village	Post-medieval
H420	MKE83576	Non-designated building	Parkside	Post-medieval
H421	MKE83577	Non-designated building	Park House	Post-medieval
H422	MKE83578	Non-designated building	Farmstead north east of Chevening House	Post-medieval
H423	MKE83579	Non-designated building	Outfarm south east of Chevening House	Post-medieval
H424	MKE83580	Non-designated building	Yard in Chevening	Post-medieval
H425	MKE83581	Non-designated building	Rose Cottage	Post-medieval
H426	MKE83618	Non-designated	Outfarm north east of Chevening	Post-medieval

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Waterman ID	Ref	Type	Description	Period
		building	Lodge	
H427	MKE83619	Non-designated building	Outfarm south of Morants Court	Post-medieval
H428	MKE83620	Non-designated building	Turvin's Farm	Post-medieval
H429	MKE83621	Non-designated building	Morants Court Farm	Post-medieval
H430	MKE83622	Non-designated building	Outfarm north west of Dunton Green Lime Works	Post-medieval
H431	MKE83623	Non-designated building	Outfarm adjacent to Beaumont Wood	Post-medieval
H432	MKE83624	Non-designated building	Farmstead south east of Brandon House	Post-medieval
H433	MKE83625	Non-designated building	Brandon House	Post-medieval
H434	MKE83626	Non-designated building	Outfarm north west of Stockholme Villa	Post-medieval
H435	MKE83627	Non-designated building	Outfarm north west of Stockholme Villa	Post-medieval
H436	MKE83628	Non-designated building	Outfarm south of Polhill Arms public house	Post-medieval
H437	MKE83629	Non-designated building	Outfarm south east of Lamberhurst Cottages	Post-medieval
H438	MKE83630	Non-designated building	Outfarm south east of Lamberhurst Cottages	Post-medieval
H439	MKE83696	Non-designated building	Outfarm in Shoreham	Post-medieval
H440	MKE83697	Non-designated building	Home Farm	Post-medieval
H441	MKE83698	Non-designated building	Filston Farm	Post-medieval
H442	MKE83699	Non-designated building	Lower Barn	Post-medieval
H443	MKE83700	Non-designated building	Frog Farm	Post-medieval
H444	MKE83702	Non-designated building	Newbarns	Post-medieval
H445	MKE88629	Non-designated building	Colgates (Colegate)	Post-medieval
H446	MKE88630	Non-designated building	Great Dunton Farm	Post-medieval

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Waterman ID	Ref	Type	Description	Period
H447	MKE88632	Non-designated building	Farmstead south south east of Colgates	Post-medieval
H448	MKE88642	Non-designated building	Danes Hollow Farm	Post-medieval
H449	MKE88644	Non-designated building	Ivy Farm	Post-medieval
H450	MKE88768	Non-designated building	Outfarm south west of New Stables Farm	Post-medieval
H451	MKE88775	Non-designated building	Outfarm adjacent to Kangles Farm	Post-medieval
H452	MKE88776	Non-designated building	Outfarm north west of Hazel Cottages	Post-medieval
H453	MKE88777	Non-designated building	Brooks Grove	Post-medieval
H454	MKE88778	Non-designated building	Outfarm north north west of Hazel Cottages	Post-medieval
H455	MKE88779	Non-designated building	Outfarm north east of Halstead	Post-medieval
H456	MKE88780	Non-designated building	Outfarm east of Brandon House	Post-medieval
H457	MKE88781	Non-designated building	Outfarm south south east of Brandon House	Post-medieval
H458	MKE88782	Non-designated building	Outfarm west of Stockholme Villa	Post-medieval
H459	MKE88783	Non-designated building	Outfarm north east of Oak Tree Farm	Post-medieval
H460	MKE88784	Non-designated building	Shepherds Barn	Post-medieval
H461	MKE88785	Non-designated building	Sepham Farm	Post-medieval
H462	MKE88786	Non-designated building	Outfarm east of Knockholt Pound	Post-medieval
H463	MKE88944	Non-designated building	Oveny Green Farm	Post-medieval
H464	MKE89279	Non-designated building	Smallholding south west of stockholme villa, Halstead	Post-medieval to Modern
H465	MKE89281	Non-designated monument	Former site of hop pickers huts south west of Lower Barn, Otford.	Post-medieval to Modern
H466	MKE89282	Non-designated monument	Hop picker's huts to the West of Lower Barn, Shoreham	Post-medieval to Modern

#### Appendices

Waterman ID	Ref	Type	Description	Period
H467	MKE89487	Non-designated monument	Former site of hop pickers' huts north of Lamberhurst Farm	Post-medieval to Modern
H468	MKE89495	Non-designated monument	Former site of hop pickers' huts northeast of Colegates	Post-medieval to Modern
H469	MKE8958	Non-designated monument	Shepherd's barn	Post-medieval
H470	MKE89605	Non-designated building	Building F14, Fort Halstead	Modern
H471	MKE89606	Non-designated building	Building F18, Fort Halstead	Modern
H472	MKE89900	Non-designated monument	Crash site of Airspeed Courier	Modern
H473	MKE92579	Non-designated monument	Knockholt House community woodland	Post-medieval to Modern
H474	MKE92582	Non-designated monument	Morants Court historic garden	Modern to Unknown
H475	MKE92732	Non-designated building	Barn at Timberden Farm	Post-medieval to Unknown
H476	MKE92733	Non-designated building	Cattleshed at Timberden Farm	Post-medieval to Unknown
H477	MKE92734	Non-designated building	Cartshed at Timberden Farm	Post-medieval to Unknown
H478	MKE92735	Non-designated building	Stable at Timberden Farm	Post-medieval to Unknown
H479	MKE96348	Findspot	Medieval Copper alloy vessel	Medieval
H480	MKE96422	Findspot	PostMedieval Copper alloy jetton	Post-medieval
H481	MKE96423	Findspot	Roman Copper alloy coin	Romano-British
H482	MKE96424	Findspot	Roman Copper alloy coin	Romano-British
H483	MKE96425	Findspot	Unknown Copper alloy unidentified object	Unknown
H484	MKE96426	Findspot	Roman Copper alloy coin	Romano-British
H485	MKE96427	Findspot	Roman Copper alloy coin	Romano-British
H486	MKE96432	Findspot	Copper alloy coin	Iron Age
H487	MKE96433	Findspot	Copper alloy coin	Iron Age
H488	MKE96434	Findspot	Copper alloy coin	Iron Age
H489	MKE96435	Findspot	Copper alloy coin	Iron Age
H490	MKE96436	Findspot	Copper alloy coin	Iron Age

#### Appendices

Waterman ID	Ref	Type	Description	Period
H491	MKE96437	Findspot	Copper alloy coin	Romano-British
H492	MKE96438	Findspot	Copper alloy coin	Romano-British
H493	MKE96439	Findspot	Copper alloy coin	Romano-British
H494	MKE96440	Findspot	Copper alloy coin	Romano-British to Unknown
H495	MKE96441	Findspot	Copper alloy coin	Romano-British
H496	MKE96442	Findspot	Copper alloy coin	Romano-British
H497	MKE96443	Findspot	Copper alloy coin	Romano-British
H498	MKE96444	Findspot	Copper alloy coin	Romano-British
H499	MKE96445	Findspot	Copper alloy coin	Iron Age to Romano-British
H500	MKE96446	Findspot	Copper alloy coin	Romano-British
H501	MKE96447	Findspot	Copper alloy coin	Romano-British
H502	MKE96448	Findspot	Copper alloy coin	Romano-British
H503	MKE96449	Findspot	Base Silver coin	Romano-British
H504	MKE96450	Findspot	Silver coin	Romano-British
H505	MKE96451	Findspot	Base Silver coin	Romano-British
H506	MKE96452	Findspot	Silver coin	Romano-British
H507	MKE96453	Findspot	Copper alloy coin	Romano-British
H508	MKE96454	Findspot	Copper alloy coin	Romano-British
H509	MKE96461	Findspot	Roman Copper alloy coin	Romano-British
H510	MKE96479	Findspot	Silver brooch	Medieval
H511	MKE96481	Findspot	Roman Copper alloy coin	Romano-British
H512	MKE97977	Non-designated monument	Roman Pit and Ditch, Pilgrim's Way Cottage, Otford	Romano-British
H513	MKE98395	Non-designated building	Myrtle Cottage, Church Street, Shoreham	Modern

#### Appendices

## C. Gazetteer of Previous Investigations & Studies

Waterman ID	Reference	Type	Description
E1	EKE11307	Evaluation	Evaluation at Bankers Mead, north west of Otford
E2	EKE11311	Excavation	Excavation of Lyphe Field, west of Otford
E3	EKE11321	Desk-Based Assessment	Desk based assessment for Fort Halstead
E4	EKE11324	Desk-Based Assessment	Desk based assessment on Fort Halstead
E5	EKE11325	Desk-Based Assessment	Field observation of Fort Halstead
E6	EKE11439	Desk-Based Assessment	Desk based assessment from the widening of M25 junctions 5 - 7
E7	EKE13860	Desk-Based Assessment	Farmstead Survey, Shoreham, Shacklands road, Timbertan Farm
E8	EKE14610	Desk-Based Assessment	Desk-based Archaeological Assessment: Fort Halstead, Kent
E9	EKE14863	Desk-Based Assessment	Archaeological Desk Based Assessment: Dunton Green Primary School, Kent
E10	EKE14987	Evaluation	Archaeological Evaluation: Land at Pilgrim's Way Cottage, Pilgrim's Way West, Otford, Kent
E11	EKE15636	Desk-Based Assessment	Broughton House, Sevenoaks Heritage Assessment
E12	EKE16909	Watching Brief	Lower Barn Cottage, Otford, Kent TN14 5PQ: Report on an Archaeological Watching Brief
E13	EKE3782	Excavation	POLHILL
E14	EKE3783	Excavation	Excavation of Saxon Cemetery POLHILL
E15	EKE3784	Excavation	Excavation at Polhill Anglo-Saxon Cemetery
E16	EKE3785	Excavation	Excavation at Polhill Anglo- Saxon Cemetery
E17	EKE3786	Excavation	FROG FARM, TWITTON
E18	EKE3787	Excavation	Excavation at Frog Farm, Twitton, Otford
E19	EKE3788	Excavation	FROG FARM, TWITTON
E20	EKE3789	Excavation	FROG FARM, TWITTON
E21	EKE3790	Excavation	WICKHAM FIELD
E22	EKE4685	Excavation	Excavation at Polhill Anglo-Saxon Cemetery
E23	EKE5758	Excavation	Excavation at Polhill Anglo-Saxon Cemetery, Polhill
E24	EKE5931	Excavation	Excavation at Polhill Saxon Cemetery, Polhill
E25	EKE9252	Evaluation	Trial trenching evaluation at Frog Farm Barns. Otford
E26	EKE9735	Watching Brief	Watching Brief at Frog Farm Barns, Otford, Sevenoaks

### Appendices

Waterman ID	Reference	Type	Description
E27	EKE9879	Watching Brief	Watching brief at 4 Wickham Field, Otford, 1994

**Appendices**



## D. Listing Entry

<https://historicengland.org.uk/listing/the-list/list-entry/1004214>

### Overview

Heritage Category: Scheduled Monument

List Entry Number: 1004214

Date first listed: 29-Apr-1976

Date of most recent amendment: 21-Mar-2013

Statutory Address: Fort Halstead, Dunton Green, nr Sevenoaks, Kent

### Location

Statutory Address: Fort Halstead, Dunton Green, nr Sevenoaks, Kent

The building or site itself may lie within the boundary of more than one authority.

County: Kent

District: Sevenoaks (District Authority)

Parish: Dunton Green

National Grid Reference: TQ4990059145

### Summary

A late C19 mobilisation centre which was modified from the late 1930s for rocketry research, and in the late 1940s for the top-secret development of Britain's first atomic bomb.

### Reasons for Designation

Fort Halstead, a late C19 mobilisation centre which was modified from the late 1930s for rocketry research, and post-war for the top-secret development of Britain's atomic bomb, is scheduled for the following principal reasons: \* Rarity and form: one of 13 purpose-built mobilisation centres nationally erected in the late C19. Fort Halstead was the largest (and most expensive) built and is one of only four designed for artillery deployment. Also, a highly significant site in terms of mid-late C20 rocketry and atomic bomb research and development; \* Survival and diversity: a mobilisation centre which survives in largely intact form. Although a section of late C19 ditch has been infilled, this survives intact as a buried feature. The fort also includes evidence for the site's later research and development role with limited alteration of some of the casements and magazines for this later use; this modification adds to the fort's interest; \*

Documentation: the site has the potential to significantly enhance our understanding of the development and operation of the late C19 mobilisation centres constructed to defend the capital, also to aid our understanding of the nationally significant atomic bomb research and development undertaken here; \*

Group value: with listed buildings within and immediately outside the Fort representative of the site's later role as a military research establishment.

### History

Fort Halstead is one of fifteen late C19 mobilisation centres interspersed with entrenchments established to defend London in the event of invasion. The capital was not encircled by these centres but was protected to its north-east, east and south, the anticipated directions of attack, and their construction represents a lack of confidence in the Royal Navy's ability to protect the country from its enemies at that time. Designed in 1894, Fort Halstead was probably constructed between 1895-7 and was intended to be a nodal point where volunteer forces could collect equipment and ammunition if the need arose. Unusually for a site of this type it also had the provision to mount machine-guns in emplacements. The fort is not shown on the 1896 Ordnance Survey map (although the associated caretakers' cottages are depicted) and therefore it is not clear whether the fort area had been deliberately left blank for security reasons (a common convention for military structures on early maps) or whether it had yet to be built. In common with many of the other mobilisation centres, Fort Halstead was generally unoccupied although its upkeep and security was ensured by on-site caretakers for whom two cottages were built outside of the fort ditch. Most mobilisation centres also had a contemporary tool store, located outside of the fort, although at Fort Halstead the tool store was not built until 1920. The London Defence Scheme, of which Fort Halstead was a part, was abandoned in 1906.

During the First World War the fort was used as a defensible ammunition store forming part of the London anti-invasion stop-line. In 1937, after sixteen years of private ownership, the War Office bought the site to accommodate the Projectile Development Establishment as it provided a remote and contained site for rocket development building on earlier work by the Ballistics Branch at the Royal Arsenal in Woolwich. From the late 1930s the site expanded with a number of buildings constructed inside and outside the fort. After the end of the war, Fort Halstead became the top-secret High Explosives Research headquarters with the task of developing Britain's atomic bomb (developing the Mark 1 warhead which when assembled in its casing was known as 'Blue Danube') and this work was to dominate the work at Fort Halstead. Other structures associated with Blue Danube have been scheduled recently at the former RAF Barnham. Additional structures for this research were built in and around Fort Halstead, all within a secure fenced enclave. As was common to projects of the time different research establishments were responsible for developing different components of weapons systems. Although few records exist it is known that Fort Halstead personnel were responsible for developing both high explosive and electronic detonators for the atomic bomb. Britain exploded her first atomic bomb on the Mont Bello Islands, Australia on 3 October 1952.

Atomic weapons research and development continued at Fort Halstead until 1955 when staff transferred to the Atomic Weapons Research Establishment at Aldermaston (Berkshire). Fort Halstead has since continued as a government defence research establishment concentrating on explosives and other research.

#### Details

Fort Halstead is located on the crest of a steep chalk escarpment of the North Downs, to the north-west of the village of Dunton Green and overlooking the Darent Valley. The fort is polygonal in plan and is surrounded by an earth rampart and a deep external ditch with a sloping earth counterscarp and concrete revetted scarp. The ditch is extant for much of the circuit except at the north-west and west of the fort where it has been infilled although survives as a buried feature. Within the base of the ditch to the south is a brick compound built against the concrete revetment and containing a domed structure of unknown function.

The original access to the interior parade is from the north-west where two of the eleven angles of the fort form a re-entrant. There is a later additional entrance to the south-west linking the fort interior with the wartime experimental rocket firing area to the south-west of the fort. This entrance is shown on an aerial photograph of 1952 but not on one of 1946. The original entrance is via a north-south causeway over the ditch which is flanked by low concrete walls topped with original metal fence posts and a modern wire mesh fence. Originally the whole fort would have been enclosed within a high steel fence with gates hung on steel girders at the entrance (traces of which survive). Where the roadway cuts through the rampart it is flanked by concrete retaining walls.

The rampart is a massively built earthwork, part revetted in concrete, with a parapet, banquette (infantry fire-step) and terreplein (a platform or level surface on which heavy guns are mounted). Along the crest of the rampart are surviving traces of the brick-revetted emplacements for machine-guns positions some with small magazine set into the rampart. (Nine appear to be shown on the Bradshaw plan of 1922). At the north-east corner of the fort is an additional structure of Second World War date, possibly a fire watch post. This is of brick and concrete construction and has a protected entrance. A number of traverses project from the internal face of the rampart, the majority of which are mounded over magazines or casemates. There is a linear central traverse which crosses the parade in a broadly north-south axis, centrally to the fort, curving to the north-east at its northern end.

There are three magazines cut into traverses to the north-east (Building F3), south-east (Building F5) and south (Building F6). These are concrete built and cellular providing chambers for the storage of ammunition (shells and cartridges). All are provided with safety lamp recesses with glazed and metal grill covers: these recesses ensured that the flame of the lamp was separated from, but lit, the ammunition storage areas. The earth-covered reinforced concrete roofs have an added layer of flint within the earth cover designed as a bursting layer to detonate any enemy shell before it reached the magazine.

There are also three sets of casemates, to the west, north and east. All the casemates are concrete built and cellular although with some discreet elements in brick. The northern (Building F2 which was not available for inspection) is cut into the northern end of the central traverse. In plan this has nine casemates running broadly north-south with a covered access corridor to the west. An associated ammo store is cut

into the rampart to the north-west across the access passage. The eastern group (Building F4) is cut into the rampart. These casemates were available for inspection and have access steps leading down from the north parallel to an access ramp. To the east of the covered corridor are the four chambers. These have solid planked double doors with timber-framed overlights. The passage is now (2012) covered in a clear plastic corrugated roofing material and there is extensive pipework in the corridor above head height. The western and largest group of casemates (Building F8) comprises 17 chambers with a reinforced concrete roof, and also two ammunition stores for small arms (Buildings F7 and F9) set west of the concrete revetted access passage within the rampart. It was originally earth-covered but this has been removed. Two flights of steps lead from the passage up onto the rampart. Access was prohibited at the time of inspection but it is understood that these casemates have experienced some minor alterations for use from the mid C20 onwards but that their C19 form remains legible. Photographs from c1989 show that the corridor, its roof covering and chamber entrances are of the same form as Building F4. However, many of the entrance overlights had been bricked-up at that time. The same photographs suggest that the internal chamber divisions are at least partly brick built.

At least one C19 hydrant survives within the fort.

### **EXTENT OF SCHEDULING**

The monument excludes all buildings and structures constructed post-1900 (although the ground beneath them is included), the one exception being the Second World War firewatcher's post on the north ramparts which is included. For the avoidance of doubt Buildings F2, F3, F4, F5, F6, F7, F8 and F9, which are all part of the C19 fort, are included in the scheduling as are any post-1900 modifications to these structures.

### **Legacy**

The contents of this record have been generated from a legacy data system.

Legacy System number: KE 303

Legacy System: RSM - OCN

#### Sources

##### Books and journals

Barker, L, Pattison, P, North Weald Redoubt, Essex , (2000)

Cathcart, B, Test of Greatness: Britain's struggle for the atomic bomb , (1994)

Clive, R, Fort Halstead: A Celebration of the First 100 years, (1977)

Cocroft, W D, Dunton Green, Sevenoaks, Kent: A Brief Assessment of the Role of Fort Halstead in Britain's Early Rocket Programmes and the Atomic Bomb Project , (2010)

Saunders, A, Smith, V, Kent's Defence Heritage, (2001), 234-242 and gazetteer reference KE80

Hamilton-Baillie, J, 'Country Life' in London's Victorian Forts, , Vol. Nov 13 1986, (1986 ), 1560-2

Smith, V, 'London Archaeologist' in The London Mobilisation Centres, , Vol. 2, No 12, (1975), 244-248

Smith, V, 'Post-Medieval Archaeology' in Chatham and London: The Changing Face of English Land Fortification 1870-1918, , Vol. 19, (1985), 105-149

#### Other

Brunton Boobyer Partnership, Notes on the History of Fort Halstead, 1984,

Cocroft, WD & Fiorato, V, Fort Halstead: a summary history, 2012,

English Heritage Archive select photographs:

Aerial Photograph (October 1946): RAF CPE UK 1789 11 Oct 1946, frame 4473

Aerial Photograph (April 1947): RAF CPE UK 1982 11 April 1947, frame 1110

Aerial Photograph (May 1952): RAF 540/731, 15 May 52, frame 4075

Griffiths, N, , R.A.R.D.E. Fort Halstead: a short history, 1984

### **Legal**

This monument is scheduled under the Ancient Monuments and Archaeological Areas Act 1979 as amended as it appears to the Secretary of State to be of national importance. This entry is a copy, the original is held by the Department for Digital, Culture, Media and Sport.

## Fort Halstead: Building F11

<https://historicengland.org.uk/listing/the-list/list-entry/1412292>

### Overview

Heritage Category:

Listed Building

Grade:

II

List Entry Number:

1412292

Date first listed:

21-Mar-2013

Statutory Address:

Fort Halstead, Dunton Green, nr Sevenoaks, Kent

### Location

Statutory Address:

Fort Halstead, Dunton Green, nr Sevenoaks, Kent

The building or site itself may lie within the boundary of more than one authority.

County:

Kent

District:

Sevenoaks (District Authority)

Parish:

Dunton Green

National Grid Reference:

TQ4986259145

### Summary

Experimental Filling Shed (Building F11), Fort Halstead, 1938.

### Reasons for Designation

Building F11 at Fort Halstead, an experimental filling shed of 1938, is listed at Grade II for the following principal reasons: \* Rarity and early date: this is the earliest surviving purpose-designed building associated with rocketry research and development nationally. Most buildings associated with this area of research are of post-war date rather than pre-war as here; \* Design and form: the building's function is legible through its form, the internal vertical bays to accommodate the filling of 9 foot rocket casings survive particularly well; \* Historic interest: F11 is significant as part of the early research programmes at Fort Halstead under the Projectile Development Establishment and, given the specialist nature of this work, is of national interest.

### History

Fort Halstead is one of fifteen late C19 mobilisation centres established to defend London in the event of invasion. Designed in 1894, it was probably constructed between 1895-7 and was intended to be a nodal point where volunteer forces could collect equipment and ammunition if the need arose.

During the First World War the fort was used as a defensible ammunition store forming part of the London anti-invasion stop-line. In 1937, after sixteen years of private ownership, the War Office bought the site to accommodate the Projectile Development Establishment as it provided a remote and contained site for rocket development building on earlier work by the Ballistics Branch at the Royal Arsenal in Woolwich. From the late 1930s the site expanded with a number of buildings constructed inside and outside the fort. After the end of the war, Fort Halstead became the top-secret High Explosives Research headquarters with the task of developing Britain's first atomic bomb (the Mark 1 warhead which when assembled in its casing was known as 'Blue Danube') and this work was to dominate the work at Fort Halstead. Additional structures for this research were built in and around the fort, all within a secure fenced enclave. As was common to projects of the time different research establishments were responsible for developing different components of weapons systems. Although few records exist it is known that Fort Halstead personnel were responsible

for developing both high explosive and electronic detonators for the atomic bomb. Britain exploded her first atomic bomb on the Mont Bello Islands, Australia on 3 October 1952.

Atomic weapons research and development continued at Fort Halstead until 1955 when staff transferred to the Atomic Weapons Research Establishment at Aldermaston (Berkshire). Fort Halstead has since continued as a government defence research establishment concentrating on explosives and other research.

**EXPERIMENTAL FILLING SHED (BUILDING F11)** Designed in February 1938 and erected in the same year. F11 is probably the earliest surviving building in the new research establishment and it was designed to allow the filling of cordite rocket motors. It was later dubbed 'Poole's Folly' as there are questions as to whether or how much it was used for its intended function. However, this is the earliest surviving purpose-built rocket-related building in England.

### **Details**

The Fort Halstead site is located on a prominent hilltop, which is part of the North Downs, to the north-west of the village of Dunton Green. The site includes both the late C19 Mobilisation Centre ('Fort Halstead') in the south of the site and a large number of buildings associated with the research facility to the north and north-east of the fort. Building F11 lies within the fort.

**EXPERIMENTAL FILLING SHED (BUILDING F11)** A two-storey concrete-framed building encased in buff brick laid in English bond. F11 is L-shaped in plan and has a sloping concrete framed roof. Its principal elevation faces east which has an external metal stair leading to a first floor covered walkway. There are two pairs of double doors to the ground floor and two pedestrian doors to the first floor, all with glazed lights. The fenestration comprises metal framed casements. Its rear (west) wall has four further external doors (two to the ground floor and two to the upper floor but now blocked) possibly all emergency exits, plus further metal framed casements. The south elevation has paired replaced casements to both floors. The north elevation is blind. Over-head cable gantries extend north from the building.

The interior was not inspected but it is known from English Heritage's Research Department report that internally the southern half of the building is occupied by brick-built vertical filling bays (to accommodate rocket casing for the assembly of a 9 foot rocket).

### **Sources**

#### **Books and journals**

Cathcart, B, *Test of Greatness: Britain's struggle for the atomic bomb*, (1994)

Clive, R, *Fort Halstead: A Celebration of the First 100 years*, (1977)

Cocroft, W D, *Dunton Green, Sevenoaks, Kent: A Brief Assessment of the Role of Fort Halstead in Britain's Early Rocket Programmes and the Atomic Bomb Project*, (2010)

Hamilton-Baillie, J, 'Country Life' in *London's Victorian Forts*, , Vol. Nov 13 1986, (1986), 1560-2

Smith, V, 'Post-Medieval Archaeology' in *Chatham and London: The Changing Face of English Land Fortification 1870-1918*, , Vol. 19, (1985), 105-149

Smith, V, 'London Archaeologist' in *The London Mobilisation Centres*, , Vol. Vol 2, No 12, (1975), 244-248

#### **Other**

Cocroft, WD & Fiorato, V, *Fort Halstead: a summary history*, 2012,

English Heritage Archives:

Aerial Photograph (October 1946): RAF CPE UK 1789 11 Oct 1946, frame 4473

Aerial Photograph (April 1947): RAF CPE UK 1982 11 April 1947, frame 1110

Aerial Photograph (May 1952): RAF 540/731, 15 May 52, frame 4075

Griffiths, N, , *R.A.R.D.E. Fort Halstead: a short history*, 1984

### **Legal**

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.





Fort Halstead: Buildings F16 and F17

<https://historicengland.org.uk/listing/the-list/list-entry/1412293>

### Overview

Heritage Category:

Listed Building

Grade:

II\*

List Entry Number:

1412293

Date first listed:

21-Mar-2013

Statutory Address:

Fort Halstead, Dunton Green, nr Sevenoaks, Kent

### Location

Statutory Address:

Fort Halstead, Dunton Green, nr Sevenoaks, Kent

The building or site itself may lie within the boundary of more than one authority.

County:

Kent

District:

Sevenoaks (District Authority)

Parish:

Dunton Green

National Grid Reference:

TQ4991459168

### Summary

Bomb Chamber (Building F16) and Detonation Chamber (Building F17), Fort Halstead, 1947.

### Reasons for Designation

Buildings F16 and F17 at Fort Halstead, the Bomb Chamber and Detonation Chamber respectively both constructed in 1947, are listed at Grade II\* for the following principal reasons: \* Rarity: these are unique buildings, specifically designed for the development of Britain's first atomic bomb; \* Historic interest: both are vital buildings in our understanding of the nation's atomic bomb research and development, a top-secret programme under the aegis of the High Explosives Research Establishment which through its work at Fort Halstead, and sister sites, was to prove one of Britain's major scientific breakthroughs in the field of military armament; \* Design and form: the original function of both buildings is legible through their specialised form and both remain little altered from their original design.

### History

Fort Halstead is one of fifteen late C19 mobilisation centres established to defend London in the event of invasion. Designed in 1894, it was probably constructed between 1895-7 and was intended to be a nodal point where volunteer forces could collect equipment and ammunition if the need arose.

During the First World War the fort was used as a defensible ammunition store forming part of the London anti-invasion stop-line. In 1937, after sixteen years of private ownership, the War Office bought the site to accommodate the Projectile Development Establishment as it provided a remote and contained site for rocket development building on earlier work by the Ballistics Branch at the Royal Arsenal in Woolwich. From the late 1930s the site expanded with a number of buildings constructed inside and outside the fort. After the end of the war, Fort Halstead became the top-secret High Explosives Research headquarters with the task of developing Britain's first atomic bomb (the Mark 1 warhead which when assembled in its casing was known as 'Blue Danube') and this work was to dominate the work at Fort Halstead. Additional structures for this research were built in and around the fort, all within a secure fenced enclave. As was common to projects of the time different research establishments were responsible for developing different components

of weapons systems. Although few records exist it is known that Fort Halstead personnel were responsible for developing both high explosive and electronic detonators for the atomic bomb. Britain exploded her first atomic bomb on the Mont Bello Islands, Australia on 3 October 1952.

Atomic weapons research and development continued at Fort Halstead until 1955 when staff transferred to the Atomic Weapons Research Establishment at Aldermaston (Berkshire). Fort Halstead has since continued as a government defence research establishment concentrating on explosives and other research.

**BOMB CHAMBER (BUILDING F16)** Designed in July 1947 and with buildings F17 and F18 forms the key group of structures within the fort relating to atomic bomb research and development. The speed with which it was designed – only two months after the High Explosives Research Establishment was set up at Fort Halstead – is a testament to the importance of and need for this structure in the context of that body's research and development.

**DETONATION CHAMBER (BUILDING F17)** This building was designed in August 1947.

### **Details**

The Fort Halstead site is located on a prominent hilltop, which is part of the North Downs, to the north-west of the village of Dunton Green. The site includes both the late C19 Mobilisation Centre ('Fort Halstead') in the south of the site and a large number of buildings associated with the research facility to the north and north-east of the fort. Buildings F16 and F17 lie within the fort.

**BOMB CHAMBER (BUILDING F16)** A reinforced rectangular concrete structure for the detonation of explosive devices with an E-shaped single armoured chamber. An external metal staircase attached to the south-east elevation provides access to the flat roof which has metal railings to the rear (north-east elevation) and sides (south-east and north-west elevations). The rear and side elevations have three horizontal rows of square metal plates with central bolts which are presumed to be fixings for the monitoring of any detonations. There are also electrical inlets and outlets in the rear elevation.

**DETONATION CHAMBER (BUILDING F17)** A bi-partite building of reinforced concrete and brick. To the south and west it is a single storey flat roofed structure housing the armoured laboratory (in reinforced concrete); to the south and east it is faced in red brick English bond, but the north elevation is in concrete (the west elevation was not inspected). The laboratory has a large and prominent T-shaped funnel to its flat roof. The main access is via folding wooden doors in the east elevation. A porch has been added to protect a south pedestrian doorway. At its north-east corner the building rises to two storeys, again in red brick English bond. All windows are metal-framed casements with concrete heads.

The interior was not inspected but it is known that the bursting chamber is located in the single storey part of the building. It is divided into two parts described as 'large' and 'small' on original plans. Each section has armoured glass observation windows and the whole is flanked by camera rooms to either side. Explosions were recorded using an angled mirror and a high speed camera. The two-storey 'tower' housed a photographic dark room on the ground floor and a control room above from which the trials were overseen.

### **Sources**

#### **Books and journals**

Cathcart, B, *Test of Greatness: Britain's struggle for the atomic bomb*, (1994)

Clive, R, *Fort Halstead: A Celebration of the First 100 years*, (1977)

Cocroft, W D, *Dunton Green, Sevenoaks, Kent: A Brief Assessment of the Role of Fort Halstead in Britain's Early Rocket Programmes and the Atomic Bomb Project*, (2010)

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Smith, V, 'Post-Medieval Archaeology' in Chatham and London: The Changing Face of English Land Fortification 1870-1918, , Vol. 19, (1985), 105-149

Smith, V, 'London Archaeologist' in The London Mobilisation Centres, , Vol. Vol 2, No 12, (1975), 244-248

#### **Other**

Aperture cards (of original plans) for buildings within the fort :

Fort Halstead H.E. Research Bomb Chamber [Building F16] Lightning Protection, 12th September 1947



Fort Halstead Bomb Chamber [Building F16], 20th August 1947  
Fort Halstead Detonation Laboratory [Building F17], August 1947  
H.E. Research (Old Fort Area) Drainage & Cold Water Supply Detonation Laboratory [Buildings F16, F17 & F18], 18th February 1948  
Fort Halstead Detonation Laboratory [Building F17] Reinforcement Details, 1947,  
Cocroft, WD & Fiorato, V, Fort Halstead: a summary history, 2012,  
English Heritage Archives:  
Aerial Photograph (October 1946): RAF CPE UK 1789 11 Oct 1946, frame 4473  
Aerial Photograph (April 1947): RAF CPE UK 1982 11 April 1947, frame 1110  
Aerial Photograph (May 1952): RAF 540/731, 15 May 52, frame 4075  
Griffiths, N, , R.A.R.D.E. Fort Halstead: a short history, 1984

### **Legal**

This building is listed under the Planning (Listed Buildings and Conservation Areas) Act 1990 as amended for its special architectural or historic interest.

## E. Legislation, Policy and Guidance

Legislation, Policy & Guidance	Document	Section/Policy
Legislation	Ancient Monuments and Archaeological Areas Act 1979	Under the Ancient Monuments and Archaeological Areas Act 1979, the Secretary of State (Department of Culture, Media and Sport (DCMS)) can schedule any site which appears to be of national importance because of its historic, architectural, traditional, artistic or archaeological interest. Additional controls are placed upon works affecting Scheduled Monuments and Areas of Archaeological Importance under the Act. The consent of the DCMS, as advised by Historic England, is required for certain works affecting Scheduled Monuments.
Legislation	Planning (Listed Buildings and Conservation Areas Act) 1990	In England, under Section 1 of the Planning (Listed Buildings and Conservation Areas) Act 1990, the Secretary of State (Department of Culture, Media and Sport (DCMS)) is required to compile lists of buildings of special architectural or historic interest, on advice from Historic England. Works affecting Listed Buildings are subject to additional planning controls administered by Local Planning Authorities. Historic England are a statutory consultee in certain works affecting Listed Buildings. Under certain circumstances, Listed Building Consent is required for works affecting Listed Buildings.
National Planning Policy	Ministry of Housing, Communities & Local Government, National Planning Policy Framework, 2019	Section 16 of the National Planning Policy Framework (NPPF) sets out the Core Planning Principles of which 'Conserving and Enhancing the Historic Environment' is one.  NPPF determines that heritage assets should be afforded proportionate weight to their significance when determining acceptable impacts on the asset or its setting. Developments affecting heritage assets are required to submit a statement describing the significance and any contribution of the assets setting. Any impact on a heritage asset should be weighed against public benefits of the proposal.
National Planning Policy	Ministry of Housing, Communities & Local Government, Planning Practice Guidance, 2019	The Planning Practice Guidance (PPG) Section 18 Conserving and enhancing the historic environment provides additional guidance which supports NPPF.
Local Plan (Policy)	Sevenoaks District Council, Core Strategy, 2011	<u>Policy SP1 Design of New Development and Conservation</u>  All new development should be designed to a high quality and should respond to the distinctive local character of the area in which it is situated. Account should be taken of guidance adopted by the Council in the form of Kent Design, local Character Area Assessments, Conservation Area Appraisals and Management Plans, Village Design Statements and Parish Plans. In rural areas account should be taken of guidance in the Countryside Assessment and AONB Management Plans.  In areas where the local environment lacks positive features new development should contribute to an improvement in the quality of the environment.  New developments should create safe, inclusive and attractive

environments that meet the needs of users, incorporate principles of sustainable development and maintain and enhanced biodiversity. The District's heritage assets and their settings, including listed buildings, conservation areas, archaeological remains, ancient monuments, historic parks and gardens, historic buildings, landscapes and outstanding views will be protected and enhanced.

Local Plan (Policy)	Sevenoaks District Council, Allocations and Development Management Plan, 2015	<p><u>Policy EN4 Heritage Assets</u></p> <p>Proposals that affect a Heritage Asset, or its setting, will be permitted where the development conserves or enhances the character, appearance and setting of the asset. Applications will be assessed with reference to the following:</p> <ul style="list-style-type: none"> <li>a) the historic and/or architectural significance of the asset;</li> <li>b) the prominence of its location and setting; and</li> <li>c) the historic and/or architectural significance of any elements to be lost or replaced.</li> </ul> <p>Where the application is located within, or would affect, an area or suspected area of archaeological importance an archaeological assessment must be provided to ensure that provision is made for the preservation of important archaeological remains/findings. Preference will be given to preservation in situ unless it can be shown that recording of remains, assessment, analysis report and deposition of archive is more appropriate.</p> <p><u>Policy EMP3 Redevelopment of Fort Halstead</u></p> <p>Redevelopment proposals would be expected to: [...]</p> <ul style="list-style-type: none"> <li>• Protect and integrate the Scheduled Ancient Monument and listed buildings into the development with improved access and setting [...]</li> </ul>
Local Plan (Policy)	Sevenoaks District Council, 2017, Local List Supplementary Planning Document	<p>The document was produced to raise awareness and enhance protection of unlisted (i.e. non-designated heritage assets) and outlines a selection criteria to determine local interest value of an asset.</p>
Local Plan (Policy) – Draft	Sevenoaks District Council, 2018, Proposed Submission Version of the Local Plan	<p><u>Policy HEN1 Historic Environment</u></p> <p>Proposals for development will be required to reflect the local distinctiveness, condition and sensitivity to change of the historic environment as defined in the following guidance:</p> <ul style="list-style-type: none"> <li>• Local Plan policies relating to design, heritage assets and landscape character;</li> <li>• Other relevant principles in the hierarchy of local guidance including the Kent Design SPD, Kent Historic Environment Record (HER) and the Local List SPD.</li> <li>• Findings as set out in the Sevenoaks District Historic Environment Review, Conservation Area Appraisals, Sevenoaks Landscape Character Assessment.</li> </ul> <p>All new developments should demonstrate an awareness and commitment to the overall protection and, where possible, enhancement of the historic environment of the District by making positive reference to the themes in the Historic Environment Review and demonstrating the following in Planning Statements or Design and</p>



Access Statements:

- A) Clear consideration of the relationship with the historic evolution of the District and local area;
- B) A broad appreciation of the historic character of the local area including current conditions;
- C) An understanding of the presence of heritage assets and their associated significance, vulnerabilities and opportunities.

Policy HEN2 Heritage Assets

Proposals that affect a designated or non-designated Heritage Asset, or its setting, will be permitted where the development sustains or enhances the heritage interest of the asset.

Applications will be assessed with reference to the following:

- A) The significance of the asset and its setting;
- B) The significance of any elements to be lost.

Any development that might affect the significance of a listed or locally listed building, conservation area, registered park of gardens, scheduled monument, historic landscape or an archaeological site will be required to submit a Heritage Statement with any Planning and/or Listed Building Consent Application. This includes development affecting their setting. The assessment of proposals should make reference to the Sevenoaks District Historic Environment Review and relevant guidance.

Where an application is located within, or would affect an area of Archaeological Potential or suspected area of archaeological importance an archaeological assessment must be provided to ensure that provision is made for the preservation of important archaeological remains/findings. Preference will be given to preservation in situ unless it can be shown that recording of remains, assessment, analysis report and deposition of archive is more appropriate.

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Guidance	Kent Downs, Kent Downs Area of Outstanding Natural Beauty Management Plan 2014-2019	<p><u>HCH1</u></p> <p>The protection, conservation and enhancement of the historic character and features of the Kent Downs landscape will be pursued and heritage-led economic activity encouraged.</p> <p><u>HCH2</u></p> <p>A wider understanding of the cultural, scientific and artistic importance of the Kent Downs landscape and its historic character will be supported in part to inform the interpretation and management of the AONB.</p> <p><u>HCH3</u></p> <p>The preparation and use of best practice guidance for adapting the historic and cultural environment to climate change will be supported.</p> <p><u>HCH4</u></p> <p>Opportunities to develop contemporary artistic, historic, cultural and scientific interpretation and celebration of the landscape and people of the Kent Downs will be pursued.</p>
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HCH5

The application of high standards of design sympathetic to cultural heritage within the AONB, identified in guidance including the AONB Landscape Design Handbook, Kent Downs Farmstead Guidance and any relevant Village Design Statements and Neighbourhood Plans, will be pursued.

Guidance	English Heritage, 2008. Conservation Principles, Policies and Guidance for the sustainable Management of the Historic Environment	English Heritage (now Historic England) sets out a logical approach to making decisions and offering guidance about all aspects of England's historic environment.
Guidance	Historic England, 2017. Historic Environment Good Practice Advice in Planning Note 3 (2 <sup>nd</sup> edition) (GPA 3) – The Setting of Heritage Assets	The documents sets out guidance against the backdrop of NPPF and Planning Practice Guidance (PPG) on managing change within the settings of heritage assets, including archaeological remains and historic buildings, sites, areas and landscapes.
Guidance	Historic England, 2015. Historic Environment Good Practice Advice in Planning Note 2 (GPA 2) – Managing Significance in Decision-Taking	The document provides information to assist local authorities, planning and other consultants, owners, applicants and other interested parties in implementing policy outlined in NPPF and PPG including; assessing the significance of heritage assets, using appropriate expertise, historic environment records, recording and furthering understanding, neglect and unauthorised works, marketing and design and distinctiveness.

## F. Site Walkover Survey Photographs



Photograph 1: View across bunkers in M area showing extends of bunts surrounding them



Photograph 2: View along Crow Drive towards Star Hill





Photograph 3: View over grassland area across north-western extent of Site



Photograph 4: View over grassland within north-eastern extent of Site (NB. No evidence of the suspected trackway was observed)





Photograph 5: General view of buildings within north-eastern extent of Site



Photograph 6: View of building foundations on Crow Drive (located at c. TQ 49453 59054)





Photograph 7: Entrance to Fort Halstead (facing Crow Drive)



Photograph 8: View of overgrown moat surrounding Scheduled Monument





Photograph 9: View across north-eastern extent of the Site across former recreational field (now dog training area) (NB. No evidence of the suspected trackway could be identified)



Photograph 10: View across landing area within north-eastern extent of Site





Photograph 11: View towards entrance to Fort Halstead along Crow Drive



Photograph 12: View of internal fort area (facing north-east)





Photograph 13: View of internal fort area (facing south)





Photograph 14: View of internal fort structure showing earthworks






Photograph 15: View from top of embankment (within fort)

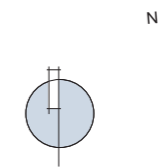
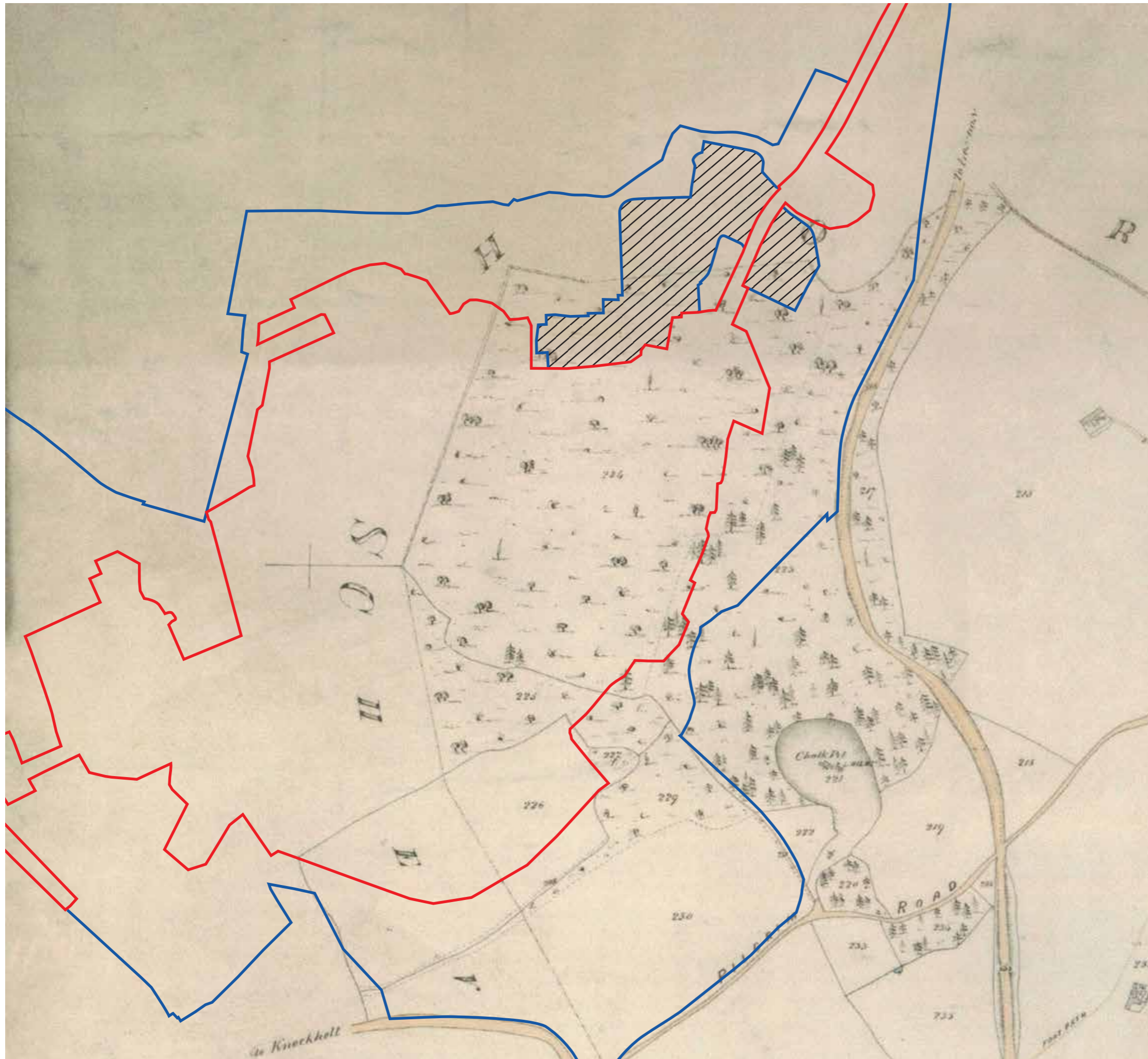




### **G. Offord Tithe Map (1844)**

The following figure was created for the 2015 Waterman desk-based assessment which has been included as an Appendix to this ADBA for reference.

-  Approximate Planning Application Boundary
-  Applicant Ownership Boundary
-  Area Outside the Site and the wider Survey Area



Project Details	EED12715-102: Fort Halstead
Figure Title	Figure 5: 1944 Otford Tithe Map
Figure Ref	EED12715-102_GR_DBA_5A
Date	November 2014
File Location	\\nt-lncs\weed\projects\eed12715\102\graphics\dba\issued figures

# UK and Ireland Office Locations

