



Staplefield Wetland Creation

Historic Environment Desk Based Assessment

November 2023

This page left intentionally blank for pagination.

Mott MacDonald
Victory House
Trafalgar Place
Brighton BN1 4FY
United Kingdom

T +44 (0)1273 365000
mottmac.com

Southern Water
Lewes Road
Falmer
Brighton
BN1 9PY

Staplefield Wetland Creation

Historic Environment Desk Based Assessment

November 2023

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	30/08/22	S.C.	E.D.	Z.B.	First draft for client review.
B	01/11/23	L.B.	E.D. P.R. MCIfA	H.S.	Internal update following comments from the Archaeological Adviser.
C	15/11/23	K.T.	N.C. MCIfA H.S.	P.R. MCIfA J.K.	Update following review of geophysical survey report and wetland design.
D	24/11/23	P.R. MCIfA	H.S.	J.K.	Update for client comments.

Document reference: 100416906-011 | 12 | D | 639529-MM-N-RPT-0012

Information class: Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

Executive summary	1
1 Introduction	2
1.1 Introduction	2
1.2 Location	2
1.3 Scheme Description	4
1.3.1 Overview	4
1.3.2 Construction	4
1.3.3 Programme	5
2 Policy, Legislation and Guidance	6
2.1 Legislation	6
2.1.1 The Ancient Monuments and Archaeological Areas Act 1979	6
2.1.2 The Planning (Listed Building and Conservation Areas) Act 1990	6
2.2 National Planning Policy	6
2.3 Local Planning Policy	7
2.3.1 DP34: Listed Buildings and Other Heritage Assets	7
2.3.2 DP35: Conservation Areas	8
2.4 Guidance	8
3 Methodology	10
3.1 Introduction	10
3.2 Study Area	10
3.3 Baseline Surveys	10
3.3.1 Site Walkover	10
3.3.2 Geophysical Survey	10
3.4 Assessment of Significance	11
3.5 Baseline Research	11
3.6 Consultation	12
3.7 Assumptions and Limitations	12
4 Baseline	14
4.1 Geology, Topography and Landform	14
4.2 Heritage Assets	15
4.2.1 Designated Heritage Assets	15
4.2.2 Non-designated Heritage Assets	16
4.3 Historic Map Regression	17
4.4 Historical and Archaeological Development	18
4.4.1 Prehistoric (100,000 BC – AD 43)	19

4.4.2	Roman (AD 43 – 410)	19
4.4.3	Early Medieval (AD 410 – 1066)	19
4.4.4	Medieval (AD 1066 – 1485)	19
4.4.5	Post-medieval (AD 1485 – 1900)	20
4.4.6	Modern (AD 1901 – Present)	21
5	Assessment of Significance	24
5.1	Overview	24
5.2	Designated Heritage Assets	24
5.2.1	Little Ashford (MM03)	24
5.3	Non-designated Heritage Assets	24
5.3.1	The Hammer Hill Bridge Forge (MM20, MM25)	24
5.3.2	Bridge House Historic Farmstead (MM17)	24
5.3.3	WWII Type 24 Pillbox (MM18) and Anti-Tank Blocks (MM19)	25
6	Archaeological Potential	26
6.1	Survival Potential	26
6.2	Archaeological Potential	26
7	Impact Assessment	28
7.1	Designated Heritage Assets	28
7.1.1	Little Ashford (MM03)	28
7.2	Non-designated Heritage Assets	28
7.2.1	WWII Type 24 Pillbox (MM18) and Anti-Tank Blocks (MM19)	28
7.2.2	Bridge House Historic Farmstead (MM17)	28
7.2.3	Archaeological Impacts	28
8	Conclusion and Recommendations	30
8.1	Conclusions	30
8.1.1	Built Heritage	30
8.1.2	Buried Archaeology	30
8.1.3	Enhanced Anomalies shown on Geophysical Survey	30
8.2	Recommendations	31
	References	32
	Legislation, Policy and Guidance	32
	Databases	32
	Primary Sources	33
	Secondary Sources	33

Appendices	35
A. Figures	36
B. Photographs	37
C. Gazetteer of Heritage Assets	42
D. Scheme Design	48
E. Geophysical Survey Report	49
F. 2011 Watching Brief	50

Tables

Table 4.1: Historic Map Regression and Remote Sensing	17
Table 4.2: Archaeological and historic periods used for the purpose of this assessment	18
Table 6.1: Archaeological Potential	26

Figures

Figure 1.1: Location of the Site	3
Figure 1.2: Map showing Site boundary	3
Figure 7.1: Showing approximate location of forge over the development proposals (not to scale)	29
Figure 7.2: Section across the flood mitigation area with construction formation depths	29

Photos

Photo 4.1: General overview of the Site looking towards all directions	15
--	----

Executive summary

This Historic Environment Desk Based Assessment (DBA) has been produced by Mott MacDonald on behalf of Southern Water, to assess the potential historic environment impacts during construction of an Integrated Constructed Wetland (ICW) (hereafter 'the Scheme') on a parcel of arable land at National Grid Reference TQ 28066 27458. The land is located to the west of Staplefield Wastewater Treatment Work (WwTW), south of Staplefield, within the District of West Sussex (hereafter 'the Site').

This DBA will support a full planning application for the Scheme which forms part of the Water Industry National Environment Programme 3 (WINEP 3), providing an opportunity to explore alternative Asset Management Plan 7 (AMP7) wastewater management options to meet the proposed total phosphorus permit of 0.5mg/l.

The Site is situated within a predominantly rural landscape surrounded by agricultural undeveloped fields. The River Ouse bounds the southern end of the Site.

The assessment has identified 16 designated heritage assets (15 grade II listed buildings and one conservation area) and 26 non-designated heritage assets within a 1km study area. These include historic properties within the historic core of Staplefield, farmhouses, Second World War assets and a Historic Parkscape. The creation of a new wetland environment will alter the agricultural setting of the designated Little Ashford and Bridge House Historic Farmstead, and non-designated Second World War features. The current setting contributes to the heritage significance of the assets. However, the Scheme will not diminish the ability to understand or appreciate these assets, as the setting will remain open, with ponds and reeds ensuring the retention of the countryside character of the area. There will be new features, such as a carpark introduced into the field for the maintenance and operation of the Scheme.

A geophysical magnetometer survey was commissioned by Southern Water after consultation with the Mott MacDonald archaeologist and West Sussex County Archaeologist to provide additional baseline information to inform this DBA. This survey, undertaken by Sumo Geophysics Ltd in August 2023, established that there is potential for surviving archaeological remains associated with the medieval Hammer Hill Bridge Forge across the south east corner of the proposed development area. The forge itself is considered to hold local moderate heritage significance, due to its historical and evidential value, however these remains will not be directly impacted by the Scheme as they lie in the wooded area south of the River Ouse. The geophysical anomalies can be interpreted as slag filled pits and ditches, which are derived from the waste products of smithing. Ground reduction (300-900mm) and other construction activities related to the creation of the new flood mitigation area would impact and potentially remove these remains.

Early engagement with the West Sussex County Council Archaeological Advisor will be required and the applicant will need to submit a Written Scheme of Investigation (WSI) and agree mitigation measures with the West Sussex County Council Archaeologist. It is recommended that this takes the form of a strip, map and record exercise.

1 Introduction

1.1 Introduction

As part of the Water Industry National Environment Programme 3 (WINEP 3), Southern Water identified an opportunity to explore alternative Asset Management Plan 7 (AMP7) wastewater management options to meet proposed phosphorus permits. Southern Water is required to ensure that Staplefield wastewater treatment works (WwTW) meets the new permit requirement of 0.5mg/l total phosphorus (TP) by 22 December 2024.

In line with Environment Agency (EA) policy, Southern Water is committed to increasing sustainability by reducing the use of hard infrastructure solutions for improving wastewater treatment at their WwTWs. As such, an Integrated Constructed Wetland (ICW) is proposed to be constructed to reduce TP concentrations to a level that would comply with the revised permit.

Mott MacDonald has been commissioned by Southern Water to provide environmental and planning services to support the delivery of a treatment wetland at Staplefield WwTW. The design of the ICW has been completed by VESI Environmental. Where references to the design are made, this is based on understanding from consultation with and documents provided by the design team.

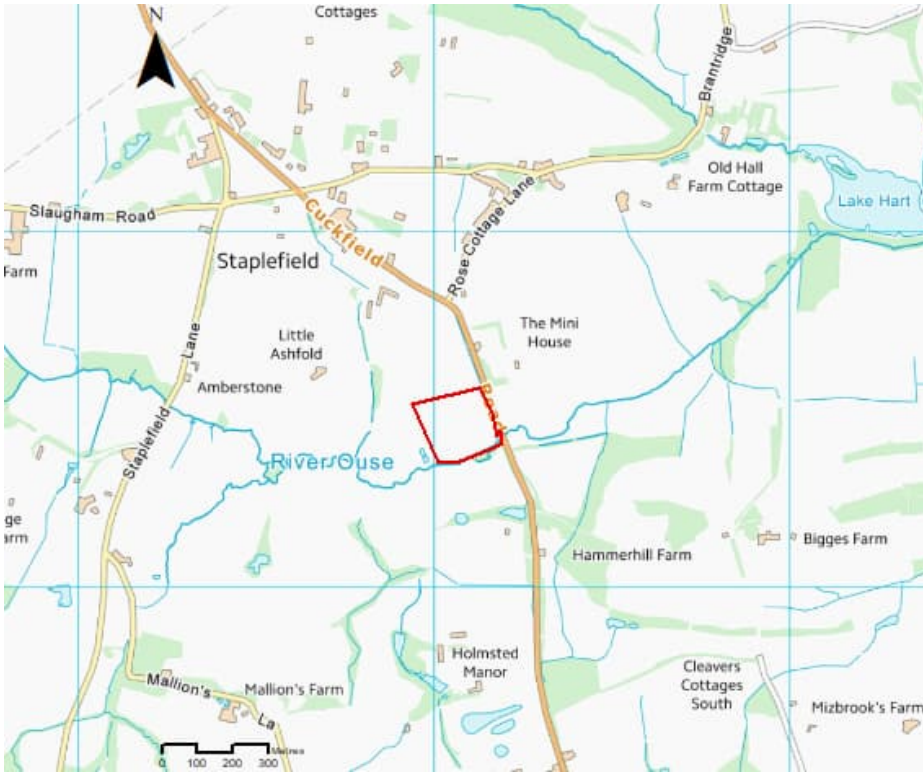
This Historic Environment Desk Based Assessment (DBA) has been prepared to understand the potential impacts to the historic environment from construction of the ICW (hereafter 'the Scheme') at Staplefield WwTW (hereafter 'the Site'). This DBA is also intended to support a planning application for the Scheme.

1.2 Location

Staplefield WwTW is situated adjacent to the River Ouse, approximately 500m of the south of the village of Staplefield in West Sussex, RH17 6ES. The grid reference of the centre of the current WwTW is TQ 27959 27401 (Figure 1.1 and Figure 1.2). The existing land use of the proposed site and surrounding area is arable farmland. The WwTW treats wastewater from Staplefield and the surrounding area before discharging the treated effluent into the River Ouse to the south of the existing site.

The main elements of the ICW will be located within the field adjacent to the east of the WwTW, currently characterised by farmland under private ownership. Other ancillary elements will be located within the current operational WwTW, and within the field adjacent to the east of the WwTW. Some additional elements, which include the flood mitigation area and an area for a construction compound, will be located to the south of the ICW and in the field to the north west of the WwTW respectively.

Figure 1.1: Location of the Site



Source: Mott MacDonald (2023)

Figure 1.2: Map showing Site boundary



Source: Mott MacDonald (2023), contains data ©Esri 2022

1.3 Scheme Description

1.3.1 Overview

The design of Staplefield ICW has been completed by VESI Environmental and has reached detailed design stage (see Appendix D for plans and sections). The ICW has been designed to deliver a treatment system to treat the incoming phosphorus load to meet the 0.5mg/l TP permit as well as provide wider environmental benefits in terms of biodiversity, carbon sequestration and landscape design.

The design philosophy of the ICW promotes the treatment of phosphorus in a sustainable and natural way. The proposed system includes four wetland cells comprising of wetland vegetation and a water depth of up to 1.0m. Flows from Staplefield WwTW (4l/s) will be pumped from the WwTW to Wetland Cell 1 and then subsequently flow via gravity through the series of wetlands cells before connecting back to the existing final effluent chamber before discharge via the existing outfall to the River Ouse.

Site investigations have shown that the underlying ground conditions are favourable for the creation of a natural clay liner (site-won clays) rather than an artificial liner. The permeability of the clays will provide protection to avoid leakage into groundwater and provide attenuation of water within the wetland.

The tallest element will be the embankments between the wetland cells, approximately 2m above existing ground level. These embankments will be formed of the spoil generated from the excavation of the wetland cells. The embankments and wetland would be planted with mixed native species to increase biodiversity as well as create suitable conditions for vital physical and biological processes to improve water quality to achieve the 0.5mg/l TP permit¹.

There is also a flood mitigation area of 3,135m³ volume in the design to compensate for the loss of flood storage within the existing field. This feature will be connected to the River Ouse via two culverts with a concrete headwall in the River Ouse, each composed of two 300mm circular pipes with non-return valves, which will allow the water level within the flood mitigation area to discharge into the River Ouse within an 11-hour drawdown period.

1.3.2 Construction

The construction of the proposed development is expected to utilise standard construction techniques. The wetland cells will be excavated using 8-tonne tracked excavators under the supervision of a banksman². 6-tonne dumpers will be used for moving material between the excavation and the designated stockpile area^{2,3}. The pumping station and associated pipework will be installed via cut and cover excavations.

The total cell area of the wetlands is 12,862m² (equivalent to 1.29 hectares) (see Appendix D). The area of each wetland cell is as follows:

- Cell 1 = 487m²
- Cell 2 = 5,399m²
- Cell 3 = 4,387m²
- Cell 4 = 2,589m²

¹ VESI Environmental (2023) Draft Design Summary Staplefield Integrated Constructed Wetland (752214-SBN-ZZ-00-SP-W-00001).

² GTb (2023) Staplefield Bulk Excavation Method Statement.

³ GTb (2023) Staplefield Ducting Pipework Method Statement.

A cut and fill balance has been calculated for the wetland area. The deepest excavation required to facilitate the construction of the proposed development will be up to 2m below existing ground level for the wetland cells.

Some construction works will be undertaken within 8m of the River Ouse, a Main River, in particular the pipework connecting the flood mitigation area to the River Ouse. Environmental permitting will be agreed with the Environment Agency in relation to flood risk activities.

1.3.3 Programme

Construction of the ICW and ancillary works to connect the ICW to the existing WwTW will commence in spring 2024 and will be carried out over approximately 6 months. The ICW is expected to be operational by winter 2024 to provide the necessary treatment to meet the revised permit by 22 December 2024.

2 Policy, Legislation and Guidance

This section provides an overview of the legislation, planning policy and guidance relevant to the Scheme with regard to the historic environment relevant to this DBA.

2.1 Legislation

2.1.1 The Ancient Monuments and Archaeological Areas Act 1979

An Act to consolidate and amend the law relating to ancient monuments; to make provision for the investigation, preservation and recording of matters of archaeological or historical interest and (in connection therewith) for the regulation of operations or activities affecting such matters⁴. This legislation has been included to ensure the client is aware of all legislation regarding archaeology and heritage.

2.1.2 The Planning (Listed Building and Conservation Areas) Act 1990

An Act to consolidate certain enactments relating to special controls in respect of buildings and areas of special architectural or historic interest with amendments to give effect to recommendations of the Law Commission⁵. This Act guides Local Planning Authority's (LPA) on the assessment of settings of listed buildings, which has relevance to this project.

2.2 National Planning Policy

The National Planning Policy Framework (NPPF) was published on 27 March 2012, revised on 24 July 2018, 20 July 2021 and again on 5 September 2023, and replaced all previous national planning policy documents. Paragraphs 189 – 208 of the NPPF address the conservation and enhancement of the historic environment; these set out the LPA's responsibilities when dealing with planning proposals which have the potential to impact on heritage assets. These policies emphasise the importance of balancing the need for the conservation of heritage assets with the desirability of new development. Those of relevance are as follows:

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

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

⁴ Available online at: <https://www.legislation.gov.uk/ukpga/1979/46>. Accessed 30/06/2022.

⁵ Available online at: <https://www.legislation.gov.uk/ukpga/1990/9/contents>. Accessed 30/06/2022.

197. In determining applications, local planning authorities should take account of:

- a) the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
- b) the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality; and
- c) the desirability of new development making a positive contribution to local character and distinctiveness.

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

205. Local planning authorities should require developers to record and advance understanding of the significance of any heritage assets to be lost (wholly or in part) in a manner proportionate to their importance and the impact, and to make this evidence (and any archive generated) publicly accessible. However, the ability to record evidence of our past should not be a factor in deciding whether such loss should be permitted.

2.3 Local Planning Policy

The Mid Sussex District Plan 2014-2031 was adopted on 28 March 2018 by the Mid Sussex District Council. The document sets out the vision, objectives, and strategic planning policies for the district until 2031. The followings parts of District Plan (DP) 34: Listed Buildings and Other Heritage Assets and DP 35: Conservation Areas are of relevance to this DBA.

2.3.1 DP34: Listed Buildings and Other Heritage Assets

Strategic Objectives:

- 2) To promote well located and designed development that reflects the District's distinctive towns and villages, retains their separate identity and character and prevents coalescence;
- 4) To protect valued characteristics of the built environment for their historical and visual qualities; and
- 11) To support and enhance the attractiveness of Mid Sussex as a visitor destination.

Evidence Base: West Sussex Historic Environment Record; Register of Listed Buildings.

2.3.1.1 Listed Buildings

Development will be required to protect listed buildings and their settings. This will be achieved by ensuring that:

- A thorough understanding of the significance of the listed building and its setting has been demonstrated. This will be proportionate to the importance of the building and potential impact of the proposal; and
- Special regard is given to protecting the setting of a listed building.

2.3.1.2 Other Heritage Assets

Development that retains buildings which are not listed but are of architectural or historic merit, or which make a significant and positive contribution to the street scene will be permitted in preference to their demolition and redevelopment.

The Council will seek to conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the character and quality of life of the District. Significance can be defined as the special interest of a heritage asset, which may be archaeological, architectural, artistic or historic.

Proposals affecting such heritage assets will be considered in accordance with the policies in the NPPF and current Government guidance.

2.3.2 DP35: Conservation Areas

Strategic Objectives:

2) To promote well located and designed development that reflects the District's distinctive towns and villages, retains their separate identity and character and prevents coalescence;

4) To protect valued characteristics of the built environment for their historical and visual qualities; and

11) To support and enhance the attractiveness of Mid Sussex as a visitor destination.

Evidence Base: Mid Sussex Conservation Area Appraisals; Sussex Extensive Urban Surveys; West Sussex Historic Environment Record.

Development in a conservation area will be required to conserve or enhance its special character, appearance and the range of activities which contribute to it.

Development will also protect the setting of the conservation area and in particular views into and out of the area.

New buildings of outstanding or innovative design may be acceptable in conservation areas provided that their impact would not cause material harm to the area⁶.

2.4 Guidance

The following guidance has been used for this assessment:

- The 2014 Chartered Institute for Archaeologists' (CIfA) Standard and Guidance for Historic Environment Desk-Based Assessment (updated 2020)⁷;
- The 2015 Historic England Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision – Taking in the Historic Environment (GPA2)⁸;
- The 2017 Historic England Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (GPA3)⁹;

⁶ Mid Sussex District Plan 2014-2031. Available online at: <https://www.midsussex.gov.uk/media/3406/mid-sussex-district-plan.pdf>. Accessed 30/06/2022.

⁷ Chartered Institute for Archaeologists (CIfA) (2020) Standard and Guidance for Historic Environment Desk-Based Assessment. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf Accessed 11/07/2022.

⁸ Historic England (2015) Good Practice Advice in Planning Note 2: Managing Significance in Decision – Taking in the Historic Environment (GPA2). Available at: <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/> Accessed 11/07/2022.

⁹ Historic England (2017) Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (GPA3). Available at: <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/> Accessed 11/07/2022.

- The 2019 Historic England Statements of Heritage Significance: Analysing Significance in Heritage Assets (TAN12)¹⁰; and
- Institute of Environmental Management and Assessment (IEMA), Cifa, Institute of Historic Building Conservation (IHBC) (2021) Principles of Cultural Heritage Impact Assessment¹¹.

¹⁰ Historic England (2019) Statements of Heritage Significance: Analysing Significance in Heritage Assets (TAN12). Available at: <https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/heag279-statements-heritage-significance/> Accessed 11/07/2022.

¹¹ IEMA, Cifa, IHBC (2021) Principles of Cultural Heritage Impact Assessment. Available at: www.iema.net/resources/blog/2021/07/20/launch-of-principles-of-cultural-heritage-impact-assessment Accessed 11/07/2022.

3 Methodology

3.1 Introduction

This section details the methodology used to compile this DBA, which has been produced in accordance with all relevant guidance including that given in Section 2.4.

3.2 Study Area

The following study area has been used to gather information on the archaeological assets, which have the potential to be affected by the proposed development:

- Designated assets¹² such as listed buildings will be assessed within the Site plus a 1km radius buffer around the Site; and
- Non-designated assets¹³ such as archaeological remains will be assessed within the Site of the proposed development, plus a 1km radius buffer around the Site.

This search radius of 1km is considered sufficient to produce a comprehensive baseline for the Site, as this is a rural location, and it will allow for an understanding of the archaeological potential and built heritage significance to be properly established. This study area was recommended by the West Sussex County Council Archaeological Advisor in June 2023.

3.3 Baseline Surveys

3.3.1 Site Walkover

A survey of the Site and study area was undertaken by heritage professionals from Mott MacDonald on the 5 August 2022 to:

- Inform understanding of heritage assets, their settings and important views;
- Better understand intervisibility between the Site and nearby heritage assets;
- Identify any additional non-designated heritage assets not already recorded on the Historic Environment Record (HER) which is of relevance within the study area;
- Inform understanding of the site conditions, such as topography and vegetation cover;
- Inform the assessment contained within this report; and
- Identify any areas of ground disturbance and the implication this might have on the survival of archaeological remains.

The Forge site in the wooded area was not accessible for safety reasons.

3.3.2 Geophysical Survey

A geophysical magnetometer survey was commissioned by Southern Water after consultation with the Mott MacDonald archaeologist and the West Sussex County Archaeologist, to provide additional baseline information to inform this DBA. This survey was undertaken by Sumo Geophysics Ltd. Who carried out a magnetometer survey of 3.5 hectares on 29 August 2023.

¹² A World Heritage Site, Scheduled Monument, Listed Building, Protected Wreck Site, Registered Park and Garden, Registered Battlefield or Conservation Area designated under national legislation.

¹³ Buildings, monuments, sites, places, areas or landscapes identified by plan-making bodies as having a degree of heritage significance meriting consideration in planning decisions, but which do not meet the criteria for designated heritage assets.

The results of the survey established the potential for surviving archaeological features shown in Appendix E.

It has been concluded within the geophysical survey report that the magnetic responses detected during the survey, especially those in the south eastern corner of the Site, are likely to be associated with a former medieval forge which is recorded due south of the site. Numerous other anomalies were recorded, likely to have been caused by agricultural practises or other modern processes¹⁴.

3.4 Assessment of Significance

Assessment of Significance within this DBA is based on the 2019 Historic England Statements of Heritage Significance: Analysing Significance in Heritage Assets (TAN12) and aligns with the NPPF (2023). The significance of heritage assets is therefore described with reference to:

- **Archaeological interest**

There will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.

- **Architectural and artistic interest**

These are interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved. More specifically, architectural interest is an interest in the art or science of the design, construction, craftsmanship and decoration of buildings and structures of all types. Artistic interest is an interest in other human creative skills, like sculpture.

- **Historic interest**

An interest in past lives and events (including pre-historic). Heritage assets can illustrate or be associated with them. Heritage assets with historic interest not only provide a material record of our nation's history but can also provide meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity.

3.5 Baseline Research

This DBA is prepared in cognisance of the 2014 (updated 2020) ClfA Standard and Guidance for Historic Environment Desk-Based Assessment, and Historic England's Conservation Principles, Policies and Guidance¹⁵. The ClfA guidance outlines the necessity of the DBA to enable appropriate mitigation strategies where necessary, in line with the local and national policies in place.

The following actions have been undertaken for this assessment:

- An examination of the local, regional and national planning policies in relation to the historic environment; (see Sections 2.2 and 2.3)
- A search of the National Heritage List for England (NHLE) for listed buildings, registered parks and gardens, scheduled monuments, World Heritage Sites and registered battlefields within the study area¹⁶; (see Sections 2.3.1.1 and 2.3.2)

¹⁴ SUMO Geophysics Ltd. 2023, Staplefield Southern Water Wetland Creation.

¹⁵ Historic England 2008, Conservation Principles, Policies and Guidance. Available online at: <https://historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic-environment/conservationprinciplespoliciesandguidanceapril08web/> Accessed 16/08/2022.

¹⁶ Historic England 2022, Search The List. Available online at: <https://historicengland.org.uk/listing/the-list/> Accessed 16/08/2022.

- A search of the West Sussex HER database for archaeological Sites, archaeological findspots, locally listed buildings, Areas of High Archaeological Potential (AHAP) and archaeological event locations within the study area¹⁷;
- A geophysical survey was carried out by Sumo Geophysics Ltd. in August 2023 (see Appendix E);
- An examination of the relevant published and unpublished archaeological and historic sources e.g., journals and historic records;
- An examination of the British Geological Survey (BGS) data¹⁸;
- An examination of historic images;
- An examination of topographical and geological evidence;
- A map regression exercise using historic maps and LiDAR¹⁹ to determine previous land use of the proposed development area; and
- A site walkover, undertaken on 5 August 2022 to determine the topography, existing land use and character of the area.
- A review of the archaeological watching brief (MM23) carried out in 2011 to the south of the Site during groundworks at Hammer Hill Water Treatment Works²⁰.

Appendix A shows the location of known historic environment features within the study area. These have been allocated a unique Mott MacDonald reference number (MM01, MM02 etc.), which is listed in a gazetteer in Appendix C and is referred to throughout the text. All distances quoted in the text are approximate (within 5m).

3.6 Consultation

The West Sussex County Archaeologist was contacted on the 7 July 2022 with details of the Site, the archaeological potential, and the proposed development and to discuss potential options for appropriate mitigation to be undertaken in advance of development. On the 9 August 2023, the DBA was updated following comments from the West Sussex County Archaeologist and a geophysical survey was arranged. The results of the geophysical survey were shared with the West Sussex County Archaeologist on the 15 September 2023 and receipt confirmed. Another meeting will be held with the West Sussex County Archaeologist following the submission of this DBA.

3.7 Assumptions and Limitations

Information provided by the HER can be limited because it depends on previous opportunities for research, fieldwork and discovery. Where nothing of historic interest is shown in a particular area, this can be due to lack of targeted research or investigation rather than the genuine absence of sub-surface archaeological deposits.

The current understanding of the extent and survival of archaeological remains within the Site is based on data relevant to the assessment which has been selected based on professional judgement. However, the specific nature, extent, date, degree of preservation and significance of known and potential archaeological remains is impossible to predict without invasive

¹⁷ West Sussex Historic Environment Record (HER) Reference Number: 2022-032. Data obtained 30/06/2022.

¹⁸ British Geological Survey 2022, Geology of Britain Viewer. Available online at: <https://www.bgs.ac.uk/map-viewers/geology-of-britain-viewer/> Accessed 16/08/2022.

¹⁹ Lidar is a remote sensing method which uses light detection and ranging to generate three-dimensional information about the Site.

²⁰ Archaeology Data Service (2011) An Archaeological Watching Brief at Hammer Hill Bridge. Available online at: https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-480-1/dissemination/pdf/archaeo6-95883_1.pdf Accessed 17/08/2022.

investigation. There is the possibility that further or more complex unknown buried archaeology exists on sites which has not been assessed.

Documentary sources are rare before the medieval period, and many historic documents are inherently biased. Older primary sources often fail to accurately locate sites and interpretation can be subjective. Historic maps provide a glimpse of land-use at a specific moment. It is therefore possible that short-term structures or areas of land-use are not shown and therefore not recorded within this assessment.

4 Baseline

4.1 Geology, Topography and Landform

The Site is surrounded by rural fields with the River Ouse bounding the southern extent of the Site, and the Staplefield WWTW to the west. The Site is predominantly flat standing at an elevation of approximately 53m AOD (Above Ordnance Datum) (see Photo 4.1). Outside the Site, the road to the west, Cuckfield Road, rises from 62m AOD up to 100m AOD towards the north east.

The bedrock geology as described by the BGS comprises upper Tonbridge Wells sand consisting of Sandstone and Siltstone which are interbedded. This sedimentary bedrock was formed in the Cretaceous Period, between 139.4 and 133.9 million years ago²¹.

Results of previous ground investigation works within the Site record sequences of topsoil overlying weald clay at a depth of c. 0.3m. Superficial deposits of alluvium have also been recorded across the southern half of the Site, consisting of clay, silt, sand, and gravel, reflecting the former floodplain of the River Ouse and sealing in former land surfaces²². The presence of certain types of alluvium can hold significant paleoenvironmental remains such as seeds, pollens and molluscs that are valuable in reconstructing past environments²³. However, in this case the alluvium is not considered to have high potential for these paleoenvironmental remains, due to the high gravel, silt and sand content²⁴.

A shrove of iron ore is known on the south side of the Site and was exploited throughout the medieval and post-medieval period for iron production.

The nearest historic borehole record is available 490m north of the Site which recorded topsoil up to 0.3m in depth, which lay above a layer of clay and sandstone up to a depth of 45m²⁵.

²¹ BGS Geology Viewer (BETA), Accessed 08/11/2023.

²² BGS, n.d. Geology Viewer. Available online at: https://geologyviewer.bgs.ac.uk/?_ga=2.184327206.1878932977.1664974049-2071017146.1664974049. Accessed 08/11/2023.

²³ Historic England 2015a, Geoarchaeology: using earth sciences to understand the archaeological record available online at: <https://historicengland.org.uk/images-books/publications/geoarchaeology-earth-sciences-to-understand-archaeological-record/hea067-geoarchaeology/> Accessed 04/07/2022.

²⁴ Mott MacDonald Ltd 2023 Southern Water AMP7 Staplefield Wetland Ground Investigation Report.

²⁵ British Geological Survey 2022, Scan TQ22NE13. Available online at: http://scans.bgs.ac.uk/sobi_scans/boreholes/584556/images/14944748.html Accessed 04/07/2022.

Photo 4.1: General overview of the Site looking towards all directions



Source: Mott MacDonald (2022)

4.2 Heritage Assets

This section details heritage assets which have been identified within the relevant study areas. Assets have been assigned a Mott MacDonald number, formatted MM01, for consistency and ease of reference. These numbers relate to the maps available in Appendix A and gazetteer available in Appendix C.

4.2.1 Designated Heritage Assets

There are no designated assets located within the Site. There are however 16 designated assets located within the 1km study area, comprising 15 grade II listed buildings and one conservation area.

4.2.1.1 Listed Buildings

The nearest designated listed buildings to the Site are the grade II listed Little Ashford (MM03), located approximately 270m north west of the Site, and Chiffley Grange (MM10), located approximately 270m north east of the Site. Both are timber-framed buildings; Little Ashford is a 15th century house, and Chiffley Grange originated either before or during the 17th century.

There are 13 other grade II listed buildings within the 1km study area and are mostly focused around the historic core of Staplefield and are within the conservation area. These are listed below.

- Barnhall (MM02) located approximately 510m to the north from the Site;
- Little Tyes (MM05) located approximately 650m to the north east from the Site;

- Yew Tree (MM08) located approximately 670m to the north east from the Site;
- Church of St Mark (MM12) located approximately 690m to the north from the Site;
- Tyes Place (MM06) located approximately 700m to the north east from the Site;
- Staplefield War Memorial (MM15) located approximately 705m to the north from the Site;
- Staplefield School (MM07) located approximately 740m to the north from the Site;
- Bigges Farmhouse (MM01) located approximately 820m to the south east from the Site;
- Barn to the North-West of Bigges Farm (MM13) located approximately 825m to the south east from the Site;
- North Hall (MM14) located approximately 920m to the south west from the Site;
- Barn to the North-West of North Hall (MM11) located approximately 940m to the south west from the Site;
- North Hall Cottage (MM04) located approximately 960m to the south west from the Site; and,
- The Jolly Tanners Public House (MM09) located approximately 1km to the north west from the Site.

4.2.1.2 Conservation Areas

Staplefield Conservation Area (MM16), designated in 1984, is located 385m to the north of the Site²⁶. This conservation area covers the village of Staplefield, in which seven of the grade II listed buildings are located.

4.2.2 Non-designated Heritage Assets

There is one asset within the 1km study area. There are seven non-designated built heritage assets located within the 1km study area. These are detailed below; they are also shown on a map in Appendix A and detailed in a gazetteer in Appendix C.

4.2.2.1 Non-designated assets identified in the HER

Of the seven non-designated built heritage assets, three are within 20m of the Site. Iron workings (site of) shown at TQ28182737 may be the remains of a Forge. A mound of forge cinder below the bay at TQ28172740 indicates the probable site of this forge (MM20).

Two Second World War Anti-Tank Blocks (MM19) are located 20m to the south east from the Site and comprise 'coffin' type blocks which were built to defend the road crossing over the River Ouse. A Second World War Pillbox (MM18) is located approximately 20m to the south west of the Site and is a Type 24 pillbox. The HER states that the pillbox was custom built for the location given the wall thickness and that there are only three reinforced concrete light machine gun embrasures.

There are four other non-designated built heritage assets within the 1km study area. These are as follows:

- Bridge House Historic Farmstead (MM17) located approximately 25m to the north east from the Site;
- World War II Anti Tank Cones (MM22) located approximately 120m to the north from the Site;
- World War II Three Chamber Pillbox (MM21) located approximately 255m to the north east from the Site; and

²⁶ Mid Sussex District Council 2018, Conservation Areas in Mid Sussex. Available online at: <https://www.midsussex.gov.uk/media/3710/conservation-areas-in-mid-sussex.pdf> Accessed 04/07/2022

- Holmsted Place Historic Parkscap (MM22) located approximately 295m to the south from the Site.

4.2.2.2 Archaeological Events

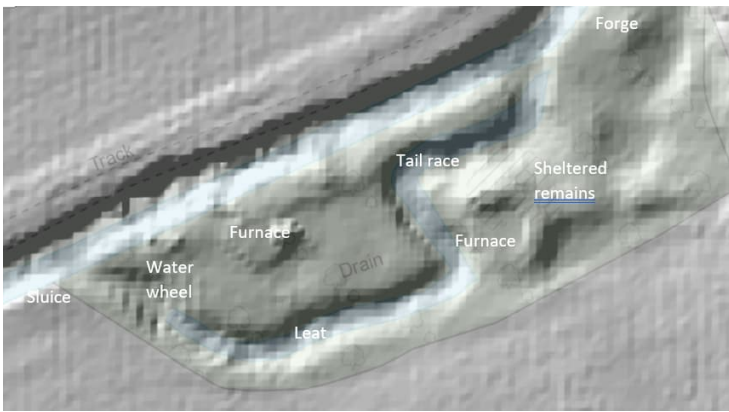
An archaeological watching brief (MM23) was carried out in 2011 to the south of the Site during groundworks at Hammer Hill Water Treatment Works (see Appendix F) where groundworks for the installation of a service trench and a compound area were archaeologically monitored. Iron working deposits were identified relating to medieval and early post-medieval activity at Hammer Hill Bridge Forge (MM20). Mesolithic and early Neolithic flint flakes were also recovered.

4.3 Historic Map Regression

Table 4.1 below provides a regression of the historic mapping and remote sensing data available for the area.

Table 4.1: Historic Map Regression and Remote Sensing

Title	Date	Description
Sussex Sheet XXV Ordnance Survey (six inches to the mile)	1879	This map shows the Site as an undeveloped parcel of land. The rectangular enclosed land is today the same size and shape of the land shown on this 1879 map. There are a series of interconnecting footpaths within the Site especially the northern half, and there is an elongated mound within the south eastern corner of the Site. This feature is likely associated with the site of Hammer Hill Bridge Forge (MM20) and could have been a loading mound for the transport of waste materials. The River Ouse is situated immediately south of the Site where a footbridge is labelled south west of the Site. Hammer Hill Bridge spans this river south east of the Site supporting the main road which runs along the eastern side of the Site. The surrounding area is predominantly rural with many parcels of land, and only a few houses. The southern part of the field to the south of the Site shows varied vegetation and trees, with a circular ground feature which may relate to a quarry or pit. Bridge House (MM17) and Ashford Farm (Little Ashford) (MM02) are labelled on the map.
Sussex XXV.4 Ordnance Survey (Second Edition)	1897	The Site remains unchanged from the previous map of 1897 above.
Sussex Sheet XXV.NE Ordnance Survey (six inches to the mile)	1899	The Site remains unchanged from the previous map of 1897 above. The informal fieldscape of Holmsted Place (MM25) is now visible and outlined south of the Site.
Sussex XXV.4 Ordnance Survey (25 inch to the mile)	1911	This map labels a benchmark within the south eastern corner of the Site. The trees and vegetation, annotated in a field to the south of the Site, have extended into the middle of the neighbouring field.
Sussex Sheet XXV.NE Ordnance Survey (six inches to the mile)	1913	The Site remains unchanged from the previous map of 1911 above.
Sussex Sheet XXV.NE Ordnance Survey (six inches to the mile)	1934	The Site remains unchanged from the previous map of 1913 above.
TQ22NE-A Ordnance Survey (1:2500)	1962	This map no longer shows the elongated mound relating to MM20 within the Site, and instead, now labels the iron working site just outside of the southern part of the Site where it is labelled as Iron Workings (Site Of).
LiDAR	DSM 2CM	LiDAR shows no features or anomalies in the Site. There are clear field boundaries and linear marks outlining the WwTW to the west of the Site. The potential post-medieval Hammer Hill Bridge water powered Forge (MM25) can be seen south of the access track and River Ouse surrounded by a tail

Title	Date	Description
		<p>race and leat (see image below taken from the Environment Agency Lidar). Some interpretation has been applied to the Lidar image below (MM25)²⁷.</p> 
Google Earth Imagery	1985	The map is too pixelated.
Google Earth Imagery	2001	The map shows the undeveloped Site as a field, with clearly defined boundaries.
Google Earth Imagery	2005	The map now shows an access route from Cuckfield Road to the Site via a gap in the eastern side of the field.
Google Earth Imagery	2012	The map shows the site has been ploughed.
Google Earth Imagery	2022	The map shows a rectangular ditch within the south eastern corner of the Site.

Source: www.nls.uk/maps and https://maps.nls.uk/geo/explore/side-by-side/#zoom=15.990267381841939&lat=51.03369&lon=-0.17421&layers=LIDAR_DSM_2m&right=ESRIWorld and Google Earth Pro 2022.

4.4 Historical and Archaeological Development

This overview of the archaeological and historical background will include a review of the available historic environment information within the study area.

The historic environment baseline has been compiled using the data available from the sources identified in Section 3.2.

Each heritage asset has been assigned a unique reference number for ease of reading. The historic narrative is provided chronologically as outlined in Table 4.2, below.

Table 4.2: Archaeological and historic periods used for the purpose of this assessment

Prehistoric Period Dates		Historic Period Dates	
Palaeolithic	500,000 to 100,000 BC	Roman	AD 43 to 410
Late Glacial/Mesolithic	100,000 to 4,000 BC	Early Medieval	AD 410 to 1066
Neolithic/Early Bronze Age	4,000 to 1,600 BC	Medieval	AD 1066 to 1540
Middle Bronze Age	1,600 to 1,100 BC	Post-medieval	c.AD 1540 to 1900
Late Bronze Age	1,100 to 700 BC	Modern	c.AD 1900 to present
Early Iron Age	800 to 300 BC		
Middle Iron Age	400 to 100 BC		
Late Iron Age/Roman Transition	100 BC to AD 43		

Source: Historic England 2022

²⁷ It is recommended that this is added to the local HER.

These dates are subjective and are used to ease discussion and are obtained from the list of the main archaeological and cultural periods of England compiled by Historic England, in conjunction with professional judgement.

4.4.1 Prehistoric (100,000 BC – AD 43)

A very small assemblage of Mesolithic and early Neolithic flint flakes, considered to be debitage, were recovered from the ploughsoil during an archaeological watching brief in 2011²⁸ (see Section 4.2.2.2).

There have been no findspots or evidence for activity dating to the Bronze Age or Iron Age within the Site or study area.

4.4.2 Roman (AD 43 – 410)

There are no findspots or activity relating to the Roman period in the Site or study area, though a religious or funerary Beaker-period bowl barrow with deliberately buried Iron Age and Roman coins was found 4.3km to the north west of the Site²⁹. Activity further afield may have been concentrated around the Roman Road³⁰ (which ran from Brighton to London – Margary 150³¹) located approximately 6km to the south east of the Site, through modern day Haywards Heath. During the Roman period, bloomery iron working was common across this region of the High Weald.

4.4.3 Early Medieval (AD 410 – 1066)

There is no known Early Medieval activity recorded in the Site or study area. It is understood that the study area would have been open and undeveloped, possibly in use as agricultural land.

4.4.4 Medieval (AD 1066 – 1485)

There is no record of the Site or surrounding villages of Staplefield or Slough Green in the Domesday book of 1086³². The area was predominantly characterised by dispersed patterns of small hamlets and isolated farms in the medieval period³³. Furthermore, it is suggested that this settlement pattern was the result of diverse manorial exploitation and assarting of land throughout the region³⁴.

The Weald's iron deposits lie relatively close to the ground surface, and so were easily extracted by open cast mining. Most extraction and smelting took place in the High Weald, a section stretching roughly east of Horsham across to south of Tunbridge Wells, and down to Hastings. High yields were obtained within this geological triangle: beneath the Wadhurst Clay in the Hastings Beds, and in parts of the Weald Clay and Tunbridge Wells Sand. The great forests of Worth, St Leonard's and Ashdown had early been important smelting districts,

²⁸ West Sussex HER: EWS1358 Data obtained: 30/06/2022.

²⁹ Archaeology Data Service 2018, The Rural Settlement of Roman Britain: an online resource. Available online at: <https://archaeologydataservice.ac.uk/archives/view/romangl/maprecord.cfm?id=11039> Accessed 10/08/2022.

³⁰ The Rural Settlement of Roman Britain: an online Resource, 2016. Available online at: <https://archaeologydataservice.ac.uk/archives/view/romangl/map.html> Accessed 10/08/2022.

³¹ Anglo Saxon History 2022, 150- London to Pycombe. Available online at: https://saxonhistory.co.uk/Location_Margary_Roman_Roads.php?ID=M150&route=150%20London%20-%20Brighton%20%28Pycombe%29 Accessed 24/08/2022.

³² Open Domesday no date, Map. Available online at: <https://opendomesday.org/map/> Accessed 05/07/2022

³³ Kent Council 2019, Medieval Framework. Available online at: https://www.kent.gov.uk/_data/assets/pdf_file/0003/99471/Medieval-chapter.pdf Accessed 18/07/2022.

³⁴ *ibid*

systematically managed by multi-stemmed coppicing to conserve timber for charcoal production³⁵.

The earliest, rudimentary, form of iron smelting used a 'bloomery'. Here, a small conical furnace, located close to an iron ore source, was built of clay, in which iron was smelted with burning charcoal. The temperature was boosted by bellows, pumped into the furnace base. Gases escaped through an outlet in the roof, and waste material ran down and away, leaving the iron reduced to a malleable lump.

This iron lump, or 'bloom', contained a high degree of cinder which was then either purified by hammering into a solid bar or forged immediately into tools or weapons. Bloomeries were often sited near streams, where high banks exposed geological seams, allowing the easy identification of ore. Streams provided water to cool the iron and forge tools, but water power was not yet used for any part of the process.

Water Power and Blast Furnaces

By the twelfth century, continental bloomeries increased production dramatically by harnessing waterpower from rapid streams to turn a waterwheel, along similar lines to corn and other mills. Much larger hammers were driven via cams on the wheel shaft. There is little information about the Wealden iron industry during the medieval period, apart from its trade in blooms for smiths, nails, hinges, wheel-strakes, miscellaneous materials for royal and church buildings, and weaponry.

Hammer Hill Bridge Forge, a medieval iron works site (MM20, MM25), is located adjacent to the south eastern boundary of the Site (see Photo B.1). This known forge indicates past iron working a small-scale industrial level, within this area, using the river water. Forges and blacksmiths were built to serve local communities, and many farms in the surrounding area depended on this service³⁶.

It was also noted during the 2011 watching brief that a number of trees on the south bank of the stream had been coppiced, often associated with charcoal production for iron working. The form of the slag suggests the area may in part have formed a smithing floor. The extent of darkened plough soil covers the area of the geophysical anomalies.

4.4.5 Post-medieval (AD 1485 – 1900)

The majority of known activity from the Site and study area occurred during the post-medieval period.

The earliest known houses to reside within the 1km study area are from the 15th century, where the grade II listed Bigges Farmhouse (MM01) and Little Ashford (MM03) are located approximately 270m to the north west to 820m south east from the Site. These two-storey houses are both timber-framed with red brick on the ground floor and tile hung above. This style continues into the 17th-18th centuries as the same materials were used to construct the grade II listed North Hall (MM14), Chiffley Grange (MM10) (see Photo B.2), Tyes Place (MM06), Little Tyes (MM05), and Yew Tree (MM08) which are located throughout the study area.

The Site of the Holmsted Forge, as previously mentioned, suggests a hamlet or small settlement may have been located in the surrounding area, although it could have served and been associated with Bridge House Farmhouse (MM17) (see Photo B.3), located approximately

³⁵ Hammer Pond (2018) Wealden Iron – A Brief History. Available online at: <http://www.hammerpond.org.uk/history/history.htm>.

³⁶ Historic England 2015b, National Farm Building Types. Available online at: <https://historicengland.org.uk/images-books/publications/national-farm-building-types/national-building-types-2014/> Accessed 11/07/2022.

25m north east from the Site. Holmsted Forge belonged to the Chaloners of Lindfield and Cokefield³⁸ in 1520 and the HER identifies that it was a working forge in 1520 but fell in a ruinous state by 1664³⁹. A forge comprises a building where the ironworking was housed, along or near a river source as access to a water supply was required to cool the metal after iron was heated and hammered⁴⁰.

The watching brief at Hammer Hill (MM23) captured iron rich material with some iron stone, and thick deposits of iron working waste including slag and charcoal were also recorded⁴¹ relating to this small-scale industrial activity. A seam of iron rich material at 0.5m below surface level of possible shrove was encountered, which may have been used in medieval bloomery forges. A mound of forge cinder below the bay at TQ28172740 indicates the probable site of this forge.

The historic Ordnance Survey mapping of 1962 shows an elongated mound, likely associated with a medieval iron works (MM20, MM25) Forge as a loading earthwork, within the south eastern corner of the Site. When heritage professionals from Mott MacDonald undertook the walkover survey, it was confirmed that the elongated mound was not present within the Site as evidenced on the historic Ordnance Survey mapping of 1962. However, crop growth within the Site and dense vegetation along the River Ouse limited some visibility. The Site today remains an undeveloped agricultural field. It was not possible to see the potential remains of the Forge in the wooded area to the south of the development site as this area was not safe to access.

The rural nature of the surrounding 1km study area is exemplified through two grade II Listed 18th century barns North-West of Bigges Farm (MM13) and North-West of North Hall (MM11) located approximately 825m south east and 940m south west from the Site. Associated with Bigges Farm and North Hall, these barns are evidence of the agrarian landscape and activities which dominated this area during the post-medieval period. This is further understood by the informal fieldscape of Holmsted Place (MM25) bordering the western edge of the Site.

Staplefield did not seem to develop until the 18th century, which is shown through the erection of public buildings within the village. The grade II listed Church of St Mark (MM12), Staplefield School (MM07), and Jolly Tanners Public House (MM09) are located approximately 690m north to 1km north west from the Site and suggest the increased size of the village and requirement of these buildings for public use.

The location of the site of a Forge is visible on historic Ordnance Survey mapping from 1879, 1897, and 1899⁴³. There is no evidence for post-medieval development within the site itself; historic mapping indicates the site remained agricultural throughout this period.

The historic landscape character of the area is planned private formal enclosure which originated in the medieval and post-medieval period.

4.4.6 Modern (AD 1901 – Present)

The rural nature of the Site and surrounding landscape is captured by historic Ordnance Survey mapping of 1911, 1913 and 1934 which shows that the Site has not changed from the post-medieval period⁴⁴, with the oval feature likely associated with Hammer Hill Bridge Forge, a site

³⁸ Cuckfield Connections 202, The Cuckfield Ironworks 3/3. Available online at: <https://www.cuckfieldconnections.org.uk/post/the-cuckfield-ironworks-3-3> Accessed 11/07/2022

³⁹ West Sussex HER: MWS939. Data obtained 30/06/2022

⁴⁰ Historic England 2022, Forges and Foundations. Available online at: <https://historicengland.org.uk/content/docs/education/explorer/teachers-kit-forges-and-foundries-pdf/> Accessed 11/07/2022

⁴¹ West Sussex HER: MWS11670. Data obtained 30/06/2022

⁴³ National Library of Scotland no date, Maps. Available online at: <https://maps.nls.uk/index.html> Accessed 11/07/2022.

⁴⁴ National Library of Scotland 2022, Maps. Available online at: <https://maps.nls.uk/> Accessed 12/07/2022

of a Medieval Iron Works (MM20), outside the south eastern corner of the Site. To the north of the Site, two wooden finger posts dated to the Modern period have also been noted.

During the Second World War, Auxiliary Units were set up as a highly secret quasi-military volunteer network⁴⁵ with the aim of counterattacking the expected invasion by Nazi Germany⁴⁶. The resistance units were supplied with the best weapons available and with modern plastic explosives⁴⁷. The United Kingdom had the advantage after witnessing the fall of many countries and remained the only country to create a successful resistance movement in advance of enemy invasion⁴⁸.

Staplefield Auxiliary Unit consisted of local resistance men from the Home Guard who had sound knowledge of the local surroundings⁴⁹. The Staplefield patrol Operational Base (OB) was to be used during an invasion and, like others, was well-hidden and purpose-built to house the patrol along with the necessary food, water, ammunition, and explosives⁵⁰. Located approximately 520m north of the Site, the OB was built by Canadian Soldiers and comprises a concrete base with brick sidewalls that supported the arched corrugated iron roof⁵¹ (see Photo B.4 and Photo B.5).

Other defence tactics were deployed near the OB and are identified on the HER as War Anti-Tank Blocks (MM19) and Anti-Tank Cones (MM22), located approximately 20m to the south east to 120m to the north of the Site. The Anti-Tank Blocks consist of two 'coffin' type blocks and were constructed to defend the road crossing over the River Ouse. The HER states that the Anti-Tank Cones were part buried and are thought to be ex-situ and likely to have been relocated from the nearby river crossing⁵². It is therefore likely they originally were located near the blocks and the River Ouse.

A Second World War Pillbox (MM18) is located 20m to the south west of the Site and is a sub hexagonal, three embrasure light machine gun pillbox. The pillbox is of brick and concrete construction and is located in a ditched field boundary, facing south to cover the River Ouse. It is partially buried protruding approximately 1.2m above ground level⁵³. The HER suggests although it looks like a Type 24 design, it was custom built due to the wall thicknesses and the number of embrasures⁵⁴. A Three Chamber Pillbox (MM21) is also located approximately 255m north east from the Site, in a sloping field facing south to south west to cover a road bridge. The rear walls have a unique design with a double course of lateral bricks protruding from both sides⁵⁵. The HER describes it as a variant form of Type 28A adapted to suit its site like others in Sussex. It has a holdfast for a 6Pdr Hotchkiss in the main embrasure⁵⁶. These non-designated

⁴⁵ War Links 2000, The Auxiliary Units Or British Resistance Organisation Of World War 2 - 1940-1944. Available online at: <http://warlinks.com/pages/auxiliary.php> Accessed 12/07/2022.

⁴⁶ Pillbox Study Group 2022, Auxiliary Units. Available online at: <http://www.pillbox-study-group.org.uk/other-wwii-defensive-structures/auxiliary-units/> Accessed 12/07/2022.

⁴⁷ Subterranea Britain 1997, Staplefield Auxiliary Units OB. Available at: <https://www.subbrit.org.uk/sites/staplefield-auxiliary-units-ob/> Accessed 12/07/2022.

⁴⁸ Pillbox Study Group 2022, Auxiliary Units. Available online at: <http://www.pillbox-study-group.org.uk/other-wwii-defensive-structures/auxiliary-units/> Accessed 12/07/2022.

⁴⁹ Subterranea Britain 1997, Staplefield Auxiliary Units OB. Available at: <https://www.subbrit.org.uk/sites/staplefield-auxiliary-units-ob/> Accessed 12/07/2022.

⁵⁰ *ibid*

⁵¹ British Resistance Archive 2016, Staplefield Patrol. Available online at: <https://www.staybehinds.com/patrol/staplefield-patrol> Accessed 12/07/2022.

⁵² West Sussex HER: MWS15064. Data obtained 30/06/2022.

⁵³ West Sussex HER: MWS5360. Data obtained 30/06/2022.

⁵⁴ *ibid*

⁵⁵ West Sussex HER: MWS14893. Data obtained 30/06/2022.

⁵⁶ *ibid*

heritage assets surrounding Staplefield show how important the village and its Auxiliary Unit was, housing an important secret force that aimed to protect and defend.

As Second World War Anti-Tank Blocks (MM19) and a Second World War Pillbox (MM18) reside on the south western corner and western boundary of the Site, it is likely that there may have some activity relating to the Staplefield Auxiliary unit within the Site. However, the watching brief (MM23) to the south of the Site did not identify any further previously unknown archaeological remains or structures from the Second World War.

5 Assessment of Significance

5.1 Overview

This section aims to define the significance of heritage assets which are situated within the study area and have the potential to be impacted by the Scheme. This is in line with legislation as recommended in Section 2.2.

5.2 Designated Heritage Assets

5.2.1 Little Ashford (MM03)

Little Ashford (MM03) is a grade II listed building located approximately 270m to the north west of the Site. The significance of the asset derives from its historic interest as an altered 15th century house. The timber framed house has architectural interest reflecting a late medieval - early post-medieval style. This may also hold archaeological interest providing evidence of building techniques and construction from the period.

The setting of Little Ashford includes the surrounding agricultural fields, the Site, and a private road which is located west of Cuckfield Road. The setting of Little Ashford shows insight into the historic character of the landscape within which the farmhouse was built. Therefore, the setting positively contributes to the significance of Little Ashford.

5.3 Non-designated Heritage Assets

5.3.1 The Hammer Hill Bridge Forge (MM20, MM25)

Iron working industrial sites are typical and characteristic of the High Weald and the area was known during the 15th - 17th centuries as the foundry of England. Small scall operations would have migrated around areas of woodland following coppicing and charcoal production cycles and until around 1500 iron was made in a bloomery process. The Wealden Iron Research Group focus on research of the various bloomeries and smelting sites across this region. The Weald is recognised as significant for future discovery of bloomery sites and research in the south-east regional framework agenda⁵⁷ and therefore the potential for the earlier bloomery on this Site is considered to have local (moderate) archaeological significance, due to the historic interest around earlier bloomeries. The discarded waste slag and charcoal is considered to hold low evidential value.

5.3.2 Bridge House Historic Farmstead (MM17)

Bridge House Historic Farmstead (MM17) is located approximately 25m to the north east from the Site. Its significance is derived from its historic interest as a farmstead dating to the 19th century. This asset is illustrative of the rural character of the study area during the 19th century.

The setting of the asset includes agricultural fields including the Site, as well as Cuckfield Road which is likely a historic road. The setting of the asset illustrates the historically agricultural character which still defines much of the study area. Therefore, the setting positively contributes to the ability to understand the significance of the asset.

⁵⁷ South East Research Framework: Resource Assessment and Research Agenda for the Medieval Period (2012) with revisions in 2019). Medieval. Available online at: https://www.kent.gov.uk/_data/assets/pdf_file/0003/99471/Medieval-chapter.pdf.

5.3.3 WWII Type 24 Pillbox (MM18) and Anti-Tank Blocks (MM19)

The Second World War Type 24 Pillbox (MM18) and Anti-Tank Blocks (MM19) are both located approximately 20m to the south west of the Site. Their significance is derived from historic interest as the pillbox and anti-tank blockage were created as an anti-invasion method for the Second World War, and their position to defend the road crossing over River Ouse. The pillbox also provides archaeological interest as it may hold evidence of construction and activity in the Second World War as it was custom built for its location. This could help in understanding defensive Second World War structures and its associated activities.

The setting of the pillbox and anti-tank block comprises the Site, the surrounding fields, the River Ouse, and the WwTW to the south. The Site formed an important role in providing an uninterrupted view toward Cuckfield Road. This enabled the pillbox visibility to defend Cuckfield Road whilst being situated in a concealed strategic position. The Site, therefore, contributes to the significance of these assets, however, overgrown vegetation has to some extent temporarily diminished the ability to understand the relationship between these assets and their setting.

6 Archaeological Potential

6.1 Survival Potential

The Site has good survival potential for archaeology, given that there is no evidence of prior development within the Site. Alluvial superficial deposits are recorded within the southern edge of the Site which create a good environment for the survival of archaeological deposits and paleoenvironmental remains, but such remains are considered to have low potential within the development area. It is likely that the Site was used historically for agricultural purposes, so there may have been some superficial disturbance from grazing stock or ploughing, which can disturb shallow remains in the kind of wet, clayey soils that are present within the Site. Therefore, there is the potential for archaeological remains to survive within the Site as it has been subject to little previous disturbance and ground reduction.

The magnetometer survey of the site has shown potential for remains associated with a bloomery or forge. It has been concluded within the geophysical survey report that the magnetic responses detected during the survey, especially those in the south eastern corner of the site, are likely to be associated with a former medieval forge which is recorded due south of the site⁵⁸.

A preliminary services search indicated that a sewer line runs diagonally across the north west corner of the field, which was not picked up by the magnetometry survey. The sewer pipe is expected to be deeply buried (approximately 2m below existing ground level) and the upcast material was rapidly used to backfill the trench which explains why the geophysical survey did not pick up a response. The service plan does not show any other sewer pipes in this field. Therefore, we are not expecting any disturbance elsewhere from similar infrastructure.

6.2 Archaeological Potential

Table 6.1 below sets out the archaeological potential of the Site. The table should be read in conjunction with the above comments on survival potential.

Table 6.1: Archaeological Potential

Historic Asset	Significance	Potential
Paleoenvironmental remains	Low to medium, depending on extent	Superficial deposits of alluvium are recorded by the BGS within the Site at its southern boundary following the course of the River Ouse. Alluvium is not expected across the northern half of the development area, but borehole investigation has proven Alluvium to be present in the southern half of the field, closest to the River Ouse. The Alluvium is described as firm orangish brown slightly gravelly slightly sandy/clayey silt, with no inclusions of plant remains, and therefore the presence of pollen and mollusc ⁵⁹ evidence is considered to be low .
Prehistoric remains	Low	There is a medium potential for background flint flakes to be recovered from the ploughsoil, dating to the Mesolithic or Neolithic periods. This is due to remains discovered during a watching brief to the south of the Site (MM23).
Roman remains	Medium significance	The potential for remains dating to the Roman period is low as there is no known activity recorded within the Site or study area from this period, but this may be due to a lack of archaeological

⁵⁸ SUMO Geophysics Ltd., 2023 Staplefield Southern Water Wetland Creation.

⁵⁹ Historic England 2015a, Geoarchaeology: using earth sciences to understand the archaeological record. Available online at: <https://historicengland.org.uk/images-books/publications/geoarchaeology-earth-sciences-to-understand-archaeological-record/heaq067-geoarchaeology/> Accessed 12/05/2022.

Historic Asset	Significance	Potential
		investigation rather than a genuine absence. This area of the High Weald was used by Iron Age and Romano British industrialists to produce iron using bloomeries.
Early medieval remains	Low to medium	The potential for agricultural remains and the rural landscape dating to the early medieval period is low . Little is known about the site prior to the medieval period.
Medieval remains	<p>Low significance for medieval agricultural features.</p> <p>Moderate significance for evidence of a medieval bloomery.</p> <p>Low significance for slag and charcoal waste discarded from the known Hammer Hill Bridge Forge.</p>	There is high potential for remains associated with the rural landscape and likely agricultural use of the Site. Hammer Hill Bridge Forge, the site a medieval iron works (MM20), located beyond the Site boundary, with some remains south of the River Ouse. Historic Ordnance Survey mapping of 1879 shows an elongated mound within the southern part of this Site, that is likely associated with a Forge or iron working activity. This appears to have been confirmed by the magnetometry survey. As such, there is also high potential for unknown archaeological remains associated with a Forge and a potential earlier bloomery site.
Post-medieval remains	Low significance for associated waste materials from post medieval forge	It is likely that the Site was used for agricultural purposes during the post-medieval period. As such there is medium potential for remains relating to agricultural practices within the Site and medium potential for waste products associated with a post medieval forge such as slag and charcoal.
Modern remains	Low to medium	Second World War Anti-Tank Blocks (MM19) are located 20m south east and a Second World War Pillbox (MM18) is located 20m south west of the Site, although there is no obvious evidence relating to these structures within the Site. There is low potential for WW2 remains within the development area.

Source: Mott MacDonald, 2023

7 Impact Assessment

This section identifies the potential impacts to be considered regarding development at the Site. Due to limited above ground remains and distance/screening from the Site, four assets have been identified as heritage considerations, as per paragraph 194 in the NPPF (see Section 2.2) and DP34 in the Mid Sussex District Plan (see Section 2.3.1), though they do not place any major constraint on the Scheme design. Other assets are assumed not to have the potential to be impacted, due to their distance from and relationship to the Site. The archaeological potential of the Site is included in Section 6 and impact assessment in Section 7.2.3.

7.1 Designated Heritage Assets

7.1.1 Little Ashford (MM03)

The nature of the proposal, creating a wetland environment, will alter the setting of Little Ashford as the rural landscape of the Site will be modified. This will slightly change the relationship between this asset and the agricultural landscape. The agricultural setting is considered to make a significant contribution to the heritage value of the local assets. However, the Scheme will not diminish the ability to appreciate the historic character of the landscape in connection to the 15th century listed building. Therefore, the Scheme will not affect the significance of the listed building as the proposed plans will not sever the way Little Ashford is enjoyed and appreciated (see Photo B.6 and Photo B.7).

7.2 Non-designated Heritage Assets

7.2.1 WWII Type 24 Pillbox (MM18) and Anti-Tank Blocks (MM19)

The Second World War Type 24 Pillbox (MM18) (see Photo B.8) and Anti-Tank Blocks (MM19) are located approximately 20m to the south west of the Site. Due to the nature of the construction, the setting of these assets will be altered, as the Site will change from an agricultural field to a wetland. However, as the Site will maintain open views and intervisibility from the Site towards Cuckfield Road and the River Ouse will not be affected. As stated in Section 5.3.3, overgrown vegetation has to some extent already severed these relationships. The green field rural setting contributes to the heritage significance of these assets, especially as the setting is unchanged since their creation. As the Scheme will retain a green and rural character, the changes will not result in significant harm to the significance of these modern assets. In addition, there is the low potential for the Scheme to impact upon as yet undiscovered WW2 features.

7.2.2 Bridge House Historic Farmstead (MM17)

The Scheme will comprise a wetland area to increase biodiversity within the Site, where it is currently in use as an agricultural field. The agricultural setting is considered to make a significant contribution to the heritage value of the local assets. The setting of Bridge House will change, though the historical agricultural landscape surrounding the asset will still continue be understood (see Photo B.9). Therefore, the Scheme will not impact the significance of the non-designated heritage asset.

7.2.3 Archaeological Impacts

The proposed Scheme shall impact upon the slag filled pits and ditches associated with Hammer Hill Bridge Forge, a site of a later medieval iron works (MM20, MM25), recorded by the magnetometry survey (see Figure 7.1 for overlay of development proposals and geophysical

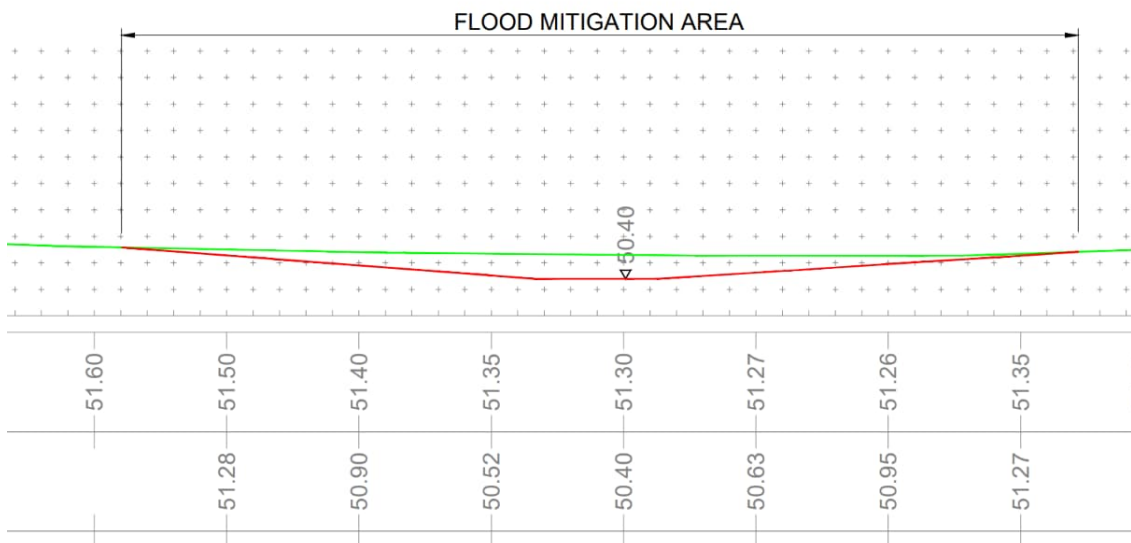
survey results). The flood mitigation area will reach a maximum depth of 0.90m (50.40mOD), at its centre point to less than 0.10m at the edge (see Figure 7.2, Figure 7.2 and Appendix D). There is also potential for recovery of residual struck flints, but these have little archaeological value.

Figure 7.1: Showing approximate location of forge over the development proposals (not to scale)



Source: SUMO Geophysics Ltd, 2023

Figure 7.2: Section across the flood mitigation area with construction formation depths



Source: GTb, 2023

8 Conclusion and Recommendations

8.1 Conclusions

This DBA has been carried out to assess the likely impacts upon the historic environment from the wetland creation Scheme to the west of Staplefield WwTW. This assessment has incorporated a review of the available data from the HER within the study area. Plans showing the study area and identified heritage assets can be seen in Appendix A and an associated gazetteer is found in Appendix C.

The assessment has identified 16 designated heritage assets (15 grade II listed buildings and one conservation area) within a 1km study area, and 26 non-designated heritage assets within the 1km study area. These include historic properties within the historic core of Staplefield, farmhouses, Second World War defensive structures and a Historic Parkscape.

8.1.1 Built Heritage

The creation of a new wetland environment will alter the agricultural setting of the designated Little Ashford and Bridge House Historic Farmstead and the non-designated Second World War features. The agricultural setting is considered to make a significant contribution to the heritage value of the local assets. However, the Scheme will not diminish the ability to understand or appreciate these assets as the setting will maintain an open view, green and rural ensuring the retention of the pastoral character of the area.

8.1.2 Buried Archaeology

The flood mitigation area will impact and truncate buried slag, charcoal pits and ditches associated with a postulated Forge (MM20) and water powered furnace (MM25) in the wooded area to the immediate south of the River Ouse. Waste from associated processes may be found within the charcoal-rich layers from charcoal preparation and storage, or deposits of burnt, iron-rich stone indicating ore roasting or storage. Iron objects, bars and off cuts can provide valuable information about the metal being made or worked at the site, and its products. Impact to these remains can be mitigated through archaeological recording, rather than by preservation in-situ.

8.1.3 Enhanced Anomalies shown on Geophysical Survey

The Wealden Iron Research Group focus on research of the various bloomeries and smelting sites across this region. The Weald is recognised as significant for future discovery of bloomery sites and research in the south east regional framework agenda⁵⁷ and therefore the potential for a medieval bloomery forge to be present on the site is considered to have local (moderate) archaeological significance.

The geophysical survey revealed anomalies that can be interpreted as slag dumps or slag-filled pits or ditches associated with a nearby ironworks. The appearance of the slag recovered during the watching brief in 2011 indicates smithing rather than smelting taking place at a Forge. The Environment Agency Lidar shows the tell-tale remains of a water-powered bloomery just outside of the development area to the south of the River Ouse.

These types of furnace are poorly understood and the remains are difficult to interpret. However, evidence of water management, such as ponds, tail races and wheel-pits, are likely to survive. This wooded area could not be accessed during the Site walkover for safety reasons and is outside of the development area of the ICW.

The slag filled pits and ditches represent a linear earthwork feature that was present on historic maps until the early 20th Century. This is likely to have been a loading mound and is no longer present, having been ploughed away. The archaeological watching brief in 2011 which involved monitoring across this area of high magnetic response revealed a 0.20m thick layer of slag and charcoal and did not record any complex and inter-cutting features. From the available evidence it is suggested that this area was used to discard the smithing waste products from the Forge located south of the River Ouse.

8.2 Recommendations

It is considered that the information provided within this DBA is sufficient to support this planning application and provide the West Sussex County Archaeologist and the planning officer adequate information to make an informed judgement on the archaeological mitigation requirements for this project, as per paragraph 194 in the NPPF (see Section 2.2) and DP34 in the Mid Sussex District Plan (see Section 2.3.1).

The magnetometry survey in August 2023 produced clear results and performed well suggesting there is high potential for archaeological survival of remains associated with the medieval Hammer Hill Bridge Forge in the south eastern corner of the Site. These remains are interpreted as slag filled pits and ditches which are derived from the waste products of smithing. The Forge itself will not be directly impacted by the Scheme as it is located in the wooded area south of the River Ouse. The remainder of the development area had very little possible archaeological anomalies.

The archaeological significance of a medieval bloomery forge is considered to be moderate, due to its evidential and historical value⁶⁰. Discarded slag and charcoal waste from the post-medieval Forge will have less evidential value. As there will be an impact upon the remains (discarded slag and charcoal waste associated with the forge) from construction of the flood mitigation area, it is recommended that consultation takes place with the West Sussex County Council Archaeological Advisor to determine targeted archaeological mitigation to be drawn up in a WSI. It is recommended that this takes the form of a strip, map and record exercise over the magnetically enhanced zone to ensure that no archaeological remains are removed without adequate record by the groundworks of the Scheme. The remains (discarded slag and charcoal waste associated with the forge) are not considered significant enough to warrant preservation in-situ.

⁶⁰ In particular if the bloomery was hand or water powered.

References

Legislation, Policy and Guidance

- Available online at: <https://www.legislation.gov.uk/ukpga/1979/46>
- Available online at: Available online at: <https://www.legislation.gov.uk/ukpga/1990/9/contents>
- Chartered Institute for Archaeologists (CIfA) 2020, Standard and Guidance for Historic Environment Desk-Based Assessment. Available at: https://www.archaeologists.net/sites/default/files/CIfAS%26GDBA_4.pdf Accessed 11/07/2022
- Historic England 2008, Conservation Principles, Policies and Guidance. Available online at: <https://historicengland.org.uk/images-books/publications/conservation-principles-sustainable-management-historic-environment/conservationprinciplespoliciesandguidanceapril08web/> Accessed 16/08/2022
- Historic England 2015, Good Practice Advice in Planning Note 2: Managing Significance in Decision – Taking in the Historic Environment (GPA2). Available at: <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/> Accessed 11/07/2022
- Historic England 2015a, Geoarchaeology: using earth sciences to understand the archaeological record available online at: <https://historicengland.org.uk/images-books/publications/geoarchaeology-earth-sciences-to-understand-archaeological-record/heag067-geoarchaeology/> Accessed 04/07/2022
- Historic England 2015b, National Farm Building Types. Available online at: <https://historicengland.org.uk/images-books/publications/national-farm-building-types/national-building-types-2014/> Accessed 11/07/2022
- Historic England 2017, Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (GPA3). Available at: <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/> Accessed 11/07/2022
- Historic England 2019, Statements of Heritage Significance: Analysing Significance in Heritage Assets (TAN12). Available at: <https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/heag279-statements-heritage-significance/> Accessed 11/07/2022
- Historic England 2022, Forges and Foundations. Available online at: <https://historicengland.org.uk/content/docs/education/explorer/teachers-kit-forges-and-foundries-pdf/> Accessed 11/07/2022
- IEMA, CIfA, IHBC 2021, Principles of Cultural Heritage Impact Assessment. Available at: www.iema.net/resources/blog/2021/07/20/launch-of-principles-of-cultural-heritage-impact-assessment Accessed 11/07/2022
- Mid Sussex District Plan 2014-2031. Available online at: <https://www.midsussex.gov.uk/media/3406/mid-sussex-district-plan.pdf> Accessed 30/06/2022

Databases

- Archaeology Data Service 2011, An Archaeological Watching Brief at Hammer Hill Bridge. Available online at: https://archaeologydataservice.ac.uk/archiveDS/archiveDownload?t=arch-480-1/dissemination/pdf/archaeol6-95883_1.pdf Accessed 17/08/2022

- Archaeology Data Service 2018, The Rural Settlement of Roman Britain: an online resource.
- Anglo Saxon History 2022, 150- London to Pycombe. Available online at: https://saxonhistory.co.uk/Location_Margary_Roman_Roads.php?ID=M150&route=150%20London%20-%20Brighton%20%28Pycombe%29 Accessed 24/08/2022
- Available online at: <https://archaeologydataservice.ac.uk/archives/view/romangl/maprecord.cfm?id=11039> Accessed 10/08/2022
- British Geological Survey 2022, Geology of Britain Viewer. Available online at: <https://www.bgs.ac.uk/map-viewers/geology-of-britain-viewer/> Accessed 16/08/2022
- British Geological Survey 2022, Geology of Britain 3D. Available online at: <https://mapapps.bgs.ac.uk/geologyofbritain3d/> Accessed 04/07/2022
- British Geological Survey 2022, Scan TQ22NE13. Available online at: http://scans.bgs.ac.uk/sobi_scans/boreholes/584556/images/14944748.html Accessed 04/07/2022
- Historic England 2022, Search The List. Available online at: <https://historicengland.org.uk/listing/the-list/> Accessed 16/08/2022
- The Rural Settlement of Roman Britain: an online Resource, 2016. Available online at: <https://archaeologydataservice.ac.uk/archives/view/romangl/map.html> Accessed 10/08/2022
- War Links 2000, The Auxiliary Units Or British Resistance Organisation Of World War 2 - 1940-1944. Available online at: <http://warlinks.com/pages/auxiliary.php> Accessed 12/07/2022
- West Sussex HER. Data obtained 30/06/2022

Primary Sources

- Open Domesday no date, Map. Available online at: <https://opendomesday.org/map/> Accessed 05/07/2022
- National Library of Scotland no date, Maps. Available online at: <https://maps.nls.uk/index.html> Accessed 11/07/2022
- SUMO Geophysics Ltd, 2023, Staplefield Southern Water Wetland Creation

Secondary Sources

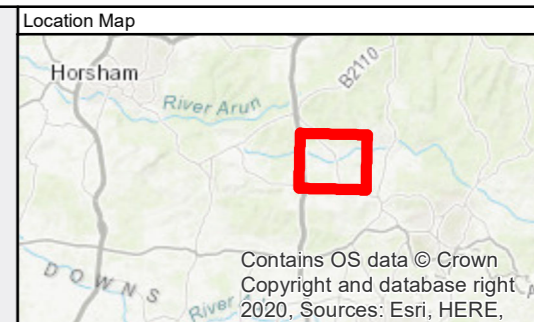
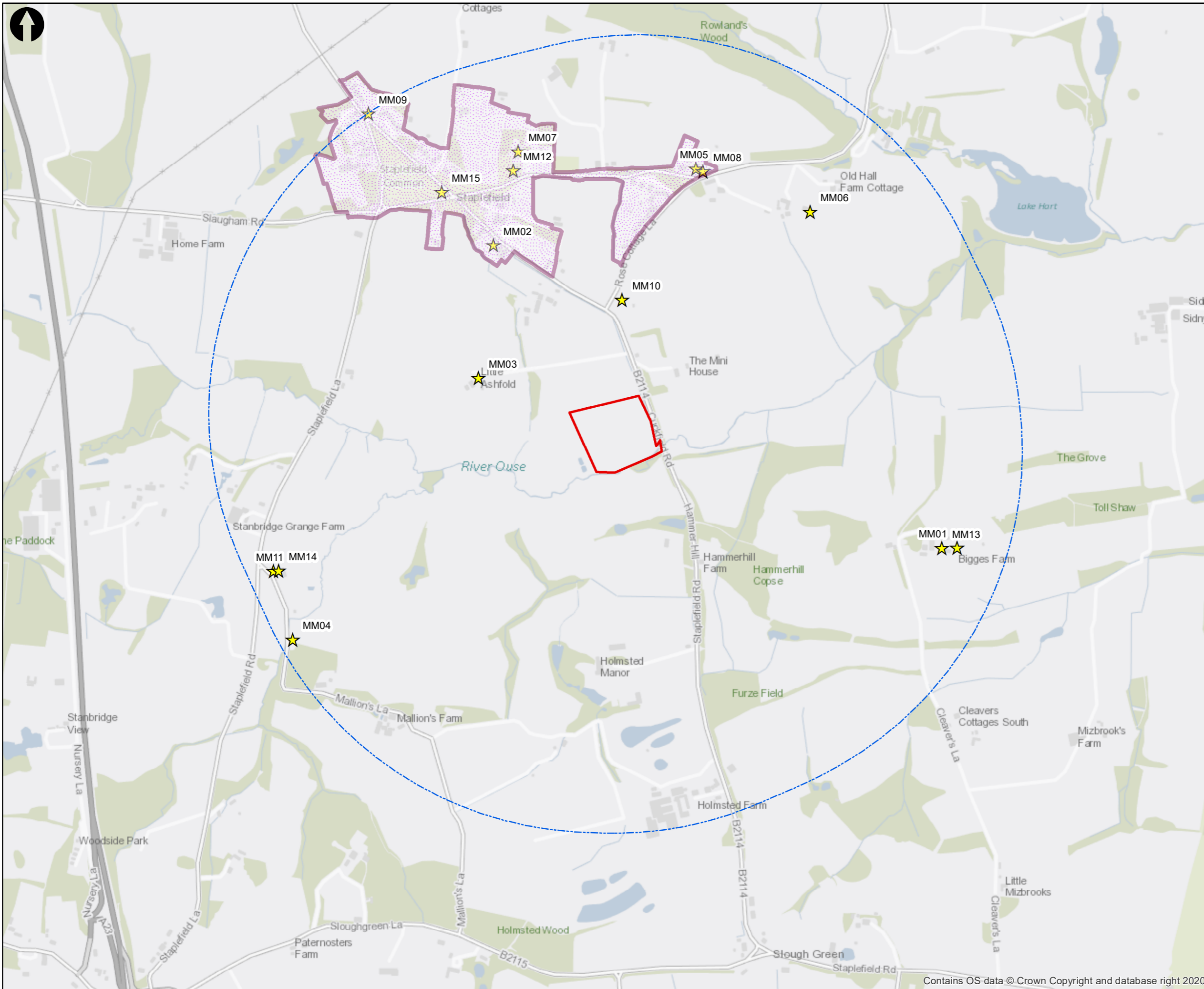
- British Resistance Archive 2016, Staplefield Patrol. Available online at: <https://www.staybehinds.com/patrol/staplefield-patrol> Accessed 12/07/2022
- Cuckfield Connections 2021, The Cuckfield Ironworks 3/3. Available online at: <https://www.cuckfieldconnections.org.uk/post/the-cuckfield-ironworks-3-3> Accessed 11/07/2022
- Subterranea Britain 1997, Staplefield Auxiliary Units OB. Available at: <https://www.subbrit.org.uk/sites/staplefield-auxiliary-units-ob/> Accessed 12/07/2022
- The Novium Museum 2022, Early Neolithic Flint Mines of Sussex. Available online at: <https://www.thenovium.org/article/31055/Early-Neolithic-Flint-Mines-of-Sussex> Accessed 11/07/2022
- Kent Council 2019, Bronze Age Framework. Available online at: https://www.kent.gov.uk/_data/assets/pdf_file/0020/93170/South-East-Research-Framework-Resource-Assessment-and-Research-Agenda-for-the-Middle-Bronze-Age-and-Iron-Age.pdf Accessed 18/07/2022
- Kent Council 2019, Medieval Framework. Available online at: https://www.kent.gov.uk/_data/assets/pdf_file/0003/99471/Medieval-chapter.pdf Accessed 18/07/2022

- Kent Council 2019, Middle Bronze Age to iron Age Framework. Available online at: https://www.kent.gov.uk/_data/assets/pdf_file/0020/93170/South-East-Research-Framework-Resource-Assessment-and-Research-Agenda-for-the-Middle-Bronze-Age-and-Iron-Age.pdf Accessed 18/07/2022
- Mid Sussex District Council 2018, Conservation Areas in Mid Sussex. Available online at: <https://www.midsussex.gov.uk/media/3710/conservation-areas-in-mid-sussex.pdf> Accessed 04/07/2022
- Pillbox Study Group 2022, Auxiliary Units. Available online at: <http://www.pillbox-study-group.org.uk/other-wwii-defensive-structures/auxiliary-units/> Accessed 12/07/2022
- Mott MacDonald 2023 Southern Water AMP7 Staplefield Wetland Ground Investigation Report

Appendices

A.	Figures	36
B.	Photographs	37
C.	Gazetteer of Heritage Assets	42
D.	Scheme Design	48
E.	Geophysical Survey Report	49
F.	2011 Watching Brief	50

A. Figures



Key to Symbols

- Site
- 1km Study Area
- ★ Listed Buildings
- Conservation Area

Notes

For information only.
 Contains OS data © Crown Copyright and database right 2020.
 Contains Historic England NHLE data © right 2022.
 Ordnance Survey. All rights reserved.

01	10/08/22	SC	For Information	ED	MH
Rev	Date	Drawn	Description	Ch'k'd	App'd

M M
MOTT MACDONALD

Mott MacDonald House
 8-10 Sydenham Road
 Croydon, CR0 2EE
 United Kingdom
 T +44 (0)20 8774 2000
 F +44 (0)20 8681 5706
 W mottmac.com

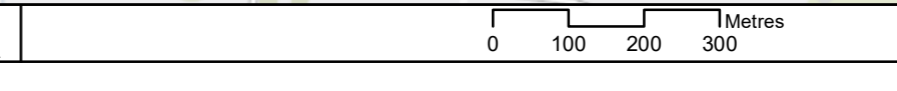
Client

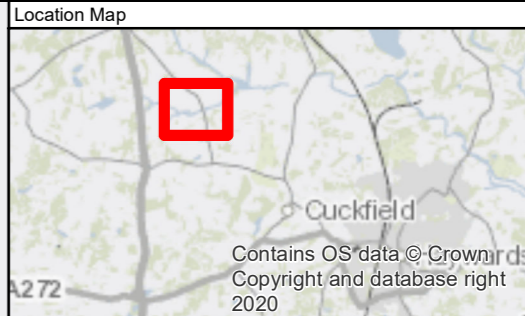
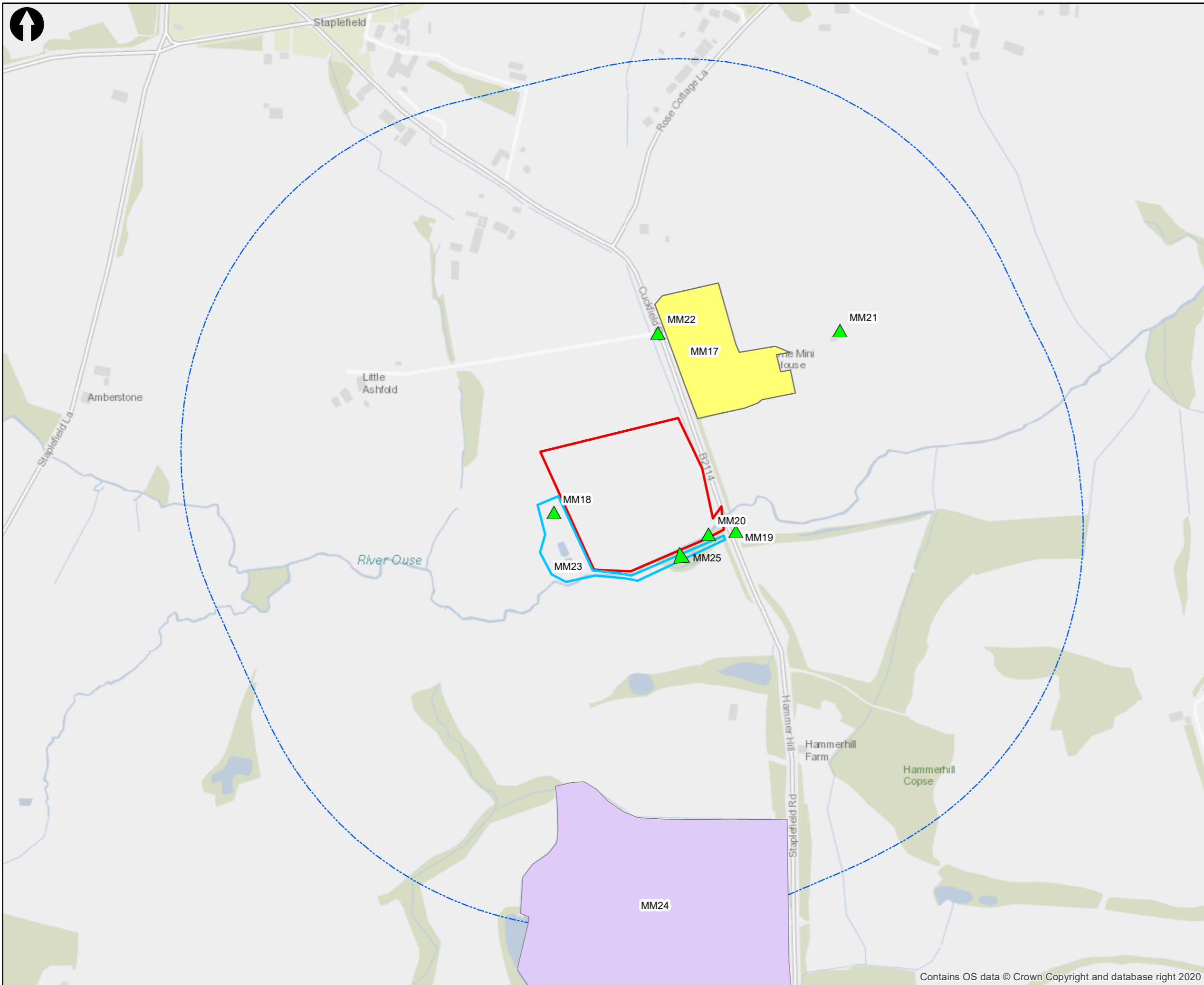
Southern Water

Title

Designated heritage assets
 within the study area

Designed	S Croston	Eng Check	E Dennis
Drawn	S Croston	Coordination	I Gray-Davis
GIS Check	E Dennis	Approved	Z Burn
Scale at A3	Status	Rev	Security
1:10,000	PRE	P1	STD





Key to Symbols

- Site
- 500m Study Area
- ▲ HER Monument
- HER Monument
- Historic Parkscape Monument HER
- HER Event

Notes

For information only.
 Contains OS data © Crown Copyright and database right 2020
 Contains West Berkshire HER data © 2022

01	10/08/22	SC	For information	ED	ZB
Rev	Date	Drawn	Description	Ch'k'd	App'd
M			Mott MacDonald House 8-10 Sydenham Road Croydon, CR0 2EE United Kingdom T +44 (0)20 8774 2000 F +44 (0)20 8681 5706 W mottmac.com		

Client

Southern Water

Title

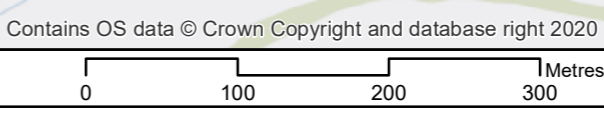
Non-designated heritage assets within the study area

Designed	S Croston	Eng Check	E Dennis
Drawn	S Croston	Coordination	I Gray-Davies
GIS Check	E Dennis	Approved	Z Burn

Scale at A3	Status	Rev	Security
1:5,000	PRE	P1	STD

Drawing Number

100416906-MMD-GIS-DR-0002



B. Photographs

Photo B.1: Location of Site of Hammer Hill Bridge Forge looking west of the Site (MM20)



Source: Mott MacDonald 2022

Photo B.2: Chiffley Grange (MM10)



Source: Mott MacDonald 2022

Photo B.3: Bridge House Farmhouse (MM17)



Source: Mott MacDonald 2022

Photo B.4: Entrance to Staplefield Operational Base



Source: British Resistance Archive 2016

Photo B.5: Staplefield Operational Base



Source: British Resistance Archive 2016

Photo B.6: Looking west towards the road leading to Little Ashford (MM03)



Source: Mott MacDonald 2022

Photo B.7: Looking south east to the Site from the road leading to Little Ashford (MM03)



Source: Mott MacDonald 2022

Photo B.8: Looking west from the site at vegetation screening the WWII Type 24 Pillbox (MM18)



Source: Mott MacDonald 2022

Photo B.9: Looking south west towards the site from Bridge House Historic Farmstead (MM17)



Source: Mott MacDonald 2022

C. Gazetteer of Heritage Assets

Table C.1: Gazetteer of Designated Heritage Assets within the study area

MM Number	NHLE Number	Name	Designation	NGR	Description
MM01	1025699	Bigges Farmhouse	Grade II Listed Building	TQ 29010 27140	C15 timber-framed building, refronted with red brick on ground floor and tile-hung above. Lower half of roof Horsham slabs, upper half tiled. Casement windows. Two storeys and attic. Four windows. One modern dormer. Crown-post roof inside.
MM02	1025705	Barnhall	Grade II Listed Building	TQ 27725 27978	One building. Early C19. Two storeys. Three windows. Stuccoed. Slate roof. Glazing bars intact. Central doorway with double doors, semi-circular fanlight and window each side, complete with glazing bars, that possibly was a shop window originally.
MM03	1025707	Little Ashfold	Grade II Listed Building	TQ 27684 27610	C15 timber-framed house, enlarged, with painted brick infilling. West front refaced with red brick on ground floor and tile-hung above. Tiled roof. Casement windows. Two storeys. Three windows. Modern L-wing to east.
MM04	1025709	North Hall Cottage	Grade II Listed Building	TQ 27169 26885	C18 or earlier. Two storeys. Two windows. Ground floor painted brick, above tile hung. Tiled roof. Casement windows, those on first floor extended to form dormers.
MM05	1025730	Little Tyes	Grade II Listed Building	TQ 28286 28190	Probably C17. Two storeys. Three windows. Ground floor red brick, above tile-hung. Tiled roof. Casement windows with latticed diamond-shaped parted.
MM06	1025731	Tyes Place	Grade II Listed Building	TQ 28603 28071	C17 or earlier timber-framed building, refronted in the C18 on ground floor with red bricks and grey headers and above tile-hung. Tiled roof. Sash windows with glazing bars intact on first floor, casement windows below. Two storeys and attic. Three windows. Two dormers.
MM07	1193603	Staplefield School	Grade II Listed Building	TQ 27794 28238	Mid C19. Probably by Benjamin Ferrey. One storey. Four windows. Stone. Slate roof. Windows of paired lights with trefoil-shaped heads.
MM08	1193612	Yew Tree	Grade II Listed Building	TQ 28306 28182	C18. Two storeys. Four windows. Ground floor rough-cast, above tile-hung. Tiled roof. Glazing bars intact. Modern gabled porch at west end of front.
MM09	1194106	The Jolly Tanners Public House	Grade II Listed Building	TQ 27379 28343	Early C19. Two storeys. Four windows. Faced with roughcast the centre of the first-floor windows extended to form dormers. Tiled roof. Casement windows, with pointed Gothic panes.
MM10	1285797	Chiffley Grange	Grade II Listed Building	TQ 28082 27827	L-shaped building. The north wing is a C17 or earlier timber-framed cottage, largely refaced with painted brick. Tiled roof. Casement windows. Large stone chimney breast with offsets on north wall. The west wing is an C18-early C19 addition. Painted brick. Tiled roof. Some of the windows have pointed Gothic panes. Two storeys. Three windows in all.

MM Number	NHLE Number	Name	Designation	NGR	Description
MM11	1285851	Barn To The North West Of North Hall	Grade II Listed Building	TQ 27116 27075	C18. Facet with weather-boarding on a stone base. Hipped tiled roof.
MM12	1354813	Church Of St Mark	Grade II Listed Building	TQ 27780 28185	Chancel, nave, and south porch with bell-arch at west end. 1847. Architect Benjamin Ferrey. Sussex sandstone. C13 Gothic. Wall paintings inside by Charles Eamer Kempe in the Morris manner.
MM13	1354838	Barn to the North West of Bigges Farm	Grade II Listed Building	TQ2896827139	C18. Faced with tarred weather-boarding. Hipped tiled roof.
MM14	1354842	North Hall	Grade II Listed Building	TQ 27130 27076	C17 or earlier timber-framed building, refronted with red brick on ground floor and tile-hung above. Tiled roof. Casement windows. Two storeys. Three windows. Modern addition to south.
MM15	1453474	Staplefield War Memorial	Grade II Listed Building	TQ2758228126	First World War Memorial. Designed by Messrs Maile and Son of London and unveiled in 1921. Dates of the Second World War subsequently added. Granite with lead lettering. The memorial is located on Staplefield Common, at the junction of Cuckfield Road and Brantridge Lane, within a modern post and chain fence. It consists of a wheel-headed cross on a rough-hewn base standing on a single square step with a paved surround. The cross has an inverted sword carved in relief on the front face. A smoothed recessed panel on the front face of the base is inscribed <i>To the glory of god/ and in honour of those men of/ Staplefield/ who gave their lives in the great wars/ 1914 - 1918 and 1939 - 1945/ their names are inscribed on the tablet in the church.</i>
MM16		Staplefield Conservation Area	Conservation Area	TQ 27687 28137	The village was designated a Conservation Area in 1984. The buildings are predominantly residential and comprise a range of ages and styles. Although few are listed, their variety gives the village character and interest.

Source: Historic England NHLE, 2022. Conservation Areas in Mid Sussex, 2018

Table C.2: Non-designated built heritage assets closest to the Scheme area

MM Number	HER Number	Name	Asset type	NGR	Description
MM17	MWS9498	Bridge House Historic Farmstead, Cuckfield	Farmstead	TQ 28226 27643	Bridge House, Cuckfield, has been identified as a Historic Farmstead dating to the 19th Century. Bridge House, Cuckfield, has been identified as a Historic Farmstead through the 'Historic Farmsteads and Landscape Character in West Sussex' Project. The project aimed to represent all farmsteads shown on the Ordnance Survey 2nd Edition 25" mapping of 1895. Bridge House is a 19th century double sided loose courtyard farmstead with a detached farmhouse set side on to the yard. It is in an isolated location and is extant (no apparent alteration).
MM18	MWS5360	WWII Type 24 Pillbox, Ansty and Staplefield	Pillbox; Blast Wall; Crenelation; Vent; Flat Roof; Lintel	TQ 27946 27453	Type 24 Pillbox. Facing south to cover the road crossing over the river Ouse. Embrasures are steel lined. A building survey was carried out on a World War II pillbox, Ansty and Staplefield, as part of a review of the Ouse valley World War II defences. Exterior: Sub hexagonal three embrasure light machine gun pillbox. The pillbox is sited in a ditched field boundary, facing south to cover the River Ouse running west - east approximately 190m away. It has a stepped entrance and a blast wall on the northern face, exiting to the west. It has been partially buried, the roof of the structure being approximately 1.2m above ground level. There are four air vents, two on the rear wall and one on each non embrasure rear wall. The pillbox is constructed of brick shuttering sealing reinforced concrete walls with cast concrete embrasures, brick lintels and flat roof. A tree that has grown up between the pillbox and entrance blast wall does not appear to have caused any obvious cracks. There is evidence of some frost damage on exposed bricks. A horizontal rebar is visible under the brick lintel of the south facing embrasure. Interior: The western return of the anti-ricochet wall has been knocked down, the bricks appearing to be extant on the floor. The unpainted portion on the ceiling confirms that the interior wall was constructed after the roof was cast. The three concrete light machine gun embrasures are in good condition though the wooden shelves no longer remain. Floor to ceiling height is 1.95m. Roof thickness measured at door to be 30cm. Narrow size entrance (164cm high X 67cm wide). There is a strong suggestion that the brick shuttering for the concrete embrasure walls was removed after the mix had cured. The walls are smoother and have a light reverse brick bond pattern. Random crease lines are also visible suggesting construction material bags were used to line the shuttering and these are also visible in the ceiling. It is not clear why the brick shuttering was removed after constructing the embrasure walls. The pillbox superficially appears as a Type 24 design but the mix of wall thicknesses and having just three reinforced concrete light machine gun embrasures suggest the pillbox was custom built for the location.
MM19	MWS5361	World War II Anti Tank blocks, Staplefield	Anti Tank Block	TQ 28192 27439	2 `coffin` type blocks. To defend the road crossing over the river Ouse. A building survey was carried out on two World War II anti-tank blocks, Ardingly, as part of a review of the Ouse valley World War II defences. The blocks are situated adjacent to the road bridge on the south-eastern side. The western block is parallel to the road and the eastern one is angled more to the south-east. They are made from reinforced concrete blocks on different sized foundation platforms. The eastern block has the appearance of horizontal shuttering lines. At the time of survey, the blocks were quite overgrown with a selection of ivy trails and mature trees. Due to the undergrowth and

MM Number	HER Number	Name	Asset type	NGR	Description
					proximity of the riverbank, it was not possible to fully check both obstacles. However, the condition of both blocks is thought to be good.
MM20	MWS939	Holmsted Forge	Iron Working Site; Pond Bay	TQ 28155 27416	Medieval forge at Holmsted or Gaston's Bridge. Placenames Hammerfield, Hammer Hill, Forge Pond Field, Forge Barn, Forge Pond Tail, Hammerfield Lag and Garston's Meadow. The forge at Gaston's Bridge (Gaston's Farm at TQ27672759 on OS 1913) belonged to the Chaloners c.1520. It was working in 1656, but by 1664 it was in ruins. The pond is silted up and the large pond bay to the W of the main road was dug away in 1928 by the County Council. There is much hammer cinder. Iron Workings (site of) shown at TQ28182737 by the OS in 1962 relates to the potential forge associated with this Site. Of the pond bay no trace remains N of the River Ouse, but to the S of the river it extends for nearly 60m and is up to is up to 1.3m in height. It has been dug into towards the river, and elsewhere has been reduced and spread by the plough. A mound of forge cinder below the bay at TQ28172740 indicates the probable site of the forge. Listed by Cleere & Crossley.
MM21	MWS14893	WWII Three Chamber Pillbox with anti-tank position in centre, Ansty and Staplefield	Pillbox; Flat Roof; Loopholed Wall; Vent; Entrance; Anti Tank Block; Pedestal	TQ 28332 27642	A building survey was carried out on a World War II three chamber pillbox, Ansty and Staplefield, as part of a review of the Ouse Valley World War II defences. The pillbox is sited at the northern crest of a gently sloping field facing south-southwest to cover the road bridge approximately 315m away. The 1947 aerial photograph shows the field to be quite open with few trees. An open hedge now runs in front of the pillbox and surrounding it are a number of trees of different varieties and maturity. There are a lot of branches and debris in the vicinity. Ivy covers part of the walls and roof and a quite mature tree has grown up between the pillbox and the entrance blast wall, causing the latter to break away. The concrete blast wall had been tied into the pillbox during construction and has completely separated from the main building. The north-west angled rear wall has a vertical crack from the roof and horizontal crack run for most of the length four courses down from the roof. Moss covers much of the other walls and there is evidence of frost damage in the bricks on the northerly faces. The flat roof is quite roughly cast and fairly overgrown. Vines have taken hold in various places in particular the rear north-west corner where the bricks have started to splay away. There are six air vents, all on the rear walls and they have a distinctive design with a double course of lateral bricks protruding inside and out. The pillbox was visited by a member of the Pillbox Society Group on the 30/05/2019 and was found to be extant. The plan shows it to be a variant form of Type 28A adapted to suit its site like others in Sussex. It has a holdfast for a 6Pdr Hotchkiss in the main embrasure.
MM22	MWS15064	World War II Anti-Tank Cones, Ansty and Staplefield	Anti-Tank Cone	TQ 28120 27648	Two partially buried World War II anti-tank cones were identified either side of the entrance to Ashfold Farm, Ansty and Staplefield. They are thought to be ex-situ and likely to have been relocated from nearby the river crossing.
MM24	TQ22NE27	Parkscape - Holmsted Place	Parkscape	TQ 2812 2671	A parkscape is shown at Holmsted Place by the OS in 1898-9.

MM Number	HER Number	Name	Asset type	NGR	Description
MM25	n/a	Water powered bloomery furnace	Ruins	TQ28132736	This potential water powered bloomery and forge/furnace has been determined during research for this DBA by analysis of the Lidar data.

Source: West Sussex County Council Historic Environment Record

Table C.3: Remaining non-designated heritage assets within the 1km study area

HER Ref	Record Type	Name	Monument Type
MWS10512	MON	Site of Field Barn Historic Outfarm to the West of Holmsted Manor, Cuckfield Rural	OUTFARM
MWS11681	MON	Hammer Hill Bridge Farm Historic Farmstead, Lindfield Rural	FARMSTEAD
MWS11982	MON	Little Ashfold (Ashfold Farm) Historic Farmstead, Ansty and Staplefield	FARMSTEAD
MWS12302	BLD	Mallions Farm Historic Farmstead, Ansty and Staplefield	FARMSTEAD; FARMHOUSE
MWS12619	MON	North Hall Farm Historic Farmstead, Ansty and Staplefield	FARMSTEAD
MWS12967	MON	Tyes Place (Tyes Farm) Historic Farmstead, Ansty and Staplefield	FARMSTEAD
MWS13481	MON	Rowlands Barn Historic Outfarm, Ansty and Staplefield	OUTFARM
MWS13647	MON	Staplefield Grange (Gables Farm) Historic Farmstead, Ansty and Staplefield	FARMSTEAD
MWS13647	MON	Staplefield Grange (Gables Farm) Historic Farmstead, Ansty and Staplefield	FARMSTEAD
MWS14356	LB	Staplefield War Memorial, Staplefield Common	WAR MEMORIAL; CROSS; PLAQUE; PLAQUE
MWS4864	MON	Brickfield on Tyes Fm	BRICKWORKS
MWS5468	MON	Staplefield Pill Box	PILLBOX
MWS7155	MON	Anti Aircraft - The Kentish Gun Belt - Tyes Place	ANTI AIRCRAFT BATTERY
MWS7606	MON	Pillbox	PILLBOX
MWS7968	MON	Site of a Tanyard, Staplefield	TANNERY
MWS85	LND	Parkscape - Staplefield Place	PARK
MWS89	LND	Parkscape - Holmsted Place	PARK
MWS9324	MON	Site of Baldnour Farm Historic Farmstead, Cuckfield Rural	FARMSTEAD; L SHAPE PLAN
MWS9403	MON	Bigges Farm Historic Farmstead, Cuckfield Rural	FARMSTEAD; L SHAPE PLAN
MWS15103	MON	World War II Vertical Rail, Ansty and Staplefield	ANTI TANK VERTICAL RAIL

HER Ref	Record Type	Name	Monument Type
MWS10512	MON	Site of Field Barn Historic Outfarm to the West of Holmsted Manor, Cuckfield Rural	OUTFARM
MWS14888	MON	Former Field Boundary, Kiln Mead, Ansty and Staplefield	FIELD BOUNDARY; GULLY
MWS14889	MON	Field Boundary, Kiln Mead and Coneyburrow, Ansty and Staplefield	HEDGE; RABBIT WARREN?; FIELD BOUNDARY; DITCH; HEDGE

Source: West Sussex County Council Historic Environment Record

Table C.4: Remaining non-designated heritage events within the 1km study area

HER Ref	Record Type	Name	Monument Type
EWS1358	EVT	Hammer Hill Bridge, Staplefield - Watching Brief	ASE Report No: 2011050
EWS1646	EVP	Nymans, Handcross - Archaeological and Historic Landscape Survey	Project No: 3006

Source: West Sussex County Council Historic Environment Record

D. Scheme Design