



STATERA
BALANCING THE GRID

East Claydon Battery Energy Storage System (BESS)

Environmental Statement

Archaeology

December 2023

1 INTRODUCTION

- 1.1.1 This chapter of the Environmental Statement (ES) assesses the potential effects of a battery storage facility with associated infrastructure, including access, drainage and landscaping (the 'Proposed Development') on land to the south of East Claydon National Grid substation in Buckinghamshire (the 'site'), on the historic environment (buried heritage assets/archaeology). This assessment has been researched and prepared by MOLA (Museum of London Archaeology). The chapter is supported by ES Volume 7: Appendix 7.1, which comprises an Archaeological Desk Based Assessment (DBA), Appendix 7.2 which comprises a Geophysical Survey and Appendix 7.3 a Written Scheme of Investigation.
- 1.1.2 The historic environment comprises archaeological remains, structures, monuments or heritage landscape within or immediately around the development site that are considered to be significant because of their evidential, historic, aesthetic or communal interest. The chapter contains a description of the heritage planning policy context and the methods used in the assessment. It describes the baseline historic environment currently existing at the site and in its immediate vicinity; provides a statement of significance of known or possible buried heritage assets; assesses the magnitude of change (impact) of the Proposed Development upon the significance of known or potential buried heritage assets and the resulting environmental effect; identifies the mitigation measures required to prevent, reduce or off-set any significant adverse environmental effects; and reports on residual effects (those that might remain after mitigation has been implemented).

2 LEGISLATION AND PLANNING POLICY CONTEXT

National policy and guidance

National Planning Policy Framework (DLUHC, 2023)

- 2.1.1 The National Planning Policy Framework (NPPF) is the primary planning policy document for use in decision taking and plan making in England, the NPPF was first published in 2012 and was most recently updated in September 2023¹. One of the core principles that underpins both plan-making and decision-taking within the framework is that heritage assets should be “conserved in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of existing and future generations” (para. 189). It recognises that heritage assets are an irreplaceable resource (para. 189) and requires the significance of heritage assets to be considered in the planning process, whether designated or not. The contribution of setting to asset significance needs to be taken into account (para. 130).
- 2.1.2 Local planning authorities are required to identify and assess the particular significance of any heritage asset that may be affected by a proposal (including by development affecting the setting of a heritage asset) taking account of the available evidence and any necessary expertise. They should take this assessment into account when considering the effect of a proposal on a heritage asset, to avoid or minimise conflict between the heritage asset's conservation and any aspect of the proposal (para. 195).
- 2.1.3 Local planning authorities should make information about the significance of the historic environment gathered as part of plan-making or development management publicly accessible. They should also 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 (para. 193).
- 2.1.4 Section 16 of the NPPF, Conserving and Enhancing the Historic Environment, is provided in full in the Archaeological Desk Based Assessment (Appendix 7.1, ES Volume 7).

Local Policy

Vale of Aylesbury Local Plan 2013-2033

- 2.1.5 The Vale of Aylesbury Local Plan 2013-2033 (VALP) was adopted in September 2021 and is currently used to inform planning within North Buckinghamshire.
- 2.1.6 Policies concerning heritage assets within the Local Plan are dealt with at Policy BE1. This states that proposals for development shall contribute to heritage values and local distinctiveness. Where a development proposal is likely to affect a designated heritage asset and/or its setting negatively, the significance of the heritage asset must be fully

¹ DCLG [Department of Communities and Local Government], March 2012 National Planning Policy Framework (Updated September 2023)

assessed and supported in the submission of an application. The impact of the proposal must be assessed in proportion to the significance of the heritage asset and supported in the submission of an application. Heritage statements and/or archaeological evaluations will be required for any proposals related to or impacting on a heritage asset and/or possible archaeological site.

- 2.1.7 Proposals which affect the significance of a non-designated heritage asset should be properly considered, weighing the direct and indirect impacts upon the asset and its setting. There will be a presumption in favour of retaining heritage assets wherever practical, including archaeological remains in situ, unless it can be demonstrated that the harm will be outweighed by the benefits of the development. Heritage statements and/or archaeological evaluations may be required to assess the significance of any heritage assets and the impact on these by the development proposal.

3 ASSESSMENT METHODOLOGY

3.1.1 This section of this ES Chapter sets out:

- The information sources that have been consulted throughout preparation of this chapter;
- Details of the consultation undertaken with respect to archaeology;
- The methodology behind the assessment of archaeological effects, including the criteria for the determination of sensitivity of receptor and magnitude of change from the existing of 'baseline' condition;
- How the identification and assessment of potential archaeological effects has been reached; and
- The significance criteria and terminology for assessment of the residual effects to archaeology.

3.2 Baseline Definition Methodology

3.2.1 Establishing the baseline conditions has entailed a desk-based study and a site visit. The full methodology and sources consulted are set out in ES Volume 7: Appendix 7.1: Archaeological Desk-Based Assessment. In summary, this comprised:

- The collection and assessment of information on known historic environment features within a 1km-radius study area surrounding the Site from the primary repositories of such information: the Buckinghamshire Historic Environment Record (BHER). The study area for archaeology extends 1km out from the Site boundary and was determined through professional judgement to appropriately characterise the historic environment of the Site, i.e. large enough to include sufficient information on surrounding past archaeological interventions, antiquarian finds and any nearby Scheduled Monuments that may give an indication of past human activity within the Site and inform the assessment of its archaeological potential;
- Consideration of the results of a previous archaeological investigation undertaken within the site, together with other relevant investigations within the study area; and
- Consultation of a broad range of relevant documentary and cartographic sources, including published histories and journals, British Geological Survey ('BGS') data, available geotechnical data and historic maps.

3.2.2 A site visit was made on 1st February 2023 in order to verify the topography of the Site, existing land use, and to provide further information on areas of possible past ground disturbance and general historic environment potential. The site visit also included visits to the designated heritage assets within the vicinity of the Site in order to determine intervisibility between these and the Site.

3.2.3 The study also takes into account the results of a geophysical survey carried out across the Site by MOLA in March and May of 2023, to establish the likely nature and location of buried heritage assets.

3.2.4 The National Planning Policy Framework (NPPF) defines a heritage asset as a building, monument, site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions, because of its heritage interest. Significance (i.e. 'sensitivity') lies in the value of a heritage asset to this and future generations because of its heritage interest, which may be archaeological, architectural, artistic or historic². The determination of the significance of archaeological assets is based on statutory designation

² Historic England. Conservation Principles, Policy and Guidance for the Sustainable Management of the Historic Environment. 2008

and/or professional judgement against four values set out in Historic England's Conservation Principles³:

- Evidential value: the potential of the physical remains to yield evidence of past human activity. This might take into account date; rarity; state of preservation; diversity/complexity; contribution to published priorities; supporting documentation; collective value and comparative potential;
- Aesthetic value: this derives from the ways in which people draw sensory and intellectual stimulation from the heritage asset, taking into account what other people have said or written;
- Historical value: the ways in which past people, events and aspects of life can be connected through heritage assets to the present, such a connection often being illustrative or associative; and
- Communal value: this derives from the meanings of a heritage asset for the people who know about it, or for whom it figures in their collective experience or memory. Communal values are closely bound up with historical, particularly associative, and aesthetic values, along with educational, social or economic values.

3.2.5 There is no single defining criterion that dictates the overall asset significance; each asset has to be evaluated using professional judgement against the range of criteria listed above on a case by case basis.

3.3 Evolution of Baseline

3.3.1 The evolution of the baseline is not relevant to the assessment of archaeology, as there would be no change expected to the below ground conditions on the Site prior to the commencement of the Proposed Development, or if the Proposed Development was not to occur, and hence any archaeological assets would remain as per the existing baseline condition.

3.3.2 In relation to the wider understanding of archaeology in the area, should new information come to light in the course of any archaeological works in the surrounding area, this may enhance the understanding of the baseline conditions at the Site.

3.4 Impact Assessment Methodology

Enabling and Construction

3.4.1 Impacts on archaeological remains occur during the enabling and construction works, specifically substructure works (otherwise known as groundworks) where ground disturbance takes place. The proposed enabling and construction works and an outline programme for these works are described in ES Volume 1, Chapter 2 The Project. Such impacts and their resulting effects are assessed below.

3.4.2 The impact assessment has been undertaken in accordance with the standards specified by the Chartered Institute for Archaeologists ('CIfA'). The methodology used to determine the significance (i.e. sensitivity) of buried heritage assets (i.e. archaeological remains), the severity of any impacts upon them and the resulting scale and significance of effects is based on that typically used in EIA. Following the characterisation of the baseline

³ Historic England. Conservation Principles for the Sustainable Management of the Historic Environment, Consultation Draft, 10th November 2017.

<https://content.historicengland.org.uk/content/docs/guidance/conservation-principles-consultationdraft>

conditions, the methodology used to characterise the potential effects on likely archaeological buried heritage assets on the site include:

- Prediction of the magnitude of likely impacts upon the known or potential significance of buried heritage assets;
- Consideration of any embedded mitigation measures that have been included with the Proposed Development, and any additional mitigation that might be required in the design and construction or operational lifetime of the Proposed Development to reduce or eliminate any significant adverse effects upon buried heritage assets; and
- Quantification of residual effects (those that might remain after mitigation).

3.4.3 The identification of physical impacts on buried heritage assets within the site considers any activity which would entail ground disturbance, for example site set up works, remediation, landscaping and the construction of new basements and foundations.

3.4.4 Embedded mitigation measures are proposed in relation to the enabling and construction impacts on archaeological remains. Tactile surface matting will be used along the route of the temporary haul road into the northern end of the site instead of soil stripping and laying of hardcore. Additional mitigation for the remainder of the Site will be secured through measures set out under a planning condition.

Completed Development

3.4.5 Direct effects upon any known or previously unknown archaeological remains which may be present on the site would cease with the completion of the groundworks stage of construction and landscaping and consequently no direct impacts are anticipated following completion of the Proposed Development since no further ground disturbance will occur. The assessment presented within this ES chapter therefore focuses on impacts and effects throughout the construction works phase.

Decommissioning

3.4.6 The Proposed Development is intended to function for a maximum of 40 years. Following this 40-year lifespan, the development will be dismantled and the land will be returned to its original state for agricultural purposes.

3.4.7 As noted above, any potential impacts and effects to buried archaeological remains will occur during the enabling and construction works. No further impacts are expected to occur on the archaeological remains at the Site, therefore there is no need to consider the decommissioning of the Proposed Development any further in respect of buried archaeological remains within this assessment.

Assumptions and Limitations

3.4.8 The assessment relies on available data, and best endeavours have been made to ensure that these are accurate and up to date. It is assumed that information on the BHER database is accurate. Whilst compiling the baseline, a process of review and validation of the BHER data has taken place (for example ensuring assets are correctly located, and undertaking further research, where appropriate, into BHER entries with little information).

3.4.9 The main limitation to the assessment is the nature of archaeological and palaeoenvironmental remains, i.e. buried and not visible, which means it can be difficult to predict definitively the presence, extent and significance of buried heritage assets, and consequently the impact upon them. Notwithstanding this limitation, the methodology is

considered robust, utilising reasonably available information, and conforms to the requirements of local and national guidance and planning policy.

- 3.4.10 This assessment considers the potential for direct impacts upon buried (below ground) archaeological remains within the site. An assessment of potential impacts and resulting effects upon the setting of surrounding built (above ground) heritage assets is provided separately within ES Volume 6: Built Heritage.

Methodology for Defining Effects

Receptors and Receptor Sensitivity

- 3.4.11 In line with the NPPF, for the purposes of this ES chapter, archaeological 'receptors' are referred to as 'buried heritage assets', and heritage 'significance' is used in place of 'sensitivity' (see Table 7-1). The use of heritage 'significance' and 'significance of (environmental) effect' are clearly differentiated throughout. All archaeological remains are highly sensitive to physical change because their heritage significance is derived from their physical form and location.
- 3.4.12 The archaeological desk-based heritage assessment (Appendix 7.1) describes the significance of designated and non-designated buried heritage assets as applied in this assessment.

Table 7-1 Significance Criteria

Buried Heritage Asset Significance	Buried Heritage Asset Description
Very High (International / National)	World Heritage Sites Scheduled monuments Grade I and II* listed buildings Historic England Grade I and II* registered parks and gardens Protected Wrecks Heritage assets of national importance.
High (National / Regional / County)	Historic England Grade II registered parks and gardens Conservation areas Designated historic battlefields Grade II listed buildings Burial grounds Protected heritage landscapes (e.g. ancient woodland or historic hedgerows) Heritage assets of regional or county importance.
Medium (District)	Heritage assets with a district value or interest for education or cultural appreciation Locally listed buildings.
Low (Local)	Heritage assets with a local (i.e. parish) value or interest for education or cultural appreciation.
Negligible	Historic environment resource with no significant value or interest.
Uncertain	Heritage assets that have a clear potential, but for which current knowledge is insufficient to allow significance to be determined.

Magnitude of Impact

- 3.4.13 Determination of magnitude of impact (i.e. change) upon the significance of known or potential heritage assets is based on the severity of the potential physical impact (e.g. any activity that would entail ground disturbance, from piling, ground reduction, etc.). and describes the criteria used in this assessment to determine the magnitude of impact (see Table 7-2).

Table 7-2 Magnitude of Impact Criteria

Asset Significance*	Buried Heritage Assets - Magnitude of Impact
High	Complete removal of asset. Change to asset significance resulting in a fundamental change in our ability to understand and appreciate the resource and its historical context, character and setting. The transformation of an asset's setting in a way that fundamentally compromises its ability to be understood or appreciated. The scale of change would be such that it could result in a designated asset being undesignated or having its level of designation lowered.
Medium	Change to asset significance resulting in a considerable change in our ability to understand and appreciate the asset and its historical context, character and setting. Notable alterations to the setting of an asset that affect our appreciation of it and its significance.
Low	Change to asset significance resulting in a small change in our ability to understand and appreciate the asset and its historical context, character and setting.

Negligible	Negligible change or no material change to asset significance. No real change in our ability to understand and appreciate the asset and its historical context, character and setting.
Uncertain	Level of survival/condition of resource in specific locations is not known: magnitude of change is therefore not known.
*It is noted that the criteria stated within this table, specifically in relation to 'uncertain' magnitude of impact levels, differs from general EIA methodology as set out within ES Volume 1: Chapter 4 EIA Methodology, however this divergence is considered to be standard practice with regard to assessing buried heritage	

Effect Nature

- 3.4.14 Adverse effects are those which cause harm to, or loss of, the significance of a heritage asset because of changes to its physical form or setting.
- 3.4.15 Beneficial effects are those which enhance a heritage asset's significance because of changes to its physical form or setting.
- 3.4.16 Buried heritage assets are finite and irreplaceable once lost. Effects arising from their removal are therefore usually adverse. An appropriate mitigation strategy would aim to eliminate, offset, or reduce to an acceptable level, any adverse effect.

Effect Scale

- 3.4.17 The scale of the potential effect is determined by comparing the significance value of the baseline buried heritage asset with the magnitude of impact (change) upon that asset as a result of the Proposed Development and are presented without mitigation. The matrix for determining the scale of this effect is presented in Table 7-3 below. Where information is insufficient to quantify the asset significance or magnitude of impact, the scale of the effect is given as 'uncertain'.

Table 7-3 Effect Scale

Magnitude of Impact	Buried Heritage Asset Significance					
	Very High	High	Medium	Low	Negligible	Uncertain
High	Major	Major	Major	Moderate	Minor	Uncertain
Medium	Major	Major	Moderate	Minor	Minor	Uncertain
Low	Moderate	Moderate	Minor	Minor	Negligible	Uncertain
Negligible	Minor	Minor/Negligible	Negligible	Negligible	Negligible	Uncertain
Uncertain	Uncertain	Uncertain	Uncertain	Uncertain	Uncertain	Uncertain

- 3.4.18 Table 7-4 describes the scale and nature of effects.

Table 7-4 Description of Effect

Scale and Nature of Effect	Description
Major Adverse	Substantial harm to, or loss of, significance of an asset of very high, high or medium heritage significance, as a result of changes to its physical form or setting.
Moderate Adverse	Less than substantial harm to the significance of an asset of very high, high or medium heritage significance, as a result of changes to its physical form or setting.
Minor Adverse	Limited harm to the significance of an asset of very high, high or medium heritage significance, as a result of changes to its physical form or setting, or substantial harm to, or the loss of, significance of an asset of low or very low heritage significance.
Negligible	No appreciable change to an asset's significance.

Uncertain	Significance of effect uncertain due to lack of information on buried heritage asset significance.
Minor Beneficial	Limited enhancement of an asset's significance as a result of changes to its physical form or setting.
Moderate Beneficial	Notable enhancement of an asset's significance as a result of changes to its physical form or setting.
Major Beneficial	Substantial enhancement of an asset's significance as a result of changes to its physical form or setting.

- 3.4.19 If any potential adverse effects are identified, an appropriate mitigation strategy would then be considered with the aim of reducing or offsetting the effect. Measures to offset adverse effects on archaeology would normally consist of design adjustments, to allow significant resources to be protected and retained (preservation in situ) or, where this is not necessary or feasible, investigation and recording before and during development, with dissemination and public engagement at an appropriate level to ensure the social benefit arising from the archaeological process is realised.
- 3.4.20 As heritage assets are an irreplaceable and finite resource, it is generally considered as standard practice within the planning system to implement measures to offset any level of adverse effect on a heritage asset, including minor adverse. This is to ensure that finite and irreplaceable remains are not removed/lost without record. The level of mitigation proposed is, in each case, proportionate to the significance of the asset being affected.
- 3.4.21 Based upon the information presented within ES Volume 7, Appendix 7.1, Archaeological Desk-Based Assessment, appropriate mitigation/offsetting measures are identified, and the resulting residual environmental effect is re-assessed as shown in Table 7-7.

Geographic Extent of Effect

- 3.4.22 The geographic extent of the effects is also identified. At a spatial level, 'site' or 'local' effects are those affecting the site and neighbouring assets – effects to archaeological assets are typically limited to the area of the physical impact, i.e. the site area. Depending on the significance of an archaeological asset identified on site, the effects upon archaeological resources could result in a wider geographic extent, i.e. at a 'district/borough' level or at a 'regional/county' level; whilst those which affect different parts of the country, or England, are considered being at a 'national' level.

Effect Duration

- 3.4.23 Although impacts on archaeological remains only occur during the demolition and construction works, the resulting effects are permanent and cannot be reversed after decommission.

Direct and Indirect

- 3.4.24 The below assessment also identifies whether the effect is 'direct' (i.e. resulting without any intervening factors) or 'indirect' or 'secondary' (i.e. not directly caused or resulting from something else).

Categorising Likely Significant Effects

- 3.4.25 Significant environmental effects are those that are categorised as either moderate or major in scale. Effects that are not 'significant' are minor or negligible in scale.
- 3.4.26 Where the effect is uncertain, further work may be needed to clarify the anticipated effect.

3.5 Current Baseline Conditions

Baseline Conditions

- 3.5.1 The Site does not contain any nationally designated (protected) heritage assets, such as scheduled ancient monuments, listed buildings, or registered parks and gardens.
- 3.5.2 Within Field 4 of the Site there are two Archaeological Notification Areas designated by the Buckinghamshire County Council, one related to a Roman road, the other a Roman pottery scatter.
- 3.5.3 Within the Site, and based on the evidence available to date, non-designated heritage assets (i.e. those which do not meet the criteria for national designation) comprise archaeological features recorded by the geophysical survey and others considered likely to be present based on the sources set out above.

Topography and Geology

- 3.5.4 Topography and geology can provide indications of suitability for settlement, potential depth of archaeological deposits, and implications for archaeological survival. The site comprises four arable and pasture fields and additional tracts of land which occupy low-lying terrain adjacent to the east side of Claydon Brook. The land is predominantly flat and level and lies at c.90-94 above Ordnance Datum (m AOD).
- 3.5.5 The geology beneath the site comprises Weymouth Member and West Walton Formation mudstone which is overlain by Beaconsfield Gravel. The overlying soils are slowly permeable, seasonally wet, slightly acid but base-rich loams and clays.

Past Archaeological Investigations

- 3.5.6 There have been no past intrusive archaeological investigations within the Site, although a magnetometer survey was undertaken at the site between March and May 2023 over ten fields (F1 to F10) which has provided information on the archaeological potential of the Site (see ES Volume 7: Appendix 7.1). Outside the Site, there has only been one other archaeological investigation, a geophysical survey and trial trench evaluation 440m to the north-east.

Archaeological and Historical Context

- 3.5.7 The prehistoric period covers the Palaeolithic (800,000 BC–10,000 BC), Mesolithic (10,000–4000 BC), Neolithic (4000–2000 BC), Bronze Age (2000–600 BC) and the Iron Age (600 BC–AD 43). Evidence of human activity dating to the Iron Age was found by the geophysical survey – a possible roundhouse and enclosure were identified in Field 10 and Field 2 respectively (see Appendix 7.1). Little evidence of the earlier periods has been recorded in the study area.
- 3.5.8 During the Roman period (AD 43–410), Akeman Street, the road linking Watling Street near St Albans to the Fosse Way at *Corninium Dubunnum* (now Cirencester). This road was situated c 9.5km south of the site. The conjectured line of a Roman road (Margary route 162) crosses the site. The road is visible as a cropmark on satellite imagery, aerial photographs and on LiDAR. The roadside ditches were also identified during the recent geophysical survey. The assumed course of the road forms an Archaeological Notification Area (ANA). Two pottery scatters have also been found within the site and form a separate archaeological notification area.

- 3.5.9 During the early medieval (Saxon) period (AD 410–1066) the site was likely open agricultural land. The village name of “Claydon” has Saxon origins, the prefix of “East” denoting it from three other nearby villages with the same name. Granborough and East Claydon are both recorded within the Domesday Survey of 1086. While East Claydon was subject to complex ownership arrangements, divided between several people both before and after the Norman Conquest, Granborough was a significantly smaller settlement and had remained part of St Albans Abbey.
- 3.5.10 The Site contains ridge and furrow throughout, as well as former field boundaries. Further areas of ridge and furrow survive in small patches over the landscape between Granborough and East Claydon. A shrunken medieval village lies c.550m to the east of the Site. A 16th-century watermill is believed to lie at the northern end of Field 10 within the site (see Appendix 7.1).
- 3.5.11 The agricultural nature of the site continues to be evidenced in the post-medieval period through drainage ditches c 600m north of the site, seen on aerial photographs. Otherwise there is no other archaeological evidence from this period within the site or study area.

Factors affecting archaeological survival

- 3.5.12 Extensive arable cultivation, which typically extends up to 0.3m, or 0.7m for deeper ploughing or drainage, will have removed earlier material culture, i.e. scattered finds, but for truncated cut features such as pits or ditches.

Archaeological Survival

- 3.5.13 The geophysical survey of the Site recorded evidence of prehistoric features, Roman and later medieval ploughing. Based on this, and the other data within the study area, the archaeological potential of the Site is considered to comprise:
- Prehistoric remains, primarily cut features relating to settlement and the agricultural use of the landscape;
 - Roman cut features and/or finds, and isolated Roman finds;
 - Later medieval remains associated with cultivation;
 - Post-medieval remains associated with cultivation.

3.6 Heritage Assets and Heritage Asset Significance

Existing

- 3.6.1 Table 7-5 lists the buried heritage assets that may be affected by the Proposed Development

Table 7-5 Likely Buried Heritage Assets

Heritage Asset	Heritage Asset Potential	Heritage Asset Significance
Prehistoric remains, primarily cut features relating to settlement and the agricultural use of the landscape	High	Medium or high, depending on nature, extent and condition
Roman cut features and/or finds	High	Medium or high, depending on nature, extent and condition
Later medieval remains associated with cultivation	High	Low

Post-medieval remains associated with cultivation	High	Low
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Introduced

- 3.6.2 No new/additional assets will be introduced on the site as part of the Proposed development.

3.7 Potential Effects

Enabling and Construction

- 3.7.1 The scale of the potential effect on archaeology prior to mitigation and the subsequent scale and significance of effects is determined by using the matrix in Table 7-3.
- 3.7.2 The Proposed Development comprises the following elements that are likely to have an impact upon the above discussed assets.
- Preliminary site works and obstruction removal;
 - New piled foundations; and
 - Landscaping and public realm works.
- 3.7.3 All impacts on archaeology would occur only during the demolition and construction phase, with the most intrusive works (i.e. basement construction and piling within the existing building footprint) likely to be those with the greatest potential for impact.

Preliminary site works including site strip

- 3.7.4 The initial Site soil strip, will truncate or remove entirely any archaeological remains within the extent and depth of the impact, such as agricultural remains:
- a medium or high magnitude of impact on remains of low significance (isolated prehistoric or Roman finds, later medieval or post-medieval agricultural remains, and structural airfield remains) resulting in a minor adverse effect (**not significant**).
 - a medium or high magnitude of impact on remains of medium significance (localised prehistoric or Roman cut features, and structural airfield remains) resulting in a moderate adverse effect (**significant**).
 - a medium or high magnitude of impact on remains of high significance (extensive prehistoric settlement remains) resulting in a major adverse effect (**significant**).

Ground Reduction

- 3.7.5 Any ground reduction will potentially truncate or remove entirely any archaeological remains to the level of reduction, such as post-medieval and later medieval agricultural remains and Roman and prehistoric features:
- a medium or high magnitude of impact on remains of low significance (isolated prehistoric or Roman finds, later medieval or post-medieval agricultural remains, and structural airfield remains) resulting in a minor adverse effect (**not significant**).
 - a medium or high magnitude of impact on remains of medium significance (localised prehistoric or Roman cut features, and structural airfield remains) resulting in a moderate adverse effect (**significant**).

- a medium or high magnitude of impact on remains of high significance (extensive prehistoric settlement remains) resulting in a major adverse effect (**significant**).

New Services

3.7.6 The excavation for laying new services will potentially truncate or remove entirely any archaeological remains within its footprint, such as post-medieval buildings, post-medieval and later medieval agricultural remains and Roman and prehistoric features:

- a medium or high magnitude of impact on remains of low significance (isolated prehistoric or Roman finds, later medieval or post-medieval agricultural remains, and structural airfield remains) resulting in a minor adverse effect (**not significant**).
- a medium or high magnitude of impact on remains of medium significance (localised prehistoric or Roman cut features, and structural airfield remains) resulting in a moderate adverse effect (**significant**).
- a medium or high magnitude of impact on remains of high significance (extensive prehistoric settlement remains) resulting in a major adverse effect (**significant**).

3.7.7 The effect is summarised in Table 7-6 below.

Table 7-6 Effect prior to mitigation

Asset	Significance	Geographical Extent	Magnitude of impact	Direct or Indirect; Duration	Scale of effect significance
Prehistoric remains, primarily cut features relating to settlement and the agricultural use of the landscape	High, depending on nature, extent and condition	Regional	Major	Direct; Long-term	Significant
Prehistoric remains, primarily cut features relating to settlement and the agricultural use of the landscape	Medium, depending on nature, extent and condition	Regional	Moderate	Direct; Long-term	Not significant
Roman cut features and/or finds	High, depending on nature, extent and condition	Regional	Major	Direct; Long-term	Significant
Roman cut features and/or finds	Medium, depending on nature, extent and condition	Regional	Moderate	Direct; Long-term	Not significant
Later medieval remains associated with cultivation	Low	Local	Minor	Direct; Long-term	Not significant
Post-medieval remains associated with cultivation	Low	Local	Minor	Direct; Long-term	Not significant

- 3.7.8 Those effects identified as moderate adverse are considered **significant** while those identified as minor adverse are considered **not significant**. The above effects would be permanent as direct impacts on the archaeological record cannot be reversed. All effects would be the result of the removal or disturbance of archaeological remains during construction groundworks, in levelling the site, the construction of hard standing (if necessary), the construction of the eastern access road and installation of below-ground services.

Decommissioning

- 3.7.9 Decommissioning has no further impact and so has been scoped out of this assessment.

3.8 Mitigation, Monitoring and Residual Effects

Embedded Mitigation

- 3.8.1 Embedded mitigation measures are intended to eliminate or reduce impacts on built heritage assets or to preserve buried archaeological remains *in situ*, i.e. design modifications, have been incorporated within the Proposed Development.
- 3.8.2 It is currently proposed that a tactile surface matting will be used to create the temporary haul road between the northern end of the site to avoid the need to construct a more permanent road, removing the impact to archaeology from impacts caused by roadworks.

Enabling and Construction

- 3.8.3 Since archaeological remains are a finite resource, all potential effects will require mitigation. It is considered that the significance of the archaeological resource is predominantly low although remains connected to the Roman Road, Roman pottery scatters or those within the northern easement are of medium significance. The adverse effects can be reduced (e.g. from Minor Adverse or Negligible) by being offset against measures to investigate and record the remains through archaeological mitigation before they are lost.

Completed Development

- 3.8.4 Any potential impacts and effects on buried heritage assets will occur as a result of ground disturbance during the enabling and construction works. No impacts or effects will occur on buried heritage assets on completion of the Proposed Development since no further ground disturbance will occur.
- 3.8.5 There is therefore no need to further consider the completed Proposed Development in respect of buried heritage assets within this ES Chapter.

3.9 Residual Effects

- 3.9.1 All of the residual effects resulting from the Proposed Development are presented in Table 7-7, identify whether the effect is significant or not.

Table 7-7 Residual Effect

Buried Heritage Asset	Description of Residual Effect	Scale and Effect	Significance	Geo	Direct /Indirect	P ⁴ / T	Duration
Enabling and Construction							
Prehistoric remains, primarily cut features relating to settlement and the agricultural use of the landscape (high significance)	Demolition and Construction Removal or truncation by preliminary site works and obstruction removal. Effect offset through recording and sampling, and dissemination of the results	Moderate adverse	Significant	Regional	Direct	P	Long-term
Prehistoric remains, primarily cut features relating to settlement and the agricultural use of the landscape (medium significance)	Demolition and Construction Removal or truncation by preliminary site works and obstruction removal. Effect offset through recording and sampling, and dissemination of the results	Minor adverse	Not significant	Regional	Direct	P	Long-term
Roman cut features and/or finds (high significance)	Demolition and Construction Removal or truncation by preliminary site works and obstruction removal. Effect offset through	Moderate adverse	Significant	Regional	Direct	P	Long-term

⁴ Buried heritage assets are a finite resource and cannot be replaced. Therefore, once they are removed, the impact upon them is permanent. Following the decommissioning of the development, the archaeological remains cannot be reinstated. No impacts on buried heritage are considered temporary.

	recording and sampling, and dissemination of the results						
Roman cut features and/or finds (medium significance)	Demolition and Construction Removal or truncation by preliminary site works and obstruction removal. Effect offset through recording and sampling, and dissemination of the results	Minor adverse	Not significant	Regional	Direct	P	Long-term
Later medieval remains associated with cultivation	Demolition and Construction Removal or truncation by preliminary site works and obstruction removal. Effect offset through recording and sampling, and dissemination of the results	Negligible adverse	Not significant	Local	Direct	P	Long-term
Post-medieval remains associated with cultivation	Demolition and Construction Removal or truncation by preliminary site works and obstruction removal. Effect offset through recording and sampling, and dissemination of the results	Negligible adverse	Not significant	Local	Direct	P	Long-term

3.10 Cumulatives

- 3.10.1 Cumulative effects of individual effects may occur when a single receptor is affected by more than one impact at any point in time. The receptors identified in this assessment are likely to be present in some form as shared assets across the whole countryside, though there will not be any shared discreet assets ie. there will not be the same feature across all sites. This assessment considers the effect of other Schemes affecting the same receptors (buried heritage assets) as the Proposed Development. Table 7-8 below identifies other schemes located within the study area. Since this scheme is subject to an appropriate programme of mitigation (reviewed and agreed by the local planning authority and its archaeological advisors), it is considered that with the implementation of a successful programme of mitigation at the site, there would be an insignificant cumulative effect with regard to buried heritage assets. From a wider perspective, however, any development project that has an impact on archaeology contributes to the cumulative erosion of this resource.

Table 7-8 Cumulative Schemes

Planning Reference	Scheme	Resource potentially shared with Development	Cumulative Effect
21/02455/app	Tuckey solar farm	No specific shared resource other than a general potential for Roman, medieval, post-medieval remains	No specific cumulative impact identified
14/03617/app	Planned expansion of substation	No specific shared resource other than a general potential for Roman, medieval, post-medieval remains	No specific cumulative impact identified
23/01939/SO	Wings solar farm	No specific shared resource other than a general potential for Roman, medieval, post-medieval remains	No specific cumulative impact identified

- 3.10.1 Following EIA Scoping, additional solar developments have come forward (Rosefield and Wings solar farms), these projects are at an early stage in the planning process and details are indicative at present. There is no detailed information on these two projects yet available to undertake cumulative assessment.

3.11 Climate Change

- 3.11.1 None of the buried heritage assets predicted to be present in the site are reliant on current climate or hydrology conditions for their survival, and therefore the impacts of the Proposed Development and resulting effects are very unlikely to change under future climate conditions. No climate change resilience measures are required for archaeology.
- 3.11.2 Any direct effects of the Proposed Development upon buried archaeological remains within the site would occur within the demolition and construction phases of the Proposed Development which would be completed prior to any longer-term climate change effects.

3.12 Conclusion

- 3.12.1 The site forms a group of nine fields lying between the villages of East Claydon and Granborough, on the east side of the Claydon Brook in the County of Buckinghamshire. Throughout the site's history it has been undeveloped land in agricultural use lying some distance from any areas of settlement.
- 3.12.2 There are two Archaeological Notification Areas within the south-western part of the Site which are the postulated route of a Roman road and pottery scatters.
- 3.12.3 The geophysical survey identified remains of probable Iron Age and Roman date within the northern area of easement and along the western boundary of the northern field, which includes a possible pit alignment. An enclosure of possible prehistoric date was also identified at the western end of the proposed access route.
- 3.12.4 This assessment has identified the potential for remains dating to prehistoric, Roman, medieval and post-medieval periods. The significance of those remains dated to the prehistoric and Roman periods is medium or high, depending on their nature, extent and condition. The significance of remains dating to the medieval and post-medieval periods is low.
- 3.12.5 The proposed development will have a moderate adverse effect upon the significant prehistoric remains and associated cut features relating to settlement and the agricultural management of the landscape. The proposals will also have a moderate adverse effect upon the significant Roman remains, cut features and finds of the period.
- 3.12.6 The proposals will have a minor adverse effect on those remains of medium significance, including prehistoric remains and cut features relating to settlement and agricultural use of the landscape, and Roman cut features and finds.
- 3.12.7 The proposals will have a negligible adverse effect on later medieval and post-medieval cultivation remains.
- 3.12.8 Although the effects on the buried heritage may be offset through a programme of recording, sampling and dissemination of the results, no mitigation will reduce those effects.

GLOSSARY

Term	Definition
Archaeological Priority Area/Zone:	Areas of archaeological priority, significance, potential or other title, often designated by the local authority.
Built Heritage	Upstanding structure of historic interest.
Cut Feature	Archaeological feature such as a pit, ditch or well, which has been cut into the then-existing ground surface.
Geotechnical	Ground investigation, typically in the form of boreholes and/or trial/test pits, carried out for engineering purposes to determine the nature of the subsurface deposits.
Heritage asset	A building, monument, site, place, area or landscape positively identified as having a degree of significance meriting consideration in planning decisions. Heritage assets are the valued components of the historic environment. They include designated heritage assets and assets identified by the local planning authority (including local listing).
Historic Environment Assessment	A written document whose purpose is to determine, as far as is reasonably possible from existing records, the nature of the historic environment resource/heritage assets within a specified area.
Historic Environment Record	Archaeological and built heritage database held and maintained by the County authority. Previously known as the Sites and Monuments Record
Listed Building	A structure of architectural and/or historical interest. These are included on the Secretary of State's list, which affords statutory protection. These are subdivided into Grades I, II* and II (in descending importance).
Made Ground	Artificial deposit. An archaeologist would differentiate between modern made ground, containing identifiably modern inclusion such as concrete (but not brick or tile), and undated made ground, which may potentially contain deposits of archaeological interest.
Mesolithic	12,000–4,000 BC
Neolithic	4,000–2,000 BC
Ordnance Datum (OD)	A vertical datum used by Ordnance Survey as the basis for deriving altitudes on maps.
Palaeolithic	700,000–12,000 BC
Post-medieval	AD 1500–present
Preservation by record	Archaeological mitigation strategy where archaeological remains are fully excavated and recorded archaeologically and the results published. For remains of lesser significance, preservation by record might comprise an archaeological watching brief.

Term	Definition
Preservation in situ	Archaeological mitigation strategy where nationally important (whether Scheduled or not) archaeological remains are preserved in situ for future generations, typically through modifications to design proposals to avoid damage or destruction of such remains.
Residual	When used to describe archaeological artefacts, this means not in situ, i.e. Found outside the context in which it was originally deposited.
Roman	AD43–410
Scheduled Monument	An ancient monument or archaeological deposits designated by the Secretary of State as a 'Scheduled Ancient Monument' and protected under the Ancient Monuments Act.
Site	The area of proposed development
Study Area	Defined area surrounding a site in which archaeological data is collected and analysed in order to set a site into its archaeological and historical context.
Truncate	Partially or wholly remove. In archaeological terms remains may have been truncated by previous construction activity.
Watching brief (archaeological)	A formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons.