

# Rosefield Solar Farm

## Preliminary Environmental Information Report

Volume 1  
Chapter 9: Cultural Heritage

September 2024



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## 9. Cultural Heritage

### 9.1. Introduction

9.1.1. This chapter presents a preliminary assessment of the likely significant effects arising from the construction, operation (including maintenance) and decommissioning of Rosefield Solar Farm upon cultural heritage and should be read in conjunction with the following appendices in **Volume 3**:

- **Appendix 9.1 – Archaeological Desk-based Assessment;**
- **Appendix 9.2 – Interim Geophysical Survey Interpretation;** and
- **Appendix 9.3 – Stage 1 Setting Assessment.**

### 9.2. Stakeholder engagement

9.2.1. **Table 9.1** provides a summary of the engagement undertaken to date to inform this preliminary assessment.

**Table 9.1 – Engagement undertaken to date**

Stakeholder	Date and method	Key matters discussed
Buckinghamshire Council Historic Environment Record Officer	9 May 2023 - Email	1 km Study area agreed for non-designated assets.
National Trust	30 January 2024 – Teams meeting	Discussion of settings impacts for Claydon House and the Registered Park and Garden.  5 km Study area agreed for designated assets.
Historic England	5 May 2024 – Teams meeting	Discussion of settings impacts of designated assets in the Study area.
National Trust and Historic England	23 March 2024 – Site meeting	Consultation undertaken on Site. Discussion of settings impacts for Knowl Hill, Ridgeline in Parcel 2 and Claydon House.
Buckinghamshire Council Archaeological Advisor	6 March 2024 - Teams call and Email	Discussion of need for geophysics and scope of trenching.

Stakeholder	Date and method	Key matters discussed
Buckinghamshire Council Archaeological Advisor	26 June 2024 – Teams call and Email	<p>The emerging geophysical survey results were discussed along with areas of ecological mitigation/enhancement that might disturb archaeology.</p> <p>The approach to trial trenching was discussed. Buckinghamshire Council happy with a bespoke approach rather than a specific percentage. The Applicant will consider trenching in areas where ponds/scrapes or large areas of tree planting (i.e. more than hedgerow enhancement) are proposed. Buckinghamshire Council agreed that a phased programme would be appropriate.</p> <p>Buckinghamshire Council agreed that areas that will have no development can be “de-scoped” from the trenching.</p>

### 9.3. Legislative framework, planning policy and guidance

9.3.1. The preliminary assessment has been undertaken with regard to the following legislation, planning policy and guidance.

#### Legislation

- Ancient Monuments and Archaeological Areas Act 1979<sup>1</sup>;
- Planning (Listed Buildings and Conservation Areas) Act 1990<sup>2</sup>;
- Treasure Act 1996 (as amended)<sup>3</sup>;
- Burial Act 1857<sup>4</sup>;

<sup>1</sup> Ancient Monuments and Archaeological Areas Act 1979. Available online: <https://www.legislation.gov.uk/ukpga/1979/46>

<sup>2</sup> Planning (Listed Buildings and Conservation Areas Act 1990). Available online: <https://www.legislation.gov.uk/ukpga/1990/9/contents>

<sup>3</sup> Treasure Act 1996 (as amended). Available online: <https://www.legislation.gov.uk/ukpga/1996/24/contents>

<sup>4</sup> Burial Act 1857. Available online: <https://www.legislation.gov.uk/ukpga/Vict/20-21/81/contents>

- Protection of Military Remains Act 1986<sup>5</sup>;
- The Hedgerows Regulations 1997<sup>6</sup>;
- Historic Buildings and Ancient Monuments Act 1953<sup>7</sup>; and
- National Heritage Act 1980 (as amended)<sup>8</sup>.

### National planning policy

- Overarching National Policy Statement for Energy (NPS EN-1) (2023)<sup>9</sup>: Section 5.9. This section of the document outlines the key considerations and general method for assessment of any likely significant impacts on the historic environment.
- National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) (2023)<sup>10</sup>: Paragraphs 2.3.6, 2.3.8 and 2.10.107 - 119. These paragraphs discuss the requirement for applicants to consider impacts to nationally recognised designations (such as World Heritage Sites and Registered Parks and Gardens) and the historic environment as a whole during the selection and design of a solar PV site, in addition to specific guidance on how these impacts can be identified, assessed and mitigated against.
- National Policy Statement for Electricity Networks Infrastructure (NPS EN-5) (2023)<sup>11</sup>: Paragraphs 2.2.10, 2.9.19 and 2.9.25. These paragraphs confirm the applicant's responsibility to abide by Schedule 9 of the Electricity Act 1989 (which highlights the desirability of preserving

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<sup>5</sup> Protection of Military Remains Act 1986. Available online:

<https://www.legislation.gov.uk/ukpga/1986/35/contents>

<sup>6</sup> The Hedgerows Regulations 1997. Available online:

<https://www.legislation.gov.uk/uksi/1997/1160/contents/made>

<sup>7</sup> Historic Buildings and Ancient Monuments Act 1953. Available online:

<https://www.legislation.gov.uk/ukpga/Eliz2/1-2/49/contents>

<sup>8</sup> National Heritage Act 1980 (as amended). Available online:

<https://www.legislation.gov.uk/ukpga/1980/17/contents>

<sup>9</sup> Department for Energy Security and Net Zero (2023). Overarching National Policy Statement for Energy (EN-1). Available online:

<https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1>

<sup>10</sup> Department for Energy Security and Net Zero (2023). National Policy Statement for Renewable Energy Infrastructure (EN-3). Available online:

<https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3>

<sup>11</sup> Department for Energy Security and Net Zero (2023). National Policy Statement for Electricity Networks Infrastructure (EN-5). Available online:

<https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5>

features of archaeological or historic interest), and discuss the requirement for applicants, when siting substations, to seek to avoid their siting within internationally and nationally designated areas of the highest amenity, cultural or scientific value (such as World Heritage Sites, Scheduled Monuments, Registered Battlefields and Listed Buildings) and to protect (as far as reasonably practicable) important landscape features such as historic hedgerows. They also outline the requirement for the Secretary of State to grant the installation of underground cabling over overhead transmission lines if the benefits of doing so clearly outweigh the harm to designated and non-designated heritage assets and their settings.

- National Planning Policy Framework (NPPF) (2023)<sup>12</sup>: Section 16 ‘Conserving and enhancing the historic environment’. This section confirms that the historic environment, including archaeological remains, constitutes a material consideration in planning decisions, requiring applicants to describe the significance of heritage assets potentially affected by a development, including any contribution made by their setting, as well as assess impacts on them by a development. NPPF empowers planning authorities to request evaluation fieldwork to inform determination of applications.

### Local planning policy

- Vale of Aylesbury Local Plan (VALP) 2013 – 2033 Adopted Plan (2021) – specifically Policy BE1<sup>13</sup>: This policy includes the desirability for proposed developments to use heritage assets to reinforce local distinctiveness, create a sense of place, and assist in the delivery of the economic well-being of the area, and for the significance, views, setting, character, appearance and context of heritage assets, both designated and non-designated, to be conserved. It also confirms the Council’s stance that *“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*

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<sup>12</sup> Ministry of Housing, Communities and Local Government and Department for Levelling Up, Housing and Communities (2023). National Planning Policy Framework. Available online: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

<sup>13</sup> Vale of Aylesbury Local Plan (VALP) 2013 – 2033 Adopted Plan (2021). Available online: [https://buckinghamshire-gov-uk.s3.amazonaws.com/documents/Aylesbury\\_local\\_plan\\_L46JWaT.pdf](https://buckinghamshire-gov-uk.s3.amazonaws.com/documents/Aylesbury_local_plan_L46JWaT.pdf)

*to assess the significance of any heritage assets and the impact on these by the development proposal."*

## Guidance

- Chartered Institute for Archaeologists' Code of Conduct: professional ethics in archaeology<sup>14</sup>;
- Chartered Institute for Archaeologists' Standard and guidance for historic environment desk-based assessment<sup>15</sup>;
- The Setting of Heritage Assets (Historic England Good Practice Advice in Planning GPA3)<sup>16</sup>;
- Statements of Heritage Significance: Analysing Significance in Heritage Assets (Historic England Advice Note 12)<sup>17</sup>;
- Managing Significance in Decision-Taking in the Historic Environment (Historic England Good Practice Advice in Planning GPA2)<sup>18</sup>; and
- IEMA, Institute of Historic Building Conservation and Chartered Institute for Archaeologists (2021), Principles of Cultural Heritage Impact Assessment in the UK<sup>19</sup>.

## 9.4. Study area

- 9.4.1. Following consultation with Buckinghamshire Council (refer to **Table 9.1**), a 1 km Study area surrounding the Site boundary has been used for consideration of non-designated heritage assets.

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<sup>14</sup> CifA. Code of Conduct. Available online:

<https://www.archaeologists.net/sites/default/files/Code%20of%20conduct%20revOct2022.pdf>

<sup>15</sup> CifA. Standards and Guidance for Historic Environment Desk-Based Assessment. Available online:

[https://www.archaeologists.net/sites/default/files/CifAS%26GDBA\\_4.pdf](https://www.archaeologists.net/sites/default/files/CifAS%26GDBA_4.pdf)

<sup>16</sup> Historic England GPA3. Available online: <https://historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/heag180-gpa3-setting-heritage-assets/>

<sup>17</sup> Historic England GPA12. Available online: <https://historicengland.org.uk/images-books/publications/statements-heritage-significance-advice-note-12/heag279-statements-heritage-significance/>

<sup>18</sup> Historic England GPA2. Available online: <https://historicengland.org.uk/images-books/publications/gpa2-managing-significance-in-decision-taking/gpa2/>

<sup>19</sup> IEMA Principles of Cultural Heritage Impact Assessment in the UK. Available online:

[https://www.archaeologists.net/sites/default/files/j30361\\_iema\\_principlesofchia\\_v8.pdf](https://www.archaeologists.net/sites/default/files/j30361_iema_principlesofchia_v8.pdf)

9.4.2. Following consultation with the National Trust and Historic England (refer to **Table 9.1**), a Study area of up to 5 km surrounding the Site boundary, informed by the Zone of Theoretical Visibility (ZTV) model, has been used for consideration of potential significant effects on designated heritage assets.

## 9.5. Establishing baseline conditions

9.5.1. The following data sources have been used to understand the existing cultural heritage conditions:

- Information on designated heritage assets from the National Heritage List for England;
- Data on non-designated heritage assets, previous archaeological investigations and historic landscape characterisation from the Buckinghamshire Historic Environment Record (HER);
- Historic Ordnance Survey mapping;
- Maps and other relevant primary and secondary sources held in Buckinghamshire archives;
- Portable Antiquities Scheme (PAS) data;
- LiDAR data;
- Aerial photographs held by Historic England Archives, Buckinghamshire HER; and
- Cambridge University Collection of Aerial Photography.

9.5.2. The following surveys have been undertaken to inform the existing cultural heritage conditions:

- Archaeological desk-based assessment, supplemented by a field visit on 10 October 2023 (**Appendix 9.1** in **Volume 3**);
- Geophysical survey (ongoing) (**Appendix 9.2** in **Volume 3**); and
- Initial setting visits to heritage assets on 10 October 2023. The Site was revisited on 26 March 2024 with Historic England and National Trust to further discuss the setting of designated heritage assets associated with Claydon House (refer to **Table 9.1**).

## 9.6. Environmental baseline

9.6.1. Overall, there are 198 recorded non-designated heritage assets within the Site boundary and 937 recorded non-designated heritage assets beyond the Site boundary but within the 1 km Study area. There are no designated heritage assets recorded within the Site boundary; however, 542 designated heritage assets are recorded beyond the Site boundary but



within the 5 km Study area. The setting of these assets has been discussed in **Appendix 9.3** in **Volume 3**.

- 9.6.2. Of those non-designated heritage assets within the Site boundary, two date to the Iron Age, seven to the Romano-British period, twelve date to the medieval period, 176 date to the post-medieval period and one dates to the modern period.
- 9.6.3. The baseline desk-based assessment (**Appendix 9.1** in **Volume 3**) has determined the following archaeological potential within the Site; where the potential varies across the Site, this is noted:
- Early Prehistoric – negligible to low (at depth throughout the Site);
  - Iron Age – high (Parcel 3);
  - Roman – medium (Parcel 3);
  - Early Medieval to Medieval – low to medium (Parcels 2 and 3);
  - Post-Medieval – high (Parcel 1a); and
  - Modern – low (Parcels 1, 2 and 3).
- 9.6.4. It has been determined that there is high potential for previously unknown remains of an Iron Age date to survive within Parcel 3. This potential is considered to be low across the rest of the Site.
- 9.6.5. Currently unknown heritage assets within the Site boundary are most likely to take the form of prehistoric or Romano-British cut features and findspots; historic small-scale industrial, occupation or agricultural remains; or paleoenvironmental remains of prehistoric or historic date.
- 9.6.6. Within the Site boundary are 12 hedgerows which form the boundaries of non-designated heritage assets, and 29 field boundaries. These field boundaries and hedgerows are protected in accordance with Criteria 1, 2, 3 and 5 of the Hedgerows Regulations 1997<sup>20</sup>.
- 9.6.7. The Grade II Registered Park and Garden of Claydon (National Heritage List for England (NHLE) reference 1000597) lies c. 70 m from the north-east of the Site boundary at its closest point. Grade II listed building Claydon House (NHLE reference 1288461) sits centrally within the park, c. 580 m to the north of the Site boundary. The park was landscaped by James Sanderson between 1763 and 1776 for the Verney family. Claydon derives its significance from its historic and artistic interest as an 18<sup>th</sup> century landscaped park. The Registered Park and Garden also derives

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<sup>20</sup> Hedgerows Regulations 1997. Available online: [The Hedgerows Regulations 1997 \(legislation.gov.uk\)](https://www.legislation.gov.uk)

significance from its wider agricultural surroundings as well as the woodlands to the south.

- 9.6.8. The significant views out from the Registered Park and Garden of Claydon are to the west from the terrace of the main house and to the south from the southern lawn, which are the main designed views from the house. The agricultural setting of the Registered Park and Garden can also be appreciated to the north, east and west of the registered area in other views.
- 9.6.9. There is an additional view looking south-east along an access route into the Registered Park and Garden of Claydon lined by trees on either side. This tree line previously extended into the Site boundary during the post-medieval period. The heritage significance of this view is still being investigated and a significant effect is possible; this will be addressed further in the ES.

### Future baseline

- 9.6.10. In the absence of Rosefield Solar Farm, the future baseline for cultural heritage and archaeology could change in the following ways:
- New heritage assets may be designated and/or currently designated heritage assets may be removed from statutory lists/registers;
  - New heritage assets may be identified;
  - Upstanding remains pertaining to built heritage and archaeological heritage assets may be degraded by the impacts of weather and the growth or proliferation of vegetation; and
  - Below-ground archaeological remains may be disturbed or truncated by agricultural activities such as ploughing or the establishment of new tree plantations, or may be negatively impacted by changes in soil moisture levels, particularly if flooding occurs within the Study area.
- 9.6.11. Changes to the designated status of assets within the Study areas will be monitored and the baseline data from the Buckinghamshire HER will be refreshed during the EIA process to ensure that the ES is based on up-to-date information.
- 9.6.12. Changes to the integrity of heritage assets as a result of weather, vegetation growth, and agricultural practices would be relatively slow to become apparent and unlikely to alter the heritage significance of heritage assets between submission of the DCO application and construction commencing.

### 9.7. Mitigation embedded into the design

- 9.7.1. This preliminary assessment has been based on the principle that measures have been 'embedded' into the design of Rosefield Solar Farm

to remove potential likely significant effects as far as practicable, for example by the considered placement of infrastructure. Embedded (primary) environmental mitigation measures that are considered to be an inherent part of Rosefield Solar Farm are detailed within **Chapter 5: Approach to the EIA**. The embedded mitigation measures relevant to cultural heritage and the benefits these provide are outlined in **Table 9.2** below.

**Table 9.2 – Embedded mitigation measures relevant to cultural heritage**

Embedded mitigation measures relevant to cultural heritage	Benefit
No Solar PV development will occur within the centre/north of the Site (between Parcels 1, 1a and 2).	Avoid or reduce potential impacts to the settings of designated assets within Middle Claydon and Botolph Claydon Conservation Areas.
Removal of Knowl Hill (Field B17) and half of Field B9 from Solar PV development.	Avoid or reduce potential impacts to the settings of designated asset Claydon House (1288461) and Registered Park and Garden Claydon Park (1000597)
Removal of fields in the southern part of Parcel 2 (Fields D27 and D30 to D37) from Solar PV development.	Avoid or reduce potential impacts to the settings of designated assets Dry Leys Farmhouse (1319271) and Finemerehill House (1117815).
Removal of fields south-west of Botolph Claydon (Fields D1, D2, D3 North and D5) from Solar PV development.	Avoid or reduce potential impacts to the settings of designated assets within Botolph Claydon Conservation Area.
Removal of fields in Parcel 1a (Fields C1, C2 and C3) from Solar PV development.	Avoid or reduce potential impacts to the setting of designated asset Finemerehill House (1117815)
Preservation of historic hedgerows within the Site.	All historic hedgerows will be retained intact, therefore ensuring no loss of such assets.
Landscape screening where appropriate, as shown in <b>Figure 3.4: Landscape and Ecological Mitigation and Enhancements Plan</b> in <b>Volume 2</b> .	Avoid or reduce potential impacts to the settings of designated assets in the surrounding area.

## 9.8. Optionality

- 9.8.1. **Chapter 5: Approach to the EIA** sets out those elements of Rosefield Solar Farm for which optionality is present within the current design and sets out the scenarios assessed for the purpose of this PEIR.
- 9.8.2. The preliminary design principles as outlined in **Chapter 5: Approach to the EIA** and preliminary parameter plans (**Figures 3.1 to 3.5 in Volume 2**) set out the reasonable ‘worst case scenario’ that has been assessed within this chapter. The ‘worst case scenario’ options in relation to this preliminary cultural heritage assessment are described in **Table 9.3** below.

Table 9.3 – Optionality scenarios assessed

Project element	Scenario assessed for this preliminary assessment
Satellite Collector Compounds	This preliminary assessment has considered the siting of the Satellite Collector Compound in Parcel 1 within either Field B10 or Field B23, as it is considered likely that there will be no significant difference in effects relating to cultural heritage with either scenario, as either location could contain currently unknown remains.  For the same reason, all three field options (Fields D8, D9 and D17) are considered for the location of the Satellite Collector Compound in Parcel 2.
Main Collector Compound	The four fields that are being considered for the Main Collector Compound have all been taken into consideration within this preliminary assessment, as it is considered likely that there will be no significant difference in effects relating to cultural heritage with any scenario.
BESS	This preliminary assessment considers both Scenario 1 and Scenario 2 for the location of the BESS, as it is considered likely that there will be no significant difference in effects relating to cultural heritage with either scenario.
Rosefield Substation	This preliminary assessment considers both Scenario 1 and Scenario 2 with respect to the Rosefield Substation location, as it is considered likely that there will be no significant difference in effects relating to cultural heritage with either scenario.
Cable route to connect the Solar PV Modules, BoSS, Collector	For the purposes of this preliminary assessment, both of the cable route options have been considered, as it is considered likely that there will be no significant

Project element	Scenario assessed for this preliminary assessment
Compounds, Rosefield Substation and BESS	difference in effects relating to cultural heritage with either scenario.
BoSS	This preliminary assessment assumes the BoSS to be located independently outdoors and central inverters would be used as this will require groundworks over a larger area than containerised ITS and therefore represents a realistic ‘worst case’ for impacts on below ground archaeological remains.
Construction Compounds	For the purposes of this preliminary assessment, all suitable locations proposed for the Main and Satellite Construction Compounds have been considered, as it is considered likely that there will be no significant difference in effects relating to cultural heritage.

### Preliminary assessment assumptions

- 9.8.3. For the purposes of this preliminary assessment, it has been assumed that Solar PV modules will be supported on piled foundations and that all cables will be buried in excavated trenches. This represents a worst case for potential archaeological impacts during construction.
- 9.8.4. The maximum parameter heights have been used to produce the ZTV which the setting assessment has relied upon. The ZTV has also used a “bare earth” model that assumes no vegetation or other screening and therefore represents a worst case for potential visibility of Rosefield Solar Farm.

### 9.9. Approach to the preliminary assessment

#### Importance of heritage assets

- 9.9.1. The importance of a heritage asset is a measure of the degree to which the heritage significance of that asset is sought to be protected through legislation and planning policy. The level of importance will therefore reflect any statutory and non-statutory heritage designation or, in the case of undesignated assets, the professional judgement of the assessor as to the degree of importance that the asset has with reference to regional research frameworks.
- 9.9.2. The criteria presented in **Table 9.4** has been used to establish the importance of heritage assets. Assessment of importance is based on a combination of designated status and professional judgement. It takes into account the Secretary of State’s criteria for the scheduling of ancient monuments and principles of selection criteria for listed buildings. It is also

recognised that, occasionally, sites can have a lower or higher than normal importance within a particular environment. The assessment of importance therefore needs to take into account the part of the Study area that is being affected and the ability of the Study area to absorb change without compromising the understanding or appreciation of the historic environment.

**Table 9.4 – Criteria for establishing the importance of heritage assets**

Importance	Description of receptors
Very High	World heritage sites; assets of acknowledged international importance; assets that can contribute significantly to acknowledged international research objectives; Historic landscapes of international value (designated or not) and extremely well preserved historic landscapes with exceptional coherence, time depth or other critical factor(s).
High	Scheduled monuments and non-designated assets of schedulable quality and importance; Grade I and II* listed buildings and Grade II listed buildings that can be shown to have exceptional qualities in their fabric or associations; Conservation Areas with exceptional qualities; non-designated structures of clear national importance; designated and non-designated historic landscapes of historic interest; assets that can contribute significantly to acknowledged national research objectives.
Medium	Grade II listed buildings; Non-designated assets that contribute to regional research objectives; Locally listed buildings and other historic unlisted buildings that have exceptional qualities; Conservation Areas.
Low	Non-designated assets of local importance including those compromised by poor preservation; assets of limited value but with the potential to contribute to local research objectives; robust non-designated historic landscapes.
Negligible	Assets with very little surviving archaeological interest; buildings of little architectural or historic note; landscapes with little historic interest.

### Magnitude of impact

9.9.3. The impact will reflect the scale of change which would be caused by Rosefield Solar Farm and the effect this would have on ability to interpret significance and appreciate the historic asset. Impacts can result either from physical changes to a historic asset or through sensory changes within its setting.

- 9.9.4. An impact may be positive where, for example as part of the development, an intrusive building or feature is removed or replaced with a more harmonious one; historic features are restored or revealed; a new feature is added which adds to public appreciation; new views are introduced that add to public experience of an asset; or public interpretation or access is improved to an asset or its setting.
- 9.9.5. Impacts may impart a major change, for example, where groundworks completely destroy important archaeological remains, to a minor change to part of a historic asset’s setting, leading to a limited impact on our ability to interpret it, or its context.
- 9.9.6. Utilising the key principles for assessing the implications of change outlined above, an assessment of the magnitude of impact has been implemented for each heritage asset using the criteria presented in **Table 9.5** below. In the absence of directly applicable guidance, these criteria have been based on professional judgement.
- 9.9.7. Conclusions of the assessed magnitude of impacts are a product of the consideration of the elements of an asset and its setting that contribute to its heritage significance and the degree to which Rosefield Solar Farm would change these contributing elements. This preliminary assessment therefore reflects the varying degrees of sensitivity of different assets to change brought about by different types of development.

**Table 9.5 – Criteria for classifying magnitude of impact**

Impact magnitude	Criteria
Major	Change to key historic building elements so that an asset is totally altered; OR change to most/all key archaeological materials such that the resource is totally altered; OR comprehensive change to the setting such that the significance of the asset is severely compromised.
Moderate	Change to many key historic building elements, such that the asset is significantly modified; changes to many key archaeological materials such that the resource is clearly modified; changes to setting of an asset, such that the significance of the asset is compromised.
Minor	Change to key historic building elements, such that the asset is slightly different; changes to key archaeological materials such that the asset is slightly altered; changes to setting of an historic building, such that its significance is slightly compromised.
Negligible	Very minor changes to historic building elements, archaeological materials or setting that hardly affect them/it.

Impact magnitude	Criteria
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No Change    No change to fabric, archaeological materials or setting.

### Significance of effect

9.9.8.    The preliminary assessment of likely significant effects has combined analysis of the data gathered during the desk-based assessment and site visit, photographs and any annotated photographs (**Volume 4: Landscape Visualisations**) of the topography and Rosefield Solar Farm.

9.9.9.    Significance of effect has been determined using a combination of importance of the asset (receptor) and the magnitude of impact upon that asset (receptor). The significance of effect matrix is presented in **Table 9.6** below and provides a guide to decision-making but is not a substitute for professional judgement and interpretation, particularly where the importance or impact magnitude levels are not clear or are borderline between categories. The significance of effect may therefore be described on a continuous scale from ‘no effect’ to ‘very large’. The significance of effect can be either beneficial or adverse. Where the matrix presents two options for significance of effect, professional judgement is used to determine the likely significance with regard to the specific circumstances of the importance of the asset and magnitude of effect (which will be fully described where necessary). These criteria are based on professional judgement.

9.9.10.    ‘Very large’, ‘large’ and ‘moderate’ effects are regarded as ‘significant’ while ‘slight’ and ‘neutral’ effects are regarded as ‘not significant’. Where the significance matrix indicates a range for the effect significance (e.g. ‘slight or moderate’), professional judgement can be applied to select one option (which would be justified by evidence, as appropriate) or an effect significance range can be applied. If a significance of effect is assigned as ‘slight or moderate’, this would be considered significant unless further information could be provided to downgrade the significance effect to ‘slight’.

Table 9.6 – Criteria for assessing the significance of effect

Importance	Impact magnitude				
	No Change	Negligible	Minor	Moderate	Major
Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large



Importance	Impact magnitude				
	No Change	Negligible	Minor	Moderate	Major
High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

### 9.10. Assessment of likely effects (without additional mitigation)

- 9.10.1. The layout of Rosefield Solar Farm is still being finalised and investigations to establish the archaeological resource of the Site are ongoing. There remains uncertainty regarding both the direct physical impacts on heritage assets as a result of construction, and the extent of change within the setting of heritage assets within the Study area. This has therefore resulted in assets being considered within this PEIR which may, once the design has been refined, not need to be considered in the subsequent ES as effects will have been avoided.
- 9.10.2. As stated in **Section 9.9**, only those impacts which result in ‘major’ or ‘moderate’ effects are regarded as significant. Therefore, by definition, impacts on heritage assets of negligible importance are not considered likely significant effects. Thus, only designated heritage assets within the Site boundary and 5 km Study area (all of medium or high importance) and non-designated heritage assets within the Site boundary and 1 km Study area of greater than negligible importance could experience significant effects (see **Table 9.6** above). For assets of low importance, significant effects would only occur with an impact of major magnitude.
- 9.10.3. Likely significant effects on cultural heritage assets may take the form of physical impacts to in situ archaeological remains pertaining to or associated with a heritage asset or changes to attributes of its setting which contribute to its significance.

#### Possible physical impacts

- 9.10.4. Physical impacts could include damage to below and/or above-ground archaeological remains pertaining to or associated with a heritage asset, particularly if it lies within the Site boundary. Such impacts could occur

during the construction phase of Rosefield Solar Farm due to construction groundworks or during the operational (including maintenance) phase of Rosefield Solar Farm due to changes in soil conditions (such as moisture levels).

### Possible settings impacts

- 9.10.5. Impacts to a heritage asset’s setting could cause changes to an attribute of that setting which contributes to the significance of that heritage asset. The Archaeological Desk-Based Assessment (**Appendix 9.1 in Volume 3**) and Stage 1 Setting Assessment (**Appendix 9.3 in Volume 3**) discusses the attributes of each heritage asset’s setting which contributes to its significance in greater detail.
- 9.10.6. Such impacts could take the form of, for example, the temporary loss of a heritage asset’s setting attribute of tranquillity during the construction phase of Rosefield Solar Farm arising from noise, light and dust associated with groundworks. Another possible impact during both the construction and operation (including maintenance) phases of Rosefield Solar Farm could be the partial loss of a heritage asset’s setting attributes of surrounding undeveloped land or green space between a heritage asset and present-day urban occupation and industrial or economic activity. It is possible that designed and/or key views between the Grade II Claydon Registered Park and Garden (NHLE 1000597) and Claydon House (NHLE 1288461) and associated designated heritage assets could be partially lost during the construction and operation (including maintenance) phases of Rosefield Solar Farm.

### Assets for which no likely significant effects are anticipated

- 9.10.7. Of the 14 designated assets that the screening exercise indicated might experience significant effects (see **Appendix 9.1 in Volume 3**), six of them are no longer considered likely to be at risk of physical impacts from or vulnerable to changes in their setting by Rosefield Solar Farm due to the evolution of its proposed layout and design. The justification for this is given in **Table 9.7** below and agreement will be sought with Buckinghamshire Council through consultation.

**Table 9.7 – Justification for no predicted likely significant effects on designated heritage assets of high and medium importance**

Asset	Justification
23, Orchard Way (NHLE 1212262)	These assets are of <b>medium</b> importance.
Weir Cottage (NHLE 1212347)	The assets do not lie within the Site boundary and no in situ archaeological remains associated with them are anticipated to extend into the Site. No physical impacts on the assets are therefore predicted.

Asset	Justification
1 and 3, Orchard Way (NHLE 1212259) Pond Cottage (NHLE 1212261) 5, Orchard Way (NHLE 1289627) Quamby (NHLE 1289628)	<p>Predicted impacts through changes to the setting of these assets are anticipated to be limited to impacts to their setting attributes of tranquillity during cable route groundworks. These will be temporary and the land returned to its undeveloped state following the installation of the cable. The predicted magnitude of impacts to their significance are therefore <b>minor</b> ('changes to setting of an historic building, such that its significance is slightly compromised'), <b>temporary</b> and <b>short-term</b>.</p> <p>The significance of effect is thus <b>slight adverse</b> and therefore <b>not significant</b>.</p>

### Assets for which likely significant effects are anticipated

9.10.8. Based on the current design of Rosefield Solar Farm as presented in this PEIR, significant adverse effects are likely on seven designated heritage assets. These are:

- Claydon House (NHLE 1288461)
- Claydon Registered Park and Garden (NHLE 1000597)
- Finemerehill House (NHLE 1117815)
- Pond Farmhouse (NHLE 1214849)
- Dry Leys Farmhouse (NHLE 1319271)
- Middle Claydon Conservation Area
- Botolph Claydon Conservation Area

9.10.9. One non-designated heritage asset of up to **medium** importance is at risk of likely significant adverse effects within or below the upper range of less than substantial harm. This is:

- Catherine Farm (HER Reference: MBC26340)

### 9.11. Additional mitigation

#### Construction phase

9.11.1. Areas of the Site that have so far not had a geophysical survey undertaken, or where certain design aspects have not yet been decided, (such as the cable route options) will be surveyed prior to the preparation of the ES. A programme of archaeological trenching informed by the geophysical survey results will also be carried out prior to the preparation of the ES. The results of these surveys will be included within the ES and

will inform proposals for appropriate mitigation measures (such as preservation in situ or a programme of archaeological investigation and recording secured by a DCO requirement).

- 9.11.2. Where archaeological remains within the Site do not require preservation in situ and cannot be avoided through embedded mitigation (changes to the layout of Rosefield Solar Farm and/or construction methods or amended foundation design or use of above ground/surface mounted cabling), it is anticipated that additional mitigation to off-set adverse impacts will take the form of a programme of archaeological investigation and recording, secured by a DCO requirement. Such a programme may include pre-commencement phases of archaeological investigation (trial trenching) and/or archaeological 'watching brief' during construction or pre-commencement formal excavation where appropriate. The need for, and scope of such mitigation, will be agreed with the Buckinghamshire Council archaeological advisor and Historic England, where necessary. The scope and methodology of the mitigation will be set out in an Outline Written Scheme of Investigation that will be submitted in support of the DCO application.
- 9.11.3. An Outline Construction Environmental Management Plan will be submitted in support of the DCO application. This will include mitigation measures to protect the physical remains of in-situ designated heritage assets, such as scheduled monuments and listed buildings. This may include measures such as the installation and maintenance of fencing around designated heritage assets during construction works. Toolbox talks to inform site contractors of these measures and the procedure to follow in case of archaeological remains being exposed will also be produced and distributed.

### Operational (including maintenance) phase

- 9.11.4. An Outline Operational Environmental Management Plan will be submitted in support of the DCO application. The Outline Operational Environmental Management Plan will include mitigation to minimise the risk of potential impacts to the settings of heritage assets during the operational (including maintenance) phase. This will include design measures to minimise impacts to settings attributes that may arise from security lighting, operational noise and associated traffic. Furthermore, an Outline Soil Management Plan will be submitted in support of the DCO application which will include measures to avoid direct physical impacts to archaeological remains as a result of changes in soil moisture content.

### Decommissioning phase

- 9.11.5. Although the decommissioning methodology is not yet finalised, the effects of decommissioning are often similar to, or to a lesser magnitude, than the construction effects.

- 9.11.6. No new infrastructure is expected to be required within the Site boundary during decommissioning phase. No physical impacts to known or potential heritage assets are therefore anticipated to arise from this. Although decommissioning groundworks associated with activities, such as the removal of the Solar PV modules and landscaping, may create physical impacts to known or potential heritage assets within the Site boundary, these are anticipated to be of a lower magnitude than physical impacts to these assets during the construction phase.
- 9.11.7. It is expected that mitigation against any likely significant effects on heritage assets within the Site boundary during the construction phase will be sufficient to avoid significant effects on in situ archaeological remains during the decommissioning phase. It is not expected that any new infrastructure or construction activities requiring groundworks (such as access roads and landscaping) will need to be established or carried out within the vicinities of the heritage assets deemed as vulnerable to changes in their settings by Rosefield Solar Farm during the decommissioning phase. Furthermore, decommissioning works will be undertaken following the principles laid down in the Outline Decommissioning Environmental Management Plan that will be submitted in support of the DCO application, further reducing the likelihood of significant physical effects to in situ archaeological remains or significant effects resulting from changes in the setting of heritage assets during this phase.

## 9.12. Assessment of residual effects (with additional mitigation)

- 9.12.1. The likely residual significant effects of Rosefield Solar Farm on the cultural heritage resource, taking into account the embedded and additional mitigation measures outlined in **Sections 9.7** and **9.11**, are presented in **Table 9.8** below.
- 9.12.2. The embedded and additional measures are considered to be sufficient to ensure physical effects on any known or potential heritage assets within the Site boundary are **not significant**.
- 9.12.3. It is acknowledged that the temporary removal of the setting attribute of tranquillity during the construction and operational (including maintenance) phases of Rosefield Solar Farm, arising from increased noise, dust and/or lighting associated with construction and operational (including maintenance) activities, is possible for heritage assets Claydon House (NHLE 1288461), Claydon Registered Park and Garden (NHLE 1000597), Finemerehill House (NHLE 1117815), Pond Farmhouse (NHLE 1214849), and Dry Leys Farmhouse (NHLE 1319271). Such effects are considered to be **significant** or **potentially significant**.
- 9.12.4. **No significant** effects are anticipated during the decommissioning phase. This includes physical impacts to in situ archaeological remains arising from decommissioning activities, as is discussed in **Section 9.11**.

Table 9.8 – Likely residual significant effects of the Rosefield Solar Farm on cultural heritage assets

Asset	Residual effect	Asset importance	Magnitude of impact	Significance of effect	Phase effect is anticipated
Claydon House (NHLE 1288461)	Partial loss of designed and/or key views between the asset and Rosefield Solar Farm and setting attribute of surrounding rural landscape character.	High	Minor	<b>Up to moderate adverse – Potentially significant</b>	Construction and operation (including maintenance)
Claydon Registered Park and Garden (NHLE 1000597)	Partial loss of designed and/or key views between the asset and Rosefield Solar Farm and setting attribute of surrounding rural landscape character.	Medium	Minor	<b>Slight adverse – Not significant</b>	Construction and operation (including maintenance)
Finemerehill House (NHLE 1117815)	Partial loss of setting attributes of surrounding rural landscape character, separation from present day urban occupation and industrial or economic activity during construction and operation (including maintenance).	Medium	Up to Moderate	<b>Up to moderate adverse - Potentially significant</b>	Construction and operation (including maintenance)

Asset	Residual effect	Asset importance	Magnitude of impact	Significance of effect	Phase effect is anticipated
Pond Farmhouse (NHLE 1214849)	Partial loss of setting attributes of surrounding rural landscape character, separation from present day urban occupation and industrial or economic activity during construction and operation (including maintenance).	Medium	Up to Moderate	<b>Up to moderate adverse - Potentially significant</b>	Construction and operation (including maintenance)
Dry Leys Farmhouse (NHLE 1319271)	Partial loss of setting attributes of surrounding rural landscape character, separation from present day urban occupation and industrial or economic activity during construction and operation (including maintenance).	Medium	Up to Moderate	<b>Up to moderate adverse - Potentially significant</b>	Construction and operation (including maintenance)
Middle Claydon Conservation Area	Partial loss of setting attributes of surrounding rural landscape character, separation from present day urban occupation and industrial or economic activity during construction	Medium	Up to Moderate	<b>Up to moderate adverse - Potentially significant</b>	Construction and operation (including maintenance)

Asset	Residual effect	Asset importance	Magnitude of impact	Significance of effect	Phase effect is anticipated
	and operation (including maintenance).				
Botolph Claydon Conservation Area	Partial loss of setting attributes of surrounding rural landscape character, separation from present day urban occupation and industrial or economic activity during construction and operation (including maintenance).	Medium	Up to Moderate	<b>Up to moderate adverse - Potentially significant</b>	Construction and operation (including maintenance)
Catherine Farm (HER Reference: MBC26340)	Partial loss of setting attributes of surrounding rural landscape character, separation from present day urban occupation and industrial or economic activity during construction and operation (including maintenance).	Medium	Up to Moderate	<b>Up to moderate adverse - Potentially significant</b>	Construction and operation (including maintenance)



### 9.13. Opportunities for enhancement

- 9.13.1. Knowl Hill will become accessible through a new permissive footpath, this will allow Claydon House to be appreciated from a key vantage point and will be an enhancement to this heritage asset.
- 9.13.2. Discussions are ongoing with statutory consultees about potential enhancements at key locations around the site, so that the heritage significance of the heritage assets can be better appreciated and understood.
- 9.13.3. Discussion is also ongoing regarding other potential measures to enhance the historic environment and collaboration regarding enhancements will be sought with the National Trust.

### 9.14. Difficulties and uncertainties

- 9.14.1. The following difficulties and uncertainties have been encountered in undertaking this preliminary assessment:
- The information provided in this PEIR is preliminary and is based on the information available at the time of writing. A full assessment of likely significant effects will be reported in the ES;
  - Not all heritage assets have been previously identified in the HER; the desk-based assessment has considered the potential for currently unknown remains and this is being further evaluated through geophysical survey;
  - The geophysical survey has not yet been completed and there are therefore areas of uncertainty regarding archaeological potential across parts of the Site. The geophysical survey will be completed to inform the ES; and
  - Not all archaeological remains can be detected by geophysical survey, and it is noted that the geology of the Site and surrounding area is known to sometimes prevent detection of archaeological remains. A programme of targeted trial trenching will inform the ES and limit the remaining uncertainties regarding archaeological potential.

### 9.15. Further work to inform the ES

- 9.15.1. To form a robust ES, the following work is proposed so that all aspects will be suitably considered:
- Completion of geophysical surveys;
  - Aerial Investigation and Mapping report (AIM)
  - Detailed setting assessment visits to heritage assets predicted to experience significant effects; and
  - Targeted trial trenching.



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