

Heckington Fen Solar Park

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Chapter 10: Cultural Heritage

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CHAPTER 10: CULTURAL HERITAGE

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Table of Contents:

CHAPTER 10: CULTURAL HERITAGE	1
10 CULTURAL HERITAGE	3
10.1 Executive summary	3
10.2 Introduction	3
10.3 Assessment Approach.....	4
10.4 Baseline Conditions.....	26
10.5 Assessment of Likely Significant Effects.....	31
10.6 MITIGATION AND ENHANCEMENTS	34
10.7 Cumulative and In-Combination Effects	35
10.8 Summary	36

List of Tables:

Table 10.1: Heritage significance	7
Table 10.2: Level of Heritage Harm / Benefit	8
Table 10.3: Summary of Scoping Opinion Responses	15
Table 10.4: : Summary of Section 42 Consultation Responses since PEIR.....	18
Table 10.5: Correspondence with statutory archaeological advisors	24
Table 10.6: Correspondence with statutory built heritage advisors	25
Table 10.7: Peat Deposits Recorded within Energy Park by Ground Investigations	26
Table 10.8: : Summary of Effects, Mitigation and Residual Effects	38

10 CULTURAL HERITAGE

10.1 EXECUTIVE SUMMARY

10.1.1 This Chapter sets out the assessment of likely significant effects of the Proposed Development upon cultural heritage receptors arising from the construction, operation and decommissioning of the Proposed Development.

10.1.2 It has been informed by heritage setting assessments, archaeological desk-based assessment, geophysical survey and trial trench evaluation of the Energy Park; and heritage setting assessments, archaeological desk-based assessment and geophysical survey of the Cable Route Corridor for the grid connection.

10.1.3 Known above-ground heritage assets (all of which are non-designated) within the Energy Park will be retained. A mitigation strategy has been designed with regard to known and potential below-ground archaeological remains within the Energy Park and the Cable Route Corridor. The residual effects of the Proposed Development are not anticipated to be significant.

10.1.4 No cumulative effects upon cultural heritage have been identified.

10.2 INTRODUCTION

10.2.1 This Chapter considers the likely significant effects of the Proposed Development (inclusive of the Energy Park, Cable Route Corridor for the grid connection and the above ground works needed for connection to the National Grid Bicker Fen Substation) on cultural heritage receptors. It includes consideration of buried archaeological remains, historic earthworks, and historic buildings and structures.

10.2.2 This Chapter has been informed by an archaeological desk-based assessment and heritage setting assessments undertaken by Pegasus Group and reported in a Heritage Desk-Based Assessment; geophysical surveys undertaken and reported on by ASWYAS, Headland Archaeology, Magnitude Surveys, and SUMO Geophysics; and a trial trench evaluation undertaken by Wessex Archaeology.

10.2.3 The Chapter has been prepared by Dr Elizabeth Pratt of Pegasus Group, who, as required by the 2017 EIA Directive, is a “**competent expert**” with “**sufficient expertise**”. This is demonstrated by her academic qualifications (BA Hons, MA, PhD), Member accreditation of the Chartered Institute for Archaeologists, and seven years’ experience of EIA.

10.2.4 This Chapter is supported by:

- **Appendix 10.1 – Heckington Fen Solar Park: Heritage Desk-Based Assessment** (document reference 6.3.10.1);
- **Appendix 10.2 – Heckington Fen Energy Park: Geophysical Survey Results** (6.3.10.2);
- **Appendix 10.3 – Heckington Fen Energy Park: Archaeological Evaluation** (6.3.10.3);
- **Appendix 10.4 – Heckington Fen Solar Park Cable Corridors: Geophysical Survey Report** (6.3.10.4);
- **Outline Written Scheme of Investigation – Evaluation** (document reference 7.13);
- **Outline Written Scheme of Investigation – Mitigation** (document reference 7.14);

- **Figure 10.1 – Designated Heritage Assets** (document reference 6.2.10);
- **Figure 10.2 – Energy Park Geophysical Survey Interpretation** (document reference 6.2.10);
- **Figure 10.3 – Cable Route Corridor Geophysical Survey Interpretation** (document reference 6.2.10);
- **Figure 10.4 – Energy Park Archaeological Mitigation Areas** (document reference 6.2.10).

10.3 ASSESSMENT APPROACH

Methodology

Guidance

10.3.1 The archaeological desk-based assessment and setting assessments were undertaken by Pegasus Group in accordance with all relevant heritage industry guidance and best practice, including:

- Standard and Guidance for Historic Environment Desk-Based Assessment (Chartered Institute for Archaeologists (CIfA) 2014);
- Planning Practice Guidance (PPG) 'Conserving and Enhancing the Historic Environment' (MHCLG, updated July 2019);
- Historic Environment Good Practice Advice in Planning Note 1: The Historic Environment in Local Plans (Historic England 2015);
- Historic England Advice Note 12: Statements of Heritage Significance: Analysing Significance in Heritage Assets (Historic England 2019); and
- Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (2nd Edition; Historic England 2017).

10.3.2 The geophysical surveys were undertaken by ASWYAS, Headland Archaeology, Magnitude Surveys and SUMO in accordance with relevant industry guidance and best practice, including:

- Geophysical Survey in Archaeological Field Evaluation (English Heritage 2008);
- Standard and Guidance for Archaeological Geophysical Survey (CIfA 2014a); and
- Guidelines for the use of geophysics in archaeology: questions to ask and points to consider (EAC 2015).

10.3.3 The trial trench evaluation was undertaken by Wessex Archaeology in accordance with relevant industry guidance and best practice, including:

- Standard and Guidance for Archaeological Field Evaluation (CIfA 2014b);
- Management of Research Projects in the Historic Environment (Historic England 2015); and
- Lincolnshire County Council Archaeological Handbook (Jennings 2019).

Baseline Data Procurement & Analysis

Data sources

10.3.4 The following key sources were consulted as part of the assessment process:

- The National Heritage List for England (NHLE) for information relating to designated heritage assets;

- The Lincolnshire Historic Environment Record (HER) for information relating to recorded heritage assets and previous archaeological works;
- Historic aerial photographs held by the HER and Historic England Archives;
- Historic maps held by Lincolnshire Archives and available through The Genealogist, National Library of Scotland, and Promap websites;
- Digital terrain model LiDAR data, available at 1m spatial resolution, from the Environment Agency Open Source Archive;
- Previous published and grey literature reports relating to archaeological investigations previously undertaken; and
- Online resources, including geological data available from the British Geological Survey (BGS), soil data available from the Cranfield University Soilscape Viewer, and historic satellite imagery available on Google Earth.

Data processing and analysis

10.3.5 A proportionate level of data, sufficient to inform the assessment of archaeological potential, significance and potential impact, has been acquired from the sources listed in section 10.3.4 above. All data has been reconciled and analysed in accordance with the relevant industry guidance and best practice, and consistent with the objectives of Environmental Impact Assessment (EIA).

10.3.6 All digital spatial data has been interrogated using industry-standard Geographical Information System (GIS) software.

Historic Environment Record data

10.3.7 The results of full commercial data searches were received from Lincolnshire HER in August 2021, February 2022, April 2022 and July 2022. The search area comprised a 2km-radius measured from the Order Limits of the Proposed Development.

10.3.8 All of the HER data supplied was reconciled and analysed within the context of the project aims and objectives.

10.3.9 The HER data returned contained numerous records of varying reliability and relevance. Only those recorded sites and events that are of relevance to the determination of potential, significance and impact in respect of cultural heritage are discussed further within this chapter.

LiDAR data

10.3.10 The entirety of the land being considered for the Proposed Development has been subject to Environment Agency LiDAR survey (aerial laser-scanning).

10.3.11 Available LiDAR data was downloaded in composite Digital Terrain Model (DTM) format, from the Environment Agency Open Source Archive. The data was then processed and interrogated using industry-standard GIS software.

10.3.12 Multiple hill-shade and shaded-relief models were created, principally via adjustment of the following variables: azimuth, height, and 'z-factor' or exaggeration. The models created were colourised using pre-defined ramps and classified attribute data.

Site inspection

10.3.13 Walkover surveys of the land being considered for the Proposed Development were undertaken between 11th and 14th April 2022 and on 20th September and 6th October

2022 in order to i) assess the Proposed Development within its wider landscape context, ii) identify any evidence for previous disturbance within the Proposed Development, and iii) examine any known or suspected heritage assets within the Proposed Development.

10.3.14 Settings assessments were carried out alongside the walkover surveys. Designated and non-designated heritage assets identified as potentially susceptible to non-physical impacts, and their settings, were assessed from the land being considered for the Proposed Development and from publicly accessible locations.

Settings Assessment

10.3.15 Heritage settings assessment was undertaken in accordance with the industry-standard methodology provided by Historic England in their Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (revised 2017). This guidance promotes a 'stepped' (iterative) approach, as follows:

- **Step 1:** assess which assets would be affected and identify their setting.
- **Step 2:** assess the degree to which these settings and views make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated.
- **Step 3:** assess the effects of the proposed development, whether beneficial or harmful, on that significance or on the ability to appreciate it.
- **Step 4:** explore ways to maximise enhancement and avoid or minimise harm.
- **Step 5:** monitor outcomes.

10.3.16 A search area of a minimum 5km-radius from the Proposed Development was applied (**Figure 10.1– Designated Heritage Assets** (document reference 6.2.10)) though the Energy Park has greater potential than the cable route to impact the significance of heritage assets through change to their setting.

10.3.17 The following primary resources were used to identify those assets that might be susceptible to impact as a result of changes to their setting arising from the Proposed Development (i.e. Step 1):

- the relevant NHLE Listing descriptions;
- elevation and contour mapping;
- modern and historic mapping;
- satellite imagery and aerial photography; and
- A Screened Zone of Theoretical Visibility Model.

10.3.18 Selected designated and non-designated heritage assets were then progressed to Steps 2 to 4 setting assessment as per Historic England's methodology (see above).

Assessment of Effect

10.3.19 The assessment of effect has considered the following in respect of each identified heritage receptor (asset):

- the asset's **heritage significance**;
- the anticipated **level of harm** to that significance (comparable to 'magnitude'); and
- whether that level of harm would comprise a **significant effect**.

10.3.20 Determination of each of the above has been undertaken in accordance with a robust methodology, formulated within the context of current best practice, recent case

law, the relevant statute and policy provisions, and key professional guidance. The rationale for each is set out within the following three sections, alongside the relevant criteria and terminology used in their articulation.

Determining Heritage Significance

10.3.21 National Policy Statement EN-1 (see 10.3.33) states that heritage significance is the sum of the heritage interests that a heritage asset holds, and differentiates between designated and non-designated heritage assets as defined in the NPPF (2021) and PPG (2019). In accordance with the levels of significance articulated in the NPPF and PPG, three levels of heritage significance are identified and utilised for the purposes of this chapter. These are presented in **Table 10.1**.

Table 10.1: Heritage significance

Significance	Qualifying Criteria
Designated heritage assets of the highest significance	Grade I and II* Listed Buildings, Grade I and II* Registered Parks and Gardens, Scheduled Monuments, Protected Wreck Sites, World Heritage Sites and Registered Battlefields. Conservation Areas of especial historic interest. <i>*Also, non-designated archaeological remains of demonstrably equivalent significance to that of Scheduled Monuments (NPPF footnote 68).</i>
Designated heritage assets of less than the highest significance	Grade II Listed Buildings and Grade II Registered Parks and Gardens. The majority of Conservation Areas.
Non-designated heritage assets	Buildings, monuments, sites, places, areas or landscapes identified as having a degree of significance meriting consideration in planning decisions, but which are not formally designated heritage assets (as defined within the PPG).

10.3.22 Sites, buildings or areas that have **no heritage significance** would not be considered heritage assets under the provisions of the NPPF (2021) and so are not considered to be heritage receptors for the purposes of this chapter.

Determining Level of Harm to Heritage Significance

10.3.23 Potential development effects upon the significance of known and potential heritage assets identified within the Application Site have been determined with reference to **harm** and/or **benefit**, as defined within the NPS EN-1 (2011) and echoed in the NPPF (2021). The identification of harm would apply where the proposals would be anticipated to reduce an asset's heritage significance. The identification of heritage benefit would apply where the proposals would be anticipated to enhance (increase) heritage significance.

10.3.24 Where harm to the significance of a **designated** heritage asset is identified, it is discussed in terms of it being either '*substantial*' or '*less than substantial*', as per the terms of NPPF (2021) and partially cited in the NPS EN-1 (2011). The NPPF does not apply these same harm criteria to non-designated heritage assets.

10.3.25 Harm to the significance of **non-designated** heritage assets is treated separately under NPPF (2021) paragraph 203, which requires that in weighing applications that directly or indirectly affect non-designated heritage assets, '*a balanced judgement*

will be required having regard to the scale of any harm or loss and the significance of the heritage asset’.

10.3.26 The methodology adopted for the purposes of this chapter in identifying levels of development effect upon the significance of designated and non-designated heritage assets directly reflects the NPPF’s position and language in this regard (**Table 10.2**).

Table 10.2: Level of Heritage Harm / Benefit

Level of Harm / Benefit	Qualifying Criteria
Heritage Benefit	<p>The asset’s significance would be enhanced and/or better revealed.</p> <p>This would weigh in favour of the Proposed Development in the planning balance. It would be a desirable outcome, consistent with all key policy objectives and industry guidance provisions.</p>
No Harm	<p>The asset’s significance would be preserved.</p> <p>This would be consistent with the NPPF’s core sustainability objective, as well as all other relevant statute and policy provisions, including the Planning (Listed Buildings & Conservation Areas) Act (1990) s.66(1) and s.72(1), and NPPF (2021) paragraphs 194–198.</p>
Less than Substantial Harm	<p>The designated asset’s significance would be reduced, but still, on balance, substantively preserved.</p> <p>Where ‘less than substantial’ harm has been identified, an attempt is made to qualify more precisely that level of harm, with reference to the heritage interests defined within the PPG and Statements of Heritage Significance: Analysing Significance in Heritage Assets (Historic England 2019).</p> <p>NPPF (2021) paragraph 202 provides that such less than substantial harm should be <i>‘weighed against the public benefits of the proposal including, where appropriate, securing its optimum viable use’</i>.</p>
Substantial Harm	<p>The designated asset’s significance would be subject to such a serious impact (reduction) that its significance would be <i>‘either vitiated altogether or very much reduced’</i> (2013 High Court Ruling)¹.</p> <p>Substantial public benefit or satisfaction of the four criteria provided within NPPF (2021) paragraph 201 would be required to outweigh this level of harm. Without this, the NPPF directs that consent should be refused.</p>
Harm to Non-Designated Heritage Assets	<p>Harm to the significance of a non-designated heritage asset would comprise a material consideration for the decision-taker. As per NPPF (2021) paragraph 203, a balanced judgement would be required having regard to the scale of any harm or loss and the significance of the heritage asset.</p> <p>Professional judgment is used in defining the anticipated level of harm to the significance of non-designated heritage assets for the purposes of the present chapter; all determinations are fully qualified within the text.</p>

¹ EWHC 2847, R DCLG and Nuon UK Ltd v. Bedford Borough Council

Assessment of Significant Effects ('Significance of Effect')

10.3.27 In determining whether any identified harm to heritage significance would translate into a significant effect for purposes of EIA, this chapter has moved away from a quantitative, matrix-led approach, as such a method would over-simplify the assessment findings. Instead, determinations are based upon professional judgement and are presented qualitatively and with full justification. This approach directly reflects key concepts in current planning policy and heritage guidance and is advocated by Historic England.

10.3.28 Ultimately, a statement of whether any identified harm does or does not represent a significant effect is provided in respect of each cultural heritage receptor using the following terminology: '**Significant**' or '**Not Significant**'.

Legislative and Policy Framework

10.3.29 The following text describes the key statute, policy and guidance provisions relevant to this assessment. Additional detail is provided within Sections 3 and 4 of the Heritage Desk-Based Assessment.

Legislation

10.3.30 Legislation relating to the built historic environment is primarily set out within the Planning (Listed Buildings and Conservation Areas) Act 1990 which provides statutory protection for Listed Buildings and Conservation Areas.

10.3.31 Section 66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 states that:

“In considering whether to grant planning permission [or permission in principle] for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State, shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses.”

10.3.32 With regards to development within Conservation Areas, Section 72 (1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 states:

“In the exercise, with respect to any buildings or other land in a conservation area, of any powers under any of the provisions mentioned in subsection (2), special attention shall be paid to the desirability of preserving or enhancing the character or appearance of that area.”

National Policy Guidance

National Policy Statements

10.3.33 National Policy Statements EN-1, EN-3 and EN-5 are the determining policy for nationally significant energy infrastructure projects. The historic environment is addressed in Section 5.8 of EN-1: Overarching National Policy Statement for Energy (dated 2011).

10.3.34 Paragraph 5.8.2 defines a heritage asset and heritage significance as follows:

“Those elements of the historic environment that hold value to this and future generations because of their historic, archaeological, architectural or artistic interest are called “heritage assets”. A heritage asset may be any building, monument, site, place, area or landscape, or any combination of these. The sum of the heritage interests that a heritage asset holds is referred to as its significance.”

10.3.35 Heritage assets of the highest significance carry a designation, namely: World Heritage Site; Scheduled Monument; Protected Wreck Site; Protected Military Remains, Listed Building; Registered Park and Garden; Registered Battlefield; Conservation Area.

10.3.36 Certain non-designated heritage assets can be of a significance equivalent to that of a designated heritage asset and can be treated as such during decision-making. Paragraphs 5.8.4 and 5.8.5 state:

“There are heritage assets with archaeological interest that are not currently designated as scheduled monuments, but which are demonstrably of equivalent significance. These include:

- **those that have yet to be formally assessed for designation;**
- **those that have been assessed as being designatable but which the Secretary of State has decided not to designate; and**
- **those that are incapable of being designated by virtue of being outside the scope of the Ancient Monuments and Archaeological Areas Act 1979.**

The absence of designation for such heritage assets does not indicate lower significance. If the evidence before the [Secretary of State] indicates to it that a non-designated heritage asset of the type described in 5.8.4 may be affected by the proposed development then the heritage asset should be considered subject to the same policy considerations as those that apply to designated heritage assets should be considered subject to the same policy considerations as those that apply to designated heritage asset.”

10.3.37 Regarding harm to the significance of a heritage asset, Paragraphs 5.8.14 and 5.8.15 state:

“There should be a presumption in favour of the conservation of designated heritage assets and the more significant the designated heritage asset, the greater the presumption in favour of its conservation should be. ...Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. Loss affecting any designated heritage asset should require clear and convincing justification. Substantial harm to or loss of a grade II listed building park or garden should be exceptional.

Substantial harm to or loss of designated assets of the highest significance, including Scheduled Monuments; registered battlefields; grade I and II* listed buildings; grade I and II* registered parks and gardens; and World Heritage Sites, should be wholly exceptional.

Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset the greater the justification will be needed for any loss. Where the application will lead to substantial harm to or total loss of significance of a designated heritage asset the [Secretary of State] should refuse consent unless it can be demonstrated that the substantial harm to or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm."

10.3.38 Paragraph 5.8.18 goes on to state:

"When considering applications for development affecting the setting of a designated heritage asset, the [Secretary of State] should treat favourably applications that preserve those elements of the setting that make a positive contribution to, or better reveal the significance of, the asset. When considering applications that do not do this, the [Secretary of State] should weigh any negative effects against the wider benefits of the application. The greater the negative impact on the significance of the designated heritage asset, the greater the benefits that will be needed to justify approval."

10.3.39 Regarding archaeological heritage assets, Paragraph 5.8.22 states:

"Where the [Secretary of State] considers there to be a high probability that a development site may include as yet undiscovered heritage assets with archaeological interest, the [Secretary of State] should consider requirements to ensure that appropriate procedures are in place for the identification and treatment of such assets discovered during construction."

10.3.40 A draft revised EN-1 (dated September 2021) seeks consistency with the current National Planning Policy Framework (adopted July 2021). It expands the definition of heritage significance to acknowledge the contribution that can be made by setting, and alters the wording of Paragraphs 5.8.4 and 5.8.5 regarding non-designated archaeological heritage assets of demonstrably equivalent significance to Scheduled Monuments.

10.3.41 The draft revised EN-1 also recommends that the applicant prepares proposals that enhance heritage significance and mitigate heritage harm, and considers whether the development effects will be direct, indirect, temporary or permanent. Further, the draft identifies a need to weigh any identified less than substantial harm to the significance of a designated heritage asset against the public benefits of the proposal.

Local Planning Policy

Central Lincolnshire Local Plan (adopted 2017)

10.3.42 Developments within North Kesteven are currently considered against policies set out in the Central Lincolnshire Local Plan adopted in 2017.

10.3.43 Policy LP25, The Historic Environment, states:

“Development proposals should protect, conserve and seek opportunities to enhance the historic environment of Central Lincolnshire.

In instances where a development proposal would affect the significance of a heritage asset (whether designated or non-designated), including any contribution made by its setting, the applicant will be required to undertake the following, in a manner proportionate to the asset’s significance:

a. describe and assess the significance of the asset, including its setting, to determine its architectural, historical or archaeological interest; and

b. identify the impact of the proposed works on the significance and special character of the asset; and c. provide clear justification for the works, especially if these would harm the significance of the asset or its setting, so that the harm can be weighed against public benefits.

Unless it is explicitly demonstrated that the proposal meets the tests set out in the NPPF, permission will only be granted for development affecting designated or non-designated heritage assets where the impact of the proposal(s) does not harm the significance of the asset and/or its setting.

Development proposals will be supported where they:

d. Protect the significance of designated heritage assets (including their setting) by protecting and enhancing architectural and historic character, historical associations, landscape and townscape features and through consideration of scale, design, materials, siting, layout, mass, use, and views and vistas both from and towards the asset;

e. Promote opportunities to better reveal significance of heritage assets, where possible;

f. Take into account the desirability of sustaining and enhancing non-designated heritage assets and their setting.

The change of use of heritage assets will be supported provided:

g. the proposed use is considered to be the optimum viable use, and is compatible with the fabric, interior, character, appearance and setting of the heritage asset;

h. such a change of use will demonstrably assist in the maintenance or enhancement of the heritage asset; and

i. features essential to the special interest of the individual heritage asset are not lost or altered to facilitate the change of use.

Listed Buildings

Permission to change the use of a Listed Building or to alter or extend such a building will be granted where the local planning authority is satisfied that the proposal is in the interest of the building's preservation and does not involve activities or alterations prejudicial to the special architectural or historic interest of the Listed Building or its setting.

Permission that results in substantial harm to or loss of a Listed Building will only be granted in exceptional or, for grade I and II* Listed Buildings, wholly exceptional circumstances.

Development proposals that affect the setting of a Listed Building will be supported where they preserve or better reveal the significance of the Listed Building.

Conservation Areas

Development within, affecting the setting of, or affecting views into or out of, a Conservation Area should preserve (and enhance or reinforce it, as appropriate) features that contribute positively to the area's character, appearance and setting.

Proposals should:

j. Retain buildings/groups of buildings, existing street patterns, historic building lines and ground surfaces; k. Retain architectural details that contribute to the character and appearance of the area;

l. Where relevant and practical, remove features which are incompatible with the Conservation Area;

m. Retain and reinforce local distinctiveness with reference to height, massing, scale, form, materials and lot widths of the existing built environment;

n. Assess, and mitigate against, any negative impact the proposal might have on the townscape, roofscape, skyline and landscape;

o. Aim to protect trees, or where losses are proposed, demonstrate how such losses are appropriately mitigated against.

Archaeology

Development affecting archaeological remains, whether known or potential, designated or undesignated, should take

every practical and reasonable step to protect and, where possible, enhance their significance.

Planning applications for such development should be accompanied by an appropriate and proportionate assessment to understand the potential for and significance of remains, and the impact of development upon them.

If initial assessment does not provide sufficient information, developers will be required to undertake field evaluation in advance of determination of the application. This may include a range of techniques for both intrusive and non-intrusive evaluation, as appropriate to the site.

Wherever possible and appropriate, mitigation strategies should ensure the preservation of archaeological remains in-situ. Where this is either not possible or not desirable, provision must be made for preservation by record according to an agreed written scheme of investigation submitted by the developer and approved by the planning authority.

Any work undertaken as part of the planning process must be appropriately archived in a way agreed with the local planning authority."

Scoping Criteria

10.3.44 The Cultural Heritage Assessment considers the following potential effects:

- **Construction Phase:** *physical (direct) effects* upon heritage assets within the Proposed Development as a result of demolition or truncation;
- **Construction Phase:** *non-physical (indirect) effects* upon heritage assets within the Proposed Development environs as a result of changes to setting;
- **Operational Phase:** *non-physical (indirect) effects* upon heritage assets within the Proposed Development and its environs as a result of changes to setting;
- **Decommissioning Phase:** *physical (direct) effects* upon heritage assets within the Proposed Development as a result of truncation; and
- **Decommissioning Phase:** *non-physical (indirect) effects* upon heritage assets within the Proposed Development environs as a result of changes to setting.

Limitations to the Assessment

10.3.45 The conclusions presented within this chapter are based upon the baseline conditions (presented below), which are derived in large part from the data held and supplied by the Lincolnshire HER. In establishing the baseline conditions, for the purposes of this chapter, both the accuracy and currency of this data has necessarily been assumed.

10.3.46 The geophysical survey method relies on the ability of a variety of instruments to measure very small magnetic fields associated with buried archaeological remains. Under favourable conditions, it can identify a wide range of features including infilled cut features such as large pits, gullies and ditches, hearths and areas of burning and kilns and brick structures. It is less successful in identifying smaller features such as post-holes and small pits, unenclosed (prehistoric) settlements and graves/burial grounds.

10.3.47 Geophysical survey and trial trench evaluation have not been undertaken for the construction access tracks for the Cable Route Corridor, as no below-ground impacts are anticipated here. Traffic will make use of existing tracks except to the west of Timms Drove, where matting will be laid directly onto the ground surface. Geophysical survey and trial trench evaluation have not/will not be undertaken within the National Grid Bicker Fen Substation due to access constraints and interference from existing infrastructure.

10.3.48 In relation to settings assessment, the inspection of heritage assets identified as potentially susceptible to non-physical impact was undertaken from the Proposed Development and publicly accessible locations. No other privately held land or properties were accessed.

Consultation

10.3.49 **Table 10.3**, a summary of consultation prior to issue of the Preliminary Environmental Assessment Report (PEIR) in June 2022, outlines matters raised within the Scoping Opinion and how these have been addressed through the ES in relation to Cultural Heritage.

Table 10.3: Summary of Scoping Opinion Responses

Consultee	Details of Consultee response	How is matter addressed	Location of response
Boston Borough Council	Requested clarity on the Historic Environment Record data search area for the Cable Route Corridor.	A 2km HER data search radius was applied to both the Energy Park and the Cable Route Corridor.	Paragraph 3.3 and Figures 3a, 4a and 4b of Appendix 10.1 (document reference 6.3.10.1).
	Flagged the need to consider the Roman archaeology found by work carried out for Triton Knoll.	Available reports were procured from the Historic Environment Record and from the Planning Portal.	Sources of Appendix 10.1 (document reference 6.3.10.1).
Historic England	Cautioned against using a fixed radius from the Order Limits to assess the setting of heritage assets.	A 5km search radius was applied to both the Energy Park and the Cable Route Corridor, but consideration was also given to assets outlying this buffer.	Paragraphs 5.74–5.76, 6.3, 6.32 and 6.36 of Appendix 10.1 (document reference 6.3.10.1).
	Ensure use of updated Historic England guidance documents when assessing physical and non-physical impacts to heritage assets.	Current Historic England guidance documents for assessing heritage significance and setting were used.	Paragraphs 3.14 and 3.19–3.21 and Sources of Appendix 10.1 (document reference 6.3.10.1).

<p>Lincolnshire County Council</p>	<p>Both the Energy Park and Cable Route Corridor must be subject to staged assessment comprising desk-based assessment, non-intrusive geophysical survey, and intrusive field evaluation (trial trenching); details of a mitigation strategy must also be submitted as part of the ES.</p>	<p>Desk-based assessment, geophysical survey, trial trench evaluation, and a mitigation strategy are provided for the Energy Park. Desk-based assessment and geophysical survey are provided for the Cable Route Corridor.</p>	<p>Appendix 10.1 (document reference 6.3.10.1); Appendix 10.2 (document reference 6.3.10.2); Appendix 10.3 (document reference 6.3.10.3); Appendix 10.4 (document reference 6.3.10.4); Outline WSI (document reference 7.13); Outline WSI (document reference 7.14)</p>
	<p>If multiple contractors are to be used for the geophysical survey, a single Written Scheme of Investigation must be prepared and adhered to.</p>	<p>Four contractors were appointed for the geophysical survey of the Energy Park. Pegasus Group prepared a single Written Scheme of Investigation, but it was supported by contractor-specific method statements to flag inevitable differences in models of survey instruments and software.</p>	<p>Appendix 10.2 (document reference 6.3.10.2).</p>
	<p>Impact assessments must consider the decommissioning phase of the Proposed Development.</p>	<p>The impact assessments consider the decommissioning phase.</p>	<p>This Chapter.</p>
	<p>Historic England’s Regional Science Advisor should be consulted regarding the Palaeolithic potential of the land being considered for the Proposed Development.</p>	<p>Contact was made with Matthew Nicholas of Historic England to discuss directional drilling of Cable Route Corridor under Forty Foot Drain.</p>	<p>See Table 10.5 below.</p>

	All designated heritage assets within a 5km radius of the Proposed Development must undergo setting assessment, with Zone of Theoretical Visibility Modelling refining a list of potentially sensitive assets.	A 5km search radius was applied to both the Energy Park and the Cable Route Corridor, but consideration was also given to assets outlying this buffer. The Screened Zone of Theoretical Visibility Model prepared for the LVIA was utilised.	Section 6 of Appendix 10.1 (document reference 6.3.10.1).
National Grid	Excavation works cannot take place closer than 3m from the gas pipeline within the Energy Park unless supervised.	A 30m buffer from the gas pipeline was accommodated for the trial trenching.	Appendix 10.3 (document reference 6.3.10.3).
North Kesteven District Council	The archaeological work currently being undertaken for Viking Link and Triton Knoll must be reviewed and form part of the baseline study of the ES.	Available reports for these schemes were procured from the Historic Environment Record and from the Planning Portal. Direct contact was also made with the archaeological contractor for Viking Link, Wessex Archaeology.	Paragraph 5.22 and Sources of Appendix 10.1 (document reference 6.3.10.1).
	Historic Environment Record data must be procured for a 2km radius search area from the Cable Route Corridor as well as the Energy Park; the Portable Antiquities Scheme database should also be consulted.	A 2km HER data search radius was applied to both the Energy Park and the Cable Route Corridor; higher-level access to the Portable Antiquities Scheme database was granted to Pegasus Group.	Paragraphs 3.2–3.4, Section 5, and Appendix 1 of Appendix 10.1 (document reference 6.3.10.1).
	LiDAR imagery must be reviewed for the Energy Park and Cable Route Corridor, in line with requirements of the Heritage Trust of Lincolnshire.	1m resolution digital terrain model LiDAR imagery was sourced and analysed for both areas.	Paragraph 3.5, Figures 6a and 6b , and Appendix 3 of Appendix 10.1 (document reference 6.3.10.1).

	<p>Geophysical survey and trial trench evaluation are required for the Cable Route Corridor as well as the Energy Park, and must be completed prior to submission to allow the results to be incorporated into the ES.</p>	<p>Geophysical survey was completed for the Energy Park and Cable Route Corridor. Trial trench evaluation was completed for the Energy Park. An Outline Written Scheme of Investigation for trial trench evaluation of the Cable Route Corridor is provided.</p>	<p>Appendix 10.2 (document reference 6.3.10.2); Appendix 10.3 (document reference 6.3.10.3); Appendix 10.4 (document reference 6.3.10.4); Outline WSI (document reference 7.13).</p>
	<p>Scope of all archaeological investigations needs to be agreed with advisors at North Kesteven District Council, Boston Borough Council, and Lincolnshire County Council.</p>	<p>Scope of desk-based assessment was discussed and agreed with LPA advisors via email. Written Schemes of Investigation for the geophysical surveys and trial trench evaluations were submitted to and approved by the LPA advisors.</p>	<p>See Table 10.5 below.</p>
	<p>The ES must consider impacts to palaeoenvironmental deposits.</p>	<p>Ground investigation works were undertaken. The character and depth of superficial geology, and the potential for peat deposits, was also recorded by the trial trenching.</p>	<p>Appendix 10.3 (document reference 6.3.10.3).</p>
	<p>All designated and non-designated heritage assets within 5km of the Proposed Development must undergo setting assessment.</p>	<p>A 5km search radius was applied to both the Energy Park and the Cable Route Corridor, but consideration was also given to assets outlying this buffer.</p>	<p>Section 6 of Appendix 10.1 (document reference 6.3.10.1).</p>

10.3.50 In addition, **Table 10.4** outlines a summary of Section 42 consultation responses since the PEIR.

Table 10.4: : Summary of Section 42 Consultation Responses since PEIR

Consultee	Details of Consultee response	How is matter addressed	Location of response
British Horse Society	Historical evidence indicates that a number of routes surrounding the site are unrecorded or under recorded as footpaths; these routes can be reasonably alleged to subsist at a minimum of bridleway status.	Historic map regression for the Energy Park and Cable Route Corridor was undertaken as part of the desk-based assessment, and former tracks and paths through the Energy Park were acknowledged.	Paragraphs 5.41–5.52 of Appendix 10.1 (document reference 6.3.10.1).
Historic England	Request for details, if available, of directional drilling strategy for Cable Route Corridor crossing of South Forty Foot Drain.	Not yet available.	N/A.
Lincolnshire County Council	Notes that value judgments and conclusions drawn within PEIR are only provisional as not all assessment work has been completed.	The ES is informed by additional data from the completion of the trial trench evaluation of the Energy Park and the geophysical survey of the Cable Route Corridor.	This Chapter.
	In accordance with EIA Regulations, the full suite of comprehensive desk-based research, non-intrusive surveys and intrusive evaluation (trial trenching) is required for both the Energy Park and the Cable Route Corridor pre-submission.	Desk-based assessment, geophysical survey, trial trench evaluation, and a mitigation strategy are provided for the Energy Park. Desk-based assessment and geophysical survey are provided for the Cable Route Corridor. An Outline Written Scheme of Investigation is provided for trial trench evaluation of the Cable Route Corridor.	Appendix 10.1 (document reference 6.3.10.1); Appendix 10.2 (document reference 6.3.10.2); Appendix 10.3 (document reference 6.3.10.3); Appendix 10.4 (document reference 6.3.10.4); Outline WSI (document reference 7.13); Outline WSI (document reference 7.14)

	<p>The desk-based assessment must review historic maps, historic aerial photographs, other archival material, Portable Antiquities Scheme data, LiDAR imagery – for both the Energy Park and the Cable Route Corridor; the Lincolnshire Archaeology Handbook should also be consulted and referenced as a guide to good practice.</p>	<p>All of the specified sources were reviewed for both the Energy Park and the Cable Route Corridor; the Lincolnshire Archaeology Handbook (2019) was also consulted.</p>	<p>Paragraphs 3.2–3.4 and Sources of Appendix 10.1 (document reference 6.3.10.1).</p>
	<p>The results of the trial trenching must inform a robust mitigation strategy submitted with the DCO submission and adhered to as part of the works programme; the mitigation strategy may include areas identified for preservation in situ, strip map sample excavation, or set piece excavation.</p>	<p>A mitigation strategy for the Energy Park, informed by the results of the trial trenching, and an outline mitigation strategy for the Cable Route Corridor, informed by the results of the geophysical survey, is provided.</p>	<p>Appendix 10.3 (document reference 6.3.10.3); Outline WSI (document reference 7.14).</p>
	<p>Impacts on buried archaeology from construction and decommissioning include not only demolition and truncation but compaction, machine tracking, reduction of protective depths of soil, and potential changes to moisture levels and chemical composition of soils; landscaping, tree planting or habitat creation as mitigation for other</p>	<p>These aspects are acknowledged and assessed for the ES.</p>	<p>This Chapter.</p>

	disciplines may also have an impact on buried archaeology and the setting of heritage assets.		
	There are opportunities for enhancement. Consider adopting a full suite of community outreach and public engagement events as an intrinsic part of the programme of archaeological work for the Proposed Development.	Students from the Build-A-Future School at Elm Grange visited the Energy Park on 28 th September 2022 while the trial trenching was underway. A talk was provided by representatives of Ecotricity and Wessex Archaeology. Further community outreach and public engagement is planned.	This Chapter.
	Setting assessment should consider the visual and non-visual aspects of experience of an asset, and justification must be given for those assets that are descoped from full assessment.	Setting assessments were undertaken in accordance with Historic England’s iterative methodology, and a detailed narrative for ‘Step 1’ is provided.	Section 6 of Appendix 10.1 (document reference 6.3.10.1).
North Kesteven District Council	The desk-based assessment must review historic maps, historic aerial photographs, other archival material, Portable Antiquities Scheme data, LiDAR imagery – for both the Energy Park and the Cable Route Corridor; the Lincolnshire Archaeology Handbook should also be consulted and referenced as a guide to good practice.	All of the specified sources were reviewed for both the Energy Park and the Cable Route Corridor; the Lincolnshire Archaeology Handbook (2019) was also consulted.	Paragraphs 3.2–3.4 and Sources of Appendix 10.1 (document reference 6.3.10.1).

	<p>The ES must acknowledge the archaeological potential of the roddons and the potential for palaeo-environmental evidence in this landscape.</p>	<p>These aspects are acknowledged within the desk-based assessment.</p>	<p>Paragraphs 5.14–5.15 and 5.65 of Appendix 10.1 (document reference 6.3.10.1).</p>
	<p>The geophysical survey has not been undertaken in some of the proposed BNG areas within the Energy Park. If no groundworks are to take place here, details of protection are required. If groundworks are to take place here, archaeological work may be required.</p>	<p>This point is acknowledged by the Applicant. The BNG area in Field G1 now lies outwith the Order Limits.</p>	<p>N/A.</p>
	<p>The significance of the archaeological resource and impact of the Proposed Development thereupon cannot be assessed until trial trenching has been completed.</p>	<p>Trial trenching has been completed for the Energy Park and the results have informed the impact assessment for the Energy Park. Trial trenching is forthcoming for the Cable Route Corridor and so the impact assessment for this aspect of the Proposed Development is based on the geophysical survey results and certain assumptions regarding archaeological potential and significance.</p>	<p>This Chapter.</p>
	<p>Impacts on buried archaeology from construction and decommissioning include not only demolition and truncation but compaction,</p>	<p>These aspects are acknowledged and assessed for the ES.</p>	<p>This Chapter.</p>

	<p>machine tracking, reduction of protective depths of soil, and potential changes to moisture levels and chemical composition of soils; landscaping, tree planting or habitat creation as mitigation for other disciplines may also have an impact on buried archaeology and the setting of heritage assets.</p>		
	<p>The Energy Park and Cable Route Corridor need to be subject to sufficient evaluation (through geophysical survey and trial trenching) to allow a suitable mitigation strategy to be designed and implemented as appropriate pre-submission.</p>	<p>Desk-based assessment, geophysical survey, trial trench evaluation, and a mitigation strategy are provided for the Energy Park. Desk-based assessment and geophysical survey are provided for the Cable Route Corridor.</p>	<p>Appendix 10.1 (document reference 6.3.10.1); Appendix 10.2 (document reference 6.3.10.2); Appendix 10.3 (document reference 6.3.10.3); Appendix 10.4 (document reference 6.3.10.4); Outline WSI (document reference 7.13); Outline WSI (document reference 7.14)</p>
	<p>The ES must refer to the Conservation Area Appraisal for Heckington and the adopted NKDC criteria for the identification of non-designated heritage assets. A copy of a completed criteria form (accessible at https://www.n-kesteven.gov.uk/re-sidents/planning-and-building/planning/conservation-and-</p>	<p>All available Appraisals for Conservation Areas located within a 5km radius of the Energy Park and Cable Route Corridor were consulted. No new non-designated heritage assets were identified; Mill Green Farmhouse and the Primitive Methodist Chapel on Sidebar Lane are already included on the Historic</p>	<p>Sources of Appendix 10.1 (document reference 6.3.10.1).</p>

	heritage/local-list-of-nondesignated-heritage-assets/) must be included in the ES.	Environment Record.	
	Notes that value judgments and conclusions drawn within PEIR are only provisional as not all assessment work has been completed.	The ES is informed by additional data from the completion of the trial trench evaluation of the Energy Park and the geophysical survey of the Cable Route Corridor.	This Chapter.

10.3.51 Consultation for archaeology was also undertaken directly by Pegasus Group with the archaeological advisors to Lincolnshire County Council, North Kesteven District Council, and Boston Borough Council. The timing of key correspondence is summarised in **Table 10.5**.

Table 10.5: Correspondence with statutory archaeological advisors

Date	Form and topic of communication
12th, 14th, 29th October 2021	Email from Elizabeth Pratt of Pegasus Group to Matthew Adams at Lincolnshire County Council, placing request for initial advice; Emails and call between Elizabeth Pratt and Denise Drury at Heritage Lincolnshire, to discuss the requirement for and scope of archaeological assessments.
5th, 17th, 25th November 2021	Teams meeting organised by Pegasus Group and Ecotricity for Lincolnshire County Council Officers, with Jan Allen of Lincolnshire County Council in attendance; Follow-up email from Elizabeth Pratt to Jan Allen, and reply from Jan Allen, regarding the requirement for and scope of archaeological assessments.
26th January 2022	Teams meeting held between Matthew Adams and Jan Allen of Lincolnshire County Council and Elizabeth Pratt of Pegasus Group, for a focussed discussion regarding the requirement for and scope of archaeological assessments.
March–April 2022	Emails between Matthew Adams and Jan Allen of Lincolnshire County Council, Denise Drury of Heritage Lincolnshire, and Elizabeth Pratt of Pegasus Group regarding the scope, methodology, and results of geophysical surveys of the Energy Park (including submission and approval of Written Schemes of Investigation).
27th May 2022	Submission of geophysical survey reports for the Energy Park to Matthew Adams, Jan Allen, and Denise Drury by Elizabeth Pratt.
June–July 2022	Email and telephone discussions between Elizabeth Pratt, Matthew Adams, Jan Allen, and Denise Drury regarding the geophysical survey reports and the requirements for trial trench evaluation of the Energy Park.

Date	Form and topic of communication
28th July 2022	Submission of Written Scheme of Investigation for geophysical survey report of cable route Matthew Adams, Jan Allen, and Denise Drury by Elizabeth Pratt on behalf of Headland Archaeology; Email reply from Jan Allen querying the discrepancy between the PEIR redline boundary and the proposed survey area boundary.
5th August 2022	Email from Matthew Nicholas of Historic England to Laura White of Ecotricity regarding the need for directional drilling under South Forty Foot Drain.
18th August & 1st September 2022	Email reply from Laura White to Matthew Nicholas providing further information as requested, and follow-up email seeking comment.
22nd August 2022	Submission of Written Scheme of Investigation (inclusive of trench plan) for trial trench evaluation to Matthew Adams, Jan Allen, Denise Drury, and Matthew Nicholas of Historic England, by Elizabeth Pratt on behalf of Wessex Archaeology.
September–October 2022	Frequent email updates and six on-site monitoring meetings for trial trench evaluation between/attended by Elizabeth Pratt, Matthew Adams, Jan Allen, and Denise Drury.
11th November 2022	Submission of further targeted consultation information leaflet to Heritage Lincolnshire by Ecotricity, and response from Heritage Lincolnshire to say that no further information is required.
22nd November 2022	Submission of 'archaeological hazard map' and proposed mitigation strategy for Energy Park to Matthew Adams, Jan Allen, Denise Drury by Elizabeth Pratt.

10.3.52 Consultation for built heritage was undertaken with the Conservation Officers at North Kesteven District Council and Boston Borough Council and the Inspectors for Ancient Monuments and Historic Buildings and Areas at Historic England. The timing of key correspondence is summarised in **Table 10.6**.

Table 10.6: Correspondence with statutory built heritage advisors

Date	Form and topic of communication
15th June 2022	Email from Elizabeth Pratt of Pegasus Group to Denise Drury and Gareth Hughes at North Kesteven District Council, Matt Bentley at Boston Borough Council, and Alison McDonald at Historic England, to outline the proposed scope and methodology of setting assessment.
20th July 2022	Email reply from Alison McDonald confirming suitability of proposed approach and deferring to LPA Officers for further input.
25th August 2022	Email reply from Matt Bentley to defer to colleague Felix Mayes at Heritage Lincolnshire.
6th September 2022	Email reply from Felix Mayes confirming suitability of proposed approach but requesting that the assessments for heritage assets in Boston Borough include photographs to and from the site and those assets.

Date	Form and topic of communication
11 th November 2022	Submission of further targeted consultation information leaflet to Heritage Lincolnshire by Ecotricity, and response from Heritage Lincolnshire to say that no further information is required.
24 th November 2022	Acknowledgement from Historic England of receipt of further targeted consultation information leaflet, with recommendation to continue to consult with specialist heritage advisors at the local planning authorities.

10.4 BASELINE CONDITIONS

Site Description and Context

10.4.1 The Energy Park forms part of Heckington Fen. Great Hale and Little Hale Fens lie to the south, and Holland Fen to the north-east. The bedrock geology of the Energy Park comprises mudstone and siltstone of the West Walton Formation (in the south-western half) and mudstone of the Amphill Clay Formation (in the north-eastern half). The superficial geology comprises tidal flat deposits of clay and silt.

10.4.2 The Cable Route Corridor for the grid connection lies to the south and west of South Forty Foot Drain. The upper and midsections of the Cable Route Corridor are characterised by the same bedrock geology as the Energy Park, but the lowermost 2km sections comprises mudstone of the Oxford Clay Formation. The superficial geology is recorded as tidal flat deposits of clay and silt.

10.4.3 Tidal flat deposits may include layers of peat, with the potential to preserve palaeoenvironmental evidence. Geotechnical investigations of the Energy Park recorded peat within a number of boreholes, generally at between 2m and 3m below present ground level but in some places as shallow as 1m (**Table 10.7**; document reference 6.3.9.2).

Table 10.7: Peat Deposits Recorded within Energy Park by Ground Investigations

Borehole	Field Number	Recorded depth below present ground level
CP2	SH6	3.00–3.40
WS1	SH15	3.40–3.95
WS2	SH4	2.15–2.65
WS3	SH1	2.50–2.90
WS4	SH5	2.60–2.95
WS5	SH14	3.45–3.85
WS8	SH1	1.87–1.91
WS9	G23	2.15–2.20 & 2.40–2.45
WS10	G20	1.30–1.50
WS11	G18	1.20–1.50
WS17	SH1	1.65–1.80
WS19	SH8	2.65–2.70
WS20	SH12	2.60–2.80

Borehole	Field Number	Recorded depth below present ground level
WS21	SH12	3.70–3.95
WS22	SH13	2.85–3.15
WS23	SH13	3.40–3.65
WS24	SH11	3.90–4.00
WS25	SH11	3.05–3.50
WS26	SH10	3.55–3.65
WS27	SH8	1.95–2.00
WS28	SH2	1.80–1.83
WS30	G9	1.25–1.30
WS32	G7	3.35–3.60
WS33	SH2	2.93–3.00
WS34	SH9	3.40–3.50
WS35	SH10	3.65–3.75
WS36	SH9	2.95–3.10
WS37	SH9	3.85–4.00
WS38	SH2	2.45–2.48
WS40	G7	0.97–1.00
WS46	SH13	0.98–1.00

10.4.4 In the following discussion, reference is made to field numbers within the Energy Park; please cross-reference to **Figure 1.4**.

Baseline Survey Information

Prehistoric (pre-43 AD) and Romano-British (43–410 AD)

10.4.5 Throughout prehistory and the early historic periods, Heckington Fen comprised saltmarsh. The trial trench evaluation of the Energy Park identified a palaeochannel in SH13, numerous ditches that aligned with roddon tributaries in several areas, and two small pits and a tree throw yielding a small assemblage of flint flakes in field G15, to the west of centre (**Appendix 10.3** (document reference 6.3.10.3)). The worked flints indicate seasonal exploitation of the saltmarsh during the Mesolithic and Neolithic periods.

10.4.6 A focus of Iron Age and Roman settlement and associated activity at Garwick is indicated by clusters of cropmarks and findspots recorded on land between Sidebar Lane and Sandlees Lane, on land to the west of Sandlees Lane, and on land south of the junction of Sandlees Lane and the A17 – more than 500m west of the Energy Park. The cropmarks to the south of White House Farm indicate enclosures, roundhouses and a trackway; this complex is designated as a Scheduled Monument.

10.4.7 Cropmarks of linear trends and a possible D-shaped enclosure are shown in field G1 (neighbouring the south-western corner of the Energy Park) on aerial photographs dated 1946, and in the northern part of the Energy Park on aerial photographs dated 1946 and 1976. Roman pottery sherds, tile fragments and briquetage (a coarse ceramic used

to make pans for evaporation of salt from seawater) were collected from the field surface of G15, G16 and G23, in the western part of the Energy Park, before the installation of the North Sea Gas Pipeline in 1971. Further evidence for Roman activity has been recorded by recent archaeological investigations for Viking Link at Moon Rakes, directly east of the Energy Park.

10.4.8 Geophysical surveys of discrete locations within the Energy Park in 2011, and for all built-development areas for the Proposed Development in 2022 (**Appendix 10.2** (document reference 6.3.10.2)), identified no anomalies unequivocally suggestive of prehistoric or Roman archaeological features. However linear geophysical trends were identified near the 1971 briquetage findspots, and other magnetic responses suggestive of burning were detected in SH11 and SH12 in the east, which adjoin Moon Rakes (**Figure 10.2** (document reference 6.2.10)).

10.4.9 The trial trench evaluation of the Energy Park identified much more Romano-British archaeology than had been indicated by the geophysical surveys, demonstrating the limitations of magnetometry on the local geology (**Appendix 10.3** (document reference 6.3.10.3)). Small pockets of dispersed features were recorded across the central and southern sectors of the site, albeit largely confined to the slightly raised plateaus where the sandier natural geology survived. The features mostly comprised enclosure systems defined by ditches and gullies, with some indications of industrial activity and salt processing.

10.4.10 The identified Roman remains can be described as follows:

- The corner of a possible enclosure in G3 in the south-west;
- Layers of grey silty clay containing crushed briquetage deriving from historic salt making processes in G4 in the west/south-west;
- Two clusters of ditches, some containing pottery sherds and charcoal-rich fills, in the south-west and north-east corners of G9 in the north-west;
- A saltern, its fills rich in charcoal and briquetage, in the north-western corner of G23 in the south of centre;
- Two clusters of activity represented by numerous ditches, gullies, and a pit, variously containing ceramic building material, fired clay, pottery, shell and burnt stone and animal bone suggestive of occupation, in the southern half of SH1 in the south; and
- Scattered ditches containing pottery sherds in the central and southern parts of SH14 in the east, which may be a continuation of the activity previously recorded at Moon Rakes (see 10.4.7).

10.4.11 Cropmarks and findspots of probable later prehistoric and Roman date are also recorded to the north and east of Swineshead Bridge and around Swineshead, and at Low Grounds, Bicker Fen, north of Donnington, and at Helpringham Fen. Cropmarks of linear and rectilinear features extend into the Cable Route Corridor to the south-west of Rectory Farm and were detected by the geophysical survey (**Figure 10.3** (document reference 6.2.10); **Appendix 10.4** (document reference 6.3.10.4)). Another area of cropmark enclosures and ditches extends into the cable route between White House Farm and Villa Farm, to the north of Bicker Drove, but these were not detected by the geophysical survey.

Early Medieval (AD 410 – 1066) & Medieval (AD 1066 – 1539)

10.4.12 A spur of high ground at Garwick, located c.800m west of the south-western corner of the Energy Park, is believed to be the location of a high-status Middle Anglo-Saxon trading centre of possible Early Anglo-Saxon or even Roman origins. It has yielded one of Lincolnshire's largest recorded assemblages of finds from this period.

10.4.13 The nearby settlements of Heckington, Great Hale, Little Hale, Howell, Steyning (Swineshead), Drayton and Bicker are all recorded in the Domesday Survey of 1086AD. It is likely that all or most of the land of the Energy Park comprised salt marsh during the early historic periods. Before drainage engineering in the 17th century onwards, the Energy Park may not have been suitable for agriculture. No dated evidence of early medieval or medieval activity was identified within the Energy Park by the trial trenching.

Post-medieval (AD 1539 – 1800) & Modern (post-1800)

10.4.14 Historic aerial photographs dated 5th June 1950 best show a pentagon-shaped outer cropmark with internal curvilinear forms in SH12 in the north-eastern quadrant of the Energy Park. The cropmark represents a former duck decoy of post-medieval date. Its site is very slightly elevated compared to the surrounding land within SH12. Indications of the infilled channels of the decoy were detected by the geophysical survey (**Appendix 10.2** (document reference 6.3.10.2)) and three shallow, artefactually-sterile, ditches were identified by the trial trench evaluation (**Appendix 10.3** (document reference 6.3.10.3)).

10.4.15 The linear settlement of East Heckington, strung along the A17 to the south of the Energy Park, was in existence by the 18th century. Buildings recorded by the HER include the 19th-century or earlier farmsteads of Poplars Farm, Elm Grange, Home Farm, Rectory Farm, and Rakes Farm (all extant); two 19th-century places of worship (one demolished and the other converted to dwelling); an early 20th-century or earlier smithy (demolished); and the early 20th-century house and designed landscape of Park House (demolished).

10.4.16 There are numerous 19th-century farmsteads scattered across the 2km study area. Those closest to the Energy Park include Sadland Farm c.300m to the north-east; Mill Green Farm c.600m to the north; Five Willow Wath Farm c.650m to the north-west; and Glebe Farm c.550m to the west. Six former farmsteads are recorded within the Energy Park on historic Ordnance Survey maps.

10.4.17 The earliest available detailed mapping of the Energy Park is the 1764 Enclosure Map for Heckington parish. It depicts the western third of the Energy Park as divided into many fields allocated to different landowners and tenants, and the central and eastern thirds of the Energy Park as unenclosed land.

10.4.18 The First Edition Ordnance Survey of 1887/8 shows two farmsteads located in the north-west of the Energy Park, one in the south-west, one in the centre, and three along Six Hundreds Drove in the east; and field barns to the north of Elm Farm and Rectory. It also shows drainage pumps and associated earthworks adjoining the west end of the northern boundary of the Energy Park and within the north-eastern corner of the Energy Park.

10.4.19 Surviving historic buildings within the Energy Park, observed during the walkover survey, include the outfarm on the west side of Six Hundreds Drove (which comprises a dilapidated terrace of cottages and an adjacent barn) and a low brick boundary wall along the west side of the track to the west of Elm Grange. These buildings, all of which may be considered as non-designated heritage assets, will remain for the lifetime of the Energy Park; there is no intention for them to be demolished as part of the Proposed Development.

10.4.20 The drainage pump in the north-east of the Energy Park, located between SH10 and SH11 to the north-east, also survives. It comprises a cast iron scoop wheel and bars of a timber frame on a gritstone mounting block above the brick-walled base and channel. There is no visible trace of the mapped channel and outlying earthwork on the north-west side; they have presumably been infilled and ploughed out. The pump structure will remain for the lifetime of the Energy Park; there is no intention for it to be demolished as part of the Proposed Development.

10.4.21 The geophysical survey detected mapped former field boundaries, coverts, and outfarms across the Energy Park (**Appendix 10.2** (document reference 6.3.10.2)). The trial trench evaluation identified former field boundaries across G16–25, SH1, SH2, SH10; and SH14, and demolition/occupational debris in G7, G23, SH10, SH11, and SH15 (**Appendix 10.3** (document reference 6.3.10.3)).

Significance of Identified Archaeological Remains

10.4.22 There are no designated archaeological remains, e.g. Scheduled Monuments, located within the land being considered for the Proposed Development.

10.4.23 Known and potential non-designated built and archaeological remains located within the Energy Park comprise:

- Upstanding post-medieval/modern brick boundary wall along the west side of the track to the west of Elm Grange;
- Upstanding post-medieval/modern buildings of Six Hundreds Farm;
- Upstanding remains of a post-medieval/modern drainage pump near Head Dike between SH10 and SH11;
- Indications of Mesolithic/Neolithic activity in G15;
- Buried remains of a Roman enclosure in G3, and ditches probably associated with Roman agricultural activity in G9, SH1, and SH14;
- Buried remains of a Roman saltern in G23, and layers containing crushed briquetage (from salt making) in G4;
- Discrete, undated, circular or sub-circular gullies and ditches in G4, G25, SH13, and SH14;
- Buried remains of a post-medieval duck decoy in SH12; and
- Buried remains of former outfarms and field boundaries in various locations, some but not all of which are shown on historic maps.

10.4.24 Known and potential non-designated built and archaeological remains located within the cable route for the grid connection comprise:

- Buried remains of enclosures and linear features of possible Roman origin to the south-west of Royalty Farm and to the east of Villa Farm; and
- Buried evidence of Roman activity elsewhere within the cable route, which may have been undetected by the geophysical survey.

10.4.25 None of these known and potential heritage assets are considered to be of the highest level of significance requiring preservation in situ. Nevertheless, the upstanding boundary wall near Elm Farm, the cottages and barn of Six Hundreds Farm, and the drainage pump at Head Dike will be retained within the Proposed Development.

10.4.26 With regard to the buried archaeological resource, the Roman saltern in G23 and the concentration of Roman ditches in the eastern part of SH1 are of greatest interest as they respectively indicate in situ salt working and perhaps a nearby settlement. These features represent non-designated heritage assets of up to regional significance.

10.4.27 The undated sub-circular and circular ditches are considered non-designated heritage assets of local significance, as a prehistoric, Roman, or medieval origin cannot be disproven.

10.4.28 The site of the post-medieval duck decoy represents a non-designated heritage asset of local to regional significance.

10.4.29 Buried remains of post-medieval and modern land use (namely former field boundaries, plough furrows, and structural and occupational debris of outfarms and field barns) are generally considered to hold insufficient significance to warrant identification as heritage assets.

10.5 ASSESSMENT OF LIKELY SIGNIFICANT EFFECTS

Direct Development Effects (i.e. truncation of archaeological remains)

Construction

10.5.1 The Proposed Development comprises the construction, operation and decommissioning of a ground mounted solar photovoltaic electricity generation and energy storage facility with associated infrastructure and landscaping (the Energy Park), and the installation of off-site cabling to connect the Energy Park with the National Grid Bicker Fen Substation (the Cable Route Corridor).

10.5.2 Ground clearance and preparation, plant and vehicle movements, installation of solar arrays (piling to 3m below present ground level), excavation of cable trenches (to 0.6-1.2m below present ground level) and directional drilling underneath existing dykes (to approximately 4m below present ground level on-site), shallow excavations for substation bases, creation of energy storage areas and drainage runs, provision of access, and landscaping (including tree and hedgerow planting) will have below-ground impacts. Plant movements may specifically result in soil compaction, reduction of the protective depths of topsoil and subsoil overlying archaeological remains, and potential changes to moisture levels and chemical composition of soils which may affect the survival of any archaeological and/or palaeoenvironmental deposits contained therein.

10.5.3 Piling, cable trenching, and directional drilling would puncture and/or partially remove peat layers forming part of the tidal flat superficial geology of the the Energy Park and Cable Route Corridor. However no changes to moisture levels or chemical composition are anticipated. The Hydrogeology assessment (**Chapter 9- Hydrology, Hydrogeology, Flood Risk and Drainage** (document reference 6.1.9)) considers that construction of the Proposed Development will not affect the water levels or drainage of peat deposits within the Energy Park, due to the thickness of overlying clays (**Table 10.7**).

10.5.4 Construction activities could also remove, truncate, or compress the known and potential buried archaeological remains of Mesolithic/Neolithic activity, Roman salt-working and agricultural activity, the undated sub-circular and circular gullies and ditches, the post-medieval duck decoy, and the post-medieval and modern outfarms and former field boundaries.

10.5.5 Given their finite nature, the direct development effects upon the known and potential buried archaeological resource would be long-term, permanent and adverse. The two Mesolithic/Neolithic pits and the Roman saltern – all small, discrete features – may be wholly destroyed by construction activities, and this could be considered **significant** in EIA terms. Partial destruction is anticipated for the Roman ditches, undated ditches, and

post-medieval duck decoy ditches, and this would be considered **not significant** in EIA terms.

10.5.6 The mitigation strategy devised will seek to minimise impacts where possible on known below-ground archaeological assets.

Operation

10.5.7 The operation phase of the Proposed Development will have no direct physical effects on the known and potential archaeological resource over and above that already identified at construction. It is anticipated that commissioning and routine maintenance works would not impact on the archaeological resource. Therefore, no additional effects (or harm) is predicted.

Decommissioning

10.5.8 The decommissioning phase of the Proposed Development will entail similar activities as for construction. The removal of ground-mounted infrastructure such as transformer bases within the Energy Park may result in disturbance to shallow-buried archaeological deposits. Plant movements may result in soil compaction, reduction of the protective depths of topsoil and subsoil overlying buried archaeological remains, and potential changes to moisture levels and chemical composition of soils which may affect the survival of palaeoenvironmental and archaeological deposits.

10.5.9 These activities may result in further destruction of features that were only partially destroyed during construction. Complete destruction of discrete Roman features would be considered **significant** in EIA terms if they occur.

Indirect Development Effects (i.e. as a result of changes to setting)

Construction

10.5.10 The construction of the Proposed Development will, through increase in traffic and noise etc., result in temporary change within the setting of certain heritage assets and this could cause some level of harm to their significance by affecting the experience of the assets. This is discussed further under the heading 'Steps 2 and 3', below.

Operation

10.5.11 The Proposed Development may, for the operational lifespan of the project, result in change within the setting of certain heritage assets, and this could cause some level of harm to their significance. This is discussed further under the heading 'Steps 2 and 3', below.

Decommissioning

10.5.12 The decommissioning of the Proposed Development will result in permanent change within the setting of certain heritage assets. Depending on the nature of the proposals, this could result in either a level of harm or benefit to their significance. The removal of the Energy Park and the reversion of the land to agricultural use could largely restore the original baseline of heritage setting. This is discussed further under the heading 'Steps 2 and 3', below.

Step 1

10.5.13 Step 1 setting assessment indicated that only the following heritage assets could be sensitive to the construction and/or operation of the Proposed Development:

- Scheduled Monument of Settlement site 600m east of Holme House;
- Grade I Listed Building of Kyme Tower at South Kyme;
- Non-Listed Mill Green Farmhouse.

10.5.14 Justification for the descopeing of other heritage assets is provided in Section 6 of **Appendix 10.1** (document reference 6.3.10.1). Below is a synopsis of Steps 2 and 3 setting assessment undertaken for the two potentially-sensitive assets listed above.

Steps 2 and 3

10.5.15 The following elements of setting contribute to the significance of the Scheduled settlement site:

- Its geographical and topographical position, which was presumably chosen to avoid the lowest-lying land prone to flooding;
- Outlying associated activity in the field to the west, as indicated by findspots of pottery sherds.

10.5.16 Although evidence of Roman salt-working and agriculture has been identified within the Energy Park by the trial trench evaluation, there is no evidence directly linking those activities with the Scheduled settlement site. The two locales may not even be contemporary; the Romano-British period spanned four centuries. There is an association between the settlement site and the Energy Park only insofar as both demonstrate a human presence in Heckington Fen in the first half of the first millennium AD.

10.5.17 It is considered that the land being considered for the Proposed Development does not contribute through setting to the significance of the settlement site. As such, no harm to the Scheduled Monument is anticipated to arise from the Proposed Development. Therefore, no effect (or harm) is predicted to occur to the significance of this asset; for EIA purposes the effect is **not significant**.

10.5.18 The following elements of setting contribute to the significance of the Grade I Listed Kyme Tower:

- The surrounding expansive flat landscape across which there were designed long-ranging views in all directions from the upper floors and battlement of the Tower;
- The earthwork and buried remains of the medieval moated manor house to which the Tower was once attached (and which are protected by a separate designation as a Scheduled Monument);
- The nearby upstanding post-medieval manor house that succeeded the medieval moated manor house (which is protected by Grade II Listing);
- The surrounding grassed areas encapsulated within the Scheduled Monument, from where the Tower is experienced; and
- The long- to mid-ranging views of the Tower on the approaches to South Kyme via Clay Bank (north of Head Dike) and Cow Drove.

10.5.19 The long-ranging intervisibility of Kyme Tower and parts of the Energy Park is largely incidental to the significance of the asset; there is no evidence to suggest that visibility specifically of the Energy Park was ever important to the defensive function of the Tower, or that the Tower was intended to be seen specifically from the Energy Park or any location to its south or south-east from where the Energy Park may be co-visible.

10.5.20 The Proposed Development of the Energy Park may be visible from the top floor and battlement of Kyme Tower (though it is not possible to gain access as there is no surviving stairwell); however it would be seen at long-range, within a landscape of a distinctly modern character. The geographical and topographical context of the Tower, and the current potential range of the views from it, will not be changed.

10.5.21 The Proposed Development of the Energy Park will not be co-visible in the identified mid-ranging views of the Tower from Clay Bank or Cow Drove and so will not detract from or compete with the prominence of the Tower from those locations. There could be co-visibility of the Tower and the Proposed Development of the Energy Park from points along the A17, but those views are at such long range that it is difficult to clearly distinguish and identify the Tower; therefore these are not considered key views of the asset.

10.5.22 It is considered that the land being considered for the Proposed Development does not contribute through setting to the significance of Kyme Tower. As such, no harm to this Grade I Listed Building is anticipated to arise from the Proposed Development. Therefore, no effect (or harm) is predicted to occur to the significance of this asset; for EIA purposes the effect is **not significant**.

10.5.23 The following elements of setting contribute to the significance of the non-Listed Mill Green Farmhouse:

- The courtyard of brick outbuildings to its east, which form part of the historic layout of the working farm;
- The gardens to its west, from where the farmhouse can be seen and appreciated and across which there are views from the side elevation of the farmhouse; and
- The open agricultural landscape to its south, which features in designed views from the farmhouse and contributes to an understanding of the origins of the farmstead.

10.5.24 Regarding the contribution made by the outlying farmland, the fields between the track and Head Dike are considered most important given their close proximity to the farmstead and the likelihood of their having comprised part of the historic landholding of the farm. The fields to the south of Head Dike, within the Energy Park, are also visible but at longer range. They make a lesser contribution to the farmhouse's significance than the fields to the north of Head Dike.

10.5.25 The Proposed Development of the Energy Park will be visible in designed views from Mill Green Farmhouse, particularly from the first-floor windows. It is considered that the significant and extensive change to the late 19th-century landscape character of the Energy Park arising from the Proposed Development (i.e. from open arable fields to extensive blocks of modern built form) will result in only **minor harm** to the significance of this non-designated heritage asset. For EIA purposes the effect is **not significant**.

10.5.26 The conclusion of minor harm takes into account that the asset's significance is primarily derived from its built form, and that its built form and other aspects of its setting such as its outbuildings and garden will be unaffected by the Proposed Development.

10.6 MITIGATION AND ENHANCEMENTS

Mitigation by Design

10.6.1 The upstanding buildings of Six Hundreds Farm, the boundary wall to the west of Elm Grange, and the drainage pump at Head Dike are retained within the Proposed

Development. During construction, these assets will be fenced off and the construction team will be advised to avoid these assets whilst on the Energy Park. The contractor appointed to undertake the construction works will produce a detailed CEMP (based on and incorporating the requirements of the Outline CEMP (document reference 7.7), as required by the Outline CEMP itself).

10.6.2 **Figure 6.2** (document reference 6.2.6) incorporates planting along the northern boundary of the Energy Park to partially screen the Proposed Development in designed views from the non-Listed Mill Green Farmhouse. No mitigation by design is required with regard to the setting of any other heritage asset.

Additional Mitigation

10.6.3 Certain areas within the Energy Park have been defined for archaeological strip map sample excavation pre-commencement (**Figure 10.4** (document reference 6.2.10)). The excavations will fully record selected Roman features identified by the trial trench evaluation, and will determine the need for any further mitigation (e.g. archaeological monitoring of groundworks, and/or design changes) prior to and/or during construction of the Proposed Development.

Enhancements

10.6.4 Students from the Build-A-Future School at Elm Grange visited the Energy Park on 28th September 2022 while the trial trenching was underway. A talk was provided by representatives of Ecotricity and Wessex Archaeology. Feedback was very positive noting it as **"a valuable learning experience"**.

10.6.5 Discussions with the headteacher have continued to try and facilitate a selection of finds being hosted at the school for future learning opportunities, subject to the approval of The Collection Museum in Lincoln. Further opportunities for practical demonstration of archaeological fieldwork may be available during the construction phase with an Outline Supply, Employment and Skills Plan accompanying the DCO.

10.6.6 In the future, other community outreach and public engagement events (e.g. talks to local groups, pop-up exhibitions in community centres, etc.) may be arranged by Wessex Archaeology in conjunction with the Applicant to communicate the findings of the trial trench evaluation and the forthcoming strip map sample excavations. Through such events, the Proposed Development will bring enhancements in respect of cultural heritage.

10.7 CUMULATIVE AND IN-COMBINATION EFFECTS

10.7.1 Consideration has been given to the following large-scale NSIP solar schemes elsewhere in Lincolnshire:

- Boston Alternative Energy Facility (EN010095);
- Outer Dowsing Offshore Wind (Generating Station) (EN010130);
- Temple Oaks (EN010126);
- Mallard Pass Solar Farm (EN010127);
- West Burton Solar Project (EN010132);
- Cottam Solar Project (EN010133);
- Tillbridge Solar Project (EN010142);
- Gate Burton Energy Park (EN010131); and
- South Lincolnshire Reservoir (TBC).

10.7.2 Consideration has been given to the following other schemes:

- Vicarage Drove (B/21/0443);
- Land West of Cowbridge Road, Bicker Fen (B/22/0356, H04-0849-22);
- Land to the North of White Cross Lane (19/0863/FUL);
- Land South of Gorse Lane, Silk Willoughby (19/0060/FUL);
- Land at Ewerby Thorpe (14/1034/EIASCR); and
- Land at Little Hale Fen (21/1337/EIASCR).

10.7.3 None of these schemes will have an effect on the archaeological or built heritage resource of the land being considered for the Proposed Development. Further, the heritage assets considered sensitive to the Proposed Development through change to setting lie outside the zone of influence with the above schemes.

10.7.4 No cumulative effects are anticipated to result from the Proposed Development in respect of cultural heritage.

10.7.5 No in-combination effects are anticipated to result from the Proposed Development in respect of cultural heritage.

10.8 SUMMARY

Introduction

10.8.1 This chapter has considered potential effects upon the significance of cultural heritage receptors. Buried archaeological remains, earthworks, buildings / structures, and all other aspects of the historic environment have all been considered.

Baseline Conditions

10.8.2 No designated heritage assets are located within the land being considered for the Proposed Development.

10.8.3 Known and potential non-designated heritage assets located within the Energy Park comprise the upstanding structures of a derelict 19th-century outfarm, boundary wall, and drainage pump; and the buried archaeological remains of two pits and a tree throw containing Mesolithic/Neolithic flints, a Roman saltern and briquetage deposits elsewhere, ditches suggestive of Roman agricultural activity as well as nearby occupation, undated ditches and gullies, a post-medieval duck decoy, and post-medieval and modern outfarms and field boundaries.

10.8.4 Known and potential non-designated heritage assets located within the Cable Route Corridor comprise buried remains of enclosures and linear features of possible Roman origin to the south-west of Royalty Farm and to the east of Villa Farm.

10.8.5 The Roman features in the Energy Park and the Cable Route Corridor represent non-designated heritage assets of up to regional significance. In the Energy Park, the post-medieval duck decoy represents a non-designated heritage asset of local to regional significance; while the upstanding historic structures represent non-designated heritage assets of local significance. Buried historic agricultural remains in the Energy Park and the Cable Route Corridor are not considered heritage assets.

10.8.6 Detailed setting assessments have identified no harm to the significance of any Scheduled Monument, Listed Building or Conservation Area as arising from the Proposed Development; but minor harm to the significance of the non-Listed Mill Green Farmhouse.

Likely Significant Effects

10.8.7 The potential for **significant cultural heritage effects** has been identified for the construction and decommissioning stages of the Proposed Development. These effects relate to the possible destruction of known buried archaeological remains of prehistoric and Roman activity. This is a worst-case scenario, however, as trial trench evaluation has not yet been complete for the Cable Route Corridor.

Mitigation

10.8.8 The derelict cottages and barn of Six Hundreds Farm, the low boundary wall at Elm Grange, and the former drainage pump at Head Dike will be retained as part of the Proposed Development.

10.8.9 Six areas within the Energy Park that preserve the densest and most extensive (read significant) evidence of Roman salt-working and agricultural activity will be subject to a mitigation strategy of strip map sample excavation (and follow-on mitigation as appropriate) to preserve the buried archaeological resource by record prior to its destruction through construction and decommissioning activities. The residual effect is **minor harm to its significance**.

10.8.10 Planting along the northern boundary of the Energy Park with Head Dike will help screen visibility of the Proposed Development in designed views from Mill Green Farmhouse, and accordingly reduce the level of **minor harm to its significance**.

Conclusion

10.8.11 This chapter has identified no significant residual effects in respect of cultural heritage assets (above and below ground) that would arise from a development of the nature and on the scale proposed.

10.8.12 **Table 10.8** provides a summary of effects, mitigation and residual effects.

Table 10.8: : Summary of Effects, Mitigation and Residual Effects

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects
Construction								
Archaeological and/or palaeo-environmental evidence within peat of tidal flat deposits	Partial loss through piling, excavation of cable trenches, and directional drilling	Permanent Direct	Non-designated heritage assets of low to moderate significance	Harm to non-designated heritage assets	Local	Not significant	None	Minor harm
Buried remains of Mesolithic or Neolithic pits	Truncation / loss through ground preparation, piling, excavation of cable trenches, and groundworks for access and landscaping	Permanent Direct	Non-designated heritage assets of low to moderate significance	Harm to non-designated heritage assets	Local	Significant	Archaeological strip map sample excavation	Minor harm (archaeology is a finite resource and so harm cannot be entirely mitigated)
Buried remains of Roman saltern	Truncation / loss through ground preparation, piling, excavation of cable trenches, and groundworks for access and landscaping	Permanent Direct	Non-designated heritage assets of moderate significance	Harm to non-designated heritage asset	Regional	Significant	Archaeological strip map sample excavation	Minor harm (archaeology is a finite resource and so harm cannot be entirely mitigated)
Buried remains of Roman agricultural activity	Truncation / loss through ground preparation, piling, excavation of cable trenches, and groundworks for access and landscaping	Permanent Direct	Non-designated heritage assets of low significance	Harm to non-designated heritage assets	Local	Not significant	Archaeological strip map sample excavation for clusters of ditches in SH1 only	Minor harm (archaeology is a finite resource and so harm cannot be entirely mitigated)

ENVIRONMENTAL STATEMENT

10. Cultural Heritage

Receptor / Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation / Enhancement Measures	Residual Effects
Buried remains of a post-medieval duck decoy	Truncation / loss through ground preparation, piling, excavation of cable trenches, and groundworks for access and landscaping	Permanent Direct	Non-designated heritage asset of low significance	Harm to non-designated heritage asset	Local	Not significant	Avoidance of topsoil stripping and levelling across the feature	None
Buried remains of former outfarms	Truncation / loss through ground preparation, piling, excavation of cable trenches, and groundworks for access and landscaping	Permanent Direct	Non-designated heritage assets of low significance	Harm to non-designated heritage assets	Local	Not significant	None	Minor harm
Operation								
Non-Listed Mill Green Farmhouse	Change to setting, specifically, the character of designed views	Permanent Indirect	Non-designated heritage asset	Minor harm to non-designated heritage asset	Local	Not significant	Planting to provide screening of the Proposed Development	Minor harm
Decommissioning								
Buried remains of scattered Roman ditches not previously subject to strip map sample excavation	Truncation / loss through plant movements and removal of solar infrastructure	Permanent Direct	Non-designated heritage assets of low to moderate significance	Harm to non-designated heritage assets	Local	Not significant	Archaeological observation and recording during the removal of ground-mounted infrastructure	Minor harm (archaeology is a finite resource and so harm cannot be entirely mitigated)

ENVIRONMENTAL STATEMENT

10. Cultural Heritage

Receptor/ Receiving Environment	Description of Effect	Nature of Effect	Sensitivity Value	Magnitude of Effect	Geographical Importance	Significance of Effects	Mitigation/ Enhancement Measures	Residual Effects
Buried remains of a post-medieval duck decoy	Truncation / loss through plant movements and removal of solar infrastructure	Permanent Direct	Non-designated heritage asset of low significance	Harm to non-designated heritage asset	Local	Not significant	Avoidance of levelling across the feature	None
Buried remains of former outfarms	Truncation / loss through plant movements and removal of solar infrastructure	Permanent Direct	Non-designated heritage assets of low significance	Harm to non-designated heritage assets	Local	Not significant	None	Minor harm