



Tween Bridge Solar Farm

A Nationally Significant Infrastructure Project in the Energy Sector

Preliminary Environmental Information Report

Chapter 8 – Cultural Heritage and Archaeology

March 2025



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8. Cultural Heritage and Archaeology

8.1. Introduction

- 8.1.1. This chapter of the PEIR reports on the preliminary assessment of the likely significant effects of the Scheme on cultural heritage and archaeology.
- 8.1.2. Consultation responses from discussions with the Local Planning Authorities and the Planning Inspectorate Scoping Opinion have been taken into account during the preparation of this chapter and this is discussed in detail below.
- 8.1.3. This PEIR has been undertaken by Jonathan Millward (BA(Hons), MA, MCIfA), Associate Heritage Consultant at Pegasus Group. Jonathan is an experienced heritage consultant, having worked for over 20 years in the heritage sector. He has extensive experience in the assessment of large-scale schemes with regards to the potential effects of these developments upon the significance of heritage assets.
- 8.1.4. This chapter is supported by the following appendices and figure (the figure is provided at the end of this chapter): –
- **Appendix 8.1** – Heritage Baseline Assessment
 - **Appendix 8.2** – Interim Geophysical Survey Report
 - **Appendix 8.3** – Geoarchaeological Assessment
 - **Appendix 8.4** – Trial Trenching Completion Statement
 - **Figure 8.1** – Heritage Assets
- 8.1.5. Baseline and assessment work is ongoing, it is anticipated that the following information will be made available for the final ES: –
- Consideration of Cumulative Impacts
 - Assessment against the detailed design parameters of the scheme
 - Assessment of the ongoing geophysical survey and any other archaeological fieldwork undertaken for this DCO application.

8.2. Consultation

- 8.2.1. A summary of consultation responses received to date is provided in Table 8.1

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Table 8.1 Summary of Consultation

CONSULTEE	SUMMARY OF CONSULTEE RESPONSE	HOW RESPONSE HAS BEEN ADDRESSED BY APPLICANT
Historic Environment Officer, North Lincolnshire Council (13/03/23)	Scope of geophysical survey should encompass the whole land take within North Lincolnshire as there has only been very limited previous survey undertaken.	Geophysical survey has been scoped in line with the consultee response.
Historic Environment Officer, South Yorkshire Archaeology Team (13/03/2023)	Further background information requested to allow considered approval of geophysical survey scope.	Copy of heritage assessment sent 13/03/2023
Historic Environment Officer, North Lincolnshire Council (22/03/23)	Following the scoping opinion, a clarified scope and methodology for the setting assessment was submitted for approval. The proposed scope and methodology was approved on 24/03/23.	Revisions to the baseline assessment were undertaken to align with the revised scope and methodology.
Design and Conservation Officer, Doncaster Council (22/03/23)	Following the scoping opinion, a clarified scope and methodology for the setting assessment was submitted for approval. The proposed scope and methodology was approved on 24/03/23.	Revisions to the baseline assessment were undertaken to align with the revised scope and methodology.
Historic England Yorkshire Regional team (22/03/23)	Following the scoping opinion, clarification was sought by HE.	Clarification was sent to HE 06/04/23.
Historic England Yorkshire Regional team (17/04/23)	Further clarification was sought following email of 06/04/23.	Clarification was sent to HE 17/04/23. No response received subsequently
Historic Environment Officer, North Lincolnshire Council (22/06/23)	WSI for geophysical survey submitted to consultee for approval. Geophysical survey methodology was approved on 30/06/23.	Survey works have commenced in line with approved WSI.

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Historic Environment Officer, South Yorkshire Archaeology Team (22/06/23)	WSI for geophysical survey submitted to consultee for approval. Geophysical survey methodology was approved on 30/06/23	Survey works have commenced in line with approved WSI.
Historic Environment Officer, North Lincolnshire Council (22/06/23)	Officer queried progress on geoarchaeological assessment.	Project team noted that procurement process was ongoing
Historic Environment Officer, North Lincolnshire Council (25/10/23)	Project team requested input on proposed trial trenching strategy.	Officer declined to discuss trial trenching and stated that geophysical survey and geoarchaeological reports were required. Project team provided interim geophysical survey results and baseline assessment (15/11/2023).
Historic Environment Officer, South Yorkshire Archaeology Team (25/10/23)	No response received	Project team requested input on proposed trial trenching strategy.
Historic Environment Officer, North Lincolnshire Council (15/11/23)	No response received	Geophysical survey summary issued to LPA Officer. Input on trenching strategy requested.
Historic Environment Officer, South Yorkshire Archaeology Team (15/11/23)	No response received	Geophysical survey summary issued to LPA Officer. Input on trenching strategy requested.
Historic Environment Officer, North Lincolnshire Council (08/02/2024)	No response received	Consultation on proposed initial phase of archaeological trial trenching.
Historic Environment		Provision of geophysical survey results and initial geoarchaeological assessment.

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Officer, North Lincolnshire Council (12/3/2024)		Requested meeting to discuss fieldwalking, test-pitting, next steps for geoarchaeology and trial trenching.
Historic Environment Officer, South Yorkshire Archaeology Team (12/3/2024)		Provision of geophysical survey results and initial geoarchaeological assessment. Requested meeting to discuss fieldwalking, test-pitting, next steps for geoarchaeology and trial trenching.
Historic England Science Advisor (12/3/2024)	Approach to further geoarchaeology was discussed	Requested specialist input on the geoarchaeological assessment and input on developing a proportionate programme of further geoarchaeological works. Outcome of discussion has been incorporated into methodology to be adopted moving forwards
Teams meeting with Historic Environment Officer, North Lincolnshire Council and Historic Environment Officer, South Yorkshire Archaeology Team (30/4/2024)	Meeting discussed archaeological progress to date and strategy for next steps. Officers refused to discuss trial trenching. N. Lincs Officer insisted all of site must be fieldwalked prior to trial trenching.	Concerns over understanding of warping were raised by Officers – these were addressed in a revision of the geoarchaeological assessment. The project team’s stance is that fieldwalking the whole order limits was disproportionate to advise appropriately on archaeological conditions. The project team agreed to consider the feasibility of targeted fieldwalking on the basis of areas of potential identified from the baseline and geoarchaeological assessments, which is being undertaken across the Order Limits. Fieldwalking was not possible in 2024 given ground conditions and the very limited extent of ploughing, which was exclusively in areas of limited archaeological potential.
Historic England Science Advisor (12/7/2024)	Approach to further geoarchaeology was discussed	Revised geoarchaeological assessment circulated. Followed up with further discussions via email 15.07.2024 Outcome of discussion has been incorporated into methodology to be adopted moving forwards

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<p>Historic Environment Officer, North Lincolnshire Council and Historic Environment Officer, South Yorkshire Archaeology Team (12/7/2024)</p>	<p>No comments received</p>	<p>Revised geoarchaeological assessment circulated</p>
<p>Historic Environment Officer, North Lincolnshire Council (9/8/2024)</p>	<p>Follow-up emails received asking for clarification received 12/08/24 and 14/08/24</p>	<p>Notification of commencement of targeted trial trenching and issue of WSI Clarification provided via email</p>
<p>Historic Environment Officer, North Lincolnshire Council (2/9/2024)</p>	<p>Invite accepted. Officer requested invitation extended to HE Science Advisor</p>	<p>Invitation to attend site monitoring meeting. Invitation extended to Science Advisor</p>
<p>Historic Environment Officer, North Lincolnshire Council (3/9/2024)</p>	<p>Officer raised concerns over trenching being undertaken without their input or prior approval and without the fieldwalking having been undertaken.</p>	<p>Formal response issued. Discussions during site meeting 11/9/24 addressed reasoning behind proceeding with trenching at this stage. Position paper regarding proposed way forward for archaeology also in prep.</p>
<p>Historic Environment Officer, North Lincolnshire Council and Historic England Science Advisor (11/9/2024)</p>	<p>Officer acknowledged trenching being undertaken correctly. Officer noted that comments had been provided re draft WSI.</p>	<p>Monitoring meeting to review targeted archaeological trial trenching. Officer comments addressed and revised WSI approved by LPA</p>

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8.3. Assessment Approach

Methodology

Guidance Documents

8.3.1. This PEIR Chapter, the Heritage Assessment (Appendix 8.1) and the methodology for the assessment of development effects have been informed by the following documents:

- Overarching NPS for Energy (EN-1) (November 2023);
- NPS for Renewable Energy Infrastructure (EN-3) (November 2023);
- NPS for Electricity Networks Infrastructure (EN-5) (November 2023);
- National Planning Policy Framework (NPPF; 2024);
- Historic England’s Conservation Principles: Policies and Guidance for the Sustainable Management of the Historic Environment (published by English Heritage in 2008);
- Historic England’s Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision Taking (2015);
- Historic England’s Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (2017);
- Historic England’s Advice Note 15: Commercial Renewable Energy Development and the Historic Environment (2021).
- Historic England’s Advice Note 12: Statements of Heritage Significance: Analysing Significance in Heritage Assets (2019)

Sources of Information

8.3.2. In order to collect historic environment data for the purposes of this Chapter, a minimum 1km study area around the Draft Order Limits was adopted in the Heritage Baseline to consider non-designated archaeological assets, as this area was considered to provide sufficient contextual information about the Scheme and its surrounding landscape, from which to assess the archaeological potential and potential impacts on the archaeological resource.

8.3.3. For built heritage assets a 1km buffer around the order limits and the Zone of Theoretical Visibility (ZTV) produced by the Landscape team was used as the study area. It is noted that a ZTV is a tool of assessment. It is not 100% accurate and for heritage, it is understood that setting is not a purely visual concept. Therefore, assets which lay outside the ZTV were also assessed to ensure they did not have an historic or functional association with the Scheme. The ZTV used is screened, meaning substantial barriers to intervisibility, such as interceding buildings or blocks of woodland have been taken into account. This approach is deemed acceptable in this instance as those barriers to intervisibility that are most susceptible to change, such as hedges and woodland, are long standing features within the landscape and it is deemed most probable that they will be subject to retention and maintenance rather than removal going forwards. Areas of recent tree planting have also been noted within the Study Area.

- 8.3.4. The Scheme is located across the administrative border between Doncaster Borough and North Lincolnshire. The study area is shown on Figure 1 of the Heritage Assessment (**Appendix 8.1**).
- 8.3.5. For the purposes of this assessment the scope of the setting assessment includes all designated heritage assets that are located within the Zone of Theoretical Visibility (ZTV) as well as non-designated historic buildings within the ZTV.
- 8.3.6. The following sources of publicly available archaeological and historical information were consulted as part of the preparation of the Heritage Assessment (**Appendix 8.1**):
- The South Yorkshire Historic Environment Record (SYHER) for information on the recorded heritage resource within the vicinity of the western part of the Scheme;
 - The North Lincolnshire Historic Environment Record (NLHER) for information on the recorded heritage resource within the vicinity of the eastern part of the Scheme;
 - The National Heritage List for England (NHLE) for information on designated heritage assets;
 - Historic maps available online;
 - Aerial photographs available online via Historic England's Aerial Photo Explorer, Cambridge Air Photos and Britain from Above;
 - Historic England's Aerial Archaeology Mapping Explorer;
 - The Lincolnshire Archives;
 - Other online resources, including Ordnance Survey Open Source data; geological data available from the British Geological Survey and Cranfield University's Soilscales Viewer; Google Earth satellite imagery; and LiDAR data from the Environment Agency.

Assessment of Significance

- 8.3.7. The significance of heritage assets has been assessed in accordance with NPS EN-1 however, there is no definitive grading system for assessing or categorising significance outside of the categories of Designated Heritage Assets of the Highest Significance and Designated Heritage Assets of Less than the Highest Significance and Non-Designated Heritage Assets, specifically with regards to the relative significance of different parts of an asset and a degree of professional judgement is required. The NPS (EN-1) clearly defines tiers of significance, and these have been used within the context of this assessment.
- 8.3.8. Heritage assets are defined by the NPS (EN-1) as "a building, monument site, place, area or landscape identified as having a degree of significance meriting consideration in planning decisions because of its heritage interest. Heritage assets include designated heritage assets, and assets identified by the local planning authority (including local listing)".
- 8.3.9. Heritage significance is defined as the value of a heritage asset to this and future generations because of their heritage interest. That interest may be archaeological, architectural, artistic or historic in nature. The assessment of significance will be guided primarily by the key industry-

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standard policies and guidance contained in '*Analysing Heritage Significance*',¹ where it is described with reference to the following key forms of value:

- Archaeological interest: There will be archaeological interest in a heritage asset if it holds, or potentially holds, evidence of past human activity worthy of expert investigation at some point.
- Architectural and artistic interest: These are interests in the design and general aesthetics of a place. They can arise from conscious design or fortuitously from the way the heritage asset has evolved. More specifically, architectural interest is an interest in the art or science of the design, construction, craftsmanship and decoration of buildings and structures of all types. Artistic interest is an interest in other human creative skills, like sculpture.
- Historic Interest: An interest in past lives and events (including pre-historic). Heritage assets can illustrate or be associated with them. Heritage assets with historic interest not only provide a material record of our nation's history but can also provide meaning for communities derived from their collective experience of a place and can symbolise wider values such as faith and cultural identity.

8.3.10. Significance derives not only from a heritage asset's physical fabric, but also from its setting. The setting of a heritage asset is defined as the surroundings within which it is experienced; its extent is not fixed and may change as the asset and its surroundings evolve. However, setting is not a heritage asset in its own right, nor is it a heritage designation in its own right. Its importance lies in what it contributes to the significance of the heritage asset. This contribution may be positive, negative or neutral.

8.3.11. Paragraphs 5.9.9–5.9.15 of the NPS (EN-1) is clear in its recognition of the need for an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. It further states that local planning authorities should require a field evaluation in addition to an appropriate desk-based assessment, where proposals include or have the potential to include heritage assets of archaeological interest. It is also unequivocal on the matter of scope, as it mentions that the level of detail should be proportionate to the importance of the asset, and no more than sufficient to understand the potential impact of a development on that significance. The results of future surveys at the Draft Order Limits will inform the EIA process in due course, at which time an assessment of significance and potential impact to any assets of archaeological interest within the Draft Order Limits will be provided.

8.3.12. The way in which heritage significance will be expressed within the PEIR has been specifically developed, based on good practice, to ensure that it is fully aligned with the requirements of NPS (EN-1) and NPS (EN-3) and the Planning (Listed Buildings and Conservation Area) Act 1990, the NPPF and Historic England's Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment.

¹ Historic England, *Statements of Heritage Significance: Analysing Significance in Heritage Assets*, Historic England Advice Note 12 (Swindon, October 2019).

- 8.3.13. The statements of significance for each of the assets will reflect the language of the Planning Act 1990, utilising terms such as character and appearance (of Conservation Areas), and architectural and historic interest (of Listed Buildings).
- 8.3.14. The statements of significance will describe ‘what matters and why’, i.e., which aspects of an asset and its setting contribute to the heritage significance of the asset and how. Although the statements rightly acknowledge the fabric of heritage assets as representing the principal embodiment and physical manifestation of their heritage significance, the surroundings of the assets, and the ways in which they can be experienced, often contribute to their overall significance. This will be assessed in line with the settings assessment methodology that follows the three step GPA 3 process².
- 8.3.15. Although terms such as High, Medium or Low value, and National, Regional or Local importance are often adopted in EIA to express a summary description of the ‘relative significance’ heritage assets, they are not universally recognised or accepted terms within heritage sector guidance and amongst heritage professionals. This is because these concepts require complex definitions to properly allow for their application, and do not directly relate to the language or key tests required in determining planning applications or heritage consents.
- 8.3.16. The criteria proposed for this assessment are laid out in Table 8.2, with terminology used derived directly from the NPPF. The language proposed for use in this assessment is entirely consistent with NPS EN-1, the NPPF and the Planning (Listed Building and Conservation Area) Act 1990, and provides the decision-maker with sufficient information to understand how change could bring benefit or harm to the heritage significance of an asset, thus enabling an informed judgement to be reached.

Table 8.2: Criteria for Assessing the Significance of Heritage Assets

HERITAGE SIGNIFICANCE	DESCRIPTION OF CRITERIA
Designated heritage assets of the highest significance	Scheduled Monuments, Protected Wreck Sites, Registered Battlefields, Grade I and II* Listed Buildings, Grade I and II* Registered Parks and Gardens, and World Heritage Sites. Archaeological assets with a significance demonstrably equivalent to a Scheduled Monument
Designated heritage assets of less than the highest significance	Grade II Listed Buildings, Conservation Areas and Grade II Registered Parks and Gardens.
Non-designated heritage assets	Heritage assets, the significance of which has been ascertained through sufficient evaluation and assessment.
No significance	Remains that have been sufficiently demonstrated to have no heritage interests as defined in the NPPF Glossary.

² Historic England, *The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3* (2nd edition, Swindon, December 2017).

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Assessment of Development Effects

- 8.3.17. The methodology directly reflects key concepts in planning policy and heritage guidance with regard to the assessment of development effects upon heritage assets. It therefore offers an appropriate way to define such effects. Clear statements of significance (the ‘what matters and why’ approach), and a sound understanding of the character of the Scheme, as presented in this assessment methodology, allow for a transparent articulation of the nature/degree of any identified effects.
- 8.3.18. The effects of the Scheme arise as a result of change to the heritage assets. The significance of a heritage asset can be harmed or lost through alteration, destruction or development within its setting. In summary, a project could bring about change within the setting of a heritage asset, resulting in harm to its significance, or the way in which that significance is experienced.
- 8.3.19. The assessment of the effect of the development upon the cultural heritage resource takes into account numerous factors, including the scale of development, the type and extent of physical disturbance and the visual effects. The development effects may be:
- Direct or indirect. Direct effects arise from physical change to the resource, which affects its physical remains or fabric (i.e., excavations which may affect the archaeological remains or alterations to historic buildings). Indirect effects relate to changes within the setting of heritage assets;
 - Permanent or temporary. Due to their character, direct effects upon the physical remains of heritage assets are permanent, and not reversible. However, effects on the settings of heritage assets may be temporary, if the development has a limited lifespan. These temporary effects can be short, medium or long-term.
 - Beneficial, when the development leads to the enhancement of the heritage resource, or adverse, when it results in harm to, or loss of, the significance of a heritage asset. If the resource will not be affected by the Scheme, there will be no impact.
- 8.3.20. To further assist in the decision-making process, the following approach to the assessment of effects upon heritage assets (Table 8.3) has been utilised. The language used here is entirely consistent with the NPS (EN-1), NPPF and the Planning Act (Listed Building and Conservation Area) 1990 and provides sufficient information to reach informed judgement.

Table 8.3: Magnitude of effect upon heritage assets

LEVEL OF EFFECT	DESCRIPTION	APPLICABLE POLICIES
Heritage Benefit	The proposals would enhance the heritage significance of a heritage asset.	Enhancing the significance of a heritage asset is a desirable development outcome in respect of heritage. It is consistent with key policy and guidance, including NPS (EN-1) paragraph 5.9.36.
No harm (neutral effect)	The proposals would preserve the significance of a heritage asset.	Preserving a Listed Building and its setting is consistent with Section 66 of

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		<p>the Planning (Listed Buildings and Conservation Areas) Act 1990.</p> <p>Preserving or enhancing the character or appearance of a Conservation Area is consistent with Section 72 of the Act.</p> <p>Sustaining the significance of a heritage asset is consistent with NPS (EN-1) paragraph 5.9.36..</p>
<p>Less than Substantial Harm</p>	<p>The proposals would result in a restricted level of harm to the significance of a heritage asset, such that the asset’s contributing heritage values would be largely preserved (lower end).</p> <p>The proposals would lead to a notable level of harm to the significance of a heritage asset. A reduced, but appreciable, degree of its heritage significance would remain (upper end).</p> <p>Not usually deemed to be significant effects in EIA terms – however professional judgement will be applied to this consideration.</p>	<p>In accordance with the NPPF, in determining an application, this level of harm upon designated heritage assets (or assets of equivalent significance) should be weighed against the public benefits of the proposals (paragraph 202).</p> <p>Proposals involving change to a Listed Building or its setting, or any features of special architectural or historic interest which it possesses, or change to the character or appearance of Conservation Areas, must also be considered within the context of the Planning Act 1990.</p> <p>Paragraph 5.9.32 of the NPS (EN-1) states that in determining planning application, the effects of the scheme on the significance of non-designated heritage assets needs to be taken into account. A balanced judgement is required to weigh direct or indirect impacts on non-designated assets, having regard for the scale of harm and the significance of the asset.</p>
<p>Substantial Harm</p>	<p>The proposals would very much reduce the heritage asset’s significance or vitiate that significance altogether.</p> <p>Deemed to be significant effects in EIA terms.</p>	<p>Paragraph 5.9.31 of the NPS (EN-1) state that substantial harm or loss to designated heritage assets of the highest significance should be wholly exceptional (Scheduled Monuments, protected wreck sites, registered battlefields, grade I and II* Listed Buildings, grade I and II* Registered Parks and Gardens, and World Heritage Sites) and to assets of less than highest significance (grade II Listed Buildings, or grade II Registered Parks or Gardens) – exceptional. Scheme leading to such harm to designated heritage assets should be refused unless it is</p>

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		<p>demonstrated that this substantial harm is necessary to achieve substantial public benefits.</p> <p>The effects of the scheme on the significance of non-designated heritage assets will require a balanced judgement to weigh direct or indirect impacts on non-designated assets, having regard for the scale of harm and the significance of the asset (paragraph 203).</p>
Minor Harm	<p>The proposals would result in a restricted level of harm to the significance of a non-designated heritage asset, such that the asset's contributing heritage values would be largely preserved.</p> <p>Not deemed to be significant effects in EIA terms.</p>	<p>The effects of the scheme on the significance of non-designated heritage assets will require a balanced judgement to weigh direct or indirect impacts on non-designated assets, having regard for the scale of harm and the significance of the asset (NPPF paragraph 216).</p>
Moderate Harm	<p>The proposals would lead to a notable level of harm to the significance of a non-designated heritage asset. A reduced, but appreciable, degree of its heritage significance would remain.</p> <p>Not deemed to be significant effects in EIA terms.</p>	<p>The effects of the scheme on the significance of non-designated heritage assets will require a balanced judgement to weigh direct or indirect impacts on non-designated assets, having regard for the scale of harm and the significance of the asset (NPPF paragraph 216).</p>
Major Harm	<p>The proposals would very much reduce a non-designated heritage asset's significance or vitiate that significance altogether.</p> <p>Deemed to be significant effects in EIA terms.</p>	<p>The effects of the scheme on the significance of non-designated heritage assets will require a balanced judgement to weigh direct or indirect impacts on non-designated assets, having regard for the scale of harm and the significance of the asset (NPPF paragraph 216).</p>

Legislative and Policy Framework

- 8.3.21. 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 their settings and Conservation Areas.
- 8.3.22. Scheduled Monuments are protected by the provisions of the Ancient Monuments and Archaeological Areas Act 1979 which relates to nationally important archaeological sites. Whilst works to Scheduled Monuments are subject to a high level of protection; it is important to note that there is no duty within the 1979 Act to have regard to the desirability of preservation of the setting of a Scheduled Monument.

National Planning Policy

National planning policy that has been considered comprises the following National Policy Statements ('NPS'):

- Overarching NPS for Energy (EN-1) (November 2023) ('NPS EN-1');
- NPS for Renewable Energy Infrastructure (EN-3) (November 2023) ('NPS EN-3')
- NPS for Electricity Networks Infrastructure (EN-5) (November 2023) ('NPS EN-5')

The relevant text from each NPS is presented below.

NPS EN-1

- 8.3.23. Heritage is discussed at section 5.9 of the NPS EN-1. Paragraphs which are considered to be of particular relevance to heritage (though it is noted that there would be no substantial harm caused to the significance of any designated heritage asset arising from the Scheme) comprise:

“5.9.27 When considering the impact of a proposed development on the significance of a designated heritage asset, the Secretary of State should give great weight to the asset’s conservation. The more important the asset, the greater the weight should be. This is irrespective of whether any potential harm amounts to substantial harm, total loss, or less than substantial harm to its significance.

5.9.28 The Secretary of State should give considerable importance and weight to the desirability of preserving all heritage assets. Any harm or loss of significance of a designated heritage asset (from its alteration or destruction, or from development within its setting) should require clear and convincing justification.

5.9.29 Substantial harm to or loss of significance of a grade II Listed Building or a grade II Registered Park or Garden should be exceptional.

5.9.30 Substantial harm to or loss of significance of assets of the highest significance, including Scheduled Monuments; Protected Wreck Sites; Registered Battlefields; grade I and II Listed Buildings; grade I and II* Registered Parks and Gardens; and World Heritage Sites, should be wholly exceptional.*

5.9.31 Where the proposed development 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 to achieve substantial public benefits that outweigh that harm or loss, or all the following apply:

- the nature of the heritage asset prevents all reasonable uses of the site
- no viable use of the heritage asset itself can be found in the medium term through appropriate marketing that will enable its conservation
- conservation by grant-funding or some form of not for profit, charitable or public ownership is demonstrably not possible
- the harm or loss is outweighed by the benefit of bringing the site back into use

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5.9.32 *Where the proposed development will lead to less than substantial harm to the significance of the designated heritage asset, this harm should be weighed against the public benefits of the proposal, including, where appropriate securing its optimum viable use.*

5.9.33 *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.*

...

5.9.36 *When considering applications for development affecting the setting of a designated heritage asset, the Secretary of State should give appropriate weight to the desirability of preserving the setting such assets and 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 give great weight to any negative effects, when weighing them 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."*

- 8.3.24. An important addition to the NPS EN-1 version of November 2023 was the discussion of the Government commitment to fully decarbonizing the power system by 2035 to underpin net zero ambitions. As part of this and to help achieve these targets, the Government has concluded that there is a critical national priority ('CNP') for the provision of nationally significant low carbon infrastructure, as identified at paragraph 4.2.4 of NPS EN-1. The implications of this CNP are set out in the paragraphs below:

"4.2.15 Where residual non-HRA or non-MCZ impacts remain after the mitigation hierarchy has been applied, these residual impacts are unlikely to outweigh the urgent need for this type of infrastructure. Therefore, in all but the most exceptional circumstances, it is unlikely that consent will be refused on the basis of these residual impacts. The exception to this presumption of consent are residual impacts onshore and offshore which present an unacceptable risk to, or unacceptable interference with, human health and public safety, defence, irreplaceable habitats or unacceptable risk to the achievement of net zero. Further, the same exception applies to this presumption for residual impacts which present an unacceptable risk to, or unacceptable interference offshore to navigation, or onshore to flood and coastal erosion risk.

4.2.16 As a result, the Secretary of State will take as the starting point for decision-making that such infrastructure is to be treated as if it has met any tests which are set out within the NPSs, or any other planning policy, which requires a clear outweighing of harm, exceptionality or very special circumstances.

4.2.17 This means that the Secretary of State will take as a starting point that CNP Infrastructure will meet the following, non-exhaustive, list of tests:

- • where development within a Green Belt requires very special circumstances to justify development;
- • where development within or outside a Site of Special Scientific Interest (SSSI) requires the benefits (including need) of the development in the location proposed to clearly

outweigh both the likely impact on features of the site that make it a SSSI, and any broader impacts on the national network of SSSIs.

- where development in nationally designated landscapes requires exceptional circumstances to be demonstrated; and
- where substantial harm to or loss of significance to heritage assets should be exceptional or wholly exceptional.”

8.3.25. Therefore, when considering any residual harm (or adverse effects) identified within this PEIR chapter because the Scheme is a CNP as low carbon infrastructure and having met the requirements in paragraph 4.2.10–14, the starting point for decision-making shall be that these harms (or adverse effects) are outweighed and the Scheme has met the tests of NPS EN-1 and any other policy requiring a clear outweighing of harm.

NPS EN-3

8.3.26. The NPS EN-3 includes a provision for the consideration of solar schemes which propose a generating capacity above a threshold of more than 50 Mega-Watts ('MW'). Of relevance to the Scheme, and its temporary nature, the NPS EN-3 sets out a series of technical considerations for the Secretary of State to take into account in the decision-making process. Paragraphs 2.10.147 – 2.10.151 are of relevance:

“2.10.147 Where the consent for a solar farm is to be time-limited, the DCO should impose a requirement setting that time-limit from the date the solar farm starts to generate electricity.

...

2.10.149 An upper limit of 40 years is typical, although applicants may seek consent without a time period or for differing time-periods for operation.

2.10.150 The time limited nature of the solar farm, where a time limit is sought as a condition of consent, is likely to be an important consideration for the Secretary of State.

2.10.151 The Secretary of State should consider the period of time the applicant is seeking to operate the generating station, as well as the extent to which the site will return to its original state, when assessing impacts such as landscape and visual effects and potential effects on the settings of heritage assets and nationally designated landscapes.”

8.3.27. Specific considerations relating to heritage are set out at paragraphs 2.10.107 to 2.10.119 which state:

“2.10.107 The impacts of solar PV developments on the historic environment will require expert assessment in most cases and may have effect both above and below ground.

2.10.108 Above ground impacts may include the effects on the setting of Listed Buildings and other designated heritage assets as well as on Historic Landscape Character.

2.10.109 Below ground impacts, although generally limited, may include direct impacts on archaeological deposits through ground disturbance associated with trenching, cabling, foundations, fencing, temporary haul routes etc.

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2.10.110 Equally, solar PV developments may have a positive effect, for example archaeological assets may be protected by a solar PV farm as the site is removed from regular ploughing and shoes or low-level piling is stipulated.

2.10.111 Generic historic environment impacts are covered in Section 5.9 of EN-1.

2.10.112 Applicant assessments should be informed by information from Historic Environment Records (HERs) or the local authority.

2.10.113 Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, the applicant should submit an appropriate desk-based assessment and, where necessary, a field evaluation. These should be carried out using expertise where necessary and in consultation with the local planning authority, and should identify archaeological study areas and propose appropriate schemes of investigation, and design measures, to ensure the protection of relevant heritage assets.

2.10.114 In some instances, field studies may include investigative work (and may include trial trenching beyond the boundary of the proposed site) to assess the impacts of any ground disturbance, such as proposed cabling, substation foundations or mounting supports for solar panels on archaeological assets.

2.10.115 The extent of investigative work should be proportionate to the sensitivity of, and extent of, proposed ground disturbance in the associated study area.

2.10.116 Applicants should take account of the results of historic environment assessments in their design proposal.

2.10.117 Applicants should consider what steps can be taken to ensure heritage assets are conserved in a manner appropriate to their significance, including the impact of proposals on views important to their setting.

2.10.118 As the significance of a heritage asset derives not only from its physical presence but also from its setting, careful consideration should be given to the impact of large-scale solar farms which depending on their scale, design, and prominence, may cause substantial harm to the significance of the asset.

2.10.119 Applicants may need to include visualisations to demonstrate the effects of a proposed solar farm on the setting of heritage assets."

NPS EN-5

8.3.28. There is no specific discussion of heritage within the NPS EN-5. There are references to heritage assets within the document in relation to the consideration of the siting of substations where the NPS identifies that they should:

"...seek to avoid altogether internationally and nationally designated areas of the highest amenity, cultural or scientific value by the overall planning of the system connections..."

8.3.29. Footnote 21 provides examples of heritage designations.

- 8.3.30. The final references to heritage within this document are found at 2.9.25 with relation to the consideration of consent for underground and subsea cable routes over a proposed overhead line. It states:

"...the Secretary of State should only grant development consent...if they are satisfied that the benefits accruing from the former proposal clearly outweigh any extra economic, social or environmental impacts that it presents...In this context it should consider:

the landscape and visual baseline characteristics of the setting of the proposed route, in particular, the impact on high sensitivity visual receptors (as defined in the current edition of the Landscape Institute's Guidelines for Landscape and Visual Impact Assessment), residential areas, designated landscapes, valued landscapes, designated heritage assets and Heritage Coasts (including, where relevant, impacts on the setting of designated features and areas), noting the policy in EN-1 section 5.4.53 on regional and local designation..."

... the potentially very disruptive effects of undergrounding on local communities, habitats, archaeological and heritage assets, marine environments, soil (including peat soils), hydrology, geology, and, for a substantial time after construction, landscape and visual amenity. (Undergrounding an overhead line will mean digging a trench along the length of the route, and so such works will often be disruptive – albeit temporarily – to the receptors listed above than would an overhead line of equivalent rating).

the potentially very disruptive effects of subsea cables on the seabed and the species that live in and on it, including physical damage to and full loss of seabed habitats²³. Cable protection can also be required where cables cross each other, or where they cannot be buried deep enough to protect them from becoming exposed. Such protection causes additional impacts that are often greater than those of the cable itself due to the large areas covered. There can also be issues where subsea cables make landfall, as much coastal land is protected habitat with environmental and heritage designations and landfall connections could cause additional disruption to coastal communities and the environment..."

- 8.3.31. Applications for Planning Permission, within the portion of the Draft Order Limits within South Yorkshire are currently considered against the policy and guidance set out within the Doncaster Local Development Plan which was adopted in September 2021. The portion of the Draft Order Limits in North Lincolnshire is subject to the provisions of the North Lincolnshire Local Development Framework Core Strategy (adopted in June 2011) and the North Lincolnshire supplementary planning document 'Planning for Renewable Energy Development' (adopted November 2011.).

Scoping Criteria

- 8.3.32. The following archaeological and heritage related comments were provided in the Planning Inspectorate Scoping Opinion dated March 2023.

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Table 8.4 Extract of aspect based scoping table from Scoping Opinion for Tween Bridge Solar Farm

ID	REF	MATTER	PINS COMMENTS	APPLICANT RESPONSE
3.7.1	n/a	n/a	No matters have been proposed to be scoped out of the assessment.	Noted.
3.7.2	Para 6.9	Impacts to archaeology and mitigation	The Inspectorate notes the potential for the Scheme to disturb or remove buried archaeological remains within the site. The ES should identify which works associated with the Scheme would result in direct impacts on archaeological resource (for example, those requiring piling), as well as indirect impacts (for example, changes to drainage patterns). Any impacts on archaeology which may result in a likely significant effect during construction and/ or decommissioning should be assessed. The ES should set out the proposals for the recording of any archaeological resource which would be permanently lost as a result of the Scheme. Effort should be made to agree the approach with relevant consultation bodies.	Noted. The applicant has discussed the need for and scope of any archaeological recording with relevant consultation bodies. The applicant has agreed the approach for further archaeological recording with relevant consultation bodies.
3.7.3	Paras 6.10 and 6.17 to 6.20	Impacts to setting	The Scoping Report acknowledges the potential for significant effects on the setting of heritage assets during operation of the Scheme. The ES should also identify potential impacts to the setting of heritage assets during construction and decommissioning and assess any impacts that are likely to result in significant effects. The assessment of impacts to setting should be supported by baseline data which is sufficient to identify all designated and non-designated built heritage assets which could be impacted by the Scheme. The SZTV developed for the Landscape and Visual assessment should be used to confirm which heritage assets may	The applicant has ensured that landscape and heritage deliver a coordinated approach to the EIA assessment to deliver a co-ordinated response for visualisations. The applicant will agree visualisations and photomontage locations with Historic England and other consultation bodies where appropriate. The applicant has provided clarification on the proposed methodology and scope of works in relation to the setting of historic buildings to Historic

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			<p>experience visual impacts from the Scheme. Paragraph 6.20 of the Scoping Report states that there is no intervisibility between the Scheme and the Peel Hill motte and bailey castle scheduled monument and Thorne Conservation Area, although these lie partly within the SZTV shown on Appendix 4.1 of the Scoping Report. The ES should fully justify the choice of heritage assets included in the setting assessment and their locations should be depicted on a supporting plan. The assessment should be supported by appropriate visualisations such as photomontages to help illustrate the likely impacts of the Scheme. Effort should be made to agree appropriate viewpoint locations for such visualisations with relevant consultation bodies including local authorities and Historic England. Cross-reference can be made to the Landscape and Visual ES assessment to avoid duplication.</p>	<p>England and other consultation bodies.</p> <p>The approach has been agreed by the Local Planning Authorities.</p>
3.7.4	Para 6.15	Baseline	<p>The Scoping Report states that following completion of the desk-based assessment, the need for any further investigative works would be considered. Where necessary any intrusive investigations and trial trenching should be completed prior to submission of the DCO application. The Applicant should make effort to discuss and agree the timing, scope and methodology for any intrusive investigations and trial trenching with relevant consultation bodies.</p>	<p>Noted.</p> <p>The applicant has liaised with the relevant bodies regarding further investigative work to agree the scope and methodology. This will continue going forwards.</p>
3.7.5	Para 6.22	Significance of effects	<p>Historic England has raised concern (Appendix 2 of this Opinion) with the proposed approach to recording significance of heritage assets (both designated and non-designated). The Applicant should make effort to agree the approach with Historic England and other relevant</p>	<p>Noted.</p> <p>The applicant has provided clarification on the methodology and scope of works to Historic England and other consultation bodies.</p>

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			consultation bodies. In the event that the Applicant's approach to recording significance of an asset deviates from the advice it has received, the ES should explain why and provide justification based on relevant evidence and professional opinion.	
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Limitations to the Assessment

- 8.3.33. To date not all of the surveys required following the completion of the baseline assessment have been completed. A magnetometry survey of the Draft Order Limits is presently being undertaken.
- 8.3.34. A trial trench evaluation of three targeted areas of the order limits has been completed. The final report has not yet been written and only an interim, completion statement, is currently available.

8.4. Baseline Conditions

Site Description and Context

- 8.4.1. This section of the PEIR Chapter presents a summary of the historical and archaeological background of the Scheme, based on the Heritage Assessment (**Appendix 8.1**) and previous archaeological works. Heritage assets discussed below are illustrated on **Figure 8.1**.
- 8.4.2. The Study Area is generally flat and comprises of a number of parcels of agricultural land. The historic market towns of Thorne and Crowle are located to the west and east of the Draft Order Limits respectively. The towns are located on slightly elevated ground compared to the Scheme which was historically marshy before much of the area was drained and reclaimed in the 17th century by Sir Cornelius Vermuyden following his being commissioned by Charles I, in 1626, to drain this area.
- 8.4.3. The underlying bedrock geology of the Scheme largely comprises Triassic sandstone of the Chester Formation in the west and Triassic mudstone of the Mercia Mudstone Group to the east. The north-western part of the Draft Order Limits, immediately adjacent to Moorends and Thorne has bedrock geology comprising Permian and Triassic sandstone of the Sherwood Sandstone Group.
- 8.4.4. There are extensive superficial deposits across the Study Area. In the north-western part of the Study Area there are deposits of the Hemingbrough Glaciolacustrine Formation with extensive deposits of Alluvium over much of the Scheme. A band of peat is indicated to the south-west of Crowle whilst there are deposits of the Sutton Sand Formation immediately to the west of the town. The geological and geoarchaeological aspects of the order limits are discussed in more detail in the geoarchaeological assessment (**Appendix 8.3**).
- 8.4.5. There are no designated heritage assets located within the Draft Order Limits.

Baseline Information

Prehistoric (pre-43 AD)

- 8.4.6. Mesolithic flint scatters (MLS19442; MSY10092) and a tranchet axe (MSY12666) have been recovered from within the order limits. Further finds of Mesolithic date have been recovered from elsewhere in the study area and are discussed in the Baseline Assessment (**Appendix 8.1**).
- 8.4.7. Within the order limits, peat deposits and a Neolithic land surface west of Medge Hall (MLS21214) were identified during an auger survey (ELS3938) conducted for the Tween Bridge Wind Farm. The auger survey was then followed by targeted trial trenching (ELS3939) although this did not identify any prehistoric artefactual material associated with the deposits but some of the environmental evidence suggested human activity nearby. There are also five findspots of flint tools (MLS940; MLS19543; MLS19574; MLS19451; MSY10053–MSY10055; MSY10094.) situated within the order limits. The Humberhead Levels Survey recovered two Late Neolithic flakes (HW8) as well as four other prehistoric flint tools (HW5; HW10; HW13; and HW16) from within the Draft Order Limits. There are extensive further finds of Neolithic date that have been recovered from elsewhere in the study area and are discussed in the Baseline Assessment (**Appendix 8.1**).
- 8.4.8. Findspots (MLS25883; MSY9396) are recorded within the order limits and dated to the Bronze Age. Finds MLS25883 and MSY9396 are recorded as worked flints. A Bronze Age trackway and a range of Bronze Age finds have been recorded within the Study Area and are discussed in the Baseline Assessment (**Appendix 8.1**).
- 8.4.9. There are a series of Iron Age cropmarks and finds recorded within the study area these are discussed in the Baseline Assessment (**Appendix 8.1**).
- 8.4.10. A series of undated cropmark enclosures (MLS18343) are recorded within the order limits, immediately to the east of Belton Grange. Targeted trial trenching was undertaken to determine the presence and survival of such features and to seek dating evidence (See **Appendix 8.4**).

The trial trenching indicated that the features identified as cropmarks existed as cut feature, below ground archaeological remains. Many of the features were considered to be post-medieval or modern in origin although some features are likely to be of earlier date. Dating evidence was only recovered from one ditch and this appears to indicate an Iron Age or Romano-British presence within this area.

Romano-British (AD 43 – 410)

- 8.4.11. A possible Romano-British ditch and enclosure are recorded on Crowle Common (MLS20927) and a possible Fortlet and settlement at Sandtoft (MLS901; Van de Noort site HC1) and findspots (MLS17318–MLS17323; MLS19545; MLS19546; MLS19549; MLS20019; MLS20020; MLS21793; MSY5197 and MSY10834) have been identified within the order limits. HER records MLS20019 and MLS20020 are at the same locations as MSY5197 and MSY10834 and it seems probable that they are duplicate records for the same finds held by the two Local Authorities. The HER record MLS19549 is a duplicate of van de Noort and Ellis' findspot (C3).
- 8.4.12. Targeted trial trenching has been undertaken in relation to the cropmarks west of Crowle (MLS20927) and the settlement (MLS901). The evaluation report is in preparation, but the initial findings have been provided in a completion statement (**Appendix 8.4**).

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- 8.4.13. Extensive further Romano–British activity has been identified from across the study area and is discussed in the Baseline Assessment (**Appendix 8.1**).

Early medieval (410 AD – 1066) and Medieval (1066 – 1539)

- 8.4.14. No heritage assets of early medieval or medieval date are recorded within the Draft Order Limits. A number of heritage assets and finds dating to these periods are recorded within the study area and discussed in the Baseline Assessment (**Appendix 8.1**).
- 8.4.15. During the medieval period the landscape character of the order limits was rather different to the present-day as it was dominated by Thorne Moor, Hatfield Moor and Thorne Mere. This situation changed during the post-medieval period with artificial drainage, land reclamation and warping.

Post-medieval (1540 – 1901), and Modern (1901 – present)

- 8.5. There are a number of post-medieval heritage assets recorded that are located within the Draft Order Limits. The New Idle Drain (MLS19586) relates to the 17th-century drainage of the marshes and the line of the Old River Don (MLS9488) also relates to these activities. Sections of the Stainforth and Keadby Canal (MLS9485) and the former Barnsley to Barnetby Railway (MLS8828) pass through the Draft Order Limits although none of these will be impacted by the Scheme.
- 8.6. The sites of several farms have also been identified within or surrounded by the scheme boundary. These include the site of the 19th-century Medge Hall Farm (MLS25262); the site of the 19th-century Lover's Ground Farmstead (MLS25265); an unnamed farmstead (MLS25555); the 19th-century Plains House Farm (MLS25552); Hains Farm (MLS25280); the site of the 19th-century Boarding House Farm (MLS25281) and Belton Grange (MLS25556.)
- 8.6.1. Further heritage assets within the Draft Order Limits have been identified from historic cartographic sources. A possible duck decoy pond (PEG200) is shown on the 1894 OS map centered on NGR 473274 412482. A cottage called 'New Zealand' (PEG201, Area A) was located at NGR 473227 412244, and these are no longer extant.
- 8.6.2. Peat extraction continued across the study area through the 19th and 20th centuries. The British Peat Moss Litter Company was formed in 1896 and had works at Moorends, Medge Hall, Hatfield Moors, Crowle Moors. The peat works transported the cut turves by means of light railways at Medge Hall, Hatfield and Crowle and by means of a canal at Moorends. short sections of some of the peat extraction tramways (PEG210 and PEG211) have been identified by the geophysical survey.
- 8.6.3. The site of a series of post-medieval barns (MLS25555) within order limits, that lie to the west of Belton Grange Farm, is shown on historic maps and having been previously demolished their remains are visible as an area of disturbance on the LiDAR data.
- 8.6.4. A pond (PEG215) was recorded to the west of Belton Grange Farm as a D-Shaped feature with a central island on the 1853 OS map. The pond has been subsequently filled in but has shown as a very strong response on the geophysical survey data

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- 8.6.5. The impact of Vermuyden's drainage scheme and later alterations define the landscape of much of the Scheme and Study Area. The various elements of the drainage system are widely recorded within the HER data (MLS19586–MLS19588; MLS19591; MLS2491; MLS9488.) Of these records, the warping drain (MLS2491, Area B), lies within the Draft Order Limits.
- 8.6.6. The former bomb store at RAF Sandtoft (MLS26024) and the bombing decoy (MLS18438) lie within part of the Scheme. The presence of the bomb store indicates the potential for unexploded ordnance to be present in the general area.
- 8.6.7. A Second World War Lancaster bomber (ND639) crashed near Windsor Lane, Crowle on 5th April 1945. All seven of the Australian crew were killed, but only five of the bodies were recovered. The North Lincolnshire HER records the putative crash site as being within the portion of the Scheme adjacent to Marsh Road, Crowle. However, the exact location is not certain, with a location to the west of Crook O Moor also suggested, and the presence of an air crash site within this portion of the Scheme cannot be discounted at this stage (MLS25882). Previous research (undertaken to support a windfarm proposal) to locate the crash site in the Marsh Road area has not been successful.
- 8.6.8. A Halifax V bomber (EB149) crashed near Crowle on 19 March 1944. Another Halifax, (DK133), crashed near Crowle on 6 September 1944. The exact location of the crashes and the remains of the crew members are unrecorded.
- 8.6.9. Two further military aircraft crash sites (PEG206 and PEG207) are present within order limits. A Halifax (LK728) crashed adjacent to Moorends on 6th July 1944. The whole crew, composed of Free French Air Force, died in the crash having suffered severe damage during a bombing raid on Mimoyecques. All of the crew's remains were recovered. A Wellington X (MF556) crashed adjacent to Moorends on 6 July 1945. Neither of the pilots on board was injured.
- 8.6.10. A third military aircraft crash is also recorded in the vicinity of Thorne, its exact location is not recorded. This crash occurred on 19th September 1940 and involved a Magister (T9676) training aircraft. The pilot's remains were recovered.
- 8.6.11. The geophysical survey undertaken as part of this project has included the three known aircraft crash sites within the order limits and has not identified the presence of any visible remains of either an impact crater or metallic debris.
- 8.6.12. The aircraft crash sites noted above are protected by the Protection of Military Remains Act 1986 and recovery or interference with the sites would require a licence. Reference to military archives and geophysical survey may elucidate the locations of potential remains, and this aspect of the historic environment will require sensitive consideration due to the potential for human remains of relatively recent date.
- 8.6.13. An undated rectangular enclosure (PEG208) is visible on the LiDAR data. The feature is not mapped on any of the historic cartographic sources consulted and measures c. 100m east–west by 80m north–south.
- 8.6.14. An undated subcircular feature (PEG212) of uncertain origin, which measures c. 26m in diameter, has been identified by the geophysical survey within the order limits, to the north–east of Medge Hall. Nearby, a series of undated linear anomalies (PEG213), probable enclosure ditches, have also been recorded.

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- 8.6.15. An undated, possible sub-rectangular enclosure (PEG214) was identified within the order limits adjacent to the North Idle Drain.
- 8.6.16. The corner of an undated probable rectilinear enclosure (PEG216) has been identified within the Order Limits, to the south of High Levels Bank, by the geophysical survey.

Archaeological Potential

- 8.6.17. There is moderate potential for surface finds dating to the Mesolithic, Neolithic and Bronze Age to be found within the Site. There is low potential for further evidence of Bronze Age forest clearance or trackways to be identified as it is likely that such remains lie at a greater depth than the works required to construct the solar farm, and the likely levels of disturbance to such remains through industrial peat extraction in the 20th century diminish the chances of their having survived.
- 8.6.18. There is moderate potential for Romano-British period archaeological remains to be identified within the site. The settlement, at Sandtoft, the enclosures to the west of Crowle and the enclosures to the east of Belton Grange are likely indicators of wider, as yet unrecorded activity within the order limits and study area.
- 8.6.19. There is low potential for any significant Medieval or Post-Medieval archaeological remains to be identified within the order limits.
- 8.6.20. There is low potential for significant archaeological remains dating to the Modern period to be identified within the order limits. However, the possibility of remains relating to the Lancaster bomber that crashed to the west of Crowle and the risk of UXO to the north of Sandtoft has been identified and these have the potential to be significant and sensitive. The geophysical survey of the order limits has failed to identify any anomalies that appear to represent crashed military aircraft.
- 8.6.21. There is moderate potential for palaeoenvironmental deposits to be identified within the order limits that can develop our understanding of the changes to the landscape through time.
- 8.6.22. There is potential for groundworks associated with the construction of the solar farm to adversely affect any underlying archaeological deposits. There is also potential for footings for the solar arrays to impact any buried archaeological remains. The scale of effect will be dependent upon the exact nature of the construction at any given location.

Future Baseline

- 8.6.23. The future baseline for heritage, if this Scheme were to be constructed, is expected to change as the Tween Bridge wind farm is due to be decommissioned in 2037, during the lifetime of the Scheme.

Assessment of Likely Significant Effects

- 8.6.24. This section of the PEIR will consider any likely significant effects upon the cultural heritage resource as a result of the Scheme.

Construction

Direct Effects

- 8.6.25. The construction phase would not result in any direct, physical impacts to any designated assets.
- 8.6.26. The physical effects of the Scheme upon the known and as yet unidentified archaeological resource would primarily result from groundworks associated with the construction of the Scheme, which is anticipated to last for up to 30 months and might include:
- Any preconstruction ground investigation works;
 - Installation of the solar panel modules/mounting system structures;
 - Creation of access roads;
 - Insertion of security fencing and CCTV poles;
 - Excavation works required for landscape mitigation features such as swales or ponds;
 - Excavation of cable trenches;
 - Any stripping and excavations associated with the creation of the battery storage area and site compounds;
 - The construction of electric vehicle charging bays; and
 - The construction of six substations.
- 8.6.27. Peat deposits and a Neolithic land surface have been recorded to the west of Medge Hall (MLS21214). The construction phase of the Scheme has the potential to adversely affect the deposits through removal or de-watering as a result of groundworks and foundation construction. The deposits are a non-designated heritage asset.
- 8.6.28. A Romano-British ditch and enclosure (MLS20927) is recorded on Crowle Common. The construction phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks and foundation construction. The ditch and enclosure is a non-designated heritage asset.
- 8.6.29. The site of a former warping drain (MLS2491) has been identified on Crowle Common. The construction phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks and foundation construction. The warping drain is a non-designated heritage asset.
- 8.6.30. The site of a former warping drain (MLS21088) has been identified on North Moor. The construction phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks associated with the cable route to connect the scheme to the National Grid Point of Connection. The warping drain is a non-designated heritage asset.
- 8.6.31. The approximate extent of Thorne Mere (PEG209) is shown on historic mapping. The construction phase of the Scheme has the potential to adversely affect the deposits through removal or de-watering as a result of groundworks and foundation construction. The deposits are a non-designated heritage asset.

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- 8.6.32. The site of the post-medieval Medge Hall Farm (MLS25262) lies to the north of Crook o' Moor. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the farmstead through their removal as a result of groundworks and foundation construction. The farmstead is a non-designated heritage asset.
- 8.6.33. The site of the post-medieval Lover's Ground Farmstead (MLS25265) is recorded north-east of Crook o' Moor Farm. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the farmstead through their removal as a result of groundworks and foundation construction. The farmstead is a non-designated heritage asset.
- 8.6.34. The site of the post-medieval Boarding House Farmstead (MLS25281) is recorded north of High Levels Bank. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the farmstead through their removal as a result of groundworks and foundation construction. The farmstead is a non-designated heritage asset.
- 8.6.35. The site of a post-medieval un-named Farmstead (MLS25555) lies to the south-west of Belton Grange. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the farmstead through their removal as a result of groundworks and foundation construction. The farmstead is a non-designated heritage asset.
- 8.6.36. A series of undated ditches and a possible enclosure (MLS18343) are recorded at Belton Grange, trial trenching has provided dating evidence from one of the ditches which indicated an Iron Age or Romano-British date. The construction phase of the Scheme has the potential to adversely affect the ditches and enclosure through their removal as a result of groundworks and foundation construction. The ditches and enclosure are a non-designated heritage asset.
- 8.6.37. A series of stakes, interpreted as part of a wooden building (MLS917), were identified c. 3.5m below ground level at Belton Grange in 1975. The construction phase of the Scheme has the potential to adversely affect the timber stakes through disturbing them during foundation construction. The stakes are a non-designated heritage asset.
- 8.6.38. A possible duck decoy pond (PEG200) was shown on the 1894 OS map. The construction phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks and foundation construction. The duck decoy is a non-designated heritage asset.
- 8.6.39. The site of the post-medieval Sandhill Cottage (PEG202) lies on the south side of the Keadby Canal, west of Maud's Bridge. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the cottage through their removal as a result of groundworks and foundation construction. The cottage is a non-designated heritage asset.
- 8.6.40. The site of the post-medieval Redhouse Cottage (PEG203) lies on the south side of the Keadby Canal, west of Maud's Bridge. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the cottage through their removal as a result of groundworks and foundation construction. The cottage is a non-designated heritage asset.
- 8.6.41. The site of the post-medieval Elmhirst Cottage (PEG205) lies on the west side of Thorne Waste Road. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the cottage through their removal as a result of groundworks and foundation construction. The cottage is a non-designated heritage asset.

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- 8.6.42. An undated enclosure (PEG208) is visible in LiDAR images west of Crook o' Moor. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks and foundation construction. The enclosure is a non-designated heritage asset.
- 8.6.43. The buried remains of a peat tramway (PEG211) have been identified by the geophysical survey to the west of Crowle. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the tramway through their removal as a result of groundworks and foundation construction. The tramway is a non-designated heritage asset.
- 8.6.44. An undated enclosure (PEG212) is visible in LiDAR images to the west of Crowle. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks and foundation construction. The enclosure is a non-designated heritage asset.
- 8.6.45. An undated enclosure (PEG213) is visible in LiDAR images to the west of Crowle. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks and foundation construction. The enclosure is a non-designated heritage asset.
- 8.6.46. An undated enclosure (PEG214) is visible in LiDAR images south of Dirtness. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks and foundation construction. The enclosure is a non-designated heritage asset.
- 8.6.47. The site of a pond (PEG215) is recorded west of Belton Grange. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the pond through their removal as a result of groundworks and foundation construction. The pond is a non-designated heritage asset.
- 8.6.48. An undated enclosure (PEG216) has been identified by the geophysical survey to the south of High Levels Bank. The construction phase of the Scheme has the potential to adversely affect any below ground remains of the enclosure through their removal as a result of groundworks and foundation construction. The enclosure is a non-designated heritage asset.
- 8.6.49. The former bomb store at RAF Sandtoft (MLS26024) lies immediately to the north of the M180. The construction phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks and foundation construction. The remains of the bomb store are a non-designated heritage asset.
- 8.6.50. A bombing decoy (MLS18438) was located immediately to the north of the M180, in the location of the later RAF Sandtoft bomb store. The construction phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks and foundation construction. The remains of the bombing decoy are a non-designated heritage asset.
- 8.6.51. The buried remains of a crashed Lancaster bomber (MLS25882) are possibly situated within the Scheme. The construction phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks and foundation construction. The remains of the aircraft are a non-designated heritage asset and protected by the provisions of the Protection of Military Remains Act (1986).

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- 8.6.52. The buried remains of a crashed Halifax bomber (PEG206) are recorded adjacent to Thorne Waste Drain Road. The construction phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks and foundation construction. The remains of the aircraft are a non-designated heritage asset and protected by the provisions of the Protection of Military Remains Act (1986).
- 8.6.53. The buried remains of a crashed Wellington bomber (PEG207) are recorded adjacent to Thorne Waste Drain Road. The construction phase of the Scheme has the potential to adversely affect the deposits through their removal as a result of groundworks and foundation construction. The remains of the aircraft are a non-designated heritage asset and protected by the provisions of the Protection of Military Remains Act (1986).
- 8.6.54. The direct effects of the Scheme upon the known and potential archaeological resource within the Draft Order Limits would be permanent, irreversible and adverse in those areas of the scheme required for the construction of substations, BESS facilities and cable trenching and are likely to result in loss of heritage significance of any potential buried archaeological features or deposits. The construction of the solar arrays will have a limited, temporary adverse effect upon the known and potential archaeological resource within these areas of the Draft Order Limits.
- 8.6.55. As a result of the construction activities, the archaeological remains are likely to be removed in those parts of the Draft Order Limits required for the construction of substations, BESS facilities and cable trenching. Within the footprint of the Scheme, this includes a number of known and potential non-designated heritage assets of archaeological interest.
- 8.6.56. The construction activities would lead to harm or total loss of significance of these non-designated heritage assets and without the implementation of appropriate mitigation, this would result in **Major Adverse effects (significant)**.

Indirect Effects

- 8.6.57. The Indirect effects of the Scheme upon the built heritage resource would primarily result from activities associated with the construction of the Scheme, which might include:
- Movement of construction vehicles within the Draft Order Limits and associated noise generated from this;
 - Increased vehicle movements to and from the Scheme;
 - Increased presence construction personnel within the Draft Order Limits.
- 8.6.58. Indirect effects have been identified in relation to three designated built heritage assets and three non-designated built heritage assets.
- 8.6.59. Dirtness Cottage (1083285) is a Grade II listed building, a designated asset of less than the highest significance. The construction phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in **less than substantial harm at the lowest end** of the spectrum and will be temporary.

- 8.6.60. Grove House Farmhouse (1192943) is a Grade II listed building, a designated asset of less than the highest significance. The construction phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily interrupt views of the asset within its rural surroundings. These adverse effects will result in **less than substantial harm at the lowest end** of the spectrum and will be temporary.
- 8.6.61. Sandhill Farmhouse (1151565) is a Grade II listed building, a designated asset of less than the highest significance. The construction phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily interrupt views of the asset within its rural surroundings. These adverse effects will result in **less than substantial harm at the lowest end** of the spectrum and will be temporary.
- 8.6.62. Belton Grange (PEGO33) is a non-designated heritage asset. The construction phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in **minor harm** and will be temporary.
- 8.6.63. Dale Mount Farm (PEGO64) is a non-designated heritage asset. The construction phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in **minor harm** and will be temporary.
- 8.6.64. Drain House Farm (PEGO76) is a non-designated heritage asset. The construction phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of construction activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in **minor harm** and will be temporary.

Operation

- 8.6.65. No direct impacts upon the buried archaeological remains are anticipated following the completion of the Construction Phase. As such, these receptors are scoped out of discussion as part of the Operation Phase. All operational phase effects are temporary (up to the operational life of the Scheme) as the Scheme will be decommissioned.
- 8.6.66. The operational Scheme will be in proximity to the Grade II Listed Dirtness Cottage (1083285), an asset of less than the highest significance, which is located c. 490m north of the Draft Order Limits. The significance of the asset is primarily derived from its physical form which displays its architectural value as a mid-19th century gate lodge. It also derives some significance from its historical value due to its connection to the locally prominent Brunyee family. The setting of the asset is formed by its relationship to the adjacent bridge and driveway that formed the southern access to Sand Hall and from its rural surroundings to the south. Views from the asset to the south are blocked by a deciduous hedge when it is in leaf but limited views to the south, including parts of the Scheme are apparent in the winter. There is however, no historic or current association between the asset and the land within the Scheme. Therefore, the temporary change introduced by the operational Scheme will adversely affect the significance of the asset as the increased vehicular traffic and personnel required to operate the solar farm which will disturb

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the tranquil seclusion of this asset. The magnitude of effect will be **less than substantial, at the lower end** of the spectrum.

- 8.6.67. The operational Scheme will be in proximity to the Grade II Listed Grove House Farmhouse (1192943), a designated asset of less than the highest significance, which is located c. 330m west of the nearest part of the Scheme. The significance of the asset is primarily derived from its physical form which displays its architectural value as a farmhouse with 18th century origins that was extended and altered in the 19th century. The setting of the asset is formed by the associated complex of farm buildings and the surrounding agricultural landscape which provide the agrarian context to the farmhouse. Parts of the Scheme to the north and east of the asset are recorded by the 1840 Thorne tithe apportionment as part of the farm owned and managed by George Kitching who resided at Grove House. Further land within the Scheme that lies to the south-east of the asset is recorded on the 1841 Hatfield tithe apportionment as being occupied by George Kitching. Views from the farmhouse are restricted by interceding buildings to the north and east meaning there is no intervisibility with the portions of the Scheme which lie in these directions. There is intervisibility between the part of the Scheme which lies to the south-east of the asset and the principal elevation of the farmhouse. The western gable end and rear elevation are partially visible from the part of the Scheme that lies to the north-west of the farmhouse. However, there are no windows that overlook this part of the Scheme. There is an historic association between parts of the Scheme and the asset. The temporary change introduced by the operational Scheme will adversely affect the significance of the asset as the operational solar farm will harm key views of the asset within its rural setting. The magnitude of effect will be **less than substantial at the lower end** of the spectrum.
- 8.6.68. The operational Scheme will be in proximity to the Grade II Listed Sandhill Farmhouse (1151565), a designated asset of less than the highest significance, which is located c. 330m east of the nearest part of the Scheme. The significance of the asset is primarily derived from its physical form which displays its architectural value as a farmhouse that was built c. 1800. The setting of the asset is formed by the surrounding agricultural landscape which provides the agrarian context to the farmhouse. Views from the principal elevation of the farmhouse face south and look along the driveway which connects the farmhouse to the A18 road. Long distance views in this direction incorporate agricultural land, presently in arable cultivation, including parts of the Scheme. There is no historic or current association between the asset and land within the Scheme. The temporary change introduced by the operational Scheme will adversely affect the significance of the asset as the operational solar farm will harm key views of the asset within its rural setting. The magnitude of effect will be **less than substantial, at the lower end** of the spectrum.
- 8.6.69. The operational Scheme will be in proximity to Belton Grange (PEGO33) which is a non-designated heritage asset, which is surrounded by the Scheme. The significance of the asset is primarily derived from its physical form which displays its architectural value as an early 19th century farmstead. The setting of the asset is formed by its associated farm buildings and its secluded, rural surroundings which provide the asset's agrarian context. The asset is surrounded by the Scheme on all sides. However, the asset is largely screened by mature hedgerows and farm-buildings which screen views to the west, south and east entirely. Views to the north are largely screened but views along the driveway are intervisible with parts of the Scheme which lie adjacent to it on the west and east. The farm is located on former common land that was enclosed in 1812. As the land was formerly common the extent of the historic land holdings associated with the farm are not clearly defined on historic sources such as the tithe apportionment. However, it seems likely that the farm held the former common lands by which it is surrounded, and which encompass parts of the Scheme. The temporary change introduced

by the operational Scheme will adversely affect the significance of the asset as the increased vehicular traffic and personnel required to operate the solar farm will disturb the tranquil seclusion of this asset. The magnitude of effect will be **minor**.

8.6.70. The operational Scheme will be in proximity to Dale Mount Farm (PEGO64) which is a non-designated heritage asset that is surrounded by the Scheme on all sides. The significance of the asset is primarily derived from its physical form which displays its architectural value as a 19th century farmhouse. The setting of the asset is formed by its associated farm buildings and its rural surroundings which provide its agrarian context. The asset is screened on all sides by a substantial hedge with a break in the hedge to the north-west of the asset providing limited intervisibility with part of the Scheme. Some land within the Scheme has an historical, and current, association with the asset as it forms part of the landholding. The temporary change introduced by the operational Scheme will adversely affect the significance of the asset as the operational solar farm will harm key views of the asset within its rural setting. The magnitude of effect will be **minor**.

8.6.71. The operational Scheme will be in proximity to Drain House Farm (PEGO76) which is a non-designated heritage asset that is surrounded by the Scheme. The significance of the asset is primarily derived from its physical form which displays its architectural value as a post-medieval farmhouse with an associated complex of barns and farm buildings. The setting of the asset is formed by its associated farm buildings and its rural surroundings which provide its agrarian context. The building is set back from the road with its principal elevation facing north along the drive which connects to the A18, High Levels Bank. To the north views are restricted by tree cover and an interceding row of modern labourers' cottages. To the west the garden of the farmhouse is bounded by a substantial hedge and to the east there is a sparse hedge which provides intermittent screening. Therefore, the asset is intervisible with elements of the Scheme to the north and east. There is an historic and current association between the asset and some of the land within the Scheme. The temporary change introduced by the operational Scheme will adversely affect the significance of the asset as the operational solar farm will harm key views of the asset within its rural setting. The magnitude of effect will be **minor**.

Decommissioning

8.6.72. It is expected that the decommissioning of the Scheme will result in no additional impact to any buried archaeological resource subsequent to the impacts of the construction phase.

8.6.73. As with the construction phase there may be some temporary impacts during the decommissioning phase upon the settings of designated heritage assets (i.e., scaffolding; movement of machinery), these impacts will be limited and temporary. Following the completion of the decommissioning there will be a beneficial impact to the setting of these assets as they will be returned to their pre-development condition.

8.6.74. Indirect effects have been identified in relation to three designated built heritage assets and three non-designated built heritage assets.

8.6.75. Dirtness Cottage (1083285) is a Grade II listed building, a designated asset of less than the highest significance. The decommissioning phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in **less than substantial harm at the lowest end** of the spectrum and will be temporary.

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- 8.6.76. Grove House Farmhouse (1192943) is a Grade II listed building, a designated asset of less than the highest significance. The decommissioning phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily interrupt views of the asset within its rural surroundings. These adverse effects will result in **less than substantial harm at the lowest end** of the spectrum and will be temporary.
- 8.6.77. Sandhill Farmhouse (1151565) is a Grade II listed building, a designated asset of less than the highest significance. The decommissioning phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily interrupt views of the asset within its rural surroundings. These adverse effects will result in **less than substantial harm at the lowest end** of the spectrum and will be temporary.
- 8.6.78. Belton Grange (PEGO33) is a non-designated heritage asset. The decommissioning phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in **minor harm** and will be temporary.
- 8.6.79. Dale Mount Farm (PEGO64) is a non-designated heritage asset. The decommissioning phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in **minor harm** and will be temporary.
- 8.6.80. Drain House Farm (PEGO76) is a non-designated heritage asset. The decommissioning phase of the Scheme has the potential to indirectly adversely affect the significance of the asset through the introduction of decommissioning activities, increased traffic and personnel to its setting which will temporarily disturb the tranquil seclusion of this asset. These adverse effects will result in **minor harm** and will be temporary.

8.7. Mitigation, Enhancement and Residual Effects

- 8.7.1. Where significant effects are anticipated, mitigation may be necessary to adequately address these effects, in order to reduce or offset the harm (effect on) to the importance (significance) of non-designated heritage assets.

Mitigation by Design

- 8.7.2. Direct adverse impacts have been identified in relation to the archaeological resource within the Draft Order Limits at this PEIR stage. These impacts will affect the resource during the construction phase (detailed at paragraphs 8.7.28–8.7.58, above) and therefore any mitigation considered necessary would be implemented prior to or during this phase of development. At present the exact nature of the mitigation required to address these effects has yet to be determined. An appropriate mitigation strategy for addressing the archaeological resource will be developed following the completion of a more detailed Scheme design and the completion of the ongoing geophysical survey which will allow a detailed understanding of the exact scale and location of adverse effects.

- 8.7.3. It is anticipated that the mitigation strategy will require a proportionate programme of archaeological survey. Any such programme would be agreed in liaison with the archaeological advisors to the Local Authorities following the completion of the ongoing geophysical survey.
- 8.7.4. Following targeted trial trenching the footprint of the Romano-British settlement (MLS901) has been excluded from intrusive construction works to allow for the preservation in situ of this non-designated heritage asset.
- 8.7.5. Opportunities to further minimize adverse effects upon the buried archaeological resource are presently under consideration. These opportunities include the use of no-dig foundations and preservation in situ, mitigation by record for areas is also under consideration.
- 8.7.6. Indirect adverse effects have been identified in relation to 15 built heritage assets. The exact nature of the designed mitigation has yet to be agreed. It is anticipated that it will entail a combination of screening through appropriate boundary treatments and offsets to retain suitable margins around/or views from the assets to minimize the adverse effects upon their settings. It is acknowledged planted boundary hedges will take a number of years to reach maturity and that the implications of this are that adverse effects will initially be slightly more significant than once the hedges are fully grown.
- 8.7.7. As this is at working draft PEIR stage, by the next iteration of the PEIR or the subsequent ES stage, these changes and amendments to layout, landscaping etc. required to mitigate the harm identified at this stage will be embedded within the Scheme and will be taken into account within the assessment of likely significant effects.

Additional Mitigation.

- 8.7.8. A programme of appropriate and proportionate additional mitigation may be required in consultation with the archaeological advisor, and if appropriate, could be implemented as a requirement to the approved Development Consent Order. Such mitigation strategies, proportionate to the significance of the individual assets affected, will ensure that they are subject to preservation by record at an appropriate stage in the development process. This will partially offset their loss through the knowledge gained through the investigations. For the archaeological remains the mitigation may include, as appropriate, excavation, strip map and sample investigation, or archaeological monitoring of ground works during construction (known as a watching brief), with appropriate post-excavation analysis and dissemination of results.
- 8.7.9. The mitigation strategies discussed above will partially offset the loss of the archaeological resource through the knowledge gained in the course of the investigations. This will, to an extent, reduce the effects on archaeological remains.

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Table 8.5: Mitigation

Ref	Measure to avoid, reduce or manage any adverse effects and/or to deliver beneficial effects	How measure would be secured		
		By Design	By legal agreement	By Requirements
1	Designated heritage assets subject to settings impact	X		
2	Non-designated heritage assets subject to settings impact	X		
3	Non-designated heritage assets subject to direct impact	X		X

Enhancements.

- 8.7.10. An additional benefit offered by archaeological works may be implemented following the investigations, including the promotion of local history in schools and local communities, and the enhancement of the public’s understanding of past activities in their local area through appropriate signage, interpretation, exhibitions and/or talks.

Residual Effects

Construction Phase

- 8.7.11. Additional mitigation is required with regards to the identified construction phase effects in relation to the archaeological resource. Therefore, the significance of effects will change when compared with that set out in the ‘Likely Significant Effects’ section of the chapter.
- 8.7.12. The significance of effects on identified areas of archaeological potential arising from the Scheme is considered to be permanent Moderate Adverse (**not significant**).
- 8.7.13. No additional mitigation is required with regards to the identified construction phase effects in relation to built heritage assets. Therefore, the residual effects of the operational phase of the Scheme remain as set out in the ‘Likely Significant Effects’ section of the chapter:
- 8.7.14. Dirtness Cottage, Grade II Listed, asset of less than the highest significance: Less than substantial harm (**not significant**)
- 8.7.15. Grove Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm (**not significant**)
- 8.7.16. Sandhill Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm (**not significant**)
- 8.7.17. Minor adverse effects have been identified during the construction phase of the Scheme in relation to the non-designated built heritage assets:
 - Belton Grange, Non-designated asset
 - Dale Mount Farm, Non-designated asset

- Drain House Farm, Non-designated asset

8.7.18. The identified effects are not considered to be significant.

Operational Phase

8.7.19. No additional mitigation is required with regards to the identified operational phase effects. Therefore, the residual effects of the operational phase of the Scheme remain as set out in the 'Likely Significant Effects' section of the chapter:

8.7.20. Dirtness Cottage, Grade II Listed, asset of less than the highest significance: Less than substantial harm (**not significant**)

8.7.21. Grove Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm (**not significant**)

8.7.22. Sandhill Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm (**not significant**)

8.7.23. Minor adverse effects have been identified during the operation phase of the Scheme in relation to the non-designated built heritage assets:

- Belton Grange, Non-designated asset
- Dale Mount Farm, Non-designated asset
- Drain House Farm, Non-designated asset

8.7.24. The identified effects are not considered to be significant.

Decommissioning Phase

8.7.25. No additional mitigation is required with regards to the identified effects during the decommissioning phase of the Scheme. Therefore, the residual effects of the decommissioning phase remain as set out in the 'Likely Significant Effects' section of the chapter.

8.7.26. Dirtness Cottage, Grade II Listed, asset of less than the highest significance: Less than substantial harm (**not significant**)

8.7.27. Grove Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm (**not significant**)

8.7.28. Sandhill Farmhouse, Grade II Listed, asset of less than the highest significance: Less than substantial harm (**not significant**)

8.7.29. Minor adverse effects have been identified during the decommissioning phase of the Scheme in relation to the non-designated built heritage assets:

- Belton Grange, Non-designated asset
- Dale Mount Farm, Non-designated asset

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- Drain House Farm, Non-designated asset

8.7.30. The identified effects are not considered to be significant.

8.7.31. The effects identified above would remain unchanged under the future baseline conditions.

8.8. Cumulative and In-Combination Effects

8.8.1. No information relating to projects in the wider vicinity for consideration within this cumulative or in-combination effects section has been provided to date. As such, no assessment can be made with regards to these effects and this section is, therefore, to be completed.

8.8.2. It is envisaged that the necessary details will be available to allow an assessment of these effects to be made as part of the ES.

8.9. Summary

Introduction

8.9.1. This Chapter has considered the likely significant effects of the Scheme upon the cultural heritage resource, including buried archaeological remains within the Draft Order Limits and heritage assets (including Scheduled Monuments and Listed Buildings) located within the wider Study Area. It has been established that subject to appropriate mitigation being implemented, the Scheme would not result in significant adverse effects upon the cultural heritage resource within the Draft Order Limits and in its surroundings.

Baseline Conditions

8.9.2. The heritage resource which has been considered within this Chapter includes the known and potential buried archaeological remains which may be affected as part of the construction stage and heritage assets, located within and in the environs of the Draft Order Limits, which could potentially be affected as a result of change within the settings of these assets introduced following the completion of the Scheme.

Likely Significant Effects

Construction Phase

8.9.3. It has been established that the construction phase of the Scheme has the potential to affect known, non-designated, archaeological remains associated with possible prehistoric Romano-British, post-medieval and modern archaeological remains as well as potential previously unrecorded archaeological remains. The groundworks associated with the construction of the cable runs within the Scheme have the potential to truncate or totally remove the archaeological remains within their footprint. Such effects would result in harm to or total loss of significance of these buried archaeological features. The installation of the solar arrays has the potential to result in localized adverse effects upon archaeological deposits lying beneath the push pin foundations. An appropriate programme of mitigation by design and additional mitigation (as required) will allow the magnitude of effect to be Moderate harm (**not significant**).

8.9.4. The construction phase of the Scheme has the potential to affect the settings of three designated heritage assets and three non-designated built heritage assets. Such effects would

result in harm to the significance of these assets, leading to Less than Substantial Harm in relation to the designated assets and minor harm in relation to the non-designated assets.

Operational Phase

- 8.9.5. The operational phase of the Scheme has the potential to affect the settings of three designated heritage assets and three non-designated built heritage assets. Such effects would result in harm to the significance of these assets, leading to Less than Substantial Harm in relation to the designated assets and minor harm in relation to the non-designated assets.

Decommissioning Phase

- 8.9.6. The decommissioning phase of the Scheme has the potential to affect the settings of three designated heritage assets and three non-designated built heritage assets. Such effects would result in harm to the significance of these assets, leading to Less than Substantial Harm in relation to the designated assets and minor harm in relation to the non-designated assets.

Mitigation and Enhancement

- 8.9.7. The exact nature of the designed mitigation in relation to built heritage assets has yet to be agreed but it is anticipated that it will entail a combination of screening through appropriate boundary treatments and offsets to retain suitable margins around/or views from the assets to minimize the adverse effects upon their settings.
- 8.9.8. Opportunities to minimize adverse effects upon the buried archaeological resource are also under consideration. It is envisaged that buried remains may be able to be preserved in situ in some parts of the Draft Order Limits (beyond the area of MLS901 which has already been excluded from development) through the use of ballast foundations.
- 8.9.9. A proportionate programme of archaeological survey and mitigation, by means of field investigation and recording, will be followed by an appropriate and proportionate mitigation strategy that will ensure that they are subject to preservation by record at an appropriate stage in the development process. This will partially offset their loss through the knowledge gained through the investigations. For the archaeological remains the mitigation may include, as appropriate, excavation, strip map and sample investigation, or archaeological monitoring of ground works during construction (known as a watching brief), with appropriate post-excavation analysis and dissemination of results.

Conclusion

- 8.9.10. The Scheme, as defined by the Draft Order Limits, if the mitigation measures identified are implemented, is considered acceptable and there would be no adverse significant residual effects.
- 8.9.11. **Table 8.6** provides a summary of effects, mitigation and residual effects.

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Table 8.6: 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								
Peat deposits and a Neolithic land surface (MLS21214)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Regional	Moderate Harm	Additional archaeological mitigation	Minor Adverse
A Romano-British ditch and enclosure (MLS20927)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm	Additional archaeological mitigation	Minor Adverse
Site of warping drain (MLS2491)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	Additional archaeological mitigation	Minor Adverse
Site of former Warping Drain (MLS21088)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	Additional archaeological mitigation	Minor Adverse
Thorne Mere (PEG209)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Regional	Moderate Harm	Additional archaeological mitigation	Minor Adverse

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Site of Medge Hall Farm (MLS25262)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Site of Lover's Ground Farm (MLS25265)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Site of Boarding House Farm (MLS25281)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Site of un-named Farmstead (MLS25555)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Undated ditches and enclosure (MLS18348)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm	Additional archaeological mitigation	Minor Adverse
Wooden Stakes (Possible wooden building (MLS917)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Site of duck decoy pond (PEG200)	Direct	Permanent	Non-designated heritage asset	Medium Harm	Local	Minor Harm	None	Minor Adverse

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Site of Sandhill Cottage (PEG202)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Site of Redhouse Cottage (PEG203)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Site of Elmhirst Cottage (PEG205)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Undated Enclosure (PEG208)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm	Additional archaeological mitigation	Minor Adverse
Remains of peat tramway (PEG211)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Undated Enclosure (PEG212)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm	Additional archaeological mitigation	Minor Adverse
Undated Enclosure (PEG213)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm	Additional archaeological mitigation	Minor Adverse

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Undated Enclosure (PEG214)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm	Additional archaeological mitigation	Minor Adverse
Site of Pond (PEG215)	Direct	Permanent	Non-designated heritage asset	Low Harm	Local	Minor Harm	None	Minor Adverse
Undated Enclosure (PEG216)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm	Additional archaeological mitigation	Minor Adverse
Site of the bomb store at RAF Sandtoft (MLS26024)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm	Additional archaeological mitigation	Minor Adverse
Site of a bombing decoy (MLS18438)	Direct	Permanent	Non-designated heritage asset	Medium Harm	County	Moderate Harm	Additional archaeological mitigation	Minor Adverse
The buried remains of a crashed Lancaster bomber (MLS25882)	Direct	Permanent	Non-designated heritage asset	High Harm	County	Major Harm	Additional archaeological mitigation	Moderate Adverse
The buried remains of a crashed Halifax bomber (PEG206)	Direct	Permanent	Non-designated heritage asset	High Harm	County	Major Harm	Additional archaeological mitigation	Moderate Adverse

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The buried remains of a crashed Wellington bomber (PEG207)	Direct	Permanent	Non-designated heritage asset	High Harm	County	Major Harm	Additional archaeological mitigation	Moderate Adverse
Dirtness Cottage	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum
Grove House Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum
Sandhill Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum
Belton Grange	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Adverse	n/a	Minor Adverse

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Dale Mount Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Adverse	n/a	Minor Adverse
Drain House Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Adverse	n/a	Minor Adverse
Operation								
Dirtness Cottage	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum
Grove House Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum
Sandhill Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum

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			highest significance			the spectrum		end of the spectrum
Belton Grange	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Adverse	n/a	Minor Adverse
Dale Mount Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Adverse	n/a	Minor Adverse
Drain House Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Adverse	n/a	Minor Adverse
Decommissioning								
Dirtiness Cottage	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum
Grove House Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of	n/a	Less than substantial harm at the lower

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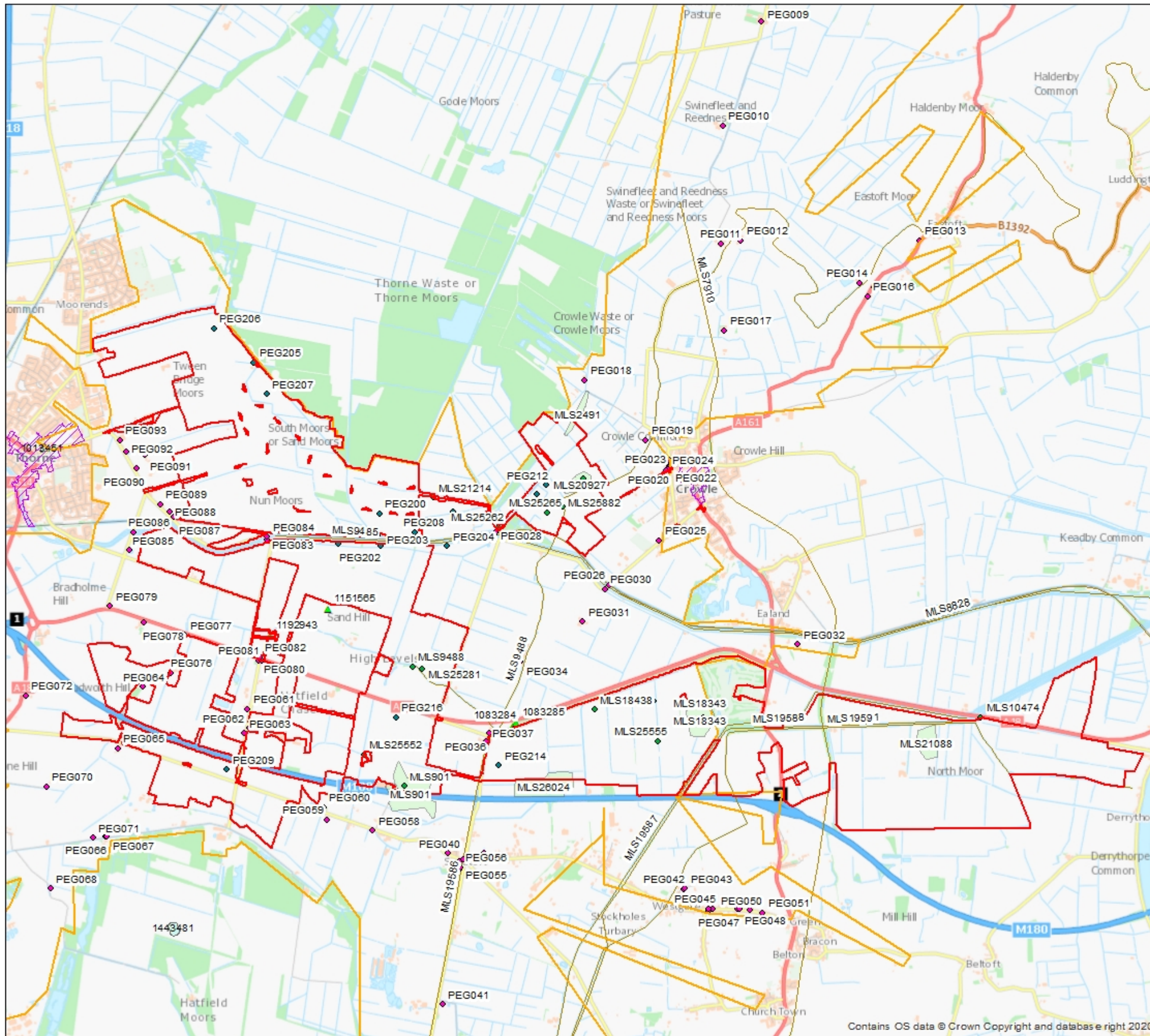
PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

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						the spectrum		end of the spectrum
Sandhill Farmhouse	Indirect	Temporary	Designated asset of less than the highest significance	Less than substantial harm	England	Less than substantial harm at the lower end of the spectrum	n/a	Less than substantial harm at the lower end of the spectrum
Belton Grange	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Adverse	n/a	Minor Adverse
Dale Mount Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Adverse	n/a	Minor Adverse
Drain House Farm	Indirect	Temporary	Non-designated heritage asset	Minor Adverse	County	Minor Adverse	n/a	Minor Adverse
Cumulative and In-Combination								
Not Yet Undertaken								

Figure 8.1

Heritage Assets



- KEY**
- Draft Order Limits
 - ZTV
 - ▲ Listed Building Grade II
 - ◆ Non-Designated Buildings
 - ◆ Additional Assets
 - ◆ Monument Point
 - Monument Line
 - Monument Polygon
 - Scheduled Monuments
 - Conservation Areas

Figure 8.1: Heritage Assets Discussed in PEIR Chapter

Tween Bridge Solar

Client: RWE
 DRWG No: HT8.1 Sheet No: - REV: AE
 Drawn by: JM Approved by: LG
 Date: 25/02/2025
 Scale: 1:50,000 @ A3

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