

Cottam Solar Project

Environmental Statement Chapter 13: Cultural Heritage

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Issue Sheet

**Report Prepared for: Cottam Solar Project Ltd.
DCO Submission**

Environmental Statement Chapter 13: Cultural Heritage

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13 Cultural Heritage

13.1 Introduction

- 13.1.1 This chapter of the Environmental Statement (ES) presents an assessment of the effects of the Scheme on cultural heritage and archaeological receptors. It will assess the effect on heritage, historic landscape and archaeology arising from likely impacts and will propose appropriate mitigation.
- 13.1.2 The assessment identifies and evaluates heritage assets within and surrounding the Study Area (defined in section 13.4 below) and assesses how the Scheme may potentially affect those heritage assets.
- 13.1.3 This ES chapter has been prepared and collated by Antony Brown, Principal Archaeology and Heritage Consultant at Lanpro Services, who is a full Member of the Chartered Institute for Archaeologists (MCIfA) and has over 22 years' experience as a heritage professional. The chapter also includes contributions from Mitchell Pollington, Director of Archaeology and Heritage at Lanpro Services, and Alice James, Associate Archaeologist at Lanpro Services (see Statement of Competence [EN010133/APP/C6.3.1.1]).
- 13.1.4 This chapter of the ES considers relevant heritage policy and guidance and sets out the methodologies and approaches which have been used to inform the Cultural Heritage chapter of the ES for the Scheme. A discussion of the cultural heritage baseline conditions is followed by a discussion of embedded mitigation measures that have been identified and adopted as part of the evolution of the project design. An assessment of the likely effects of the Scheme upon the cultural heritage resource, alongside a discussion of proposed additional mitigation strategies is undertaken. Cumulative impacts resulting from the combined effects of the Scheme with other significant and relevant committed proposals within the vicinity of the Scheme are discussed; and finally, any identified residual effects are identified that would occur as a result of the development assuming the implementation of the proposed mitigation.
- 13.1.5 This chapter is supported by the following appendices:
- **Appendix 13.1** Archaeological Desk-Based Assessments (DBAs), [EN010133/APP/C6.3.13.1].
 - **Appendix 13.2** Archaeological Geophysical Survey Reports, [EN010133/APP/C6.3.13.2].
 - **Appendix 13.3** Geoarchaeological Desk-Based Assessment, [EN010133/APP/C6.3.13.3].
 - **Appendix 13.4** Air Photo and LiDAR Mapping and Interpretation Reports, [EN010133/APP/C6.3.13.4].
 - **Appendix 13.5** Heritage Statement, [EN010133/APP/C6.3.13.5].

- **Appendix 13.6** Archaeological Evaluation Reports, [EN010133/APP/C6.3.13.6].
- **Appendix 13.7** Archaeological Written Scheme of Investigation (WSI), [EN010133/APP/C6.3.13.7].
- **Appendix 13.8** Cultural Heritage Impact Assessment Tables, [EN010133/APP/C6.3.13.8].
- **Appendix 13.9** Consultation Response Table, [EN010133/APP/C6.3.13.9].

13.1.6 This chapter is also supported by the following figures:

- **Figure 13.1** Site location and figure key plan, [C6.4.13.1].
- **Figure 13.2** Assessed Archaeological Remains and Historic Buildings - Cottam 1, [C6.4.13.2].
- **Figure 13.3** Assessed Archaeological Remains and Historic Buildings - Cottam 2, [C6.4.13.3].
- **Figure 13.4** Assessed Archaeological Remains and Historic Buildings - Cottam 2, 3a and 3b, [C6.4.13.4].
- **Figure 13.5** Assessed Archaeological Remains and Historic Buildings - Cottam Cable Route, [C6.4.13.5].
- **Figure 13.6** Historic Landscape Characterisation – Cottam 1, [C6.4.13.6].
- **Figure 13.7** Historic Landscape Characterisation – Cottam 2, [C6.4.13.7].
- **Figure 13.8** Historic Landscape Characterisation – Cottam 2, 3a and 3b, [C6.4.13.8].
- **Figure 13.9** Historic Landscape Characterisation – Cottam Cable Route, [C6.4.13.9].
- **Figure 13.10** Designated Heritage Assets – Cottam Cable Route, [C6.4.13.10].

13.2 Consultation

13.2.1 Consultation undertaken throughout the pre-application and scoping phase informed the approach and the information provided in this chapter. A full list of consultation comments of relevance to Cultural Heritage and the responses to these are provided in the Consultation Response Tables in **Appendix 13.9** and also in the Consultation Report (Counter Context) [EN010133APP/C5.1] submitted with the DCO application.

13.3 Legislation, Planning Policy and Guidance

13.3.1 The following legislative provisions, policy and guidance, as well as the EIA Regulations, provide the context for the cultural heritage assessment to be undertaken in the EIA.

13.3.2 The applicable legislative framework comprises:

- *Ancient Monuments and Archaeological Areas Act (AMAAA) 1979*¹, which provides specific protection for monuments of national interest;
- *Planning (Listed Buildings and Conservation Areas) Act 1990*², which provides specific protection for buildings and areas of special architectural or historic interest; and
- *Historic Buildings and Ancient Monuments Act 1953*³, which makes provision for the compilation of a register of gardens and other land (parks and gardens, and battlefields).
- *Hedgerows Regulations 1997*⁴ make provision for the protection of important hedgerows, which may be afforded statutory protection should they qualify as being 'important' for, *inter alia*, historical or archaeological reasons.

13.3.3 The applicable National Policy Statements (NPS) include:

- The adopted *Overarching National Policy Statement for Energy (EN-1)*⁵ Section 5.8: The Historic Environment is the section of this document of greatest relevance to this chapter, and the key points relevant to this assessment are as follows:

*'Applicant's assessment: As part of the ES ... the applicant should provide a description of the significance of the heritage assets affected by the proposed development and the contribution of their setting to that significance. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on the significance of the heritage asset. As a minimum, the applicant should have consulted the relevant Historic Environment Record (or, where the development is in English or Welsh waters, English Heritage or Cadw) and assessed the heritage assets themselves using expertise where necessary according to the proposed development's impact'*⁶.

¹ <https://www.legislation.gov.uk/ukpga/1979/46>. Retrieved 04/11/2022.

² <https://www.legislation.gov.uk/ukpga/1990/9/contents>. Retrieved 04/11/2022.

³ <https://www.legislation.gov.uk/ukpga/Eliz2/1-2/49/contents> Retrieved 04/11/2022.

⁴ <https://www.legislation.gov.uk/uksi/1997/1160/contents/made> Retrieved 04/11/2022.

⁵ Department of Energy and Climate Change (DECC). July 2011. *Overarching National Policy Statement for Energy (EN-1)*.

⁶ *Ibid.*, paragraph 5.8.8.

*'Where a development site includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation. Where proposed development will affect the setting of a heritage asset, representative visualisations may be necessary to explain the impact'*⁷.

*'The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents'*⁸.

- The NPS described above is currently under review and in 2021 the Department for Business, Energy and Industrial Strategy consulted on the emerging *Draft Overarching National Policy Statement for Energy (EN-1)*⁹. Section 5.9: The Historic Environment is the section of this document of most relevance to this chapter, and the key points relevant to this assessment are as follows:

*'Applicant's assessment: The applicant should undertake an assessment of any likely significant heritage impacts of the proposed development as part of the EIA and describe these in the ES. This should include consideration of heritage assets above, at, and below the surface of the ground'*¹⁰.

*'As part of the ES the applicant should provide a description of the significance of the heritage assets affected by the proposed development, including any contribution made by their setting. The level of detail should be proportionate to the importance of the heritage assets and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the applicant should have consulted the relevant Historic Environment Record (or, where the development is in English or Welsh waters, Historic England or Cadw) and assessed the heritage assets themselves using expertise where necessary according to the proposed development's impact'*¹¹.

'Where a site on which development is proposed includes, or the available evidence suggests it has the potential to include, heritage assets with an archaeological interest, the applicant should carry out appropriate desk-based assessment and, where such desk-based research is insufficient to properly assess the interest, a field evaluation. Where proposed

⁷ Ibid., paragraph 5.8.9.

⁸ Ibid., paragraph 5.8.10.

⁹ Department for Business, Energy & Industrial Strategy (DBEIS). July 2021. *Draft Overarching National Policy Statement for Energy (EN-1)*.

¹⁰ Ibid., paragraph 5.9.10.

¹¹ Ibid., paragraph 5.9.11.

development will affect the setting of a heritage asset, accurate representative visualisations may be necessary to explain the impact¹².

The applicant should ensure that the extent of the impact of the proposed development on the significance of any heritage assets affected can be adequately understood from the application and supporting documents. Studies will be required on those heritage assets affected by noise, vibration, light and indirect impacts, the extent and detail of these studies will be proportionate to the significance of the heritage asset affected¹³.

The applicant is encouraged, where opportunities exist, to prepare proposals which can make a positive contribution to the historic environment, and to consider how their scheme takes account of the significance of heritage assets affected. This can include, where possible:

- enhancing, through a range of measures such a sensitive design, the significance of heritage assets or setting affected*
- considering measures that address those heritage assets which are at risk or which may become at risk, as a result of the scheme*
- considering how visual or noise impacts can affect heritage assets, and whether there may be opportunities to enhance access to, or interpretation, understanding and appreciation of, the heritage assets affected by the scheme¹⁴.*

‘Careful consideration in preparing the scheme will be required on whether the impacts on the historic environment will be direct or indirect, temporary or permanent¹⁵.

‘Applicants should look for opportunities for new development within Conservation Areas and World Heritage Sites, and within the setting of heritage assets, to enhance or better reveal their significance. Proposals that preserve those elements of the setting that make a positive contribution to the asset (or which better reveal its significance) should be treated favourably¹⁶.

- The adopted *National Policy Statement for Renewable Energy Infrastructure (EN-3)*¹⁷ does not contain any policies pertaining to the impacts of solar energy production on the cultural heritage resource. However, the emerging *Draft National Policy Statement for Renewable Energy Infrastructure (EN-3)*¹⁸*

¹² Ibid., paragraph 5.9.12.

¹³ Ibid., paragraph 5.9.13.

¹⁴ Ibid., paragraph 5.9.14.

¹⁵ Ibid., paragraph 5.9.15.

¹⁶ Ibid., paragraph 5.9.16.

¹⁷ DECC. July 2011, *National Policy Statement for Renewable Energy Infrastructure (EN-3)*.

¹⁸ DBEIS. November 2021. *Draft National Policy Statement for Renewable Energy Infrastructure (EN-3)*.

contains *Section 2.53 - Solar photovoltaic generation impacts: cultural heritage*. Key paragraphs within this section include:

*'The impacts of solar PV developments on the historic environment will require expert assessment in most cases. Solar PV developments may affect heritage assets (sites, monuments, buildings, and landscape) both above and below ground. Above ground impacts may include the effects of applications on the setting of Listed Buildings and other designated heritage assets as well as on Historic Landscape Character. Below ground impacts may include direct impacts on archaeological deposits through ground disturbance associated with trenching, cabling, foundations, fencing, temporary haul routes etc. Equally archaeological finds may be protected by a solar PV farm as the site is removed from regular ploughing and shoes or low-level piling is stipulated'*¹⁹

*'Applicant's assessment: It is anticipated that the applicant's assessment will be informed by a consultation with the Historic Environment Record (HER). Alternatively, the applicant may contact the local authority for this information. 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 are expected to 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'*²⁰.

*'In some instances, field studies may include investigative work such as trial trenching beyond the boundary of the proposed site to assess the impacts of any underground cabling on archaeological assets. The extent of investigative work should be proportionate to the sensitivity of, and extent of proposed cabling in, the associated study area'*²¹

'Applications should take account of the results of historic environment assessments in their design, for instance through the sensitive planning of installations. The applicant 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. 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 on such assets. Depending on their scale, design and prominence, a large-scale solar farm within the setting

¹⁹ Ibid., paragraph 2.53.2.

²⁰ Ibid., paragraph 2.53.3.

²¹ Ibid., Paragraph 2.53.4.

of a heritage asset may cause substantial harm to the significance of the asset. Visualisations may be required to demonstrate the effects of a proposed solar farm on the setting of heritage assets²².

Mitigation: *The ability of the applicants to microsite specific elements of the proposed development during the construction phase should be an important consideration by the Secretary of State when assessing the risk of damage to archaeology. Therefore, where requested by the applicant, the Secretary of State should consider granting consents which allow for the micro siting within a specified tolerance of elements of the permitted infrastructure so that precise locations can be amended during the construction phase in the event that unforeseen circumstances, such as the discovery of previously unknown archaeology, arise²³*

Secretary of State decision making: *‘Consistent with the generic policy on historic environmental impacts in EN1 (Section 5.9) the Secretary of State should be satisfied that solar farms and associated infrastructure have been designed sensitively taking into account known heritage assets and their status’²⁴.*

‘Solar farms are generally consented on the basis that they will be time-limited in operation. The Secretary of State should therefore consider the length of time for which consent is sought when considering the impacts of any indirect effect on the historic environment, such as effects on the setting of designated heritage assets²⁵

- The adopted *National Policy Statement for Electricity Networks Infrastructure (EN-5)*²⁶ does not contain any policies pertaining to the impacts of solar energy production on the cultural heritage resource, but does make reference to archaeology or heritage on two occasions, both with regard to the laying of below ground electricity cables:
- *‘Effects on soil, water, ecology and **archaeology** are likely to be negative, at least in the short term, requiring significant mitigation, but there is uncertainty around long term effects depending on the specific location and the sensitivity of the receiving environment. However, long term effects on landscape, townscape and visual impacts will be positive²⁷.*
- *‘... the environmental and archaeological consequences (undergrounding a 400kV line may mean disturbing a swathe of ground up to 40 metres across,*

²² Ibid., Paragraph 2.53.5.

²³ Ibid., paragraph 2.53.6.

²⁴ Ibid., paragraph 2.53.7.

²⁵ Ibid., paragraph 2.53.8.

²⁶ DECC. July 2011. *National Policy Statement for Electricity Networks Infrastructure (EN-5)*.

²⁷ Ibid., paragraph 1.7.5.

*which can disturb sensitive habitats, have an impact on soils and geology, and damage **heritage assets**, in many cases more than an overhead line would²⁸.*

13.3.4 The national and local planning policy framework and associated guidance includes:

- *National Planning Policy Framework (NPPF)* - Section 16: Conserving and Enhancing the Historic Environment²⁹.
- *NPPF Planning Practice Guidance: Historic environment*³⁰.
- *The Central Lincolnshire Local Plan* (adopted on 24 April 2017): Policy LP25: The Historic Environment³¹.
- The emerging *Bassetlaw Local Plan 2020-2037* - Policy ST42: The Historic and Environment³² and Policy ST43: Designated and Non-Designated Heritage Assets³³.
- *The Core Strategy and Development Management Policies Development Plan for Bassetlaw* (adopted on 22 December 2011) - Policy DM8: The Historic Environment³⁴.

13.3.5 Sectorial guidance documents relevant to the EIA include:

- The former Department for Transport's *Design Manual for Roads and Bridges* ("DMRB")³⁵
- English Heritage's *Conservation Principles: Policies and guidance for the sustainable management of the historic environment*³⁶.
- Historic England's *Historic Environment Good Practice Advice in Planning 2: Managing Significance in Decision Taking in the Historic Environment*³⁷
- Historic England's *The Setting of Heritage Assets*³⁸.

²⁸ Ibid., paragraph 2.8.9.

²⁹ Ministry of Housing, Communities & Local Government (MHCLG). 2021. *National Planning Policy Framework*. Paragraphs 189-208.

³⁰ MHCLG. 2019. *National Planning Policy Framework. Planning Policy Guidance: Historic Environment*.

³¹ Central Lincolnshire. Adopted April 2017, *Central Lincolnshire Local Plan 2012-2036*. Section 5.10, p.62-64.

³² Bassetlaw District Council. *Bassetlaw Local Plan 2020-2037*. Publication Version. August 2021.p.155-156.

³³ Bassetlaw District Council. *Bassetlaw Local Plan 2020-2037*. Publication Version. August 2021.p.156-157.

³⁴ Bassetlaw District Council. *The Core Strategy and Development Management Policies Development Plan for Bassetlaw*. Adopted December 2011. p.62-63.

³⁵ Department for Transport (DfT). 2008. *Design Manual for Roads and Bridges. Volume 11 Section 3 Part 2 (HA 208/07) Environmental Assessment. Environmental Topics. Cultural Heritage*.

³⁶ English Heritage. 2008. *Conservation Principles. Conservation Principles. Policies and guidance for the sustainable management of the historic environment*. Historic England, London.

³⁷ Historic England. 2015. *Historic Environment Good Practice Advice in Planning 2: Managing Significance in Decision Taking in the Historic Environment*. Swindon, Historic England.

³⁸ Historic England. 2017. *Historic Environment Good Practice Advice in Planning. Note 3: The Setting of Heritage Assets*. (Second Edition). Swindon, Historic England.

- Historic England's: *Statement of Heritage Significance: Analysing Significance in Heritage Assets*³⁹.
- Historic England's *Commercial Renewable Energy Development and the Historic Environment*⁴⁰.
- The Chartered Institute for Archaeologists' *Standard and Guidance for Historic Environment Desk-based Assessment*⁴¹
- Lincolnshire County Council's *Archaeology Handbook*⁴² which lays out the requirements for undertaking archaeological work in the County.

13.4 Assessment Methodology and Significance Criteria

Study Area

Non-designated heritage assets

- 13.4.1 For non-designated heritage assets, a 1km study area surrounding each of the Cottam Sites has been adopted for the Desk Based Assessments (DBAs) that have been prepared as part of the baseline to inform the ES, which is a standard sized study area for assessments of this type in rural areas of England. This ES chapter will make reference to these wider study areas where appropriate but will focus on those assets within the Order Limits under assessment, as it is these assets that would be directly affected by the Scheme. For the Cable Route Corridors running between the Sites and the grid connection at Cottam Power Station, a 250m study area was used for the archaeological appraisal of the routes. This smaller study area was chosen for the Cable Route Corridor as it was considered that a larger study area would have resulted in a disproportionately large assessment area for what would ultimately be a relatively localised impact (i.e., along the final cable route that will be chosen within the defined Cable Route Corridor). Moreover, this smaller study area was sufficient to provide an assessment of any known archaeological remains that could be impacted by the Scheme within the Cable Route Corridor.

Designated heritage assets

- 13.4.2 For designated heritage assets, Historic England in its role as statutory consultee provided a Scoping Response which highlighted the following sites and settings for consideration in the assessment:

³⁹ Historic England. 2019. *Statement of Heritage Significance: Analysing Significance in Heritage Assets*. Historic England Advice Note 12. Swindon, Historic England.

⁴⁰ Historic England. 2021. *Commercial renewable energy development and the historic environment* Historic England Advice Note 15. Swindon. Historic England.

⁴¹ Chartered Institute for Archaeologists. 2020. *Standard and Guidance for Historic Environment Desk-based Assessment*. Reading, ClfA.

⁴² Jennings, L. 2019. *Archaeology Handbook. Revised 2019*. Lincoln, Lincolnshire County Council.

- The Scheduled Site of college and Benedictine abbey of St. Mary, Stow (NHLE 1012976)
- The Scheduled Medieval Settlement and moated site, Coates (NHLE 1016979)
- The Scheduled Medieval settlement, Thorpe (NHLE 1016978)
- Grade I listed Church of St. Mary, Stow (NHLE 1146624)
- Grade I listed Church of St. Lawrence, Corringham (NHLE 1064162)
- Grade I listed Church of St. Edith, Coates by Stow (NHLE 1146742)
- Grade II* listed Church of St. Andrew, Fillingham (NHLE 1359847) and Fillingham Conservation Area
- Grade I listed Fillingham Castle (NHLE 1166045)
- Grade II Registered Park and Garden at Fillingham Castle (NHLE 1000977).

13.4.3 However, it was also stated that this advice was given '*Without prejudice to the results of analysis (which will benefit from use of our GPA Setting of Heritage Assets)*'. These assets range in distance from immediately adjacent to a Site (e.g., *Thorpe Medieval settlement*) to assets c.2.45km distant to the east on the Lincoln Cliff (e.g., *Fillingham Castle*).

13.4.4 The Scoping Opinion provided by PINS on behalf of the Secretary of State also highlighted that the 2km study area proposed for Built Heritage in the Scoping Report was inconsistent with the 5km study area proposed for the LVIA chapter. It further noted the location of heritage assets along the Lincoln Cliff more than 2km to the east of Cottam 1 that could potentially have lines of site to both the Cottam and West Burton Sites. It concluded that the ES should define an appropriate study area based upon the views to and from the Scheme, and potential impacts to all heritage assets, and that this should inform the cumulative assessment.

13.4.5 Consequently, the Heritage Statement that has been produced to assess potential impacts to the settings of designated heritage assets (included in Appendix 13.5) identified all designated assets 'of the highest significance' within a 5km radius of each of the Sites under consideration, and these were taken forward for further assessment in accordance with the methodology detailed in *The Setting of Heritage Assets*⁴³. For Grade II Listed Buildings, which are considered to be of 'medium' value (see Table 13.6 below), a 2km study area was adopted for assessment in the Heritage Statement, in accordance with the proposed methodology detailed in the PEIR. For the temporary impacts during construction that could occur along the Cable Route Corridors, a 500m study area has been adopted, as it was considered that any temporary, short term, reversible effects would be of a negligible significance and moreover would be unlikely to be discernible at distances greater than 500m.

⁴³ Historic England 2017, op. cit.

Sources of Information

13.4.6 The following sources of information have been consulted to inform this ES chapter:

- The DBAs that have been produced by Lanpro Services for each of the Cottam 1, 2, 3a and 3b Sites and the Cable Route Corridors (included in Appendix 13.1). These comprise:
 - *Archaeological Desk-based Assessment: Cottam 1. Cottam solar project, Lincolnshire*⁴⁴
 - *Archaeological Desk-based Assessment: Cottam 2. Cottam solar project, Lincolnshire*⁴⁵
 - *Archaeological Desk-based Assessment: Cottam 3. Cottam solar project, Lincolnshire*⁴⁶
 - *Archaeological Desk-Based Appraisal: Cottam Cable and Access Corridor. Cottam Solar Project, Lincolnshire*⁴⁷
- The Geophysical Survey reports produced by Archaeological Services (ASWYAS) and Wessex Archaeology which comprise the following (included in Appendix 13.2):
 - *Cottam Solar Project, Cottam 1, Lincolnshire: Geophysical Survey*⁴⁸.
 - *Cottam Solar Project, Cottam 2, Lincolnshire: Geophysical Survey*⁴⁹.
 - *Cottam Solar Project, Cottam 3, Lincolnshire: Geophysical Survey*⁵⁰.
 - *Cottam Solar Project, Cottam Cable Route, Lincolnshire: Geophysical*
 - *Shared Cable Route Corridor, Nottinghamshire and Lincolnshire: Detailed Gradiometer Survey Report*⁵¹

⁴⁴ James, A. and Ryan, R. 2022a. *Archaeological Desk-based Assessment: Cottam 1. Cottam solar project, Lincolnshire*. Unpubl. Lanpro client report.

⁴⁵ James, A. and Ryan, R. 2022b. *Archaeological Desk-based Assessment: Cottam 2. Cottam solar project, Lincolnshire*. Unpubl. Lanpro client report.

⁴⁶ James, A. and Ryan, R. 2022a. *Archaeological Desk-based Assessment: Cottam 3. Cottam solar project, Lincolnshire*. Unpubl. Lanpro client report.

⁴⁷ James, A. 2022. *Archaeological Appraisal: Cottam Cable and Access Corridor. Cottam solar project, Lincolnshire*. Unpubl. Lanpro client report.

⁴⁸ Brunning, E. 2022a. *Cottam Solar Project, Cottam 1, Lincolnshire: Geophysical Survey*. Archaeological Services WYAS Report no. 3777.

⁴⁹ Brunning, E. 2022b. *Cottam Solar Project, Cottam 2, Lincolnshire: Geophysical Survey*. Archaeological Services WYAS Report no. 3769.

⁵⁰ Brunning, E. 2022c. *Cottam Solar Project, Cottam 3, Lincolnshire: Geophysical Survey*. Archaeological Services WYAS Report no. 3756.

⁵¹ Plesnicar, R. and Edwards, P. 2022. *Shared Cable Route Corridor, Nottinghamshire and Lincolnshire: Detailed Gradiometer Survey Report*. Wessex Archaeology Report no. 257661.03

- Oxford Archaeology North's *Cottam Solar Farm, Lincolnshire: Geoarchaeological Assessment Report*⁵² (included in Appendix 13.3).
- Alison Deegan's *Air Photo and LiDAR Mapping and Interpretation: Gate Burton Energy Park, Nottinghamshire and Lincolnshire*⁵³ (included in Appendix 13.4).
- Alison Deegan's *Air Photo and LiDAR Mapping and Interpretation for the Cottam Solar Project and Cable Routes, Lincolnshire and Nottinghamshire*⁵⁴ (included in Appendix 13.4).
- Lanpro's *Cottam Solar Project: Heritage Statement*⁵⁵ (included in Appendix 13.5)
- The interim reports on the archaeological evaluations undertaken by CFA and Wessex Archaeology, which comprise the following (included in Appendix 13.6):
 - *Cottam 1 Solar Project: Interim Report. Archaeological Evaluation.*⁵⁶
 - *Cottam 2 Solar Project: Interim Report. Archaeological Evaluation*⁵⁷
 - *Cottam 3 Solar Project: Interim Report. Archaeological Evaluation*⁵⁸
 - *Shared Grid Connection Corridor, Nottinghamshire and Lincolnshire. Archaeological Evaluation Interim Report*⁵⁹

The Settings of Heritage Assets

13.4.7 The methodology that has been employed for the setting assessment (see Appendix 13.5) follows Historic England's *Good Practice Advice Note* (GPAN 3)⁶⁰ which recommends a 5-stage approach to the assessment of impacts to settings of heritage assets:

- Step 1: identify which heritage assets and their settings are affected.

⁵² Rutherford, M. 2022. *Cottam Solar Farm, Lincolnshire: Geoarchaeological Assessment Report*. Oxford Archaeology North Report no. 2022/2197.

⁵³ Deegan, A. 2022a. *Air Photo and LiDAR Mapping and Interpretation for the Cottam Solar Project and Cable Routes, Lincolnshire and Nottinghamshire*. Alison Deegan project report no. 2223001.

⁵⁴ Deegan, A. 2022b. *Air Photo and LiDAR Mapping and Interpretation: Gate Burton Energy Park, Nottinghamshire and Lincolnshire*. Alison Deegan project report no. 2122007.

⁵⁵ Brown, A. 2022. *Cottam Solar Project Environment Statement. Appendix 13.5: Heritage Statement*.

⁵⁶ Daly, G. and Litchfield, J 2022a. *Cottam 1 Solar Project: Interim Report. Archaeological Evaluation*. CFA Report no. Y597/22.

⁵⁷ Daly, G. and Litchfield, J. 2022b. *Cottam 2 Solar Project. Interim Report: Archaeological Evaluation*. CFA Report no. 592/22.

⁵⁸ Daly, G. and Greaves, F. 2022. *Cottam 2 Solar Project: Interim Report. Archaeological Evaluation*. CFA Report no. Y598/22.

⁵⁹ Powell, J. 2022. *Shared Grid Connection Corridor, Nottinghamshire and Lincolnshire. Archaeological Evaluation Interim Report*. Wessex Archaeology Report Ref: 268980.01.

⁶⁰ Historic England 2017, op. cit.

- Step 2: Assess the degree to which these settings and views make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated.
- Step 3: Assess the effects of the proposed development, whether beneficial or harmful, on the significance or on the ability to appreciate it.
- Step 4: Explore ways to maximise enhancement and avoid or minimise harm.
- Step 5: Make and document the decision and monitor outcomes.

13.4.8 The conclusions of the setting assessment were used to inform the impact assessment scores as assessed using the adapted DMRB methodology described below (paragraphs 13.4.9-13.4.119).

[Impact Assessment Methodology](#)

Introduction

13.4.9 The the *Cottam Solar Project Environmental Impact Assessment Scoping Report [EN01033APP/C6.3.2.1]* included proposed methodologies for assessing Archaeology and Built Heritage in the ES, but the PINS' Scoping Opinion identified inconsistencies in the matrices used for determining 'significant' effects. Consequently, the PEIR instead proposed that the methodology to be adopted in the ES chapter for assessing predicted impacts and effects upon the cultural heritage resource would follow the guidance provided in the Highways Agency's *Design Manual for Roads and Bridges (DMRB)*⁶¹. This methodology was designed for the assessment of impacts and effects resulting from road construction, but it is also a useful approach to the assessment of other development schemes. The original methodology was developed in consultation with the key historic environment stakeholders in the UK, including English Heritage (in their role at the time as non-departmental public body advising the British Government, a role now fulfilled by Historic England) and the Institute for Archaeologists (now the Chartered Institute for Archaeologists - CIfA). The original methodology has also been adapted for this assessment to take cognisance of the updated national planning policy contained within the NPPF, and more recent guidance concerning assessment of significance and impacts to setting^{62 63}.

13.4.10 It should be noted that a new updated version of the DMRB has been published⁶⁴, which supersedes the original DMRB guidance document issued in 2007⁶⁵. However, this updated methodology does not address deficiencies identified by Historic England in the previous document in terms of its failure to comply with *NPPF's* definition of heritage 'assets of the highest significance'. It also adopts a more

⁶¹ DfT 2008, op. cit.

⁶² English Heritage 2008, op. cit.

⁶³ Historic England 2017, op. cit.

⁶⁴ Highways England. 2020. *LA106 Cultural Heritage Assessment. Revision 1*.

⁶⁵ DfT 2008, op. cit.

simplified, generic, assessment methodology which removes the detail contained in the original document with regard to the assessment of the cultural heritage ‘sub-topics’. Consequently, the original *DMRB* assessment methodology for cultural heritage has been retained for use in this assessment, as adapted to comply with more recent professional guidance (as described below in paragraph 13.4.12) and the *NPPF* terminology (as described below in paragraph 13.4.13).

- 13.4.11 The original methodology identified three cultural heritage ‘sub-topics’, each with its own assessment methodology: Archaeological Remains, Historic Buildings and Historic Landscape, as described in further detail below, noting any changes that have been adopted in this ES to bring the methodology into line with the *NPPF* terminology

Assessing the Magnitude of Change

- 13.4.12 The scale and magnitude of change to cultural heritage assets can be assessed using the five-tier grading system for each of the sub-topics as presented in Tables 13.1 - 13.3. These tables were originally published in *DMRB*⁶⁶, but have been modified for use in this ES using professional judgement to highlight that in terms of assessing impacts to setting, it is impacts to the significance of a heritage asset (or the ability to appreciate this significance) brought about by changes to their settings that are being measured and assessed rather than changes to settings *per se* (as was implicit in the original *DMRB* tables). It is considered that with this modification, the methodology accords more closely with more recent guidance⁶⁷ on the assessment of impacts to the settings of heritage assets. It should be noted that the magnitude of change values described below in Table 13.1 can be either *adverse* or *beneficial* in nature.

Table 13.1: Factors in the Assessment of the Magnitude of Change for Archaeological Remains

Magnitude	Description
Major	<ul style="list-style-type: none"> Changes to most or all key archaeological elements, such that the resource is totally altered Comprehensive changes to significance (or the ability to appreciate it) due to changes to setting
Moderate	<ul style="list-style-type: none"> Changes to many key archaeological elements, such that the resource is clearly modified Considerable changes to significance (or the ability to appreciate it) due to changes to setting
Minor	<ul style="list-style-type: none"> Changes to key archaeological elements, such that the asset is slightly altered Slight changes to significance (or the ability to appreciate it) due to changes to setting

⁶⁶ DfT 2008, op. cit., Annexe 5, Table 5.3; Annexe 6, Table 6.3; and Annexe 7, Table 7.3.

⁶⁷ Historic England 2017, op. cit.

Magnitude	Description
Negligible	<ul style="list-style-type: none"> Very minor changes to elements, or to significance (or the ability to appreciate it) due to changes to setting
No change	<ul style="list-style-type: none"> No change

Table 13.2: Factors in the Assessment of the Magnitude of Change for Historic Buildings

Magnitude	Description
Major	<ul style="list-style-type: none"> Changes to key historic building elements such that the resource is totally altered Comprehensive changes to significance (or the ability to appreciate it) due to changes to setting
Moderate	<ul style="list-style-type: none"> Changes to many key historic building elements, such that the resource is significantly modified Changes to the setting of an historic building, such that its significance (or the ability to appreciate it) is significantly modified
Minor	<ul style="list-style-type: none"> Changes to key historic building elements, such that the asset is slightly different Changes to the setting of an historic building, such that its significance (or the ability to appreciate it) is noticeably changed
Negligible	<ul style="list-style-type: none"> Slight changes to historic building elements or setting that hardly affect the significance of the asset.
No change	<ul style="list-style-type: none"> No change

Table 13.3: Factors in the Assessment of the Magnitude of Change for Historic Landscapes

Magnitude	Description
Major	<ul style="list-style-type: none"> Change to most or all key historic landscape elements, parcels or components: Extreme visual effects: Gross change of noise or change to sound quality: Fundamental changes to use or access: <p>Resulting in total change to historic landscape character unit</p>
Moderate	<ul style="list-style-type: none"> Changes to many key historic landscape elements, parcels or components; Visual change to many key aspects of the historic landscape; Noticeable differences in noise or sound quality; Considerable changes to use or access: <p>Resulting in moderate changes to historic landscape character.</p>
Minor	<ul style="list-style-type: none"> Changes to few key historic landscape elements, parcels or components; Slight visual changes to few key aspects of historic landscape; Limited changes to noise levels or sound quality;

Magnitude	Description
	<ul style="list-style-type: none"> Slight changes to use or access: Resulting in limited changes to historic landscape character.
Negligible	<ul style="list-style-type: none"> Very minor changes to key historic landscape elements, parcels or components; Virtually unchanged visual effects; Very slight changes in noise levels or sound quality; Very slight changes to use or access: Resulting in a very small change to historic landscape character.
No change	<ul style="list-style-type: none"> No change

Assessing the Value of Heritage Assets

- 13.4.13 In order to assess the significance of the different magnitudes of change resulting from the Scheme, the above factors have to be weighed against the value of each cultural heritage asset. This 'value' is broadly equivalent to an asset's significance in NPPF terminology⁶⁸ (also referenced in the NPS⁶⁹), but the term 'value' has been retained here in order that this is not confused with the 'significance of effects' which is discussed in paragraphs 13.4.18–13.4.19 below. The DMRB tables 13.4-13.6 below have also been modified to bring them into accordance with the NPPF paragraph 200 which states that heritage assets 'of the highest significance' include Scheduled Monuments, Protected Wreck Sites, Battlefields, grade I and II* Listed Buildings, grade I and II* Parks and Gardens, as well as World Heritage Sites. Consequently, all of these assets have been grouped into the single category of 'high' value rather than 'high' and 'very high' (for World Heritage Sites) as in the original DMRB methodology.
- 13.4.14 In addition to the DMRB methodology, with regards to assigning 'value', reference will also be made to 'heritage significance' as described in the *National Planning Policy Framework* (NPPF), which is defined as the '*value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic. Significance derives not only from a heritage asset's physical presence, but also from its setting*⁷⁰.
- 13.4.15 These three heritages 'interests' are described more fully in the *Planning Practice Guidance: Historic environment* document⁷¹:
- archaeological interest:** As defined in the Glossary to the National Planning Policy Framework, 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.

⁶⁸ MHCLG 2021, op. cit., p.71-72.

⁶⁹ DECC, 2011, op. cit., p.90 (Footnote 118).

⁷⁰ MHCLG 2021, op. cit., p.71-72.

⁷¹ MHCLG 2019, op. cit., paragraph 006.

- **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 skill, 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.

13.4.16 Reference will also be made to the ‘heritage values’ described in the guidance regarding the assessment of significance contained within *Conservation Principles*⁷². This states that the significance of heritage assets derives from the ‘heritage values’ that they possess, which may be *evidential*, *historical* (either *illustrative* or *associative*), *aesthetic* or *communal*.

13.4.17 Cultural heritage assets can include archaeological assets, historic buildings/built environment, and/or historic landscapes, and different criteria are provided in the DMRB guidance for establishing a ‘value’ for each of these assets, as tabulated in Tables 13.4-13.6.

Table 13.4: Factors for assessing the value of archaeological assets

Value	Description
High	<ul style="list-style-type: none"> • World Heritage Sites (including nominated sites) • Assets of acknowledged international importance • Assets that can contribute significantly to acknowledged international research objectives • Scheduled Monuments (including proposed sites) • Undesignated assets of schedulable quality and importance • Assets that can contribute significantly to acknowledged national research objectives
Medium	<ul style="list-style-type: none"> • Designated or undesignated assets that contribute to regional research objectives
Low	<ul style="list-style-type: none"> • Designated and undesignated assets of local importance • Assets compromised by poor preservation and/or poor survival of contextual associations • Assets of limited value, but with potential to contribute to local research objectives
Negligible	<ul style="list-style-type: none"> • Assets with very little or no surviving archaeological interest
Unknown	<ul style="list-style-type: none"> • The importance of the asset cannot be ascertained

⁷² English Heritage 2008, op. cit.

Table 13.5: Factors for assessing the value of the historic built environment

Value	Description
High	<ul style="list-style-type: none"> • Standing structures inscribed as of universal importance as World Heritage Sites • Other buildings of recognised international importance • Scheduled Monuments with standing remains • Grade I and Grade II* Listed Buildings • Other listed buildings that can be shown to have exceptional qualities in their fabric or historical association • Conservation Areas containing very important buildings • Undesignated structures of clear national importance
Medium	<ul style="list-style-type: none"> • Grade II Listed Buildings • Historic unlisted buildings that can be shown to have exceptional qualities in their fabric or historical associations • Conservation Areas containing buildings that contribute significantly to its historic character • Historic Townscape or built-up areas with important historic integrity in their buildings, or built settings (e.g., including Street furniture and other structures)
Low	<ul style="list-style-type: none"> • 'Locally Listed' buildings • Historic (unlisted) buildings of modest quality in their fabric or historical association • Historic Townscape or built-up areas of limited historic integrity in their buildings, or built settings (e.g., including Street furniture and other structures)
Negligible	<ul style="list-style-type: none"> • Buildings of no architectural or historical note; buildings of an intrusive character
Unknown	<ul style="list-style-type: none"> • Buildings with some hidden (i.e., inaccessible) potential for historical significance

Table 13.6: Factors for assessing the value of the historic landscapes

Value	Description
High	<ul style="list-style-type: none"> • World Heritage Sites inscribed for their historic landscape qualities • Historic landscapes of international value, whether designated or not • Extremely well preserved historic landscapes with exceptional coherence, time-depth, or other critical factor(s) • Designated historic landscapes of outstanding interest • Undesignated historic landscapes of outstanding interest • Undesignated landscapes of high quality and importance, and of demonstrable national value • Well preserved historic landscapes, exhibiting considerable coherence, time-depth, or other critical factors
Medium	<ul style="list-style-type: none"> • Designated special historic landscapes

Value	Description
	<ul style="list-style-type: none"> • Undesignated historic landscapes that would justify special historic landscape designation, landscapes of regional value • Averagely well-preserved historic landscapes with reasonable coherence, time-depth, or other critical factor(s)
Low	<ul style="list-style-type: none"> • Robust undesignated historic landscapes • Historic landscapes with importance to local interest groups • Historic landscapes whose sensitivity is limited by poor preservation and/or poor survival of contextual associations
Negligible	<ul style="list-style-type: none"> • Landscapes with little or no significant historical interest

The Significance of Effects

13.4.18 This ES chapter will classify the effect of the Scheme upon cultural heritage assets (both positive and negative impact) using the following measures:

- Very Large beneficial
- Large beneficial
- Moderate beneficial
- Slight beneficial
- Neutral
- Slight adverse
- Moderate adverse
- Large adverse
- Very Large adverse.

13.4.19 Table 13.7 below has been adapted from the DMRB 'Significance of Effects' matrix⁷³ to accord with the terminology described above, and with the definition of '*heritage assets of the highest significance*' provided in the NPPF⁷⁴. It is considered that 'significant' effects are those that are scored as *Moderate* or higher.

⁷³ DfT 2008, op. cit., Annexe 5, Table 5.4; Annexe 6, Table 6.4; and Annexe 7, Table 7.4.

⁷⁴ MCHLG 2021, op. cit., p.57.

Table 13.7: The Significance of Effects Matrix

Value/Sensitivity	High	Neutral	Slight	Slight/ Moderate	Moderate/ Large	Large/ Very Large
	Medium	Neutral	Neutral/ Slight	Slight	Moderate	Moderate/ Large
	Low	Neutral	Neutral/ Slight	Neutral/ Slight	Slight	Slight/ Moderate
	Negligible	Neutral	Neutral	Neutral/ Slight	Neutral/ Slight	Slight
		No change	Negligible	Minor	Moderate	Major
Magnitude of change (Beneficial or adverse)						

- 13.4.20 In making the decision, the Secretary of State will have regard to whether any identified 'significant' effects constitute 'substantial harm'⁷⁵.
- 13.4.21 Paragraph 5.8.14 of NPS EN1 states: *'There should be a presumption in favour of the conservation of designated heritage assets and the more significant the designated heritage asset, the greater the presumption in favour of its conservation should be. Once lost heritage assets cannot be replaced and their loss has a cultural, environmental, economic and social impact. Significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. Loss affecting any designated heritage asset should require clear and convincing justification. Substantial harm to or loss of a grade II listed building park or garden should be exceptional. Substantial harm to or loss of designated assets of the highest significance, including Scheduled Monuments; registered battlefields; grade I and II* listed buildings; grade I and II* registered parks and gardens; and World Heritage Sites, should be wholly exceptional'*⁷⁶.
- 13.4.22 Paragraph 5.8.15 goes on to state: *'Any harmful impact on the significance of a designated heritage asset should be weighed against the public benefit of development, recognising that the greater the harm to the significance of the heritage asset the greater the justification will be needed for any loss. Where the application will lead to substantial harm to or total loss of significance of a designated heritage asset the IPC should refuse consent unless it can be demonstrated that the substantial harm to or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm.'*⁷⁷
- 13.4.23 The Secretary of State is also likely to have regard to the NPPF policy on substantial harm as an important and relevant matter in their decision making.

⁷⁵ MHCLG 2019, op. cit., Paragraph: 018 Reference ID: 18a-018-20190723.

⁷⁶ DECC. July 2011, op. cit., paragraph 5.8.14.

⁷⁷ Ibid., paragraph 5.8.15

13.5 Baseline Conditions

Archaeological Remains

Designated Archaeological Assets: Scheduled Monuments

13.5.1 The combined 5km study area surrounding the Cottam 1, 2, 3a and 3b sites contains 21 Scheduled Monuments that are included on Historic England's *National Heritage List for England* (NHLE), as detailed in Table 13.8 below. None of these Scheduled Monuments are located within any of the Sites, although the Thorpe Medieval settlement (NHLE 1016978) is directly abutting the southern edge of Cottam 1. The locations of these assets are depicted on Figures App.13.5-1 and App.13.5-2 in the Heritage Statement in **Appendix 13.5**, which also contains further detailed information concerning each of these assets.

Table 13.8: Scheduled Monuments within the combined Cottam 5km study area

NHLE	Name
1003570	Deserted village of North Ingleby
1004922	Owmby Roman settlement
1004996	Deserted village of Dunstall
1005041	Roman villa W of Scampton Cliff Farm
1007689	Site of medieval preceptory and settlement remains, Temple Garth
1008685	Site of Heynings Priory
1011456	Monks Garth moated site
1012976	Site of a college and Benedictine Abbey, St Mary's Church
1019229	The medieval bishop's palace and deer park, Stow Park
1016110	Hermit Dam moated site
1016794	Southorpe medieval settlement and cultivation remains
1016795	Gilby medieval settlement and cultivation remains
1016797	Broxholme medieval settlement and cultivation remains
1016920	Moated manorial complex immediately north west of Elm Tree Farm
1016978	Thorpe medieval settlement
1016979	Coates medieval settlement and moated site
1018288	Cross in St Cuthbert's churchyard
1018290	Cross in All Saints churchyard
1018291	Cross in St Martin's churchyard

NHLE	Name
1019068	Harpwell Hall: a post-medieval house and gardens overlying medieval settlement remains immediately south of Hall Farm
1020196	Dovecote at Elm Tree Farm

13.5.2 For the Cable Route Corridor, it was considered that any visual impacts would be relatively localized, temporary, short term and reversible, and consequently it was considered that a 500m study area to assess potential impacts to Scheduled Monuments would be appropriate. There are two Scheduled Monuments within this 500m study area, the *Fleet Plantation moated site* (NHLE 1008594) which is located c.100m to the south of the perimeter fence of the Cottam Power Station, and *The medieval bishop's palace and deer park, Stow Park* (NHLE 1019229) is also just inside this study area. Both Scheduled Monuments are depicted by purple polygons on ES Figure 13.10 [Application Doc. No. C6.4.13.10].

Non-Designated Archaeological Assets

13.5.3 The baseline for on-Site non-designated archaeological assets has been derived from the sources detailed above in paragraph 13.4.6, full details of which can be found in **Appendices 13.1-13.6**.

Cottam 1

13.5.4 The DBA identified that there are 16 archaeological entries on the Lincolnshire HER and/or the NRHE within the Cottam 1 Site boundary and associated access routes, and an additional 15 areas of archaeological interest have been identified as a result of the air photo assessment, geophysical survey and evaluation trenching undertaken to inform this ES. These archaeological remains are listed in Table 13.9 below, and their locations are depicted on ES Figure 13.2 [Application Doc. No. C6.4.13.2].

Table 13.9: Gazetteer of Archaeological Remains within the Cottam 1 Site

ES ref.	Other references	Description
AR01	HER: MLI50540 AP: AP119	The Thorpe le Fallows Thorpe SMV Scheduled Monument is located immediately to the south of the DCO Limits, but the HER polygon for this is slightly larger and extends further to the north into the Order Limits. The AP and LiDAR analysis undertaken in 2022 ⁷⁸ also identified an 'L-shaped' ditch and low earthworks of a possible plough headland in this area. These features were targeted by evaluation trenching in October 2022, which confirmed the presence of three E-W oriented ditches in Trench 33,

⁷⁸ Deegan 2022a. op. cit., p.28 – AP119. (Appendix 13.4).

ES ref.	Other references	Description
		one of which contained a sherd of pottery spot-dated to the Late Iron Age or Romano-British period ⁷⁹ .
AR02	AP: AP118	The AP and LiDAR analysis undertaken in 2022 ⁸⁰ identified another 'L-shaped' ditch at Thorpe le Fallows (AP118) which appeared to be cut by the ridge and furrow, and therefore likely to be of post-medieval date. Five evaluation trenches were excavated in this parcel (D16) in October 2022, including a trench across this putative feature, but no features of archaeological interest were identified ⁸¹ .
AR03	HER: MLI52526 NRHE: 1057914 AP: AP112	An area of ridge and furrow recorded from air photographs (Aps) by the National Mapping Programme (NMP) in 1992-1996 and recorded on the HER and NRHE as 'earthworks'. The AP and LiDAR analysis undertaken in 2022 ⁸² confirms that these were identified as cropmarks only and no earthworks survive.
AR04	HER: MLI52520 NRHE: 1057914 AP: AP112	An area of ridge and furrow recorded by the NMP in 1992-96 and recorded on the HER and NRHE as 'earthworks'. The AP and LiDAR analysis undertaken in 2022 ⁸³ confirms that these were identified as cropmarks only and no earthworks survive.
AR05	HER: MLI52527 NRHE: 1057914 AP: AP112	An area of ridge and furrow recorded by the NMP in 1992-1996 and recorded on the HER and NRHE as 'earthworks'. The AP mapping ⁸⁴ confirms that these were identified as cropmarks only and no earthworks survive.
AR06	HER: MLI52523 NRHE: 1057914 AP: AP112	'The Grange' placename is recorded in an HER entry, as identified from the OS 1956 6-inch series map. This is also recorded on the OS 1 st edition 25-inch map surveyed in 1885. A farmstead is recorded though not named on the 1850 tithe map and OS Old Series map of 1824. No further remains associated with a grange were identified by the geophysics or AP assessment in this vicinity, although the possibility that earlier

⁷⁹ Daly and Litchfield 2022a. op. cit., p.40-41; Fig. 3.15. (Appendix 13.6).

⁸⁰ Ibid., p.38 – AP119.

⁸¹ Daly and Litchfield. 2022a. op. cit., Fig. 3.16. (Appendix 13.6).

⁸² Deegan 2022a op. cit., p.38 – AP112. (Appendix 13.4).

⁸³ Ibid.

⁸⁴ Ibid.

ES ref.	Other references	Description
		remains could survive beneath the extant farmstead known as the Grange cannot be discounted.
AR07	Geophysics: A3	Geophysical survey undertaken in July-December 2021 identified buried features thought possibly to be associated with settlement or a field system of Iron Age or Romano-British date in Field D13 and D14 ⁸⁵ . Evaluation trenching undertaken in September 2022 targeting these features in Field D14 confirmed the presence of ditches in Trenches 2, 5-8, and 12 which produced finds including two beads, an iron brooch and c.580 pottery sherds, mostly spot-dated to the 2 nd and 3 rd centuries (i.e., the Romano-British period) ⁸⁶ .
AR08	HER: MLI52516	The HER records that a stone ford across the River Till was reported at this location in 1959, though this is not depicted on any OS mapping.
AR09	HER: MLI118759	The site of an unnamed demolished 19 th century farmstead, Sturton by Stow, recorded on the HER. A slight earthwork is visible at this location on the LiDAR.
AR10	HER: MLI116510	The site of an unnamed demolished 19 th century farmstead, Stow, recorded on the HER. Aerial imagery indicates that concrete foundations of the building survive.
AR11	Geophysics: A3 & P3 AP: AP131	Geophysical survey undertaken in July-December 2021 identified enclosures, possible ring ditches and other features indicative of a likely Iron Age-Romano or British settlement ⁸⁷ , some of which were also identified from air photos ⁸⁸ .
AR12	Geophysics: P5	Geophysical survey undertaken in July-December 2021 identified a broken ditch-like anomaly that appears to have been cut by furrows in the medieval or post-medieval period ⁸⁹ .
AR13	HER: MLI52107 NRHE: 1062889	An area of ridge and furrow, Cammeringham, identified by the NMP in 1992-1996. The HER entry records that the 2006 Google Earth image indicates that this had been levelled by modern arable

⁸⁵ Brunning 2022a, op. cit., p.7 – Anomalies A3. (Appendix 13.2).

⁸⁶ Daly and Litchfield. 2022a. op. cit., p.29-40; p.117; Fig. 2.2; Fig. 13.8; Fig. 3.10. (Appendix 13.6).

⁸⁷ Brunning 2022a, op. cit., p.6 - Anomalies A2 & P3. (Appendix 13.2).

⁸⁸ Deegan 2022a, op. cit., p.39 – AP131. (Appendix 13.4).

⁸⁹ Brunning 2022a, op. cit., p.7 - Anomalies P5. (Appendix 13.2).

ES ref.	Other references	Description
	AP: AP102	cultivation, and no features of known or possible archaeological significance were observed in this parcel by the AP and LiDAR analysis undertaken in 2022 ⁹⁰ .
AR14	Geophysics: P1 & P2.	Geophysical survey undertaken in April to October 2022 identified NNE-SSW oriented ditch that is not depicted on any historic mapping abutted by a small rectilinear enclosure measuring c.35m by 9m ⁹¹ . Other linear trends were identified to the west of these features.
AR15	Geophysics: A6	Geophysical survey undertaken in July-December 2021 identified possible Iron Age/Romano-British and/or medieval period ditches to the south-east of Normanby by Stow ⁹² .
AR16	NRHE: 891755 AP: AP153	A southwards continuation of the hollow way previously identified by the NMP at the SMV of Normanby by Stow (see AR18 below) was mapped as part of the AP assessment ⁹³ .
AR17	HER: MLI52438	Findspot of a silver penny of Cnut (1016-35) found in 1952 at Normanby by Stow shrunken medieval village (SMV).
AR18	HER: MLI52445 Geophysics: A4, A5 & P6	Normanby by Stow SMV. The tiny township of Normanby, reckoned in 1839 to amount to 520 acres, extends in a narrow strip along the north boundary of Stow for the full east west dimension of the parish and is generally no more than 500 metres north to south. No form of separate ecclesiastical provision is recorded. The earthworks are fragmentary but sufficient survives to suggest that Normanby in Stow was a planned village consisting of a rectangular block divided axially by a central north to south street, which for much of its length is still a road ⁹⁴ . The HER polygon delineates the extent of the earthworks as recorded by the NMP in 1992-1996, and further elements were mapped as part of the 2022 AP analysis (see AR15 above). Geophysical

⁹⁰ Deegan 2022a, op. cit., p.37 – AP02. (Appendix 13.4).

⁹¹ Brunning 2022a, op. cit., p.9 – Anomalies P1 & P2. (Appendix 13.2).

⁹² Ibid., p.7 – Anomalies A6.

⁹³ Deegan 2022a, op. cit., p.39 – AP153. (Appendix 13.4).

⁹⁴ Everson, P.L., Taylor, C.C., and Dunn, C.J. 1991. *Change and Continuity: Rural Settlement in North-West Lincolnshire*. Archive Notes (Quoted in HER entry).

ES ref.	Other references	Description
		survey undertaken in July-December 2021 also confirmed the presence of buried features associated with the SMV ⁹⁵ .
AR19	HER: MLI52445	Early Medieval pottery scatter on land north of East Farm, Normanby by Stow
AR20	HER: MLI89098	Two sherds of Romano-British pottery found at East Farm, Normanby by Stow
AR21	AP: AP241	The AP analysis undertaken in 2022 ⁹⁶ identified a fragment of medieval or post medieval ridge and furrow which is visible as earthworks on LiDAR imagery. The LiDAR data indicates that the furrows have a depth of c.10-15cm.
AR22	Geophysics: A9	Geophysical survey undertaken in July-December 2021 identified enclosure ditches and possible field systems of Iron Age-Romano-British date ⁹⁷ . Evaluation trenching undertaken in July and August 2022 confirmed the presence of numerous ditches, pits and gullies in Trenches 1-4 and 8-11 which produced a range of finds including animal bone (including a relatively complete skeleton), CBM (ceramic building material), worked stone, Romano-British pot (spot dated to the 2 nd – 4 th centuries AD), and metal objects including a coin of likely Roman date ⁹⁸ .
AR22a	N/A	A possible kiln was identified during the evaluation in Trench 35 which could be contemporary with (and an outlier to) the settlement evidence identified at AR22 ⁹⁹ .
AR23	Geophysics: A10	Geophysical survey undertaken in July-December 2021 identified an enclosure ditch and possible field systems on a similar alignment to those identified c.200m to the west at AR17 ¹⁰⁰ . Evaluation trenching undertaken in July and August 2022 identified archaeological remains in Trenches 70, 71, 83, 84, 89, 90, 100, 101, 11, 112, and 115 including ditches, pits and gullies. Large quantities of animal bone, CBM,

⁹⁵ Brunning 2022a, op. cit., p.7 - Anomalies A4, A5 & P6. (Appendix 13.2).

⁹⁶ Deegan 2022a, op. cit. p, 43 – AP241. (Appendix 13.4).

⁹⁷ Brunning 2022a, op. cit., p.7-8. – Anomalies A9. (Appendix 13.2).

⁹⁸ Daly and Litchfield 2022a. op. cit., p.42-54, p.118; Fig. 2.3 & Figs 3.17-3.18. (Appendix 13.6).

⁹⁹ Ibid., p.59-61; Fig. 2.3 & Fig. 3.24 (Appendix 13.6).

¹⁰⁰ Brunning 2022a, op. cit., p.7-8 – Anomalies A10. (Appendix 13.2).

ES ref.	Other references	Description
		pottery largely spot dated to the 2 nd - 4 th centuries, (although some possible late Iron Age and some Saxon pottery was also recovered) ¹⁰¹ .
AR24	Geophysics: A7 & P9	Geophysical survey undertaken in July-December 2021 ¹⁰² identified a possible trackway with appended enclosures indicative of Iron Age or Romano-British settlement activity. Evaluation trenching undertaken in this parcel in August 2022 identified archaeological remains in Trenches 95, 120, 122, 123, 124 and 127 including ditches, pits and gullies. Large quantities of animal bone, CBM, pottery largely spot dated to the 2 nd - 4 th centuries, and part of a possible quern stone. Fragments of a possible crucible indicating high-status metalworking activity were also recovered from Trench 22. In addition to the ditches identified by the geophysics, Trenches 123 and 124 also revealed the presence of 11 graves. These were oriented East-West, and possible Anglo-Saxon pot sherds recovered from the grave fills, and a piece of bone comb accompanying one of the burials indicates a likely Anglo-Saxon date for this cemetery ¹⁰³ . Contingency Trenches 84-88 were excavated to try to define the extent of the cemetery, and one further burial was identified in Trench 187 ¹⁰⁴ .
AR25	Geophysics: P1	Geophysical survey undertaken in July-December 2021 identified a linear trend which is thought to be a possible former field boundary, though as it is not depicted on any historic mapping it could be of archaeological interest ¹⁰⁵ .
AR26	Geophysics: P2	Geophysical survey undertaken in July-December 2021 identified a linear trend which is thought to be a possible former field boundary, though as it is not depicted on any historic mapping it could be of archaeological interest, and there are some rectilinear features in the same vicinity ¹⁰⁶ .

¹⁰¹ Daly and Litchfield 2022a. op. cit., p.66-88; p.118; Fig. 2.3; Figs. 3.34-3.36; Fig. 3.39; Fig. 3.43. (Appendix 13.6).

¹⁰² Brunning 2022a op. cit., p.7 – Anomalies A7 & P9. (Appendix 13.2).

¹⁰³ Daly and Litchfield 2022a. op. cit., p.74-76; p.89-89-107; p.118; Fig. 2.3; Figs 2.3; Fig. 3.41; Figs. 3.44-3.45. (Appendix 13.6).

¹⁰⁴ Ibid., p. 112; p.118; Fig. 3.45.

¹⁰⁵ Brunning 2022a, op. cit., p.6 – Anomalies P1. (Appendix 13.2).

¹⁰⁶ Brunning 2022a, op. cit., p.6 – Anomalies P2. (Appendix 13.2).

ES ref.	Other references	Description
AR27	AP: AP71 & AP78	The AP analysis undertaken in 2022 ¹⁰⁷ identified a series of parallel ditches and an irregular hollow are visible as cropmarks on historical air photos. They coincide with the location of a putative late Romano-British settlement (MLI51104) identified from ceramics and stonework in the plough soil (see AR27 below) but are thought more likely to be post-medieval drains ¹⁰⁸ .
AR28	HER: MLI51104	Site of a Romano-British settlement south-west of Turpin Farm. The HER records that deep ploughing in 1936 brought up an abundance of Romano-British pottery and stone fragments. A series of parallel ditches were identified in the same area by the AP assessment (AP71), and evaluation trenching was undertaken in this parcel in October 2022. This evaluation identified archaeological features in Trenches 2, 6, 9-14 and 16, including a large rectilinear double-ditched enclosure in Trenches 9, 12, 16 and 17. The ditches had been re-cut, indication a possible prolonged period of use. Large quantities of animal bone and pottery largely spot dated to the 2 nd - 4 th centuries were recovered, along with CBM and roof tile indicating the possible presence of a substantial building. Trench 11 provided evidence for earlier settlement activity in the form of two possible ring gullies associated with pottery probably dating to the Iron Age (including 3 possibly complete vessels) ¹⁰⁹ .
AR29	HER: MLI51105	Possible medieval precursor to Turpin Farm. The HER entry references Everson <i>et al</i> 's list of possible farmsteads with medieval precursors situated at the western, low-lying ends of parishes ¹¹⁰ .
AR30	AP: AP56	AP analysis identified a series of earthworks visible immediately to the west of Side Farm ¹¹¹ , including a broad north-south oriented ditch abutted by a possible pond and other linear features. The earthworks appeared to be levelled on later photographs, and evaluation trenching in this parcel

¹⁰⁷ Deegan 2022a, op. cit., p.43 – AP71 & AP 78. (Appendix 13.4).

¹⁰⁸ Ibid., p, 4.

¹⁰⁹ Daly and Litchfield 2022a. op. cit., p.11-28; p.116-7; Fig. 2.1; Figs. 3.1-3.4. (Appendix 13.6).

¹¹⁰ Everson, *et al*, op. cit., p.12.

¹¹¹ Deegan 2022a, op. cit., p.35 – AP56. (Appendix 13.4).

ES ref.	Other references	Description
		undertaken in October 2022 did not identify any features of archaeological significance ¹¹² .
AR31	Geophysics: A1	Geophysical survey undertaken in July-December 2022 identified a complex system of enclosures, ditches and pits in parcel C28 which appeared to represent settlement activity of multiple phases ¹¹³ . The complex measures at least 300m by 140m and is likely to extend into the field in the south. The AP analysis undertaken in 2022 also identified a small poorly defined cropmark that could indicate the location of an Iron Age or Romano-British enclosure ¹¹⁴ .

Cable Route Corridor from Cottam 1 to Cottam 2

13.5.5 Along the Cable Route Corridor between the Cottam 1 and Cottam 2 Sites, two areas of potential archaeological interest have been identified within the Order Limits as a result of the air photo assessment and geophysical survey undertaken to inform this ES. Details of these are provided in Table 13.10 below, and their locations are depicted on ES Figure 13.2 [Application Doc. No. C6.4.13.2] and 13.3 [Application Doc. No. C6.4.13.3].

Table 13.10: Gazetteer of Archaeological Remains along the Cable Route Corridor between Cottam 1 and Cottam 2.

ES ref.	Other references	Description
AR32	AP: AP50	AP and LiDAR analysis undertaken in 2022 identified several ditches and hollows of uncertain date visible as earthworks and cropmarks immediately to the east of Heaton's Wood ¹¹⁵ .
AR33	Geophysics: A1 & P3	Geophysical survey undertaken in April to October 2022 identified a cluster of ditches and other features which appeared to be cut by medieval furrows. These were interpreted as possible settlement activity possibly dating from the Romano-British to medieval periods ¹¹⁶ .

Cottam 2

¹¹² Daly and Litchfield 2022a, op. cit., p.10; p.29; Fig. 2.1; Figs. 3.5-3.7. (Appendix 13.6).

¹¹³ Brunning 2022a, op. cit., p.9 – Anomalies A1. (Appendix 13.2).

¹¹⁴ Deegan 2022a, op. cit., p.33 – AP28. (Appendix 13.4).

¹¹⁵ Ibid., p.35 – AP50.

¹¹⁶ Brunning 2022d, op. cit., p.9 - Anomalies A1 & P2. (Appendix 13.2).

13.5.6 There are two entries on the Lincolnshire HER and NRHE relating to archaeological remains within the Cottam 2 Site, a single Portable Antiquities Scheme (PAS) findspot, and a further eight areas of potential archaeological interest have been identified as a result of the air photo assessment, geophysical survey and evaluation trenching undertaken to inform this ES. These archaeological remains are listed in Table 13.11 below, and their locations are depicted on ES Figure 13.3 [Application Doc. No. C6.4.13.3].

Table 13.11: Gazetteer of Archaeological Remains within the Cottam 2 Site

ES ref.	Other references	Description
AR34	HER: MLI98190 AP: AP45.	Probable late medieval ridge and furrow earthworks were identified by the NMP in 1992-96, and these have been identified as surviving as very low earthworks visible in the LiDAR data ¹¹⁷ . The LiDAR mapping indicates that the surviving earthworks are very low with a general height difference between the ridges and furrows of c.10cm and therefore probably not readily visible in the field.
AR35	Geophysics: P1	Geophysical survey undertaken in 2022 identified rectilinear and curvilinear trends ¹¹⁸ (Brunning 2022b, op. cit., p.5 - Anomalies P1) interpreted as possibly having an archaeological origin. It is possible that these could relate to Iron Age/Romano-British or later settlement activity.
AR36	HER: MLI54038 AP: AP43.	Two blocks of medieval ridge and furrow earthworks recorded to the south and south-east of Corringham Grange Farm by the NMP in 1992-96. The AP analysis undertaken in 2022 confirms that these have been levelled by more recent agricultural activity ¹¹⁹ .
AR37	Geophysics: P3	Geophysical survey undertaken in July-December 2021 identified three possible enclosures of possible Iron Age/Romano-British date ¹²⁰ . A few short anomalies and trends close to the enclosures were interpreted as possible archaeology and may be associated ¹²¹ . Evaluation trenching undertaken in July and August 2022 confirmed the presence of these enclosures in Trenches 59-63, and pottery dated from the Iron Age to the Romano-British period recovered from these features indicate an extended period of

¹¹⁷ Deegan 2022a, op. cit., p.34 - AP45. (Appendix 13.4).

¹¹⁸ Brunning 2022b, op. cit., p.5 – Anomalies P1. (Appendix 13.2).

¹¹⁹ Deegan 2022a op. cit. & accompanying digital dataset - AP43. (Appendix 13.4).

¹²⁰ Brunning 2022b, op. cit., p.5 - Anomalies A1-A3. (Appendix 13.2).

¹²¹ Ibid. - Anomalies P3.

ES ref.	Other references	Description
		use ¹²² . Numerous features were also identified in the area to the south of the geophysical anomalies (Trenches 46 and 48-55) although a paucity of dating evidence precludes any secure interpretation for these ¹²³ .
AR38	Geophysics: A4 & P4	Geophysical survey undertaken in 2022 identified two sub-circular trends identified by the geophysical survey ¹²⁴ identified as possibly having archaeological origin and could possibly relate to Iron Age/Romano-British settlement activity. Evaluation trenching undertaken in October 2022 confirmed the presence of these features and pottery recovered from the fills dated from the Iron Age to the Romano-British period, indicating an extended period of use ¹²⁵ .
AR39	AP: AP41 Geophysics: P5	The AP assessment undertaken in 2022 identified a swathe of indistinct cropmarks of possible curvilinear enclosures of unknown date but a natural origin for these cropmarks could not be discounted ¹²⁶ . The Geophysical survey undertaken in 2022 also identified a sub-circular trend in this vicinity ¹²⁷ . Evaluation trenches were excavated within this parcel in October 2022, but none of the curvilinear features proved to be of archaeological origin, although an undated ditch cut by a gulley was identified in a single trench to the south of these features ¹²⁸ .
AR40	PAS: NLM-B3E9AB	Findspot of Copper alloy coin recorded by the Portable Antiquities Scheme. <i>Dupondius</i> of an indeterminate early Roman ruler, probably issue of 43-200.
AR41	Geophysics: N/A	Geophysical survey undertaken in 2022 identified a sub-circular trend to the north of The Cottage.
AR42	Geophysics: A2	Geophysical survey undertaken in 2022 identified two sub-circular trends identified by the geophysical survey ¹²⁹ identified as possibly having archaeological

¹²² Daly and Litchfield 2022b, op. cit., p.32-42; p.48; Fig. 2; Figs. 3.13-3.14. (Appendix 13.6).

¹²³ Ibid., p.24-32; p.49; Figs. 3.15-3.17.

¹²⁴ Brunning 2022b, op. cit., p.7 – Anomalies A4 & P4. (Appendix 13.2).

¹²⁵ Daly and Litchfield 2022b, op. cit., p.48 – Trenches 14-18. (Appendix 13.6).

¹²⁶ Deegan 2022a, op. cit., p.34 – AP41. (Appendix 13.4).

¹²⁷ Brunning 2022b, op. cit., p.7; Figure 37 – Anomalies P5. (Appendix 13.2).

¹²⁸ Daly and Litchfield 2022b, op. cit., p.45. (Appendix 13.6).

¹²⁹ Brunning 2022b, op. cit., p.5 – Anomalies A2. (Appendix 13.2).

ES ref.	Other references	Description
		origin and could possibly relate to Iron Age/Romano-British settlement activity.
AR43	AP: AP34	The AP and LiDAR assessment undertaken in 2022 identified a curvilinear ditch of c.55m in length uncertain date or purpose, although this may be part of a wider extensive medieval/post-medieval field system comprising mostly levelled ridge and furrow with headlands between the m surviving as low earthworks visible in the LiDAR data ¹³⁰ .

Cable Route Corridor from Cottam 2 to Cottam 3b

13.5.7 Along the Cable Route Corridor between the Cottam 2 and Cottam 3b Sites, one area of potential archaeological interest has been identified within the Order Limits as a result of the air photo assessment undertaken to inform this ES. Details of this are provided in Table 13.12 below, and their locations are depicted on Figure 13.8 [Application Doc. No. C6.4.13.8].

Table 13.12: Gazetteer of Archaeological Remains along the Cable Route Corridor between Cottam 2 and Cottam 3b.

ES ref.	Other references	Description
AR44	AP: AP32	The AP assessment undertaken in 2022 identified a north-south oriented ditch with a second ditch running off from it to the west ¹³¹ . This may be a field boundary of post medieval date, but as it is not depicted on any historic mapping an earlier date cannot be discounted.

Cottam 3b

13.5.8 There are no archaeological entries recorded on the Lincolnshire HER or the NRHE within the Cottam 3b Site, but three areas of potential archaeological interest have been identified as a result of the air photo assessment, geophysical survey and evaluation trenching undertaken to inform this ES. These archaeological remains are listed in Table 13.13 below, and their locations are depicted on ES Figure 13.4 [Application Doc. No. C6.4.13.4].

Table 13.13: Gazetteer of Archaeological Remains within the Cottam 3b Site

ES ref.	Other references	Description
AR45	Geophysics: P6	Geophysical survey undertaken in 2021-22 identified a group of possible archaeological responses,

¹³⁰ Deegan 2022a, op. cit., p.34 – AP34. (Appendix 13.4).

¹³¹ Ibid., p. 33 - AP32.

ES ref.	Other references	Description
		interpreted as possibly representing rectilinear enclosures of Iron Age/Romano-British date ¹³² . Evaluation trenching was undertaken in Cottam 3 during August and September 2022, and Trenches 30-33 were placed to target these features. The evaluation confirmed the presence of a series of ditches, a pit and a post hole. Artefacts recovered from these features included metal and glass items, slag, ceramic building material, animal bone, and pottery dating from the 2 nd - 3 rd centuries including sherds of high status Samian ware ¹³³ .
AR46	Geophysics: A4 & P5 AP: AP24	Geophysical survey undertaken in 2021-22 identified possible field systems and enclosures thought to be of potential archaeological significance ¹³⁴ , and the AP and LiDAR assessment undertaken in 2022 also identified four ditches of uncertain date in this area ¹³⁵ . Evaluation trenching was undertaken during August and September 2022 to target these features, and this confirmed the presence of a series of ditches and pits in Trenches 10-14 and 19-21 and Trench 23, some of which produced animal bone and pottery dating from the Late Iron Age to the Romano-British period (2 nd -3 rd century), including two sherds of Samian ware ¹³⁶ .
AR47	AP: AP34	The AP and LiDAR assessment undertaken in 2022 identified two ditches of uncertain date which may be the continuation of features identified to the east in AR36 ¹³⁷ .

Cottam 3a

- 13.5.9 There are three archaeological entries on the Lincolnshire HER within the Cottam 3a Site, two of which are also recorded on the NRHE. In addition, and a further seven areas of potential archaeological interest have been identified as a result of the air photo assessment, geophysical survey and evaluation trenching undertaken to

¹³² Brunning 2022c, op. cit., p.7 - Anomalies P6. (Appendix 13.2).

¹³³ Daly and Greaves 2022, op. cit., p.14-22; Figs. 2.1-2.2. (Appendix 13.6).

¹³⁴ Brunning 2022c, op. cit., p.7 - Anomalies A4 & P5. (Appendix 13.2).

¹³⁵ Deegan 2022a, op. cit., p.33 - AP24. (Appendix 13.4).

¹³⁶ Daly and Greaves 2022, op. cit., p.9-p.66; Figs. 2.1-2.2. (Appendix 13.6).

¹³⁷ Deegan 2022a, op. cit., p.33 - AP34. (Appendix 13.4).

inform this ES. These archaeological remains are listed in Table 13.14 below, and their locations are depicted on ES Figure 13.4 [Application Doc. No. C6.4.13.4].

Table 13.14: Gazetteer of Archaeological Remains within the Cottam 3a Site

ES ref.	Other references	Description
AR48	Geophysics: P2	Geophysical survey undertaken in 2021-22 identified a cluster of linear responses which were interpreted as having a possible archaeological origin due to their alignment being different to the agricultural responses in this area. It is possible they are the remains of a field system or part of an enclosure ¹³⁸ .
AR49	HER: MLI117386	Blyton Field, Blyton. The HER records the site of Blyton Field, Blyton - a demolished 19 th century outfarm that was depicted on the OS 1st edition map of 1885 and subsequent early 20 th century mapping but was likely demolished to make way for RAF Blyton in 1942.
AR50	Geophysics: P1	Geophysical survey undertaken in 2021-22 identified a circular feature with a diameter of c.11m interpreted as a possible ring ditch ¹³⁹ .
AR51	HER: MLI54074 NRHE: 1057014 AP: AP8	Probable medieval ridge and furrow seen as earthworks recorded by the NMP. The AP and LiDAR assessment undertaken in 2022 confirmed that low earthworks of ridge and furrow survive within the northern half of Field K5 but have been levelled further to the east ¹⁴⁰ . The LiDAR mapping indicates that the surviving earthworks are very low with a general height difference between the ridges and furrows of c.10cm.
AR52	Geophysics: P3	Geophysical survey undertaken in 2021-22 identified a cluster of linear responses which were interpreted as having a possible archaeological origin due to their alignment being different to the agricultural responses in this area. It is possible they are the remains of a field system or part of an enclosure ¹⁴¹ .
AR53	Geophysics: A3	Geophysical survey undertaken in 2021-22 identified a cluster of linear ditches and pit-like features which are likely to be part of a field system or settlement of Iron Age or Romano-British date ¹⁴² . Excavations

¹³⁸ Brunning 2022c, op. cit., p.6 - Anomalies P2. (Appendix 13.2).

¹³⁹ Ibid., p. 6 - Anomaly P1.

¹⁴⁰ Deegan 2022a, op. cit., p.31 - AP8. (Appendix 13.4).

¹⁴¹ Brunning 2022c, op. cit., p.6 - Anomalies P3. (Appendix 13.2).

¹⁴² Ibid., p.7 - Anomalies A3.

ES ref.	Other references	Description
		undertaken in August and September 2022 identified ditches in two of the trenches to the west of the anomalies which might also be related (Trenches 57 and 58) ¹⁴³ .
AR54	Geophysics: A2	Geophysical survey undertaken in 2021-22 identified a cluster of linear ditches and trends covering an area of c.75m by 57m ¹⁴⁴ . Subsequent evaluation trenching undertaken in August and September 2022 uncovered a dense and complex series of intercutting features which may have been part of a ladder settlement and used for small-scale agricultural or pastoral activities. Late Iron Age to Romano-British pottery was recovered from Trenches 41, 42, and 43; the majority of this can be dated to the late 1 st to the 3 rd century ¹⁴⁵ . Two trenches to the south might also be related to this settlement activity, or that to the south-east at AR50 ¹⁴⁶ .
AR55	Geophysics: A1	Geophysical survey undertaken in 2021-22 identified a cluster of linear ditches thought likely to be associated with settlement activity ¹⁴⁷ . Subsequent evaluation trenching was undertaken in August and September 2022 to target these features. This confirmed the presence of the features in Trenches 16-21, as well as additional curvilinear and linear ditches representing a concentrated area of settlement activity. Iron Age to Romano-British pottery was recovered from these trenches, as well as copper alloy metal finds and animal bone ¹⁴⁸ .
AR56	Geophysics: P4	Geophysical survey undertaken in 2021-22 identified a cluster of linear trends and ditches thought to be associated with settlement activity ¹⁴⁹ . Subsequent evaluation trenching undertaken in August and September 2022 uncovered an area of complex intercutting ditches in Trenches 10-13 ¹⁵⁰ . Whilst some of the features identified might relate to medieval or post-medieval furrows, the majority of the features

¹⁴³ Daly and Greaves 2022, op. cit. p.62-63; Fig. 2.3; Fig. 3.28. (Appendix 13.6).

¹⁴⁴ Brunning 2022c, p.7 - Anomalies A2. (Appendix 13.2).

¹⁴⁵ Daly and Greaves 2022, op. cit. p.50-61; p.66; Fig. 2.1, Figs. 13.23-24. (Appendix 13.6).

¹⁴⁶ Ibid., p.62-63; – Fig. 2.3; Fig. 3.28.

¹⁴⁷ Brunning 2022c, op. cit., p.6 - Anomalies A1. (Appendix 13.2).

¹⁴⁸ Daly and Greaves 2022, op. cit. p.34- 48; Fig. 2.1; Fig. 2.3; Figs 3.13-14. (Appendix 13.6).

¹⁴⁹ Brunning 2022c, op. cit., p.6 - Anomalies P4. (Appendix 13.2).

¹⁵⁰ Daly and Greaves 2022, op. cit., p.24-33; p.66; Fig.2.1; Fig. 2.3; Figs. 3.11-12. (Appendix 13.6).

ES ref.	Other references	Description
		identified in this area aligned with the archaeological features identified on the geophysical survey or are features which were not identified. Possible late Iron Age pottery was recovered from one trench and four trenches produced Romano-British pottery dating to the 2 nd – 3 rd century ¹⁵¹ .
AR57	HER: MLI54074 NRHE: 1386159 NRHE: 1419412 AP: AP1-17	RAF Blyton. Blyton Airfield was opened in November 1942 and was closed in 1945. After the war, the base was used for equipment storage until 1947, when it was put on care and maintenance, and it briefly returned to use as a relief landing ground in the 1950s. RAF Blyton was officially closed in May 1954, and the land was sold and mostly returned to agricultural use by the early 1960s. The AP and LiDAR assessment undertaken in 2022 identified that two military camps associated with RAF Blyton are visible as upstanding structures and buildings on historical air photos. All above ground elements have now been removed but very shallow earthworks indicate where these camps stood ¹⁵² . Pan handle aircraft hard standings, the former taxiway, three runways and the perimeter track are also visible on historical air photos in several parcels, but these have now been removed ¹⁵³ . Some small sections of hard standing and concrete surfaces do survive but these are outside of the DCO Limits ¹⁵⁴ .

Cable Route Corridor from Cottam 1 to Cottam Power Station

13.5.10 There are seven archaeological entries within the Order Limits on the Lincolnshire HER along the Cable Route Corridor from Cottam 1 to its terminus at the Cottam Power Station, and seven entries on Historic England’s NRHE (six of which duplicate the HER entries). In addition, a further 10 areas of potential archaeological significance have been identified through air photo assessment, geophysical survey and evaluation trenching undertaken to inform this ES or as part of the ongoing assessment works commissioned by Low Carbon for the Gate Burton Energy Park along the proposed Shared Cable Corridor. These archaeological remains are listed in Table 13.15 below, and their locations are depicted on ES Figure 13.5 [Application Doc. No. C6.4.13.5].

¹⁵¹ Ibid., p.66.

¹⁵² Deegan 2022a, op. cit., p. 31 - AP6-8. (Appendix 13.4).

¹⁵³ Ibid., p. 31-32 – AP1-17.

¹⁵⁴ Ibid., p.7.



Table 13.15: Gazetteer of Archaeological Remains along the Cable Route Corridor and access routes between Cottam 1 and the Cottam Power Station

ES ref.	Other references	Description
AR58	HER: MLI52492	Earthwork remains of a former medieval ridge and furrow field system to the east of Marton were identified on aerial photography by the National Mapping Programme in 1992-96. The AP and LiDAR assessment undertaken in 2022 confirmed that these former earthworks have now been levelled by more recent agricultural activity ¹⁵⁵ .
AR59	AP: AP102	The AP and LiDAR assessment undertaken in 2022 for the Gate Burton Solar scheme (which includes a proposed Shared Cable Corridor route with the Cottam Solar Scheme) identified possible field boundaries and small rectilinear enclosures visible as faint and indistinct cropmarks on recent air photos, of possible Iron Age or Romano-British date ¹⁵⁶
AR60	HER: MLI50575	Till Bridge Lane. Roman road running from Lincoln to Doncaster. The alignment is largely followed by later features, but some earthwork and cropmark sections survive. In the later first century AD the Romans found that, with the rising importance of York, there was a need for a road that would avoid the wide ferry crossing of the Humber, which the main route of Ermine Street found unavoidable. A road was, therefore, laid out that takes off from Ermine Street at a point near North Carlton, and proceeds north-west to Bawtry and Doncaster, then swinging north through Castleford to Tadcaster and finally north-east to York. It is at first a substantial agger, and after one and a half miles it joins Till Bridge Lane, which then follows the alignment to the crossing of the Trent at Littleborough.
AR61	Geophysics: Q1	Geophysical survey undertaken in 2021-22 as part of the West Burton Solar scheme extended across part of the Cable Route Corridor, and this identified a series of rectilinear and linear anomalies of possible archaeological interest, although this interpretation was tentative as it was concluded that the features could equally be of more recent agricultural origin ¹⁵⁷ .

¹⁵⁵ Ibid., p.41 - AP160.

¹⁵⁶ Deegan, A. 2022b. *Air photo and LiDAR mapping and interpretation: Gate Burton Energy Park Nottinghamshire and Lincolnshire*. Alison Deegan Report for project 2122007. p.16 - AP102. (Appendix 13.4).

¹⁵⁷ James, A. 2022. *West Burton Three: West Burton Solar Scheme, Lincolnshire*. p.14; Figs. 12-13 - Area Q1.

ES ref.	Other references	Description
		<p>Evaluation trenching in this area was undertaken in October and November 2022 to inform the assessment of the West Burton Solar scheme, and Trenches 1-20 were placed to target these putative features as well as apparently 'blank' areas. The putative enclosure ditch was targeted by Trenches 15, 17 and 18, and whilst linear features were identified, it was unclear as to whether these related to furrows, and no clear dating evidence was recovered. Elsewhere, an undated linear feature was recorded in Trench 20, an undated pit in Trench 5, and what were interpreted as furrows or other post-medieval agricultural features in Trenches 7, 8, 10 and 115. In conclusion, no clear evidence for Iron Age/Romano-British activity was identified in any of the trenches in the field parcel Q1, although some ditches identified could feasibly relate to field boundaries associated with the settlement activity identified in field parcel Q9a to the east (see AR62)¹⁵⁸</p>
AR62	Geophysics: Q9a	<p>Geophysical survey undertaken in 2021-22 as part of the West Burton Solar scheme extended across part of the Cable Route Corridor, and this identified several rectilinear, linear and amorphous anomalies and trends thought likely to be caused by infilled archaeological features. It was postulated that anomalies are suggestive of a roadside settlement to the south of the Roman Road which linked Ermine Street to a crossing at the River Trent in Marton (now fossilised by Till Bridge Lane)¹⁵⁹. Evaluation trenching in the area in October and November 2022 in this area was undertaken in October and November 2022 to inform the assessment of the West Burton Solar scheme, and Trenches 1-20 were placed to target these putative features as well as apparently 'blank' areas. The evaluation confirmed the presence of the geophysical rectilinear anomalies as well as numerous other finds and features such as CBM, stone packed postholes, the remains of a possible wall or stone surface, as well as possible evidence for</p>

¹⁵⁸ CFA, forthcoming. *West Burton 3 Solar Project Interim Report: Archaeological Evaluation Trenching*. DRAFT (page nos. TBC); Fig. 2.2; Figs 3.1-3.4.

¹⁵⁹ James 2022, op. cit., p.18; Figs. 18-19 - Anomalies Q9a.

ES ref.	Other references	Description
		metal-working and glass manufacture or re-working ¹⁶⁰
AR63	HER: MLI52489 AP: AP227 & AP236	Cropmarks of a probable Roman trackway and field boundaries, to the south-east of Marton, identified on aerial photographs examined as part of the National Mapping Programme in 1992-96. The AP and LiDAR analysis undertaken in 2022 identified that this feature is visible as a cropmark running south-east to north-west across three parcels. Within the Cable Route Corridor it is no more than a shallow, infilled hollow-way, but in the two parcels to the south of the Cable Route Corridor this cropmark suggests a broad compacted surface flanked by ditches, becoming less well defined to the north. Projecting this feature further north-west it would converge with the Roman road known as Till Bridge Lane on the west side of Marton ¹⁶¹ .
AR64	HER: MLI52488 AP: AP109, AP110, AP111 & AP233.	Earthworks of probable post-medieval flood defences, to the south of Marton. Identified on aerial photographs examined as part of the National Mapping Programme in 1992-96. Confirmed by the AP and LiDAR analysis undertaken as part of the Gate Burton Solar scheme in 2022 as meandering through 4 of the parcels assessed ¹⁶² .
AR65	HER: MLI125067	The Winter Camp of the Viking Great Army at Torksey. The Viking Great Army overwintered at Torksey in 872-73, as recorded by the Anglo-Saxon Chronicle, and their camp has been identified to the north of Torksey village in the parishes of Brampton and Torksey. The camp sat on a prominent bluff partially surrounded by marshes and with the River Trent on its western boundary; effectively an island. Although it lacked earthwork defences, it was an area that could be easily defended, it controlled the River Trent and provided a good vantage point over the surrounding flood plain.
AR66	NHLE: 1341116	River Trent Navigation. The River Trent is an historic navigation running for about 100 miles from the Midlands to the Humber ports and the North Sea. At its peak in the 19 th and early 20 th century, the Trent

¹⁶⁰ CFA, forthcoming, op. cit., Fig. 2.1; Figs. 3.5-3.6.

¹⁶¹ Deegan 2022b, op. cit., p.4 - AP227 & AP236. (Appendix 13.4).

¹⁶² Ibid., p.8 - AP109, AP110, AP111 and AP233.

ES ref.	Other references	Description
		formed the main artery of trade for the East Midlands, being connected with the Sheffield and South Yorkshire Navigations, the Chesterfield Canal, the Foss Dyke, the Grantham Canal, the Erewash Canal, the River Soar Navigation and the Trent and Mersey Canal,
AR67	AP: AP125	The AP and LiDAR assessment undertaken in 2022 for the purposes of the Gate Burton Energy Park scheme identified a possible rectilinear enclosure thought to be of likely Iron Age or Roman date ¹⁶³ . Archaeological evaluation trenching in this area has recently been undertaken for the purposes of the Gate Burton Energy Park scheme, and this feature was targeted by Trench 1082, but this did not positively identify any archaeological remains ¹⁶⁴ .
AR68	AP: AP125	The AP and LiDAR assessment undertaken in 2022 for the purposes of the Gate Burton Energy Park scheme identified a large hollow and adjacent arrangement of pits which might be of archaeological significance ¹⁶⁵ . Archaeological evaluation trenching along the Shared Cable Corridor targeted this features (Trench 1088), but no archaeological remains were positively identified ¹⁶⁶ .
AR69	HER: MNT15983 NRHE: 1061696 & 106697 AP: AP125 & AP126 Geophysics: 1004	Possible Iron Age/Romano-British settlement activity was identified in this area by the NMP in 1992-96. The features identified included a possible Prehistoric ditched enclosure, measuring 27 by 17 metres (NRHE 1061696) in the eastern field covered by this polygon, and part of what could be a larger enclosure in the field to the west (NRHE 1061697). The AP and LiDAR assessment undertaken in 2022 for the purposes of the Gate Burton Energy Park scheme confirmed the presence of these features as well identifying as a north-south oriented linear feature interpreted as a possible trackway of later prehistoric or Roman date, two small circular features and a swathe of small pits immediately to the west of this and an incomplete enclosure immediately to the east ¹⁶⁷ . The geophysical survey undertaken by Wessex Archaeology along the

¹⁶³ Deegan, A 2022b., op. cit., p.17 - AP125. (Appendix 13.4).

¹⁶⁴ Powell 2022, op. cit., p.46; Fig. 8. (Appendix 13.6).

¹⁶⁵ Deegan 2022b, op. cit., p.17 - AP125).

¹⁶⁶ Powell 2022, op cit., p.48; Fig. 8 (Appendix 13.6).

¹⁶⁷ Deegan 2022b., op. cit., p.17 - AP125 & AP126. (Appendix 13.4).

ES ref.	Other references	Description
		Shared Cable Corridor also identified the oval enclosure towards the eastern edge of AR66 ¹⁶⁸ . A subsequent evaluation trench targeting this latter feature (Trench 1090) identified a discrete sandy deposit within the enclosure but did not positively identify the surrounding ditch ¹⁶⁹ . Nevertheless, the report was circumspect regarding this, stating that <i>'given the limited nature of investigation during the evaluation and the apparent clarity of the geophysical survey these features may still be of archaeological origin'</i> ¹⁷⁰ . Similarly, a putative rectilinear enclosure identified by the AP assessment ¹⁷¹ to the south of the oval enclosure was not positively identified during the evaluation (Trench 1091) ¹⁷² , but nevertheless, the report concluded that <i>'some uncertainty remains over the nature of this deposit, and it may be either archaeological or geological in origin'</i> ¹⁷³ .
AR70	AP: AP127	The AP and LiDAR assessment undertaken in 2022 for the purposes of the Gate Burton Energy Park scheme identified further features along the Shared Cable Corridor in the parcel to the west of the features described as AR69 above. These included a multiple ditch boundary of possible prehistoric date comprising three faint ditches running south-east to north-west, and further linear boundary features or part of a field system to the south of this ¹⁷⁴ . Three evaluation trenches were located in this area and a single well-defined ditch was identified in Trench 1102, though this was only partially excavated, and no finds were recovered for dating purposes ¹⁷⁵
AR71	HER: MNT4983 AP: AP136 & AP137 Geophysics: 4005 & 4006	A palimpsest of cropmarks at South Leverton was identified by the NMP in 1992-96, comprising extensive, ditched, rectilinear field system with two integral N-S trackways (approximately 600m long); the field units have an average breadth of 90m. All the features are quite unrelated to the modern field pattern and are probably of Roman date (NRHE

¹⁶⁸ Plesnicar and Edwards op. cit., p.7; Fig. 29 - Site 4004. (Appendix 13.2).

¹⁶⁹ Powell 2022, op. cit., p.49. (Appendix 13.6).

¹⁷⁰ Ibid., p.12

¹⁷¹ Deegan 2022b, op. cit., p. 17 – AP125. (Appendix 13.4).

¹⁷² Powell 2022, op. cit., p.49-50. (Appendix 13.6).

¹⁷³ Ibid., p.13.

¹⁷⁴ Deegan 2022b, op. cit., p.18 - AP127. (Appendix 13.4).

¹⁷⁵ Powell 2022, op. cit., p.12; Fig. 9. (Appendix 13.6).

ES ref.	Other references	Description
		324968). Further details relating to these features were identified within the Shared Cable Corridor by the AP and LiDAR assessment undertaken in 2022 for the purposes of the Gate Burton Energy Park scheme ¹⁷⁶ . The geophysical survey undertaken in April, May and September along the Shared Cable Corridor also identified an arrangement of linear anomalies immediately to the north of the railway line, along with pit like features or areas of intense burning, suggesting the potential for industrial activity ¹⁷⁷ . The recent evaluation undertaken along the Shared Cable Corridor in Fields 131 and 132 (north of the railway line) and Field 136 (south of the railway line) confirmed the presence of multiple intercutting ditches representing possibly representing two separate field systems and associated enclosures and trackways closely corresponding with those features recorded by the AP and LiDAR assessment and geophysical survey, and spot-dating of the pottery recovered suggests a broad Romano-British date for these features. ¹⁷⁸ .
AR72	AP: AP138	Part of the trackway and field system originally mapped by the NMP (see AR68 above) was identified as extending further to the south by the AP and LiDAR assessment undertaken in 2022 for the Gate Burton Solar scheme ¹⁷⁹ . However, evaluation trenching undertaken in this field (Field 138) did not identify the trackway, and likewise the trenches targeting the trackway in Field 137 immediately to the north did not record it, and therefore it is possible that this has now been truncated by more recent ploughing activity. ¹⁸⁰
AR73	AP: AP145 Geophysics: 4002	The AP and LiDAR assessment undertaken in 2022 for the Gate Burton Solar scheme identified further ditches of uncertain date along the Shared Cable Corridor to the west of Cottam Power Station ¹⁸¹ . These features were targeted by four trenches as part of the recent evaluation along the Shared Cable

¹⁷⁶ Deegan 2022b, op. cit., p.18 - AP136 and AP137. (Appendix 13.4).

¹⁷⁷ Plesnicar and Edwards 2022, op. cit., p.7 - Sites 4005 & 4006. (Appendix 13.2).

¹⁷⁸ Powell 2022, op. cit., p.13-16; Figs.10-11. (Appendix 13.6).

¹⁷⁹ Deegan 2022b, op. cit., p.19 - AP138. (Appendix 13.4).

¹⁸⁰ Powell 2022, op. cit., p.16; Figs.11-12. (Appendix 13.6).

¹⁸¹ Deegan 2022b, op. cit., p. 19 - AP146. (Appendix 13.4).

ES ref.	Other references	Description
		Corridor, but no archaeological features were recorded, although a bands of what were interpreted as a changes in the geology were identified in two of the trenches ¹⁸² .
AR74	AP: AP146	The AP and LiDAR assessment undertaken in 2022 for the Gate Burton Solar scheme identified further ditches of uncertain date to the west of Cottam Power Station along the Shared Cable Corridor ¹⁸³ . Greater detail regarding these features was obtained by the geophysical survey undertaken in April, May and September along the Shared Cable Corridor. This identified a rectilinear arrangement of anomalies covering an area of 110m by 80m with various internal sub-divisions and apparent entrances thought to be of Romano-British date ¹⁸⁴ . Evaluation trenching confirmed the presence of a complex of rectilinear enclosures and ditches suggestive of Iron Age to Romano-British activity on the slightly higher ground to the west of the River Trent ¹⁸⁵
AR75	AP: AP149	The AP and LiDAR assessment undertaken in 2022 for the Gate Burton Solar scheme identified possible Iron Age or Roman field boundaries and several possible post medieval quarry pits along the Shared Cable Corridor to the west of Cottam Power Station ¹⁸⁶ . These were not targeted by trenching as part of the recent evaluation along the Shared Cable Corridor ¹⁸⁷ .

Historic Buildings

Designated Historic Buildings: Grade I and II* Listed Buildings within 5km

13.5.11 Grade I and II* Listed Buildings are classed as heritage assets ‘of the highest significance’ in terms of the NPPF¹⁸⁸, and historic buildings of *High Value* according to the criteria detailed in Table 13.4 above. The combined 5km study area surrounding the Cottam 1, 2 and 3 sites contains 35 Grade I and Grade II* Listed Buildings, as detailed in Table 13.16 below. The locations of these buildings are

¹⁸² Powell 2022, op. cit., p. 82-83, Trenches 1156-1158 (Appendix 13.6).

¹⁸³ Ibid., p. 19 - AP145.

¹⁸⁴ Plesnicar and Edwards 2022, op. cit., p.6 - Site 4002. (Appendix 13.2).

¹⁸⁵ Powell 2022, op. cit., p.17-18; Fig. 14. (Appendix 13.6).

¹⁸⁶ Deegan 2022b, op. cit., p. 19 - AP149. (Appendix 13.4).

¹⁸⁷ Powell 2022, op. cit., Fig. 1. (Appendix 13.6).

¹⁸⁸ MHCLG 2021, op. cit., Paragraph 200, p.57

indicated by dark blue points (Grade I) and yellow and black points (Grade II*) on Figures App.13.1 and App.13.2 which accompany the Heritage Statement in **Appendix 13.5**.

- 13.5.12 At the Scoping stage it was proposed that a number of these assets should be scoped out of further assessment, but the PINS' Scoping Opinion requested that further evidence be presented in the ES to demonstrate no direct or indirect impacts to these receptors. This further assessment is detailed within the Heritage Statement included as **Appendix 13.5**.

Table 13.16: Grade I and II* Listed Buildings within the combined Cottam 5km study area

NHLE	Name	Grade
1063342	Church of St Michael and All Angels, Cammeringham	II*
1063348	Glentworth Hall, Glentworth	II*
1063375	Church of St Alkmund, Blyborough	I
1063376	Blyborough Hall, Blyborough	II*
1063378	Church of St Cuthbert, Brattleby	II*
1064048	Church of All Saints, Heapham	I
1064070	Church of St Luke, North Carlton	II*
1064133	Church of St Peter, Scotter	I
1064134	The Old Manor House, Scotter	II*
1064137	Manor House, Scotter	II*
1064159	Church of St Martin, Blyton	I
1064162	Church of St Lawrence, Corringham	I
1146616	Church of St Lawrence and St George, Springthorpe	I
1146624	Church of St Mary, Stow	I
1146742	Church of St Edith, Stow	I
1146810	Church of All Saints, Upton	II*
1147235	North Carlton Hall, North Carlton	I
1147274	Gateway at Scampton House Farm in Field to West of House, Scampton	I
1165812	Church of St John the Baptist, Northorpe	I
1165912	Church of St Genwys, Scotton	I
1165919	Manor House, Cammeringham	II*
1166045	Fillingham Castle, Fillingham	I

NHLE	Name	Grade
1166242	Church of All Saints, Hemswell	II*
1309029	Church of St Chad, Harpswell	I
1309078	Church of St Michael, Glentworth	II*
1309113	Monument 10 Yards South of Chancel of Church of St Andrew, Fillingham	II*
1309134	Gateway, Entrance Lodges and Wall to Fillingham Castle, Fillingham	II*
1317137	Church of All Saints, Pilham	II*
1317208	Church of All Saints, Laughton	I
1359458	Gate Burton Hall, Gate Burton	II*
1359484	Church of St. Margaret of Antioch, Marton	I
1359490	Church of St Botolph, Saxilby with Ingleby	I
1359492	Church of St John the Baptist, Scampton	II*
1359493	Church of St John the Baptist and Monson Mausoleum, South Carlton	I
1359847	Church of St Andrew, Fillingham	II*

Conservation Areas

13.5.13 There are seven Conservation Areas within the combined 5km study area for the Cottam Solar Scheme. These are listed in Table 13.17 below, and a value has been assigned to each using the criteria provided in Table 13.5 above. Their locations are depicted by green polygons on Figures App.13.1 and App.13.2 which accompany the Heritage Statement in **Appendix 13.5**.

Table 13.17: Conservation Areas within the combined Cottam 5km study area

Name	Value
Brattleby	High
Fillingham	High
Glentworth	High
Hemswell	High
Ingham	Medium
South Carlton	High
Springthorpe	High

Designated Historic Buildings: Grade II Listed Buildings within the 2km study areas

13.5.14 At the Scoping stage, it was proposed that many of the Grade II Listed Buildings within 2km of the DCO Limits should be scoped out of further assessment, but the PINS' Scoping Opinion requested that further evidence be presented in the ES to demonstrate no direct or indirect impacts to these receptors. This further assessment is provided in the Heritage Statement in **Appendix 13.5** of this ES, and the locations of all of the Grade II Listed Buildings assessed are depicted by magenta points on Figures App.13.1 and App.13.2 which accompany this Heritage Statement.

Cottam 1

13.5.15 There are 50 Grade II Listed Buildings within the 2km study area surrounding the Cottam 1 Site, as listed in Table 13.18 below. These are all classed as historic buildings of *Medium* value using the criteria provided in Table 13.5 above.

Table 13.18: Grade II Listed buildings within the 2km study area for Cottam 1

NHLE	Name	Location
1064093	Stables At Aisthorpe Hall	Aisthorpe
1063335	Brattleby Hall	Brattleby
1063336	Stable Block at Brattleby Hall	Brattleby
1063337	Gate Piers at Brattleby Hall	Brattleby
1063338	The Old Rectory	Brattleby
1063341	Lodge Cottage	Brattleby
1359845	Garage At the Old Post Office	Cammeringham
1359846	Gate Piers to Manor House	Cammeringham
1063343	5, Chapel Lane	Fillingham
1063345	Lake House	Fillingham
1063346	Gateway	Fillingham
1166037	The Old Rectory	Fillingham
1309085	Manor House	Fillingham
1359848	Village Hall	Fillingham
1063349	12, Church Street	Glentworth
1166094	Nos 1 To 4 Hall Cottages (Stable Block at Glentworth Hall)	Glentworth
1309058	Northlands House	Glentworth
1359850	The Old Vicarage	Glentworth
1063355	Grange Farmhouse	Ingham

NHLE	Name	Location
1063356	School and Attached School House	Ingham
1146541	Applegarth House	Ingham
1166375	Church of All Saints	Ingham
1308905	The Generous Britain Public House	Ingham
1359422	Jubilee Terrace Cottages	Ingham
1359816	33, The Green	Ingham
1359479	2, Glenworth Road	Kexby
1064075	Till Bridge Farm Cottages	Scampton
1064062	Whipping Post	Stow
1064063	Threshing Barn at Church End Farm	Stow
1064064	21, Church Lane	Stow
1064065	Monument 3 Yards South of Church of St Edith	Stow
1064066	6, Sturton Road	Stow
1146735	Stables and Pigeoncote at Church End Farm	Stow
1146755	9, Ingham Road	Stow
1146761	Wesleyan Chapel	Stow
1359486	Manor Farmhouse	Stow
1064067	Subscription Mill	Sturton By Stow
1064068	Lych Gate and Wall of Church of St Hugh of Avalon	Sturton By Stow
1146766	Brickyard Cottages	Sturton By Stow
1146772	Church of St Hugh of Avalon	Sturton By Stow
1146778	Old Hall	Sturton By Stow
1359487	Barn at Bransby House for Retired Horses	Sturton By Stow
1359488	Old Rectory Home for the Elderly	Sturton By Stow
1308921	Thorpe in the Fallows Farmhouse	Thorpe in the Fallows
1064029	20, Fillingham Road	Willingham
1064030	1 and 3, Stow Road	Willingham
1146826	Church of St Helen	Willingham
1146841	Old Rectory	Willingham
1308795	Grange Farmhouse	Willingham
1359509	Willingham House	Willingham

Cottam 2

- 13.5.16 There are seven Grade II Listed Buildings within the 2km study area surrounding the Cottam 2 Site, as listed in Table 13.19 below. These are all classed as historic buildings of *Medium* value using the criteria provided in Table 13.5 above.

Table 13.19 Grade II Listed buildings within the 2km study area for Cottam 2

NHLE	Name	Location
1064163	Mill at Mill House Farm	Corringham
1165535	Old Hall	Corringham
1165563	Lychgate at Church of St Lawrence	Corringham
1165585	Mill House Farmhouse Stables and Barn	Corringham
1317241	1, High Street	Corringham
1359417	Corringham Windmill	Corringham
1064061	20, Hill Road	Springthorpe

Cottam 3a and 3b

- 13.5.17 There are 16 Grade II Listed Buildings within the combined 2km study area surrounding the Cottam 3a and 3b Sites, as listed in Table 13.20 below. These are all classed as historic buildings of *Medium* value using the criteria provided in Table 13.5 above

Table 13.20: Grade II Listed buildings within the 2km study area for Cottam 3a & 3b

NHLE	Name	Location
1165509	Matt Hall	Blyton
1359454	Old Railway Station	Blyton
1359455	The Old Windmill	Blyton
1064166	4, Church Road	Laughton
1317186	Mount Pleasant Farmhouse	Laughton
1317236	Outbuilding at Laughton Post Office Formerly Number 2 Church Road	Laughton
1359420	Laughton Hall Farmhouse	Laughton
1064172	Rose Cottage	Northorpe
1064173	Village Hall	Northorpe
1064174	Northorpe Hall	Northorpe
1165830	Manor House	Northorpe
1165840	Northorpe Old Hall	Northorpe

NHLE	Name	Location
1359421	6, Monson Road	Northorpe
1064132	Lime Cottage	Pilham
1064175	Church Gate and Railings	Pilham
1309162	Firs Farm	Pilham

Listed Buildings within 500m of the Cable Route Corridor

13.5.18 For the cable route, it was considered that any visual impacts would be relatively localized, temporary, short term and reversible, and consequently it was considered that a 500m study area would be more than sufficient to assess potential impacts to Listed Buildings. There are 16 Listed Buildings within 500m of the Cable Route Corridors, as listed in Table 13.21 below. Their locations are depicted by dark blue (Grade I) and magenta (Grade II) points on ES Figure 13.10 [Application Doc. No. C6.4.13.10].

Table 13.21: Grade II Listed buildings within the 500m study area for the cable route

NHLE	Name	Grade	Location
1359417	Corringham Windmill	II	Corringham
1212380	Church of Holy Trinity	II	Cottam
1370089	Font Half a Metre East of South Porch at Church of Holy Trinity	II	Cottam
1064057	Ingelby Arms Public House	II	Marton
1064059	Windmill	II	Marton
1064060	Berfoston Cottage	II	Marton
1146582	Cross	II	Marton
1146594	No 21 and Attached Barn to Rear	II	Marton
1146611	Wapping Lane Farmhouse and Attached Outbuilding	II	Marton
1308917	25, Gainsborough Road	II	Marton
1359484	Church of St. Margaret of Antioch	I	Marton
1359485	Thornleigh House	II	Marton
1064058	Stow Park Station	II	Marton
1146606	Signal Box at Stow Park Station	II	Marton
1064063	Threshing Barn at Church End Farm	II	Stow

NHLE	Name	Grade	Location
1146735	Stables and Pigeoncote at Church End Farm	II	Stow

Non-Designated Historic Buildings

- 13.5.19 Currently, there are no Local Lists of Heritage Assets in Lincolnshire, but Heritage Lincolnshire is leading the Local Heritage List Campaign in partnership with Lincolnshire County Council, having received funding from the Ministry of Housing, Communities and Local Government (MHCLG) (as it then was)
- 13.5.20 Whilst no statutory protection is afforded to the settings of non-designated historic buildings (i.e., those of *Low* Value using the criteria described in Table 13.5 above), it was considered appropriate to provide an assessment of the impacts to those in close proximity to the Scheme, as there is the potential for ‘significant’ effects to occur in instances where the magnitude of change could be of *Major* magnitude. Consequently, those non-designated historic buildings identified on the Lincolnshire HER within 250m of the Cottam Sites are identified in Tables 13.23 – 13.26 below, as it is considered unlikely that a *Major* change would occur at buildings beyond this distance. It was considered that any temporary, short-term and reversible impacts to the settings of non-designated buildings along the Cable Route Corridor would be of too low a magnitude to consider as part of the baseline.
- 13.5.21 In order to ascribe a historical value to these buildings (in accordance with criteria set out in Table 13.5 above), data obtained from *The Building the Evidence base for Historic Farmsteads in Greater Lincolnshire Project*¹⁸⁹ was utilised. This project mapped all the historic farmsteads in Lincolnshire, and characterised them according to their level of survival, as described in the first column of Table 13.22 below. The value assigned in Table 13.22 to these different categories has been derived from the criteria for assessing the value of historic buildings provided in Table 13.5 above.

Table 13.22: Assessment of the value of historic farmsteads in Lincolnshire

Survival	Value
Extant - no apparent alteration	Low
Altered - partial loss - less than 50% change	Low
Altered - significant loss - more the 50% change	Negligible
House only - farmhouse only survives	Low

¹⁸⁹ Lake, J. and Partington, A.2 015. *Building the evidence base for Historic Farmsteads in Greater Lincolnshire* [data-set]. York: Archaeology Data Service [distributor] <https://doi.org/10.5284/1035172>

Demolished - farmhouse survives but complete alteration	Negligible
Lost - farmstead/outfarm totally demolished	Negligible

Cottam 1

13.5.22 There are no non-designated built heritage assets recorded on the HER within the Cottam 1 Site boundaries, although several of those historic buildings identified in Table 13.23 below are wholly surrounded by elements of the Site, and therefore would be experienced as being ‘within’ the development, or else are in close proximity (i.e., <250m distant) and therefore could potentially experience a ‘significant’ effect as a result of the proposed development. Their locations are depicted by light blue points on ES Figure 13.2 [Application Doc. No. C6.4.13.2].

Table 13.23: HER built environment entries within 250m of the Cottam 1 Site

ES Ref	HER ID	Description	Value
HB01	MLI118749	Thorpe le Fallows Farm, Thorpe in the Fallows - (significant loss - more than 50% alteration)	Negligible
HB02	MLI118750	Clandon House, Thorpe in the Fallows - (significant loss - more than 50% alteration)	Negligible
HB03	MLI118748	The Grange, Thorpe in the Fallows - (significant loss - more than 50% alteration)	Negligible
HB04	MLI116508	Stow Pasture, Stow - (extant - no apparent alteration)	Low
HB05	MLI116509	The Pastures, Stow - (extant - no apparent alteration)	Low
HB06	MLI118742	Cold Harbour, Cammeringham - (demolished - farmhouse survives but complete alteration)	Negligible
HB07	MLI118739	Blackthorn Hill, Cammeringham - (demolished - farmhouse survives but complete alteration)	Negligible
HB08	MLI116506	West Farm, Stow - (partial loss - less than 50% change)	Low
HB09	N/A	East Farm Stow - (extant - no apparent alteration)	Low
HB10	MLI118118	Lowfield Farm, Willingham - (significant loss - more than 50% alteration)	Negligible
HB11	MLI118047	Turpin Farm, Fillingham - (partial loss - less than 50% change)	Low

ES Ref	HER ID	Description	Value
HB12	MLI118048	Side Farm, Fillingham - (significant loss – more than 50% alteration)	Negligible
HB13	MLI118049	North Farm, Fillingham - (significant loss – more than 50% alteration)	Negligible
HB14	MLI118050	Unnamed farmstead, Fillingham - (significant loss – more than 50% alteration)	Negligible
HB15	MLI118051	Glebe Farm (Rectory Farm), Fillingham - (partial loss – less than 50% change)	Low
HB16	MLI118052	Fillingham Grange, Fillingham - (significant loss – more than 50% alteration)	Negligible
HB17	MLI118045	Unnamed farmstead, Fillingham - (extant – no apparent alteration)	Low

Cottam 2

- 13.5.23 There are no non-designated built heritage assets recorded on the HER within the Cottam 2 Site boundary, although the historic farmstead identified in Table 13.24 below is wholly surrounded by elements of the Site, and therefore would be experienced as being ‘within’ the development. The location of this farmstead is depicted by a light blue point on Figure 13.3 [Application Doc. No. C6.4.13.3].

Table 13.24: HER built environment entries within 250m of the Cottam 2 Site

ES Ref	HER ID	Description	Value
HB18	MLI117364	Corringham Grange Farm, Corringham - (partial loss – less than 50% change)	Low

Cottam 3b

- 13.5.24 There are no non-designated built heritage assets recorded on the HER within the Cottam 3b Site boundary, although the historic farmsteads identified in Table 13.25 below are in close proximity (i.e., <250m distant) and therefore could potentially experience a ‘significant’ effect as a result of the proposed development. The location of these farmsteads are depicted by a light blue point on Figure 13.4 [Application Doc. No. C6.4.13.4].

Table 13.25: HER built environment entries within 250m of the Cottam 3b Site

ES Ref	HER ID	Description	Value
HB19	MLI117413	Glebe Farm, Blyton - (extant – no apparent alteration)	Low
HB20	MLI117414	Top Farm (Blyton Top), Blyton - (demolished - farmhouse survives but complete alteration)	Negligible

Cottam 3a

13.5.25 There are no non-designated built heritage assets recorded on the HER within the Cottam 3b Site boundary, although the three historic farmsteads identified in Table 13.26 below are in close proximity (i.e., <250m distant) and therefore could potentially experience a 'significant' effect as a result of the proposed development. Their locations are depicted by light blue points on ES Figure 13.4 [Application Doc. No. C6.4.13.4].

Table 13.26: HER built environment entries within 250m of the Cottam 3a Site

ES Ref	HER ID	Description	
HB21	MLI117412	Grange Farm, Blyton - (demolished - farmhouse survives but complete alteration)	Negligible
HB22	MLI117385	Blyton Grange, Blyton - (partial loss – less than 50% change)	Low
HB23	MLI117211	Cold Harbour, Laughton - (significant loss – more than 50% alteration)	Negligible

The Historic Landscape

Designated Landscapes: Registered Parks and Gardens

13.5.26 There is one designated historic landscape within the 5km study area, comprising *Fillingham Castle* Grade II Registered Park and Garden (NHLE 1000977). This is located on the Lincoln Cliff, c.1.91km to the east of Parcel B at Cottam 1. Cottam 2 is located c.8.5km to the north-west of this asset, and Cottam 3 is located c.11.95km to the north-west. The location of this asset is depicted by a cyan polygon on Figures App.13.1 and App.13.2 in **Appendix 13.5**.

Historically Important Hedgerows

13.5.27 Hedgerows form an important element of the historic landscape, and under the *Hedgerow Regulations 1997*, hedgerows are afforded statutory protection should they qualify as being 'important' for, *inter alia*, historical or archaeological reasons. The historical and archaeological criteria include:

- Hedgerows which mark pre-1850 parish boundaries ;
- Hedgerows which incorporate or are within Scheduled Monuments or sites listed on an SMR/HER;
- Hedgerows which mark the boundary of a pre-1600 estate or manor;
- Hedgerows which are an integral part of a field system pre-dating the Enclosure Acts (meaning an Enclosure Act mentioned in the *Short Titles Act*;

the earliest of these was made in 1845), as depicted on a map held at the County Records Office; and

- Hedgerows which are part of or visibly related to any building or other feature associated with such a system¹⁹⁰.

13.5.28 All hedgerows visible on Google Earth imagery were assessed against the above criteria and those identified as qualifying as historically important within the DCO Limits are depicted on the DCO Important Hedgerow Plan [**Application Doc. No. C2.7**] and are also depicted in green on ES Figures 13.2-13.5 [**Application Doc. Nos. C6.4.13.2 - C6.4.13.5**], with those on pre-1850 parish boundaries depicted in purple. Hedgerows depicted in orange (on ES Figures 13.2-13.5) are considered to be 'probably' historically important, as they are on field boundaries depicted on pre-1850 tithe maps, but for which no map pre-dating 1845 could be identified at the Lincolnshire Archives. These include the parishes of Laughton (1847 tithe map), Coates (1850 tithe map), Cammeringham (1847 tithe map), Thorpe le Fallows (1847 tithe map) and Scampton (1849 tithe map). The parish of Fillingham was enclosed in 1760, therefore many of the hedgerows in the parish could date to this period and be historically important. However, as no map pre-dating the Ordnance Survey 1st edition map surveyed in 1885 could be located at Lincolnshire Archives, the hedgerows in this parish shown on this map have been coloured in cyan on ES Figures 13.2-13.5, as 'possible' examples of historically important hedgerows.

Historic Landscape Characterisation

13.5.29 The ongoing country-wide Historic Landscape Characterisation (HLC) is being carried out by local authorities under the auspices of Historic England, and the HLC for Lincolnshire was completed and published in 2011¹⁹¹ (Lord and Mackintosh 2011). The three Cottam Sites are all located within Character Area *TVL1: The Trent Valley*, which is located within *The Northern Cliff Foothills* Character Zone. In addition, a small area towards the eastern edge of Parcel B at Cottam 1 falls *within* Character Area *NCL3: The Cliff Edge Airfields*, which is located within *The Northern Cliff* Character Zone.

13.5.30 In Tables 13.27-32 below, the different HLC types which make up these Character Areas and Zones have each been assigned a value based upon the attributes described in Table 13.6 above, the guidance provided in the guidance document co-authored by English Heritage (now Historic England) *Assessing the Effect of Road Schemes on Historic Landscape Character*¹⁹², and professional judgement. For the Modern Fields HLC type, where these have good legibility of the earlier field pattern (for example largely rationalised parliamentary enclosure period geometric

¹⁹⁰ Statutory Instruments. 1997 No. 1160. COUNTRYSIDE. *The Hedgerow Regulations 1997*. p.12.

¹⁹¹ Lord, J. and Mackintosh, A. 2011. *The Historic Landscape Characterisation Project for Lincolnshire*. Lincoln, Lincolnshire County Council.

¹⁹² Highways Agency. 2007. *Assessing the Effects of Road Schemes on Historic Landscape Character*. English Heritage/Department for Transport guidance document.

landscapes with significant areas of modern fields), these have been assigned a Low value, whereas those where the removal of most historic indicators (for example as a result of extreme boundary loss in modern prairie type fields), these have been assigned a Negligible value.

Cottam 1

- 13.5.31 There are 43 individual HLC units within the Cottam 1 Site boundary and associated access routes comprising six HLC types (*Ancient Enclosure, Isolated Farmstead, Modern Fields, Parliamentary Planned Enclosure, Plantation Woodland and Private Planned Enclosure*). These are detailed in Table 13.27 below and their locations are depicted on ES Figure 13.6 [Application Doc. No. C6.4.13.6].

Table 13.27: On-Site HLC units within Cottam 1

HLC ID	HLC Type	Value
HLI20674	Ancient Enclosure	High
HLI20745	Ancient Enclosure	High
HLI20759	Ancient Enclosure	High
HLI20786	Ancient Enclosure	High
HLI21000	Ancient Enclosure	High
HLI21001	Ancient Enclosure	High
HLI20688	Isolated Farmstead	Medium
HLI20771	Isolated Farmstead	Medium
HLI145	Modern Fields	Negligible
HLI146	Modern Fields	Negligible
HLI148	Modern Fields	Negligible
HLI20658	Modern Fields	Negligible
HLI20659	Modern Fields	Low
HLI20661	Modern Fields	Negligible
HLI20662	Modern Fields	Low
HLI20663	Modern Fields	Low
HLI20677	Modern Fields	Low
HLI20731	Modern Fields	Low
HLI20732	Modern Fields	Negligible
HLI20750	Modern Fields	Low
HLI20751	Modern Fields	Low
HLI20752	Modern Fields	Low

HLC ID	HLC Type	Value
HLI20753	Modern Fields	Low
HLI20756	Modern Fields	Negligible
HLI20758	Modern Fields	Low
HLI20773	Modern Fields	Low
HLI20774	Modern Fields	Low
HLI20785	Modern Fields	Low
HLI21002	Modern Fields	Low
HLI21026	Modern Fields	Negligible
HLI108388	Modern Fields	Negligible
HLI108389	Modern Fields	Negligible
HLI142	Parliamentary Planned Enclosure	Medium
HLI144	Parliamentary Planned Enclosure	Medium
HLI156	Parliamentary Planned Enclosure	Medium
HLI20729	Parliamentary Planned Enclosure	Medium
HLI20736	Parliamentary Planned Enclosure	Medium
HLI20757	Parliamentary Planned Enclosure	Medium
HLI155	Plantation Woodland	High
HLI20801	Plantation Woodland	Negligible
HLI21008	Plantation Woodland	High
HLI108394	Private Planned Enclosure	Medium
HLI108395	Private Planned Enclosure	Medium

Cottam 2

13.5.32 There are seven individual HLC units within the Cottam 2 Site boundary comprising three HLC types (*Ancient Enclosure*, *Modern Fields* and *Parliamentary Planned Enclosure*). These are detailed in Table 13.28 below and their locations are depicted on ES Figure 13.7 [Application Doc. No. C6.4.13.7].

Table 13.28: On-Site HLC units within Cottam 2

HLC ID	HLC Type	Value
HLI19285	Ancient Enclosure	High
HLI19281	Modern Fields	Low
HLI19282	Modern Fields	Low
HLI19283	Modern Fields	Low

HLC ID	HLC Type	Value
HLI19276	Parliamentary Planned Enclosure	Medium
HLI19277	Parliamentary Planned Enclosure	Medium
HLI19316	Parliamentary Planned Enclosure	Medium

Cottam 3b

- 13.5.33 There are three individual HLC units within the Cottam 3b Site boundary comprising two HLC types (*Modern Fields* and *Parliamentary Planned Enclosure*). These are detailed in Table 13.29 below and their locations are depicted on ES Figure 13.8 [Application Doc. No. C6.4.13.8].

Table 13.29: On-Site HLC units within Cottam 3

HLC ID	HLC Type	Value
HLI18969	Modern Fields	Low
HLI19154	Modern Fields	Low
HLI18970	Parliamentary Planned Enclosure	Medium

Cottam 3a

- 13.5.34 There are four individual HLC units within the Cottam 3a Site boundary comprising two HLC types (*Military Airfield* and *Modern Fields*). These are detailed in Table 13.30 below and their locations are depicted on ES Figure 13.8 [Application Doc. No. C6.4.13.8].

Table 13.30: On-Site HLC units within Cottam 3a

HLC ID	HLC Type	Value
HLI18742	Military Airfield	Medium
HLI18937	Modern Fields	Negligible
HLI18961	Modern Fields	Negligible
HLI18965	Modern Fields	Low

Cable Route Corridor

- 13.5.35 The Cable Route Corridor and its associated access routes cross through 41 HLC units in Lincolnshire, comprising five HLC types (*Ancient Enclosure*, *Isolated Farmstead*, *Modern Fields*, *Parliamentary Planned Enclosure* and *Private Planned Enclosure*). These are detailed in Table 13.31 below and their locations are depicted on ES Figures 13.6-13.9 [Application Doc. Nos. C6.4.13.6 - C6.4.13.9].

Table 13.31: On-Site HLC units along the Cable Route Corridor

Cable route	HLC ID	HLC Type	Value
Cottam 1- Cottam 2	HLI19399	Modern Fields	Negligible
	HLI19442	Modern Fields	Negligible
	HLI20478	Parliamentary Planned Enclosure	Medium
	HLI20469	Modern Fields	Low
	HLI20476	Parliamentary Planned Enclosure	Medium
	HLI20471	Modern Fields	Low
	HLI20483	Modern Fields	Negligible
	HLI20452	Modern Fields	Low
	HLI20448	Parliamentary Planned Enclosure	Medium
	HLI19288	Parliamentary Planned Enclosure	Medium
	HLI19284	Modern Fields	Low
Cottam 2 – Cottam 3b	HLI19275	Parliamentary Planned Enclosure	Medium
	HLI19298	Modern Fields	Negligible
	HLI19242	Private Planned Enclosure	Medium
	HLI19153	Modern Fields	Low
	HLI19241	Private Planned Enclosure	Medium
	HLI19233	Modern Fields	Low
	HLI19204	Modern Fields	Negligible
Cottam 3b - Cottam 3a	HLI18968	Modern Fields	Negligible
	HLI18960	Parliamentary Planned Enclosure	Medium
Cottam 1g – Cottam 1f	HLI20695	Modern Fields	Low
	HLI20664	Modern Fields	Low
Cottam 1f – Cottam Power Station	HLI20831	Isolated Farmstead	Medium
	HLI20832	Isolated Farmstead	Medium
	HLI20833	Modern Fields	Low
	HLI20749	Modern Fields	Low
	HLI20734	Modern Fields	Low
	HLI20735	Modern Fields	Negligible
	HLI20740	Modern Fields	Negligible
	HLI20856	Modern Fields	Negligible
	HLI20850	Modern Fields	Negligible

Cable route	HLC ID	HLC Type	Value
	HLI20851	Modern Fields	Negligible
Cottam 1f – Cottam Power Station (Shared Cable Corridor)	HLI20845	Modern Fields	Negligible
	HLI20860	Parliamentary Planned Enclosure	Medium
	HLI20848	Modern Fields	Low
	HLI20859	Parliamentary Planned Enclosure	Medium
	HLI20862	Ancient Enclosure	High
	HLI20881	Parliamentary Planned Enclosure	Medium
	HLI20861	Modern Fields	Low
	HLI20951	Modern Fields	Low
	HLI20892	Parliamentary Planned Enclosure	Medium

13.5.36 In addition to the above, to the west of the Trent, the Shared Cable Corridor and its associated access routes cross through eight HLC units in Nottinghamshire, comprising five HLC types (*Ancient Enclosure, Isolated Farmstead, Modern Fields, Parliamentary Planned Enclosure* and *Private Planned Enclosure*). These are detailed in Table 13.32 below (from east to west) and their locations are depicted on Figure 13.9 [Application Doc. No. C6.4.13.9].

Table 13.32: On-Site Nottinghamshire HLC units along the Shared Cable Corridor

HLC code	HLC Type	Period	Value
REGGEO	Regularly Laid Out Large Geometric Field Patterns	18 th / 19 th century	Medium
REGGEO	Regularly Laid Out Large Geometric Field Patterns	18 th / 19 th century	Medium
DESTROY	Modern Modified Field Patterns	Modern (20 th century)	Low
IREGGEO	Irregular Geometric Field Patterns	18 th /19 th century	Medium
REFLOF	Field Patterns Reflective of Open Fields	Post-medieval (Late 15 th – early 18 th century)	High
SEMIREG	Semi-Regular Field Patterns	Varies (Medieval – 19 th century)	Medium-High

HLC code	HLC Type	Period	Value
DESTROY	Modern Modified Field Patterns	Modern (20 th century)	Negligible
DESTROY	Modern Modified Field Patterns	Modern (20 th century)	Negligible

13.6 Embedded Mitigation

- 13.6.1 A full suite of archaeological desk-based research and non-intrusive surveys (including air photo and LiDAR mapping and interpretation, geoarchaeological assessment and geophysical survey) was undertaken to assess the archaeological potential of the Scheme. These assessments and surveys identified several concentrations of features within the Scheme that were interpreted as relating to prehistoric, Roman and medieval activity.
- 13.6.2 A programme of evaluation trenching was undertaken targeting the concentrations of features identified through non-intrusive surveys. The aim of this was to test the results of these surveys on the ground ('ground truthing'), as well as across adjacent 'blank' areas, where baseline information and the results of non-intrusive surveys suggested a negligible to low potential for archaeological features to be present.
- 13.6.3 The results of the evaluation trenching demonstrated a close correlation between the results of non-intrusive surveys and the presence of buried archaeological features identified in the trenches, and provided information on the character, form and date of the archaeological resource. Where complex archaeological remains were encountered during the evaluation trenching, additional contingency trenches were agreed with Lincolnshire Historic Environment Team, to allow a clearer understanding of the nature of any remains.
- 13.6.4 The extensive scope of non-intrusive survey work, supported by targeted evaluation trenching, which showed a clear correlation between the results of non-intrusive surveys and the features identified by the trenching, is considered sufficient to meet the information requirements of the relevant NPPF and NPS policies in order to inform the DCO application at this stage, as well as to establish that the archaeological potential for 'blank' areas across the Scheme is negligible/low.
- 13.6.5 Given the low impact the Scheme will have across the majority of the site (around 0.07% ground impact for areas of solar mounts), an extensive and untargeted programme of evaluation trenching across all remaining 'blank' areas of the Scheme, which did not take into account the evidence from the range of non-intrusive survey work undertaken to inform the DCO application, was considered disproportionate.
- 13.6.6 Evaluation trenching was not considered necessary for the majority of the Cottam Cable Route Corridor, where one or two circuits are proposed, dependent upon the location, because baseline information and non-intrusive survey data suggests minimal archaeological potential. A programme of archaeological monitoring, in the

form of a watching brief, and targeted ‘strip, map and record’ excavation are considered suitable further mitigation techniques to safeguard against any potential impacts to previously unknown archaeological remains during the construction phase, based on the information collated to inform the DCO application (this further mitigation is discussed under ‘Mitigation Measures’ in section 13.8 below).

- 13.6.7 Within the Shared Cable Corridor, archaeological evaluation trenching covering a sample of approximately 1% of the area was agreed with Lincolnshire Historic Environment Team. The Shared Cable Corridor is intended to be used by up to three or more Schemes, and so development work across these schemes has the potential to cause a higher impact on any buried archaeological deposits. Baseline information and non-intrusive surveys identified the Shared Cable Corridor area to have potential to contain extensive late prehistoric and Roman period remains, and this was confirmed by the targeted evaluation trenching.
- 13.6.8 Full details of the proposed embedded mitigation strategies (and also including those areas where the additional mitigation discussed in section 13.8 below is proposed) are provided in the Written Scheme of Investigation (WSI) which is provided in **Appendix 7**.
- 13.6.9 Table 13.33 below provides descriptions of the ‘embedded mitigation’ strategies that are proposed in this ES along with the codes that have been used in the Impact Assessment Tables included in Appendix 13.8. Code ‘AA’ refers to those putative archaeological assets where no mitigation (‘embedded’ or ‘additional’) has been proposed due to the impacts being of a negligible magnitude, and codes ‘BB’, ‘CC1’ and ‘CC2’ refer to the ‘embedded mitigation’ strategies discussed in more detail below.

Table 13.33: ‘Embedded mitigation’ codes used in the impact assessment tables in Appendix 13.8

Mitigation code	Description of ‘embedded’ mitigation proposals
AA	None proposed due to impact being of a negligible magnitude
BB	‘Embedded mitigation’ resulting in preservation <i>in situ</i> – no solar panels, cable routes or other infrastructure proposed in this area
CC1	‘Embedded mitigation’ to achieve preservation <i>in situ</i> – solar panels placed on non-intrusive concrete feet, with connection by above ground cabling ducts (or as for BB above if this is not possible)
CC2	‘Embedded mitigation’ to achieve preservation <i>in situ</i> – horizontal directional drilling (HDD) beneath archaeological remains

- 13.6.10 Archaeological mitigation that has been embedded into the Scheme by design includes the avoidance of archaeologically sensitive areas by the removal of panels and other infrastructure entirely, and/or the installation of concrete feet for the panels, which would also serve to preserve the archaeological remains *in situ* (as

illustrated on Plate 4.3 in the Concept Design Parameters section in Chapter 4 of the ES). This latter mitigation strategy is set out in planning guidance published by BRE on behalf of Cornwall Council¹⁹³ and acknowledged by Historic England in its Advice Note concerning renewable energy and the historic environment¹⁹⁴. There are no embedded mitigation measures to reduce the likely significant effects upon historic buildings or the historic landscape.

- 13.6.11 Archaeologically sensitive areas where the proposed panels have been removed entirely from the scheme include an area to the north of Thorpe le Fallows where it was thought that buried remains associated with the *Thorpe medieval settlement* Scheduled Monument (NHLE 1016978) might survive and where the evaluation trenching also identified a ditch containing Iron Age or Romano-British pottery (AR01). An area within the Order Limits to the east of Normanby by Stow has been set aside as a non-intrusive ecological mitigation area to avoid impacts to extensive medieval earthworks associated with the Shrunken Medieval Village (AR18) as well as an area of likely Iron Age/Romano-British settlement activity identified by geophysical survey (AR15). Similarly, a non-intrusive ecological mitigation area has been included within the Order Limits to avoid impacts to two other areas of likely Iron Age/Romano-British settlement activity identified by geophysical survey (AR31 and AR54).
- 13.6.12 Areas where the embedded mitigation includes the use of concrete feet for the panels and above ground cabling ducts to avoid impacts to archaeologically sensitive areas identified during the assessment include the mitigation areas at AR07, AR22, AR23, AR24, AR28, AR37, AR38, AR54, AR55 and AR56, all of which have been proven through evaluation trenching to comprise Iron Age and/or Romano-British settlement evidence. The locations of these archaeological areas are depicted in magenta on ES Figures 13.2 – 13.5 [**Application Doc. No. C6.4.13.2 - C6.4.13.5**]. Further ‘informative trenching’ is proposed at AR11, AR25, AR26, AR41, AR42, AR43, AR45, AR46, AR47, AR48, AR49, AR50 and AR52, which are also areas are depicted in magenta on ES Figures 13.2 – 13.5. These are all areas where possible, but uncertain, archaeological remains have been identified through geophysical survey or air photo and LiDAR analysis. Should the proposed informative trenching confirm the presence of significant archaeological remains in these areas, then these areas will also be included in the embedded mitigation with the proposed solar panels being mounted on concrete feet.
- 13.6.13 It should be noted that, currently, it is not possible to install ‘tracker’ panels on concrete feet, although technological advances may allow this by the time that the Scheme is constructed. However, should this not be the case, then it is proposed that the tracker solar panels will be removed entirely from identified areas of

¹⁹³ BRE. *Planning guidance for the development of large scale ground mounted solar PV systems*.

¹⁹⁴ Historic England. 2021. *Commercial Renewable Energy Development and the Historic Environment*. Historic England Advice Note 15. Swindon, Historic England. Paragraph 68, p. 16.

archaeological sensitivity. Fixed panels can be placed on concrete feet and therefore if the site were constructed with fixed panels, then the above embedded mitigation will apply.

- 13.6.14 Further embedded mitigation comprises the use of horizontal directional drilling (HDD) beneath areas known to contain important archaeological remains, as would be employed along a c.925m length of the Shared Cable Route to the north of Cottam Power Station. An extensive palimpsest of archaeological remains thought to date to the Iron Age/Romano British periods is present in this area, and directional drilling proposed across a large proportion of this would serve to preserve these remains *in situ* (although areas extending westwards and eastward from the proposed HDD area would still be impacted and require further mitigation as discussed in section 13.8 below).
- 13.6.15 The impact assessment table for non-designated archaeological remains (Table App.13.8-2 (**Appendix 13.8**)) provides a concordance with the mitigation area codes that are used in the WSI (Appendix 13.7), including the ‘embedded mitigation’ discussed above, and also additional mitigation strategies which are discussed in more detail below in section 13.8. In this table, the ‘embedded mitigation’ strategies are identified by the codes ‘BB’ (no development proposed in archaeologically sensitive area), ‘CC1’ (panels on concrete feet in archaeologically sensitive area) and ‘CC2’ (HDD beneath archaeologically sensitive area), as detailed in Table 13.33.
- 13.6.16 The final column in the impact assessment table for archaeological remains (Table App.13.8-2) provides an indication of the ‘significance of effects’ of the Scheme without embedded mitigation in place, and below this an indication of the predicted ‘significance of effects’ assuming the embedded mitigation has been implemented (where proposed). It is evident from this that for those archaeological areas where ‘embedded mitigation’ is proposed with the code ‘BB’, then the significance of effects would be *Neutral* with or without the embedded mitigation in place, as there would be *No change*. For those archaeological areas where ‘embedded mitigation’ is proposed with the code ‘CC1’ or ‘CC2’, then the significance of effects would be *Neutral*, whereas without the embedded mitigation, then the effect would be *Slight Adverse* in each instance (except for example at AR22 and AR24 where a mixture of embedded mitigation and further mitigation is proposed).

13.7 Identification and Evaluation of Likely Significant Effects

Introduction

- 13.7.1 The identification of the likely ‘significant’ effects upon the cultural heritage resource is undertaken using the methodology described in Section 13.4 above, and specifically the criteria for assessing the magnitude of change for archaeological remains, historic buildings and historic landscapes set out in Tables 13.1 – 13.3, and the criteria for assessing the values of archaeological remains, historic buildings and historic landscapes set out in Tables 13.4 – 13.5. The ‘significance of the effects’ can be ascertained by applying these values to the matrix provided in Table 13.7.

13.7.2 The assessment scores for each heritage asset as ascertained using the above methodology are presented in a series of impact assessment tables which can be found in **Appendix 13.8** (Tables App.13.8-1 – App.13.8-10).

13.7.3 In the impact assessment tables in **Appendix 13.8**, in those instances where the same impacts are predicted at multiple receptors, as a matter of expediency a code has been assigned to each impact description, and this has been entered into the 'Impact code' column of the relevant assessment table. These impact codes and the associated impact descriptions are provided below in Table 13.34. Impacts to HLC units are more variable and asset-specific, and consequently a brief description of the impact is provided (see column 3 in Tables App. 13.8-5 and App.13.8-10) rather than a generic code such as those provided in Table 13.34 below.

Table 13.34: Impact codes used in the impact assessment tables in Appendix 13.8

Impact code	Description of impact
A	Construction Phase - Possible direct adverse impacts to buried archaeological remains from piles to secure to solar panels, and other site infrastructure such as access roads, battery storage, inverters, associated cabling, and HGV movement through nearby villages.
B	Construction Phase - Possible direct adverse impacts to buried archaeological remains from excavation for cable route and associated access routes, compounds and laydown areas.
C	Operational Phase - Indirect beneficial impacts from removal of buried archaeological remains ('do something') from the agricultural ploughing regime (i.e., the 'do nothing scenario') during the operational phase.
D	Construction Phase - Visual impact to settings of heritage assets due to intervisibility with site construction, cable route construction, temporary compounds and lay-down areas.
E	Operational Phase - Visual impact to settings of heritage assets due to intervisibility with solar panels and other site infrastructure.
F	No impact likely – asset represented by findspot, place name, documentary reference only, location unknown, or evaluation has confirmed lack of significance.
G	No impact likely – asset located within Order Limits, but no development proposed in this area.

13.7.4 Further codes have also been used in the impact assessment tables in **Appendix 13.8** to describe the nature of the impacts, in terms of their duration and reversibility. These are described below in Table 13.35:

Table 13.35: Further impact codes used in Appendix 13.8

Impact code	Nature of Impact
St	Short term impact (up to 12 months)
Mt	Medium term (1-5 years)
Lt	Long term (more than 5 years)
P	Permanent
R	Reversible
PR	Partially reversible
Ir	Irreversible
N/A	Not applicable

13.7.5 For the impact assessment tables for archaeological remains (Tables App.13.8-1 – App.13.8-2 and App.13.8-6 – App.13.8-7) and historic buildings (Tables App.13.8-3 – App.13.8-4 and App.13.8-8 – App.13.8-9), column 1 identifies the heritage receptor under assessment, and column 2 provides a description of the predicted impact in with reference to the impact codes provided above in Table 13.34. Column 3 indicates the value of the heritage receptor as derived from the criteria for assessing the value of archaeological remains (Table 13.4), historic buildings (Table 13.5) as appropriate, and column 4 describes the predicted magnitude of change that would result from the proposed development compared to the ‘do nothing scenario’, without any mitigation in place (derived from Tables 13.1 and 13.2). The nature of the impact is then assessed in column 5, using the codes derived from Table 13.35. Any proposed mitigation is identified in column 6, using the codes provided in Table 13.33 (for embedded mitigation, as described in section 13.6 above) and 13.36 (for additional mitigation, as described in section 13.8 below), and for archaeological remains this is cross-referenced to the mitigation areas discussed in greater detail in the archaeological WSI provided in **Appendix 13.7** (which identifies areas of embedded mitigation and further mitigation). Finally, column 7 provides a score derived from the significance of the effects matrix provided in Table 13.7. Where appropriate, this row is subdivided to indicate the significance of effects without any mitigation in place, and below this the score assigned once any proposed mitigation has been implemented.

13.7.6 The impact assessment tables for the historic landscape (Tables App.13.8-5 and App.13.8-10 in **Appendix 13.8**) are structured slightly differently, with the HLC type and/or value in column 2 (derived from Table 13.6) and a description of the impact in column 3. There is also no column for mitigation in these two tables as it is not possible to mitigate the predicted changes in historic landscape character (though these effects would be ultimately reversible following decommissioning).

[Construction Phase](#)

- 13.7.7 As set out in Chapter 2 of the ES, for the purposes of the assessment, the two-year construction phase effects are effects that are anticipated to result from activities during site preparation / enabling works, construction, and commissioning activities e.g., effects such as construction traffic, noise and vibration from construction activities, dust generation, site runoff, mud on roads, and the visual intrusion of plant and machinery on site.

Archaeological Remains

Scheduled Monuments

- 13.7.8 For designated archaeological remains (Scheduled Monuments), it is evident that the visual impacts that would be most evident during the operational phase would commence during construction, but it is difficult to disentangle and quantify the relative levels of impact that would occur throughout the phase as these would be fluid. In general, it can be stated that any visual impacts that might occur during the construction phase would be, overall, of no greater magnitude than those experienced during the operational phase and would be of a short-term duration and reversible, as detailed in Table App.13.8-2 in **Appendix 13.8**. They would, however, be of a different nature, for example the possible visibility of plant movement, temporary cranes, and the presence of temporary construction compounds. These might result in very localised visual impacts that could be of a greater magnitude than what would occur during the operational phase, but the reversibility and short-term duration of these impacts would mean that the significance of the effects would soon return to *Neutral*.
- 13.7.9 Even though the construction phase is assessed as being two-years in length (i.e., *medium term*) in reality the visual impacts that might occur at most of the Scheduled Monuments would be likely to be very ephemeral in nature (for example limited glimpses of construction in a discrete part of a Site) and therefore for the most part these have been assessed as short term impacts. Only at *Thorpe medieval settlement* has it been considered that these impacts could potentially extend for more than 12 months and would, therefore, be *medium term*.
- 13.7.10 However, as the operational phase would commence immediately following the construction phase, and any 'reversibility' of the visual impacts during construction (i.e., removal of temporary site compounds, temporary haul roads etc) would immediately be superseded by the visual impacts of the operational phase. The potential visual impacts upon Scheduled Monuments would, therefore, best be considered as a continuum, with low-level impacts commencing at the beginning of the construction phase, increasing in magnitude and reaching a peak at the beginning of the operational phase, continuing for 40 years (with some potential reduction in the visual impact as landscape mitigation i.e., planting, matures) and then gradually reducing to pre-construction levels during the decommissioning phase. As the visual impacts would be at their greatest in terms of magnitude and duration during the operational phase, this is the main focus of the assessment of

impacts to Scheduled Monuments as detailed in the Heritage Statement (**Appendix 13.5**).

- 13.7.11 Nevertheless, further impacts that would be solely construction phase specific could be experienced along, and in the vicinity of, the Cable Route Corridor. However, the only Scheduled Monument fully within the 500m study area for the Cable Route Corridors is *Fleet Plantation moated site* (NHLE 1008594), which is located c.150m to the south of the perimeter fence of Cottam Power Station and c.320m from the point where the Shared Cable Corridor would meet the electrical sub-station. The earthworks of this medieval moated site are out of sight within a woodland plantation, and the immediate setting to the north of this Scheduled Monument is already dominated by the presence of the Power Station, and it is therefore considered that the temporary excavation of the cable route trench along the southern edge of the earth bund just outside the perimeter fence of the Power Station would constitute an additional Negligible Adverse setting impact upon this Scheduled Monument, resulting in *Slight Adverse* effects that would be of a short term and reversible nature, and therefore 'not significant' in EIA terms. The medieval bishop's palace and deer park, Stow Park (NHLE 1019229) also extends very slightly into the 500m study area, but there is no visibility from this monument to the north beyond the hedgerows that demarcate the course of Till Bridge Lane, and therefore no visual impact from the Cable Route Corridor.
- 13.7.12 It should be noted that there is the potential for a direct physical impact upon one Scheduled Monument during the construction phase, this being due to the abnormal loads oversailing as they pass through the village of Stow. The Order Limits indicate that this would be immediately adjacent to the churchyard wall which forms the boundary of the *Site of a college and Benedictine Abbey, St Mary's Church* (NHLE 1012976). This has the potential to result in impacts of *Minor or Moderate Adverse* magnitude and therefore effects of up to *Large Adverse* significance should any damage to the churchyard wall or archaeological remains beyond occur. Mitigation measures to ensure that this does not occur are discussed below in **Section 13.8**.
- 13.7.13 In conclusion, during the construction phase, there is the potential for there to be *Slight Adverse* effects at five Scheduled Monuments, and up to *Moderate Adverse* effects at one Scheduled Monument (*Thorpe medieval settlement* – NHLE 1016978). This latter impact could result in 'significant' effects in EIA terms, and although impacts resulting from the construction phase are medium term and reversible, the visual impacts of the constructed Scheme would continue into and throughout the operational phase. There is also the potential (in the absence of mitigation) for *Large Adverse* effects upon the *Site of a college and Benedictine Abbey, St Mary's Church, Stow* (NHLE 1012976) which would also be a 'significant' effect, should this occur.
- Non-designated Archaeological Remains*
- 13.7.14 Impacts to non-designated archaeological remains would largely occur during the construction phase, when activities such as the installation of panels and other

Scheme infrastructure such as battery panels, sub-stations, cable routes, the haul roads and access routes, lay-down areas and compounds all have the potential to have an adverse, permanent, and irreversible impact upon buried archaeology.

13.7.15 Whilst it should be self-evident how many of these scores have been reached with reference to the criteria detailed in Tables 13.1 – 13.7, in some instances a degree of professional judgement has been required, for example where the *significance of effects* matrix provides two alternative scores to choose from. For transparency, the bullet points below provide some indication as to how some of these decisions have been reached:

- Where ubiquitous and low value agricultural features such as buried furrows would be impacted by the occasional piling required for the solar arrays, this *Negligible Adverse* impact has been scored as having *Neutral* rather than *Slight Adverse* effects, as it is considered that the *evidential value* of these remains would not be compromised by these impacts.
- Where archaeological excavation and recording are proposed as mitigation, (for example along the cable routes, access and haul roads, inverters, battery storage compound, and substations), the adverse impacts upon the archaeological resource would still occur, and therefore the significance of effects scores remain the same with or without mitigation in place.
- Where *Medium* value archaeological remains such as Iron Age/Romano-British settlement and field systems have been identified in areas where solar panels are proposed it has been considered that, in the absence of mitigation, the impacts could range from *Negligible* to *Minor Adverse* due to the likely limited (but unquantifiable) impact that occasional piles and cable runs could have upon the buried remains, which would nevertheless be largely preserved *in situ*. With standard mitigation in place in the form of placing the panels on concrete feet, the impact would be avoided, and it is therefore considered that the effects upon these remains would be *Neutral* during the construction phase. This is notwithstanding the fact there could be some impacts due to construction traffic movement, though such impacts could also occur anyway in the 'do nothing' scenario, due to impacts from agricultural machinery.
- The full open-area excavation of the Anglo-Saxon cemetery (AR24) that is proposed (and commenced with the removal of 11 burials during the evaluation) would result in an effect more significant (i.e., *Large Adverse*) than might have occurred without any further mitigation in place (i.e., 'preservation *in situ* beneath concrete feet). However, this was a pre-emptive decision taken in consultation with the Lincolnshire's Historic Environment Officer in order to mitigate the effects of the 'do-nothing' scenario by preserving 'by record' important remains that otherwise would be likely to be lost to the plough.
- For archaeological remains identified along the Shared Cable Corridor, it is not clear at present how great the impact will be, because a) the full evaluation results are not yet available, and b) the precise design of the cable route has

not been finalised. It has been assumed in Table App.13.8-2 that the magnitude of the impact will be within the range of *Minor to Moderate Adverse* (or *No change to Large Adverse* at putative assets with unproven archaeological significance). This needs to be caveated further, as it is difficult to ascertain how best to assess impacts to features that are part of a wider palimpsest (for example should impacts to a ring ditch which forms part of a wider settlement area be assessed in terms of the individual feature or the settlement as a whole?).

13.7.16 The assessment results in Table App.13.8-2 indicate that most of the identified impacts to archaeological remains are 'not significant' in EIA terms, with effects mostly ranging between *Negligible* and *Slight Adverse*. However, as noted above there is the potential along the Shared Cable Corridor for up to *Moderate Adverse* impacts to what are likely to be regionally important remains of *Medium* value to occur, which could potentially result in 'significant' effects (i.e. at AR67-75). However, these impacts are not fully understood at present as the full results of the archaeological evaluations recently undertaken along the Shared Cable Corridor are not yet available, nor has the precise design for the cable route and associated temporary infrastructure been finalised. Similarly, as noted above, there can always be some debate about the magnitude of impacts to complex archaeological remains depending upon the resolution and scale at which they are assessed.

13.7.17 There could also be up to *Large Adverse* effects upon a kiln of possible Iron Age/Romano-British date at AR22a which would be fully excavated ahead of the construction of the battery storage area at the Cottam 1 Site. However, the significance of effects for this asset are uncertain as the features identified here during the evaluation are undated and only tentatively interpreted as a kiln, and therefore the value (and hence significance of effects) might be of a lesser magnitude.

Historic Buildings

Listed Buildings

13.7.18 The proposed Scheme is not anticipated to result in any direct, physical impacts to Listed Buildings during the construction phase.

13.7.19 Where there is intervisibility between historical buildings and the Sites, or where views towards buildings would include elements of the Scheme in the same arc of view, the visual impacts that would occur during the operational phase of the Scheme as identified by the Heritage Statement in **Appendix 13.5** would commence with low-level impacts at the beginning of the construction phase, increasing in magnitude until construction is complete. Whilst the magnitude of the visual impact might on occasion be greater during the construction phase than the operational phase (e.g., as a result of moving plant, temporary installation of cranes etc), such impacts would be of a very short-term duration and would be reversible. As such, it is considered that the magnitude of change that would result from the construction

phase of the Scheme would be, at worst, equivocal to that identified during the operational phase (as discussed in the heritage statement in **Appendix 13.5**), as detailed in Table App.13.8-3 which can be found in Appendix 13.8. As the visual impacts would be at their greatest in terms of magnitude and duration during the operational phase, this is the main focus of the assessment of impacts to Listed Buildings as detailed in the Heritage Statement and discussed further below in the operational phase section. The assessment provided Table App.13.8-3 indicates that there it is predicted that there would be *Negligible Adverse* impacts at three Grade II Listed Buildings and *Minor Adverse* impacts at one Grade II Listed Building and two Grade II* Listed Buildings, in each case resulting in *Slight Adverse* effects.

13.7.20 There would be additional visual impacts during the construction phase along the cable route corridor, which would be visible within the settings of two Grade II Listed Buildings:

- *Signal Box at Stow Park Station* (NHLE 1146606)
- *Stow Park Station* (NHLE 1064058)

13.7.21 However, as the key contribution that setting makes to these assets is bound up with their proximity to the railway line and its intersection with Till Bridge Lane, this slight visual impact would constitute a *No Change* to their significance and therefore *Neutral* effects, for the construction phase.

Non-designated Historic Buildings

13.7.22 There would be no direct physical impacts to non-designated historic buildings during the construction phase of the Scheme. As discussed above, for Scheduled Monuments and Listed Buildings, impacts to the settings of these buildings would be experienced as a continuum, with low-level impacts commencing at the beginning of the construction phase, increasing in magnitude and reaching a peak at the beginning of the operational phase, continuing for 40 years and then gradually reducing to pre-construction levels during the decommissioning phase. The predicted construction phase-specific impacts (which also take into consideration the temporary and short term visual and noise impacts from construction traffic) are presented in Table App.13.8-4 in **Appendix 13.8**. As the visual impacts would be at their greatest in terms of magnitude and duration during the operational phase, these are addressed in greater detail in the relevant operational phase section below.

13.7.23 Even though the construction phase is assessed in this ES as being two-years in length (i.e., *medium term*) in reality the visual impacts that might occur at most of the non-designated historic buildings would be likely to be very ephemeral in nature (for example limited glimpses of construction in a discrete part of a Site) and therefore these have been assessed as *short term* impacts.

13.7.24 For those effects where the *significance of effects* matrix (Table 13.7) provides two alternative scores to choose from, in these instances the lower of the two scores has

been chosen due to the temporary and short-term nature of the impacts during the construction phase.

- 13.7.25 In conclusion, Table App.13.8-4 in **Appendix 13.8** indicates that for non-designated buildings, construction phase effects would range from *Neutral* to *Slight Adverse*, and therefore 'not significant'.

Historic Landscape

Registered Parks and Gardens

- 13.7.26 The only Registered Park and Garden within the 5km study area for the assessment is the Grade II Listed *Fillingham Park*, which is located c.1.9km to the east of the Cottam 1 Site at its nearest point. There would be no direct physical impacts during the construction phase, but similarly to the designated heritage assets discussed above, the setting impacts resulting from the Scheme would be experienced as a continuum, with low-level impacts commencing at the beginning of the construction phase, increasing in magnitude and reaching a peak at the beginning of the operational phase, continuing for 40 years and then gradually reducing to pre-construction levels during the decommissioning phase. As the visual impacts would be at their greatest in terms of magnitude and duration during the operational phase, this is discussed in greater detail in the relevant section below.
- 13.7.27 Nevertheless, it can be stated that the visual impact of the construction traffic, temporary compounds and haul roads, along with the increasing visibility of the solar arrays as they are constructed at a minimum of 1.9km distant from the western edge of the Registered Park and Garden, and moreover, taking account of the layering effect that would occur in a relatively flat landscape, this would have a very low-level industrialising effect upon the rural character of part of the distant Trent valley landscape. It is considered that this would result in *Minor Adverse* impacts which for an asset of *Medium* value would result in *Slight Adverse* effects, i.e., 'not significant'.

Non-designated Historic Landscape

- 13.7.28 For the HLC units, the key effects would be experienced during the operational phase of the Scheme, and whilst (similarly to all of the designated assets discussed above) these impacts would commence during the construction phase, forming a continuum lasting until decommissioning, the main assessment of these effects is described below as part of the operational phase assessment.
- 13.7.29 Notwithstanding the above, the historic landscape impacts along the cable route would be construction phase specific, and Table App.13.8-5 in **Appendix 13.8** provides an assessment of these impacts that would occur during the construction phase only. This illustrates that the impacts would all be short term and reversible, caused by change of land-use and access due to the excavation of the cable trench and laying of the cable, construction of temporary laydown areas and compounds, and/or cutting through hedgerows, some of which are historically important.

- 13.7.30 The impact assessment table (Table App.13.8-5) illustrates that these temporary and reversible impacts would, at worst, be of a *Negligible Adverse* magnitude and effects of up to *Slight Adverse* significance along much of the cable route. The Shared Cable Corridor would be slightly more impactful as two scenarios have required assessment, neither of which would be characterised by the relatively rapid excavation, laying of cable and backfilling envisaged for other areas along the cable route. The first scenario relates to the construction of the Scheme, West Burton Solar Project and Gate Burton Energy Park's ducts and cables at the same time, assuming an 18-month duration for this where haul roads, laydown areas, construction compounds and any fencing would remain *in situ*. The second scenario is for the three Schemes' ducts and cables to be installed sequentially over a five-year period, which would also require all of the haul roads, laydown areas, construction compounds and any fencing to remain *in situ* for this more extended period. These latter two scenarios for the Shared Cable Corridor would result in impacts of up to *Minor Adverse* magnitude, but the effects would still be at worst, of *Slight Adverse* significance, and so 'not significant' in EIA terms.
- 13.7.31 In conclusion, the construction phase-specific impacts to the historic landscape would result in effects that are 'not significant' in EIA terms.

Operational Phase

Archaeological Remains

Scheduled Monuments

- 13.7.32 The Heritage Statement (**Appendix 13.5**) provides an assessment of potential impacts to the 21 Scheduled Monuments within the 5km study area surrounding the three Scheme Sites, the results of which are also presented in Table App.13.8-6 in **Appendix 13.8**. This identified that the topographic locations of these designated heritage assets on the generally flat Trent valley floodplain (or in one instance set back from the Lincoln Cliff with no visibility of the Trent Valley beyond) coupled with the layering effect of the ubiquitous hedgerows and woodland plantations that characterise this landscape, views and vistas are generally very restricted. At 15 of the Scheduled Monuments, the assessment concluded that it was unlikely that any visibility of the Scheme would be possible. At five of the Scheduled Monuments, potential visibility of elements of the Scheme was identified, but in general this would be restricted to slight glimpses contained within narrow arcs of view and/or at such a distance that this would be barely perceptible. Consequently, these would result in changes of *Negligible Adverse* magnitude to the significance of these heritage assets, resulting in, at worst, *Slight Adverse* effects. At *Thorpe Medieval Settlement* (NHLE 1016978), however, the close proximity of the Scheme would result in much greater visual impact, this being across a wide arc of view dominated by an element of the historic landscape that contributes to the significance of the Scheduled Monument and allows its significance to be appreciated. These considerable changes to the setting would result in what are considered to be *Moderate Adverse* impacts to the significance of the heritage asset. The significance

of effects matrix (Table 13.7) indicates that this should be scored as either *Moderate* or *Large Adverse* effects. However, as the field parcel to the north only possesses a slight legibility of the medieval field system, in this case two field boundaries reflecting the likely edges of former strips field reflecting the medieval agricultural practices (or possibly a furlong, though this cannot be proven), professional judgement suggests the effects would be of *Moderate Adverse* significance, which are nevertheless considered 'significant' in terms of the ES assessment.

Non-designated Archaeological Remains

- 13.7.33 Impacts to on-site archaeological remains during the operational phase of the Scheme are detailed in Table App.13.8-7 in **Appendix 13.8**. Essentially, the impacts to buried archaeological features during the operational phase would be of a largely beneficial nature, due to these remains being taken out of the agricultural cycle of regular ploughing which most of the field parcels within the Order Limits are currently subject to. Whilst the magnitude of this impact is difficult to define, it has been scored on the basis that this could range from *Negligible Beneficial*, for example in those instances where the upper fill of a deep ditch would be preserved by the Scheme when it would otherwise have been truncated by ploughing, to *Major Beneficial*, for example where shallowly buried features (as was the case at the Anglo-Saxon cemetery AR24) would be preserved *in situ* when they might otherwise be totally destroyed by ploughing over the 40 year operational phase of the Scheme.
- 13.7.34 Table App13.8-7 identifies that the likely beneficial impacts discussed above would occur at 24 of the archaeological areas assessed, but it is difficult to define the magnitude of these impacts and the significance of the effects with any certainty as it is unknowable as to how much truncation to archaeological remains would be caused by the next 40 years of ploughing in the 'do nothing' scenario. With this caveat in place, it is considered that these impacts could be anywhere within the range of a *Negligible Beneficial* to *Major Beneficial* magnitude. Taking into account these uncertainties, the assessment has identified that 'significant' beneficial effects could *potentially* occur at 22 of the archaeological areas within the Order Limits (i.e., those scored as potentially having *Slight* to *Moderate Beneficial* or *Slight* to *Large Beneficial* effects).

Historic Buildings

Listed Buildings

- 13.7.35 The Heritage Statement (**Appendix 13.5**) provides an assessment of potential impacts to the 35 Grade I and II* Listed Buildings within the 5km study area surrounding the four Scheme Sites, and the 75 Grade II Listed Buildings within the 2km study area. The Heritage Statement concluded in Step 1 of the assessment that the majority of these buildings would not be affected by the Scheme, and only seven Listed Buildings were identified as requiring further, more detailed assessment in Steps 2-4 of the assessment, the results of which are presented in Table App.13.8-8 in **Appendix 13.8**.

13.7.36 During the operational phase of the Scheme, there would be impacts to five Grade II Listed Buildings and two Grade II* Listed Buildings, all of which are considered to be impacts of *Slight Adverse* magnitude, as discussed in the Heritage Statement in **Appendix 13.5**, and detailed in Table App. 13.8-8 in **Appendix 13.8**. For *Glentworth Hall* and *Fillingham Castle* the significance of effects matrix indicates that these effects should be scored as either *Slight* or *Moderate Adverse*, and the lower of these scores was decided upon since the visibility of the Scheme would be of a limited nature considering the distances involved. Similarly, for *Thorpe in the Fallows Farmhouse*, *Mount Pleasant Farmhouse* and *Corringham Windmill*, the significance of effects matrix indicates that these effects should be scored as either *Neutral* or *Slight Adverse*, and the higher score was chosen to help highlight where mitigation measures (as discussed in section 13.8 below) could reduce or remove the adverse effects through effective screening.

13.7.37 In conclusion, none of the operational phase impacts upon Listed Buildings would result in 'significant effects' in EIA terms.

Non-designated Historic Buildings

13.7.38 For impacts upon non-designated historic buildings during the operational phase, these were assessed on the basis that where panels are proposed in fields immediately adjacent to, and/or surrounding a historic building, these would be prominently visible and result in comprehensive changes to the rural/agricultural setting, and consequently this would be considered to result in an impact of *Major Adverse* magnitude. For buildings of *Negligible* value, the significance of effects matrix indicates that this should be scored as a *Slight Adverse* effect. For buildings of *Low* value, whether this was scored as a *Moderate* rather than *Slight Adverse* effect has been based upon professional judgement, taking into account the positioning of the panels with regards to any key views from or towards the buildings.

13.7.39 Table App.13.8-9 illustrates that for most of the non-designated historic buildings assessed, the effects would be either *Neutral* or *Slight Adverse* effects, i.e., 'not significant', but at Turpin Farm (HB11), Corringham Grange Farm (HB18) and Blyton Grange Farm (HB22), the *Major Adverse* impacts would result in 'significant' *Moderate Adverse* effects in the absence of additional mitigation.

Historic Landscape

Registered Parks and Gardens

13.7.40 The Heritage Statement (**Appendix 13.5**) provides an assessment of potential impacts of the Scheme at the Fillingham Castle Grade II Registered Park and Garden (NHLE 1000977). This concluded that as the Scheme is a minimum of 1.9km distant from the western edge of the Registered Park and Garden, and also taking account of the layering effect that would occur in a relatively flat landscape, the array of solar panels that could be visible from Fillingham Castle would have a very low-level industrialising effect upon the rural character of part of the distant Trent valley

landscape (see LVIA Figure 8.14.30a-e). These visual impacts can be characterised as *'Slight changes to setting, resulting in a loss of significance or its enhancement'*, and therefore impacts of a Minor Adverse magnitude. For a Grade I Listed Building of High value, this would result in effects of *Slight* or *Moderate Adverse* significance in terms of the scoring methodology adopted by the ES, and for the Grade II Registered Park and Garden, which is of *Medium* value, this would result in effects of *Slight Adverse* significance, i.e. 'not significant'.

The non-designated Historic Landscape

- 13.7.41 Impacts to the on-site HLC units during the operational phase of the proposed development are detailed in Table App.13.8-10 in **Appendix 13.8**. The magnitude of change scores for HLC units have been assessed using professional judgement, on the basis that where less than 20% of the HLC unit would be affected by the installation of solar panels and/or other infrastructure associated with the Scheme then this would be an impact of *Negligible Adverse* magnitude. Where 20% - 50% of the HLC unit would be affected, this would be considered to be a *Minor Adverse* impact, and where 50% - 80% would be affected this would be considered to be a *Moderate Adverse* impact. For those instances when 80% or more of the unit would be affected, this would be an impact of *Major Adverse* magnitude.
- 13.7.42 For those instances where the *significance of effects* matrix (Table 13.7) provides two alternative scores to choose from, professional judgement has been used, but in general the lower score has been chosen, because apart from the occasional gapping through hedgerows that the Scheme would necessitate, the Scheme would largely preserve the historic landscape parcels and associated elements intact, and the visual impacts and change in land-use, though long term, would ultimately be reversible.
- 13.7.43 Table App. 13.8-10 illustrates that within the Cottam 1 Site there would be 'significant' effects at four HLC units, due to the industrialising effect of placing solar panels across areas of *Ancient Enclosure* which contribute positively to the setting of Scheduled Monuments. There would be *Minor Adverse* impacts at HLC20786 which forms part of the setting of *Coates medieval settlement and moated site* (NHLE 1016979), resulting in a *Moderate Adverse* effect. To the north of *Thorpe medieval settlement* (NHLE 1016978) there would be *Moderate Adverse* impacts at HLC21000 resulting in *Large Adverse* effects, and slightly more distant from the Scheduled Monument, at HLC21001 there would be *Moderate Adverse* impacts resulting in what are considered to be Moderate Adverse effects. There would be Major Adverse impacts at HLC20759 to the west of the Normanby by Stow Shrunken Medieval Village, resulting in Large Adverse effects.
- 13.7.44 Within the Cottam 2 Site there would 'significant' effects at one HLC unit, due to the industrialising effect of placing solar panels across areas a block of well-preserved Parliamentary Enclosure resulting in *Major Adverse* impacts and hence *Moderate Adverse effects*.

- 13.7.45 Within the Cottam 3a Site there would 'significant' effects at one HLC unit, due to the industrialising effect of placing solar panels across a Military Airfield of *Medium* value resulting in *Moderate Adverse* impacts and hence *Moderate Adverse* effects.
- 13.7.46 No significant operational phase historic landscape effects have been identified for the Cottam 3b Site, and no further effects would occur along the Cable Route Corridor during the operational phase, as this will have been reinstated and any hedgerows affected during construction will be growing back.

Decommissioning Phase

- 13.7.47 As discussed in Chapter 4 of the ES (paragraph 4.8.1), decommissioning is expected to take between 12 and 24 months and will be undertaken in phases, and for the purposes of the assessment is expected to occur no earlier than 40 years after the commencement of operation of the Scheme. A Decommissioning Environmental Management Plan will be prepared prior to decommissioning and will be secured through the Decommissioning Strategy which is secured by a Requirement in the draft DCO.

Archaeological Remains

Scheduled Monuments

- 13.7.48 The decommissioning phase would require plant movement and other activities similar to those employed during the construction phase, which could have an adverse impact upon the settings of nearby Scheduled Monuments. It is likely that, as with construction, there is the potential for there to be *Slight Adverse* effects at five Scheduled Monuments, and up to *Moderate Adverse* effects at one Scheduled Monument (*Thorpe medieval settlement* – NHLE 1016978). However, these impacts are no greater than during the operational phase, and would be temporary, short term and reversible in nature, and would ultimately result in the reversal of the operational phase impacts leading to *Neutral* effects at the end of the decommissioning phase.

Non-designated Archaeological Remains

- 13.7.49 As discussed in Chapter 4 of the ES (paragraph 4.8.3), there is a high degree of uncertainty regarding decommissioning as engineering approaches and technologies are likely to change over the operational life of the Scheme. There is the potential for impacts to archaeological remains as a result of any proposed groundworks and/or plant movement during decommissioning, and it is envisaged that detailed mitigation strategies to avoid or minimise any such impacts to the archaeological resource will be included in the Decommissioning Environmental Management Plan that will be required prior to decommissioning. Consequently, it is concluded that this would ensure that any decommissioning effects would not be 'significant'.

Historic Buildings

Listed Buildings

- 13.7.50 Similarly to Scheduled Monuments, plant movement and other activities during decommissioning similar to those employed during the construction phase could have an adverse impact upon the settings of nearby Listed Buildings. However, it is considered that these impacts would be of no greater magnitude than the operational impacts that would already be occurring, and the decommissioning impacts would be temporary, short term and reversible in nature, and would ultimately result in the reversal of the operational phase impacts leading to *Neutral* effects at the end of the decommissioning phase. Consequently, it can be concluded that the likely decommissioning effects would not be 'significant'.

Non-designated Historic Buildings

- 13.7.51 As for the Listed Buildings discussed above, decommissioning impacts to the settings of non-designated historic buildings would be of no greater magnitude than the operational impacts that would already be occurring, and the decommissioning impacts would be temporary, short term and reversible in nature, and would ultimately result in the reversal of the operational phase impacts leading to *Neutral* effects at the end of the decommissioning phase. Consequently, it can be concluded that the likely decommissioning effects would not be 'significant'.

Historic Landscape

- 13.7.52 Similarly to archaeological remains, there is the potential for impacts to historic landscape units, parcels and elements as a result of any proposed groundworks and/or plant movement during decommissioning of the Scheme, but it is envisaged that detailed mitigation strategies to avoid or minimise any such impacts to the historic landscape will be included in the Decommissioning Environmental Management Plan that will be required prior to decommissioning, and that this would ensure that any decommissioning effects would not be 'significant'.

13.8 Mitigation Measures

Archaeological Remains

- 13.8.1 Full details of the proposed mitigation strategies (including those areas where the 'embedded mitigation' discussed in section 13.6 above is proposed) are provided in the Written Scheme of Investigation (WSI) which is provided in **Appendix 7**.
- 13.8.2 Table 13.36 below provides descriptions of the additional mitigation strategies that are proposed in this ES along with codes that have been used in the Impact Assessment Tables included in **Appendix 13.8**. Code 'AA' refers to those putative archaeological assets where no 'embedded' or 'further' mitigation has been proposed due to the impacts being of a negligible magnitude, and codes 'DD', 'EE', 'FF' and 'GG' refer to the further mitigation proposals that would occur in advance of, and during construction, should the Scheme be permitted, as detailed in the WSI.

Code 'HH' refers to the proposed re-instatement of any earthworks that are disturbed during construction, as would occur where the cable route and any associated haul road would cut through the historic flood defences at AR64. Code 'KK' refers to the landscape mitigation proposals which would help to mitigate impacts to the settings of heritage assets, as discussed further below. Code 'LL' identifies where it will be necessary for a banksman to monitor the HGV where there is a requirement to mount the pavement in the village of Stow, immediately adjacent to the *Site of a college and Benedictine Abbey, St Mary's Church* Scheduled Monument (NHLE 1012976).

Table 13.36: Additional mitigation codes used in the impact assessment tables in Appendix 13.8

Mitigation code	Description of additional mitigation proposals
AA	None proposed due to impact being of a negligible magnitude
DD	Strip, Map and Sample (SMS) excavation and 'preservation by record'
EE	Watching Brief scalable to SMS excavation and 'preservation by record'
FF	Full open area excavation to remove plough-damaged burials from agricultural regime
GG	Informative trenching followed by BB or CC if appropriate
HH	Re-instatement of earthworks following construction
JJ	Ground protection matting if vehicular access required
KK	Landscape mitigation proposals (e.g., planting of shelter belts and scattered trees, planting of new hedgerows, existing hedgerow reinforcement) which should reach maturity by Year 15
LL	Monitoring of HGV movement through the village of Stow by banksman during construction

13.8.3 The impact assessment table for non-designated archaeological remains (Table App.13.8-2 (**Appendix 13.8**)) provides a concordance with the mitigation area codes that are used in the WSI (**Appendix 13.7**), and in the final column provides an indication of the 'significance of effects' of the Scheme without mitigation in place, and below this an indication of the predicted 'significance of effects' assuming the proposed mitigation has been implemented.

13.8.4 It should be noted that for buried archaeological remains where embedded mitigation is not proposed, and 'preservation by record' is proposed instead, whether by means of Strip, Map and Sample excavation ('DD'), Watching Brief ('EE'), or Open Area Excavation ('FF'), then the ultimate impact upon the archaeological resource would remain the same. This is because the archaeological remains would still be destroyed or truncated through excavation, but the 'preservation by record'

can be seen to be 'off-setting' the impacts by recovering artefacts and providing a greater understanding and appreciation of the *evidential value* inherent in archaeological remains.

Designated Heritage Assets and Non-designated Buildings

- 13.8.5 The only potential direct physical impact to a designated heritage asset is the potential for damage to the wall of the churchyard at the *Site of a college and Benedictine Abbey, St Mary's Church* (NHLE 1012976) during construction. This is due to the fact that HGVs delivering abnormal loads will need to mount the pavement adjacent to the Scheduled Monument, but this can be mitigated by the close monitoring of these manoeuvres by a suitably qualified banksman to ensure that this potential adverse impact can be avoided.
- 13.8.6 For impacts to the settings of designated heritage assets and non-designated historic buildings, the landscape mitigation proposals discussed in the LVIA chapter (section 8.8) would provide screening (by Year 15) for some of these assets, and this would help to reduce the visual impact of the solar panels and other Site infrastructure. These proposals are referred to in the Impact Assessment Tables in **Appendix 13.8** by the mitigation code 'KK'.
- 13.8.7 The heritage assets listed below, comprising a Scheduled Monument, a Registered Park and Garden, and three Listed Buildings, the assessment concluded that, in the absence of mitigation, the construction and operational phases would result in effects of *Slight Adverse* significance:
- Roman villa west of Scampton Cliff Farm (NHLE 1005041)
 - Fillingham Castle (NHLE 1166045/NHLE 1000977)
 - Glentworth Hall (NHLE 1063348)
 - Former stables at Glentworth Hall (NHLE 1166094)
- 13.8.8 It is concluded that whilst the landscape proposals, once matured by Year 15, would reduce the visual impact from these designated heritage assets, the Scheme would still be likely to be visible from this elevated position and therefore this score would remain unchanged.
- 13.8.9 It is considered that the *Slight Adverse* effects predicted at the following Scheduled Monuments, Listed Buildings, and non-designated historic buildings would be reduced to *Neutral* once the landscape proposal have matured (i.e., by Year 15) by virtue of the placement of the proposed screening proposals:
- Gilby medieval settlement (NHLE 1016795)
 - Coates medieval settlement and moated site (NHLE 1016979)
 - Thorpe in the Fallows Farmhouse (NHLE 1308921)
 - Mount Pleasant Farmhouse east of Laughton (NHLE 1317186)
 - Corringham Windmill (NHLE 1359417)

- HB2: Clandon House, Thorpe in the Fallows
- HB4: Stow Pasture, Stow
- HB5: The Pastures, Stow
- HB14: Unnamed farmstead, Fillingham
- HB15: Glebe Farm (Rectory Farm), Fillingham
- HB16: Fillingham Grange, Fillingham
- HB17: Unnamed farmstead, Fillingham
- HB19: Glebe Farm, Blyton
- HB23: Cold Harbour, Laughton

13.8.10 For the *Thorpe medieval settlement* Scheduled Monument (NHLE 1016978), the 'embedded mitigation' comprised setting back the proposed solar panels 50m from the northern edge of the Scheduled Area in the field to the north. However, the LVIA visualisations produced from within the scheduled area from Viewpoint 6 (ES Figure 8.14.6c-d) illustrate that this would still result in a *Moderate Adverse* impact due to the adverse effect that this would have upon the visual relationship with the field to the north and its fossilised strip field boundaries (part of an HLC unit of the '*Ancient Enclosure*' type), as well as the industrialising effect of the prominently visible solar panels and other Site infrastructure. The assessment concludes that this would translate into *Moderate Adverse* (i.e., 'significant' effects) in the absence of further mitigation. LVIA Figure 8.14.6e illustrates how the landscape mitigation proposals (i.e., new hedgerow planting) will have matured by Year 15. Whilst this would screen the views of the solar panels, thereby mitigating the industrialisation effect that these would have on the rural character of the adjacent landscape, the visual relationship with the *Ancient Enclosure* fields to the north would still be severed, and this would, therefore, remain as a *Moderate Adverse* effect. It is recommended that further consultation with Historic England is undertaken during the Examination Period with a view to identifying a design that would reduce this 'significant' impact to an acceptable level. This could, for example, include setting back the hedgerow further to the north so that some visibility of the field to the north is preserved, which would also serve to avoid impacts to recently identified archaeological remains of possible Iron Age/Romano British date immediately to the north of the Scheduled monument (AR01).

Historic Landscape

13.8.11 As discussed above (paragraphs 13.8.6 – 13.8.7) for the Fillingham Castle Listed Building, it is considered that the *Slight Adverse* effects that would occur during the operational phase at the Fillingham Castle Registered Park and Garden would be mitigated slightly by Year 15 when the landscape mitigation planting has matured, but this would still remain as *Slight Adverse*, as elements of the Scheme would still be likely to be visible when weather conditions allow it.

13.8.12 For the non-designated historic landscape, it is considered that the new planting and reinforcement of existing vegetation would have an overall beneficial effect by reinforcing the historic landscape character, but it is considered that the assessment scores for individual HLC units would remain unchanged.

13.9 In-Combination Effects

13.9.1 It is considered that during the construction phase and decommissioning phase, in-combination effects could be experienced at all receptors where there would be both a visual and a noise and or dust impacts due to construction traffic.

13.9.2 During the operational phase, there would be an in-combination visual effect upon the settings of those heritage assets where views from the Lincoln Cliff contribute to their significance:

- Roman villa west of Scampton Cliff Farm (NHLE 1005041)
- Fillingham Castle (NHLE 1166045/NHLE 1000977)
- Glentworth Hall (NHLE 1063348)
- Former stables at Glentworth Hall (NHLE 1166094)

13.9.3 The views from or including each of these assets would be likely to include all of the Sites, but Cumulative Sites have already been assessed as part of the Heritage Statement (**Appendix 13.5**).

13.9.4 A review of the other assessments within this ES indicates that there will be no significant in-combination effects with archaeology/heritage, and that the landscape planting and ecological mitigation will result in beneficial effects upon the historic environment.

13.9.5 There would be beneficial effects at the operation (Year 15) stage due to the landscape mitigation to the overall character of the designated heritage assets since the new planting would assist with framing and softening within the landscape. The embedded ecological mitigation would result in a large-scale reversion of arable to permanent grassland, as well as the adoption of generous ecological buffer zones, which will remove areas from arable cultivation and remove the threat to buried archaeological remains from deep ploughing. It is considered, therefore that the ecological mitigation strategy (as secured in the LEMP) would have a positive effect on the preservation conditions of buried archaeological remains.

13.10 Cumulative Effects

13.10.1 For cumulative impacts, Chapter 2 of this ES has identified the following NSIPs in close proximity to the Scheme:

- a) West Burton Solar Project (currently subject to an EIA Scoping Opinion (March 2022 and Statutory Consultation Summer 2022. Working broadly to the same timescales as the Scheme);
- b) Gate Burton Energy Park (EIA scoping opinion issued December 2021 and Statutory Consultation Summer 2022);

c) Tillbridge Solar (EIA Scoping opinion issued by PINS November 2022).

- 13.10.2 It can be stated at the outset that in general terms, there will be cumulative effects from each of these schemes upon the overall archaeological resource, as it is likely that each will adversely impact upon buried archaeological remains within each of the different schemes' extents to some degree, even taking into account embedded and additional mitigation.
- 13.10.3 For the settings of heritage assets, it is considered that the zone of influence (ZOI) is very much constrained for those assets located within the lowlands of the Trent valley, as confirmed by the ZTVs for these assets produced as part of the Heritage Statement (**Appendix 13.5**). The only 'significant' effect identified due to impacts to the setting of a designated heritage asset is at the *Thorpe medieval settlement* Scheduled Monument (NHLE 1016978), this being due to the close proximity of elements of the Cottam 1 Site. There would be no significant cumulative effects from any of the other NSIPs at this heritage receptor.
- 13.10.4 *Slight Adverse* effects (i.e., effects that are 'not significant') have been identified at the following Scheduled Monuments for the Scheme:
- Deserted village of Dunstall (NHLE 1004996)
 - Roman villa west of Scampton Cliff Farm (NHLE 1005041)
 - Southorpe medieval settlement (NHLE 1016794)
 - Gilby medieval settlement (NHLE 1016795)
 - Coates medieval settlement and moated site (NHLE 1016979)
- 13.10.5 *Slight Adverse* effects (i.e., effects that are 'not significant') have also been identified at the following Listed Buildings for the Scheme:
- Fillingham Castle (NHLE 1166045)
 - Glentworth Hall (NHLE 1063348)
 - Former stables at Glentworth Hall (NHLE 1166094)
 - Thorpe in the Fallows Farmhouse (NHLE 1308921)
 - Mount Pleasant Farmhouse east of Laughton (NHLE 1317186)
 - Corringham Windmill (NHLE 1359417)
- 13.10.6 *Slight Adverse* effects (i.e., effects that are 'not significant') have also been identified at the following Registered Park and Garden for the Scheme:
- Fillingham Castle (NHLE 1000977)
- 13.10.7 It is considered that there could only be cumulative effects at those heritage assets identified above (in Paragraph 13.9.2 where views from the Lincoln Cliff contribute to the significance of the asset:
- Roman villa west of Scampton Cliff Farm (NHLE 1005041)

- Fillingham Castle (NHLE 1166045/NHLE 1000977)
- Glentworth Hall (NHLE 1063348)
- Former stables at Glentworth Hall (NHLE 1166094)

13.10.8 This is due to the fact that the other NSIPs in the vicinity of the Scheme would also be likely to be visible from these elevated viewpoints along the Lincoln Cliff, but not from those situated in the Trent Valley. Should all of the NSIPs identified in paragraph 13.10.1 above be permitted and constructed, then the *Slight Adverse* effects identified at those heritage assets located on the Lincoln Cliff with extensive views across the Trent valley would increase in magnitude as a result of the cumulative effects, and whilst it is possible that this could result in *Moderate Adverse* effects or above (i.e., 'significant' effects) at one or more of these assets, this would require the results of further detailed design and assessment of the other NSIPs to confirm.

13.11 Residual Effects

13.11.1 The residual effects that would remain as a result of the Scheme assuming that all 'embedded' and 'additional' mitigation has been implemented are set out in Tables 13.37 – 13.39 below:

Table 13.37: Residual effects following mitigation: Construction Phase

Heritage Receptor	Residual Effects
Scheduled Monuments	
Deserted village of Dunstall (NHLE 1004996)	Slight Adverse
Roman villa west of Scampton Cliff Farm (NHLE 1005041)	Slight Adverse
Southorpe medieval settlement (NHLE 1016794)	Slight Adverse
Gilby medieval settlement (NHLE 1016795)	Slight Adverse
Coates medieval settlement and moated site (NHLE 1016979)	Slight Adverse
Thorpe medieval settlement (NHLE 1016978)	Moderate Adverse
Non-Designated Archaeological Remains	
AR10 (Site of demolished farmstead)	Slight Adverse
AR14 (Possible ditch and enclosure)	Neutral or Slight Adverse
AR18 (Normanby by Stow SMV)	Slight Adverse
AR22 (RB settlement)	Slight Adverse
AR22a (undated possible kiln)	Slight to Large Adverse

Heritage Receptor	Residual Effects
AR24 (RB settlement & Anglo-Saxon cemetery)	Large Adverse
AR25 (possible ditch)	Negligible Beneficial
AR32 (Possible ditches)	Neutral or Slight Adverse
AR44 (uncertain ditch)	Neutral or Slight Adverse
AR59 (IA/RB settlement)	Slight Adverse
AR61 (Post-medieval and RB ditches)	Neutral or Slight Adverse
AR63 (RB trackway)	Neutral or Slight Adverse
AR65 (Torksey Viking camp)	Neutral or Slight Adverse
AR67 (rectilinear enclosure?)	Neutral to Moderate Adverse
AR68 (possible pits and hollow)	Neutral to Moderate Adverse
AR69 (possible IA/RB settlement)	Slight to Moderate Adverse
AR70 (IA/RB field system)	Slight to Moderate Adverse
AR71 (RB field system)	Slight to Moderate Adverse
AR72 (RB trackway)	Slight to Moderate Adverse
AR73 (RB settlement)	Slight to Moderate Adverse
AR74 (possible RB ditches?)	Slight to Moderate Adverse
AR75 (possible IA/RB ditches?)	Slight to Moderate Adverse
Listed Buildings	
Glentworth Hall (NHLE 1063348)	Slight Adverse
Fillingham Castle (NHLE 1166045)	Slight Adverse
Former stables at Glentworth Hall (NHLE 1166094)	Slight Adverse
Thorpe in the Fallows Farmhouse (NHLE 1308921)	Slight Adverse
Mount Pleasant Farmhouse east of Laughton (NHLE 1317186)	Slight Adverse
Corringham Windmill (NHLE 1359417)	Slight Adverse
Non-Designated Historic Buildings	
HB3: The Grange, Thorpe in the Fallows	Slight Adverse
HB6: Cold Harbour, Cammeringham	Slight Adverse
HB7: Blackthorn Hill, Cammeringham	Slight Adverse
HB11: Turpin Farm, Fillingham	Slight Adverse

Heritage Receptor	Residual Effects
HB12: Side Farm, Fillingham	Slight Adverse
HB15: Glebe Farm (Rectory Farm), Fillingham	Slight Adverse
HB18: Corringham Grange Farm, Corringham	Slight Adverse
HB22: Blyton Grange, Blyton	Slight Adverse
HB23: Cold Harbour, Laughton	Slight Adverse
Registered Park and Garden	
Fillingham Castle (NHLE 1000977)	Slight Adverse
Non-Designated Historic Landscape	
HLI156 - Parliamentary Planned Enclosure	Slight Adverse
HLI20662 - Modern Fields	Slight Adverse
HLI20729 - Parliamentary Planned Enclosure	Slight Adverse
HLI20674 - Ancient Fields	Slight Adverse
HLI21000 - Ancient Fields	Slight Adverse
HLI20478 - Parliamentary Planned Enclosure	Slight Adverse
HLI20476 - Parliamentary Planned Enclosure	Slight Adverse
HLI20448 - Parliamentary Planned Enclosure	Slight Adverse
HLI19277 - Parliamentary Planned Enclosure	Slight Adverse
HLI19275 - Parliamentary Planned Enclosure	Slight Adverse
HLI18970 - Private Planned Enclosure	Slight Adverse
HLI18742 - Military Airfield	Slight Adverse
HLI20695 - Modern Fields	Slight Adverse
HLI20833 - Modern Fields	Slight Adverse
HLI20749 - Modern Fields	Slight Adverse
HLI20845 - Modern Fields	Option 2: Slight Adverse
HLI20848 - Modern Fields	Option 2: Slight Adverse

Heritage Receptor	Residual Effects
HLI20859 - Parliamentary Planned Enclosure	Option 2: Slight Adverse
HLI20861 - Modern Fields	Option 2: Slight Adverse
HLI20951 - Modern Fields	Option 2: Slight Adverse
HLI20892 - Parliamentary Planned Enclosure/Medium	Option 2: Slight Adverse
REGGEO - Regularly Laid Out Large Geometric Field Patterns	Option 2: Slight Adverse
REGGEO - Regularly Laid Out Large Geometric Field Patterns	Both Options: Slight Adverse
DESTROY - Modern Modified Field Patterns	Option 2: Slight Adverse
REFLOF - Field Patterns Reflective of Open Fields	Both Options: Slight Adverse
SEMIREG - Semi-Regular Field Patterns	Both Options: Slight Adverse
DESTROY - Modern Modified Field Patterns	Option 2: Slight Adverse

Table 13.38: Residual effects following mitigation: Operational Phase

Heritage Receptor	Residual Effects
Scheduled Monuments	
Deserted village of Dunstall (NHLE 1004996)	Slight Adverse
Roman villa west of Scampton Cliff Farm (NHLE 1005041)	Slight Adverse
Southorpe medieval settlement (NHLE 1016794)	Slight Adverse
Thorpe medieval settlement (NHLE 1016978)	Moderate Adverse
Non-Designated Archaeological Remains	
AR07 - (IA/RB settlement)	Slight to Large Beneficial
AR11 - (IA/RB settlement)	Slight Beneficial
AR18 (Normanby by Stow SMV)	Slight Adverse
AR22 (RB settlement)	Neutral to Slight Beneficial
AR23 (RB settlement)	Slight to Large Beneficial

Heritage Receptor	Residual Effects
AR24 (RB settlement & Anglo-Saxon cemetery)	Slight to Large Beneficial
AR25 (possible ditch)	Neutral or Slight to Large Beneficial
AR26 (possible ditch)	Neutral or Slight to Large Beneficial
AR28 (RB settlement)	Slight to Large Beneficial
AR31 (IA/RB settlement)	Neutral
AR35 (IA/RB settlement?)	Neutral or Slight to Large Beneficial
AR37 (IA/RB settlement)	Slight to Large Beneficial
AR38 (IA/RB settlement)	Slight to Large Beneficial
AR41 (possible ring ditch)	Neutral or Slight to Large Beneficial
AR42 (possible IA/RB settlement)	Neutral or Slight to Large Beneficial
AR43 (uncertain ditch)	Neutral or Slight to Large Beneficial
AR45 (IA/RB settlement)	Slight to Large Beneficial
AR46 (IA/RB settlement)	Slight to Large Beneficial
AR47 (uncertain ditches)	Neutral or Slight to Large Beneficial
AR48 (IA/RB settlement?)	Slight to Large Beneficial
AR49 (site of Blyton Field)	Slight to Moderate Beneficial
AR50 (possible ring ditch)	Neutral or Slight to Large Beneficial
AR52 (possible field system)	Neutral or Slight to Large Beneficial
AR54 (IA/RB settlement)	Slight to Large Beneficial
AR55 (IA/RB settlement)	Slight to Large Beneficial
AR56 (IA/RB settlement)	Slight to Large Beneficial
Listed Buildings	
Glentworth Hall (NHLE 1063348)	Slight Adverse
Fillingham Castle (NHLE 1166045)	Slight Adverse
Former stables at Glentworth Hall (NHLE 1166094)	Slight Adverse
Non-Designated Historic Buildings	
HB3: The Grange, Thorpe in the Fallows	Slight Adverse
HB6: Cold Harbour, Cammeringham	Slight Adverse
HB7: Blackthorn Hill, Cammeringham	Slight Adverse
HB8: West Farm, Stow	Slight Adverse

Heritage Receptor	Residual Effects
HB9: East Farm, Stow	Slight Adverse
HB11: Turpin Farm, Fillingham	Moderate Adverse
HB12: Side Farm, Fillingham	Slight Adverse
HB13: North Farm, Fillingham	Slight Adverse
HB18: Corringham Grange Farm, Corringham	Slight Adverse
HB20: Top Farm (Blyton Top), Blyton	Slight Adverse
HB21: Grange Farm, Blyton	Slight Adverse
HB22: Blyton Grange, Blyton	Slight Adverse
Registered Park and Garden	
Fillingham Castle (NHLE 1000977)	Slight Adverse
Non-Designated Historic Landscape	
HLI20674 – Ancient Enclosure	Slight Adverse
HLI20759 – Ancient Enclosure	Large Adverse
HLI20786 – Ancient Enclosure	Moderate Adverse
HLI21000 – Ancient Enclosure	Large Adverse
HLI21001 – Ancient Enclosure	Moderate Adverse
HLI145 – Modern Fields	Slight Adverse
HLI146 – Modern Fields	Slight Adverse
HLI148 – Modern Fields	Slight Adverse
HLI20658 – Modern Fields	Slight Adverse
HLI20659 – Modern Fields	Slight Adverse
HLI20661 – Modern Fields	Slight Adverse
HLI20662 – Modern Fields	Slight Adverse
HLI20752 – Modern Fields	Slight Adverse
HLI20758 – Modern Fields	Slight Adverse
HLI20774 – Modern Fields	Slight Adverse
HLI20785 – Modern Fields	Negligible Adverse
HLI21002 – Modern Fields	Slight Adverse
HLI21026 – Modern Fields	Slight Adverse
HLI108388 – Modern Fields	Slight Adverse
HLI108389 – Modern Fields	Slight Adverse

Heritage Receptor	Residual Effects
HLI142 – Parliamentary Planned Enclosure	Slight Adverse
HLI144 – Parliamentary Planned Enclosure	Slight Adverse
HLI156 – Parliamentary Planned Enclosure	Moderate Adverse
HLI20729 – Parliamentary Planned Enclosure	Slight Adverse
HLI20736 – Parliamentary Planned Enclosure	Neutral
HLI20757 – Parliamentary Planned Enclosure	Slight Adverse
HLI108394 – Private Planned Enclosure	Slight Adverse
HLI108395 – Private Planned Enclosure	Slight Adverse
HLI19285 – Ancient Enclosure	Slight Adverse
HLI19281 – Modern Fields	Slight Adverse
HLI19282 – Modern Fields	Slight Adverse
HLI19283 – Modern Fields	Slight Adverse
HLI19276 – Parliamentary Planned Enclosure	Moderate Adverse
HLI19277 – Parliamentary Planned Enclosure	Slight Adverse
HLI19316 – Parliamentary Planned Enclosure	Slight Adverse
HLI18742 – Military Airfield	Moderate Adverse
HLI18937 – Modern Fields	Slight Adverse
HLI18961 – Modern Fields	Slight Adverse
HLI18965 – Modern Fields	Slight Adverse
HLI18969 – Modern Fields	Slight Adverse
HLI19154 – Modern Fields	Slight Adverse
HLI1897 – Parliamentary Planned Enclosure	Slight Adverse

13.11.2 As discussed in Chapter 4 of the ES (paragraph 4.8.3) and paragraph 13.7.49 above, there is a high degree of uncertainty regarding decommissioning as engineering approaches and technologies are likely to change over the operational life of the Scheme. Consequently, it is not possible to state with any degree of certainty what residual effects might occur with regard to impacts to buried archaeological remains, although it is to be assumed that the Decommissioning Environmental

Management Plan that will be prepared prior to decommissioning and will be secured through the Decommissioning Strategy which is secured by a Requirement in the draft DCO would seek to avoid or minimise such impacts.

- 13.11.3 For the impacts to the settings of heritage assets, the assessment has identified that the residual effects could be of up to a similar magnitude as during the construction phase, albeit mitigated for a number of assets by the screening effects of the landscape proposals which would become effective by Year 15 of the operational phase.

Table 13.39: Residual effects following mitigation: Decommissioning Phase

Heritage Receptor	Residual Effects
Scheduled Monuments	
Deserted village of Dunstall (NHLE 1004996)	Slight Adverse
Roman villa west of Scampton Cliff Farm (NHLE 1005041)	Slight Adverse
Southorpe medieval settlement (NHLE 1016794)	Slight Adverse
Thorpe medieval settlement (NHLE 1016978)	Moderate Adverse
Listed Buildings	
Glentworth Hall (NHLE 1063348)	Slight Adverse
Fillingham Castle (NHLE 1166045)	Slight Adverse
Former stables at Glentworth Hall (NHLE 1166094)	Slight Adverse
Non-Designated Historic Buildings	
HB3: The Grange, Thorpe in the Fallows	Slight Adverse
HB6: Cold Harbour, Cammeringham	Slight Adverse
HB7: Blackthorn Hill, Cammeringham	Slight Adverse
HB8: West Farm, Stow	Slight Adverse
HB9: East Farm, Stow	Slight Adverse
HB11: Turpin Farm, Fillingham	Moderate Adverse
HB12: Side Farm, Fillingham	Slight Adverse
HB13: North Farm, Fillingham	Slight Adverse
HB18: Corringham Grange Farm, Corringham	Slight Adverse
HB20: Top Farm (Blyton Top), Blyton	Slight Adverse

Heritage Receptor	Residual Effects
HB21: Grange Farm, Blyton	Slight Adverse
HB22: Blyton Grange, Blyton	Slight Adverse
Registered Park and Garden	
Fillingham Castle (NHLE 1000977)	Slight Adverse