



Technical Appendix 3: Cultural Heritage Impact Assessment

Kingston Solar Farm

21/12/2021



Disclaimer

Neo Environmental Limited shall have no liability for any loss, damage, injury, claim, expense, cost or other consequence arising as a result of use or reliance upon any information contained in or omitted from this document.

Copyright © 2021

The material presented in this report is confidential. This report has been prepared for the exclusive use of Renewable Energy Systems (RES) Ltd. The report shall not be distributed or made available to any other company or person without the knowledge and written consent of Renewable Energy Systems (RES) Ltd or Neo Environmental Ltd.

NEO ENVIRONMENTAL LTD	
<p>Head Office - Glasgow: Wright Business Centre, 1 Lonmay Road, Glasgow. G33 4EL T 0141 773 6262 E: info@neo-environmental.co.uk</p>	
<p>Warrington Office: Cinnamon House, Crab Lane, Warrington, WA2 0XP. T: 01925 661 716 E: info@neo-environmental.co.uk</p>	<p>Rugby Office: Valiant Suites, Lumonics House, Valley Drive, Swift Valley, Rugby, Warwickshire, CV21 1TQ. T: 01788 297012 E: info@neo-environmental.co.uk</p>
<p>Ireland Office: Johnstown Business Centre, Johnstown House, Naas, Co. Kildare. T: 00 353 (0)45 844250 E: info@neo-environmental.ie</p>	<p>Northern Ireland Office: 83-85 Bridge Street, Ballymena, Northern Ireland, BT43 5EN. T: 0282 565 04 13 E: info@neo-environmental.co.uk</p>

Prepared For:

Renewable Energy Systems (RES) Ltd



Prepared By:

Michael Briggs BSc (Hons) MSc ACIfA MIAI



	Name	Date
Edited By:	Nicole Beckett	21/12/2021
Checked By:	Paul Neary	21/12/2021
	Name	Signature
Approved By	Paul Neary	

Contents

Executive Summary	5
Introduction	6
Legislation, Policy and Guidance	11
Assessment Methodology	19
Baseline Characterisation	23
Assessment of Direct Effects	33
Assessment of Indirect Effects	39
Mitigation Measures	51
Residual Effects	53
Summary	54
List of Appendices	55

EXECUTIVE SUMMARY

- 3.1. A Cultural Heritage Impact Assessment has been produced to evaluate the potential direct and indirect effects upon cultural heritage assets and archaeological remains resulting from the proposed solar farm on lands circa 1.3km south of Gotham and c. 0.75km northwest of East Leake, Nottinghamshire.
- 3.2. A search of high-grade heritage assets such as World Heritage Sites, Scheduled Monuments, Parks and Gardens of Special Historic Interest, Historic Battlefields and Heritage Coasts has been carried out within a 5km study zone of the Proposed Development, while Listed Buildings and Conservation Areas have been assessed within a 2km study zone. Non-designated archaeology and heritage sites within the local Historic Environment Record have also been assessed within a 1km study zone.
- 3.3. Baseline information was also obtained through a site walkover survey, map regression analysis, placenames analysis, aerial photography and consultation with relevant records and databases. As the design of the Proposed Development has implemented exclusion zones around any possible sub-surface remains associated with the well (L48/M48) in **Field 5**, as well as the post-medieval houses/farmsteads depicted in **Fields 5, 9 and the corner of Fields 12 – 14** on the 1884 OS map no direct effects will occur on known assets. As such, no further mitigation measures will be required to avoid impacts upon known assets.
- 3.4. Although the design of the Proposed Development includes exclusion zones in order to avoid directly impacting remains associated with known features within and around the site boundary, the remainder of the site possesses archaeological potential associated with multiple periods from prehistoric to post-medieval. While there are currently no specific indicators for specific sub-surface remains that may be impacted by the Proposed Development, this general potential for sub-surface remains is present throughout the site. However, the results of the geophysical survey undertaken within the Application Site did not identify any anomalies likely to indicate archaeological features of significance. Residual direct effects upon hitherto-unknown archaeology as a result of the Proposed Development are therefore anticipated to be **Low**, on the assumption that an appropriate programme of archaeological works is implemented prior to the construction stage of the Proposed Development, including provision for further evaluation (trial trenching of identified geophysical anomalies) and protection of sub-surface archaeology within the Application Site. It is anticipated that, as no features of archaeological significance are indicated by the geophysical survey, this approach would be sufficient as part of a planning condition at the post-determination stage.
- 3.5. Indirect effects upon the surrounding heritage assets have been assessed overall as **Low** in the worst case. Therefore, no specific mitigation is considered to be required for the reduction of any visual impacts.

INTRODUCTION

Background

- 3.6. Neo Environmental Ltd has been appointed by Renewable Energy Systems (RES) Ltd (the “Applicant”) to complete a Cultural Heritage Impact Assessment (CHIA) for a proposed 49.9MW solar farm with associated infrastructure (the “Proposed Development”) on lands circa 1.3km south of Gotham and c. 0.75km northwest of East Leake, Nottinghamshire (the “Application Site”).
- 3.7. Please see **Figure 4 of Volume 2: Planning Application Drawings** for the layout of the Proposed Development.

Development Description

- 3.8. The Proposed Development will consist of the construction of a 49.9MW solar farm with bi-facial solar photovoltaic (PV) panels mounted on metal frames, new access tracks, underground cabling, perimeter fencing with CCTV cameras and access gates, two temporary construction compounds, substation and all ancillary grid infrastructure and associated works.
- 3.9. The Proposed Development will result in the production of clean energy from a renewable energy resource (daylight) and will also involve additional landscaping including hedgerow planting and improved biodiversity management.

Site Description

- 3.10. The Application Site is located on lands circa 1.3km south of Gotham and c. 0.75km northwest of East Leake, Nottinghamshire; the approximate centre point of which is Grid Reference E453185, N328739. Comprising 16 agricultural fields and additional ancillary areas, the Application Site measures c. 80.65 hectares (ha) in total, with only c. 55.65 hectares accommodating the solar arrays themselves. See **Figure 1 of Volume 2: Planning Application Drawings** for details.
- 3.11. The Proposed Development Site is split into two sections, north and south, by an area of woodland, Leake New Wood. Both sections lie on elevated, gently undulating land ranging between 87 – 96m AOD. The northern section extends across several rectilinear agricultural fields largely contained by existing mixed woodland providing good screening for the wider area. These include Gotham Wood to the north, Cuckoo Bush to the east, Leake New Wood to the south and Crownend Wood to the west. The southern section is also surrounded by pockets of woodland including Oak Wood, Crow Wood and Ash Spinney.
- 3.12. The Application Site is in an area with an existing industrial presence with a telecoms mast located on the southwestern boundary of Field 7, a wood pole line along the boundary between Fields 7 and 8 and within the southern section of Fields 4 and 5 and overhead lines

located along the southern boundary of Field 16 and the eastern boundary of Field 15 (See **Figure 3 of Volume 2: Planning Application Drawings** for field numbers).

- 3.13. The surrounding area is semi-rural in nature with the site being surrounded by agricultural fields and woodland in most directions. The area is however punctuated by individual farmsteads and Rushcliffe Golf Club is located on the eastern boundary of Field 15 in the southern section of the site. There are also various industrial brownfield sites within the locality including Charnwood Truck Services located directly southwest of Field 4. Additionally, there is a large-scale power station located beyond the A453, circa 1.58km north of the site which can currently be seen from Bridleway 12.
- 3.14. Recreational routes include a number of Bridleways (BW) which cross or abut the Site providing connectivity to the wider Kingston Estate. These include Gotham BW No. 10, 11 and 12 and West Leake BW's No. 5 and 13. West Leake BW No. 5, also known as the Midshires Way, is also a Long-Distance Walking Association (LDWA) Route bordering the southern boundary of Fields 15 and 16. While there are several field drains throughout the Application Site, it lies entirely within Flood Zone 1, an area described as having a "Low probability" of flooding.
- 3.15. The Application Site will be accessed from Wood Lane, which is an unadopted road. Delivery vehicles will exit the M1 at junction 24, signposted A453 Nottingham (S), onto the A453 and travel in a northeast direction for approximately 4.3km, before taking the exit onto West Leake Lane. This road will be travelled on in a southern direction for approximately 1.5km, before turning left onto Kegworth Road. Vehicles will travel northeast along this road for approximately 1.3km before turning right into Wood Lane

Scope of the Assessment

- 3.16. The assessment has been produced to evaluate the cultural heritage assets and archaeological remains relevant to the Application Site. A search of high-grade designated heritage assets such as Scheduled Monuments, World Heritage Sites, Registered Parks and Gardens of Special Historic Interest (PGSHI), Registered Battlefields and Heritage Coasts has been carried out within a 5km study zone of the Proposed Development, in line with previous similar assessments produced by Neo Environmental. This study zone allows assets of national significance to be appropriately considered for indirect impacts, both on the assets themselves and their settings.
- 3.17. Architectural heritage assets such as Listed Buildings and Conservation Areas have been assessed within a 2km study zone. This study zone is also in line with previous solar farm assessments produced by Neo Environmental. It is considered to be appropriate for assets of regional and local significance. These features are potentially sensitive to visual impacts but not to the same extent as those of national significance.
- 3.18. Non-designated archaeology and heritage sites within the local Historic Environment Record have been assessed within a 1km study zone. These sites are usually of a lower sensitivity to

visual impacts but both features and events within the record can be a good indication of the likely archaeological potential of land within the Application Site.

3.19. Where appropriate, sites of exceptional value or sensitivity outside the study zones have also been assessed. The aims of the assessment are as follows:

- To identify all known heritage assets within the study zone based on all available public resources;
- To identify the archaeological potential of the Application Site;
- To determine what if any level of recording will be required for any extant remains;
- To assess the significance of any direct or indirect effect of the Proposed Development on cultural heritage assets and their settings and potential archaeological remains within the study zone, from construction through to decommissioning;
- To identify mitigation measures where possible and aid in the design process to reduce the potential impacts of the proposed scheme;
- To provide recommendations for any further archaeological/heritage assessment work that should be undertaken as part of the Proposed Development.

3.20. The report is supported by the following Figures and Technical Appendices:

- Appendix 3A: Figures
 - Figure 3.1 – Designated Heritage Assets
 - Figure 3.2 – Historic Environment Record
 - Figure 3.3 – 1884 OS Historic Map
 - Figure 3.4 – 1900 OS Historic Map
 - Figure 3.5 – Lidar Data
- Appendix 3B: Tables
- Appendix 3C: Plates
- Appendix 3D: Geophysical Survey Report

Statement of Authority

- 3.21. The assessment has been conducted by registered archaeologists with the Chartered Institute for Archaeologists (CIfA), of Associate (ACIfA) level or above and/or members of the Institute of Archaeologists of Ireland (IAI). The assessment has been conducted in accordance with the appropriate professional guidance outlined in the Codes of Professional Conduct, Institute of Archaeologists of Ireland (adopted April 2006)¹.
- 3.22. Michael Briggs BSc (Hons) MSc ACIfA MIAI was the primary author of this assessment. He has undertaken a large number of cultural heritage and archaeological impact assessments for developments across the UK and Ireland, with a particular focus on renewable projects, including numerous solar farms throughout the Republic of Ireland and Northern Ireland. He has over six years of professional experience, including assessments for the initial stages of feasibility and heritage impacts through to any final mitigation measures required for each site, such as geophysical surveys and trial trenching.
- 3.23. Paul Neary BA H.Dip MA MSc MIEEnvSc MIAI ACIFA CEnv was the primary editor of this report. Paul is dual-qualified as a Chartered Environmentalist and archaeologist. Paul has over 14 years of archaeology and heritage experience, the majority of which relates to Ireland. Paul has worked on large road projects, EIA developments and energy projects across Ireland and the UK. He is licensed to direct archaeology work in the Republic of Ireland and has also held archaeology director licenses in Northern Ireland.

Consultation

- 3.24. Pre-application consultation was undertaken in May and June 2021 with Rushcliffe Borough Council, Nottingham County Council and Historic England. A summary of their comments is contained below.

Table 1: Table of Consultation

Consultee	Comments	Actions
Andrea Baxter Planner – Rushcliffe Borough Council 13/05/2021	<i>“The Council’s computer data base indicates archaeology and contamination hotspots as follows: Archaeology: site 1 – to the northern area of field 8 and 9 and Site 3- Eastern corner of field 16 and contamination: Site 1 - Kingston Mine (now Hardstaff) to the south of field 1 and 3; entire field 5 is highlighted as being potentially contaminated; pocket area in north of field 8 is identified as disturbed ground; northern extreme of fields 4,5,6,7, are within 250m of</i>	Hotspots to be checked with HER data purchased from local authority and included within assessment.

¹ IAI (2006) IAI Code of Professional Conduct. IAI

<p>Pre-application response</p>	<p><i>landfill site on Gypsum Way (methane); an Esso Pipeline runs through fields 8,9,10. Site 2 -Field 1 potentially contaminated in 2 pockets “worked ground”</i></p>	
<p>Sera Baker Heritage Officer – Rushcliffe Borough Council 24/05/21 Pre-application consultation</p>	<p><i>“The proposal site is identified on the Nottinghamshire Historic Environment Record. There are no designated heritage assets either within the site or within the vicinity which might have their settings impacted upon by the proposed development.</i></p> <p><i>However, within 2km are two Conservation Areas and several Grade I, Grade II* and Grade II listed buildings. Within 5km are several designated heritage assets including Scheduled Ancient Monuments (SAMs) and Parks and Gardens of Special Historic Interest included on the Register of Historic Parks and Gardens maintained by Historic England. If any development were to be considered I would suggest that the indirect effects of the proposal be taken into account as part of any heritage assessment, including any impact on long distance views and the special interest of the designated assets.”</i></p>	<p>Indirect effects to be assessed for heritage assets within 5km and 2km study areas.</p>
<p>Samuel Clarke Archaeologist – Historic England 03/06/21 Email consultation</p>	<p><i>“We refer you to the expertise of the County Council Archaeological Advisors and Rushcliffe Conservation Officer and our published GPA3 Setting of Heritage Assets, noting particular attention should paid to understanding the site in the context of the early medieval landscape in this area, (for example) the CEMEX site near Rempstone which includes <https://historicengland.org.uk/listing/the-list/list-entry/1471412> and Rushcliffe Moot, Court Hill, Gotham.”</i></p>	<p>Indirect effects to utilise Setting of Heritage Assets document and consider the early medieval landscape around the Application Site.</p>
<p>Emily Gillott Heritage Officer – Nottingham County Council 28/06/21 Email consultation</p>	<p><i>“The HER has very little information about the area because little work has been done, so it would be helpful to provide results of a geophysical survey at pre-application stage would help to advise risks and archaeological potential. I understand that groundworks for solar farms can be comparatively limited but the archaeological potential of the site is really not well-understood and this is a landscape where we’ve had significant archaeological sites in unexpected places.”</i></p>	<p>A geophysical survey has been completed and attached to this report as Appendix 3D.</p>

LEGISLATION, POLICY AND GUIDANCE

3.25. This Cultural Heritage Impact Assessment has been considered with regard to all relevant national, regional and local planning policy and guidance:

- National Planning Policy Framework 2019, paragraphs 189 & 193 – 197²;
- The Town and Country Planning (Environmental Impact Assessment) Regulations 2017, Schedule 4³;
- Ancient Monuments and Archaeological Areas Act 1979 (as amended)⁴;
- Historic England: The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition)⁵;
- Historic England’s Statement of Heritage Significance: Analysing Significance in Heritage Assets. Historic England Advice Note 12 (2019)⁶;
- National Heritage Act 1983 (amended 2002)⁷;
- Planning (Listed Buildings and Conservation Areas) Act 1990⁸;
- Hedgerows Regulations 1997: Schedule 1 – Additional Criteria for Determining “Important” Hedgerows⁹; and
- Rushcliffe Local Plan Parts 1 and 2 (adopted 2014)¹⁰.

² Ministry of Housing, Communities & Local Government (2019) *National Planning Policy Framework*. HM Government, London.

³ HM Government (2017) *The Town and Country Planning (Environmental Impact Assessment) Regulations*. HM Government, London.

⁴ HM Government (1979) *Ancient Monuments and Archaeological Areas Act*. HM Government, London.

⁵ Historic England (2017) *The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition)*. Historic England.

⁶ Historic England (2019) *Statement of Heritage Significance: Analysing Significance in Heritage Assets*. Historic England Advice Note 12. Historic England.

⁷ HM Government (1983) *National Heritage Act (Amended 2002)*. HM Government, London.

⁸ HM Government (1990) *Planning (Listed Buildings and Conservation Areas) Act*. HM Government, London.

⁹ HM Government (1997) *The Hedgerows Regulations*. HM Government, London.

¹⁰ Rushcliffe Borough Council (2016) *Rushcliffe Local Plan: Adopted Policies Map*. RBC.

- 3.26. The most relevant policy documents to this impact assessment are discussed in more detail below.

National Planning Policy Framework (NPPF) 2021

- 3.27. The overarching policy and guidance for the conservation and enhancement of the historic environment have been formulated within Chapter 16 of the NPPF 2021 and build upon the core planning principle for the appropriate conservation of heritage assets. The framework classifies the historic environment as: *“all aspects of the environment resulting from the interaction between people and places through time, including all surviving physical remains of past human activity, whether visible, buried or submerged, and landscaped and planted or managed flora”* (NPPF, Glossary).
- 3.28. Under this reviewed policy document archaeological sites, buildings, parks and gardens, conservation areas, battlefields or other aspects of the historic environment that have significance because of their historic, archaeological, architectural or artistic interest are considered heritage assets. These heritage assets include both designated sites and non-designated sites identified by the Local Planning Authority and must be a consideration in the planning process due to their heritage interest.
- 3.29. Policies outlined in the document consider both the treatment of the assets themselves and their setting in the landscape, which are the primary material considerations for heritage assets involved in the development planning process. Key paragraphs from this document that are relevant to this project are detailed below.

Paragraph 194

“In determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets’ importance and no more than is sufficient to understand the potential impact of the proposal on their significance. As a minimum the relevant historic environment record should have been consulted and the heritage assets assessed using appropriate expertise where necessary. Where a site on which development is proposed includes, or has the potential to include, heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation.”

Paragraph 199

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

Paragraph 200

“Any harm to, or loss of, the significance of a designated heritage asset (from its alteration or destruction, or from development within its setting), should require clear and convincing justification. Substantial harm to or loss of:

- a) grade II listed buildings, or grade II registered parks or gardens, should be exceptional;*
- b) assets of the highest significance, notably scheduled monuments, protected wreck sites, registered battlefields, grade I and II* listed buildings, grade I and II* registered parks and gardens, and World Heritage Sites, should be wholly exceptional.”*

Paragraph 201

“Where a proposed development will lead to substantial harm to (or total loss of significance of) a designated heritage asset, local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or total loss is necessary to achieve substantial public benefits that outweigh that harm or loss, or all of the following apply:

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

Paragraph 202

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

Paragraph 203

“The effect of an application on the significance of a non-designated heritage asset should be taken into account in determining the application. In weighing applications that directly or indirectly affect non-designated heritage assets, a balanced judgement will be required having regard to the scale of any harm or loss and the significance of the heritage asset.”

- 3.30. This report includes a detailed assessment of both designated and non-designated heritage assets in order to determine their significance and sensitivity to the proposed development. Where non-designated assets are of high significance they will be considered and assessed as equivalent to scheduled monuments.

The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition)

3.31. This document mainly offers guidance and advice regarding consideration of the setting of heritage assets. The guidance was produced by Historic England and is contextualised by NPPF and the related guidance in the National Planning Practice Guide.

3.32. There are useful concepts regarding setting illustrated in the document, and it lays out the recommended procedure for assessing the effects a development proposal may have on the surrounding assets and their settings. The document defines setting as the surroundings in which an asset is experienced, and discusses the effects that developments can have on the different types of setting heritage assets have.

“The contribution of setting to the significance of a heritage asset is often expressed by reference to views, a purely visual impression of an asset or place which can be static or dynamic, long, short or of lateral spread, and include a variety of views of, across, or including that asset.” (Paragraph 10)

3.33. As a result, this assessment takes into account the setting of all identified heritage assets and determines the impact that the proposed development may have on them. It is understood that views to and from the heritage asset, as well as any meaningful intervisibility that it shares with its surrounding landscape, can constitute significance. Detailed consideration of these views has been undertaken and any relevant impacts, with mitigation measures where appropriate, have been highlighted.

“Settings of heritage assets change over time. Understanding this history of change will help to determine how further development within the asset’s setting is likely to affect the contribution made by setting to the significance of the heritage asset. Settings of heritage assets which closely resemble the setting in which the asset was constructed or formed are likely to contribute to significance but settings which have changed may also themselves enhance significance, for instance where townscape character has been shaped by cycles of change and creation over the long term. Settings may also have suffered negative impact from inappropriate past developments and may be enhanced by the removal of the inappropriate structure(s).” (Paragraph 9)

3.34. As part of this assessment, the changes to an asset’s setting over time will be considered where appropriate. This will allow the significance of the setting’s contribution to the heritage value of an asset to be understood.

“Conserving or enhancing heritage assets by taking their settings into account need not prevent change; indeed, change may be positive, for instance where the setting has been compromised by poor development. Many places coincide with the setting of a heritage asset and are subject to some degree of change over time. NPPF policies, together with the guidance on their implementation in the Planning Policy Guidance (PPG), provide the framework for the consideration of change affecting the setting of undesignated and designated heritage assets as part of the decision-taking process.” (Paragraph 18)

- 3.35. Historic England, therefore, are not seeking to ensure that heritage assets do not preclude development and their protection should not prevent change. However, the more important a designated asset, the greater the weight should be given to its conservation. This assessment will identify the significance of designated and non-designated heritage assets and apply appropriate weight to the potential impact on them as a result of the Proposed Development.

Hedgerows Regulations 1997

- 3.36. Part II of Schedule 1 within the Hedgerows Regulations 1997 states the additional criteria for determining “important” hedgerows in an archaeological and historic context. This can be important for a site where hedgerows may require alteration or removal to accommodate the design of a proposal.

“1. The hedgerow marks the boundary, or part of the boundary, of at least one historic parish or township; and for this purpose, “historic” means existing before 1850.

2. The hedgerow incorporates an archaeological feature which is-

(a) included in the schedule of monuments compiled by the Secretary of State under section 1 (schedule of monuments) of the Ancient Monuments and Scheduled Areas Act 1979; or

(b) recorded at the relevant date in a sites and Monuments Record.

3. The hedgerow-

(a) is situated wholly or partly within an archaeological site included or recorded as mentioned in paragraph 2 or on land adjacent to and associated with such a site; and

(b) is associated with any monument or feature on that site.

4. The hedgerow-

(a) marks the boundary of a pre-1600 AD estate or manor recorded at the relevant date in a sites and Monuments Record or on a document held at that date at a Record Office; or

(b) is visibly related to any building or feature of such an estate or manor.

5. The hedgerow-

(a) is recorded in a document held at the relevant date at a Record Office as an integral part of a field system pre-dating the Inclosure acts; or

(b) is part of, or visibly related to, any building or other feature associated with such a system, and that system-

- (i) *is substantially complete; or*
- (ii) *is of a pattern which is recorded in a document prepared before the relevant date by a local planning authority, within the meaning of the 1990 Act(b), for the purposes of development control within the authority's area, as a key landscape characteristic."*

Rushcliffe Local Plan Parts 1 and 2

3.37. The approach to heritage and archaeology within the planning and development control processes for the Rushcliffe Borough Council area is summarised within Policy 11 of Part 1 (Core Strategy) and Policies 28 and 29 of Part 2 (Land and Planning Policies).

Policy 11: Historic Environment (Part 1)

- “1. *Proposals and initiatives will be supported where the historic environment and heritage assets and their settings are conserved and/or enhanced in line with their interest and significance. Planning decisions will have regard to the contribution heritage assets can make to the delivery of wider social, cultural, economic and environmental objectives.*
2. *The elements of Rushcliffe's historic environment which contribute towards the unique identity of areas and help create a sense of place will be conserved and, where possible, enhanced with further detail set out in later Local Development Documents. Elements of particular importance include:*
 - a) *industrial and commercial heritage such as the textile heritage and the Grantham Canal;*
 - b) *Registered Parks and Gardens including the grounds of Flintham Hall, Holme Pierrepont Hall, Kingston Hall and Stanford Hall; and*
 - c) *prominent listed buildings.*
3. *A variety of approaches will be used to assist in the protection and enjoyment of the historic environment including:*
 - a) *the use of appraisals and management plans of existing and potential conservation areas;*
 - b) *considering the use of Article 4 directions;*
 - c) *working with partners, owners and developers to identify ways to manage and make better use of historic assets;*
 - d) *considering improvements to the public realm and the setting of heritage assets within it;*

- e) ensuring that information about the significance of the historic environment is publicly available. Where there is to be a loss in whole or in part to the significance of an identified historic asset then evidence should first be recorded in order to fully understand its importance; and
- f) considering the need for the preparation of local evidence or plans.
4. Particular attention will be given to heritage assets at risk of harm or loss of significance, or where a number of heritage assets have significance as a group or give context to a wider area.”

Policy 28: Conserving and Enhancing Heritage Assets (Part 2)

- “1. Proposals that affect heritage assets will be required to demonstrate an understanding of the significance of the assets and their settings, identify the impact of the development upon them and provide a clear justification for the development in order that a decision can be made as to whether the merits of the proposals for the site bring public benefits which decisively outweigh any harm arising from the proposals.
2. Proposals affecting a heritage asset and/or its setting will be considered against the following criteria:
- a) the significance of the asset;
- b) whether the proposals would be sympathetic to the character and appearance of the asset and any feature of special historic, architectural, artistic or archaeological interest that it possesses;
- c) whether the proposals would conserve or enhance the character and appearance of the heritage asset by virtue of siting, scale, building form, massing, height, materials and quality of detail;
- d) whether the proposals would respect the asset’s relationship with the historic street pattern, topography, urban spaces, landscape, views and landmarks;
- e) whether the proposals would contribute to the long-term maintenance and management of the asset; and
- f) whether the proposed use is compatible with the asset.”

Policy 29: Development Affecting Archaeological Sites (Part 2)

- “1. Where development proposals affect sites of known or potential archaeological interest, an appropriate archaeological assessment and evaluation will be required to be submitted as part of the planning application. Planning permission will not be granted without adequate assessment of the nature, extent and significance of the

remains present and the degree to which the proposed development is likely to affect them.

2. *Where archaeological remains of significance are identified permission will only be granted where:*
 - a) *The archaeological remains will be preserved in situ through careful design, layout and siting of the proposed development; or*
 - b) *When in-situ preservation is not justified or feasible, appropriate provision is made by the developer for excavation, recording and for the post-excavation analysis, publication, and archive deposition of any findings (to be undertaken by a suitably qualified party), provided that it can be clearly demonstrated that there are wider public benefits of the development proposal which outweigh harm to heritage assets of archaeological interest in line with NPPF requirements”*
- 3.38. This impact assessment will therefore consider all designated and non-designated heritage assets identified within the above local policies in order to ensure that the proposed development does not substantially harm any heritage assets or their settings, in order to comply with policies in both the Rushcliffe Local Plan and the NPPF.

ASSESSMENT METHODOLOGY

Desk Based Assessment

- 3.39. The desk-based assessment was conducted to ascertain all historical and archaeological information relevant to the Application Site and the local area. A search of high-grade designated heritage assets such as Scheduled Monuments, World Heritage Sites, Registered Parks and Gardens of Special Historic Interest (PGSHI), Registered Battlefields and Heritage Coasts has been carried out within a 5km study zone of the Proposed Development, while Listed Buildings and Conservation Areas have been assessed within a 2km study zone. Non-designated sites within the local Historic Environment Record (HER) and similar sources have also been identified within a 1km study zone.
- 3.40. Study zones were implemented around the extent of all proposed construction works and do not include any existing access routes that do not require additional construction. The sizes of these study zones were selected to ensure that comprehensive and informative data was collated to characterise the direct and indirect impacts that the Proposed Development may have on historical and archaeological assets within the local area. Due to the nature of the records, some degree of overlap is possible (for example a site that has been recorded within both the HER and as a Listed Building) and some assets may therefore have been repeated.
- 3.41. Where appropriate, sites of exceptional value or sensitivity outside the study zones have also been assessed.
- 3.42. Historical databases and various archives were consulted to identify the designated assets and undertake the assessment. The main sources which were consulted include the:
- The National Heritage List for England (NHLE);
 - The Humber Historic Environment Record (HER);
 - Published sources available in the Humber HER;
 - Register of Parks and Gardens of Special Historic Interest (Historic England);
 - Register of Historic Battlefields (Historic England);
 - GIS shapefiles hosted via UK Government and Local Authority links;
 - Aerial imagery via Google Earth, Bing Maps and ArcGIS Pro global mapping;
 - National Collection of Aerial Photography;
 - Cambridge University Collection of Aerial Photography;
 - <http://www.britainfromabove.org.uk/>;

- Excavation reports hosted by Archaeology Data Service and OASIS; and
- Historic Maps accessible via the OS and National Library of Scotland.

Professional Guidance

3.43. The assessment has been conducted in accordance with the appropriate professional guidance, which includes:

- Code of Conduct, Chartered Institute of Field Archaeologists (CIfA) (2014)¹¹
- Standards and Guidance for Archaeological Desk Based Assessment, CIfA (2014)¹²

Map Regression Analysis

3.44. Analysis of historic maps can reveal the changes in land use and field boundaries in the area and can highlight potential areas of archaeological interest that may have been lost in the subsequent years. Relevant maps were consulted to undertake this analysis as part of the desk-based assessment and site walkover survey.

Aerial Photography and Placename Assessments

3.45. To identify potential archaeological features within the Application Site that are not recorded within the relevant databases, aerial photography of the land was examined in order to identify any cropmarks or markings within the Application Site that may be indicative of previously unknown features.

3.46. Similarly, a placename analysis of the local districts and areas comprising the Application Site was undertaken where relevant, as this can often determine the historical land use associated with the Application Site even when other evidence of this usage has been lost.

Assessment of Direct Effects

3.47. Potential direct effects during the construction phase are considered as physical disturbance of known or associated archaeological remains. These impacts can be caused through the construction processes within the footprint of the Proposed Development, including ancillary works such as access tracks. Direct impacts can affect both above ground and subsurface remains, which will both be considered within this assessment. The presence and character of any existing archaeological features will be identified within the site boundary, and the archaeological potential of the site assessed through a desk-based assessment of the

¹¹ CIfA (2014) *Code of Conduct*. Chartered Institute for Archaeologists.

¹² CIfA (2014) *Standards and Guidance for desk-based assessment*. Chartered Institute for Archaeologists.

surrounding archaeological resource and landscape. The significance of any impacts will be determined by considering the construction methodology within the Application Site and to what extent this would disturb any sub-surface remains.

Assessment of Indirect Effects

3.48. The assets that were identified through the sources previously listed were assessed for their significance using the criteria presented in **Table 1: Appendix 3B**. The magnitude of the indirect impacts upon these assets was determined by considering the views and intervisibility shared with the Proposed Development, as well as the nature, character, date, extent, setting and surviving remains of the feature where relevant. Indirect effects were then assigned using this information on the following scale:

- Major
- Major to moderate
- Moderate
- Moderate to low
- Low
- Low to negligible
- Negligible

3.49. Indirect effects of 'moderate' or above are considered significant and appropriate mitigation measures have been recommended where appropriate to lower the potential impact.

Visual Impact Assessment

3.50. A Zone of Theoretical Visibility (ZTV) was produced to identify sites with a greater potential for being indirectly impacted by the Proposed Development. The ZTV has been overlaid on the heritage assets within the study zones, to identify those that will potentially be visually impacted by the Proposed Development during the operational phase.

3.51. Digital Terrain Modelling sourced from digital height data derived from Ordnance Survey Ireland, with the viewer height set at 2m high was used to calculate the ZTV. The produced ZTV was 'bare earth' and therefore did not account for any elements in the landscape such as trees, hedgerows, walls or buildings that may help screen views, nor account for the influences of the weather upon any views.

The Importance of Setting

- 3.52. Setting can be important to the way in which historic assets or places are understood, appreciated and experienced. The Historic England document 'The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (Second Edition)' is used as guidance for determining the contributions made by settings to the heritage value of their assets, and how these settings may be sensitive to indirect impacts.
- 3.53. Where development is proposed it is important to identify and define the setting of the heritage asset and to assess how development might impact upon this resource. Setting often extends beyond the property boundary, or 'curtilage', of an individual historic asset into a broader landscape context. Less tangible elements can also be important in understanding the setting. These may include function, sensory perceptions or the historical, artistic, literary and scenic associations of places or landscapes. In the light of this guidance, development proposals should seek to avoid or mitigate detrimental impacts on the settings of historic assets.

Site Visit

- 3.54. A walkover survey was conducted at the Application Site on 5th February 2021. The primary aim of the survey was to identify any potential archaeological or historical features within the Application Site that are not recorded. The land and fields within the Application Site were documented photographically along with any possible features identified. The results of this survey also considered available information on the known designated and non-designated sites within and close to the Application Site.

Assessment Limitations

- 3.55. The consulted sources contain records of known archaeological and historic features. The record is not an exhaustive record of all surviving historic environment features and does not preclude the possible existence of archaeological remains of significance within the study zone, which are at present unknown or have been added to the records recently. It was assumed that official data provided by public bodies was accurate and up-to-date.
- 3.56. Views and effects were carefully assessed, but restrictions due to accessibility because of private land ownership or issues regarding Health and Safety may have limited assessment. However, no significant issues were encountered during the walkover survey.

BASELINE CHARACTERISATION

3.57. The following section outlines the historical and archaeological background within the extent of the study zones and the local area. This provides a clear depiction of the context and significance of the heritage assets that could potentially be impacted by the Proposed Development. The report outlines an assessment of the direct and indirect impacts of the Proposed Development and proposed mitigation measures. The potential for disturbing any remains within the footprint of the Proposed Development has been assessed and recommendations produced for any further investigative work.

Archaeological Period Classifications

3.58. The period classifications below provide chronological context for the archaeological assets which are discussed as part of this report.

- Lower Palaeolithic (pre 30,000 BC)
- Upper Palaeolithic (30,000 - 10,000BC)
- Mesolithic (10,000 – 4,000BC)
- Neolithic (4,000 – 2,500BC)
- Bronze Age (2,500 - 700BC)
- Iron Age (700BC – AD43)
- Roman (AD43 – AD450)
- Early Medieval (AD450 - AD1066)
- Medieval (AD1066 - AD1540)
- Post Medieval & Modern (AD1540 onwards)

Archaeological and Cultural Heritage Assets

3.59. Both designated and non-designated heritage assets have been identified within the relevant study zones, and are considered along with the results of previous archaeological work, the site visit and map regression analysis, in order to assess the archaeological potential within the Application Site. These results inform part of the direct impacts assessment. Designated heritage assets are also considered for indirect impacts resulting from the Proposed Development.

- 3.60. The full list of assets identified within their respective study zones is presented within **Table 2: Appendix 3B**. A total of nine Scheduled Monuments and three PGSHIs were identified within the 5km study zone (**Figure 3.1: Appendix 3A**), while 27 Listed Buildings (including two Grade I, one Grade II* and 24 Grade II) and two Conservation Areas were identified within the 2km study zone (**Figure 3.1: Appendix 3A**). In addition, 91 sites within the local HER were also identified within the 1km study area, including 78 point features and 13 polygon features (**Figure 3.2: Appendix 3A**). Two of these HER sites lie within the boundary of the Application Site. This includes the 'Well, Gotham' (L48/M48), which contains two references to the former post-medieval well depicted within the northwest of the site on OS historic mapping, as well as the findspot for 'flint flakes from Crow Wood Hill, Gotham' (L27) within the southeast of the Application Site.
- 3.61. The above assets have therefore all been assessed for potential direct and indirect effects within this report. However, no World Heritage Sites, Registered Battlefields or Heritage Coasts were identified within their respective study zones.

Prehistoric Period (Mesolithic, Neolithic, Bronze Age, Iron Age) (10,000BC – AD43)

- 3.62. Several sites from the Neolithic and Bronze Age periods appear to be present from the Historic Environment Record within the 1km study area. These include the aforementioned findspot for flint flakes (L27) within the southeast of the site, possibly dating to the Neolithic or Bronze Age, as well as the Bronze Age Cuckoo Bush Mound (L22/M22) located to the north of the Application Site. The location of the find spot and the proximity of the site to the Bronze Age mound provides notable evidence for prehistoric activity within the local area.

Roman Period (AD43 – AD450)

- 3.63. A 'Roman coin hoard from Rushcliffe Halt, East Leake' (L25) is recorded c. 650m to the east of the Application Site, while several further confirmed Romano-British scheduled monuments are located within the 5km study area around the site, including the:
- 'Romano-British Nucleated Enclosed Settlement and Roman Villa Complex at Glebe Farm' (NA01) c. 2.15km to the north;
 - 'Roman Site on Red Hill' (NA02) c. 2.6km to the northwest; and
 - 'Roman Villa and Enclosures N of Ratcliffe Lane' (NA06) c. 3.7km to the west.
- 3.64. The wider area around the Application therefore has evidence for Romano-British settlement activity, especially along the valley of the River Trent to the northwest, where scheduled monuments NA01, NA02 and NA06 are located.

Early Medieval and Medieval (AD450 - AD1540)

- 3.65. A number of HER sites within the 1km study area also relate to the early medieval and medieval periods, including the:
- 'Rushcliffe Moot, Court Hill, Gotham' (L67/M67);
 - 'Moated Manor, Rushcliffe Moat, Gotham' (L12/M12);
 - 'Earthworks at Town End Farm, West Leake' (L8986/L8988);
- 3.66. In addition, three confirmed medieval scheduled monuments lie within the 5km study area around the site, including the 'Anglo-Saxon Cremation Cemetery 750m West of Rempstone Hall' (NA03), 'Medieval Settlement Remains Immediately east of the Wymeshead' (NA04) and the 'Fishponds 90m South East of St Mary's Church' (NA08), located c. 3.35km to the southeast, c. 4km to the southwest and 4.9km to the north of the Application Site respectively. The wider area around the Application therefore has evidence for Anglo-Saxon and medieval settlement activity, with the scheduled monuments being similarly located by the River Trent and River Soar. The early medieval landscape indicated by the above monuments was mentioned during consultation with Samuel Clarke of Historic England.

Post Medieval & Modern (AD1540 onwards)

- 3.67. Most sites within the local HER relate to the post-medieval and modern periods. These sites illustrate the predominant land uses of the landscape over the last few hundred years and include agricultural farmsteads and various types of industrial activity. In particular there are a relatively large number of features associated with historical mining and quarrying within the 1km study area.
- 3.68. Within the Application Site there is one post-medieval feature, namely the former well feature (L48/M48) within the northwest section of the site. As the site appears to have been in agricultural usage since at least its 1884 depiction on OS historic mapping, post-medieval and modern remains within the site are likely to be associated with farming activity, while the surrounding area has considerable evidence of post-medieval quarrying and mining activity.

Local Archaeological Fieldwork / Previous Excavations

- 3.69. One archaeological event is recorded within the Application Site. This is the 'Casual find at Crow Hill Wood, Gotham' (ENT326), which is the event associated with the find spot for the HER monument 'Flint flakes from Crow Hill, Gotham' (L27).
- 3.70. Five other archaeological events are also recorded within c. 500m of the Application Site boundary. These include:

- ENT316/837 – ‘Field observations at Rushcliffe Moat, Gotham by Colquhoun’ associated with HER monument ‘Rushcliffe Moat, Gotham’ (L12);
- ENT3334 – ‘Field observations in Gotham parish by Colquhoun’ associated with HER monument ‘Cuckoo Bush Mound, Gotham’ (L22);
- ENT363 – ‘Field observations at site of remains of Old Trent Bridge’ associated with HER monument ‘Two arches from Old Trent Bridge’ (L9039);
- ENT371 – ‘Historical report: Cross, St George’s Church, Barton in Fabis’ associated with HER monument ‘Remains of churchyard cross, Barton in Fabis (L5243); and
- ENT633 – ‘Historical report: Enclosure, East Leake’ associated with HER monument ‘Cropmark, West Leake’ (L273).

3.71. The HER events recorded near to the Application Site therefore relate to archaeological features also recorded as monuments within the HER.

Map Regression Analysis

3.72. **Figure 3.3: Appendix 3A** contains the 1884 OS historic map of the Application Site, while **Figure 3.4: Appendix 3A** shows the 1900 OS historic map of the Application Site. These maps show the progression of land use and field boundaries in the area, and can highlight potential areas of archaeological interest that may have been lost in the subsequent years.

3.73. The 1884 OS historic map (**Figure 3.3: Appendix 3A**) shows that land within the Application Site mostly comprised agricultural fields of relatively regular size and shape through the site. The primary exception to this was the two fields within the northwest extent (**Fields 1 and 2**), which were depicted as rough, uncultivated land within an area labelled as ‘The Odells’. Other than internal field boundaries and what appeared to be drainage channels, the only other development depicted within the site boundary included three houses or small farmsteads: one within **Field 5** towards the northern section of the site (which includes the depiction of a well, recorded within the HER as L48/M48), one within **Field 9** further to the southeast and one on the boundary corner of **Fields 12 – 14**, in the southern section of the Application Site. It is noted that the recorded location of the well L48/M48 within the HER is slightly off, and georeferencing the 1884 OS map identifies that its true location lies inside the western edge of the area of coarse vegetation defining the former curtilage of the house here. The agricultural fields within the site itself were presumably associated with these houses/farmsteads at the time. No other features of archaeological interest are discernible within the site boundary on this map. Of note is the considerable amount of woodland and forestry depicted adjacent to the sections of the site, including blocks labelled as Gotham Wood, Spinney, Crownend Wood, Cuckoo Bush, Black Covert, Ash Spinney, Crow Wood, West Leake Hills and Foxhill Wood.

3.74. The 1900 OS historic map (**Figure 3.4: Appendix 3A**) shows the same composition of fields and boundaries, but with an additional field depicted as uncultivated land within 'The Odells' in the northwest and a field to the southeast of this depicted as parkland with ornamental trees. The three houses/farmsteads within the Application Site boundary are still depicted on this map, with the northernmost house labelled as 'Keepers Cottage'. No other features of archaeological interest are discernible within the site boundary on this map. The substantial amounts of woodland in the areas adjacent to the Application Site still appear to be present and unchanged.

Aerial Photography

3.75. Since the depiction of the Application Site on the 1900 OS historic mapping, several internal field boundaries have been removed from its northern and southern sections in order to enlarge these fields and facilitate their agricultural usage. Similarly, two of the houses/farmsteads that were depicted on historic mapping (in **Fields 5 and 9**) no longer appear to be standing and are visible on aerial imagery as overgrown plots. The footprints of woodland areas surrounding the Application Site also appear to be intact and almost identical to their extents on the 1900 OS map, with the exception of small additions to some blocks of woodland such as Cuckoo Bush. However, no cropmarks suggestive of archaeological features are discernible from a review of modern aerial photography on Google Earth, Bing Maps and ArcGIS Pro global mapping, although a dog-legged 'boundary' feature is very faintly visible within **Field 10** on Google Earth and Bing Maps, running in an approximate southwest to northeast direction. However, this feature does not correlate with any such feature on historic maps and its nature is not clear. Similarly, linear cropmarks denoting the lines of former field boundaries within the southernmost fields are very faintly visible on some aerial imagery such as Bing Maps.

3.76. Two historical aerial photographs of fields within the Application Site were identified from the Cambridge University Collection of Aerial Photography (CUCAP) and the Britain from Above (BfA) databases. These images did not cover the full site but only partial shots of certain fields, as detailed below:

- CUCAP – 'Gypsum mine, 1.50 miles ENE of Kingston upon Soar' (ABA68¹³), oblique taken in 1960 and shows **Fields 1 – 5**; and
- BfA – 'Rushcliffe Golf Course, Gotham, 1947' (EAW009490¹⁴), oblique taken in 1947 and showing **Fields 10 – 12, 15 & 16**.

3.77. However, these images do not reveal any cropmarks that may indicate sub-surface archaeological features. Two additional historical aerial images from 1978 and 1999 were

¹³ <https://www.cambridgeairphotos.com/location/aba68/>, last accessed 23/08/21

¹⁴ <https://www.britainfromabove.org.uk/en/image/EAW009490>, last accessed 23/08/21

identified within the National Collection of Aerial Photography database¹⁵¹⁶ that are likely to contain views of fields within the Application Site, but no digitised copies of these images were accessible.

Lidar Data

- 3.78. **Figure 3.5: Appendix 3A** contains the 1m/2m DTM Lidar data of the Application Site. This data was reviewed in order to identify the potential for hitherto-unknown archaeological features as well as identify the possible extents of known features.
- 3.79. The only clear internal features that show up are the field boundaries themselves. However, faint lines depicting likely plough marks are just visible within **Fields 5, 8 – 10 & 14 – 16**, while the aforementioned dog-legged ‘boundary’ feature is also faintly visible within **Field 10**. No other features of possible interest are discernible within the lidar data.

Site Visit

- 3.80. An archaeological walkover survey of the Application Site was conducted on Thursday 5th February 2021, undertaken by T Cousins and S Malone of Trent & Peak Archaeology. Weather conditions varied considerably during the course of the visit, including spells of sun, fog, cloud and rain. Conditions underfoot were very boggy in places due to previous rainfall, with some sizeable areas of standing water at surface level. However, this did not notably prevent the visibility of the ground overall and due to very low grass or new crop across the site, visibility of the ground was largely unobscured. The below results were provided by T Cousins and S Malone, and plates referenced are contained within **Appendix 3C**.

Area 1 (Fields 1 – 6)

- 3.81. Area 1 comprises the six northernmost fields bounded by Wood Lane on the northeast and on the southeast by a trackway, which is a public right of way. The fields are enclosed by hedgerows and bounded by steeply wooded hill-slopes on the north and west. These fields are relatively flat around the north and east, but sloping southwards and westwards in the southern part of the area (**Plates 1 – 3**).
- 3.82. The steep slope to the southwest opens out towards the Kingston Mine, which is a non-designated heritage asset (M64) located outside of the site boundary (**Plate 4**). Telegraph poles run approximately northeast to southwest across the site from Wood Lane towards the mine.
- 3.83. In the southeast corner of the northeastern field (**Field 5**), a non-designated heritage asset is recorded, consisting of a map depiction of a well. This location is clearly evident as an area of

¹⁵ <https://ncap.org.uk/frame/11-1-2-336-112>, last accessed 23/08/21

¹⁶ <https://ncap.org.uk/frame/19-1-1-98-288>, last accessed 23/08/21

coarser grass and trees. Some bricks and metal were seen among undergrowth in one area, perhaps relating to some former structure here, but no clearly in situ structural remains could be discerned (**Plate 5**).

- 3.84. With the exception of this small copse, the fields in Area 1 were comprised of very short grass which considerably aided the walk over survey. No archaeological finds or features were discernible in the six fields of Area 1 beyond the possible structural remains noted above.

Area 2 (Fields 7 – 11)

- 3.85. Area 2 is comprised of four rectangular enclosed fields all aligned generally north-south, with a fifth triangular field at the eastern edge. The continuation of Wood Lane bounds the north-eastern edge, and the southern side is entirely bounded by woodland (**Plates 6 – 8**). The area is essentially level at a height of some 90m AOD and the surface comprised of short grasses. A communications tower is present at the southern edge of the westernmost field (**Plate 7**).
- 3.86. To the northeast of Area 2, just off Wood Lane, is the Cuckoo Bush round barrow (M22) recorded by the Nottinghamshire HER. This is demarcated by a wooden fence and is publicly accessible via a path from Wood Lane, but is within woodland which screens the barrow from the Site (**Plates 9 – 11**).

Proposed Cable Route (between Fields 11 and 12)

- 3.87. The proposed cable route runs for approximately 420m through Leake New Wood an area of mixed, managed woodland between Areas 2 and 3 (**Plate 12**). The route is currently a wide grass trackway that is not publicly accessible beyond the entrance from Area 2, which is shared with a public footpath. No archaeological finds or features were identified during the survey of the cable route, which is not in the immediate vicinity of any heritage assets.

Area 3 (Fields 12 – 14)

- 3.88. Area 3 comprises five largely rectangular fields between Leake New Wood on the north and Crow Wood and Ash Spinney to the south. The area is again generally flat, at c. 90m AOD, but sloping away more steeply at the south-west and southeast where the rise in ground level back up towards Fox Hill and Area 4 is very evident (**Plates 13 – 15**). The ground surface was mixed short grass and young crop. Two residential dwellings, The Cottage and Stone House, were adjacent to and within the area. No archaeological remains were identified during the walk-over survey.

Area 4 (Fields 15 & 16)

- 3.89. Area 4 comprises two narrow rectangular fields forming an L-shape bounded to the north-east by a hedgerow which separates the site from Rushcliffe Golf Club, to the southeast by Stocking Lane, and by woodland dividing this area from Area 3 to the west (**Plates 16 – 17**).

Telephone poles run across the northern field. The two fields are divided by a trackway running from Stocking Lane along the edge of Crow Wood to the dwellings in Area 3.

- 3.90. Within the golf course is a moated enclosure (M12) recorded by the Nottinghamshire HER. This is on the northern slope of the hills some way beyond the trees seen to the left of **Plate 16**. The site is also a wooded area and is not visible from the Site (**Plate 18**). The discovery of flint flakes in the eastern corner of Area 4 (L27) is also recorded by the Nottinghamshire HER but nothing was visible in the vicinity.
- 3.91. The fields are generally level, between 90 – 95m AOD, but sloping away in the southwest where the wooded slope of Foxhill Wood borders Area 3 (**Plate 19**). Both fields were ploughed with young crop, and there were several patches of shallow standing water. No archaeological finds or features were seen in Area 4.

Setting of Designated Assets

- 3.92. Although the Site is located on high ground, much of the immediate surrounding area is dense woodland which effectively screens the Application Site from the surrounding Study Area, particularly to the north, northeast and west. In addition, there are further areas of high ground within the Study Area that affect the views to and from surrounding designated assets. Within the 2km area, these designated assets are effectively in four groups located at Gotham, East and West Leake, and at Kingston Hall and Park.

Gotham

- 3.93. The designated assets (listed buildings) at Gotham are located to the north of Site, predominantly within the historic core but with the Old School House nearer the western edge of the village. There are limited views to these assets from the north of Area 1, with the ground and woodland screening the views from the remainder of the Application Site. The most discernible assets are the church and old school building (**Plate 20**). Views from Gotham towards the Site are dominated by the wooded hill slopes, offering good screening effects (**Plates 21 – 22**).

East Leake

- 3.94. The designated assets within East Leake (listed buildings) are to the southeast of Area 4. Depending on the exact location of the assets, it is likely that some could have distant views of this part of the Application Site but from ground level the extent of urban development around the historic core would certainly interrupt these views. The plateau of higher ground extends some way southeast of Stocking Lane so that views as far west as Area 4 are limited (**Plates 23 & 24**).

West Leake

- 3.95. Situated to the southwest of Areas 3 and 4, the designated assets (listed buildings) within West Leake are well screened from the Application Site by the dense woodland surrounding

those areas (**Plates 25 – 26**). Additionally, the ground to the southeast undulates quite considerably. Areas 1 and 2 are also completely screened by the woodlands, and also by an area of high ground to the north of the village (**Plate 27**).

Kingston Hall, Park and West Leake Lane Assets.

- 3.96. A single listed building is shown at Kingston Fields Farm to the southwest of Areas 1 and 2. This is itself largely surrounded by trees and views to Areas 1 and 2 are screened by the thickly wooded hill slopes. This asset is west of Areas 3 and 4, but there are no views to the Application Site due to the woodland fringing West Leake Lane itself (**Plates 28 & 29**).
- 3.97. Kingston Hall estate is largely inaccessible to the public, but views from a point adjacent to the northern limit of the estate boundary wall on Gotham Road again shows the Application Site to be screened by the wooded hill slopes and other intervening areas of woodland (**Plate 30**). Woods belonging to the park itself would likely also form a further screen.

Scheduled Monuments

- 3.98. Given the results presented thus far, it is clear that views to or from the Site and designated assets within the study area are well screened by the topography of the wooded hill slopes and other areas of woodland. The possible exception among the more distant Scheduled Monuments was the Roman villa site at Glebe Farm. This lies beyond Gotham, to which there were views from the north of Area 1. However, this monument lies beyond Gotham Hill, which rises to the same elevation as the West Leake Hills, and there are no views to or from this designated asset and the Site (**Plate 31**).

Archaeological Geophysical Survey

- 3.99. As part of the evaluation of the archaeological potential for the Application Site, a geophysical gradiometer survey was undertaken by Target Archaeological Geophysics between the 22nd and 30th September 2021. A total of 78 hectares were surveyed and the results showed the following¹⁷:
- *“The results from geophysical survey in fields 1-16 of the proposed development display no sites of definite archaeological interest. No clear representation of archaeological settlement or activity in the form of enclosure remains or concentrations of significant response have been recorded. The survey results are dominated by responses from relatively recent landuse, including abundant small-scale ferrous, magnetic disturbance, cultivation trends, former land drains/suspected former land drains, buried services and weakly magnetic trends of uncertain origin.*

¹⁷ Nicholls, J (2021) *Geophysical Survey Report: Kingston Solar Farm, Nottinghamshire*. Target Archaeological Geophysics.

- *Responses worthy of further investigation have been recorded, the majority of which are indicative of relatively recent industrial activity, thought to be associated with past mining activity, quarrying, and possible kilns, for which there is considerable evidence within a 1000m radius of the site boundary. These responses are generally visible in the geophysical data as strongly magnetic burnt-fired anomalies and discrete positives, most notably in the survey results from fields 10-12.*
- *A sub-circular group of trends to the SE in Field 15 is deemed to be of tentative archaeological significance.*
- *Interpretation of the results from fields 1-16 has been complicated, and this is due mainly to a 'noisy' and variable magnetic background deriving from widespread modern disturbance across the site. This disturbance likely results from a combination of factors, including removal of past field boundaries, installation of multiple land drains/suspected land drains, intensive cultivation, and landscaping.*
- *Responses indicative of natural soil/geological origin are also apparent in the results from this survey."*

3.100. The full geophysical survey report is contained within **Appendix 3D** attached to this report.

ASSESSMENT OF DIRECT EFFECTS

Known Archaeological and Heritage Assets

- 3.101. There are no designated heritage assets located within or adjacent to the Application Site that could be physically impacted by the Proposed Development (see **Figure 3.1: Appendix 3A**). As such, no direct effects will occur on designated assets.
- 3.102. There are two non-designated archaeological sites from the Nottinghamshire HER that lie within the Application Site boundary (see **Figure 3.2: Appendix 3A**). This includes the 'Well, Gotham' (L48/M48), which contains two references to the former post-medieval well depicted within the eastern extent of **Field 5** on OS historic mapping, as well as the findspot for 'flint flakes from Crow Wood Hill, Gotham' (L27) within **Field 15**.
- 3.103. The site walkover survey identified that the location of the well (L48/M48) exists within an area of coarser grass and trees, which corresponds with its location depicted on the 1884 OS map. Some bricks and metal were seen among undergrowth in one area, perhaps relating to some former structure here, but no clearly in situ structural remains could be discerned (**Plate 5: Appendix 3C**). As such, there are no above-ground standing remains that could be physically impacted by the Proposed Development, although there is still potential for below-ground remains associated with the well. This area within the coarse vegetation has therefore been excluded from the development design (see **Figure 4 of Volume 2: Planning Application Drawings**) in order to avoid possible direct effects upon the well or any other sub-surface elements within the grounds of the adjacent 'Keeper's Cottage'.
- 3.104. Similarly, the curtilages of the two houses/farmsteads depicted on the 1884 OS map within the northwest corner of **Field 9** and on the corner of **Fields 12 – 14** have also been avoided within the development design by utilising buffer zones around their extents (see **Figure 4 of Volume 2: Planning Application Drawings**). As such, no direct effects will occur on any sub-surface remains associated with these features.
- 3.105. The other non-designated archaeological site within the Application Site boundary is the findspot for flint flakes (L27) within **Field 15**. This is recorded as an archaeological event within the HER and does not have any known remains currently present at its location. The site walkover survey assessed the area for any further surface finds or indications for archaeological features, but nothing was identified. As such, there are no known remains associated with L27 that could be directly impacted by the Proposed Development.
- 3.106. In consideration of the above and the implemented buffer zones utilised within the development design, **no direct effects** upon known archaeological and heritage assets are anticipated.

Archaeological Potential

- 3.107. Although the design of the Proposed Development includes exclusion zones in order to avoid directly impacting remains associated with known features within and around the site boundary, the remainder of the site possesses archaeological potential associated with multiple periods from prehistoric to post-medieval.
- 3.108. Archaeological potential associated with the prehistoric period is largely derived from the close proximity of the Application Site to the HER entry for the Bronze Age Cuckoo Bush Mound (L22/M22), which represents the round barrow located adjacent to the north of **Field 10**. In addition, **Field 15** contains the HER entry for the findspot for prehistoric flint flakes (L27). As a result, the Application Site is considered to have some degree of potential for prehistoric remains, particularly within **Fields 9 – 11** and **Field 15**, due to these areas being in close proximity to these ‘hotspots’ highlighted within the pre-application response.
- 3.109. There is lower potential for Romano-British remains within the Application Site, although it is noted that there are several scheduled monuments within the 5km study area associated with this period. However, these sites are largely evident along the valley of the River Trent to the northwest, where scheduled monuments NA01, NA02 and NA06 are located. There are no specific indicators for such remains possible within the site itself, but its location within a region with known Romano-British remains suggests there is a minor archaeological potential associated with this period.
- 3.110. The Application Site similarly sits within a region with notable early medieval (Anglo-Saxon) and medieval fabric. This includes three scheduled monuments within the 5km study area: the ‘Anglo-Saxon Cremation Cemetery 750m West of Rempstone Hall’ (NA03), ‘Medieval Settlement Remains Immediately east of the Wymeshead’ (NA04) and the ‘Fishponds 90m South East of St Mary’s Church’ (NA08). The wider area around the Application therefore has evidence for Anglo-Saxon and medieval settlement activity, with the scheduled monuments being similarly located to the Romano-British remains by the River Trent and River Soar. The early medieval landscape indicated by the above monuments was mentioned during consultation with Samuel Clarke of Historic England. As with the Romano-British period, there are no specific indicators for possible early medieval and medieval remains within the Application Site, but the evidence for such activity in the surrounding area suggest there is a minor archaeological potential associated with this period.
- 3.111. Potential for post-medieval archaeological remains is present throughout the site due to the majority of the site being within consistent agricultural usage since at least the 19th century, but likely much earlier. However, such remains are expected to be of low significance (former field boundaries, plough marks, drainage, etc), as indicated by analysis of historic maps, aerial imagery, lidar data and other sources, as well as the geophysical survey undertaken.
- 3.112. In consideration of the above, the Application Site is expected to possess archaeological potential associated with multiple periods from prehistoric to post-medieval. However, as highlighted within consultation with Emily Gillott, the Heritage Officer for Nottingham County

Council, there is limited information currently available within the Historic Environment Record due to a lack of investigative work being undertaken in the local area. A site walkover survey was undertaken to help inform the desk-based assessment of the archaeological potential, but nothing was identified. The geophysical gradiometer survey undertaken within the Application Site between the 22nd and 30th September 2021 did not identify any “*sites of definite archaeological interest*”¹⁸. As such, no potential for archaeological features of significance was indicated via the results of this survey. However, some tentative features likely to be associated with post-medieval mining and quarrying activity (as common in the surrounding area), as well as some possible features within the southeast of **Field 15**, may require further investigation to determine their nature but are not considered to represent significant archaeology. The full geophysical survey report is contained within **Appendix 3D** attached to this report.

- 3.113. Direct impacts relating to hitherto-unknown sub-surface remains therefore cannot be accurately ascertained at this stage, but the predicted likelihood of such impacts can be estimated by considering the ground disturbance of the construction methods that will be used, as below.

Ground Disturbance from Construction Methods

- 3.114. Different levels of intrusion and disturbance are anticipated for different construction elements. As such, the potential for impacting upon sub-surface remains is dependent on the type and scale of each construction element. The following information is provided in line with the National Monument Service (NMS) guidance and presents quantitative detail on each aspect of construction that is expected to have potential direct impacts upon archaeology.
- 3.115. All technical details are based on the best information available and are indicative only. They may change due to situations such as ground conditions, micro-siting or changes in technology. Individual impacts from each element of construction are estimates based on information available at this stage, and are assigned based on their resulting ground disturbance relative to the overall Application Site area, as well as the archaeological potential of the land.
- 3.116. Construction involving topsoil stripping has, in general, a lower potential for impacting upon sub-surface remains below the archaeological horizon, but retains a similar potential for encountering archaeological remains as construction involving deeper excavation work.

¹⁸ Nicholls, J (2021) *Geophysical Survey Report: Kingston Solar Farm, Nottinghamshire*. Target Archaeological Geophysics.

Excavation works

Substation

- 3.117. A large grid substation area is proposed within the western extent of **Field 5**. This element is expected to result in a ground disturbance area of 62m by 49.5m (**3,069m²**).

Inverter Substations

- 3.118. There will be 20 inverter substations positioned alongside the access tracks throughout the Application Site. Each station will measure approximately 16m by 6m, requiring an area of ground disturbance of 96m² each and **1,920m²** in total. In addition, 15 hardstanding areas, each measuring 16m by 16m, will also be implemented for the inverter substations. This will result in an additional ground disturbance area of **3,840m²**.
- 3.119. Each of these inverter substations will be positioned onsite through the use of a crane. It is anticipated that the site tracks can be used to provide a hardstanding for the crane and that no additional hardstanding areas will need to be constructed. The units will require ground excavation before establishing a hardstanding base for stability.

Cable Trenches

- 3.120. Depending on the functionality of the cable trenches, they will measure up to 1m wide and their total ground disturbance area is estimated to be c. **6,000m²**. The trenches will be excavated to a depth of approximately 1m and will be backfilled after the cables have been laid.

CCTV Bases

- 3.121. There will be approximately 106 CCTV cameras positioned along the perimeter fence. Each base is expected to require a concrete foundation of 0.75m by 0.75m which will therefore have an area of disturbance of c. 0.56m² each. This will result in a total ground disturbance of **59.63m²**

Equipment Containers

- 3.122. There will be two equipment containers implemented as part of the Proposed Development. Each container will measure c. 12.2m by 2.4m, requiring an area of ground disturbance of 29.3m² each and **58.6m²** in total.

Topsoil stripping

Access and Site Tracks

- 3.123. The access and site tracks are expected to measure c. 5,420m in length and have a typical width of c. 4m, therefore resulting in a total ground disturbance of approximately **21,680m²**. The access tracks will be constructed by stripping the topsoil and laying down a geotextile/geogrid. Crushed rock will then be layered and compacted on to the geotextile/geogrid in order to establish the access and site tracks.

Temporary Compound Area

- 3.124. Two temporary compound areas will be implemented in **Field 5** and **Field 12**. Each will measure c. 60m by 50m in a rectangular shape, resulting in a total ground disturbance area of c. **6,000m²**. This will be constructed by the stripping of topsoil and subsequent layering of crushed stone similar to the process for the site tracks.

Piling

Solar Panels

- 3.125. Solar panels will be mounted on galvanised metal mounting frames which will be supported by posts piled into the ground at a depth of c. 1 – 2m. The direct impacts from the piling are considered to be minimal due to the small total area covered, with each pile having a diameter of 0.1m and an area of disturbance of 0.008m². The number of pile-driven poles will be approximately 35,368, resulting in a total cumulative area of ground disturbance of c. **282.94m²**.

Perimeter Fence

- 3.126. Poles will also be inserted into the ground to support the perimeter fence. The total length of fence will be 9.88km with approximately 3,294 fence posts (proposed as one every 3m). Each fence post will disturb c. 0.03m² of ground, resulting in a total area of ground disturbed by the perimeter fence of **98.82m²** of the Application Site area.

Vehicle Movements

- 3.127. Vehicle movements are expected to be largely accommodated by the internal site tracks. Where off-road driving is required (e.g., placement or removal of piling), there is potential for ground compression or rutting in adverse/wet conditions. However, this is not expected to have any notable effect on sub-surface archaeology and the current agricultural use of the Application Site indicates that the ground is already subject to frequent movement of agricultural machinery.

Piling

- 3.128. Piling is anticipated to be done by a c. 2.95 tonne pile driver with rubber tracks. The relatively low weight of the vehicle (compared to standard agricultural vehicles which are currently on use on the Application Site) and the rubber tracks (as opposed to tyres) indicate that its activity is not expected to have any impact upon potential sub-surface remains.
- 3.129. A standard agricultural vehicle will also be used to move panels on areas without an access track where this is required. This vehicle will be of similar weight and specifications as other agricultural vehicles which are commonly used on the land.

Excavation and Topsoil Stripping

- 3.130. A standard 360° excavator will be used on site to excavate material. Movement of this vehicle will be limited; movement up once during excavation and down once during backfilling. The excavator will be on tracks and will largely move on areas due to be subsequently stripped of topsoil.

Summary of Ground Disturbance

- 3.131. Overall, the proposed footprint constitutes a relatively small percentage of the total area of the Application Site (80.65ha):
- 42,568.63m² for infrastructure (c. 5.28% of the Application Site area); and
 - 381.76m² for piling (c. 0.05% of the Application Site area).
- 3.132. The total ground disturbance area resulting from the Proposed Development is therefore **42,950.39m²** or c. **5.33%** of the Application Site area. As such, the potential for encountering or disturbing below-ground archaeology within the Application Site during the construction phase is considered to be relatively low compared to other types of development.

ASSESSMENT OF INDIRECT EFFECTS

- 3.133. The calculated ZTV was overlain onto the heritage assets map in order to identify those which have a greater potential to be visually impacted by the Proposed Development. The ZTV does not account for intervening hedgerows, trees or built structures, which will limit the intervisibility between the building/monument and the Proposed Development.
- 3.134. Within their respective study zones, a total of five scheduled monuments, two historic parks and gardens, two grade I listed buildings, one grade II* listed building and 24 grade II listed buildings are located within the ZTV. These assets are therefore assessed for indirect impacts below. Where non-designated heritage assets are considered to have substantial standing remains and/or sensitive settings, these will also be assessed for indirect effects.

Scheduled Monuments

Roman Site on Red Hill (NA02)

- 3.135. The Roman Site on Red Hill is a scheduled monument located c. 2.6km to the northwest of the Application Site. It does not have any digitised descriptions within the Historic England List, but its entry within the Nottinghamshire HER¹⁹ states:

“There is scope for suggesting that Red Hill was a site of considerable importance in the Roman period. Its location on a prominent hill-top site commanding the junction of the Soar with the Trent and overlooking the flood plain to the N, would be suitable either for a trading or temple site and the Soar itself could have marked the W boundary of Coritanian tribal territory at some time in the Roman period. The finds of Samian, metalwork, glass and coins are above average in quality and quantity for this part of the Trent Valley. There are finds from all centuries, but coin evidence would suggest a greater importance in the late Roman period.”

- 3.136. The site has been the subject of numerous archaeological investigative works, including walkover surveys, trenching and watching briefs, which have confirmed the presence of considerable sub-surface remains and artefacts from the Romano-British period, indicating a site of special importance. The scheduled monument therefore derives its primary heritage value from its sub-surface potential and its contributions to our understanding of the Romano-British period in the Trent Valley. This value will therefore not be affected by any possible views and intervisibility with the Proposed Development.
- 3.137. In addition to its sub-surface potential, the Roman site also derives certain significance from its prominent setting on the hilltop overseeing the river valley, particularly the Soar to the west and the Trent to the north. However, as the Application Site is located in the opposite

¹⁹ https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?uid=MNT12790&resourceID=1041, last accessed 25/08/21

direction from these rivers, the Proposed Development will not impact upon the visual relationship between the Roman Site and the two rivers. In addition, views to the southeast from the site are truncated by the substantial cooling towers contained within the adjacent Ratcliffe Power Station. These towers prevent most possible views with the Application Site and have significantly compromised the value and contribution of its setting in this direction. Due to the dominating presence of these towers, the scheduled monument is not considered to be at all sensitive to any possible views and intervisibility with the Proposed Development in this direction. Indirect effects upon the Roman Site on Red Hill are therefore anticipated to be **Negligible**.

Anglo-Saxon Cremation Cemetery 750m West of Rempstone Hall (NA04)

- 3.138. The Anglo-Saxon Cremation Cemetery 750m West of Rempstone Hall is a scheduled monument located c. 3.35km to the southeast of the Application Site. It is described within the Historic England List²⁰ as:

“The monument comprises a group of largely urned cremations within what appears to have been a low mound set beside a ring ditch that appears likely to represent a prehistoric monument which acted as a focus for the Anglo-Saxon activity.

[...]

Open area excavation and trenching within the east section identified a total of 75 cremations, of which 26 have been excavated and 49 remain unexcavated. Detailed hand excavation within a small area centred on SK 56293 24586 suggests an average of approximately 1.4 urns per m²; extrapolated across the whole (estimated as 0.12ha or 1200m²) and based on an assumption that around 50% of the area currently identified as the cemetery limits contains cremations (600m²), then this gives an estimate of around 840 cremations. Given the vagaries of estimating overall numbers, a total number of burials in the range of 500 to 1200 is possible.

[...]

A number of ‘early’ Anglo-Saxon finds, dating generally to the 5th and 6th centuries AD, lie directly below ploughsoil. Some finds have been heavily truncated by ploughing, and in some instances single large stones had been used to mark a burial. The machine excavation of eleven trenches, carried out to determine the extent of the cemetery, identified evidence of a possible ring ditch/ ring ditches (possibly indicating a Bronze Age barrow), suggesting that a prehistoric monument may have been the original focus for the cremations which were found to cluster on its south-east side.”

- 3.139. The scheduled monument therefore derives its primary heritage value from its sub-surface potential for prehistoric and Anglo-Saxon remains. In particular, the rarity of Anglo-Saxon settlement sites has meant that cemeteries from this period are the main contributors to our

²⁰ <https://historicengland.org.uk/listing/the-list/list-entry/1471412>, last accessed 25/08/21

understanding about the early Anglo-Saxon period. This value will therefore not be affected by any possible views and intervisibility with the Proposed Development.

- 3.140. Its setting comprises a single undeveloped field bordered by the CEMEX East Leake Quarry, Ashby Road A6006 and agricultural development on Rempstone Road. As such, while its immediate undeveloped setting benefits the monument, the wider area does not contribute to the heritage value of the monument or its setting. In addition, views and intervisibility with the Application Site are not expected to be possible due to the presence of significant intervening field boundaries and urban development within East Leake to its northwest. As such, indirect effects are anticipated to be **Negligible**.

Medieval Settlement Remains Immediately East of the Wymeshead (NA05)

- 3.141. The Medieval Settlement Remains Immediately East of the Wymeshead is a scheduled monument located c. 4km to the southwest of the Application Site. It is described within the Historic England List²¹ as:

“The monument includes the remains of medieval habitation representing areas of abandonment caused by the shifting and expansion of settlement northwards to form the present town of Kegworth and is situated immediately east of The Wymeshead on the western bank of the River Soar.

The remains take the form of a series of earthworks and buried features principally centred upon two hollow ways or main thoroughfares through the settlement which survive as linear depressions.

Documentary sources record the discovery of an Anglo-Saxon linked disc-headed pin of probable 9th century date immediately south of the Hermitage during the 1914-18 war. The pin is believed to have come from a destroyed burial mound, and suggests that the area was already a focus for settlement in the early medieval period. Additional finds have included a 15th-16th century kidney dagger within the hollow way alongside the river, suggesting that occupation of the area continued for a considerable time.”

- 3.142. The scheduled monument therefore derives its primary heritage value from its sub-surface potential, which its Historic England entry also describes as being likely to survive largely undisturbed and in good preservation. In addition to this, the designated area of the medieval settlement sits within an aesthetic setting on the western bank of the River Soar, upon an area of parkland largely enclosed on its west and south sides by mature trees. The resultant setting on the side of the river contributes greatly to the designated area. As a result, the monument would be considered somewhat sensitive to any visual impacts that would affect this setting or its visual relationship with the adjacent River Soar.

²¹ <https://historicengland.org.uk/listing/the-list/list-entry/1018359>, last accessed 25/08/21

- 3.143. Views and intervisibility with the Application Site are expected to be heavily restricted by areas of intervening vegetation and field boundaries. This was confirmed as the most likely scenario during the site walkover survey, which identified that views towards distant scheduled monuments such as this one were largely prevented by surrounding woodland on the hills around the Application Site. Any possible views and intervisibility from points are therefore likely to be limited and not at all harmful to the setting of the monument at this distance. Indirect effects are therefore anticipated to be **Negligible**.

Roman Villa and Enclosures N of Ratcliffe Lane (NA06) and Site Revealed by Aerial Photography, SE of Dunster Barn (NA07)

- 3.144. The Roman Villa and Enclosures N of Ratcliffe Lane is a scheduled monument located c. 3.7km to the west of the Application Site, while the Site Revealed by Aerial Photography, SE of Dunster Barn is a separate scheduled monument located adjacent to this, c. 3.95km to the west of the Application Site. Neither site has any digitised descriptions within the Historic England List, but their entries within the Nottinghamshire HER²²²³ are as follows:

“Roman villa consisting of a rectangular building (c.40m long) with a projecting wing to the north, with other buildings (including possible aisled barns) and enclosures around it. Material recovered from the site suggests a C2nd-C4th date.

[...]

Cropmarks of a large Roman villa complex, with the villa building, farm enclosures and probable aisled barns. There are also two rectangular enclosures which may predate the villa, and in fact may be of the Iron Age. A large pit alignment also crosses the site from south-east to north-west. The Romano-British farm buildings are in part laid out over this.” (NA06)

“Enclosures and small circles have been noted on aerial photographs, almost certainly the closes and round houses of an Iron Age/Romano-British village. The southern part of the site is enclosed by a large rectilinear enclosure.” (NA07)

- 3.145. While the two sites are recorded as separate monuments, their close proximity and similar dates suggest they may have been occupied together as part of the same Iron Age/Romano-British settlement, at least at one point in time. The adjacent designated areas are located within the same agricultural setting on the north side of Ratcliffe Lane and c. 1.3km to the southwest of the Roman Site on Red Hill (NA02). The settlement sites are also on the southern bank of a tributary stream to the River Soar, which would have presumably been integral to its position as well.

²² https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?resourceID=1021&uid=MLE4659, last accessed 25/08/21

²³ https://www.heritagegateway.org.uk/Gateway/Results_Single.aspx?resourceID=1021&uid=MLE4675, last accessed 25/08/21

- 3.146. The local setting appears largely undeveloped and its position on the stream bank provides a beneficial contribution to their heritage values as a result. As such, while the primary heritage value is derived from their potential for sub-surface remains associated with Iron Age and Romano-British settlement activity, they are also considered to be somewhat sensitive to visual impacts that may affect its local setting or relationship with the stream to their north. However, the wider area contains substantial modern development, in particular the Ratcliffe Power Station, for which the cooling towers dominate views to the east from within the local setting of the assets. The monuments are therefore not considered to be sensitive to views and intervisibility with the Proposed Development in this direction and at this distance.
- 3.147. Views and intervisibility with the Application Site are expected to be heavily restricted by areas of intervening vegetation and field boundaries, including that along the Remembrance Way to the southeast of the monuments. This was confirmed as the most likely scenario during the site walkover survey, which identified that views towards distant scheduled monuments such as these were largely prevented by surrounding woodland on the hills around the Application Site. Any possible views and intervisibility from points are therefore likely to be limited and not at all harmful to the setting of the monument at this distance. Indirect effects upon both scheduled monuments NA06 and NA07 are therefore anticipated to be **Negligible**.

Historic Parks and Gardens

Kingston Park Pleasure Gardens (NA10)

- 3.148. Kingston Park Pleasure Gardens is a Grade II Historic Park and Garden located c. 1.55km to the west of the Application Site. It is described within the Historic England database²⁴ as follows:

“Pleasure gardens and parkland of 1840-44 associated with Kingston Hall, designed by Edward Blore to complement the Hall of 1842-45.

*The 1840s pleasure gardens and parkland associated with Kingston Hall, Kingston-on-Soar, Nottinghamshire are designated at Grade II for the following principal reasons: * Intactness: The pleasure gardens are substantially intact and the parkland to the south of the Hall retains its historical configuration. * Designer: Edward Blore is an architect of national renown. Kingston Park is an unusual example of his holistic design ethos applied to the principal and ancillary buildings, landscape and wider estate, which adds considerable historic interest, amplified by its association with Lord Belper. * Group Value: The registered area is integral to the layout of the estate generally and has strong group value with, and contributes to the setting of, the Hall, Stables, Pavilion and Gotham Road Lodge, all listed at Grade II.”*

- 3.149. The asset retains much of its original character and architectural merit, including its principal house Kingston Hall and other Grade II listed buildings (NA36 – 39), the areas of parkland and

²⁴ <https://historicengland.org.uk/listing/the-list/list-entry/1001716>, last accessed 25/08/21

woodland surrounding the house and particularly to the south, and other features within its boundary such as the footprint of the former walled garden, the fish pond and the connecting footpaths. As such, the setting and character of the historic park remain faithful to its original design and contribute greatly to its heritage value. The asset is largely inaccessible to the public, but it is considered to be potentially sensitive to visual impacts, particularly those which may affect the visual relationship between the surrounding parkland areas and the principal house Kingston Hall.

- 3.150. Views and intervisibility between the Kingston Park Pleasure Gardens and the Proposed Development are expected to be largely restricted by woodland around both the asset itself and the Application Site. This was confirmed to be the case during the site visit, which identified that views from the northern extent of the park were screened by the wooded hill slopes (**Plate 30: Appendix 3C**). Such views are predicted to be typical for most of the park extent and especially for the principal building and core of the asset due to the mature woodland enveloping the northeastern sides of its curtilage. Any residual intervisibility that may be possible will be infrequent and partial, which would not be considered harmful to the setting of the park. Indirect effects are therefore anticipated to be **Low to negligible**.

Stanford Hall (NA11)

- 3.151. Stanford Hall is a Grade II Historic Park and Garden located c. 3.05km to the southeast of the Application Site. It is described within the Historic England database²⁵ as follows:

“A late C18 landscape park with gardens and pleasure grounds largely laid out in the C19, with additional early C20 features.

The grounds immediately surrounding the Hall are laid out with formal gardens to the south and south-west, an informal walk and tennis courts to the west, a largely open lawn to the north entrance front, and former aquatic enclosures set into the grassed slope to the east.”

- 3.152. The asset was depicted on the OS 1884 map as a large, open area of parkland interspersed with sections of woodland, ponds, trackways and ornamental trees. Within the southeast section of these areas was the core area comprising the principal building Stanford Hall, range buildings and walled gardens. Since this depiction, the parkland and woodland areas within the wider park areas have remained relatively unchanged, other than minor alterations to their footprints, but the core area has been fundamentally altered. This includes the 20th century additions to the principal building and the removal of the range buildings, walled gardens and sections of woodland, which have been replaced by a large compound of modern buildings in use as the Defence Medical Rehabilitation Centre (DMRC Stanford Hall), which now dominate the core setting of the asset. As such, the setting and character of the park is considered to have been compromised by the dominating presence of the modern compound and is not particularly sensitive to visual impacts, although this sensitivity increases slightly

²⁵ <https://historicengland.org.uk/listing/the-list/list-entry/1001640>, last accessed 25/08/21

for the large areas of original parkland across the northwestern sections of the designated area.

- 3.153. As the park lies only partially within the calculated ZTV of the Proposed Development, no clear views or intervisibility are predicted to be possible at this distance due to vegetation present along intervening field boundaries and roads, as well as the built environs of East Leake which lies between the two points. Indirect effects are therefore anticipated to be **Negligible**.

Listed Buildings

Grade I/II Listed Buildings within Gotham (NA13, NA16 & NA18 – 20)

- 3.154. A total of one Grade I and four Grade II listed buildings are situated within Gotham, located c. 1 – 1.15km to the northeast of the Application Site. These structures include:
- Grade I listed Church of St Lawrence (NA13) – Parish church originally dating from 13th century onwards, restored in 1789 and repaired 1869;
 - Grade II listed Store at South of Nottinghamshire Bus Depot (NA16) – Barn originally dating from mid-17th century but rebuilt in 19th century, now in use as a store;
 - Grade II listed Gotham Primary School (NA18) – School built in 1879, facing onto Kegworth Road on the northwest side of Gotham;
 - Grade II listed The Wellhouse (NA19) – Hexagonal wellhouse originally built in the mid-19th century, now a shelter on the junction of Leake Road and Main Street; and
 - Grade II listed The Manor (NA20) – House originally dating from the 16th century and rebuilt in the 17th century and altered in the 19th and 20th centuries.
- 3.155. The structures share an overall urban setting within the core of Gotham, particularly NA13, NA19 and NA20 due to their close proximity. The buildings mostly represent the surviving post-medieval fabric of the village, with the church also containing some medieval elements. Their primary heritage values are derived from their architectural merit and original features. The urban setting of the assets does not particularly contribute to the storehouse (NA16) or primary school (NA18), but the village centre location benefits the well house (NA19) due to its original function and social history within Gotham. Similarly, both the church (NA13) and the manor house (NA20) are set back from the village roads within their own defined curtilages which benefit their heritage value. These structures are therefore considered to be somewhat sensitive to visual impacts which may occur within their immediate surroundings, particularly for the church due to its Grade I listing, but are not sensitive to visual impacts which occur within the wider area outside Gotham, due to the substantial modern development within the surrounding urban environs.

3.156. Views and intervisibility with the Gotham listed buildings are expected to be largely screened by intervening vegetation as well as the built environs of Gotham itself. The site visit identified that limited views and intervisibility may be possible for the primary school (NA18) and the tower of the church (NA13), but these views are largely restricted to certain points within the Application Site such as **Field 5 (Plates 20 – 22: Appendix 3C)**. Such views at this distance will not be harmful to the settings or heritage values of the listed buildings. Indirect effects are therefore anticipated to be **Low** for the Church of St Lawrence (NA13), **Low to negligible** for the Gotham Primary School (NA18) and **Negligible** for the remaining three structures (NA16, NA19 & NA20).

Grade I/II Listed Buildings within East Leake (NA14 & NA25 – 35)

3.157. A total of one Grade I and 11 Grade II listed buildings are situated within the East Leake Conservation Area, located c. 1.5km to the southeast of the Application Site. These structures include:

- Grade I listed Church of St Mary (NA14) – Parish church with elements dating from the 12th, 14th, 15th and 17th centuries, but chancel rebuilt c. 1880 and vestry enlarged 1914. The church sits within open grounds, containing its surrounding graveyard, within the core of the village, facing onto Main Street and Station Road;
- Grade II listed Old Hall Farmhouse and Old Hall Squash Club (NA25) – Farmhouse and attached barn dating from late 17th century and mi-18th century, but altered 20th century;
- Grade II listed Chest Tomb Single Metre East of the Chancel of Church of St Mary (NA26) – Chest tomb to John Bley, 1731, by Church of St Mary;
- Grade II listed Glebe Farmhouse (NA27) – House and cottage constructed 1797-8, now a single house;
- Grade II listed The Pinfold (NA28) – Pinfold originally constructed in the 18th century, restored in 1980;
- Grade II listed 8, Main Street (NA29) – Early 19th century house;
- Grade II listed 10 and 12, Main Street (NA30) – Two late 18th century cottages;
- Grade II listed Number 25 Incorporating the Post Office (NA31) – House, dating to 1715 and 1728 but with 20th century alterations, now in use as a house and post office;
- Grade II listed Honeypot Cottage (NA32) – Two cottages originally constructed early and mid-17th century with 18th and 19th century alterations, now in use as a single cottage;
- Grade II listed Church House (NA33) – Late 18th century house;

- Grade II listed 1 and 3, Brookside (NA34) – Three cottages originally constructed in mid-17th century with 18th century alterations and extensions, then subsequently restored c. 1980. Now in use as two cottages; and
 - Grade II listed 1914-1918 War Memorial (NA35) – War memorial dating to c. 1919.
- 3.158. The structures share an overall urban setting within the East Leake Conservation Area and mostly represent the surviving post-medieval fabric within East Leake, with the church also containing some medieval elements. Their primary heritage values are derived from their architectural merit and original features. The urban setting of the assets does not particularly contribute to the heritage value of the residential structures such as the houses, cottages and farmhouse, although their proximity to one another lends certain group value within the core of the village. Nonetheless, most assets are not considered to be particularly sensitive to visual impacts due to the substantial amount of modern development within the surrounding East Leake village.
- 3.159. The primary exception to this is the Grade I listed Church of St Mary, which is set back from Main Street and Station Road within its own grounds. The grounds themselves contain its associated graveyard and benefit the local setting of the church considerably. This setting also remains relatively open, providing visual links with the surrounding buildings within East Leake. However, while the church would be considered sensitive to visual impacts which may affect this local setting or its visual relationship with the church, it is considerably less sensitive to visual impacts which may occur from areas outside East Leake itself, due to the substantial modern development within the surrounding urban environs.
- 3.160. Views and intervisibility between the East Leake listed buildings and the Proposed Development are expected to be largely screened by the surrounding built environs of East Leake, as well as by woodland around certain parts of the Application Site. The site visit identified that limited views and intervisibility may be possible for certain elements of the listed buildings, such as the tower of the Church of St Mary, but most views are very limited and likely to be almost entirely screened by surrounding modern development (**Plates 23 & 24: Appendix 3C**). Indirect effects are anticipated to be **Low to negligible** for the Church of St Mary (NA14) and **Negligible** for the remainder of the structures (NA25 – 35).

Grade II*/II Listed Buildings within West Leake (NA15 & NA21 – 24)

- 3.161. A total of one Grade II* and four Grade II listed buildings are situated within the West Leake Conservation Area, located c. 1.2 – 1.45km to the southwest of the Application Site. These structures include:
- Grade II* listed Church of St Helena (NA15) – Parish church with elements from the 12th, 14th and 15th centuries, and extensively restored in 1878. The church is set back from Main Street within a well-defined setting along with its associated graveyard and other features such as The Old Rectory (NA22), lychgate (NA23) and sundial (NA24);

- Grade II listed 55, Main Street (NA21) – House originally constructed in the mid-18th century;
- Grade II listed The Old Rectory (NA22) – Rectory from 1723 but altered early 19th and 20th centuries. Now in use as two houses;
- Grade II listed Lychgate at Entrance to Churchyard of Church of St Helena (NA23) – Lychgate dating to c. 1919, located at the Main Street entrance to the Church of St Helena; and
- Grade II listed Sundial in Churchyard of Church of St Helena, Single Metre South of the Chancel (NA24) – Sundial dating to the 18th century, with early 19th century alterations. Located in the grounds of the Church of St Helena.

3.162. The structures share an overall urban setting within the West Leake Conservation Area and are mostly associated with the Church of St Helena. The setting of the church is set back from Main Street within a well-defined setting which contains its associated graveyard and other features such as The Old Rectory (NA22), lychgate (NA23) and sundial (NA24). These features contribute to a group setting which benefits the heritage value of each of these structures. This setting also benefits from the surrounding mature trees, which help to enclose the setting and limit visibility between the listed buildings and wider urban development along Main Street. These listed buildings are therefore considered to be sensitive to visual impacts which may affect this group setting. The only asset not contained within the grounds of the church is 55 Main Street (NA21), which is a house located to the northeast, further along Main Street. This house derives its primary heritage value from its architectural merit, although its setting within the West Leake Conservation Area contributes somewhat to its value as well. It is considered to be somewhat sensitive to visual impacts within its local environs, but its location on the roadside surrounded by modern residences indicates that it would not be sensitive to visual impacts occurring from outside West Leake itself.

3.163. Views and intervisibility between the West Leake listed buildings and the Proposed Development are expected to be effectively screened by areas of mature trees within and around the village, especially for the structures within the grounds of the church. Modern buildings within West Leake are also expected to further screen any potential for such views. The site visit confirmed this to be the case and no particular visibility was identified to be possible (**Plates 25 – 27: Appendix 3C**). Indirect effects are therefore anticipated to be **Negligible** for all listed buildings within West Leake (NA15 & NA21 – 24).

Kingston Fields Farmhouse and Workshops (NA17)

3.164. The Kingston Fields Farmhouse and Workshops is a Grade II listed building located c. 1km to the west of the Application Site. Originally constructed in the mid-18th century, the asset was subsequently altered in the mid-19th century and remains in use as a house and workshops.

It derives its primary heritage value from its architectural merit and the group setting provided by their courtyard arrangement. The localised setting on its southeast side, abutting the local road, contributes to the character and setting of the buildings, but the western and northern sides contain large agricultural buildings which dominate its setting on these sides. The buildings are therefore considered to be somewhat sensitive to visual impacts which affect its southeastern 'courtyard' setting, but are not at all sensitive to visual impacts which affect the remainder of its curtilage.

- 3.165. Views and intervisibility between the listed building and the Proposed Development are expected to be largely screened by mature trees both around the asset itself as well as the woodland around the Application Site. The site visit confirmed that such views are mostly prevented by woodland fringing both West Leake Lane and the Application Site itself (**Plates 28 & 29: Appendix 3C**). Any residual intervisibility that may be possible will be infrequent and only partially possible through the woodland, which would not be considered harmful to the setting of the listed building. Indirect effects are therefore anticipated to be **Low to negligible**.

Grade II Listed Buildings within Kingston on Soar (NA36 – 39)

- 3.166. A total of four Grade II listed buildings are situated within the extent of the Kingston Park Pleasure Gardens historic park and garden (NA10), located c. 1.7 – 1.8km to the west of the Application Site. These structures include:
- Grade II Stable Block at Kingston Hall (NA36) – Stable block from 1842-6, now several houses;
 - Grade II Lodge and Attached Gateway (NA37) – Lodge and gateway for park, dating from 1846;
 - Grade II Kingston Hall (NA38) – Principal building of the historic park and garden from 1842-6, now divided into several houses; and
 - Pavilion in the Garden of Kingston Hall (NA39) – Pavilion constructed 1842-6 within the grounds of the historic park.
- 3.167. The contemporary structures all contribute to and benefit from their group setting within the Kingston Park Pleasure Gardens. As these assets form the fabric of the park, they share the same setting, sensitivity and views as those previously assessed for this asset (NA10). As such, indirect effects upon the listed buildings are similarly anticipated to be **Low to negligible**.

Summary of Indirect Effects

- 3.168. There were five Scheduled Monuments identified within the 5km study zone that lie inside the calculated ZTV of the Proposed Development. Indirect effects upon the monuments (NA02 & NA04 – 07) are anticipated to be **Negligible**.

- 3.169. There were two Historic Parks and Gardens identified within the 5km study zone that lie inside the calculated ZTV of the Proposed Development. Indirect effects upon Kingston Park Pleasure Gardens (NA10) are anticipated to be **Low to negligible**, while indirect effects upon Stanford Hall (NA11) are anticipated to be **Negligible**.
- 3.170. There were two Grade I Listed Buildings identified within the 5km study zone that lie inside the calculated ZTV of the Proposed Development. Indirect effects upon the Church of St Lawrence (NA13) are anticipated to be **Low**, while indirect effects upon the Church of St Mary (NA14) are anticipated to be **Low to negligible**.
- 3.171. There was one Grade II* Listed Building identified within the 5km study zone that lies inside the calculated ZTV of the Proposed Development. Indirect effects upon the Church of St Helena (NA15) are anticipated to be **Negligible**.
- 3.172. There were 24 Grade II Listed Buildings identified within the 5km study zone that lie inside the calculated ZTV of the Proposed Development. Indirect effects upon six of these structures (NA17 – 18 & NA36 – 39) are anticipated to be **Low to negligible**, while indirect effects upon the other 18 structures (NA16 & NA19 – 35) are anticipated to be **Negligible**.
- 3.173. There were no World Heritage Sites, Historic Battlefields or Heritage Coasts identified in their respective study zones. As such, these resources are not considered to be at risk of significant indirect effects.

MITIGATION MEASURES

Direct Effects upon Known Assets

3.174. As the design of the Proposed Development has implemented exclusion zones around any possible sub-surface remains associated with the well (L48/M48) in **Field 5**, as well as the post-medieval houses/farmsteads depicted in **Fields 5, 9 and the corner of Fields 12 – 14** on the 1884 OS map (see **Figure 4 of Volume 2: Planning Application Drawings**), no direct effects will occur on known assets. As such, **no further mitigation measures will be required to avoid impacts upon known assets.**

Archaeological Potential

3.175. Although the design of the Proposed Development includes exclusion zones in order to avoid directly impacting remains associated with known features within and around the site boundary, the remainder of the site possesses archaeological potential associated with multiple periods from prehistoric to post-medieval. However, as highlighted within consultation with Emily Gillott, the Heritage Officer for Nottingham County Council, there is limited information currently available within the Historic Environment Record due to a lack of investigative work being undertaken in the local area.

3.176. It is anticipated that further evaluation works will be required in order to fully quantify the specific archaeological potential associated with the above periods. To this end, it is recommended that an appropriate **programme of archaeological works is implemented prior to the commencement of the construction phase** of the Proposed Development. The archaeological works should aim to build on the results of the geophysical survey (see **Appendix 3D**) by utilising **trial trenches to target the anomalies identified**. As none of these anomalies are expected to indicate any archaeological remains of significance, such trenching would primarily aim to verify the results of the survey and investigate the nature of anomalies anticipated to be associated with former quarrying, mining or other features. The results of this trial trenching can then inform the need for any further archaeological work or site re-design as necessary. **It is considered that this approach would be sufficient as part of a post-determination planning condition**, but such requirements is at the discretion of the planning authorities and archaeological advisors at Rushcliffe Borough Council and Nottinghamshire County Council.

3.177. With the implementation of an appropriate programme of archaeological works, measures will be in place for the identification and preservation, either in-situ or by record, of any sub-surface archaeological remains. Requests and requirements for archaeological work at all stages is at the discretion of the planning authorities and archaeological advisors at Rushcliffe Borough Council and Nottinghamshire County Council.

Indirect Effects

- 3.178. Indirect effects upon the surrounding heritage assets have been assessed as overall Low in the worst case. Therefore, **no specific mitigation is considered to be required for the reduction of any visual impacts.**

RESIDUAL EFFECTS

- 3.179. As the design of the Proposed Development has implemented exclusion zones around any possible sub-surface remains associated with the well (L48/M48) in **Field 5**, as well as the post-medieval houses/farmsteads depicted in **Fields 5, 9 and the corner of Fields 12 – 14** on the 1884 OS map (see **Figure 4 of Volume 2: Planning Application Drawings**), no direct effects will occur on known assets. As such, no further mitigation measures will be required in relation to these sites and **no residual direct effects upon known assets are anticipated.**
- 3.180. Following the implementation of an appropriate archaeological programme of works, building on the results of the completed geophysical survey and undertaken prior to the construction stage of the Proposed Development, measures will be in place for the further evaluation of the specific archaeological potential of the Application Site, as well as the full recording and preservation of any sub-surface remains of significance that are identified during this or any further work as necessary. As such, residual direct effects upon hitherto-unknown archaeology as a result of the Proposed Development are anticipated to be **Low, on the assumption that the above measures are implemented.**
- 3.181. As no mitigation is expected to be required for indirect effects, residual indirect effects can be considered to be unchanged at **Low** in the worst case.

SUMMARY

- 3.182. All potential direct and indirect effects upon designated and non-designated heritage assets within the study zones have been assessed through appropriate methods.
- 3.183. As the design of the Proposed Development has implemented exclusion zones around any possible sub-surface remains associated with the well (L48/M48) in **Field 5**, as well as the post-medieval houses/farmsteads depicted in **Fields 5, 9 and the corner of Fields 12 – 14** on the 1884 OS map (see **Figure 4 of Volume 2: Planning Application Drawings**), **no direct effects will occur on known assets**. As such, no further mitigation measures will be required to avoid impacts upon known assets.
- 3.184. Although the design of the Proposed Development includes exclusion zones in order to avoid directly impacting remains associated with known features within and around the site boundary, the remainder of the site possesses archaeological potential associated with multiple periods from prehistoric to post-medieval. While there are currently no specific indicators for specific sub-surface remains that may be impacted by the Proposed Development, this general potential for sub-surface remains is present throughout the site. However, the results of the geophysical survey undertaken within the Application Site did not identify any anomalies likely to indicate archaeological features of significance. Residual direct effects upon hitherto-unknown archaeology as a result of the Proposed Development are therefore anticipated to be **Low**, on the assumption that an appropriate programme of archaeological works is implemented prior to the construction stage of the Proposed Development, including provision for further evaluation (trial trenching of identified geophysical anomalies) and protection of sub-surface archaeology within the Application Site.
- 3.185. Indirect effects upon the surrounding heritage assets have been assessed as overall **Low** in the worst case. Therefore, no specific mitigation is considered to be required for the reduction of any visual impacts.