

Windsock Solar Farm

Environmental Impact Assessment Scoping Report

Volume 2: Appendices (Part 1)

October 2026

PINS Ref: EN0110045

Windsock Solar Farm

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Appendix A

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APPENDIX A:
SITE LOCATION PLAN

CRANWELL, BRAUNCEWELL AND BYARD'S LEAP CP

Legend:

Site boundary

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
03	09/10/2026	Updated Title	DL	DL	HH
02	30/09/2026	Updated Title	FA	FA	HH
01	28/09/2026	Updated RLB	FA	FA	HH

Windsock Solar Farm

TITLE: Appendix A:
Figure 1: Site Location

ID: P665151_App_A_Site_Location_A3L

0 0.2 0.4
Kilometres

Scale: 1:10,000 @ A3

REV 03

Path: RSK Group\RSK Environment GIS Projects - 665151 - Windsock\01GIS

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Appendix B

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APPENDIX B:
PROPOSED DEVELOPMENT CONCEPT MASTERPLAN

Legend :

- Site boundary
- Solar fence
- Existing roads
- Potential area for Solar PV development and/or mitigation and enhancement
- Potential area for Solar PV development, Substation and/or BESS and/or mitigation and enhancement
- Potential area for mitigation and enhancement

1
2
3
4
5
6
7
8

Royal Air Force College Cranwell

Temple Bruer

Braunceston

Braunceswell Quarries

CRS: EPSG:27700
Projection: Transverse Mercator
Ellipsoid: OSGB 1936
Units: meters

Location Plan: Not to scale

Rev	Date	Description	Drn	Chk	App
08	13/10/2026	RLB Update	IR	HH	HH

Windsock Solar Farm

SLR Windsock Solar Farm

TITLE:

Appendix B:
Figure 1: Proposed Development concept masterplan

ID: EN0110045

Scale 1:5,000 @A1

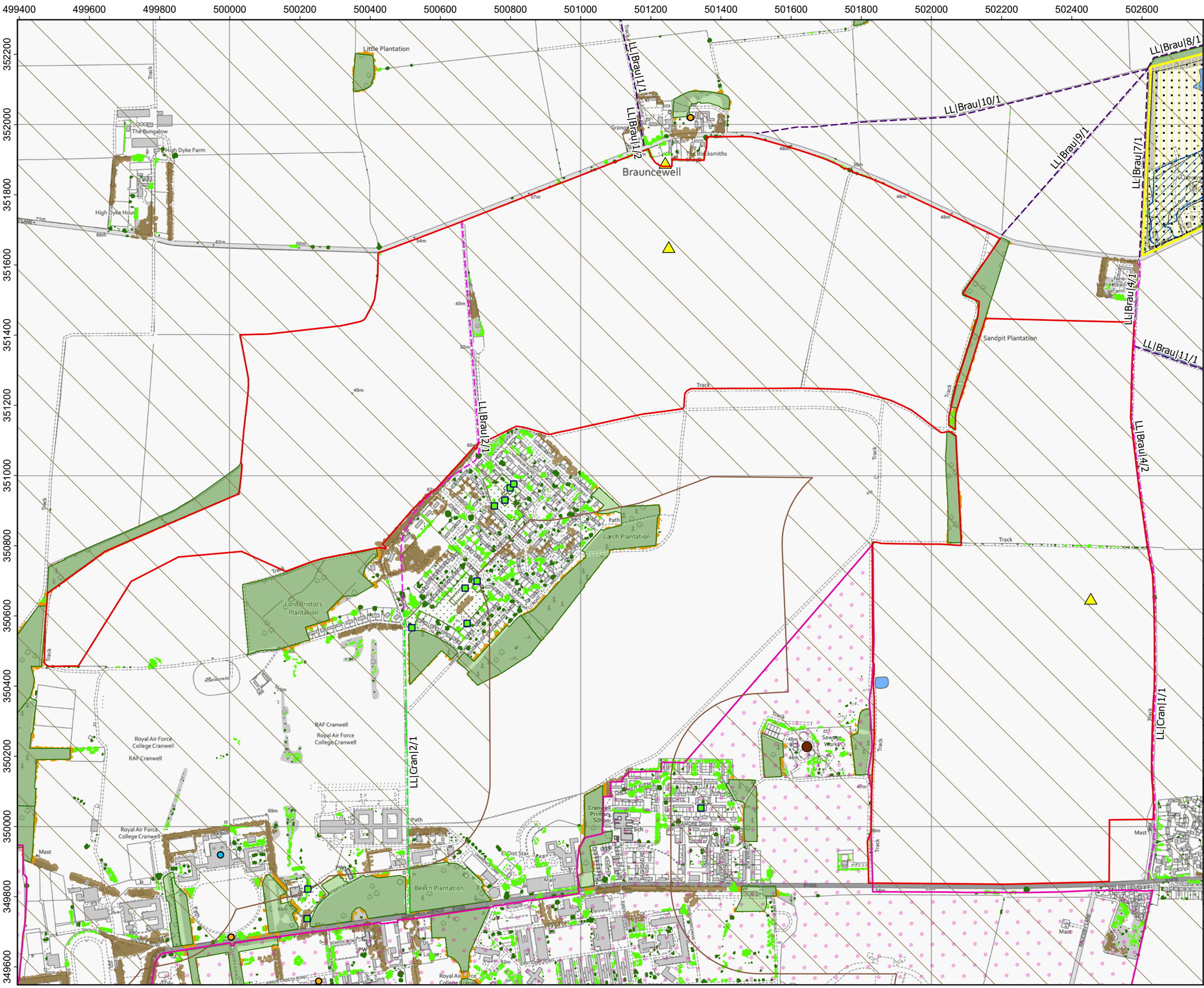
REV.08

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Appendix C

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APPENDIX C:
ENVIRONMENTAL FEATURES PLAN



Legend:

- Site boundary
- Listed Buildings
  - II
  - II*
- Public Rights of Way
  - Footpaths
  - Public Bridleways
  - Restricted Byway
- OS Open Greenspace Access Point
- OS Open Greenspace
- Potentially contaminative land use (sewage treatment works)
- Recorded historical mineral extraction site
- Local Geological Site (Brauncewell Quarry)
- Limestone Mineral Safeguarding Area
- Surface Water Area
- Nitrate Sensitive Areas
- Authorised Landfill Site
- Open Mosaic Habitat (Draft)
- National Forest Inventory (2024)
- National Trees Outside Woodland
  - Group of Trees
  - Lone Tree
  - National Forest Inventory Over Hanging Canopy
  - Small Woodland

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter



Rev	Date	Description	Drn	Chk	App
04	09/10/2026	Updated Title	DL	DL	HH
03	04/10/2026	Revised base map	DL	DL	HH
02	01/10/2026	Updated Title	FA	FA	HH

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TITLE: Appendix C:
Figure 1: Environmental Features Plan

ID: P665151_App_C_Environmental_Features_A3L

0 0.2 0.4
Kilometres

Scale: 1:10,000 @ A3

REV 04

Path: RSK Group\RSK Environment GIS Projects - 665151 - Windsock\01GIS

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Appendix D

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APPENDIX D: SIGNIFICANCE CRITERIA

1.1 Air quality

1.1.1 The significance level attributed to each effect will be assessed based on the magnitude of change due to the Proposed Development and the sensitivity of the affected receptor.

1.1.2 The significance of effects is only assigned following the implementation of additional mitigation measures. Additional mitigation will ensure that a potential significant adverse effect will not occur and so the residual effect will be not significant.

Construction and decommissioning phases: impacts from dust and particulate matter emissions

1.1.3 The Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 1]** criteria and methodology will be adopted to determine the sensitivity of the receptor and the magnitude of change.

Sensitivity of the area

1.1.4 **Table 1** below sets out the general principles, along with professional judgement, that will be considered to determine the scale of sensitivity that will be applied to receptors identified and considered within the construction phase and decommissioning phase assessments.

Table 1: Sensitivity of different types of receptor to dust soiling, health effects and ecological effects

Receptor sensitivity	Sensitivity of people to dust soiling effects	Sensitivity of people to the health effects of PM_{10}	Sensitivity of receptors to ecological effects
High	Surrounding land where: • Users can reasonably expect an enjoyment of a high level of amenity; or • The appearance, aesthetics or	• Locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where	• Locations with an international or national designation and the designated features may be affected by dust soiling; or • Locations where there is a community of a particularly dust

Receptor sensitivity	Sensitivity of people to dust soiling effects	Sensitivity of people to the health effects of PM_{10}	Sensitivity of receptors to ecological effects
	value of their property would be diminished by soiling; and • The people or property would reasonably be expected to be present continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. • Indicative examples include dwellings, museums and other culturally important collections, medium and long term car parks and car showrooms.	individuals may be exposed for eight hours or more in a day). • Indicative examples include residential properties, hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.	sensitive species such as vascular species included in the Red Data List For Great Britain **[Ref. 2]**. • Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.
Medium	Surrounding land where: • Users would expect to enjoy a reasonable level of amenity, but would not reasonably expect to enjoy the same level of amenity as in	• Locations where the people exposed are workers and exposure is over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a	• Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown; or • Locations with a national designation where the features may be affected by dust deposition. • Indicative example

Receptor sensitivity	Sensitivity of people to dust soiling effects	Sensitivity of people to the health effects of PM_{10}	Sensitivity of receptors to ecological effects
	their home; or • The appearance, aesthetics or value of their property could be diminished by soiling; or • The people or property wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. • Indicative examples include parks and places of work.	day). • Indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM_{10}, as protection is covered by Health and Safety at Work legislation.	is a Site of Special Scientific Interest (SSSI) with dust sensitive features.
Low	Surrounding land where: • The enjoyment of amenity would not reasonably be expected; or • Property would not reasonably be expected to be diminished in appearance, aesthetics or value by soiling; or	• Locations where human exposure is transient. • Indicate examples include public footpaths, playing fields, parks and shopping streets.	• Locations with a local designation where the features may be affected by dust deposition. • Indicative example is a local Nature Reserve with dust sensitive features.

Receptor sensitivity	Sensitivity of people to dust soiling effects	Sensitivity of people to the health effects of PM_{10}	Sensitivity of receptors to ecological effects
	• There is transient exposure, where the people or property would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. • Indicative examples include playing fields, farmland (unless commercially-sensitive horticultural), footpaths, short term car parks and roads.		

1.1.5 **Tables 2** to **4** below derived from IAQM Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 1]** and show how the sensitivity of the area may be determined for dust soiling, human health and ecological impacts respectively. These tables take account of a number of factors which may influence the sensitivity of the area when determining dust impacts during the construction and decommissioning phases.

Table 2: Sensitivity of the area to dust soiling effects on people and property

Receptor sensitivity	Number of receptors	Distance from the source (m)			
		<20	<50	<100	<250
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low

Receptor sensitivity	Number of receptors	Distance from the source (m)			
		<20	<50	<100	<250
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

Notes are derived from IAQM Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 1]** and explain how the sensitivity of the area to dust soiling effects on people and property is determined:

a) The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout.
b) Estimate the total number of receptors within the stated distance. Only the highest level of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors <20 m of the source and 95 high sensitivity receptors between 20 and 50 m, then the total of number of receptors <50m is 102. The sensitivity of the area in this case would be high.
c) For trackout, the distances should be measured from the side of the roads used by construction traffic. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50 m from the edge of the road.

Table 3: Sensitivity of the area to human health impacts

Receptor sensitivity	Annual mean PM_{10} concentration	Number of receptors	Distance from the source (m)			
			<20	<50	<100	<250
High	>32 µg/m^3	>100	High	High	High	Medium
		10-100	High	High	Medium	Low
		1-10	High	Medium	Low	Low
	28-32 µg/m^3	>100	High	High	Medium	Low
		10-100	High	Medium	Low	Low
		1-10	High	Medium	Low	Low
	24-28 µg/m^3	>100	High	Medium	Low	Low
		10-100	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	<24 µg/m^3	>100	Medium	Low	Low	Low
		10-100	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Medium	>32 µg/m^3	>10	High	Medium	Low	Low
		1-10	Medium	Low	Low	Low
	28-32 µg/m^3	>10	Medium	Low	Low	Low
		1-10	Low	Low	Low	Low
	24-28 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low

Receptor sensitivity	Annual mean PM_{10} concentration	Number of receptors	Distance from the source (m)			
			<20	<50	<100	<250
	<24 µg/m^3	>10	Low	Low	Low	Low
		1-10	Low	Low	Low	Low
Low	-	≥1	Low	Low	Low	Low

Notes are derived from IAQM Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 1]** and explain how the sensitivity of the area to human health impacts is determined:

a) The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout.
b) Estimate the total within the stated distance (e.g. the total within 250m and not the number between 100 and 250m), noting that only the highest level of area sensitivity from the table needs to be considered. For example, if there are 7 high sensitivity receptors <20m of the source and 95 high sensitivity receptors between 20 and 50m, then the total of number of receptors <50m is 102. If the annual mean PM_{10} concentration is 29µg/m^3, the sensitivity of the area would be high.
c) Most straightforwardly taken from the national background maps but should also take account of local sources. The values are based on 32µg/m^3 being the annual mean concentration at which an exceedance of the 24-hour objective is likely in England, Wales and Northern Ireland. In Scotland there is an annual mean objective of 18µg/m^3.
d) In the case of high sensitivity receptors with high occupancy (such as schools or hospitals) approximate the number of people likely to be present. In the case of residential dwellings, just include the number of properties.
e) For trackout, the distances should be measured from the side of the roads used by construction traffic. The impact declines with distance from the site, and it is only necessary to consider trackout impacts up to 50m from the edge of the road.

Table 4: Sensitivity of the area to ecological impacts

Receptor sensitivity	Distance from the source (m)	
	<20	<50
High	High	Medium
Medium	Medium	Low
Low	Low	Low

Notes are derived from IAQM Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 1]** and explain how the sensitivity of the area to ecological impacts is determined):

a) The sensitivity of the area should be derived for each of the four activities: demolition, construction, earthworks and trackout and for each designated site.
b) Only the highest level of area sensitivity from the table needs to be considered.
c) For trackout, the distances should be measured from the side of the roads used

Receptor sensitivity	Distance from the source (m)	
	<20	<50
by construction traffic. The impact declines with distance from the site.		

Dust emission magnitude

1.1.6 **Table 5** below is derived from IAQM Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 1]** and presents the potential magnitude of change for dust emissions that will be used in undertaking the construction and decommissioning phases assessment.

Table 5: Scale of magnitude for dust emission impacts

Activity	Dust emissions magnitude	Description
Demolition	Large	Total building volume >75,000m^3, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >12m above ground level.
	Medium	Total building volume 12,000m^3 - 75,000m^3, potentially dusty construction material, demolition activities 6m – 12m above ground level.
	Small	Total building volume <12,000m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <6m above ground, demolition during wetter months.
Earthworks	Large	Total site area >110,000m^2, potentially dusty soil type (e.g. clay), >10 heavy earth moving vehicles active at any one time, formation of bunds >6m in height.
	Medium	Total site area 18,000m^2 - 110,000m^2, moderately dusty soil type (e.g. silt), 5 – 10 heavy earth moving vehicles active at any one time, formation of bunds 3m – 6m in height.
	Small	Total site area <18,000m^2, soil type with large grain size (e.g. sand), <5 heavy earth moving vehicles active at any one time, formation of bunds <3m in height.
Construction	Large	Total building volume >75,000m^3, on site concrete batching, sandblasting
	Medium	Total building volume 12,000m^3 - 75,000m^3, potentially dusty construction material (e.g. concrete), on site concrete batching.
	Small	Total building volume <12,000m^3, construction material with low potential for dust release (e.g. metal cladding or timber).
Trackout	Large	>50 HDV (>3.5t) trips in any one day, potentially

Activity	Dust emissions magnitude	Description
		dusty surface material (e.g. high clay content), unpaved road length >100m.
	Medium	20 – 50 HDV (>3.5t) trips in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50m – 100m.
	Small	<20 HDV (>3.5t) trips in any one day, surface material with low potential for dust release, unpaved road length <50m.

Risk of dust impacts

1.1.7 The sensitivity of the area (as shown in **Tables 1** to **4**) and dust emission magnitude (as shown in **Table 5**) will be combined using **Table 6** below to determine the risk of dust impacts with no mitigation applied, which will be used to recommend site-specific mitigation measures. The classification of risk is based upon the IAQM Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 1]**.

1.1.8 The IAQM Guidance on the Assessment of Dust from Demolition and Construction v2.2 **[Ref. 1]** makes reference to the use of professional judgement when assessing the significance of the effects of dust impacts from construction and decommissioning activities. 'High risk' is considered to be **significant** and 'medium risk', 'low risk' and 'negligible' are considered to be **not significant**.

Table 6: Risk of dust impacts (without mitigation)

Activity	Sensitivity of the area	Dust emission magnitude		
		Large	Medium	Small
Demolition	High	High risk	Medium risk	Medium risk
	Medium	High risk	Medium risk	Low risk
	Low	Medium risk	Low risk	Negligible
Earthworks	High	High risk	Medium risk	Low risk
	Medium	Medium risk	Medium risk	Low risk
	Low	Low risk	Low risk	Negligible
Construction	High	High risk	Medium risk	Low risk
	Medium	Medium risk	Medium risk	Low risk
	Low	Low risk	Low risk	Negligible
Trackout	High	High risk	Medium risk	Low risk
	Medium	Medium risk	Medium risk	Low risk
	Low	Low risk	Low risk	Negligible

Construction and decommissioning phases: exhaust emissions impact from operation of equipment

1.1.9 Exhaust emissions from construction and decommissioning plant may have an impact on local air quality in the vicinity of the Site. A qualitative impact assessment will be undertaken with reference to the Greater London Authority Non-Road Mobile Machinery Practical Guide **[Ref. 3]**. and based on professional judgement considering the following factors:

- The duration of the construction/decommissioning phase;
- The number and type of construction/decommissioning plant that could be required; and
- The number and proximity of sensitivity receptors to the proposed development site.

Construction and decommissioning phases: road traffic exhaust emissions impacts

1.1.10 The significance of effects of exhaust emissions arising from construction and decommissioning vehicles will be evaluated qualitatively using professional judgement with reference to the Environmental Protection UK and IAQM Land-Use Planning & Development Control: Planning for Air Quality **[Ref. 4]**, Natural England Air Pollution and Development: Advice for Local Authorities **[Ref. 5]** and JNCC Guidance on Decision-making Thresholds for Air Pollution **[Ref. 6]**.

Sensitivity of the receptor

1.1.11 Matrices for determining the sensitivity of the receptor are not available in Environmental Protection UK and IAQM Land-Use Planning & Development Control: Planning for Air Quality **[Ref. 4],** Natural England Air Pollution and Development: Advice for Local Authorities **[Ref. 5]** and JNCC Guidance on Decision-making Thresholds for Air Pollution **[Ref. 6]**, and therefore matrices from IAQM on the Assessment of Dust from Demolition and Construction **[Ref. 1]** as shown in **Table 7** are used.

Table 7: Scale of receptor sensitivity

Sensitivity of receptor	Human receptors	Ecological receptors
High	• Locations where members of the public are exposed over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may	• Locations with an international or national designation and the designated features may be affected by dust soiling. • Locations where there is a community of a particularly dust sensitive species such as vascular species included in the

Sensitivity of receptor	Human receptors	Ecological receptors
	be exposed for eight hours or more in a day). • Indicative examples include residential properties, hospitals, schools and residential care homes should also be considered as having equal sensitivity to residential areas for the purposes of this assessment.	Red Data List For Great Britain **[Ref. 2]**. • Indicative examples include a Special Area of Conservation (SAC) designated for acid heathlands or a local site designated for lichens adjacent to the demolition of a large site containing concrete (alkali) buildings.
Medium	• Locations where the people exposed are workers and exposure is over a time period relevant to the air quality objective for PM_{10} (in the case of the 24-hour objectives, a relevant location would be one where individuals may be exposed for eight hours or more in a day). • Indicative examples include office and shop workers, but will generally not include workers occupationally exposed to PM_{10}, as protection is covered by Health and Safety at Work legislation.	• Locations where there is a particularly important plant species, where its dust sensitivity is uncertain or unknown. • Locations with a national designation where the features may be affected by dust deposition. • Indicative example is a Site of Special Scientific Interest (SSSI) with dust sensitive features.
Low	• Locations where human exposure is transient. • Indicate examples include public footpaths, playing fields, parks and shopping streets.	• Locations with a local designation where the features may be affected by dust deposition. • Indicative example is a local Nature Reserve with dust sensitive features.

Magnitude of change

1.1.12 The screening criteria and thresholds used for assessing the construction and decommissioning phases road traffic exhaust emissions are presented in **Tables 8** and **9**. If these criteria are not exceeded, it is unlikely that there will be any significant effects on air quality.

Table 8: Screening criteria for requiring an air quality assessment derived from Environmental Protection UK and IAQM Land-Use Planning & Development Control: Planning for Air Quality **[Ref. 4]**

The development will	Indicative criteria to proceed to an air quality assessment
Cause a significant change in Light Duty Vehicle (LDV) traffic flows on local roads with relevant receptors	A change of LDV flows of: • more than 100 Annual Average Daily Traffic (AADT) within or adjacent to an Air Quality Management Area (AQMA); or • more than 500 AADT elsewhere.
Cause a significant change in Heavy Duty Vehicle (HDV) flows on local roads with relevant receptors	A change of HDV flows of: • more than 25 AADT within or adjacent to an AQMA; or • more than 100 AADT elsewhere.

Table 9: Screening thresholds derived from JNCC Guidance on Decision-making Thresholds for Air Pollution **[Ref. 6]**

AADT change required to trigger exceedance of 1% of critical levels for nitrogen oxides (NO_x) and ammonia at difference distances from a road			
Distance from road (m)	1% of critical level for NO_x (30µg/m^3)	1% of critical level for ammonia (1µg/m^3)	1% of critical level for ammonia (3µg/m^3)
25	547	731	2,194
50	917	11,45	3,434
100	1,620	1,791	5,372
150	2,410	2,327	6,980
200	3,242	2,802	8,406

AADT change required to trigger exceedance of 1% of critical loads for nitrogen deposition at difference distances from a road				
Distance from road (m)	1% of critical load (5kg-N/ha/yr)	1% of critical load (10kg-N/ha/yr)	1% of critical load (15kg-N/ha/yr)	1% of critical load (20kg-N/ha/yr)
Deposition for forest vegetation				
20	207	415	622	829
50	303	606	909	1,212
100	443	887	1,330	1,773
150	554	1,108	1,661	2,215
200	648	1,297	1,945	2,594
Deposition for short vegetation				

20	359	717	1.076	1,434
50	529	1,058	1.587	2,116
100	780	1,561	2.341	3,121
150	980	1,959	2.939	3,918
200	1,151	2,302	3.453	4,604

Note:

The impacts from the Proposed Development and other nearby planned and permitted projects (an in-combination assessment) are less than 1% of the critical level/load can be considered insignificant.

Significance of effect

1.1.13 Environmental Protection UK and IAQM Land-Use Planning & Development Control: Planning for Air Quality **[Ref. 4]**, Natural England Air Pollution and Development: Advice for Local Authorities **[Ref. 5]** and JNCC Guidance on Decision-making Thresholds for Air Pollution **[Ref. 6]** make reference to the use of professional judgement when assessing the significance of the effects of road traffic exhaust emissions during construction and decommissioning phases.

1.1.14 Environmental Protection UK and IAQM Land-Use Planning & Development Control: Planning for Air Quality **[Ref. 4]**, recommends that the following factors should be taken into account when making judgement on the overall significance of effect of a development:

- The existing and future air quality in the absence of the development;
- The extent of current and future population exposure to the impacts; and
- The influence and validity of any assumptions adopted when undertaking the prediction of impacts.

1.2 Biodiversity

1.2.1 The determination of ecologically significant effects for ecological impact assessment (EcIA), as discussed below, is taken from ‘Guidelines for Ecological Impact Assessment in the UK and Ireland’ (Chartered Institute of Ecology and Environmental Management (CIEEM), 2018, version 1.3 updated September 2024) **[Ref. 7]**.

1.2.2 For the purpose of EcIA, a significant effect is sufficiently important to require assessment and reporting so that the decision maker is adequately informed of the environmental consequences of permitting a project. It is a positive or negative effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging

(enhancement of biodiversity). Effects can be considered significant at a wide range of scales, from international to local.

1.2.3 A significant effect does not necessarily equate to an effect so severe that consent for the project should be refused planning permission. For example, many projects with significant negative ecological effects have been lawfully permitted following EIA procedures. Significant effects should be qualified with reference to an appropriate geographic scale. For example, a significant effect on a Site of Special Scientific Interest is likely to be of national significance. European case law is specific regarding significance in relation to European sites and Annexed habitats. However, the scale of significance of an effect may not be the same as the geographic context in which the feature is considered important. For example, an effect on a species which is on a national list of species of principal importance for biodiversity may not have a significant effect on its national population. Examples of other relevant scales include regional and county. It should be noted that effects may be significant at the local scale, particularly in view of policies for no net loss of biodiversity.

1.2.4 When seeking mitigation and/or compensation solutions, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and/or compensation for effects on a species population significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved.

1.2.5 When describing ecological impacts and effects, reference is made to the following characteristics as required:

- **Positive or negative**: Positive represents a change that improves the quality of the environment e.g. by increasing species diversity, extending habitat or improving water quality. This may also include halting or slowing an existing decline in the quality of the environment. Negative represents a change which reduces the quality of the environment e.g. destruction of habitat, removal of foraging habitat, habitat fragmentation, pollution.
- **Extent**: The spatial or geographical area over which the impact/effect may occur under a suitably representative range of conditions (e.g. noise transmission under water).
- **Magnitude**: The size, amount, intensity and volume - this should be described on a quantitative basis where possible.
- **Duration**: Defined in relation to ecological characteristics (such as the lifecycle of a species) as well as human timeframes.
- **Frequency and timing**: The number of times an activity occurs.
- **Reversibility**: An irreversible effect is one from which recovery is not possible within a reasonable timescale or there is no reasonable chance of action being taken to reverse it. A reversible effect is one from which

spontaneous recovery is possible or which may be counteracted by mitigation. In some cases, the same activity can cause both reversible and irreversible effects.

1.2.6 CIEEM Guidelines **[Ref. 7]** requires a clear statement as to whether or not an effect is significant and at what geographical scale, for example 'significant at the national level'. In accordance with CIEEM Guidelines **[Ref. 7]** a significant effect is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. A significant effect can be either positive or negative.

1.2.7 The frames of reference used to describe the importance of each receptor, which are based on the CIEEM Guidelines **[Ref. 7]**, are as follows:

- International (i.e. Ramsar Sites, SACs and SPAs) (normally within the geographic area of Europe);
- UK or national (Great Britain but considering the potential for certain ecological features/receptors to be more notable (of higher importance) in England, with context relative to Great Britain as a whole).
- Regional;
- County;
- District; and
- Local (i.e. within approximately 5km of the Site).

1.2.8 Significant effects encompass impacts on the structure and function of defined sites and ecosystems. The following need to be determined:

- **For designated sites** – is the project and associated activities likely to undermine the conservation objectives of the site, or positively or negatively affect the conservation status of species or habitats for which the site is designated, or may it have positive or negative effects on the condition of the site or its interest/qualifying features?
- **For ecosystems** – is the project likely to result in a change in ecosystem structure and function?

1.2.9 Consideration should be given to whether:

- Any processes or key characteristics will be removed or changed.
- There will be an effect on the nature, extent, structure and function of component habitats.
- There is an effect on the average population size and viability of component species.

1.2.10 Consideration of functions and processes acting outside the formal boundary of a designated site is required, particularly where a site falls within a wider ecosystem e.g. groundwater dependent terrestrial ecosystems can be damaged where the proposed activity impacts on the quantity or quality of

groundwater that feeds these habitats. Predictions should always consider wider ecosystem processes.

1.2.11 Many ecosystems have a degree of resilience to perturbation that allows them to tolerate some biophysical change. Ecological effects should be considered in light of any information available or reasonably obtainable about the capacity of ecosystems to accommodate change.

1.2.12 Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:

- **Habitats** – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area.
- **Species** – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

1.2.13 In many cases (e.g. for species and habitats of principal importance for biodiversity), there may be an existing statement of the conservation status of a feature and objectives and targets against which the effect can be judged. However, not all species or habitats will be described in this way and the conservation status of each feature being assessed may need to be agreed with the relevant statutory nature conservation body and set out in the EcIA. The conservation status of a habitat or species will vary depending on the geographical frame of reference.

1.2.14 When assessing potential effects on conservation status, the known or likely background trends and variations in status should be taken into account. The level of ecological resilience or likely level of ecological conditions that would allow the population of a species or area of habitat to continue to exist at a given level, or continue to increase along an existing trend or reduce a decreasing trend, should also be estimated.

Precautionary principle

1.2.15 The evaluation of significant effects should always be based on the best available scientific evidence. If sufficient information is not available, further survey or additional research may be required. In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed. Where uncertainty exists, it must be acknowledged in the EcIA.

1.3 Climate

1.3.1 Given the international urgency of climate change, the sensitivity of the receptor (i.e., global atmosphere) to fluctuations in greenhouse gas (GHG)

emissions is considered 'very high'. Thus, the level of the significance of effects is determined by the magnitude, and timing, of GHG emissions and the likelihood of avoiding severe climate change.

1.3.2 In accordance with the GHG Protocol **[Ref. 8]**, the assessment will quantify applicable Kyoto Protocol **[Ref. 9]** GHGs as measured in tonnes of carbon dioxide equivalence (tCO_2e) (global warming potential), where equivalence means having the same warming effect as CO_2 over 100 years. The six original Kyoto Protocol gas groups are CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), sulphur hexafluoride (SF_6) and perfluorocarbons (PFCs). Nitrogen trifluoride (NF_3), a chemical released in certain high-tech industries, was added in 2013. The global warming potential of each is presented in **Table 10**.

Table 10: Kyoto Protocol GHGs and their global warming potential based upon Intergovernmental Panel on Climate Change's Fifth Assessment Report **[Ref. 9]**

GHG/group	Chemical formula	Global warming potential (CO_2e)
Carbon dioxide	CO_2	1
Methane	CH_4	28
Nitrous oxide	N_2O	265
Hydrofluorocarbons	HFCs	Depends on specific gas
Sulphur hexafluoride	SF_6	23,500
Perfluorocarbons	PFCs	Depends on specific gas
Nitrogen Trifluoride	NF_3	16,100

1.3.3 The approach to the GHG assessment will follow the GHG Protocol's **[Ref. 6]** core principles:

- **Relevance**: selecting an appropriate inventory boundary that reflects the GHG activities of the Proposed Development and serves the decision-making needs of users;
- **Completeness**: accounting for all emission sources within the chosen inventory boundary, with any specific exclusions disclosed and justified;
- **Consistency**: aiming to collect meaningful and consistent data over time whilst transparently documenting any significant changes to data quality and/or format;
- **Transparency**: addressing all relevant issues in a coherent and clear manner; and
- **Accuracy**: minimising uncertainty and avoiding systematic over-or under-quantification of emissions, and ensuring any necessary estimates or assumptions required are conservative and guided by industry standards.

1.3.4 Impact assessments normally assess to what degree a development will affect the baseline environment of the study area. In the case of GHG

emissions, any emissions will have a long-term, irreversible negative effect on the global atmosphere, which is considered to be highly receptive to any emissions of GHGs. A specific source of GHG emissions cannot be linked to impacts at a specific location, but would have impacts globally.

1.3.5 This GHG assessment will therefore evaluate the significance of emissions based upon guidance from Institute of Sustainability and Environmental Professionals (ISEP) Guide 'Assessing Greenhouse Gas Emissions and Evaluating their Significance Edition 2.1' (April 2026) **[Ref. 10]**, which provides a framework for determining significance against the goals of the 2015 Paris Agreement (i.e., against a science-based 1.5°C trajectory) **[Ref. 11]** (see **Table 11**).

1.3.6 The significance of the GHG impacts of Proposed Development on the climate will be determined by assessing the magnitude of emissions against both national and sectoral carbon budgets. The UK carbon budgets are only currently available to 2042 (7th carbon budget, 2038 – 2042); where carbon budgets are not available for certain assessment periods, a qualitative approach will be taken.

1.3.7 The renewable electricity from the Proposed Development is directly replacing that generated by fossil-fuel energy. To ensure robustness within the assessment, the GHG emissions savings from the operation of the Proposed Development will be assessed based upon a comparison of operational emissions per kWh energy generation against a range of alternative energy generation methods, including gas-fuelled power stations, current UK grid carbon-intensity, and other forms of low carbon energy generation.

Table 11: Framework for assessment of significant effects

Significance	Level	Criteria
Significant	Major adverse	Project adopts a business-as-usual approach, not compatible with the national Net Zero trajectory, or aligned with the goals of the Paris Agreement (i.e., a science-based 1.5°C trajectory) **[Ref. 11]**. Greenhouse gas impacts are not mitigated or reduced in line with local or national policy for projects of this type.
	Moderate adverse	Project's greenhouse gas impacts are partially mitigated, and may partially meet up-to-date policy; however, emissions are still not compatible with the national Net Zero trajectory or aligned with the goals of the Paris Agreement **[Ref. 11]**.
Not significant	Minor adverse	Project may have residual emissions, but the project is compatible with the goals of

Significance	Level	Criteria
		the Paris Agreement **[Ref. 11]**, complying with up-to-date policy and good practice.
	Negligible	Project has minimal residual emissions and goes substantially beyond the goals of the Paris Agreement **[Ref. 11]**, complying with up-to-date policy and best practice.
Significant	Beneficial	Project causes greenhouse gas emissions to be avoided or removed from the atmosphere, substantially exceeding the goals of the Paris Agreement **[Ref. 11]** with a positive climate impact.

1.4 Cultural heritage

Importance of heritage assets

1.4.1 The importance of a heritage asset is a measure of the degree to which the heritage significance of that asset is sought to be protected through legislation and planning policy. The level of importance will therefore reflect any statutory and non-statutory heritage designation or, in the case of undesignated assets, the professional judgement of the assessor in consultation with Historic England and the archaeological and built heritage advisors to the local authority, as to the degree of importance that the asset has with reference to regional research frameworks and national designation selection criteria.

1.4.2 The criteria presented in **Table 12** will be used to establish the importance of heritage assets. These criteria have been adapted from Design Manual for Roads and Bridges LA 106 **[Ref. 12]** using professional judgement and planning policy.

1.4.3 It is recognised that, occasionally, assets can have a lower or higher importance than the criteria below would normally indicate. Where this is the case, the rationale for assigning importance will be clearly articulated within the assessment.

Table 12: Criteria for establishing the importance of heritage assets

Importance	Description
Very High	World Heritage Properties; assets of acknowledged international importance; assets that can contribute significantly to acknowledged international research objectives; Historic landscapes of international value (designated or not) and extremely well preserved historic landscapes with exceptional coherence, time depth or other critical factor(s).
High	Scheduled Monuments and non-designated assets of

Importance	Description
	schedulable quality and importance; Grade I and II* listed buildings and Grade II listed buildings that can be shown to have exceptional qualities in their fabric or associations; Conservation Areas with exceptional qualities; non-designated structures of clear national importance; designated and non-designated historic landscapes of more than local historic interest; assets that can contribute significantly to acknowledged national research objectives.
Medium	Grade II listed buildings; non-designated assets that contribute to regional research objectives; locally listed buildings and other historic unlisted buildings that have exceptional qualities; conservation areas.
Low	Non-designated assets of local importance including those compromised by poor preservation; assets of limited value but with the potential to contribute to local research objectives; robust non-designated historic landscapes.
Negligible	Assets with very little surviving archaeological interest; buildings of little architectural or historic note; landscapes with little historic interest.

Magnitude of impact

1.4.4 The magnitude of impact reflects the scale of change which would be caused by the Proposed Development and the effect this would have on ability to interpret significance and appreciate the historic asset. Impacts can result either from physical changes to the fabric of a historic asset or through sensory changes within its setting.

1.4.5 An impact may be positive where, for example, as part of the Proposed Development, an intrusive building or feature is removed or replaced with a more harmonious one; historic features are restored or revealed; a new feature is added which adds to public appreciation; new views are introduced that add to public experience of an asset; or public interpretation or access is improved to an asset or its setting.

1.4.6 Impacts may impart major change, for example where groundworks completely destroy important archaeological remains, or minor change, such as changes to part of a historic assets' setting which lead to a limited impact on our ability to interpret it or its context.

1.4.7 Utilising the key principles for assessing the implications of change outlined above, an assessment of the magnitude of impact will be implemented for each baseline heritage asset using the criteria presented in **Table 13** below. These criteria have been adapted from Design Manual for Roads and Bridges LA 106 **[Ref. 12]** using professional judgement, and with regard to the definition of "substantial harm" within Policy H5-2c of the National

Planning Policy Framework (NPPF) **[Ref. 13]**, which states *"substantial harm would occur where the development proposal would seriously affect a key element of the asset's significance"*.

1.4.8 Conclusions of the assessed magnitude of impacts are a product of the consideration of the elements of an asset and its setting that contribute to its heritage significance and the degree to which the Proposed Development would change these contributing elements. The assessment will therefore reflect the varying degrees of sensitivity of different assets to change brought about by different types of development.

1.4.9 To assist with the assessment of "harm" as required in National Policy Statement (NPS) EN-1 **[Ref. 14]**, NPS EN-3 **[Ref. 15]** and the NPPF **[Ref. 13]**, adverse impacts of major magnitude are considered to equate to either "total loss of" or "substantial harm to" heritage significance; adverse impacts of moderate magnitude may be either "substantial harm" or a high level of harm not quite reaching the threshold for "substantial", whilst adverse impacts of minor or negligible magnitude represent lower levels of harm respectively. Situations where "no change" is predicted represent no harm to the heritage significance of a heritage asset. Beneficial impacts represent enhancements to heritage significance.

Table 13: Criteria for classifying magnitude of impact upon heritage significance

Impact	Magnitude criteria
Major	Total loss of the significance of a designated or non-designated heritage asset through total loss of all key element(s) of that asset's significance, such as those related to historic building fabric, archaeological materials or setting. Substantial harm to the significance of a designated or non-designated heritage asset through comprehensive change to all key element(s) of that asset's significance, such as those related to historic building fabric, archaeological materials or setting.
Moderate	Substantial harm to the significance of a designated heritage asset through considerable change to one or more (but not all) key element(s) of that asset's significance, such as those related to historic building fabric, archaeological materials or setting. Harm (at a level below substantial harm but above minor harm) to the significance of a non-designated heritage asset through considerable change to one or more (but not all) key element(s) of that asset's significance, such as those related to historic building fabric, archaeological materials or setting.
Minor	Harm to the significance of a designated or non-designated heritage asset through slight change to one or more key element(s) of that asset's significance, such as those related to

Impact	Magnitude criteria
	historic building fabric, archaeological materials or setting.
Negligible	Harm to the significance of a designated or non-designated heritage asset through very slight change to one or more key element(s) of that asset's significance, such as those related to historic building fabric, archaeological materials or setting, such that the significance is barely affected.
No change	No change to the significance of a designated or non-designated heritage asset through no change to the key element(s) of that asset's significance, such as those related to historic building fabric, archaeological materials or setting.

Significance of effect

1.4.10 Significance of effect will be based on a combination of importance of the asset (the asset's sensitivity) and the magnitude of impact upon that asset (the receptor). The significance of effect matrix is presented in **Table 14** below and provides a guide to decision-making but is not a substitute for professional judgement and interpretation, particularly where the importance or impact magnitude levels are not clear or are borderline between categories. The significance of effect may be described on a continuous scale from 'no effect' to 'major'. These criteria have been adapted from Design Manual for Roads and Bridges LA 106 **[Ref. 12]** based on professional judgement.

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

1.4.12 Permanent effects are considered to be those which are not reversible on decommissioning (i.e. direct physical impacts to below ground archaeological remains). Temporary effects are considered to be those which are reversible and typically relate to changes in the setting of heritage assets. For the purposes of the assessment, construction and decommissioning phase setting effects will be defined as "short term" and operational phase effects as "long term".

Table 14: Criteria for assessing the significance of effect

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

1.5 Land and groundwater

1.5.1 The assessment for land and groundwater will utilise Design Manual for Roads and Bridges LA 109: Geology and Soils **[Ref. 18]**, Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]** and Design Manual for Roads and Bridges LA 104: Environmental Assessment and Monitoring **[Ref. 20]** for assigning receptor sensitivity or importance relating to geology and groundwater, magnitude of impact (change) and significance of effect. The receptor sensitivity and magnitude of impact (change) criteria for mineral resources are taken from the Institute of Environmental Management and Assessment (IEMA) Guide: A New Perspective on Land and Soil in Environmental Impact Assessment **[Ref. 21]**.

1.5.2 It is acknowledged that the main use of Design Manual for Roads and Bridges is for projects that relate to projects promoted by National Highways. However, in the absence of specific guidance relating to the assessment of geology, contamination and groundwater with respect to solar projects, the use of these standards is considered to result in a robust and appropriate assessment. In addition to applying this methodology, the Design Manual for Roads and Bridges assessment criteria should be adjusted to reflect the non-road nature of the majority of the Proposed Development and to provide a clear discussion on the risks to groundwater from contamination, not just routine runoff, as is provided in the table of typical Design Manual for Roads and Bridges examples of magnitude of impact (change). This has been addressed by updating the examples in **Table 18** to include other situations beyond routine runoff.

Sensitivity of the receptor for geology, mineral resources and contamination

1.5.3 Sensitivity criteria for geology and contamination, derived from Design Manual for Roads and Bridges LA 109: Geology and Soils **[Ref. 18]**, are defined in **Table 15**, along with criteria for mineral resources, which are derived from and the IEMA guide **[Ref. 21]**.

1.5.4 It should be noted that when considering the potential for contamination to affect other receptors (human health or groundwater), the receptor importance criteria for human health will be taken from **Table 15** and criteria for groundwater are provided in **Table 16**.

Table 15: Environmental value (sensitivity) and descriptions for geology, mineral resources and contamination

Receptor value (sensitivity)	Description
Very high	**Geology:** very rare and of international importance with no potential for replacement (e.g. UNESCO World Heritage Sites, UNESCO Global Geoparks, SSSIs and Geological Conservation Review sites (GCRs) where citations indicate features of international importance). Geology meeting international designation citation criteria which is not designated as such. **Mineral resources:** important mineral reserves that would be sterilised (i.e., without future access). **Contamination:** 1) Human health: very high sensitivity land use such as residential or allotments; 2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and 3) Groundwater: use sensitivity criteria from **Table 16** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
High	**Geology:** rare and of national importance, with little potential for replacement (e.g. geological SSSI, Area of Special Scientific Interest (ASSI), National Nature Reserves (NNR)). Geology meeting national designation citation criteria which is not designated as such. **Mineral resources:** surface mineral reserves that would be sterilised (i.e., without future access). **Contamination:** 1) Human health: high sensitivity land use such as public open space;

Receptor value (sensitivity)	Description
	2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and 3) Groundwater: use sensitivity criteria from **Table 16** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
Medium	**Geology:** of regional importance with limited potential for replacement (e.g. regionally important geological or geomorphological sites (RIGS)). Geology meeting regional designation citation criteria which is not designated as such. **Mineral resources:** surface mineral reserves that would remain accessible for extraction. **Contamination:** 1) Human health: medium sensitivity land use such as commercial or industrial; 2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and 3) Groundwater: use sensitivity criteria from **Table 16** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
Low	**Geology:** geological units of local importance or interest, with potential for replacement (e.g. non-designated geological exposures, former quarries, mining sites). **Mineral resources:** surface mineral reserves that would remain accessible for extraction. **Contamination:** 1) Human health: low sensitivity land use such as highways and rail; 2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and 3) Groundwater: use sensitivity criteria from **Table 16** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
Negligible	**Geology:** no geological exposures or little or no local interest. **Mineral resources:** surface mineral reserves that would remain accessible for extraction, or no mineral reserves. **Contamination:** 1) Human health: undeveloped surplus land or no sensitive land use proposed;

Receptor value (sensitivity)	Description
	2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and 3) Groundwater: use sensitivity criteria from **Table 16** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
Notes: Main source of table contents is Design Manual for Roads and Bridges LA 109: Geology and Soils **[Ref. 18]**. Elements related to mineral resources are derived from the IEMA guide **[Ref. 21]**.	

Importance of the receptor for groundwater

1.5.5 The importance criteria presented in **Table 16** are derived from Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**.

1.5.6 It should be noted that when considering the potential for contamination to affect other receptors (human health or groundwater), the receptor importance criteria for groundwater are taken from **Table 16** and criteria for human health are provided in **Table 15**.

Table 16: Receptor importance for groundwater

Importance	Typical criteria	Typical examples
Very high	Nationally significant attribute of high importance	Principal aquifer providing a regionally important resource, and/or supporting a site protected under EC and UK legislation; Groundwater that locally supports a groundwater dependent terrestrial ecosystem; Source Protection Zone 1.
High	Locally significant attribute of high importance	Principal aquifer providing locally important resource or supporting a river ecosystem; Groundwater that supports a groundwater dependent terrestrial ecosystem; Source Protection Zone 2.
Medium	Of moderate quality and rarity	Aquifer providing water for agriculture or industrial use with limited connection to surface water; Source Protection Zone 3.
Low	Lower quality	Unproductive strata

Magnitude of impact (change) for geology, mineral resources and contamination

1.5.7 The magnitude of impact (change) is classified using the criteria presented in **Table 17**, which are derived from Design Manual for Roads and Bridges LA 109: Geology and Soils **[Ref. 18]** and the IEMA guide **[Ref. 21]**.

1.5.8 It should be noted that when considering the potential for contamination to affect receptors (human health or groundwater), the magnitude of impact (change) criteria for human health are taken from **Table 17** and criteria for groundwater are provided in **Table 18**.

Table 17: Magnitude of impact (change) criteria for geology, mineral resources and contamination

Magnitude of impact (change)	Typical description
Major	**Geology:** loss of geological feature/designation and/or quality and integrity, severe damage to key characteristics, features or elements. **Mineral resources:** physical removal or permanent sterilisation of mineral resource. **Contamination:** 1) Human health: significant contamination identified. Contamination levels significantly exceed background levels and relevant screening criteria (e.g. category 4 screening levels) **[Ref. 22]** with potential for significant harm to human health. Contamination heavily restricts future use of land; 2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and 3) Groundwater: use sensitivity criteria from **Table 18** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
Moderate	**Geology:** partial loss of geological feature/designation, potentially adversely affecting the integrity; partial loss of/damage to key characteristics, features or elements. **Mineral resources:** permanent loss or reduction of access to mineral resources and restrictions to current or future use. **Contamination:** 1) Human health: contaminant concentrations exceed background levels and are in line with limits of relevant screening criteria (e.g. category 4 screening levels) **[Ref. 22]**. Significant contamination

Magnitude of impact (change)	Typical description
	can be present. Control/remediation measures are required to reduce risks to human health/make land suitable for intended use; 2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and 3) Groundwater: use sensitivity criteria from **Table 18** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
Minor	**Geology:** minor measurable change in geological feature/designation attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements. **Mineral resources:** temporary loss or reduction of access to mineral resources and restriction to current or future use. **Contamination:** 1) Human health: contaminant concentrations are below relevant screening criteria (e.g. category 4 screening levels) **[Ref. 22]**. Significant contamination is unlikely with a low risk to human health. Best practice measures can be required to minimise risks to human health; 2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and 3) Groundwater: use sensitivity criteria from **Table 18** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
Negligible	**Geology:** very minor loss or detrimental alteration to one or more characteristics, features or elements of geological feature/designation. Overall integrity of resource not affected. **Mineral resources:** no discernible loss/reduction in access that would restrict current or future use. **Contamination:** 1) Human health: contaminant concentrations substantially below levels outlined in relevant screening criteria (e.g. category 4 screening levels) **[Ref. 22]**. No requirement for control measures to reduce risks to human health/make land suitable for intended use; 2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and

Magnitude of impact (change)	Typical description
	3) Groundwater: use sensitivity criteria from **Table 18** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
No change	**Geology:** no temporary or permanent loss/disturbance of characteristics features or elements. **Mineral resources:** no change in access to or availability of mineral resources. **Contamination:** 1) Human health: reported contaminant concentrations below background levels; 2) Surface water: this receptor is included in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**; and 3) Groundwater: use sensitivity criteria from **Table 18** (as taken from Table 3.70 in Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**).
Notes: Main source of table is Design Manual for Roads and Bridges LA 109: Geology and Soils **[Ref. 18]**. Elements relating to mineral resources are derived from the IEMA guide **[Ref. 21]**.	

Magnitude of impact for groundwater

1.5.9 The magnitude of impact is classified using the criteria presented in **Table 18** below, which are adapted from Design Manual for Roads and Bridges LA 113: Road Drainage and the Water Environment **[Ref. 19]**. This table includes reference to the potential risks from contamination introduced by the Proposed Development and contamination mobilised by the Proposed Development, as well as impacts due to routine runoff.

1.5.10 It should be noted that when considering the potential for contamination to affect receptors (human health or groundwater), the magnitude of impact criteria for groundwater are taken from **Table 18** and criteria for human health are provided in **Table 17** above.

Table 18: Magnitude of impact criteria for groundwater

Magnitude of impact	Criteria	Typical example
Major adverse	Results in loss of attribute and/or quality and integrity of the attribute	Loss of, or extensive change to, an aquifer. Loss of regionally important water supply. Potential high risk of pollution to groundwater from contamination introduced as a result of

Magnitude of impact	Criteria	Typical example
		the Proposed Development, as a result of mobilisation of existing contamination, or as a result of routine runoff. Loss of, or extensive change to groundwater dependent terrestrial ecosystem or baseflow contribution to protected surface water bodies. Reduction in water body Water Framework Directive classification. Loss, or significant damage, to major structures through subsidence or similar effects.
Moderate adverse	Results in effect on integrity of attribute, or loss of part of attribute	Partial loss or change to an aquifer. Degradation of regionally important public water supply or loss of significant commercial/industrial/agricultural supplies. Potential medium risk of pollution to groundwater from contamination introduced as a result of the Proposed Development, as a result of mobilisation of existing contamination, or as a result of routine runoff. Partial loss of the integrity of groundwater dependent terrestrial ecosystem. Contribution to reduction in water body Water Framework Directive classification. Damage to major structures through subsidence or similar effects, or loss of minor structures.
Minor adverse	Results in some measurable change in attributes, quality or vulnerability	Potential low risk of pollution to groundwater from contamination introduced as a result of the Proposed Development, as a result of mobilisation of existing contamination, or as a result of routine runoff. Minor effects on an aquifer, groundwater dependent terrestrial ecosystems, abstractions and structures.
Negligible	Results in effect on attribute, but of insufficient magnitude to affect the use or integrity	No measurable impact upon an aquifer and/or groundwater receptors.
Minor beneficial	Results in some beneficial effect on	Reduction of groundwater hazards to existing structures.

Magnitude of impact	Criteria	Typical example
	attribute or a reduced risk of negative effect occurring	Reductions in waterlogging and groundwater flooding.
Moderate beneficial	Results in moderate improvement of attribute quality	Contribution to improvement in water body Water Framework Directive classification. Improvement in water body catchment abstraction management strategy (or equivalent) classification. Support to significant improvements in damaged groundwater dependent terrestrial ecosystem.
Major beneficial	Results in major improvement of attribute quality	Removal of existing polluting discharge to an aquifer or removing the likelihood of polluting discharges occurring. Recharge of an aquifer. Improvement in water body Water Framework Directive classification.
No change		No loss or alteration of characteristics, features or elements; no observable impact in either direction.

Significance of effect for geology, contamination, mineral resources and groundwater

1.5.11 The significance of effect for geology, mineral resources and contamination is based on the sensitivity of the receptor and the magnitude of impact (change), as outlined in **Table 19** and derived from Design Manual for Roads and Bridges LA 104: Environmental Assessment and Monitoring **[Ref. 20]**. The significance of effect for groundwater is based on the importance of the receptor and the magnitude of impact, as outlined in **Table 19** and adapted from Design Manual for Roads and Bridges LA 104: Environmental Assessment and Monitoring **[Ref. 20]**. The significance of effect can be adverse or beneficial.

1.5.12 The significance of an effect is reported as either ‘significant’ or ‘not significant’. Any effects determined as ‘moderate’ or above are considered to be significant. Any effects determined as ‘slight’ or below are considered not significant.

1.5.13 Where the significance matrix indicates a range for the effect significance (e.g. ‘slight or moderate’), professional judgement can be applied to select one option (which would be justified by evidence, as appropriate), or an effect significance range can be applied. Where a range for the significance

of effect means that the effect could be either significant or not significant, professional judgement has been applied to define the significance (for example with the range 'slight to moderate', where slight would be not significant, but moderate would be significant). Where both categories within the range fall within either 'significant' or 'not significant', the range has not been adjusted to a single descriptor (for example if the range is 'neutral or slight', as both effects are considered to be not significant; or if the range is 'large or very large', as both effects are considered to be significant).

1.5.14 The effect can be characterised as positive (beneficial) or negative (adverse); direct or indirect; short-term, medium term or long-term; and permanent or temporary.

Table 19: Significance of effect criteria for geology, mineral resources, contamination and groundwater

Sensitivity/ Importance	**Magnitude of impact (change)**				
	No Change	Negligible	Minor	Moderate	Major
Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight
Note: the importance criteria for groundwater do not include a category of negligible					

1.6 Landscape and visual

1.6.1 The Guidelines for Landscape and Visual Impact Assessment (Third Edition) (GLVIA3) **[Ref. 23]** are widely recognised as the primary source of guidance for landscape and visual impact assessment in the UK, but clearly state that:

"*The guidance concentrates on principles while also seeking to steer specific approaches where there is a general consensus on methods and techniques. It is not intended to be prescriptive, in that it does not provide a detailed 'recipe' that can be followed in every situation. It is always the primary responsibility of any landscape professional carrying out an assessment to ensure that the approach and methodology adopted are appropriate to the particular circumstances*." (paragraph 1.20) **[Ref. 18]**.

1.6.2 GLVIA3 also states that:

"*professional judgement is a very important part of the LVIA" (paragraph 2.23) and that "in all cases there is a need for the judgements that are made to be reasonable and based on clear and transparent methods so that the reasoning applied at different stages can be traced and examined by others*." (paragraph 2.24) **[Ref. 23]**.

1.6.3 It goes on to state that:

"*there are no hard and fast rules about what effects should be deemed significant but LVIAs should always distinguish clearly between what are considered to be the significant and non-significant effects*." (paragraph 3.32) **[Ref. 23]**.

1.6.4 Landscape and visual assessments are separate, though linked processes which GLVIA3 **[Ref. 23]** notes are *"related but very different considerations"*. The assessment of the potential effect on the landscape is carried out as an effect on the environmental resource (i.e., the landscape). Visual effects are assessed as an inter-related effect on people.

1.6.5 In accordance with GLVIA3 **[Ref. 23]**, the significance of landscape effects is determined by combining judgements regarding the sensitivity of the receiving landscape and the magnitude of the landscape effects arising from the Proposed Development.

1.6.6 In accordance with GLVIA3 **[Ref. 23]**, the significance of visual effects is determined by combining judgements regarding the sensitivity of visual receptors (people who view the landscape) and the magnitude of the change they experience arising from the Proposed Development.

Landscape effects

1.6.7 In accordance with GLVIA3 **[Ref. 23]**, the significance of landscape effects is determined by combining judgements regarding the sensitivity of the receiving landscape and the magnitude of the landscape effects arising from the Proposed Development.

1.6.8 An assessment of the degree to which the Proposed Development changes the distinct and recognisable pattern of elements, or characteristics, in the landscape that make one landscape different from another enables a judgement to be made as to the significance of the effect in landscape character terms.

1.6.9 In order to reach an understanding of the effects of development upon the landscape resource, it is necessary to consider different aspects of the landscape baseline including:

- **Landscape fabric/elements**: The individual features of the landscape, such as hills, valleys, woods, hedges, tree cover, vegetation, buildings and roads for example which can usually be described and quantified.
- **Landscape key characteristics**: The particularly notable elements or combinations of elements which make a particular contribution to defining or describing the character of an area, which may include experiential characteristics such as wildness and tranquillity.

Landscape sensitivity

1.6.10 As stated in GLVIA3 **[Ref. 23]**, *"LVIA sensitivity is similar to the concept of landscape sensitivity used in the wider arena of landscape planning, but is not the same as it is specific to the particular project or development that is being proposed and to the location in question"*. In landscape and visual impact assessment, landscape sensitivity is assessed by combining judgements about the value attached to a landscape and its susceptibility to the type of change and nature of the development proposed. The overall sensitivity of the landscape to a particular development is described as High, Medium or Low.

- **Landscape value** varies in relation to the different stakeholders and different parts of society that use or experience a landscape. It reflects the importance attached to a landscape. Sometimes it is used as a basis for designation or recognition which expresses national or local authority consensus, because of its special qualities/attributes. Although factors such as formal designations are an important component when determining landscape value, other aspects are also considered as part of the judgement process, as explained in Landscape Institute Technical Guidance Note 02-21: Assessing Landscape Value Outside National Designations **[Ref. 24]**. These include issues related to natural and cultural heritage (for example ecological, geological or heritage matters), landscape condition, associations (in terms of connections with people, arts or events), distinctiveness (i.e., a sense of unique identity in the landscape), recreational opportunities, perceptual aspects (including scenic quality, wildness and tranquillity) and landscapes with a clearly identifiable role or function. In the assessment, the value attributed to the landscape will be described as: National, Regional, or Community.
- **Landscape susceptibility** according to GLVIA3 **[Ref. 23]** means *"the ability of the landscape receptor to accommodate the proposed Development without undue consequences for maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies"* (paragraph 5.40). The susceptibility of the landscape varies depending on the type of development proposed and the particular site location. Judgements on landscape susceptibility include references to both the physical and aesthetic characteristics and the potential scope for mitigation. In the assessment, the susceptibility of the landscape will be described as: High, Medium or Low.

1.6.11 The criteria and the detailed judgements regarding susceptibility and value of landscape receptors will be set out in the assessment.

1.6.12 Sensitivity is judged taking into account the component judgments about the value and susceptibility of the receptor as illustrated by **Table 20** below. Where sensitivity is judged to lie between levels, an intermediate assessment will be adopted.

Table 20: Landscape sensitivity criteria

Value	Susceptibility		
	High	Medium	Low
National	High	High/medium	Medium
Regional	High/Medium	Medium	Medium/Low
Community	Medium	Medium/Low	Low

Magnitude of landscape effect

1.6.13 The magnitude of effect arising from the Proposed Development at any particular location is assessed in terms of its 'size or scale, geographic extent of the area or receptor that is influenced and its duration and reversibility' (paragraph 5.48).

1.6.14 Judgements concerning the scale of the change take account of:

- Degree of loss or alteration to key landscape features/elements; characteristics; and for designated areas – special qualities and/or purposes of designation.
- Distance from the Proposed Development.
- Landscape context to the Proposed Development.

1.6.15 The approach to assessing effects on landscape character is to consider the key characteristics for the Landscape Character Area (LCA) within which the Proposed Development is located (the host LCA) and if relevant the adjacent LCAs (non-host) and identify which of these the Proposed Development would affect. A large-scale change in landscape character is likely to occur where key characteristics would be lost or substantially changed. A small-scale change is likely to occur where key characteristics are altered to a lesser degree and this can be influenced by distance and surrounding context.

1.6.16 Where particular views are a key characteristic of a LCA, large or medium scale landscape character effects may occur where the Proposed Development becomes a key feature of those views. A similar approach applies to designated landscapes, for which the effects on the defined purposes of designation and special qualities are considered.

1.6.17 The scale of landscape change is described as: Large, Medium or Small.

1.6.18 Having established the scale of change to the landscape baseline, the geographic extent of the change can be identified and is described as: Wide, Intermediate, Localised or Limited.

1.6.19 **Duration and reversibility** can be linked depending on the nature of the development. Reversibility is a judgement about the practicality of reversing the landscape effects of the proposed development (for example, solar farms are ultimately largely reversible whilst housing is permanent). Duration reflects how long the change will last. In the assessment, the duration of the change will be considered:

- short term when lasting less than 2 years;
- medium term when lasting between 2 and 10 years;
- long term when lasting between 10 and 40 years; and
- permanent for more than 40 years.

1.6.20 Magnitude is considered taking into account the three contributory factors, as illustrated by the diagrams presented in **Figure 1** below.

Visual effects

1.6.21 In accordance with GLVIA3 **[Ref. 23]**, the significance of visual effects is determined by combining judgements regarding the sensitivity of visual receptors (people who view the landscape) and the magnitude of the effect they experience arising from the Proposed Development.

Visual receptor sensitivity

1.6.22 In landscape and visual impact assessment, visual receptor sensitivity is assessed by combining judgements about the value attached to views and the susceptibility of the viewer to the type of change and nature of the development proposed. The overall sensitivity of the visual receptor to a particular development is described as High, Medium or Low.

- **Value of views**: The value of public views, which is the focus of GLVIA3, will vary depending on the nature, location and context of the view and the recognised importance of the view. Considerations include cultural associations; designation or policy protection; views of or from landmarks; and/or the scenic quality of the view. It should be noted that the value attributed relates to the value of the view only (e.g. a National Trail is nationally valued for access, but not always for the available views from every section). The value attributed to visual amenity is described as: National, Regional, or Community.
- **Susceptibility of visual receptors**: Those living within view of the Proposed Development are usually regarded as the highest susceptibility group as well as those engaged in outdoor pursuits for

whom landscape experience is the primary objective. The susceptibility of potential visual receptors will also vary depending on the activity of the receptor. For visual receptors, susceptibility and value are closely linked - the most valued views are also likely to be those where viewer's expectations will be highest. Visual receptor susceptibility is defined in accordance with the criteria below.

- **High** - Local residents; users of outdoor recreation focussed on the appreciation of views including footpaths, beauty spots and picnic areas and people experiencing views to or from important features of physical, visual, cultural or historic interest.
- **Medium** - Local road users and travellers on trains. People engaged in outdoor recreation with some appreciation of the landscape e.g. road cycling, nature conservation, golf and water based recreation.
- **Low** - Workers, users of facilities and commercial buildings (indoors) experiencing views from buildings. Road and rail users on fast moving commuting or trunk routes. Visual receptors where views are incidental to the activity and/or location.

1.6.23 Sensitivity is judged taking into account the component judgments about the value and susceptibility of the receptor, as illustrated by **Table 21** below. Where sensitivity is judged to lie between levels, an intermediate assessment will be adopted. Note that a greater weight is intentionally attributed to the susceptibility of the visual receptor than to value. This is in recognition of the fact that relatively few views are specifically recognised through designation or cultural reference. This approach still acknowledges that value associations influence sensitivity.

Table 21: Visual sensitivity criteria

Value	**Susceptibility**		
	High	Medium	Low
National	High	High/medium	Medium
Regional	High/Medium	High/Medium	Medium/Low
Community	High/Medium	Medium	Low

Magnitude of visual effect

1.6.24 The magnitude of visual effect arising from the Proposed Development is assessed in terms of its size or scale, geographic extent of the area or receptor that is influenced and its duration.

1.6.25 Representative viewpoints are used in the landscape and visual impact assessment as 'samples' on which to base judgements of the scale of change on visual receptors. The wider extent of the effect and its duration are not captured in the viewpoint analysis (as a viewpoint cannot capture these factors for an entire route or area). As duration and extent are

necessary considerations in determining magnitude of effect, judgements concerning magnitude and significance are provided for visual receptors and not for representative viewpoints. The only exception to this rule would be a specific viewpoint – where people visiting that location to look at the view are assessed as a visual receptor group in its own right.

1.6.26 With the exception of specific viewpoints (as noted above), each route (e.g. a footpath or road) and receptor group (e.g. a community or village) will encompass a range of possible views, which might vary from no view of the development to very clear, close views. Therefore, effects are described in such a way as to identify where views towards the development are likely to arise and what the scale and duration and extent of those views is likely to be. In some cases, this will be further informed by a nearby viewpoint and in others it will be informed with reference to zone of theoretical visibility (ZTV) studies, aerial photography and site visits. Each of these individual effects are then considered together in order to reach a judgement of the effects on the visual receptors along that route, or in that place.

1.6.27 The scale of change arising from the Proposed Development as experienced by a visual receptor group reflects the degree to which the nature of the views from that location would be changed taking into account:

- the distance of the viewpoint from the Proposed Development;
- the degree to which the Proposed Development is visible or screened;
- the angle of view in relation to main receptor activity or main focus of the view;
- the horizontal and vertical field of view occupied by the Proposed Development; and
- the extent and nature of other built development visible.

1.6.28 The scale of change in view is described as: Large, Medium, Small or Negligible.

1.6.29 The approach to assessing effects on views is to consider the full 360 degree view from any given receptor – not just those towards the development and/or shown in visualisations. It is assumed that the change would be seen in clear visibility and the assessment is carried out on that basis. Seasonal variations in visibility due to varying vegetation cover is also taken into account in all judgements.

1.6.30 For visual receptors moving through the landscape (e.g. road and rail users), the length of their journey during which they would see the Proposed Development is reflected in the judgement of the geographic extent of effects. The geographical extent of visual change is described as: Wide, Intermediate, Localised or Limited.

1.6.31 Duration reflects how long the change will last and judgements are framed in the same way as described above for landscape effects. In the assessment, the duration of the change would be considered:

- short term when lasting less than 2 years;
- medium term when lasting between 2 and 10 years;
- long term when lasting between 10 and 40 years, and
- permanent for more than 40 years.

1.6.32 Magnitude is considered taking into account the three contributory factors as illustrated by the diagrams presented in **Figure 1** below.

Combining scale of change, extent, and duration to determine magnitude of landscape and visual effects

1.6.33 Scale of change is the first and primary factor in determining magnitude. Geographical extent and duration of the effect are modifying factors to the overall magnitude judgement which may be higher if the effect is particularly widespread and/or long lasting, or lower if it is constrained in geographic extent and/or timescale.

1.6.34 The diagrams presented below in **Figure 1** illustrate in outline how these two modifying factors are considered in a two-stage process. A judgement is first formed about the scale of the change to the landscape or visual receptor. The geographic extent of the effect is then considered as a modifying influence in the first part of **Figure 1** (Stage 1). The result or outcome of Stage 1 is then considered again in relation to the duration of the effect as illustrated in the second part of **Figure 1** (Stage 2). The outcome of Stage 2 is the overall magnitude of effect judgement reported in the assessment. **Figure 1** is not intended to be interpreted rigidly as a chart to provide definitive answers; professional judgement is employed as appropriate to arrive at an overall magnitude judgement.

1.6.35 The magnitude of effects is described as Substantial, Moderate, Slight or Negligible. Where magnitude is judged to lie between levels, an intermediate assessment will be adopted and judgement will be justified as necessary.

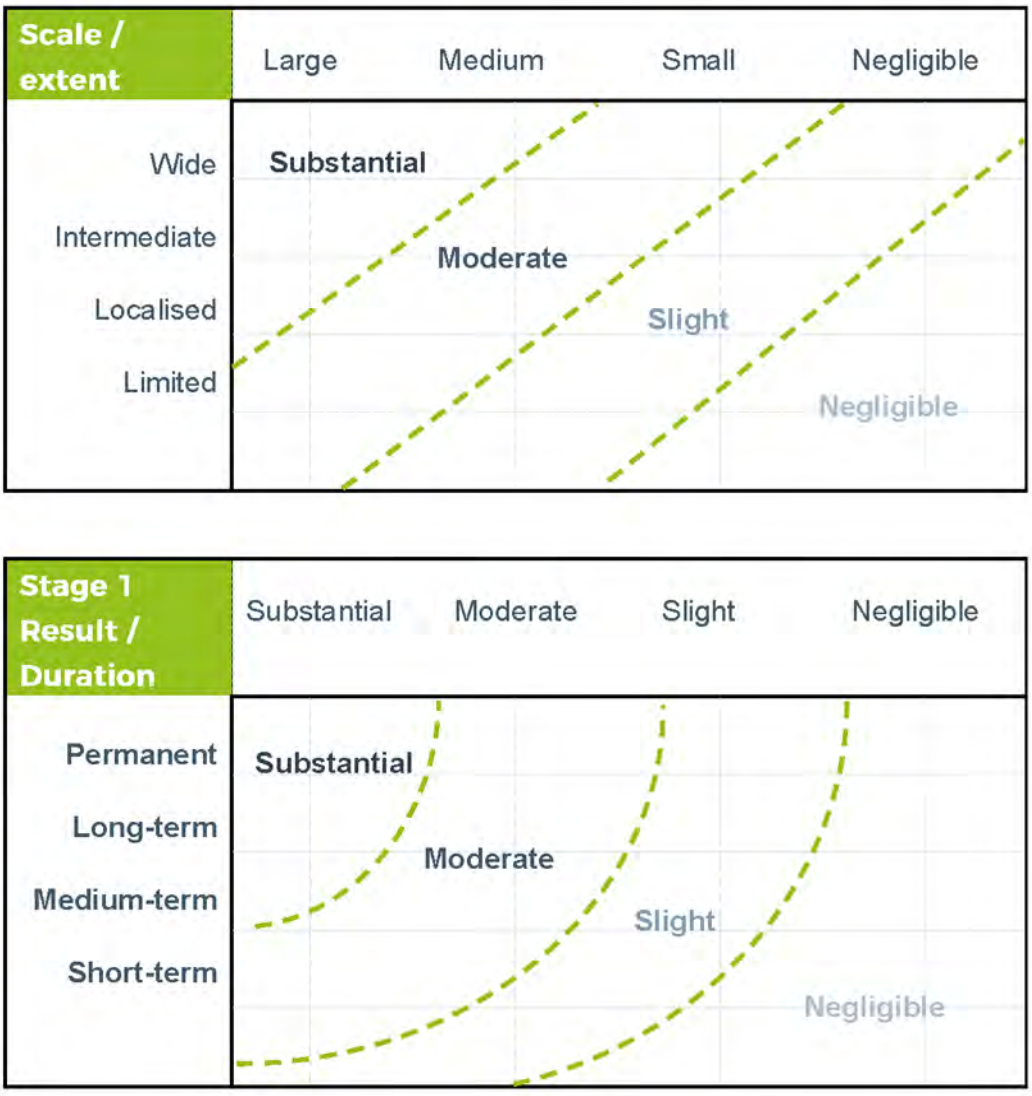


Figure 1: Scale of effect diagrams

Significance of landscape and visual effects

1.6.36 The significance of any identified landscape or visual effect is assessed as Major, Moderate, Minor or Negligible. These categories are based on the consideration of sensitivity with the predicted magnitude of effect. **Table 22** below is not used as a prescriptive tool and illustrates the typical outcomes, allowing for the exercise of professional judgement. In some instances, a particular parameter may be considered as having a determining effect on the analysis.

Table 22: Significance of effect criteria

Receptor sensitivity	Magnitude of effect			
	Substantial	Moderate	Slight	Negligible
High	Major	Major/Moderate	Moderate	Minor
Medium	Major/ Moderate	Moderate	Moderate/ Minor	Minor/Negligible
Low	Moderate	Moderate/Minor	Minor	Negligible

1.6.37 Where the effect is classified as Major or Major/Moderate, this is considered to be equivalent to likely significant effects. Where Moderate effects are predicted, professional judgement is applied to determine whether the effect is significant or not ensuring that the potential for significant effects to arise has been thoroughly considered and justification is provided for the judgement reached as appropriate.

1.6.38 Effects of Moderate/Minor, Minor, Minor/Negligible or Negligible significance are considered to be not significant.

1.6.39 Landscape and visual effects can be beneficial or adverse and, in some instances, may be considered neutral. Neutral effects are those which overall are neither adverse nor beneficial but may incorporate a combination of both. Whether an effect is beneficial, neutral or adverse is identified based on professional judgement. GLVIA3 **[Ref. 23]** indicates at paragraph 2.15 that this is a *"particularly challenging"* aspect of assessment, especially in the context of a changing landscape.

1.6.40 However, for the avoidance of doubt, in the assessment it will be assumed that where new infrastructure is introduced into the landscape or views, this will generally constitute an adverse effect. Any variation from this stance will be clearly justified in the assessment.

1.7 Noise and vibration

Construction noise

1.7.1 The methods for assessing the significance of noise from construction activities are provided within Annex E of BS 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Noise' (BS 5228-1) **[Ref. 25]**. One such method of applying significance to noise effects is repeated in **Table 23** below.

Table 23: Criteria for assessing the significance of noise from construction activities

Assessment Category and Threshold Value Period, L_{Aeq}	Threshold Value in Decibels, dB		
	Category A[1]	Category B[2]	Category C[3]
Night-time (23.00−07.00)	45	50	55
Evenings and weekends[4]	55	60	65
Daytime (07.00−19.00) and Saturdays (07.00−13.00)	65	70	75

[1] Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are less than these values.
[2] Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are the same as category A values.
[3] Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5dB) are higher than category A values.
[4] 19.00–23.00 weekdays, 13.00–23.00 Saturdays and 07.00–23.00 Sundays.

1.7.2 A significant effect has been deemed to occur if the site noise level (construction only) exceeds the threshold level for the category appropriate to the ambient noise level for a month or more. If the baseline ambient noise level exceeds the Category C values, then a significant effect is deemed to occur if the total noise level (construction + ambient noise) for the period increases by more than 3dB.

1.7.3 Works for a shorter duration that might result in a significant effect are considered by using the trigger levels for sound insulation and time criteria from Annex E.4 of BS 5228-1 **[Ref. 25]**.

Construction vibration

1.7.4 BS 5228-2:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Vibration' (BS 5228-2) **[Ref. 26]** provides guidance on vibration levels that can be used to assess the likely impacts of construction activities on buildings and on humans. Annex B of the standard gives guidance on the significance of vibration effects in terms of human response to vibration and structural response, as presented in **Table 24** and **Table 25** respectively below.

Table 25: Guidance on effects of vibration levels perceptible on humans during construction

Vibration Level (PPV)	Effect
$0.14mms^{-1}$	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.

Vibration Level (PPV)	Effect
0.3mms^{-1}	Vibration might be just perceptible in residential environments.
1.0mms^{-1}	It is likely that vibration of this level in residential environments will cause complaint but can be tolerated if prior warning and explanation has been given to residents.
10mms^{-1}	Vibration is likely to be intolerable for any more than a very brief exposure to this level.

Table 26: Transient vibration guide values for cosmetic damage during construction

Line	Type of Building	Peak component particle velocity in frequency range of predominant pulse	
		4Hz to 15Hz	15Hz and above
1	Reinforced or framed structures/industrial and heavy commercial buildings.	50mms^{-1} at 4Hz and above.	
2	Unreinforced or light framed structures.	15mms^{-1} at 4Hz increasing to 20mms^{-1} at 15Hz.	20mms^{-1} at 15Hz increasing to 50mms^{-1} at 40Hz and above.
	Residential or light commercial buildings.		
Note 1 – values referred to are at the base of the building. Note 2 – for line 2, at frequencies below 4Hz, a maximum displacement of 0.6mm (zero to peak) is not to be exceeded.			

1.7.5 BS 5228-2 **[Ref. 26]** states that the guide values in **Table 26** predominantly relate to transient vibration which does not give rise to resonant responses in structures, and to low-rise buildings. Where the dynamic loading caused by continuous vibration is such as to give rise to dynamic magnification due to resonance, especially at the lower frequencies where lower guide values apply, then the guide values in **Table 26** might need to be reduced by up to 50%.

Road traffic noise

1.7.6 The change in road traffic noise associated with the Project will be assessed using the criteria set out in Design Manual for Roads and Bridges (DMRB) 'LA 111 - Noise and Vibration' (LA 111) **[Ref. 27]**.

1.7.7 DMRB LA 111 defines the magnitude of road traffic noise impacts in the short term (immediate impact) and long term (future impact), as presented in **Table 27**. The variation in noise levels resulting from construction phase traffic are assessed against the short term criteria.

Table 27: DMRB LA 111 magnitude of noise impact criteria

Magnitude of Change	Noise Change, dB $L_{A10,18hr}$	
	Short Term	Long Term
Major	≥ 5.0	≥ 1.0
Moderate	3.0 to 4.9	5.0 to 9.9
Minor	1.0 to 2.9	3.0 to 4.9
Negligible	< 1.0	< 3.0

Operational noise

1.7.8 BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' **[Ref. 28]** describes the methods for rating and assessing noise from industrial or commercial sources. The standard is applicable for the purpose of assessing sound at dwellings, through the determination of a rating level of an industrial or commercial noise source.

1.7.9 The prescribed methodology requires the noise levels generated by the industrial or commercial source to be assessed against the measured pre-development background sound level at the surrounding receptor locations. The background level is the sound level exceeded for 90% of the time and reflects the underlying sound level that is experienced when specific noise events are not taking place.

1.7.10 Where the predicted noise levels contain certain acoustically distinguishing characteristics at the receptor location which are more likely to attract attention (tonality, impulsivity, intermittency), a character correction/penalty is applied.

1.7.11 The derived rating level is compared against the prevailing background sound level as determined from a baseline survey. Typically, the greater the difference between the rating level and the background sound level, the greater the magnitude of the impact, as noted below:

- A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5dB is likely to be an indication of adverse impact depending on the context.
- Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact depending on the context.

1.7.12 Where the initial estimate of the impact needs to be modified due to the context, all pertinent factors should be taken into account, including:

- The absolute level.

- The character and level of the residual sound.
- The sensitivity of the receptor and whether dwellings will already (or likely) to incorporate design measures that secure good internal and/or outdoor acoustic conditions, such as: i) façade insulation treatments, ii) ventilation and/or cooling, and iii) acoustic screening.

Sensitivity of the receptor

1.7.13 Sensitivity classifications for human receptors have been defined for a range of receptor types, as shown in **Table 28**; these have been informed from guidance contained in the following documents:

- DMRB LA 111 **[Ref. 28]**; and
- Institute of Environmental Management and Assessment (IEMA) 'Guidelines for Environmental Noise Impact Assessment' **[Ref. 29]**.

Table 28: Receptor sensitivity criteria for noise and vibration

Receptor sensitivity	Type of receptor
High	Residential properties, educational establishments, hospitals, places of worship, hotels, children's nurseries, nursing homes.
Medium	Commercial premises including offices, halls, public municipal areas, bars and restaurants.
Low	Industrial premises.
Negligible	All other areas that are typically unoccupied.

Magnitude of impact

1.7.14 The magnitude of the impact within this assessment will be described using the following scale:

- High;
- Medium;
- Low; and
- Negligible.

1.7.15 Although the lowest measure of magnitude of impact is defined as 'negligible', it should be noted that noise and vibration levels may still be audible/perceptible during the construction, operation (including maintenance) and decommissioning phase.

1.7.16 It is not possible to have a single objective noise-based measure that defines magnitude of impact that is applicable to all sources of noise and at all receptors. Consequently, appropriate assessment criteria used to establish the magnitude of impact from the Proposed Development at each receptor

will be developed based on the above standards and guidance, as informed by the study of baseline conditions.

Significance of effect

1.7.17 The overall significance of an effect is determined by combining the sensitivity of the receptor and magnitude of impact (as presented in **Table 29**). The assessment of significance relies on best practice and the relevant published standards and guidance documents.

1.7.18 The significance of an effect is reported as either 'significant' or 'not significant'. Where significance of effect is assessed as 'negligible' or 'minor', the effect is not significant. Where the significance of effect is assessed as 'moderate' or 'major', the effect is significant.

Table 29: Determining significance of effects for noise and vibration

Magnitude of impact	Sensitivity of receptor/receiving environment to change			
	Negligible	Low	Medium	High
Negligible	Negligible	Negligible	Negligible	Negligible
Low	Negligible	Negligible	Negligible	Minor
Medium	Negligible	Negligible	Minor	Moderate
High	Negligible	Minor	Moderate	Major

1.8 Population

1.8.1 The significance of effects relating to Population will be based on professional judgement and Design Manual for Roads and Bridges LA112 Population and Human Health (DMRB LA 112) **[Ref. 30]**.

1.8.2 Criteria to determine the value (sensitivity) of each receptor is detailed in **Table 30**.

Table 30: Environmental value (sensitivity) and descriptions

Receptor value (sensitivity)	Description
Very high	**Private property and housing:** 1) existing private property or land allocated for housing located in a local authority area where the number of households are expected to increase by >25% by 2041 (ONS data); and/or 2) existing housing and land allocated for housing (e.g. strategic housing sites) covering >5ha and/or >150 houses. **Community land and assets**

Receptor value (sensitivity)	Description
	Where there is a combination of the following: 1) complete severance between communities and their land/assets, with little/no accessibility provision; 2) alternatives are only available outside the local planning authority area; 3) the level of use is very frequent (daily); and 4) the land and assets are used by the majority of the community. **Businesses:** 1) existing employment sites (excluding agriculture) >5ha. **Agricultural land holdings:** 1) areas of land in which the enterprise is wholly reliant on the spatial relationship of land to key agricultural infrastructure; and 2) access between land and key agricultural infrastructure is required on a frequent basis (daily). **Users of recreational routes:** 1) national trails and routes likely to be used for both commuting and recreation that record frequent (daily) use. Such routes connect communities with employment land uses and other services with a direct and convenient route. Little/no potential for substitution; and 2) routes regularly used by vulnerable travellers such as the elderly, school children and people with disabilities, who could be disproportionately affected by small changes in the baseline due to potentially different needs. **Tourism, occupancy, employment, agricultural economy and GVA receptors** 1) Has no capacity to absorb or respond to change without noticeable socio-economic loss or gain.
High	**Private property and housing:** 1) private property or land allocated for housing located in a local planning authority area where the number of households are expected to increase by 16-25% by 2041 (ONS data); and/or 2) existing housing and land allocated for housing (e.g. strategic housing sites) covering >1-5ha and/or >30-150 houses. **Community land and assets** Where there is a combination of the following: 1) there is substantial severance between community and assets, with limited accessibility provision; 2) alternative facilities are only available in the wider local planning authority area;

Receptor value (sensitivity)	Description
	3) the level of use is frequent (weekly); and 4) the land and assets are used by the majority of the community. **Businesses:** 1) employment sites (excluding agriculture) covering >1 – 5ha. **Agricultural land holdings:** 1) areas of land in which the enterprise is dependent on the spatial relationship of land to key agricultural infrastructure; and 2) access between land and key agricultural infrastructure is required on a frequent basis (weekly). **Users of recreational routes:** 1) regional trails and routes (e.g. promoted circular walks) likely to be used for recreation and to a lesser extent commuting, that record frequent (daily) use. **Tourism, occupancy, employment, agricultural economy and GVA receptors** 1) has limited capacity to absorb or respond to change without noticeable socio-economic loss or gain; or 2) is of high socio-economic, land use, recreational, or tourism value; or 3) is of national or international importance; or 4) is accorded priority in national policy; or 5) has no alternatives with available capacity within its study area; or 6) is a destination in its own right (as regards tourism and visitor attractions).
Medium	**Private property and housing:** 1) houses or land allocated for housing located in a local authority area where the number of households is expected to increase by >6-15% by 2041 (ONS data); and/or 2) existing housing and land allocated for housing (e.g. strategic housing sites) covering <1ha and/or <30 houses. **Community land and assets** Where there is a combination of the following: 1) there is severance between communities and their land/assets but with existing accessibility provision; 2) limited alternative facilities are available at a local level within adjacent communities; 3) the level of use is reasonably frequent (monthly); and 4) the land and assets are used by the majority of the community. **Businesses:** 1) existing employment sites (excluding agriculture) covering

Receptor value (sensitivity)	Description
	<1ha. 2) Small local businesses. **Agricultural land holdings:** 1) areas of land in which the enterprise is partially dependent on the spatial relationship of land to key agricultural infrastructure; and 2) access between land and key agricultural infrastructure is required on a reasonably frequent basis (monthly). **Users of recreational routes:** 1) public rights of way and other routes close to communities which are used for recreational purposes (e.g. dog walking), but for which alternative routes can be taken. These routes are likely to link to a wider network of routes to provide options for longer, recreational journeys. **Tourism, occupancy, employment, agricultural economy and GVA receptors:** 1) has some capacity to absorb or respond to change and may result in some perceptible noticeable socio-economic loss or gain; or 2) has moderate capacity to absorb change without fundamentally altering its present character; or 3) has a moderate socio-economic, land use, recreational or tourism value; or 4) is of regional importance; or 5) is accorded priority in local policy; or 6) has some alternatives with available capacity within its study area; or 7) is a destination for people already visiting the area (in regards to tourism and visitor attractions); or 8) forms a cluster of low sensitivity receptors.
Low	**Private property and housing**: 1) proposed development on unallocated sites providing housing with planning permission/in the planning process. **Community land and assets** Where there is a combination of the following: 1) limited existing severance between community and assets, with existing full Disability Discrimination Act (DDA) DDA 1995 **[Ref. 31]** compliant accessibility provision; 2) alternative facilities are available at a local level within the wider community; 3) the level of use is infrequent (monthly or less frequent); and 4) the land and assets are used by the minority of the community. **Businesses:**

Receptor value (sensitivity)	Description
	1) proposed development on unallocated sites providing employment with planning permission/in the planning process. **Agricultural land holdings:** 1) areas of land which the enterprise is not dependent on the spatial relationship of land to key agricultural infrastructure; and 2) access between land and key agricultural infrastructure is required on an infrequent basis (monthly or less frequent). **Users of recreational routes:** 1) routes which have fallen into disuse through past severance, or which are scarcely used because they do not currently offer a meaningful route for either utility or recreational purposes. **Tourism, occupancy, employment, agricultural economy and GVA receptors:** 1) has the capacity to absorb or respond to change with hardly perceptible socio-economic loss or gain; or 2) is tolerant of change without detriment to its character; or 3) is of low socio-economic, land use, recreational or tourism value; or 4) is of local importance; or 5) is accorded low priority in policy; or 6) has a choice of alternatives with available capacity within its study area; or 7) is an incidental destination for people already visiting the area (as regards tourism and visitor attractions).
Negligible	**Private property and housing:** 1) N/A. **Community land and assets** Where there is a combination of the following: 1) no or limited severance or accessibility issues; 2) alternative facilities are available within the same community; 3) the level of use is very infrequent (a few occasions yearly); and 4) the land and assets are used by the minority of the community. **Businesses:** 1) N/A. **Agricultural land holdings:** 1) areas of land which are infrequently used on a non-commercial basis. **Users of recreational routes:** 1) N/A.

Receptor value (sensitivity)	Description
	Tourism, occupancy, employment, agricultural economy and GVA receptors: 1) the socio-economic receptor has the capacity to absorb or respond to change with no socio-economic loss or gain; or 2) the receptor is resistant to change and is of low socio-economic, land use, recreational or tourism value; or there is a wide choice of alternatives with available capacity within its study area.

1.8.3 Criteria for determining the magnitude of impact (change) for each receptor is presented in **Table 31**. These criteria are based on professional judgement and DMRB LA 112 **[Ref. 30]**.

Table 31: Magnitude of impact and typical descriptions

Magnitude of impact (change)	Typical description
Major	**Private property and housing, community land and assets, businesses and agricultural land holdings:** 1) loss of resource and/or quality and integrity of resource; severe damage to key characteristics, features or elements. e.g. direct acquisition and demolition of buildings and direct development of land to accommodate highway assets; and/or 2) introduction (adverse) or removal (beneficial) of complete severance with no/full accessibility provision. 3) major loss or improvement to key elements/features of the baseline conditions such that post development character/composition will fundamentally change. **Users of recreational routes:** 1) >500m increase (adverse)/decrease (beneficial) in journey length; or 2) an impact that would be expected to cause a major restriction of access to or availability of assets in the study area or would result in a major change to existing patterns of use. **Tourism, occupancy, employment, agricultural economy and GVA receptors:** 1) substantial change to the socio-economic receptor in terms of employment levels, output or productivity; and/or 2) an impact that would dominate over baseline tourism and visitor economy conditions; and/or 3) a substantial change to socio-economic loss or gain in the area of impact affecting a large number of people and/or businesses; and/or

Magnitude of impact (change)	Typical description
	4) to the extent of changing the business and employment structure.
Moderate	**Private property and housing, community land and assets, businesses and agricultural land holdings:** 1) partial loss of/damage to key characteristics, features or elements, e.g. partial removal or substantial amendment to access or acquisition of land compromising viability of property, businesses, community assets or agricultural holdings; and/or 2) introduction (adverse) or removal (beneficial) of severe severance with limited/moderate accessibility provision. **Users of recreational routes:** 1) >250m – 500m increase (adverse) or decrease (beneficial) in journey length. 2) an impact that would be expected to have a moderate restriction of access to or availability of assets in the study area or would result in a moderate change to existing patterns of use. **Tourism, occupancy, employment, agricultural economy and GVA receptors:** 1) notable changes to the socio-economic receptor in terms of employment levels, output or productivity; and/or 2) an impact that would be expected to result in a moderate change to baseline tourism and visitor economy conditions; and/or 3) a partial change to socio-economic loss or gain in the area of impact affecting a sizeable number of people (20-100) and/or businesses (10-30) to the extent of adjusting business operations and employment.
Minor	**Private property and housing, community land and assets, businesses and agricultural land holdings:** 1) a discernible change in attributes, quality or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features or elements, e.g. amendment to access or acquisition of land resulting in changes to operating conditions that do not compromise overall viability of property, businesses, community assets or agricultural holdings; and/or 2) introduction (adverse) or removal (beneficial) of severance with adequate accessibility provision. **Users of recreational routes:** 1) >50m - 250m increase (adverse) or decrease (beneficial) in journey length. 2) an impact that would be expected to have a small restriction of access to or availability of assets in the study

Magnitude of impact (change)	Typical description
	area or would result in a small change to existing patterns of use. **Tourism, occupancy, employment, agricultural economy and GVA receptors:** 1) slight/hardly perceptible change to the socio-economic receptor in terms of employment levels, output or productivity; and/or 2) an impact that would be expected to result in a perceptible difference to baseline tourism and visitor economy conditions; and/or 3) a small change to socio-economic loss or gain in the area of impact affecting a group of people and/or businesses to the extent of influencing business activities and employment opportunities.
Negligible	**Private property and housing, community land and assets, businesses and agricultural land holdings:** 1) very minor loss or detrimental alteration to one or more characteristics, features or elements. e.g. acquisition of non-operational land or buildings not directly affecting the viability of property, businesses, community assets or agricultural holdings; and/or 2) very minor introduction (adverse) or removal (beneficial) of severance with ample accessibility provision. **Users of recreational routes:** 1) <50m increase (adverse) or decrease (beneficial) in journey length. 2) An impact that would be unlikely to result in a noticeable difference to assets in the study area. **Tourism, occupancy, employment, agricultural economy and GVA receptors:** 1) no perceptible change to the socio-economic receptor in terms of employment levels, output or productivity; and/or 2) an impact that would not be expected to result in a measurable variation from baseline tourism and visitor economy conditions; and/or 3) no change to socio-economic loss or gain in the area of impact affecting no people and/or businesses permanently and very few people and/or businesses temporarily (for less than 1 year).
No change	**Private property and housing, community land and assets, businesses, agricultural land holdings and users of recreational routes:** 1) no loss or alteration of characteristics, features, elements or accessibility; no observable impact in either direction. **Tourism, occupancy, employment, agricultural economy**

Magnitude of impact (change)	Typical description
	and GVA receptors: 1) no change to the socio-economic receptor in terms of employment levels, outputs or productivity.

1.8.4 The significance of effect is determined by combining the value (sensitivity) of the affected receptor with the magnitude of impact (change). **Table 32** details how the significance of effects will be determined; the criteria are based on professional judgement and DMRB LA112 **[Ref. 30]**.

1.8.5 An effect of 'moderate', 'very large' or 'large' is deemed to be significant. A 'neutral' or 'slight' effect is deemed not significant.

1.8.6 Where the significance matrix indicates a range for the effect significance (e.g. 'slight or moderate'), professional judgement can be applied to select one option (which would be justified by evidence, as appropriate) or an effect significance range can be applied. Where a range for the effect of significance means that the effect could be either significant or not significant, professional judgement will be applied to define the significance (for example with the range 'slight to moderate', where slight would be not significant, but moderate would be significant). Where both categories within the range fall within either 'significant' or 'not significant', the range has not been adjusted to a single descriptor (for example if the range is 'neutral or slight', as both effects are considered to be not significant; or if the range is 'large or very large', as both effects are considered to be significant).

Table 32: Significance of effect matrix

Sensitivity	Magnitude of impact				
	No Change	Negligible	Minor	Moderate	Major
Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate
Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

1.9 Soil

Sensitivity of agricultural land quality, soil handling resilience and soil health

1.9.1 Sensitivity criteria for agricultural land quality and soil handling resilience, derived from the Institute of Environmental Management and Assessment (IEMA) Guide **[Ref. 32]**, are presented in **Table 33** and **Table 34** respectively. Agricultural land classification (ALC) grades have been used as the determining factor for receptor sensitivity for agricultural land quality.

1.9.2 The other factors mentioned within the IEMA Guide **[Ref. 32]** (ecological habitat, soil biodiversity, platform for landscape, soil carbon, soil hydrology, archaeology, cultural heritage, community benefits, geodiversity and source of materials) are assessed as part of the soil resource survey required to calculate the ALC grades. During the ALC survey, anything that can become a potential limitation is flagged by the surveyor and used to gain a full description of the soil characteristics across the Site. Likewise, soil ecological habitats are directly correlated to soil health, so by understanding the soil profile as a whole and the soil limitations, soil function can be understood.

1.9.3 The ALC survey provides sufficient information to accurately describe the soil's physical characteristics across the Site and ALC is the industry standard classification to describe soil function within UK. Therefore, although there is no direct data for the other factors mentioned within the IEMA Guide **[Ref. 32]**, the assessment provides an accurate representation of soil function which is reflected through ALC grade as all soil factors are interlinked.

1.9.4 Sensitivity criteria for the soil health receptor are based on the Agriculture and Horticulture Development Board (AHDB) **[Ref. 33]** soil health scorecard approach, in conjunction with Institute of Sustainability and Environmental Professionals (ISEP) guidance **[Ref. 21]**, and are presented in **Table 36**.

Table 33: Receptor sensitivity relating to agricultural land quality

Sensitivity (in-situ soils)	Soil resource and soil functions
Very high	**Biomass production:** ALC Grades 1 & 2. **Ecological habitat, soil biodiversity and platform for landscape:** Soils supporting protected features within a European site (e.g., Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar); Peat soils; Soils supporting a National Park, or Ancient Woodland. **Soil carbon:** Peat soils. Soils with potential for ecological/landscape restoration.

Sensitivity (in-situ soils)	Soil resource and soil functions
	Soil hydrology: Very important catchment pathway for water flows and flood risk management. **Archaeology, cultural heritage, community benefits and geodiversity:** Scheduled Monuments and adjacent areas; World Heritage and European designated sites; Soils with known archaeological interest; Soils supporting community/recreational/educational access to land covered by National Park designation. **Source of materials:** Important surface mineral reserves that would be sterilised (i.e., without future access).
High	**Biomass production:** ALC Grade 3a. **Ecological habitat, soil biodiversity and platform for landscape:** Soils supporting protected features within a UK designated site (e.g., United Nations Educational, Scientific and Cultural Organisation (UNESCO) Geoparks, Site of Special Scientific Interest (SSSI) or Protected Landscapes, Special Landscape Area, and Geological Conservation Review sites); Native Forest and woodland soils; Unaltered soils supporting semi-natural vegetation (including priority habitats). **Soil carbon:** Organo-mineral soils (e.g., peaty soils). **Soil hydrology:** Important catchment pathway for water flows and flood risk management. **Archaeology, cultural heritage, community benefits and geodiversity:** Soils with probable but as yet unproven (prior to being revealed by construction) archaeological interest; Historic parks and gardens; Regionally Important Geological and Geomorphological Sites (RIGS); Soils supporting community/recreational/educational access to RIGS and Protected Landscapes. **Source of materials:** Surface mineral reserves that would be sterilised (i.e. without future access).
Medium	**Biomass production:** ALC Grade 3b. **Ecological habitat, soil biodiversity and platform for landscape:** Soils supporting protected or valued features within non-statutory designated sites (e.g., Local Nature Reserves, Local Geological Sites, Sites of Nature Conservation Importance, Special Landscape Areas; Non-Native Forest and woodland soils. **Soil carbon:** Mineral soils. **Soil hydrology:** Important minor catchment pathway for water flows and flood risk management. **Archaeology, cultural heritage, community benefits and geodiversity:** Soils with possible but as yet unproven (prior to being revealed by construction) archaeological

Sensitivity (in-situ soils)	Soil resource and soil functions
	interest; Soils supporting community/recreational/educational access to land. **Source of materials:** Surface mineral reserves that would remain accessible for extraction.
Low	**Biomass production:** ALC Grades 4 and 5 or Urban soils. **Ecological habitat, soil biodiversity and platform for landscape:** Soils supporting valued features within non-designated notable or priority habitats/landscapes; Agricultural soils. **Soil carbon:** Mineral soils. **Soil hydrology:** Pathway for local water flows and flood risk management. **Archaeology, cultural heritage, community benefits and geodiversity:** Soils supporting no notable cultural heritage, geodiversity nor community benefits; Soils supporting limited community/recreational/educational access to land. **Source of materials:** Surface mineral reserves that would remain accessible for extraction.
Negligible	As for low sensitivity, but with only indirect, tenuous, and unproven links between sources of impact and soil functions.

Table 34: Receptor sensitivity relating to soil handling resilience

Sensitivity of topsoil and subsoil	Soil texture, field capacity days (FCD) and wetness class
High (low resilience to structural damage)	Soils with high clay and silt fractions (clays, silty clays, sandy clays, heavy silty clay loams and heavy clay loams) and organo-mineral and peaty soils where the FCD are 150 or greater; Medium-textured soils (silt loams, medium silty clay loams, medium clay loams and sandy clay loams) where the FCDs are 225 or greater; and All soils in wetness class 5 and 6 (WCV and WCVI).
Medium (medium resilience to structural damage)	Clays, silty clays, sandy clays, heavy silty clay loams, heavy clay loams, silty loams and organo-mineral and peaty soils where the FCDs are fewer than 150; Medium-textured soils (silt loams, medium silty clay loams, medium clay loams and sandy clay loams) where FCDs are fewer than 225; and Sands, loamy sands, sandy loams and sandy silt loams where the FCDs are 225 or greater or are in wetness classes 3 and 4 (WCIII and WCIV).

Sensitivity of topsoil and subsoil	Soil texture, field capacity days (FCD) and wetness class
Low (high resilience to structural damage)	Soils with a high sand fraction (sands, loamy sands, sandy loams and sandy silt loams) where the FCDs are fewer than 225 and are in wetness classes 1 and 2 (WCI and WCII).

1.9.5 The categories for receptor sensitivities relating to soil health are outlined in **Table 35**.

1.9.6 Sensitivity assesses as the average (mean) of the overall score of each soil health indicator, which are presented in **Table 36**. Soil health indicators can be a range of factors such as nutrient concentrations, organic matter, pH, bulk density, soil biota, earthworm counting or VESS (visual evaluation of soil structure) score.

1.9.7 The average of the scores assigned to each indicator is rounded to the closest whole number. The overall soil health sensitivity classification is therefore determined from the mean score of the indicators assessed, rather than any single indicator.

Table 35: Receptor sensitivity relating to soil health

Sensitivity of soils	Relation to soil health assessment outcome
High	Soil is assessed as having optimal soil health, based on the mean score of the assessed soil health indicators. Optimal soil health is determined for biological, chemical and physical soil conditions.
Medium	Soil is assessed as having moderate soil health, based on the mean score of the assessed soil health indicators. Moderate soil health is determined for biological, chemical and/or physical soil conditions.
Low	Soil is assessed as having poor soil health, based on the mean score of the assessed soil health indicators. Poor soil health is determined for biological, chemical and/or physical soil conditions.

Table 36: Soil health indicator scoring system

Indicator	Scoring System		
	Poor (1 pt)	Moderate (2 pts)	Optimal (3 pts)
VESS	Poor soil structure. Compact or very compact with impacts on root	Adequate soil structure. Firm. Larger aggregates break down	Good soil structure. Friable/crumbly. Small round aggregates.

Indicator	Scoring System		
	Poor (1 pt)	Moderate (2 pts)	Optimal (3 pts)
	observed.		
Earth worm count	Cropping: ≤3 Grassland: ≤9 or predominantly one species	Cropping: 4-8 Grassland: 10-19	Cropping: ≥9 Grassland: ≥20 with good range of eco-types
Soil organic matter (Cropping - East England)	Light topsoil: ≤1.0 Medium topsoil: ≤1.7 Heavy topsoil: ≤2.2	Light topsoil: 1.1-2.1 Medium topsoil: 1.8-3.3 Heavy topsoil: 2.3-4.4	Light topsoil: ≥2.2 Medium topsoil: ≥3.4 Heavy topsoil: ≥4.5
Soil organic matter (Cropping - East England, Midlands and South England)	Light topsoil: ≤1.0 Medium topsoil: ≤1.9 Heavy topsoil: ≤2.7	Light topsoil: 1.1-3.0 Medium topsoil: 2.0-4.0 Heavy topsoil: 2.8-5.2	Light topsoil: ≥3.1 Medium topsoil: ≥4.1 Heavy topsoil: ≥5.3
Soil organic matter (Cropping – Southwest England, Northwest England and Wales)	Light topsoil: ≤1.3 Medium topsoil: ≤2.5 Heavy topsoil: ≤3.6	Light topsoil: 1.4-3.7 Medium topsoil: 12.6-5.0 Heavy topsoil: 3.7-6.2	Light topsoil: ≥3.8 Medium topsoil: ≥5.1 Heavy topsoil: ≥6.3
Soil organic matter (Grassland – all lowland regions)	Light topsoil: ≤2.1 Medium topsoil: ≤3.4 Heavy topsoil: ≤4.6	Light topsoil: 2.2-4.9 Medium topsoil: 3.5-6.4 Heavy topsoil: 4.7-7.6	Light topsoil: ≥5.0 Medium topsoil: ≥6.5 Heavy topsoil: ≥7.7
pH	Cropping: ≤5.49 Grassland: ≤5.49	Cropping: 5.5-6.49 or ≥7.5 Grassland: 5.5-5.99 or ≥7.5	Cropping: 6.5-7.49 Grassland: 6.0-7.49
Extractable P	≤9 or ≥71. Index 0 or above 4	10-15 or 46-70. Index 1 or 4	16-45. Index 2 or 3
Extractable K	≤60. Index 0	61-120. Index 1	≥121. Index 2 or higher
Extractable Mg	≤25. Index 0	26-50 or ≥351. Index 1 or above 5	51-350. Index 2-5
Potential mineralisable N	≤27	28-40	≥41

Indicator	Scoring System		
	Poor (1 pt)	Moderate (2 pts)	Optimal (3 pts)
CO2-C burst	<100	100-135	>135

Magnitude of impact relating to agricultural land quality and soil handling resilience

1.9.8 Where an impact is considered to be likely to occur as a result of the Proposed Development being constructed, operated and/or decommissioned, the magnitude of impact is classified using the criteria presented in **Table 37**, which are derived from the IEMA Guide **[Ref. 32]**.

Table 37: Magnitude of impact criteria relating to agricultural land quality and soil handling resilience

Magnitude of impact (change)	Description of impacts restricting proposed land use
Major	Permanent, irreversible loss of one or more soil functions or soil volumes (including permanent sealing or land quality downgrading) over an area of more than 20 ha; or loss of soil-related features, as advised by other factor specialists in the EIA team (including effects from 'temporary developments'*). or Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of more than 20 ha; or gain in soil-related features, as advised by other factor specialists in the EIA team (including effects from 'temporary developments'*).
Moderate	Permanent, irreversible loss of one or more soil functions or soil volumes, over an area of between 5 ha and 20 ha; or loss of soil-related features, as advised by other factor specialists in the EIA team (including effects from 'temporary developments'*). or Potential for improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of between 5 ha and 20 ha; or gain in soil related features, as advised by other factor specialists in EIA team.
Minor	Permanent, irreversible loss over an area of less than 5 ha or a temporary, reversible loss of one or more soil functions or soil volumes; or temporary, reversible loss of soil-related features, as advised by other factor specialists in EIA team. or

Magnitude of impact (change)	Description of impacts restricting proposed land use
	Potential for permanent improvement in one or more soil functions or soil volumes due to remediation or restoration over an area of less than 5 ha; or a temporary improvement in one or more soil functions due to remediation or restoration or off-site improvement; or temporary gain in soil-related features, as advised by other factor specialists in EIA team.
Negligible	No discernible loss or reduction or improvement of soil functions or soil volumes that restrict current or proposed land use.
* Temporary developments can result in a permanent impact if resulting disturbance or land use change causes permanent damage to soils.	

Magnitude of impact relating to soil health

1.9.9 Where an impact is considered to be likely to occur as a result of the Proposed Development being constructed, operated and/or decommissioned, the magnitude of impact is classified by the degree of change, duration and reversibility of the effect on soil health. Effects may be either beneficial or adverse depending on whether soil health is enhanced or degraded using the criteria presented in **Table 38** which is based on profession judgement in line with AHDB **[Ref. 33]** and ISEP guidance **[Ref. 21]**.

Table 38: Magnitude of impact criteria relating to soil health

Magnitude of impact (change)	Description of impacts restricting soil health
Major	Permanent and irreversible change to soil health resulting in a substantial degradation, loss or enhancement of one or more biological, chemical and/or physical soil functions. The change is expected to persist beyond the lifetime of the development and is not readily reversible through normal land management practices.
Moderate	Long-term but reversible change to soil health resulting in a measurable degradation or enhancement of one or more biological, chemical and/or physical soil functions. The change would persist for an extended period but could be reversed through restoration, remediation, management intervention or a change in land use.
Minor	Temporary and reversible change to soil health resulting in a limited degradation or enhancement of one or more biological, chemical and/or physical soil functions. The change is short-term in nature and soil health is expected

Magnitude of impact (change)	Description of impacts restricting soil health
	to return to, or move towards, its previous condition following cessation of the activity.
Negligible	No discernible change to overall soil health or to the biological, chemical or physical functions of the soil.

Significance of effect relating to agricultural land quality, soil handling resilience and soil health

1.9.10 The significance of effect is based on the sensitivity of the receptor and the magnitude of impact, as outlined in **Table 39**, which is derived from the IEMA Guide **[Ref. 32]**. The significance of effect can be either adverse or beneficial.

1.9.11 The significance of an effect is reported as either 'significant' or 'not significant'. Any effects that have been determined as 'moderate' or above are considered to be significant. Any effects that have been determined as 'slight' or below are considered not significant. Where the significance matrix indicates a range for the effect significance (e.g. 'slight or moderate'), professional judgement can be applied to select one option (which would be justified by evidence, as appropriate) or an effect significance range can be applied. If a significance of effect is assigned as 'slight or moderate', this would be considered significant unless further information could be provided to downgrade the significance effect to 'slight'.

1.9.12 With reference to **Table 35** and **Table 36** above, it should be noted that for soil handling resilience and soil health, only the sensitivity categories of 'high', 'medium' and 'low' apply within **Table 39**. The sensitivity categories of 'very high' and 'negligible' do not apply.

Table 39: Significance of effect criteria relating to agricultural land quality, soil handling resilience and soil health

Sensitivity	Magnitude of impact				
	No Change	Negligible	Minor	Moderate	Major
Very High	Neutral	Slight	Moderate or Large	Large or Very Large	Very Large
High	Neutral	Slight	Slight or Moderate	Moderate or Large	Large or Very Large
Medium	Neutral	Neutral or Slight	Slight	Moderate	Moderate or Large
Low	Neutral	Neutral or Slight	Neutral or Slight	Slight	Slight or Moderate

Sensitivity	Magnitude of impact				
	No Change	Negligible	Minor	Moderate	Major
Negligible	Neutral	Neutral	Neutral or Slight	Neutral or Slight	Slight

1.10 Transport and access

1.10.1 The Institute of Environmental Management and Assessment (IEMA) Environmental Assessment of Traffic and Movement (2023) **[Ref. 34]** will be used to characterise the environmental transport and access effects (off-site effects) and the assessment of significance. The guidelines intend to complement professional judgement and the experience of trained assessors and require consideration of the following:

- Severance;
- Driver delay;
- Pedestrian delay (incorporating delay to all non-motorised users);
- Non-motorised user amenity;
- Fear and intimidation;
- Road safety;
- Road safety audits; and
- Large loads.

Sensitivity of the receptor

1.10.2 In terms of transport and access impacts, the receptors are the users of the roads (vehicle users and non-motorised users) and those resident alongside the roads within the study area and the locations through which those roads pass.

1.10.3 The IEMA Guidelines (2023) **[Ref. 34]** includes guidance on how the sensitivity of receptors should be assessed. Using that as a base, professional judgement has been used to develop a classification of sensitivity for users based on the characteristics of roads and locations. This is summarised in **Table 40**.

Table 40: Classification of receptor sensitivity

Sensitivity	Description
High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.

Sensitivity	Description
	Where a location is a large rural settlement containing a high number of community and public services and facilities.
Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures. Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures. Where a location is a small rural settlement, few community or public facilities or services.
Negligible	Where roads have no adjacent settlements. Includes new or existing strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Indivisible Loads, and new strategic trunk road junctions capable of accommodating Abnormal Indivisible Loads. Where a location includes individual dwellings or scattered settlements with no facilities.

Magnitude of impact

1.10.4 The magnitude of impact will be assessed in accordance with the following rules which are outlined in the IEMA Guidelines (2023) **[Ref. 34]**, and is used to inform a screening exercise to determine which links within the study area are to be considered for detailed analysis in the assessment:

- **Rule 1**: Include highway links where traffic flows are predicted to increase by more than 30% (or where the number of heavy goods vehicles (HGVs) is predicted to increase by more than 30%).
- **Rule 2**: Include any other specifically sensitive areas where total traffic flows are predicted to increase by 10% or more.

1.10.5 The IEMA Guidelines (2023) **[Ref. 34]** identify the key impacts when assessing the magnitude of impact from an individual development:

- **Severance** – the IEMA Guidelines (2023) **[Ref. 34]** advises that: "*The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing 'slight', 'moderate' and 'substantial' changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.*" (Para 3.16).

The IEMA Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that: "*the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc*." (Para 3.17).

- **Driver delay** – the IEMA Guidelines (2023) **[Ref. 34]** note that these delays are only likely to be "*significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system*" (Para 3.20).
- **Pedestrian delay** (incorporating delay to all non-motorised users) – the IEMA Guidelines (2023) **[Ref. 34]** advises that "*pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general, increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site.*" (Para 3.24). Furthermore, the IEMA Guidelines advises that: *"…it is not considered wise to set down definitive thresholds. Instead it is recommended that the competent traffic and movement expert use their judgement to determine whether pedestrian delay constitutes a significant effect*." (Para 3.26).
- **Non-motorised user amenity** - the IEMA Guidelines (2023) **[Ref. 34]** advises that: "*The 1993 Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law*." (Para 3.30).
- **Fear and intimidation** – there are no commonly agreed thresholds for estimating levels of fear and intimidation from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and substantial changes respectively in the IEMA Guidelines (2023) (Para 2.19) **[Ref. 34]**. As such, this will be used to assess the potential impacts associated with construction activities around fear and intimidation on people near the Proposed Development.
- **Road safety** – professional judgement will be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the IEMA Guidelines (2023) **[Ref. 34]**, areas of collision clusters will be subject to detailed review.
- **Road safety audits** – It is proposed to undertake any necessary Road Safety Audits post-consent and it is considered that this can be secured via a DCO requirement.
- **Large loads** – The movement of the Abnormal Indivisible Loads associated with the construction of the Proposed Development will be considered in full, within a separate route survey assessment, which will

identify if any physical mitigation measures are required to accommodate the predicted loads.

1.10.6 While not specifically identified, as more vulnerable road users, cyclists are considered in similar terms to pedestrians.

1.10.7 The impacts and levels of magnitude are discussed in **Table 41**. The IEMA Guidelines (2023) **[Ref. 34]** states that there are useful references within Design Manual for Roads and Bridges that can be used cautiously to augment the assessment methodologies outlined in the Guidelines. Equally, the EIA suite of documents (Design Manual for Roads and Bridges LA 101 to LA 104 inclusive) set out a framework for EIA, some of which can be utilised for an assessment of non-highway/road projects. Therefore, the criteria presented in **Table 41** have been informed by Design Manual for Roads and Bridges LA 104: Environmental Assessment and Monitoring **[Ref. 20]**.

Table 41: Criteria for determining magnitude of impact

Magnitude of impact	Description
Major	These effects are considered to be material in the decision-making process.
Moderate	These effects may be important but are not likely to be material factors in decision making. The cumulative effects of such factors may influence decision-making if they lead to an increase in the overall adverse effect on a receptor.
Minor	These effects may be raised as local factors. They are unlikely to be critical in the decision-making process but are important in improving the subsequent design of the project.
Negligible	No effects or those that are imperceptible.

Significance of effect

1.10.8 The significance of the effect upon receptors is determined by combining the assessed magnitude of impact and the sensitivity of the receptor. **Table 42** sets out a matrix below used to determine significant effects.

1.10.9 Significance is categorised as major, moderate, minor or negligible. Effects judged to be of major or moderate significance are considered to be significant and will require additional mitigation. Effects judged to be of minor or negligible significance are considered not significant.

1.10.10 Where an effect could be one of major/moderate, moderate/minor or minor/negligible significance, professional judgement will be used to determine which option should be applicable.

Table 42: Significance of effect matrix

Sensitivity of receptor	Magnitude of impact			
	Major	Moderate	Minor	Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

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Appendix E

Windsock
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APPENDIX E: PROPOSED STRUCTURE OF THE ENVIRONMENTAL STATEMENT

The ES will form three volumes, and a Commitments Register as detailed below and in line with Planning Inspectorate's Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Application Documents Annex A[1], alongside the anticipated chapters that will form part of Volume 1.

6.1 Volume 1 Environmental Statement Chapters

Introductory Chapters

Chapter 1: Introduction

Chapter 2: Location of the Proposed Development

Chapter 3: Description of the Proposed Development

Chapter 4: Reasonable Alternatives Considered

Chapter 5: Approach to Environmental Impact Assessment

Technical Chapters

Chapter 6: Air Quality

Chapter 7: Biodiversity

Chapter 8: Climate

Chapter 9: Cultural Heritage

Chapter 10: Land and Groundwater

Chapter 11: Landscape and Visual

Chapter 12: Noise and Vibration

Chapter 13: Population

Chapter 14: Soil

Chapter 15: Transport and Access

Chapter 16: Interaction Effects and Cumulative Effects

6.2 Volume 2 Environmental Statement Appendices

[1] Nationally Significant Infrastructure Projects: Advice on the Preparation and Submission of Application Documents - GOV.UK

6.3 Volume 3 Environmental Statement Figures

6.4 Volume 4 Non-Technical Summary

Appendix F

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APPENDIX F:
EIA SCOPING REPORT COMMITMENTS REGISTER



Windsock Solar Farm

EIA Scoping Report Commitments Register

October 2026
PINS Ref: EN0110045

Windsock
Solar Farm

1 INTRODUCTION

1.1 Purpose of this document

1.1.1 This Commitments Register has been prepared on behalf of Trio Windsock Solar Farm Ltd (the Applicant) to track commitments made on behalf of the Applicant in relation to the Environmental Impact Assessment (EIA) Scoping Report and the Development Consent Order (DCO) application for the construction , operation (including maintenance) and decommissioning of Windsock Solar Farm (the Proposed Development).

1.1.2 This Commitment Register follows the format and structure advised in the Nationally Significant Infrastructure Projects: Commitments Register guidance[1].

1.1.3 This document is a 'live' document and will be updated throughout the pre-application process as the design develops.

[1] Nationally Significant Infrastructure Projects: Commitments Register - GOV.UK

Commitment Reference	Commitment	Monitoring	Project Phase	Air Quality	Biodiversity	Climate Change	Cultural Heritage	Glint and Glare	Land and Groundwater	Landscape and Visual	Noise	Population and Health	Soil	Transport	Waste	Water	Commitment Securing Mechanism	Delivery	Associated Supporting Documents	Compliance Data and Details
1	The Proposed Development design would incorporate a minimum offset distance of 500m from all residential receptors to the location of the BESS and Substation.	N/A	PC, C, O, D	X						X	X	X					Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
2	The Proposed Development design would incorporate a minimum offset distance of 100m from all residential receptors to the Solar PV development.	N/A	PC, C, O, D	X				X		X	X						Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
3	The Proposed Development design would incorporate a minimum offset distance of 150m from the RAF antenna.	N/A	PC, C, O, D									X					Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
4	The Proposed Development design would incorporate a minimum offset distance of 10m from the edge of woodlands and centreline of hedgerows to the fenceline.	N/A	PC, C, O, D		X					X							Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
5	The Proposed Development design would incorporate a minimum offset distance of 10m from all PRoW to the fenceline.	N/A	PC, C, O, D	X						X	X	X					Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
6	Where possible, existing hedgerows, woodland, ditches and field margins would be retained. Where possible, any breaks or crossings (associated new tracks, security fencing, and/or cable routes) would be designed to use existing agricultural tracks between fields and the width of any crossings would be kept to a minimum.	N/A	PC, C, O, D		X			X		X							Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
7	Where hardstanding is concentrated, e.g., Substation concrete bases, a formal drainage strategy would be included.	N/A	PC, C, O, D						X							X	Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
8	The Proposed Development design would minimise, where possible, the use of BMV agricultural land. Where possible, existing access tracks will be used, and new access tracks will avoid BMV land as far is practical.	N/A	PC, C, O, D										X				Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
9	Construction storage areas and machinery will be designed and appropriately managed to prevent spillages or waste products coming into contact with soils, surface water and groundwater, in accordance with statutory environmental protection requirements.	N/A	PC, C, O, D						X				X			X	Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
10	Areas of impermeable surfaces will be assessed in the Flood Risk Assessment and designed to ensure adequate groundwater infiltration is maintained during works. This will ensure that no significant changes occur to the existing surface water or groundwater regime.	N/A	PC, C, O, D						X							X	Design Commitments FRA	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
11	The Outline Drainage Strategy will ensure that the surface water regime during construction will continue to mirror the existing surface water regime and will ensure that there is minimal effect on the existing groundwater conditions.	N/A	PC, C, O, D						X							X	Design Commitments Outline Drainage Strategy	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	

KEY:
PC = Pre-construction, C = Construction, O = Operation (including maintenance), D = Decommissioning

Commitment Reference	Commitment	Monitoring	Project Phase	Air Quality	Biodiversity	Climate Change	Cultural Heritage	Glint and Glare	Land and Groundwater	Landscape and Visual	Noise	Population and Health	Soil	Transport	Waste	Water	Commitment Securing Mechanism	Delivery	Associated Supporting Documents	Compliance Data and Details
12	All existing PRoW will be retained in their existing alignment, wherever practicable, and any diversions will take the shortest feasible route. Where it is not possible to avoid diversions or closures of existing PRoWs; any new permanent and diverted PRoW would be designed to either replicate or improve a PRoW route, quality, safety and accessibility. Any proposed changes to a PRoW will be agreed in consultation with Lincolnshire County Council and North Kesteven District Council, to ensure there are suitable diversions/replacements in place.	N/A	PC, C, O, D							X		X		X			Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
13	Proposed hedgerows will be planted using locally native species where possible, with a variety of fruiting and nut bearing species providing foraging opportunities.	N/A	PC, C, O, D		X			X		X							Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
14	Carbon reduction practices will be embedded as a core principle for the design team. Earlier engagement with carbon reduction allows for the greatest returns.	N/A	PC, C, O, D			X											Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 4.8.	
15	Perimeter fencing surrounding the Solar PV development will be offset at least 30m from existing main badger setts where practicable.	N/A	PC, C, D		X												Design Commitments	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 4.8.	
16	To ensure best practice guidance is adhered to in relation to pollution prevention measures in regards to surface water quality, groundwater quality, and waste.	N/A	C, O, D						X						X	X	Outline CEMP, Outline Site Waste Management Plan (Outline SWMP), Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Sections 5.7, 5.9 and 6.5	
17	Actions to meet the waste hierarchy in accordance with the principles of the Government's Resources and waste strategy for England 2018 Promoting the recycling of materials by segregating construction waste to be re-used and recycled where practical.	N/A	C, O, D												X		Outline CEMP, Outline SWMP, Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Section 5.7.	
18	Procedures should be put in place to avoid damage to human health due to contamination, and to avoid, minimise or mitigate effects on the environment during works. This includes managing risks from former agricultural activities such as waste pits, pesticides and asbestos containing material, ensuring that land and groundwater receptors are protected from effects of contamination associated with historical usage of the land.	N/A	C, O, D						X							X	Outline CEMP, Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Sections 5.9 and 6.5.	
19	Fuel storage will be managed by procedures in appropriate management documents, including storage, bunding, inspections, provisions of spill kits, etc.	N/A	C, O, D						X							X	Outline CEMP, Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Sections 5.9 and 6.5.	

KEY:
PC = Pre-construction, C = Construction, O = Operation (including maintenance), D = Decommissioning

Commitment Reference	Commitment	Monitoring	Project Phase	Air Quality	Biodiversity	Climate Change	Cultural Heritage	Glint and Glare	Land and Groundwater	Landscape and Visual	Noise	Population and Health	Soil	Transport	Waste	Water	Commitment Securing Mechanism	Delivery	Associated Supporting Documents	Compliance Data and Details
20	Refuelling will be managed by procedures in management plans, including restricting areas where refuelling can be undertaken, distance from watercourses/drainage, provision of drip trays, etc.	N/A	C, O, D						X							X	Outline CEMP, Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Sections 5.9 and 6.5.	
21	Hazardous materials and substances will be managed by adherence to appropriate management plans, including concrete mixing and use,	N/A	C, O, D						X							X	Outline CEMP, Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Sections 5.9 and 6.5.	
22	Spillages and leaks will be managed by emergency response procedures within the management plans using the Stop, Contain, Notify system	N/A	C, O, D						X							X	Outline CEMP, Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Sections 5.9 and 6.5.	
23	If unexpected contamination is encountered, this will be managed in accordance with procedures detailed in appropriate management plans. If remediation is necessary, this will be agreed in accordance with the North Kesteven District Council and Lincolnshire County Council and/or EA, as appropriate.	N/A	C, O, D						X							X	Outline CEMP, Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Sections 5.9 and 6.5.	
24	A piling risk assessment will be prepared in advance of construction works.	N/A	C						X							X	Outline CEMP	Construction by the Principal Contractor.	EIA Scoping Report Sections 5.9 and 6.5.	
25	Any damage to land drainage will be either reinstated or diverted prior to handing the land back to the landowner.	N/A	C, O, D						X							X	Outline CEMP, Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Sections 5.9 and 6.5.	
26	Trenchless Horizontal Directional Drilling (HDD) methods would be undertaken in accordance with a HDD Fluid Breakout Plan.	N/A	C						X							X	Outline CEMP	Construction by the Principal Contractor.	EIA Scoping Report Sections 5.9 and 6.5.	
27	Remove concrete, hardstanding, foundations and internal tracks to up to 1m depth; cables below 1m may remain in situ subject to review against appropriate legislation and standards at the time of decommissioning.	N/A	D						X							X	Outline DEMP	Decommissioning by the Principal Contractor.	EIA Scoping Report Sections 5.9 and 6.5.	
28	Pre-construction surveys will be carried out for species where the baseline may of changed (e.g. badger).	N/A	PC, D		X												Outline CEMP, Outline DEMP	Pre-construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.2.	
29	Measures to safeguard ecological receptors from construction and decommissioning related effects will be implemented where practicable.	N/A	C, D		X												Outline CEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.2.	
30	Natural England Licence(s) will be sought for any impacts to bats, badgers and Schedule 1 birds as required. The licencing process requires mitigation	N/A	PC		X												Outline CEMP and Outline Landscape and Ecological	Pre-construction by the Principal Contractor.	EIA Scoping Report Section 6.2.	

KEY:
PC = Pre-construction, C = Construction, O = Operation (including maintenance), D = Decommissioning

Commitment Reference	Commitment	Monitoring	Project Phase	Air Quality	Biodiversity	Climate Change	Cultural Heritage	Glint and Glare	Land and Groundwater	Landscape and Visual	Noise	Population and Health	Soil	Transport	Waste	Water	Commitment Securing Mechanism	Delivery	Associated Supporting Documents	Compliance Data and Details
	measures and specific methods to be provided during the application process and provides a legal framework to ensure implementation.																Management Plan (Outline LEMP).			
31	Measures to undertaken to protect retained trees and their Root Protection Areas from construction and decommissioning activities will be identified.	N/A	PC, D		X												Outline CEMP, Outline DEMP	Pre-construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.2.	
32	Long-term management and monitoring of ecological features will be set out in the Detailed LEMP with the principals that underpin them set out in the Outline LEMP.	N/A	O		X												Outline OEMP and Outline LEMP	Operation by the Operations Team.	EIA Scoping Report Section 6.2.	
33	Retained trees will be protected from operational activities and appropriately managed where required.	N/A	O		X												Outline OEMP and Outline LEMP	Operation by the Operations Team.	EIA Scoping Report Section 6.2.	
34	Any future works to retained trees will be undertaken in accordance with relevant arboricultural standards and subject to appropriate controls	N/A	O		X												Outline OEMP and Outline LEMP	Operation by the Operations Team.	EIA Scoping Report Section 6.2.	
35	Where lighting is required, it will conform to best practice guidelines with respect to minimising light spill into adjacent habitats to prevent disturbance to sensitive receptors. Inward/downward directional lighting would be used to avoid light spill onto adjacent hedgerows, woodlands, and field margins, which are likely to be used by bats and other nocturnal animals.	N/A	C, D		X					X							Outline CEMP, Outline DEMP	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Sections 6.2 and 6.6.	
36	Where technical specifications allow, maximise the recycled content of construction materials such as concrete and steel.		C			X											Outline CEMP	Construction by the Principal Contractor.	EIA Scoping Report Section 6.3.	
37	Where possible, maximise the specification of materials with an environmental product declaration with the aim of reducing embodied carbon emissions.		C			X											Outline CEMP	Construction by the Principal Contractor.	EIA Scoping Report Section 6.3.	
38	Incentivise the use of local suppliers, where possible, with a view to shorten Proposed Development supply chains and environmental footprint.		C			X											Outline CEMP	Construction by the Principal Contractor.	EIA Scoping Report Section 6.3.	
39	On-site mobile and non-mobile plant should conform to the latest emissions standards, with mobile vehicles conforming to EURO 6 standards as a minimum. All plant should investigate the option of using Hydrotreated Vegetable Oil fuels or electric versions where possible.		C			X											Outline CEMP	Construction by the Principal Contractor.	EIA Scoping Report Section 6.3.	
40	Require main contractors to report on energy data, water usage and waste disposal and their GHG emissions.		C			X											Outline CEMP	Construction by the Principal Contractor.	EIA Scoping Report Section 6.3.	
41	Weather forecasts to be monitored daily. Forecasts would be used to inform the sequencing of activities and the use of appropriate personal protective equipment.		C, D			X											Outline CEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.3.	

KEY:
PC = Pre-construction, C = Construction, O = Operation (including maintenance), D = Decommissioning

Commitment Reference	Commitment	Monitoring	Project Phase	Air Quality	Biodiversity	Climate Change	Cultural Heritage	Glint and Glare	Land and Groundwater	Landscape and Visual	Noise	Population and Health	Soil	Transport	Waste	Water	Commitment Securing Mechanism	Delivery	Associated Supporting Documents	Compliance Data and Details
42	Provision of welfare facilities including breaks, shade, and hydration facilities, as well as first aid amenities.		C, D			X											Outline CEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.3.	
43	Provision of an Emergency Response Plan, to include on-site fire prevention, suppression, and evacuation procedures.		C, D			X											Outline CEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.3.	
44	Monitoring and maintenance of plant and equipment to ensure compliance of machinery with design specifications and flexibility in the construction activities programme to account for climatic variation.		C,D			X											Outline CEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.3.	
45	Appropriate on-site storage of plant and equipment.		C, D			X											Outline CEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.3.	
46	Hazardous materials would be maintained in a safe storage area when not in use. This would be away from the Site access and egress points. Disposal of hazardous waste would be undertaken appropriately, taking into account the risks associated with high temperatures and increased rainfall.		C			X											Outline CEMP	Construction by the Principal Contractor.	EIA Scoping Report Section 6.3.	
47	Wherever practical, components would be prioritised for re-use, refurbishment and recycling, with disposal only considered as a last resort.		D			X											Outline DEMP	Decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.3.	
48	The condition and integrity of assets would be regularly assessed, and maintenance undertaken as early as required, giving consideration to materials with enhanced tolerance to fluctuating temperatures and exposure to rainfall.		O			X											Outline OEMP	Operation by the Operations Team.	EIA Scoping Report Section 6.3.	
49	Demarcating of heritage assets within the Site (if present) using physical barriers, if appropriate, with a suitable buffer from the heritage asset established to avoid accidental direct impacts.		PC, C, D				X										Outline CEMP, Outline DEMP	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.4.	
50	A programme of archaeological investigation and recording will be undertaken to off-set adverse impact to archaeological remains if required, and in agreement with the Historic Environment (Infrastructure) Officer where necessary.		PC, C				X										Outline CEMP, Outline WSI	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.4.	
51	Planting to reduce visual effects resulting from changes within the setting of a heritage asset if required and appropriate.		PC, C, O				X	X		X							Outline CEMP, Outline OEMP, Outline LEMP	Construction by the Principal Contractor. Operation by the Operations Team.	EIA Scoping Report Section 6.4.	
52	Spoil bunds will be located away from known archaeological remains and therefore avoid potential impacts to them through decommissioning activities such as soil rotavation.		D				X										Outline DEMP, Outline SMP	Decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.4.	

KEY:
PC = Pre-construction, C = Construction, O = Operation (including maintenance), D = Decommissioning

Commitment Reference	Commitment	Monitoring	Project Phase	Air Quality	Biodiversity	Climate Change	Cultural Heritage	Glint and Glare	Land and Groundwater	Landscape and Visual	Noise	Population and Health	Soil	Transport	Waste	Water	Commitment Securing Mechanism	Delivery	Associated Supporting Documents	Compliance Data and Details
53	Infrastructure design will take account of local drainage conditions and potential surface water flood risk where relevant, with sensitive electrical infrastructure located at the necessary minimum ground levels.		PC, C, O, D			X										X	Design Commitments	Construction by the Principal Contractor.	EIA Scoping Report Section 6.4.	
54	A ground investigation and accompanying interpretative report is required. The scope and methodology should be confirmed and agreed with North Kesteven District Council and Lincolnshire County Council before commencement of any works.	TBC	C						X							X	Outline CEMP	Client to confirm	EIA Scoping Report Section 6.5.	
55	To follow best practice guidance from the British Horse Society (BHS) for undertaking works near bridleways	N/A	C, O, D								X						Outline Construction Environmental Management Plan (Outline CEMP), Outline Operational Environmental Management Plan (Outline OEMP), and Outline Decommissioning Environmental Management Plan (Outline DEMP)	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	BHS, (2025) Advice on solar farms near routes used by Equestrians. Available online: solar-0825.pdf BHS (2026) Advice on Construction sites on or near horse routes. Available online: construction-0626.pdf EIA Scoping Report Section 6.7.	
56	Measures to minimise levels of noise and vibration during the construction and decommissioning phases may include, but not be limited to: • The use of lower emitting noise level plant items; • Management of operations to more appropriate periods; • Use of noise barriers/temporary enclosures; • Sensitive routing of construction traffic, both within the Site and on the public highway; • Preparation of a Noise and Vibration Management Plan; • Design of the construction compound layouts to reduce the need for reversing vehicles; • Use of low-noise vehicle reversing systems; and • Community liaison.		PC, C, D								X			X			Outline CEMP, Outline DEMP, Outline Construction Traffic Management Plan (Outline CTMP)	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.7.	
57	To ensure that best practice guidance is adhered to in relation to the handling of soils during construction, operation and decommissioning activities. Measures to mitigate against damage to soils can include: • Storing stripped soils temporarily in segregated stockpiles dependent on soil type, correctly managed including grassing and weeding regularly, to	N/A	PC, C, O, D										X				Outline Soil Management Plan (Outline SMP), Outline CEMP, Outline OEMP and Outline DEMP	Construction and decommissioning by the Principal Contractor. Operation by the Operations Team.	Institute of Quarrying (2021) Good Practice Guide for Handling Soils in Mineral Workings. Available online: https://www.quarrying.org/soils-guidance Defra (2009) Construction Code of	

KEY:
PC = Pre-construction, C = Construction, O = Operation (including maintenance), D = Decommissioning

Commitment Reference	Commitment	Monitoring	Project Phase	Air Quality	Biodiversity	Climate Change	Cultural Heritage	Glint and Glare	Land and Groundwater	Landscape and Visual	Noise	Population and Health	Soil	Transport	Waste	Water	Commitment Securing Mechanism	Delivery	Associated Supporting Documents	Compliance Data and Details
	reduce the risk of erosion and prevent the soil from becoming anaerobic. • Determining access routes for the importation of construction materials, plant and equipment to avoid unnecessary trafficking of soil. • Managing vehicle movements through measures such as track matting to reduce risk of compaction. • Where possible, controlling the timing of works to ensure that soils are only handled when in a dry, friable condition and when below the plasticity limit. • Redistributing soils excavated during construction across nearby agricultural fields, allotments and landscaping regions allowing the material to be reincorporated into the existing soil resource and avoiding the development of anaerobic conditions associated with prolonged storage.																		Practice for the Sustainable Use of Soils on Construction Sites. Available online: https://assets.publishing.service.gov.uk/media/5b2264ff40f0b634cfb50650/pb13298-code-of-practice-090910.pdf EIA Scoping Report Section 6.9.	
58	Measures to mitigate against the effects of construction traffic on the local highway network, both in terms of traffic routing, timing of construction staff/HGV movement measures such as start and end times for example.		PC, C, D											X			Outline CTMP, Outline DEMP	Construction and decommissioning by the Principal Contractor.	EIA Scoping Report Section 6.10.	

KEY:
PC = Pre-construction, C = Construction, O = Operation (including maintenance), D = Decommissioning

Appendix G

Windsock
Solar Farm

APPENDIX G: BIODIVERSITY REPORTS

Contents:

Windsock Solar Preliminary Ecology Appraisal Report

Windsock Solar BNG

Windsock Solar Arable Plants Baseline Report 2025

Windsock Solar Bat Survey Baseline Report 2025

Windsock Solar Badger Survey Report (CONFIDENTIAL)

Windsock Solar Breeding Bird Surveys Baseline Report 2025 (CONFIDENTIAL)

Windsock Solar Non-Breeding Bird Surveys Baseline Report 2025-2026

Windsock Solar Great Crested Newt Survey Report

APPENDIX G:
WINDSOCK SOLAR PRELIMINARY ECOLOGICAL ASSESSMENT REPORT

Survey information contained within this report forms part of the EIA Scoping Report for information only. The PEA survey detailed within this appendix were undertaken in May 2025 and were based on a superseded version of the Site boundary that was larger than the current Site boundary detailed within the EIA Scoping Report.

Preliminary Ecological Appraisal Report

Windsock Solar Farm, Lincolnshire

Trio Windsock Solar Farm Ltd

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Prepared by:

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SLR Project No.: 405.065637.00001

20 November 2025

Revision: 1.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	20 November 2025	[redacted]	[redacted]	[redacted]

Basis of Report

This document has been prepared by SLR Consulting Limited (SLR) with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with Trio Windsock Solar Farm Ltd (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

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Executive Summary

Trio Windsock Solar Farm Ltd commissioned SLR Consulting to carry out a Preliminary Ecological Appraisal (PEA) for the proposed Windsock Solar Farm on land south of Long Lane, Brauncewell, Lincolnshire. The Site extends over approximately 261 hectares of predominantly arable farmland interspersed with woodland parcels, hedgerows, and scrub, and lies adjacent to RAF College Cranwell. The development will comprise a solar array of up to 200MW and a 100MW BESS, with the design shaped by various site constraints and opportunities, including ecology. The PEA establishes baseline ecological conditions, identifies potential constraints, and provides recommendations for further surveys and mitigation.

High Dyke Site of Special Scientific Interest (SSSI) is located around 400m to the west. This is a nationally important calcareous grassland site and potential indirect impacts during construction may require mitigation. Cranwell Grassland Local Wildlife Site (LWS) lies immediately adjacent to the Site, and measures should be designed to protect this LWS. Within the Site, priority habitats include native hedgerows and broadleaved woodland, which should be retained and protected. Other habitats present include arable fields, modified grassland, scrub, and a single pond.

Species of interest potentially present include amphibians, reptiles, breeding and wintering birds, bats, badger, hedgehog, and brown hare. No notable botanical interest was recorded beyond the potential for rare arable plants, for which a separate survey has been undertaken. The PEA highlights the need to avoid and minimise impacts on designated sites and priority habitats. A Biodiversity Net Gain of at least 10% will be required under planning policy, and there are opportunities for habitat enhancement, including strengthening hedgerows and creating wildflower margins.

Further surveys for bats, birds, amphibians, and badger have been completed or scheduled, and reptile surveys may be required in 2026 depending on the final design. Results of other surveys will be detailed in separate reports. Early integration of ecological considerations into the project design will be essential to ensure compliance and deliver positive biodiversity enhancements.

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Appendices

Appendix A **Relevant Legislation and Planning Policy**
Appendix B **UKHab Classification Plan**
Appendix C **Biodiversity Net Gain Cover Letter**

Acronyms and Abbreviations

BAP	Biodiversity Action Plan
BNG	Biodiversity Net Gain
CIEEM	Chartered Institute of Ecology and Environmental Management
DCO	Development Consent Order
GCN	Great crested newt
GLNP	Greater Lincolnshire Nature Partnership
HSI	Habitat Suitability Index
IAS	Invasive Alien Species (Enforcement and Permitting) Order
IEF	Important Ecological Feature
INNS	Invasive and Non-Native Species
MAGIC	Multi-Agency Geographic Information for the Countryside Maps
NE	Natural England
NERC	Natural Environment and Rural Communities
NKDC	North Kestevan District Council
NSIP	Nationally Significant Infrastructure Project
RNR	Roadside Nature Reserve
SSSI	Statutory Sites of Special Interest
UK Hab	UK Habitat Classification
WCA	Wildlife and Countryside Act
WTATI	Woodland Trust Ancient Tree Inventory

1.0 Introduction

SLR Consulting was commissioned by Trio Windsock Solar Farm Ltd in March 2025 to undertake a Preliminary Ecological Appraisal (PEA) report for a proposed solar farm and battery energy storage system (BESS) on Land to the South of Long Lane (central UK grid reference: TF 01602 51581), Brauncewell, Cranwell, NG24 8RL, herein referred to as 'the Site'.

This PEA is being undertaken to provide initial baseline information on ecology which will then be used to determine the need or otherwise for further ecological survey work and inform further Site design and mitigation.

1.1 Site Description

The Site boundary is depicted in the UK Habitat Classification (UKHab) plan in Appendix B.

The Site is comprised predominantly of arable fields used to grow a variety of vegetable and cereal crops, with small parcels of woodland lying on the boundary of the Site and some parcels forming boundaries in between fields. A large part of the centre of the Site is currently occupied by a pig farm.

Directly to the south of the Site lies the Royal Air Force (RAF) College Cranwell, with residential estates, military barracks and Ministry of Defence (MoD) buildings, and an airstrip. To the north, east and west of the Site lie more arable fields. Brauncewell Quarries also lies to the northeast of the Site.

The Site lies approximately 5.7km northwest of the centre of Sleaford and measures approximately 261ha in extent.

1.2 Details of the Proposed Development

At the time of writing, project proposals are at an early stage of development. The proposed development is likely to comprise a solar array of up to 200MW, and a 100MW BESS element. The layout of the project will be informed by a variety of Site factors, including ecology constraints and opportunities.

1.3 Purpose of this Report

This report presents the findings of the Preliminary Ecological Appraisal. The report seeks to:

- Establish ecological baseline conditions;
- To identify potential ecological constraints to the proposed development and make initial recommendations to avoid potentially significant effects on important ecological features, where possible;
- To identify potential requirements for mitigation, where possible, including mitigation measures that will be required and those that may be required (depending on results of further surveys or final scheme design);
- To establish any requirements for more detailed surveys; and
- To identify opportunities for biodiversity enhancements as part of the project.

Where an ecological report is required to accompany a planning application, the appropriate report is an EcIA Report (or an Ecology/Biodiversity Chapter of an Environmental Impact Assessment Report for an EIA project). Under normal circumstances, it is not appropriate to submit a PEA as part of a planning application, because the scope of a PEA is unlikely to fully meet planning authority requirements in respect of biodiversity policy and implications

for protected species. This is because a PEA is normally written to advise a client of ecological constraints and opportunities to inform their design options, likely mitigation requirements, and the need for further surveys. It therefore lacks a detailed assessment of ecological effects, and commitment to mitigation; the planning authority is therefore unlikely to have adequate information to enable the decision maker to determine the application lawfully. A PEA may, however, be submitted as an appendix to an EcIA Report.

1.4 Evidence of Technical Competence and Experience

1.4.1 Field Survey

The Site survey was undertaken by SLR Senior Ecologist Anna Volak BSc (Hons) and Ecologist Ben Smith BSc (Hons). Both Anna and Ben are Qualifying members of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Anna has over 4 years' experience as a consultant ecologist. She is experienced in a variety of protected species surveys and is also experienced in completing UKHab surveys and has completed numerous Biodiversity Net Gain (BNG) assessments on a variety of projects. Anna also has experience managing small to medium scale projects and inputting on large multi-disciplinary projects.

Ben has two years' experience as a consultant ecologist and has undertaken protected species surveys including bat emergence, nighttime bat walkover, tree inspection, great crested newt (GCN) Habitat Suitability Index (his) and eDNA and otter surveys. Additionally, Ben has experience with PEA and UKHab surveys.

1.4.2 Reporting

This report has been produced by SLR Assistant Ecologist Hannah Baker BSc (Hons). Hannah is a qualifying member of CIEEM and has over a year experience in ecological surveying and report writing.

This report has been subject to Quality Assurance review as per SLR's policies by Anna Volak. The report has been approved by Dr Paul Clack CEnv MCIEEM, a Technical Director at SLR Consulting with 25 years post-doctoral experience in ecological consultancy.

1.5 Validity of Data

According to CIEEM advice, survey data are valid for a period of 12 to 18 months from the date of the survey. The report highlights any circumstances where data may be valid for less than 18 months. Between 18 months and 3 years, a professional ecologist will need to undertake a site visit and may also need to update desk study information and then review the validity of the report.

1.6 Relevant Legislation and Policy

Generic Legislation and Policy text is provided in Appendix A. Details of relevant Local Planning Policy is provided below.

The Site lies within the administrative boundary of North Kestevan District Council (NKDC) and is therefore subject to the current Central Lincolnshire Local Plan.

Central Lincolnshire Local Plan

Within the local plan, it states that there is a need to preserve and improve the biodiversity within the Lincolnshire county, as stated in section 1.2.12 of the plan:

'Overall, Central Lincolnshire's biodiversity is under pressure from various factors including climate change, habitat fragmentation, development and large scale intensive agriculture.

Major landscape-scale initiatives are proposed in response to this to restore and enhance the area's ecological networks and corridors.'

Part of the location plans objectives to improve by 2040 includes:

- Biodiversity and Green Infrastructure: To conserve and enhance biodiversity and geodiversity across Central Lincolnshire by delivering measurable net gain in biodiversity through development and establishing nature recovery networks through planning.
- To provide enhanced opportunities for people to access and appreciate wildlife and the natural environment whilst safeguarding protected sites.
- To protect, enhance and create and improve high quality green and blue spaces that are multifunctional; for sport, recreation, play and ecosystem services, and which form part of and are connected to the green infrastructure network, improving landscape connectivity for people and wildlife.
- Climate Change Adaptation and Flood Risk: To minimise vulnerability, improve community resilience and ensure Central Lincolnshire adapts to the effects of climate change, both now and in the future through careful planning and design of the built and natural environment.

As such the following policies have been put in place in Section 11, Policy S60 of the local plan to meet the above objectives.

All development should:

a) Protect, manage, enhance and extend the ecological network of habitats, species and sites of international, national and local importance (statutory and non-statutory), including sites that meet the criteria for selection as a Local Site;

b) Minimise impacts on biodiversity and features of geodiversity value;

c) Deliver measurable and proportionate net gains in biodiversity in accordance with Policy S61; and

d) Protect and enhance the aquatic environment within or adjoining the site, including water quality and habitat.

Designated Sites

The following hierarchy of sites will apply in the consideration of development proposals:

1 International Sites The highest level of protection will be afforded to internationally protected sites. Development proposals that will have an adverse impact on the integrity of such areas, will not be supported other than in exceptional circumstances, in accordance with the NPPF. Development proposals that are likely to result in a significant adverse effect, either alone or in combination with other proposals, on any internationally designated site, must satisfy the requirements of the Habitats Regulations (or any superseding similar UK legislation). Development requiring Appropriate Assessment will only be allowed where it can be determined, taking into account mitigation, that the proposal would not result in significant adverse effects on the site's integrity.

2 National Sites (NNRs and SSSIs) Development proposals should avoid impact on these nationally protected sites. Development proposals within or outside a national site, likely to have an adverse effect, either individually or in combination with other developments, will not normally be supported unless the benefits of the development, at this site, clearly outweigh both the adverse impacts on the features of the site and any adverse impacts on the wider network of nationally protected sites.

3 Irreplaceable Habitats Planning permission will be refused for development resulting in the loss, deterioration or fragmentation of irreplaceable habitats, including ancient woodland and aged or veteran trees, unless there are wholly exceptional reasons and a suitable compensation strategy will be delivered.

4 Local Sites (LNR, LWS and LGS) Development likely to have an adverse effect on locally designated sites, their features or their function as part of the ecological network, will only be supported where the benefits of the development clearly outweigh the loss, and the coherence of the local ecological network is maintained. Where significant harm cannot be avoided, the mitigation hierarchy should be followed.

Species and Habitats of Principal Importance

'All development proposals will be considered in the context of the relevant Local Authority's duty to promote the protection and recovery of priority species and habitats.

Development should seek to preserve, restore and re-create priority habitats, ecological networks and the protection and recovery of priority species set out in the Natural Environment and Rural Communities Act 2006, Lincolnshire Biodiversity Action Plan, Lincolnshire Geodiversity Strategy and Local Nature Recovery Strategy.'

1.6.1 Biodiversity Net Gain (BNG)

In England, BNG is mandatory under schedule 7A of the Town and Country Planning Act 1990 (as inserted by schedule 14 of the Environment Act 2021). Therefore, developers must deliver a Biodiversity Net Gain of at least 10% in each of the three assessed criteria: Habitats, Hedgerows and Watercourses.

At the time of writing, the consenting route for the project is unconfirmed, but given the potential scale may be as a Nationally Significant Infrastructure Project (NSIP) via a Development Consent Order (DCO). BNG is not currently mandatory for NSIPs but this is expected to change in May 2026.

1.6.2 Biodiversity Action Plan

Biodiversity Action Plan's (BAPs) are important in ensuring the requirements of the local planning policy are met, therefore the PEA will take into consideration the priority habitats and species present within the Lincolnshire Biodiversity Action Plan. The following habitats and species relevant to the Site are listed below.

1.6.2.1 Priority Lincolnshire BAP Habitats

Farmland and Grassland

- Arable field margins
- Hedgerows and hedgerow trees
- Lowland calcareous grassland

Trees and Woodland

- Lowland mixed deciduous woodland

1.6.2.2 Priority Lincolnshire BAP Species:

Amphibians

- Natterjack toad *Epidalea calamita*

- Great crested newt *Triturus cristatus*
- Palmate newt *Lissotriton helveticus*
- Smooth newt *Lissotriton vulgaris*

Bats

- Whiskered bat *Myotis mystacinus*
- Brandt's bat *Myotis brandti*
- Natterer's bat *Myotis nattereri*
- Daubenton's bat *Myotis daubentonii*
- Noctule *Nyctalus noctula*
- Leisler's bat *Nyctalus leisleri*
- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Nathusius' pipistrelle *Pipistrellus nathusii*
- Barbastelle *Barbastella barbastellus*
- Brown long-eared bat *Plecotus auritus*

Farmland Birds

- Grey partridge *Perdix perdix*
- Lapwing *Vanellus vanellus*
- Yellow wagtail *Motacilla flava*
- Skylark *Alauda arvensis*
- Linnet *Linaria cannabina*
- Corn bunting *Emberiza calandra*
- Yellowhammer *Emberiza citronella*
- Reed bunting *Emberiza scheoeniclus*
- Turtle dove *Streptopelia turtur*
- Bullfinch *Pyrrhula pyrrhula*
- Starling *Sturnus vulgaris*
- Tree sparrow *Passer montanus*
- Snipe *Gallinago gallinago*
- Curlew *Numenius arquata*
- Redshank *Tringa totanus*
- Barn owl *Tyto alba*

2.0 Methodology

2.1 Baseline Data Collection

2.1.1 Desk Study

An ecological desk study was completed. The desk study involved the collation and review of contextual information such as designated sites and local records of protected and priority species occurring within the Site and within 2km of the Site boundary (hereafter referred to as the 'Study Area').

For statutory designated sites and their risk zones, the search was extended to 10km to account for movements between highly mobile species such as bird and bat species that can traverse that distance easily and may be affected by proposed works.

A summary of the information obtained, and the source(s) used is outlined below in Table 2-1. Records of designated sites and protected and notable species were provided by the Greater Lincolnshire Nature Partnership (GLNP), as well as online interfaces, including the Multi-Agency Geographic Information for the Countryside (MAGIC) Maps. Information on ancient and veteran trees within the Study Area has been sourced from Woodland Trust Ancient Tree Inventory (WTATI)

Table 2-1: Desk Study: Study Areas and Data Sources

Feature	Study Area	Source*
Sites		
International statutory protected sites	10km	MAGIC
National and local statutory protected sites	2km	MAGIC, GLNP
Non-statutory protected sites	2km	MAGIC
Habitats		
Priority Habitats	2km	MAGIC, GLNP
Ancient Woodland	2km	MAGIC, WTATI
Ponds	0.5km**	MAGIC
Species		
Protected, priority, notable and invasive species	2km	GLNP
European protected species licence applications (EPSL)	2km	MAGIC
** 0.5km is considered appropriate based on English Nature, 2001, which advises that ponds up to 0.5km away from a development could be affected by changes to a site.		

2.1.2 Field Survey

The Site was surveyed by SLR ecologists on the 14th and 15th May 2025. The survey comprised a walkover of all areas of the Site and comprised a habitat survey using UKHab methodology, and included preliminary checks for notable, protected and rare species of both flora and fauna. Habitats were mapped and features of interest were recorded using a tablet and GPS enabled mapping software. For the purposes of this report the habitats present within the Site have been mapped using the fine scale minimum mapping unit

(MMU) (25m^2, 5m length), in accordance with the UK Habitat Classification User Manual. Field signs of protected species or stands of invasive species, were recorded as target notes.

A broad species list for each habitat was collected and quantified using the DAFOR scale, classifying each species into one of the following categories:

- Dominant – >75% cover
- Abundant – 50-75% cover
- Frequent – 26-50% cover
- Occasional – 11-25% cover
- Rare – 0-10% cover

The UKHab is a comprehensive classification system for the UK that has been developed to benefit from changes in habitat categorisation and recording analysis in recent decades. The system comprises a principal hierarchy (the Primary Habitats) which include broad habitats and priority habitats and non-hierarchical Secondary codes. Habitat nomenclature and definitions have been designed to remain as close to existing systems as possible in order that data can be collected, analysed and translated without ambiguity.

The habitats identified were classified to at least Level 4, where possible. This level of survey includes the documentation of habitats to a recognised standard but also includes the recording of field evidence indicating the presence or potential presence of species that could constitute a material consideration in planning terms, such as protected or notable plant or faunal species, including but not limited to, GCN, breeding birds, bats and badger *Meles meles*.

Whilst not a full botanical or protected species survey, the method of survey enables experienced ecologists to obtain an understanding of the ecology of a site such that it is possible to either:

- Confirm the conservation significance of the Site and assess the potential for impacts on habitats / species likely to represent a material consideration in planning terms; or
- Establish the scope and extent of any additional specialist ecological surveys that will be required before such confirmation can be made.

In addition, the presence of plant species included within Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA) and Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019 (IAS) were incidentally recorded during the survey. Plants included within the schedule are considered derogated pest species that are pernicious or injurious, such as Japanese knotweed *Reynoutria japonica*, Himalayan balsam *Impatiens glandulifera*, and giant hogweed *Heracleum mantegazzianum*. It is an offence under this legislation to plant or cause the spread of these species in the wild.

2.1.2.1 Habitat Condition Assessment Survey

Condition assessments were undertaken alongside the UKHab survey in accordance with the Statutory Biodiversity Metric user guide and condition assessment sheets. The condition assessment data was collected to enable provision of a BNG baseline score.

2.1.3 Limitations

2.1.3.1 Desk Study

Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that important habitats or

protected species not identified during the data search do in fact occur within the vicinity of the Site. Interpretation of maps and aerial photography has been conducted in good faith, using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the field Study Area.

2.1.3.2 Field Survey(s)

No limitations were encountered during the field survey.

3.0 Results

3.1 Designated Sites

3.1.1 Statutory Designated Sites

Using MAGIC Maps for data information, as well as data provided from GLNP, there are seven statutory designated sites within 10km of the Site boundary. The details of the sites are summarised below in Table 3-1.

Table 3-1: Statutory Designated Sites within 10km of the Site Boundary

Site/Reference Number	Name	Designation	Qualifying Features	Approximate Distance/ Direction from Site
SK 990 497	High Dyke	SSSI	Lowland calcareous grassland, site holds a nationally scarce plant bastard-toadflax *Thesium humifusum* and holds a population of Red Listed plant spotted cat's-ear *Hypochaeris maculata*.	0.39km west
TF 029 435	Wilsford & Rauceby Warrens	SSSI	This site hold a population of GCN, as well as calcareous grasslands that hold historic value, and hold a good population of a red listed plant smooth rupturewort, *Herniaria glabra*.	6.34km south
SK 980 438	Moor Closes	SSSI	The site contains red listed plant tall thrift *Armeria maritima* ssp. *elongata*, and contains neutral grassland parcels as well as a mire grassland and rush pasture, which hold historic value.	6.9km southwest
SK 987 428	Ancaster Valley	SSSI	Site contains two nationally scarce plant populations; rare spring-sedge *Carex ericetorum* and pasqueflower *Pulsatilla vulgaris*, as well as holding some mixed deciduous woodland parcels and calcareous grassland parcels that are in favourable condition.	7.5km southwest
SK 978 426	Copper Hill	SSSI	This site contains populations of a nationally scarce plant man orchid *Aceras anthropophorum* and has favourable calcareous grassland parcels and holds historical value.	8.2km southwest
SK 986 413	Wilsford Heath Quarry	SSSI	The site contains mixed deciduous woodland parcels and calcareous grassland parcels, some parcels on site are very species rich and have very little scrub growth.	9.1km south

Site/Reference Number	Name	Designation	Qualifying Features	Approximate Distance/ Direction from Site
SK 954 423	Honington Camp	SSSI	The site contains calcareous grassland features that holds historic value.	9.2km southwest

3.1.1.1 SSSI risk zones

The Site lies within the risk zone of High Dyke SSSI, but solar / BESS are not a development types listed on the NE website that would not automatically trigger the need to consult with NE in this location. However, given potential similarities in flora, this SSSI will be considered further within this assessment.

There is sufficient distance between the other six statutory designated sites and the Site boundary whereby the proposed development is not anticipated to have an impact on them. Therefore, these designated sites have not been considered further in this assessment.

3.1.2 Non-Statutory Designated Sites

GLNP returned eight results of local wildlife sites within the Study Area. A summary of all non-statutory designated sites within 2km of the Site boundary are listed in Table 3-2 below:

Table 3-2: Non-Statutory Designated Sites within 2km of the site.

Stat Site/ Reference Number	Name	Designation	Approximate Distance/ Direction from Site
SK994504	Cranwell Grassland	Local Wildlife Site (LWS)	0km southwest (adjacent to boundary)
TF030521	Brauncewell Quarry	LWS	0.28km northeast
SK993543	High Dike, Long Lane to Navenby Verges	LWS	0.8km northwest
TF006497	Lodge Paddock, RAF Cranwell	LWS	1.2km south
TF035526	A15, Slate House Farm to Dunsby Pit Plantation	LWS	1.6km northeast
SK988480	High Dike, Byard's Leap to Ancaster Verges	LWS	1.6km southwest
TF017537	Temple Road Verges, Welbourn to Brauncewell	LWS	1.8km north
SK971500	Fulbeck Heath Road Verges	LWS	2km west

In addition, the GLNP data search returned three records of Roadside Nature Reserves (RNRs):

- Byards Leap Gorse
- Byards Leap Plantation
- High Dyke

The closest of the RNRs (High Dyke) is located approximately 0.4km to the west of the Site and the other two sites are located approximately 1.7km southwest of the Site boundary.

Due to Cranwell grassland abutting the Site boundary, this Site will be considered further within this assessment, for any potential ecological disturbances, or damage that could be created from the proposed works being carried out.

The remaining non-statutory designated sites are of sufficient distance away from the Site that no adverse impacts from the proposed development are anticipated. Therefore, they have not been considered further.

3.1.3 Ancient Woodland

From the information pack provided by GLNP and the use of MAGIC maps, there are no areas of ancient woodland within the Study Area. Therefore, this will not be considered further within this assessment.

3.1.3.1 Ancient and Veteran Trees

A search of WTATI found five records of veteran trees within the Study Area. Four of the veteran trees are located approximately 1.3km east of the Site boundary and include three pedunculate oak *Quercus robur* trees and one common ash *Fraxinus excelsior*. The fifth veteran tree is a cherry tree and is located approximately 0.6km Southwest of the Site boundary.

The trees are located a sufficient distance away from the Site and are not anticipated be affected by proposed works, therefore they will not be considered further within this assessment.

3.1.4 Ponds

Using MAGIC Maps and the data supplied from GLNP, there are no ponds within the Study Area. However, there is one waterbody present on Site (a drainage pond on the margin of an arable field, also shown on 1:25,000 scale Ordnance Survey (OS) mapping of the Site), this water body will be considered further in this assessment.

OS mapping and aerial imagery show there are approximately four lagoons that sit within Brauncewell quarry, which is located over 500m from the Site boundary. The closest of the lagoons is approximately 509m from the Site boundary. A review of North Kesteven's planning portal showed multiple planning application for Brauncewell Quarry, however no ecological documents were attached to any of the applications and GCN are presumed absent from the quarry.

No other ponds are mapped within 500m of the Site.

3.2 Habitats

3.2.1 Priority Habitats

GLNP returned records of three priority habitat parcels within the Study Area. Five other records of priority habitats parcels were returned using MAGIC. A large number of deciduous woodland parcels were also returned within the Study Area, however, for brevity, only those parcels immediately adjacent to the Site or within the Site boundary have been listed. The priority habitat parcels include:

- Deciduous woodland located 0m west of the Site (on Site boundary).
- Deciduous woodland located 0m South of the Site (on Site boundary).
- Deciduous woodland located 0m northeast of the Site, also extending into the Site.
- Deciduous woodland 0m west of the Site (on Site boundary).

- Open mosaic habitat located 225m north of the Site.
- Lowland calcareous grassland located 395m west of the Site;
- Lowland calcareous grassland located 465m southwest of Site.
- Traditional orchard located 966m southeast of the Site.

Due to several deciduous woodland parcels being within the Site /adjacent to the Site, they will be further considered within this assessment.

3.2.1.1 Field Survey

Descriptions of the Site habitats are provided with photographs in Sections 3.2.1.2 to 3.2.1.11, and the location and extent of the habitats are shown on Figure 1. A summary of the habitats is presented in Table 3-3.

Table 3-3: Habitats on Site

Baseline Habitat (UKHab Codes)	Extent (ha)
Habitat Areas (ha)	
Non-cereal crops – c1d	197.82ha
Cereal crops – c1c	52.07ha
Other neutral grassland – g3c	6.45ha
Other woodland; mixed; mainly broadleaved – w1h5	3.24ha
Modified grassland – g4	1.70ha
Developed land; sealed surface – u1b	0.61ha
Artificial unvegetated, unsealed surface – u1c	0.38ha
Sparsely vegetated urban land – u1f	0.13ha
Standing open water and canal – r1	0.12ha
Mixed scrub – h3h	0.07ha
Other woodland; broadleaved – w1g	0.07ha
Bramble scrub – h3d	0.04ha
Total	**262.69ha**
Hedgerow Lengths (km)	
Other native hedgerow – h2a6	1.09km
Hedgerow priority habitat – h2a	0.58km
Species-rich native hedgerow – h2a5	0.17km
Total	**1.84km**

The UKHab survey recorded one Habitats of Principal Importance on Site, this was native hedgerows, as listed under S41 of the NERC Act 2006.

3.2.1.2 Non-Cereal Crops c1d

The remaining fields in the centre and east of the Site are non-cereal crops and contain crops such as potatoes, sugar beet and opium poppy *Papaver somniferum*.

Figure 3-1: Field containing young beet crop



Figure 3-2: Field containing young potato crop



3.2.1.3 Cereal Crops c1c

The Site is comprised of several adjoining arable fields. The fields to the west were growing cereal crops at the time of survey, as seen in Figure 3-3 and Figure 3-4. At the time of survey, the western fields contained sown barley crop.

Figure 3-3: Cereal-Crop fields on western side of Site



Figure 3-4: Western field sown with barley crop



3.2.1.4 Other Neutral Grassland g3c

There are parcels of other neutral grassland within the Site boundary, largely located in the corners of arable fields. Some parcels contained a scattered scrubs and trees whilst others had a taller, more tussocky sward. Species in these parcels include perennial rye-grass *Lolium perenne* (abundant), fescue species *Festuca* sp. (occasional), ribwort plantain *Plantago lanceolata* (frequent), common daisy *Bellis perennis* (occasional), black medick *Medicago lupulina* (occasional), common bird's-foot trefoil *Lotus corniculatus* (occasional), hogweed *Heracleum sphondylium* (frequent), thistle species (occasional), common nettle (occasional) and greater willow herb *Epilobium hirsutum* (frequent) (see Figure 3-7 and Figure 3-8).

Figure 3-5: Other Neutral Grassland with Scattered Trees



Figure 3-6: Other Neutral Grassland to the East of the Site



3.2.1.5 Developed land; sealed surface u1b

In the centre of the Site, a sealed surface access track connects RAF Cranwell to Long Lane to the north. This road is used by farm and military vehicles and is also a public right of way.

Figure 3-7: Sealed surface access track



3.2.1.6 Other woodland – mixed – mainly broadleaved w1h5

Four parcels of other woodland – mixed – mainly broadleaved are present within the Site boundary. The species of trees found within these parcels include wild cherry *Prunus avium* (frequent), ash (frequent), hawthorn *Crataegus monogyna* (frequent), field maple *Acer campestre* (frequent), hazel *Corylus avellana* (frequent), sycamore *Acer pseudoplatanus* (occasional) and oak (occasional) (see Figure 3-9 and Figure 3-10).

Figure 3-8: Other Woodland – Mixed – Mainly Broadleaved Woodland



To the southwest of the Site, one of the parcels only has immature or semi-mature, and the spacing and linear nature of the trees indicates it is plantation woodland.

Figure 3-9: Plantation Woodland



3.2.1.7 Modified Grassland g4

There are several small parcels of modified grassland around the Site, particularly close to roads and footpaths. Some parcels had stands of tall forbs, and tall and tussocky swards and included species such as perennial ryegrass (dominant), cow parsley *Anthriscus sylvestris* (occasional), ribwort plantain (occasional), thistle species *Asteraceae* sp. (occasional), common nettle *Urtica dioica* (rare) (see Figure 3-5). Biodiversity is often low in modified grasslands adjacent to arable fields, due to many factors such as intensive mowing and pesticide or herbicide use.

Figure 3-10: Modified Grasslands to the East of the Site



In the middle of one of the eastern arable fields, a bund of what appears to be scraped topsoil/waste hay from the pig farm has formed. The vegetation structure is composed predominantly of tall forbs and areas of bare ground. Species include fig-leaf goosefoot *Chenopodium ficifolium* (dominant), common nettle (frequent), dock species *Rumex* sp. (occasional), and ox-eye daisy *Leucathemum vulgare* (rare).

Figure 3-11: Topsoil/waste bund with tall forbs



3.2.1.8 Artificial Unvegetated - Unsealed Surface – u1c

There are many private roads and agricultural tracks that run through the Site, all made of artificial but unsealed substrate. (see Figure 3-15). These roads are predominantly for movement of farm vehicles and machinery but are also used as footpaths.

Figure 3-12: Access track



3.2.1.9 Sparsely vegetated urban land – u1f

Two parcels of sparsely vegetated urban land exist within the Site. One is located in the western central part of the Site, just off of the sealed surface access track. It appears to be a farm lay-down and storage area. The other is located in the east, at the top of the access track to the pig farm. This area also appears to be used for storage and farm vehicle manoeuvring.

Figure 3-13: Farm lay-down and storage area in the western central part of the Site



Figure 3-14: Storage area to the East of the Site



3.2.1.10 Standing Open Water and Canals (Pond) – r1, 42

Along the western boundary of the southernmost field, there is a large, manmade pond. A pump is located along the northern edge, suggesting that water is pumped from an external source into the pond. The pond has a fringe of marginal vegetation, largely comprised of grasses and bulrush Typha latifolia. At the time of survey, a family of mallard ducks Anas platyrhynchos was using the pond.

Figure 3-15: Large attenuation pond



3.2.1.11 Mixed Scrub h3h

There are two parcels of mixed scrub within the Site boundary. The parcels include species like; bramble (abundant), hawthorn (frequent), sycamore (frequent), elder *Sambucus nigra* (occasional), field maple (occasional) and ash (rare) (see Figure 3-11 and Figure 3-12).

Figure 3-16: Mixed Scrub in the Southwest of the Site



Figure 3-17: Mixed Scrub Northeast edge of the Site



3.2.1.12 Other Broadleaved Woodland

The woodland predominantly sits outside of the Site, in the RAF Cranwell ownership boundary, but the tree canopy and some younger trees and saplings cross into one of the western arable fields. Species include sycamore (frequent), hawthorn (occasional), ash (occasional) and elm species, *Ulmus* sp. (occasional). The understory could not be fully assessed due to access constraints, however, from the arable field, bramble and short herbs and grasses are present. Footpaths also run through the woodland.

Figure 3-18: Broadleaved woodland parcel to the south of western arable field



3.2.1.13 Bramble Scrub

There is one small parcel of short bramble scrub within the Site (see Figure 3-13). It is located within a clearing of one of the woodland parcels towards the east of the Site.

Figure 3-19: Bramble scrub on Eastern side of Site



3.2.1.14 Native Hedgerows – h2a (h2a5 & h2a6)

Many of the arable fields within the Site are bounded by native hedgerows, some of which are classified as species rich (see Figure 3-16 and Figure 3-17) The hedgerows are comprised of hawthorn (abundant), wild privet *Ligustrum vulgare* (occasional), sycamore (occasional), bramble (abundant), dog-rose *Rosa canina* (occasional), elder (frequent) and ash (rare).

Figure 3-20: Hedgerows in Southeastern area on Site



Figure 3-21: Hedgerows spanning Northwestern edge to Northeastern edge on Site



3.3 Species

3.3.1 Plants

The GLNP data search returned 20 records of protected or notable plant species. Thirteen records of purple milk-vetch *Astragalus danicus* were returned, the closest and most recent of which is located in High Dyke RNR, approximately 0.4km west from the Site boundary in 2010. One record of bluebell *Hyacinthoides non-scripta* was also returned in 2008, located in Moor Wood which lies approximately 0.42km north of the Site boundary.

The remaining records are comprised of non-native species including one record of Italian alder *Alnus cordata*, located 1.6km northeast of the Site boundary, four records of butterfly-bush *Buddleja davidii*, the closest of which is located approximately 1.7km northeast of the Site, and one record of the invasive species variegated yellow archangel *Lamiastrum galeobdolon* subsp. *argentatum*.

Due to the largely arable nature of the Site, there may be notable arable plant species. Therefore, plants will be considered further within this assessment.

3.3.2 Invertebrates

The GLNP data search returned 38 records of protected or notable moth and butterfly species. Eleven of these records are wall butterfly *Lasiommata megera*, the closest of which is located 0.17km southwest of the Site boundary, and the most recent record is from 2011. Twenty-two of the records are for the small heath butterfly *Coenonympha pamphilus*, the closest of which is located 0.07km south of the Site, and the most recent record is from 2025. One record of the northern brown argus butterfly *Aricia artaxerxes* is from 1998 and located 1.4km southeast of the Site. One record of marsh fritillary *Euphydryas aurinia* is from 1974 and is located approximately 0.93km southeast from the Site. Three records of cinnabar moth *Tyris jacobaeae* were returned from the data search, the closest of which is from the High Dyke RNR, located 0.4km west from the Site boundary, and the most recent record is from 2020.

Due to the largely arable nature of the Site, it is not anticipated to support a large or diverse invertebrate species assemblage. Therefore, because of this, and in combination with the limited invertebrate species records, invertebrates will not be considered further in this assessment.

3.3.3 Amphibians

GLNP returned 15 records of amphibians within the Study Area. The listed amphibians recorded include: six records of the common frog *Rana temporaria*, two records of the smooth newt *Lissotriton vulgaris*, and seven records of the common toad *Bufo bufo*.

The closest and most recent recording of common toad and common frog was in 2006, both located approximately 0.87km south of the Site boundary. No grid reference was provided for smooth newt to calculate the closest recording to Site, but they were last recorded in 1976.

Due to a water body being identified on Site and habitats such as scrub and woodland edge amphibians are considered further within this report.

3.3.4 Reptiles

GLNP's data pack contains 12 records of four species of reptile. The list of reptiles noted include: seven records of common lizard *Zootoca vivipara*, one record of slow worm *Anguis fragilis*, three records of grass snake *Natrix helvetica* and one record of adder *Vipera berus*.

The most recent and closest record of common lizard was in 2024, located approximately 0.1km southwest of the Site boundary. Adder, slow worm and grass snake were all last recorded in 1976 and no grid reference was provided in the desk study to calculate distance of records from Site.

Due to the presence of multiple reptile species being recorded within the Study Area (although noting the age of some records) as well as their being favourable habitat on Site, reptiles will be considered further within this assessment.

3.3.5 Birds

GLNP provided 128 records of 21 different species of bird that have been sighted within the Study Area. The only protected species record found within the Site boundary was barn owl. A summary of all red listed, amber listed, and priority one species recorded can be found in Table 3-4 below.

Table 3-4: Summary of Protected birds within the Study Area

Taxon	Vernacular	Category	Taxon	Vernacular	Category
Tyto alba	Barn owl	Priority 1	*Turdus pilaris*	Fieldfare	Priority 1 Red Listed
Fringilla montifringilla	Brambling	Priority 1	*Locustella naevia*	Grasshopper warbler	Priority 1 Red Listed
Tringa nebularia	Greenshank	Priority 1 Amber Listed	*Anser anser*	Greylag Goose	Amber Listed
Falco subbuteo	Hobby	Priority 1	*Circus cyaneus*	Hen Harrier	Priority 1 Red Listed
Circus aeruginosus	Marsh Harrier	Priority 1 Amber Listed	*Ichthyaetus melanocephalus*	Mediterranean Gull	Priority 1 Amber Listed
Falco columbarius	Merlin	Priority 1 Red Listed	*Circus pygargus*	Montagu's Harrier	Priority 1 Red Listed
Pandion haliaetus	Osprey	Priority 1 Amber Listed	*Falco peregrinus*	Peregrine	Priority 1

Taxon	Vernacular	Category	Taxon	Vernacular	Category
Coturnix coturnix	Quail	Priority 1 Amber Listed	*Milvus milvus*	Red Kite	Priority 1
Turdus iliacus	Redwing	Priority 1 Amber Listed	*Turdus torquatus*	Ring Ouzel	Red Listed
Muscicapa striata	Spotted Flycatcher	Red Listed	*Cygnus cygnus*	Whooper Swan	Priority 1 Amber Listed

Due to there being many protected, priority and Schedule 1 species observed on and near the Site, as well as many favourable habitats on Site for nesting birds, they are considered further within this report.

3.3.6 Mammals

3.3.6.1 Bats

GLNPs data pack contain 53 records of three bat species. These included two records of whiskered bat, seven records of brown long eared bat, three records of common pipistrelle, eight recordings of an unknown pipistrelle species, and 33 records of unidentified bats. The closest record of bat was an unidentified species in 2018, approximately 0.59km east of the Site Boundary.

The search on MAGIC returned one record of a granted protected species licence application. The licence ran from 2020 – 2021 and allowed for the damage of a resting place for brown long-eared bat, common pipistrelle and soprano pipistrelle. This licence is located 0.84km south of the Site boundary, within RAF Cranwell.

The woodland parcels on Site have the potential to offer suitable roosting and foraging habitat for bats. The hedgerows also offer suitable commuting and foraging habitat for bats. The grasslands and the pond may also offer bats suitable foraging opportunity. No building structures are present on Site, however, trees with potential roost features were identified within several woodland parcels across the Site. Due to there being records of bat species within the desk study as well as favourable habitat for bats within the Site, bats are considered further within this report.

3.3.6.2 Badger

The GNLP returned 41 records of badger within the Study Area. The most recent recording of a badger was in July 2024 and was approximately [redacted] Fourteen of the records were badgers involved in road collisions.

Evidence of badgers was found during the field survey including snuffle holes, and several potential sett entrances in an area of woodland in the centre of the Site, immediately [redacted] Due to records of badger in close proximity to the Site as well as their being suitable habitat for badger on Site, badgers are considered further within this report.

3.3.6.3 Otter

From GLNP's data pack, there is one record of an otter *Lutra lutra*, within the Study Area, recorded in January 2025, and was seen approximately 1.9km east of the Site.

The Site itself does not support favourable habitat for otter, as there are no watercourses in the Site other than the single isolated field pond. As such it is likely the Site is unlikely to support otter and so otter will not be considered further within this assessment.

3.3.6.4 Water Vole

There have been no records of any water vole *Arvicola amphibius*, within the Study Area, from GLNP.

Due to there being no records present of water vole, as well as no suitable habitat on Site for water vole surveys such as watercourses, they will not be considered further within this report. The isolated field pond is not considered likely to support this species and no signs of water vole were observed during the field survey.

3.3.6.5 Other Mammals

Other mammals within the Study Area that were noted by GLNP included, 104 records of the brown hare *Lepus europaeus*, one record of the feral ferret *Mustela putorius subsp. furo* which was recorded as a road collision, and 54 records of the West European hedgehog *Erinaceus europaeus*.

The closest record of hedgehog was in 2023, located approximately 0.64km west of the Site Boundary. The closest recording of brown hare was in 2013, located approximately 0.41km north of the Site Boundary.

Due to the proximity of the desk study recordings to the Site for these two species as well as there being favourable habitat on Site for brown hare and hedgehog, both these species will be considered further within this assessment.

4.0 Ecological Constraints and Opportunities

At the time of writing, the proposed development has no fixed design and no construction plan. Therefore, the potential impacts of the proposed development on any of the ecological features listed below cannot be fully assessed, but commentary is provided to aid future project planning.

4.1 High Dyke SSSI

The Site lies 0.39km from the SSSI. The SSSI is primarily designated for its calcareous flora, including arable plants. SSSIs are of national importance.

Direct impacts are unlikely to occur, and construction phase impacts (such as construction phase dust deposition) should be avoidable with careful planning. Section 4.4 outlines requirements for additional botanical surveys for local populations of arable plants.

4.2 Cranwell Grassland LWS

Cranwell Grassland LWS is designated for the presence of unimproved calcareous grassland, along with plantation lowland mixed deciduous woodland. This LWS is located immediately adjacent to the southwestern corner of the Site.

Due to the close proximity, there is the potential that the LWS may be adversely impacted by the proposed development. LWSs are of county importance, and all efforts should be made to avoid and minimise impacts to Cranwell Grassland LWS. Mitigation is likely to include pollution prevention measures and wildlife friendly fencing to prevent accidental encroachment.

4.3 Habitats

It is not currently known which habitats on Site will be lost to facilitate the proposed development, but it is anticipated most work will be located within the large fields on Site. The only habitats on Site that are of Principal Importance under S41 of the NERC Act 2006 are lowland deciduous woodland w1f7 and native hedgerows h2a.

These habitats should be retained where possible, and any losses reduced to minimal areas. Further mitigation and compensation for habitats should be designed as the Project moves forward. This is likely to include like protective fencing to ensure retained habitats are not damaged.

4.4 Plants

Due to the arable plant interest within High Dyke SSSI and the potential farmland such as that found within the Site has for this group of plants, an arable plants survey has been undertaken in the 2025 season and results from this survey will be provided in a separate report to outline any key findings and advice.

Other habitats on Site recorded during the during the UK Hab survey were typical of this part of Lincolnshire and no notable or protected plant were recorded. No further botanical survey work is recommended in these habitats.

4.5 Amphibians

The desk study returned no records of GCN within 2km of the Site, but other amphibians, including common frog, smooth newt and common toad, have been recorded. One waterbody on Site has the potential to provide favourable breeding habitat for GCN or other amphibians. A GCN HSI and eDNA survey has been conducted on this waterbody during the 2025 survey season, from which the results will be provided within a separate report.

4.6 Reptiles

There is suitable habitat on Site for reptiles, such as the dense scrub and woodland edges for sheltering, and the open grassland areas for basking and hunting. The desk study data also shows records of common lizard, grass snake, slow worm and adder, within 2km of the Site.

Due to the presence of suitable habitat on Site for reptiles, as well as recent and nearby records, there is a possibility that reptiles may use the Site. The requirement for dedicated reptile surveys is dependant on the emerging Project design and should be kept under review.

If such areas will be removed as part of the Project, it is recommended that reptile surveys are carried out on Site in the 2026 season to check for reptile presence or likely absence, and population density. These would comprise the deployment of reptile refuges in suitable habitat around the Site, followed by a bedding in period of two weeks, followed by subsequent surveys to check for reptiles. The optimum period for carrying out such surveys in April-May and late August-September.

4.7 Birds

The desk study returned records of 20 species of priority or protected within 2km of the Site boundary. The Site itself provides a range of habitats that would be suitable for a range of bird species throughout the year.

The hedgerows and dense scrub provide suitable habitat for nesting and foraging as well as protection from predators. The arable fields and grassland around their perimeter have the potential to provide good habitat for ground nesting birds such as skylark and grey partridge, both of which are red listed species in the UK.

The woodland parcels also provide good opportunities for foraging, a resource for nesting material and opportunity for nesting. Breeding bird surveys have been completed over the 2025 season, the results of which are presented in a separate report, and wintering bird surveys have commenced in October 2025 and will continue through the winter into 2026.

4.8 Bats

The desk study data shows that whiskered bat, brown long-eared bat and common pipistrelle have been recorded within 2km of the Site boundary, along with 41 recordsof unidentified bat species. The woodland parcels have the potential to provide roosting opportunities for bats.

The woodland and hedgerows also provide good foraging and commuting opportunities for bats. Bat surveys have been conducted on Site across the 2025 survey season, in the form of static detector surveys, day-time and night-time bat walkovers. The surveys will help to identify if bats are present on Site and the species assemblage, as well as how bats use the Site i.e. roosting, foraging or commuting. During the field surveys, trees with bat roost potential were noted within some of the woodland parcels. The results from the surveys will be provided in a separate baseline report and will provide recommendations and further guidance based on the results gathered.

4.9 Badger

The desk study data shows that badgers have been observed within 2km of the Site. The Site itself contains areas of good habitat where badgers may choose to build setts or use for foraging, such as the woodland parcels, scrub and hedgerows. A badger survey is scheduled to be undertaken in November 2025. The results from the survey will be provided

in a separate baseline report which will include further recommendations and advice based on the data.

4.10 Other Mammals

The desk study provided data on both brown hare and hedgehog within the Study Area. During the other field surveys that were undertaken on the Site this year, brown hare were observed several times within the Site boundary. There is a large amount of favourable habitat for both of these species on Site, including hedgerows and broadleaved woodland for hedgehogs, and neutral grassland, arable fields and modified grassland areas for brown hare.

Both of these species are listed as UK BAP species associated with Lincolnshire's farmland and grassland within the Lincolnshire BAP and therefore, with the confirmed presence of brown hare on Site and the potential for hedgehog, appropriate mitigation and enhancement measures should be considered as the Project design process moves forward.

4.11 Recommendations for Further Surveys

Reptile surveys are potentially recommended in the 2026 season due to the presence of suitable habitat on Site and records of several reptile species in the Study Area, particularly as records are recent and very close to the Site Boundary. This is dependant of emerging Project design and the requirement kept under review.

Further surveys may be recommended within the species-specific reports as a result of the surveys that have been carried out during the 2025 survey season, such as bat roost surveys. Any such further survey work should consider the emerging design of the Project, as avoidance of potential impacts is the first stage of the ecological mitigation hierarchy.

5.0 Conclusions and Recommendations

A PEA has been conducted for the proposed Cranwell Solar project. A desk study using the data provided by GLNP and on-line sources has been used to inform the appraisal.

An initial UK Habitat Classification survey and habitat condition assessment was undertaken on the 14th and 15th May 2025, and multiple other targeted species surveys have been, and continue to be undertaken throughout the 2025/26 season.

The following Important Ecological Features (IEF) were identified:

- High Dyke SSSI;
- Cranwell Grassland LWS;
- Habitats (including hedgerow and broad-leaved woodland priority habitats);
- Amphibians (potentially including GCN);
- Reptiles;
- Breeding and wintering birds;
- Badger;
- Bats;
- Hedgehogs; and
- Brown hare.

Reptile surveys have been identified as a potential requirement for the 2026 survey season, though these are dependent on emerging project design. Results of the 2025 targeted species surveys and recommendations can be found within the separate species survey reports for the project.

Appendix A Relevant Legislation and Planning Policy

Appendix A Relevant Legislation and Planning Policy

Legislation

A summary of legislation relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original legislation should be consulted for definitive information.

Environment Act (2021)

The Environment Act has wide ranging provisions including those around:

- Environmental governance;
- Environmental regulation;
- Waste and resource efficiency;
- Air quality and environmental recall;
- Water;
- Nature and biodiversity;
- Conservation covenants.

Of particular relevance is Part 6 of the Act which introduces "biodiversity gain in planning" and will apply in England to planning applications under the Town & Countryside Act and the Planning Act. Schedule 14 now requires that biodiversity gain be a condition of planning permission in England. These changes will be enacted through subsequent secondary legislation or regulations. This part of the Act also changes the responsibilities that Government or public bodies have by strengthening the existing NERC Act biodiversity duty. Public authorities are now required to seek to conserve and enhance biodiversity in the exercise of their functions.

Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. Under the Habitats Regulations it is an offence to deliberately capture, kill or disturb[1] wild animals listed under Schedule 2 of the Regulations as well as damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time). European Sites, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), are also protected under the Habitat Regulations, and any proposal that could affect them will require an Habitats Regulations Assessment (HRA).

[1] Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017

Part 3 of the regulations provide for the protection of areas of habitats or species where maintenance of the status of water is an important factor. Under the regulations additional consideration may need to be given to sites in the form of a Water Framework Directive (WFD) assessment where a project lies in proximity to a water body or to linked water bodies which could be affected. This includes consideration of whether water bodies are WFD receptors in particular those of high status or have high status morphology.

Natural Environment & Rural Communities (NERC) Act 2006

Section 40 of the NERC Act 2006 places a duty on public authorities to have regard to the purpose of conserving biodiversity in the exercise of their functions. Public authorities include government departments, local authorities and statutory undertakers.

Section 41 of the Act (Section 42 in Wales) requires the publication of a list of habitats and species publish which are of principal importance for the purpose of conserving biodiversity. The Section 41 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity.

Note that Sections 40 and 42 were superseded in Wales by the Environment (Wales) Act 2016 (see below).

Protection of Badgers Act 1992

The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

Wildlife & Countryside Act 1981

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CRoW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

Planning Policy

A summary of national planning policy relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general

guidance only and the original policy documents should be consulted for definitive information. For local planning policy relevant to biodiversity the relevant local plans should be consulted.

National Planning Policy (England)

The National Planning Policy Framework (NPPF)[2] sets out guidance for local planning authorities and decision-makers in how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/05[3], the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out. Specific policies relating to conserving and enhancing the natural environment are set out in paragraphs 180-184 and policies specifically related to habitats and biodiversity are set out in 185-188 of the NPPF.

Paragraph 180 states that:

"Planning policies and decisions should contribute to and enhance the natural and local environment by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."

Paragraph 181 states that:

"Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework[4]; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries."

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[2] Department for Levelling Up, Housing & Communities (Dec 2023) National Planning Policy Framework (publishing.service.gov.uk)

[3] Office of the Deputy Prime Minister odpm-circ-0605.qxd (publishing.service.gov.uk)

[4] *Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality. The availability of agricultural land used for food production should be considered, alongside the other policies in this Framework, when deciding what sites are most appropriate for development.*

Paragraph 182 states that:

"Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads[5]. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas."

Paragraph 183 states that:

"When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development[6] other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:

a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;

b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and

c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated."

Paragraph 184 states that:

"Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 182), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character."

Paragraph 185 states that:

"*To protect and enhance biodiversity and geodiversity, plans should:*

a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity[7]; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation[8]; and

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[5] English National Parks and the Broads: UK Government Vision and Circular 2010 provides further guidance and information about their statutory purposes, management and other matters.

[6] For the purposes of paragraphs 182 and 183, whether a proposal is 'major development' is a matter for the decision maker, taking into account its nature, scale and setting, and whether it could have a significant adverse impact on the purposes for which the area has been designated or defined.

[7] Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

[8] Where areas that are part of the Nature Recovery Network are identified in plans, it may be appropriate to specify the types of development that may be suitable within them.

b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."

Paragraph 186 states that:

"*When determining planning applications, local planning authorities should apply the following principles:*

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons[9] and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."

Paragraph 187 states that:

"The following should be given the same protection as habitats sites:

a) potential Special Protection Areas and possible Special Areas of Conservation;

b) listed or proposed Ramsar sites[10]; and

c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites."

Paragraph 188 states that:

"The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site."

---

[9] For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.

[10] Potential Special Protection Areas, possible Special Areas of Conservation and proposed Ramsar sites are sites on which Government has initiated public consultation on the scientific case for designation as a Special Protection Area, candidate Special Area of Conservation or Ramsar site.

Appendix B UKHab Classification Plan

499500 500000 500500 501000 501500 502000 502500

352000 351500 351000 350500

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LEGEND

Site Boundary

Primary Habitat Classification

Heathland and Shrub - Hedgerows
- h2a - Hedgerow Priority Habitat
- h2a5 - Species-rich Native Hedgerow
- h2a6 - Other Native Hedgerow

Cropland - Arable and Horticulture
- c1 - Arable and Horticulture
- c1c - Cereal Crops
- c1d - Non-cereal Crops

Grassland - Calcerous Grassland
- g2c - Other Calcareous Grasslands

Grassland - Neutral Grassland
- g3 - Neutral Grassland
- g3c - Other Neutral Grassland

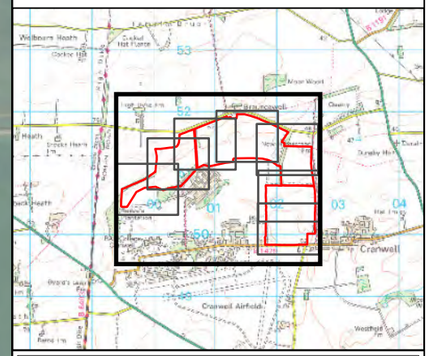
Grassland - Modified Grassland
- g4 - Modified Grassland

Heathland and Shrub - Dense Scrub
- h3 - Dense Scrub
- h3d - Bramble Scrub
- h3h - Mixed Scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing Open Water and Canal

Urban - Built-up Areas and Gardens
- u1 - Built-up Area and Garden
- u1b - Developed Land; Sealed Surface
- u1c - Artificial Unvegetated, Unsealed Surface
- u1f - Sparsely Vegetated Urban Land

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1f - Lowland Mixed Deciduous Woodland
- w1g - Other Woodland; Broadleaved
- w1h5 - Other Woodland; Mixed; Mainly Broadleaved



0 250 500

Metres

trio

SLR

WINDSOCK SOLAR FARM

PRELIMINARY ECOLOGICAL APPRAISAL

UK HABITAT BASELINE

FIGURE 1.1

Scale 1:10,000 @ A3

Date OCTOBER 2026

405.065637.00001.0005.0 UK Habitat Baseline

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499500

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Secondary Codes:
10 - Scattered Scrub
11 - Hedgerow with Trees
16 - Tall Forbs
29 - Plantation
32 - Scattered Trees
42 - Pond
81 - Ruderal or Ephemeral
104 - Other Grazed
128 - Tall or Tussocky Sward
507 - Nutrient Enriched Substrate
510 - Bare Ground
517 - Recent Management
521 - Unmanaged
839 - Track

N

LB7: h2a
c1c
B11: c1c
B9: g3c 128
B8: w1h5 29
c1c
c1c
B14: g3c 32 10 839
B10: w1g
g3c 32 10 839
h3
w1g
c1c
g3c 128
c1c
B2: c1c
c1c
B7: c1c
c1c
B1: c1c
w1g
B4: h3h 521
B6: g3c 128 839 10 32
g3c 128 839 10 32
B3: g4
g2c
B5: h3h 521
Plantation Road

0 100 200
Metres

405.065637.00001.0005.0 UK Habitat Baseline

LEGEND

Site Boundary

Primary Habitat Classification

Heathland and Shrub - Hedgerows
h2a - Hedgerow Priority Habitat

Cropland - Arable and Horticulture
c1c - Cereal Crops

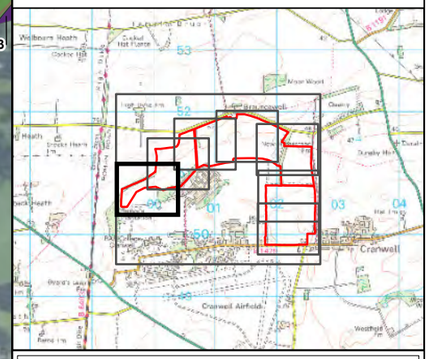
Grassland - Calcerous Grassland
g2c - Other Calcareous Grasslands

Grassland - Neutral Grassland
g3c - Other Neutral Grassland

Grassland - Modified Grassland
g4 - Modified Grassland

Heathland and Shrub - Dense Scrub
h3 - Dense Scrub
h3h - Mixed Scrub

Woodland and Forest - Broadleaved Mixed and Yew Woodland
w1g - Other Woodland; Broadleaved
w1h5 - Other Woodland; Mixed; Mainly Broadleaved



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WINDSOCK SOLAR FARM

PRELIMINARY ECOLOGICAL APPRAISAL

UK HABITAT BASELINE

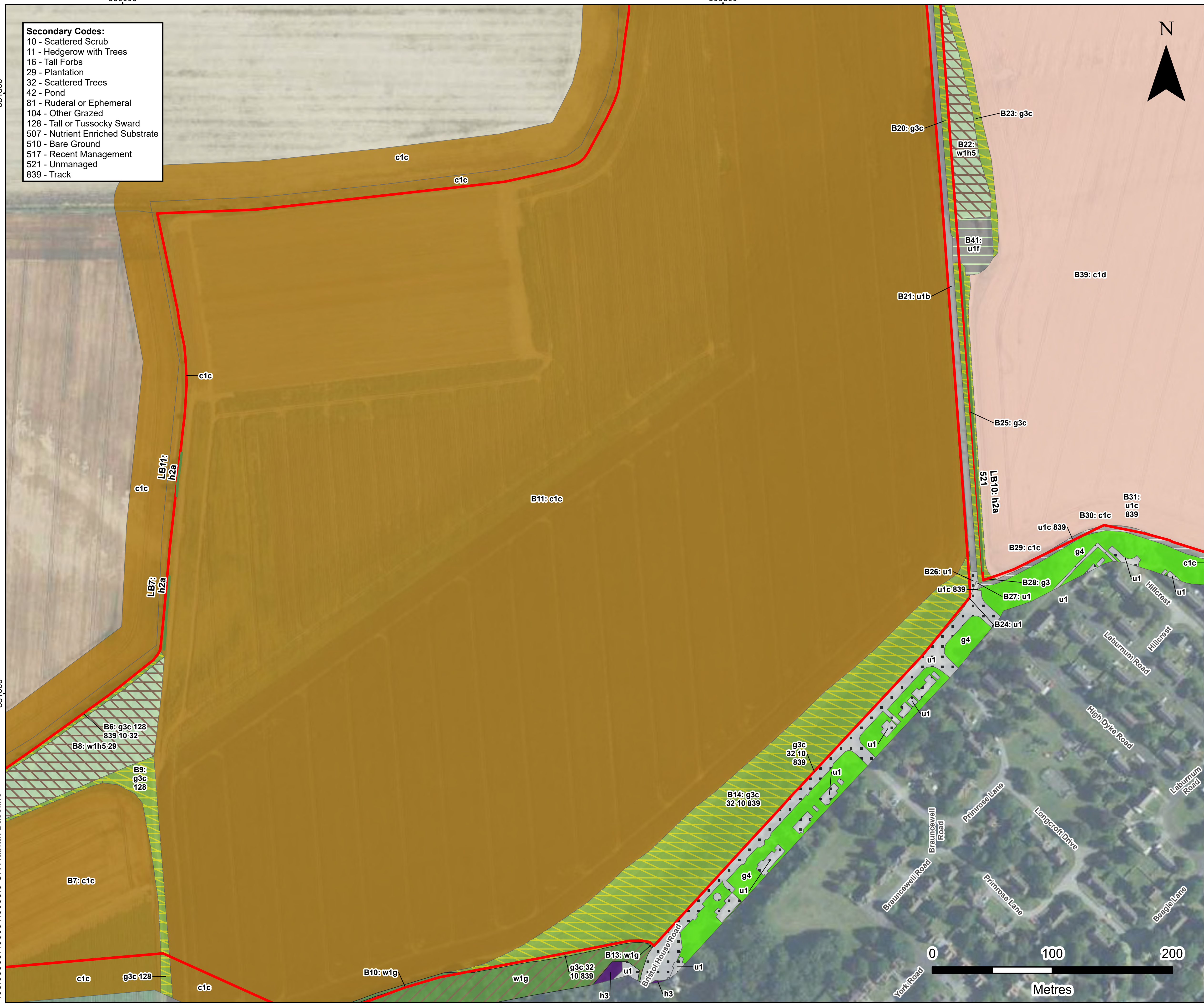
FIGURE 1.2

Scale 1:3,000 @ A3

Date OCTOBER 2026

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LEGEND

Site Boundary

Primary Habitat Classification

Heathland and Shrub - Hedgerows

h2a - Hedgerow Priority Habitat

Cropland - Arable and Horticulture

c1c - Cereal Crops

c1d - Non-cereal Crops

Grassland - Neutral Grassland

g3 - Neutral Grassland

g3c - Other Neutral Grassland

Grassland - Modified Grassland

g4 - Modified Grassland

Heathland and Shrub - Dense Scrub

h3 - Dense Scrub

Urban - Built-up Areas and Gardens

u1 - Built-up Area and Garden

u1b - Developed Land; Sealed Surface

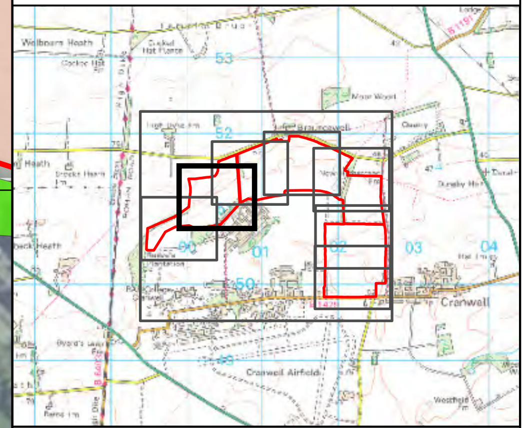
u1c - Artificial Unvegetated, Unsealed Surface

u1f - Sparsely Vegetated Urban Land

Woodland and Forest - Broadleaved Mixed and Yew Woodland

w1g - Other Woodland; Broadleaved

w1h5 - Other Woodland; Mixed; Mainly Broadleaved



WINDSOCK SOLAR FARM

PRELIMINARY ECOLOGICAL APPRAISAL

UK HABITAT BASELINE

FIGURE 1.3

Scale	Date
1:3,000 @ A3	OCTOBER 2026

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405.065637.00001.0005.0 UK Habitat Baseline

Secondary Codes:
10 - Scattered Scrub
11 - Hedgerow with Trees
16 - Tall Forbs
29 - Plantation
32 - Scattered Trees
42 - Pond
81 - Ruderal or Ephemeral
104 - Other Grazed
128 - Tall or Tussocky Sward
507 - Nutrient Enriched Substrate
510 - Bare Ground
517 - Recent Management
521 - Unmanaged
839 - Track

N

B34: g3c
g4 16
B35: g3c
u1
c1c
u1
u1
h2a6 517 11
u1
c1c
B15: c1c
B16: u1
c1c
u1
B19: g3c
B17: u1
B18: u1
h2a
h2a
h2a
u1
c1c
u1
B12: h3h
LB1: h2a6 521
B20: g3c
B23: g3c
c1c
B39: c1d
B22: w1h5
c1c
B21: u1b
B41: u1f
B11: c1c
B40: c1 104
B36: g3c
B38: c1c
B37: g3c
g3c
c1c
c1d
B33: c1c
c1c
B31: u1c 839
u1c 839
B30: c1c
B32: c1c
u1c 839
c1c
B29: c1c
g4
B27: u1
g3c 81 128
B26: u1
B14: g3c 32 10 839
u1
Hillcrest
u1
g4
B28: g3
u1
Laburnum Road
B24: u1
High Dyke Road
c1c
B25: g3c
LB10: h2a 521

0 100 200
Metres

LEGEND

Site Boundary

Primary Habitat Classification

Heathland and Shrub - Hedgerows
- h2a - Hedgerow Priority Habitat
- h2a6 - Other Native Hedgerow

Cropland - Arable and Horticulture
- c1 - Arable and Horticulture
- c1c - Cereal Crops
- c1d - Non-cereal Crops

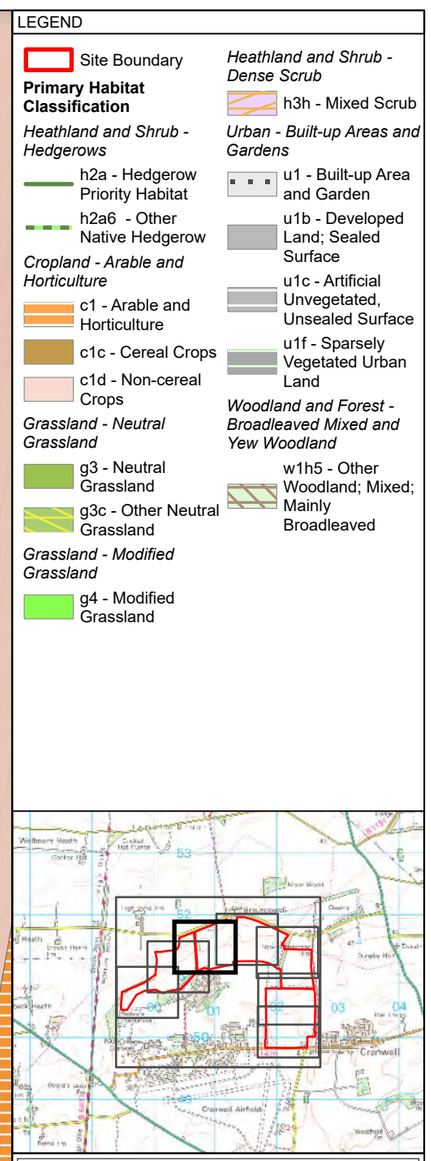
Grassland - Neutral Grassland
- g3 - Neutral Grassland
- g3c - Other Neutral Grassland

Grassland - Modified Grassland
- g4 - Modified Grassland

Heathland and Shrub - Dense Scrub
- h3h - Mixed Scrub

Urban - Built-up Areas and Gardens
- u1 - Built-up Area and Garden
- u1b - Developed Land; Sealed Surface
- u1c - Artificial Unvegetated, Unsealed Surface
- u1f - Sparsely Vegetated Urban Land

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1h5 - Other Woodland; Mixed; Mainly Broadleaved



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WINDSOCK SOLAR FARM

PRELIMINARY ECOLOGICAL APPRAISAL

UK HABITAT BASELINE

FIGURE 1.4

Scale 1:3,000 @ A3

Date OCTOBER 2026

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501500

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405.065637.00001.0005.0 UK Habitat Baseline

Secondary Codes:
10 - Scattered Scrub
11 - Hedgerow with Trees
16 - Tall Forbs
29 - Plantation
32 - Scattered Trees
42 - Pond
81 - Ruderal or Ephemeral
104 - Other Grazed
128 - Tall or Tussocky Sward
507 - Nutrient Enriched Substrate
510 - Bare Ground
517 - Recent Management
521 - Unmanaged
839 - Track

N

LEGEND

Site Boundary

Primary Habitat Classification

Heathland and Shrub - Hedgerows

h2a6 - Other Native Hedgerow

Cropland - Arable and Horticulture

c1 - Arable and Horticulture

c1c - Cereal Crops

c1d - Non-cereal Crops

Grassland - Neutral Grassland

g3 - Neutral Grassland

g3c - Other Neutral Grassland

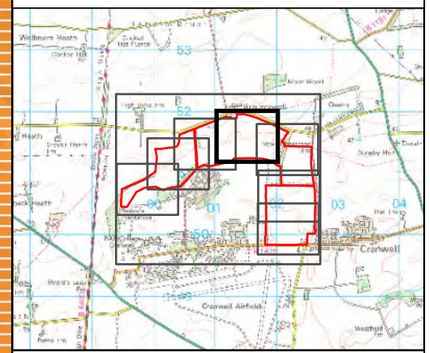
Grassland - Modified Grassland

g4 - Modified Grassland

Urban - Built-up Areas and Gardens

u1 - Built-up Area and Garden

u1c - Artificial Unvegetated, Unsealed Surface



trio

SLR

WINDSOCK SOLAR FARM

PRELIMINARY ECOLOGICAL APPRAISAL

UK HABITAT BASELINE

FIGURE 1.5

Scale 1:3,000 @ A3

Date OCTOBER 2026

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502000

502500

351000

350500

405.065637.00001.0005.0 UK Habitat Baseline

Secondary Codes:
10 - Scattered Scrub
11 - Hedgerow with Trees
16 - Tall Forbs
29 - Plantation
32 - Scattered Trees
42 - Pond
81 - Ruderal or Ephemeral
104 - Other Grazed
128 - Tall or Tussocky Sward
507 - Nutrient Enriched Substrate
510 - Bare Ground
517 - Recent Management
521 - Unmanaged
839 - Track

B93: c1c
B72: g4 839
w1f
B74: g4 839
B73: g4 839
B92: c1d
B75: g4 839
LB12: h2a
LB13: h2a
LB6: h2a6 11
B90: g3c 128 10
LB4: h2a6 11
B95: c1c
LB5: h2a 521 c1c
u1c 839
B58: g3c 128 10 839
c1c
B57: c1c
B55: u1c 839
B54: g3c 128 10 839
B87: g3c 128 10 839
c1c
c1c
B96: g4 10
g4 10
h2a6 517
c1c
B91: c1d
LB8: h2a5 11 521
g3c 128 10 839
B59: g3c 128 10 839
c1d
B63: r1 42
B62: g3c 128 10 839
h3h
g3c 128 507
u1c
B60: u1c
B61: g3c 128 507
w1g

N

0 100 200
Metres

LEGEND

Site Boundary

Primary Habitat Classification

Heathland and Shrub - Hedgerows
- h2a - Hedgerow Priority Habitat
- h2a5 - Species-rich Native Hedgerow
- h2a6 - Other Native Hedgerow

Cropland - Arable and Horticulture
- c1c - Cereal Crops
- c1d - Non-cereal Crops

Grassland - Neutral Grassland
- g3c - Other Neutral Grassland

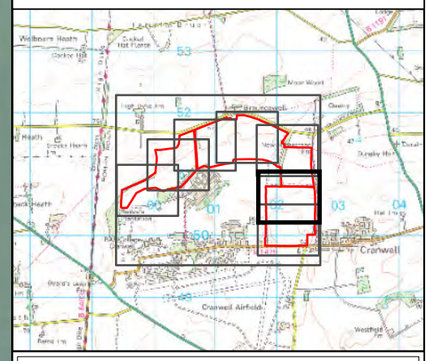
Grassland - Modified Grassland
- g4 - Modified Grassland

Heathland and Shrub - Dense Scrub
- h3h - Mixed Scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing Open Water and Canal

Urban - Built-up Areas and Gardens
- u1c - Artificial Unvegetated, Unsealed Surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1f - Lowland Mixed Deciduous Woodland
- w1g - Other Woodland; Broadleaved



trio

SLR

WINDSOCK SOLAR FARM

PRELIMINARY ECOLOGICAL APPRAISAL

UK HABITAT BASELINE

FIGURE 1.7

Scale 1:3,000 @ A3

Date OCTOBER 2026

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502000

502500

350500

350000

405.065637.00001.0005.0 UK Habitat Baseline

B87: g3c 128 10 839 c1c

g3c 128 10 839

B59: g3c 128 10 839

B63: r1 42

B62: g3c 128 10 839

h3h

g3c 128 507

B61: g3c 128 507

w1g

u1c

B60: u1c

B56: g4

g4

c1c

B52: w1g

B48: c1c

u1

B49: u1

g4

B50: g4

c1c

B51: c1c

B64: g3c

Cranwell Avenue

B53: u1

g4

B91: c1d

LB8: h2a5 11 521

c1c

B96: g4 10

h2a6 517

g4 10

B99: g3c 10 839

B101: h3h

B98: h3h

B97: g3c 10 839

g3c 10 839

g4

u1

B100: g4 10

h3h

u1

u1c 839

c1d

LB9: h2a6 517

B94: g3c

h2a6 517

g3c

College Road

u1

g4

g4

u1

g4

The Sidings

College Road

Rauceby Lane

N

0 100 200

Metres

Secondary Codes:
10 - Scattered Scrub
11 - Hedgerow with Trees
16 - Tall Forbs
29 - Plantation
32 - Scattered Trees
42 - Pond
81 - Ruderal or Ephemeral
104 - Other Grazed
128 - Tall or Tussocky Sward
507 - Nutrient Enriched Substrate
510 - Bare Ground
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521 - Unmanaged
839 - Track

LEGEND

Site Boundary

Primary Habitat Classification

Heathland and Shrub - Hedgerows
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- r1 - Standing Open Water and Canal

Urban - Built-up Areas and Gardens
- u1 - Built-up Area and Garden
- u1c - Artificial Unvegetated, Unsealed Surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1g - Other Woodland; Broadleaved

trio

SLR

WINDSOCK SOLAR FARM

PRELIMINARY ECOLOGICAL APPRAISAL

UK HABITAT BASELINE

FIGURE 1.8

Scale 1:3,000 @ A3

Date OCTOBER 2026

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Appendix C Biodiversity Net Gain Cover Letter

SLR Consulting Limited

20 November 2025

Attention: Stuart McGowan
Trio Windsock Solar Farm Ltd
Kintocher Farm House
Abercairney
Crieff Perthshire
PH7 3NQ

SLR Project No.: 405.065637.00001

RE: Windsock Solar Farm, Lincolnshire, Biodiversity Net Gain Covering Letter

SLR Consulting Limited (SLR) were commissioned by Trio Windsock Solar Farm Ltd to undertake a baseline Biodiversity Net Gain (BNG) assessment, to inform the design stage for a proposed solar farm and battery energy storage system (BESS) on Land to the South of Long Lane (central UK grid reference: TF 01602 51581), Brauncewell, Cranwell, NG24 8RL, herein referred to as the 'Site'. This BNG assessment has been undertaken using Defra's Statutory Biodiversity Metric[1]. At the time of writing, the proposed development has no fixed design and no construction plan. The BNG assessment only accounts for the baseline value of the Site as it is currently.

This letter provides the information required in Paragraph: 011 Reference ID: 74-011-20240214 of the Biodiversity Net Gain guidance:

- If planning permission is granted that the development will be subject to a biodiversity gain planning condition;
- The pre-development biodiversity value is based upon the results of habitat surveys undertaken on the 14th and 15th May 2025. Survey data are valid for a period of 12 to 18 months from the date of the survey, according to CIEEM advice[2];
- The pre-development biodiversity values for the development are shown in the Statutory Biodiversity Metric and are summarised as:
    - Habitat Units: 569.78 units
    - Hedgerow Units: 18.30 units
- A copy of the Statutory Biodiversity Metric is included with this letter; the version is dated 20.11.2025;
- No activities have been carried out on the Site prior to the date of application which would have resulted in a loss of onsite biodiversity value;
- Included with this letter is a plan showing the onsite habitats which exist on the date of the application; and
- A copy of the condition assessment sheets for the habitats are included with this letter.

[1] Defra (2023) – Statutory Biodiversity Metric Tools and Guides (https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides)
[2] Chartered Institute of Ecology and Environmental Management (2019) - Advice Note on the Lifespan of Ecological Reports & Surveys.

Closure

This letter summarises the information required in Paragraph: 011 Reference ID: 74-011-20240214 of the Biodiversity Net Gain guidance, including the baseline units in terms of habitats and hedgerows.

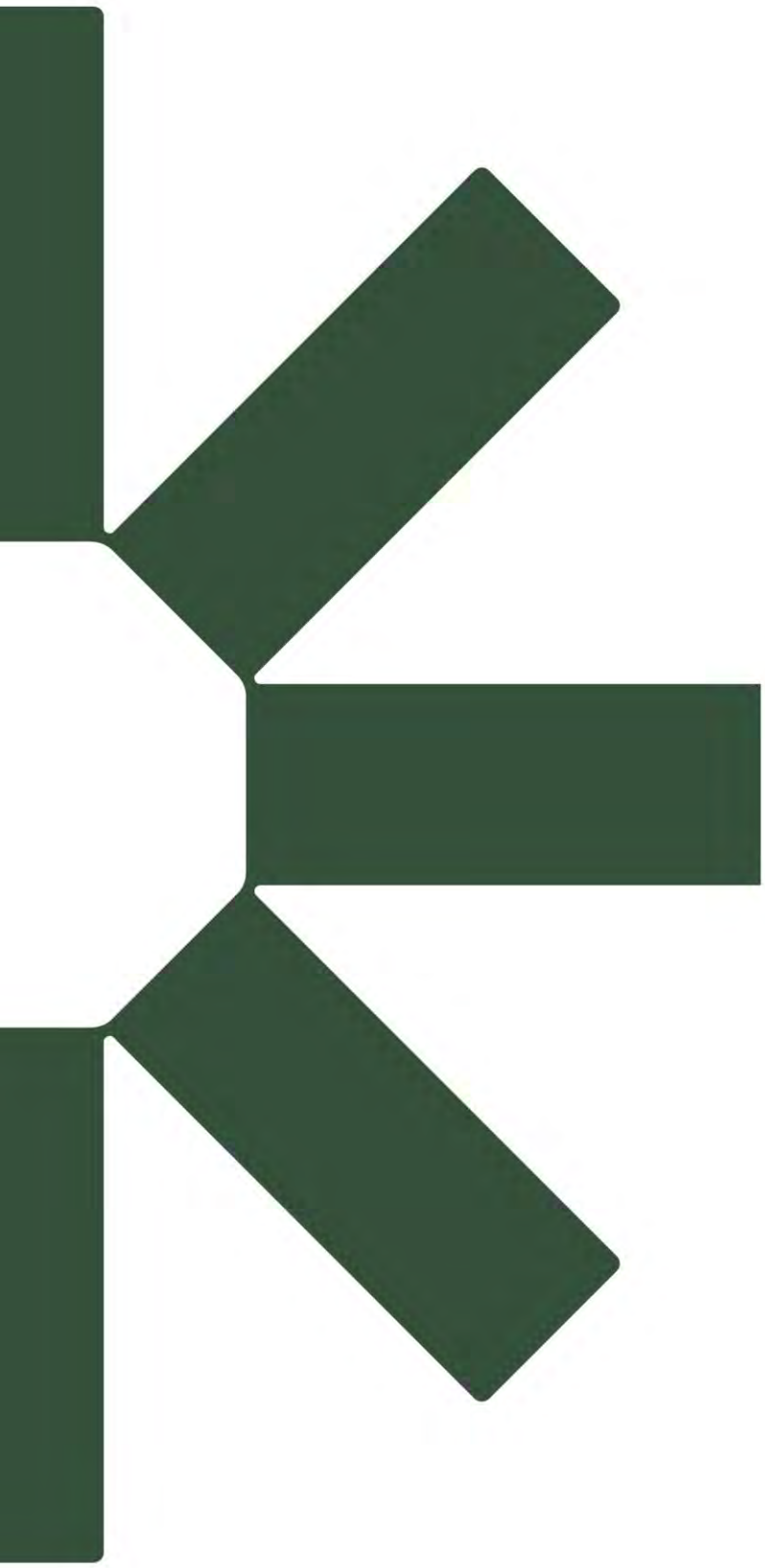
Yours Sincerely,

SLR Consulting Limited

[redacted]

Office phone +44 [redacted]
Mobile [redacted]
[redacted]com

Attachments 20251120_Windsock Solar & BESS_BNG Metric_V01.xls



Making Sustainability Happen

APPENDIX G: WINDSOCK SOLAR BNG

Survey information contained within this report forms part of the EIA Scoping Report for information only. The habitat surveys that underpin the BNG baseline detailed within this appendix were undertaken in May 2025 and were based on a superseded version of the Site boundary that was larger than the current Site boundary detailed within the EIA Scoping Report.

SLR Consulting Limited

20 November 2025

Attention: [redacted]
Trio Windsock Solar Farm Ltd
Kintocher Farm House
Abercairney
Crieff Perthshire
PH7 3NQ

SLR Project No.: 405.065637.00001

RE: Windsock Solar Farm, Lincolnshire, Biodiversity Net Gain Covering Letter

SLR Consulting Limited (SLR) were commissioned by Trio Windsock Solar Farm Ltd to undertake a baseline Biodiversity Net Gain (BNG) assessment, to inform the design stage for a proposed solar farm and battery energy storage system (BESS) on Land to the South of Long Lane (central UK grid reference: TF 01602 51581), Brauncewell, Cranwell, NG24 8RL, herein referred to as the 'Site'. This BNG assessment has been undertaken using Defra's Statutory Biodiversity Metric[1]. At the time of writing, the proposed development has no fixed design and no construction plan. The BNG assessment only accounts for the baseline value of the Site as it is currently.

This letter provides the information required in Paragraph: 011 Reference ID: 74-011-20240214 of the Biodiversity Net Gain guidance:

- If planning permission is granted that the development will be subject to a biodiversity gain planning condition;
- The pre-development biodiversity value is based upon the results of habitat surveys undertaken on the 14th and 15th May 2025. Survey data are valid for a period of 12 to 18 months from the date of the survey, according to CIEEM advice[2];
- The pre-development biodiversity values for the development are shown in the Statutory Biodiversity Metric and are summarised as:
    - Habitat Units: 569.78 units
    - Hedgerow Units: 18.30 units
- A copy of the Statutory Biodiversity Metric is included with this letter; the version is dated 20.11.2025;
- No activities have been carried out on the Site prior to the date of application which would have resulted in a loss of onsite biodiversity value;
- Included with this letter is a plan showing the onsite habitats which exist on the date of the application; and
- A copy of the condition assessment sheets for the habitats are included with this letter.

[1] Defra (2023) – Statutory Biodiversity Metric Tools and Guides (https://www.gov.uk/government/publications/statutory-biodiversity-metric-tools-and-guides)
[2] Chartered Institute of Ecology and Environmental Management (2019) - Advice Note on the Lifespan of Ecological Reports & Surveys.

Closure

This letter summarises the information required in Paragraph: 011 Reference ID: 74-011-20240214 of the Biodiversity Net Gain guidance, including the baseline units in terms of habitats and hedgerows.

Yours Sincerely,

SLR Consulting Limited

[redacted]
Senior Ecologist

Office phone +44 3300[redacted]
Mobile [redacted]
email [redacted]

Attachments 20251120_Windsock Solar & BESS_BNG Metric_V01.xls

APPENDIX G:
WINDSOCK SOLAR ARABLE PLANTS BASELINE REPORT 2025

Survey information contained within this report forms part of the EIA Scoping Report for information only. The arable plant survey detailed within this appendix were undertaken between June 2025 and July 2025 and were based on a superseded version of the Site boundary that was larger than the current Site boundary detailed within the EIA Scoping Report.

Arable Plants Baseline Report 2025

Windsock Solar Farm, Lincolnshire

Trio Windsock Solar Farm Ltd.

UK House
5th Floor
164-18 Oxford Street
London
W1D 1NN

Prepared by:

SLR Consulting Limited

Treenwood House, Rowden Lane, Bradford on Avon,
BA15 2AU

SLR Project No.: 405.065637.00001

Client Reference No: CRAN123-3-5

20 November 2025

Revision: 1.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	20 November 2025	Paul Clack	Jess Colebrook	Jess Colebrook
	Click to enter a date.			
	Click to enter a date.			
	Click to enter a date.			
	Click to enter a date.			

Basis of Report

This document has been prepared by SLR Consulting Limited (SLR) with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with Trio Windsock Solar Farm Ltd (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

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Executive Summary

This report presents the findings of an arable plant survey undertaken by SLR Consulting Ltd for Trio Windsock Solar Farm Ltd in summer 2025. The purpose of the study was to aid the design of a proposed solar array and battery energy storage system development at Cranwell, Lincolnshire. The report focuses on arable plant communities within the site.

The Cranwell area is characterised by low-lying, predominantly arable farmland interspersed with small areas of plantation woodland. The site lies close to High Dyke, a designated Site of Special Scientific Interest noted for its grassland and scrub habitats and rare arable plants. Given the ecological sensitivity of the area, comprehensive survey data was required to guide project design and planning.

The study aimed to identify arable plant communities present within the site, record any notable or protected species, and assess the conservation importance of these habitats. To achieve this, a desk study was undertaken alongside detailed field surveys in June and July 2025. The desk study reviewed mapping, aerial photography, and biodiversity records, while the field survey focused on five arable fields within the site. Surveys concentrated on field margins where plant diversity is typically greatest, and species abundance was recorded using the DAFOR scale.

Results indicate that the site supports a range of arable plants including some species of conservation interest. Seven species listed as Important Arable Plant Area (IAPA) indicators were recorded, including field gromwell, dwarf spurge and corn parsley. Field gromwell, assessed as Critically Endangered in the latest Great Britain Red List, was the most significant finding, but the population of the Vulnerable dwarf spurge was also noteworthy. Overall, the combined score for the site suggests that the arable plant community falls below the threshold for county-level importance but may be of local value.

The presence of these IAPA species should be considered during project design. Retaining areas of disturbed ground and working with local farmers to maintain suitable conditions could help conserve these plants. The data collected provides a robust baseline for future ecological impact assessment and should be used to inform recommendations for habitat management.

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Appendices

Appendix A Figures

Acronyms and Abbreviations

Acronym / Abbreviation	Meaning
BESS	Battery Energy Storage System
EcIA	Ecological Impact Assessment
SSSI	Site of Special Scientific Interest
IAPA	Important Arable Plant Area
IPA	Important Plant Area
NBN	National Biodiversity Network
NVC	National Vegetation Classification
PEA	Preliminary Ecological Appraisal
DAFOR	Dominant, Abundant, Frequent, Occasional, Rare (scale for plant abundance)
BAP	Biodiversity Action Plan
CR	Critically Endangered (Red Data Book status)
EN	Endangered (Red Data Book status)
VU	Vulnerable (Red Data Book status)
LC	Least Concern (Red Data Book status)
NT	Near Threatened (Red Data Book status)

1.0 Introduction

1.1 Purpose of this report

SLR Consulting Ltd (SLR) was commissioned by Trio Windsock Solar Farm Ltd. in March 2025 to carry out a range of baseline ecological surveys to inform a proposed solar array and battery energy storage system (BESS) development (hereafter “the Project”).

This report documents the methods and results of arable plant surveys undertaken in 2025. The assessment of impacts resulting from the proposed development and the identification of mitigation measures are beyond the scope of this report and will be covered in a separate Ecological Impact Assessment (EcIA) report in due course.

1.2 Project Background

At the time of writing, project proposals are at an early stage of development. The proposed development is likely to comprise a solar array of up to 200MW, and a 100MW BESS element. The layout of the project will be informed by a variety of site factors, including ecology constraints and opportunities.

1.3 Site Description and Context

The Cranwell area of central Lincolnshire is low lying, relatively flat and dominated by agricultural land uses. These include large areas of arable farmland, which dominate the Site covered by this report. Small areas of plantation woodland are also present, and the active RAF Cranwell military facility is present to the south.

A Roman Road known as High Dyke (part of Roman Ermine Street) is present approximately 400m to the west of the Site. High Dyke is a designated Site of Special Scientific Interest (SSSI), notified its grassland and scrub habitats and constituent species. The citation for the SSSI states that areas of bare ground in the centre of the tract provide a habitat for rare arable plants such as night-flowering catchfly *Silene noctiflora* and Venus’s looking-glass *Legousia hybrida*, which are now scarce in arable fields generally.

The Site itself (refer to Drawing 2 for the Site boundary) is approximately 260ha in extent, primarily comprising a series of agricultural fields. These are under active management and used to grow cereal and other crops. Part of the site is also used for pig husbandry. Field boundaries comprise hedgerows and grassy buffer strips. Within the site and in adjacent areas are small areas of mixed and broadleaved woodland. Further details in respect of habitats can be found in the Preliminary Ecological Appraisal report for the project and associated UKHab results[1].

1.4 Aims and Objectives

SLR was commissioned to address the following study aims:

- Survey the arable plant communities present within the Site;
- Identify any notable or protected arable plant species that may be present; and
- Review the nature conservation importance of arable plant habitat within the Site.

To achieve these study aims, the study had the following objectives:

[1] Preliminary Ecological Appraisal Report, Windsock Silar Farm, Lincolnshire. SLR Consulting Ltd, November 2025.

- Conduct a detailed desk study to review evidence provided by third party organisations relating to arable habitats and plants in the landscape at and adjacent to the Site; and
- Carry out field survey work to ascertain if populations of rare or notable species were present.

The results of this survey, and subsequent recommendations, are included within this report.

The contents of this report represent baseline survey findings collected to inform project design and associated planning requirements. Baseline data and associated findings and recommendations presented in this report will be reviewed and summarised within the Ecological Impact Assessment for the project.

1.5 Evidence of Technical Competence and Experience

The survey and report were completed by SLR Technical Director Paul Clack CEnv, MCIEEM. Paul is a botanical surveyor with over 25 years of survey experience. He has surveyed for arable plants in a variety for areas of England and has used the methodologies employed in this study for various land parcels previously. He has also undertaken training with Dr Phil Wilson for arable plant surveying via the Species Recovery Trust.

Additional QA review has been provided by Jess Colebrook BSc (Hons), Chartered Environmentalist (CEnv), full member of CIEEM (MCIEEM). Jess is a Technical Director at SLR, with 25 years professional ecological experience, and holds a Level 4 Field Identification Skills Certificate (FISC) issued by the Botanical Society of Britain and Ireland.

2.0 Methods

2.1 Study Area

The following study areas were used for desk study and field survey work:

Desk Study Area – a zone extending two kilometres from the Site boundary (see Figure 1, Appendix A) within which to gather information on habitats and plants species (hereafter the 'Desk Study Area').

Field Survey Area – The survey concentrated on field margins and locations where it was evident that herbicide had not been applied. The majority of the species diversity and most of the seed resource of arable fields is contained within the outermost 4 metres, as in this zone the application of herbicides tends to be least efficient, crop drilling is less efficient, and effects of soil compaction promote growth[2].

Five fields within the Site were surveyed as shown on Figure 2 in Appendix A, with survey effort generally focussed on a 5m zone around the field boundary (hereafter the 'Field Survey Area').

2.2 Desk Study

To obtain pre-existing information about arable habitats and protected or notable plant species within the Desk Study Area, a desk study was undertaken in summer 2025. Protected and notable habitats and plant species are considered to be those that are listed or included in the following:

- Annex 1 or Annex 2 of the Habitats Directive (Council Directive 92/43/EEC);
- Schedule 8 of the Wildlife and Countryside Act, 1981 (as amended);
- The Vascular Plant Red List for Great Britain[3];
- Plant Species of Principal Importance in England included on Section 41 of the Natural Environment and Rural Communities Act 2006;
- Joint Nature Conservation Committee Conservation Designations for UK Taxa spreadsheet containing details of plant species listed on the UK or England Red Data Book and National Notable, Nationally Rare or Nationally Scarce plant species.
- Lincolnshire Biodiversity Action Plan[4].
- Greater Lincolnshire Nature Partnership's 2016 review of scarce arable plants[5].

The desk study reviewed the following information:

- Open source 1:25,000 Ordnance Survey mapping and aerial photography;
- Freely downloadable datasets available from Natural England were consulted for information regarding Habitats of Principal Importance

[2] Wilson, P. J. & King, M. (2003). Arable Plants – a field guide. WILDGuides Ltd.

[3] Stroh, P. et al (2025). A new vascular plant Red List for Great Britain, British & Irish Botany 7(3): 148-216.

[4] Lincolnshire Biodiversity Action Plan 2011 – 2020 (3rd edition), Lincolnshire Biodiversity Partnership. Available at: https://www.nelincs.gov.uk/wp-content/uploads/2016/02/201110-LincolnshireBAP-3rd-edition.pdf. It should be noted that a Local Nature Recovery Strategy is in preparation for Greater Lincolnshire, but at the time of writing this has not been published. This is expected in 2026.

[5] *Scarce arable plants: An assessment of current status in Greater Lincolnshire*, Greater Lincolnshire Nature Partnership, December 2016. Available at: https://glnp.org.uk/images/uploads/knowledge-hub-articles/Scarce%20arable%20plants%20report%202016.pdf

- National Biodiversity Network (NBN) Atlas layers available for commercial use
- A data search obtained from Lincolnshire Environmental Records Centre (August 2025) was consulted to ascertain the location of records of Important Arable Plant Area (IAPA) indicator species as defined by Plantlife/Wilson and Byfield[6] and Environmental Stewardship areas; and
- Soilscapes Geology viewer[7].

2.3 Field Survey

The survey was carried out on the 2nd and 3rd of June and 14th and 15th July 2025. Two survey visits were employed to cover early and later flowering species and to mitigate for mid-summer droughts and crop harvesting.

Weather conditions during the June surveys were cool and overcast, with rain at times, but with sufficient dry periods to not constrain survey effort. The July surveys were undertaken in warmer weather, again with no constraints to botanical survey effort. Weather conditions are summarised in

Table 2-1.

Table 2-1: Weather conditions during field surveys

Survey Date	2nd June	3rd June	14th July	15th July
Temperature (ºC)	19	13, rising to 20	24	18
Cloud cover (Octas)	3/8	8/8 - 4/8	6/8	8/8
Precipitation	None	Occasional rain	None	None
Wind	W, 10 mph	W, 15 mph	SW, 15 mph	SW, 20 mph

A species list[8] was recorded for each field within the Field Survey Area and the DAFOR[9] system was used to record the abundance of each species. Target notes were made describing and identifying the locations of IAPA species and other features of interest.

2.4 Data Evaluation

Plant species lists were analysed using the scoring system developed by Byfield and Wilson (2005)[1] for the identification of IAPAs. The Byfield and Wilson method contains a list of IAPA indicator species, each species is given a score on account of its rarity or threat status. By summing the scores, one may compare an assemblage of arable plants recorded during a survey to provisional threshold scores for assessing the conservation importance of arable plant sites as follows. Thresholds for chalk and limestone derived soils are cited as these are appropriate to the Field Survey Area, as the Soilscapes viewer of this location categorises fields as comprising *Soilscape 3: Shallow lime-rich soils over chalk or limestone*:

- European Importance – score = 90+;

[6] Byfield, A.J. & Wilson, P. J. (2005). Important Arable Plant Areas: identifying priority sites for arable plant Conservation in the United Kingdom. Plantlife International, Salisbury, UK

[7] https://www.landis.org.uk/soilscapes/

[8] Species nomenclature follows the complete list of taxon names from the BSBI distribution database (June 2025 update) available via https://bsbi.org/recording/resources/taxon-lists

[9] The DAFOR scale is used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover.

- National Importance – score = 45 – 89;
- County Importance – score = 30 – 44.

The conservation status of plant species recorded during field surveys was assigned with reference to the following registers:

- The Flora of Lincolnshire[10].
- Supplement to the Flora of Lincolnshire[11]
- The Vascular Plant Red List for Great Britain[12].
- Greater Lincolnshire Nature Partnership's 2016 review of scarce arable plants.

In addition, comparison of field data was made with the National Vegetation Classification (NVC), which divides arable plant assemblages in the United Kingdom into different community types. Identification of NVC community types was undertaken according to the keys printed in Volume 5 of British Plant Communities[13]. No formal quadrat analysis was undertaken during the field survey as this was not required to characterise the plant communities present.

2.5 Assumptions and Limitations

There is no definitive guidance on when to survey for arable plants. The field survey campaign was designed to cover earlier and later flowering species and this was successfully achieved. This two-visit strategy also helped mitigate the fact that summer 2025 in Lincolnshire was extremely hot and dry, with drought conditions meaning that by the July visit some crops were harvested early and arable plant specimens were becoming desiccated. Therefore, results are considered to be a fair description of arable plant communities present within the land parcels surveyed.

The NVC is not widely used in evaluating arable plant communities because such communities are typically highly modified due to herbicide use and often do not align precisely with the NVC community types. NVC Community types identified should therefore be taken as indicative.

Access was freely available to all five land parcels that formed the Field Survey Area during both surveys and therefore did not present a constraint on the representativeness or validity of the survey.

In summary, no significant constraints to the survey or evaluation were encountered, such that it is possible to achieve the aims and objectives set out in Section 1.2 of this report.

[10] Gibbons, J. (1975). The Flora of Lincolnshire. Lincolnshire Naturalists Union, Lincoln.

[11] Gibbons, J. and Weston, I. (1985). Supplement to the Flora of Lincolnshire, Lincolnshire Naturalists Union, Lincoln.

[12] Stroh, P. et al (2025). A new vascular plant Red List for Great Britain, British & Irish Botany 7(3): 148-216.

[13] Rodwell, J.S. (Ed.) (2000). British Plant Communities, Volume 5: Maritime communities and vegetation of open habitats. Cambridge University Press.

3.0 Results

3.1 Desk Study

IAPA Species

The data search from LERC returned very limited records of vascular plants, and none of those records related to IAPA species. Similarly, the vascular plant records on the NBN Atlas did not contain any IAPA records.

The lack of IAPA records found in searches of the above two sources is most likely reflective of a lack of recording effort locally, rather than a true absence of such species. It is noted that the citation for High Dyke SSSI (see subsequent section) includes reference to IAPA species, but these are not included in the above sources.

Relevant designated sites

High Dyke SSSI, notified for its grassland habitats and plant species, is located approximately 400m to the west of the Site. Although botanical interest is mostly within permanent species-rich calcareous grassland, areas of bare ground in the centre of the trackway provide a habitat for arable plants such as night-flowering catchfly and Venus's looking-glass, which are now scarce in arable fields generally and both are IAPA species.

The LERC data search identified eight non-statutory Local Wildlife Sites (LWS) within 2km of the Field Survey Area. No IAPA indicator species are mentioned within the citations for these LWSs. This is not unusual, as LWSs tend to not include arable land or margins.

Developed by Plantlife, Important Plant Areas (IPA) are key sites for exceptional botanical richness; rare, threatened and socio-economically valuable plant species; and rare and threatened habitats. There are no nearby IPAs, the closest such area is the North Norfolk Coast & The Wash IPA, at its closest point 35km to the East of the Field Survey Area.

Environmental Stewardship

The whole of the Field Study Area is covered by 'Entry Level Plus Higher-Level Stewardship'. Natural England's Open Data Publication identifies positive interventions including 6m buffer strips, field corner management, use of nectar flower mixtures and provision of beetle banks as part of the stewardship scheme.

3.2 Field Survey

The Field Survey Area was divided into the five individual land parcels (fields) and these are discussed in the following sections. A description of the field is provided, including an approximate area and cropping type. Results are presented in tabular format, along with an IAPA total score. A discussion of the results and recommendations for the project are included in Section 4 of this report.

It should be noted that the abundance scores included in the tables of results are a combination of June and July survey visits. Whilst the June visit recorded more species overall, additional species were recorded in July despite the dry conditions.

Photographs of each field and selected species are included where relevant.

Field One

Field One is located in the east of the Field Survey Area and is approximately 70ha is extent. The field was sown with sugar beet in early spring 2025 and supported fewer plant species

in the June visit as the ground has recently been tilled and sown. More species were evident during the July visit.

A buffer strip (a retained vegetated grassy corridor) is present to the north of Field One, dividing this field from Field Two. Along this margin, various plants are present within the crop, including the IAPA indicator species small-flowered crane's-bill *Geranium pusillum*.

The most noteworthy species recorded in Field One was a small population of IAPA indicator dwarf spurge *Euphorbia exigua*, present in the north-eastern corner of the field on the margin of the crop. Three small plants were recorded in the July visit.



Photograph 1: View of Field One in June with young beet crop.



Photograph 2: Dwarf spurge present in north-east corner of Field One.

Table 3-1 Field One survey results

Species name	Vernacular name	Abundance	IAPA Score
Achillea millefolium	Yarrow	R	-
Aethusa cynapium	Fool's parsley	F	-
Anagallis arvensis	Scarlet pimpernel	R	-
Arrhenatherum elatius	False oat-grass	R	-
Artemesia vulgaris	Mugwort	F	-
Bromus hordeaceus	Soft brome	O	-
Bromus sterilis	Barren brome	O	-
Capsella bursa-pastoris	Shepherd's purse	O	-
Chenopodium album	Fat hen	A	-
Cirsium arvense	Creeping thistle	F	-
Convolvulus arvensis	Field bindweed	F	-
Dactylis glomerata	Cock's-foot	O	-
Euphorbia exigua	Dwarf spurge	R	6
Euphorbia helioscopia	Sun spurge	F	-
Fallopia convolvulus	Black bindweed	F	-
Festuca rubra	Red fescue	R	-
Fumaria officinalis	Common fumitory	F	-
Galium aparine	Cleavers	O	-
Geranium molle	Dove's-foot crane's-bill	R	-
Geranium pusillum	Small-flowered crane's-bill	F	2
Heracleum sphondylium	Hogweed	O	-

Species name	Vernacular name	Abundance	IAPA Score
Lamium purpureum	Red dead-nettle	R	-
Lapsana communis	Nipplewort	R	-
Lepidium didymum	Lesser swinecress	R	-
Linaria vulgaris	Common toadflax	R	-
Lolium perenne	Perennial rye-grass	O	-
Matricaria discoidea	Pineappleweed	R	-
Papaver rhoeas	Common poppy	O	-
Phacelia tanacetifolia	Phacelia	R	-
Plantago lanceolata	Ribwort plantain	R	-
Poa annua	Annual meadow-grass	F	-
Polygonum aviculare	Common knotgrass	O	-
Reseda luteola	Weld	R	-
Rumex crispus	Curled dock	R	-
Senecio vulgaris	Common groundsel	O	-
Silene latifolia	White campion	F	-
Sisymbrium officinale	Hedge mustard	R	-
Solanum nigrum	Black nightshade	F	-
Solanum tuberosum	Potato	R	-
Sonchus arvensis	Perennial sow-thistle	O	-
Sonchus asper	Prickly sow-thistle	R	-
Sonchus oleraceus	Smooth sow-thistle	R	-
Tripleurospermum inodorum	Scentless mayweed	O	-
Urtica urens	Annual nettle	O	-
Veronica persica	Common field-speedwell	F	-
Vicia sativa	Common vetch	R	-
Viola arvensis	Field pansy	F	-
IAPA Total			8

Field Two

Field Two is located in the north east of the Field Survey Area and is approximately 30ha in extent. The field was primarily planted with a potato crop, but with a spring sown barley section in the middle of the field. As for Field One, as both crops had recently been sown/planted, fewer species were evident during June, but more were evident by July.

The varied cropping within this field supports a relatively diverse arable plant assemblage, with 56 species recorded around its margins. The IAPA species small-flowered crane's-bill was again present (recorded in all of the fields surveyed).

The most noteworthy plant recorded was the IAPA species corn parsley *Sison segetum*, with a population of around 20 plants present in the north-east of Field Two, mostly within a retained turning area in the corner area of the field.



Photograph 3: View of Field Two in June with young potato crop.



Photograph 4: One of several corn parsley plants in Field Two in June.

Table 3-2 Field Two survey results

Species	Vernacular	Abundance	IAPA score
Achillea millefolium	Yarrow	O	-
Anthriscus sylvestris	Cow parsley	R	-
Arrhenatherum elatius	False oat-grass	R	-
Avena fatua	Wild oat	O	-
Bromus hordeaceus	Soft brome	R	-
Bromus sterilis	Barren brome	F	-
Capsella bursa-pastoris	Shepherd's purse	O	-
Carduus nutans	Musk thistle	R	-
Centaurea nigra	Black knapweed	R	-
Centaurea scabiosa	Greater knapweed	R	-
Chenopodium album	Fat hen	A	-
Cirsium arvense	Creeping thistle	F	-
Cirsium vulgare	Spear thistle	R	-
Convolvulus arvensis	Field bindweed	O	-
Dactylis glomerata	Cock's-foot	O	-
Elymus repens	Common couch	R	-
Epilobium sp.	Willowherb sp.	O	-
Erigeron canadensis	Canadian fleabane	O	-
Euphorbia helioscopia	Sun spurge	O	-
Fallopia convolvulus	Black bindweed	O	-
Fumaria officinalis	Common fumitory	F	-
Galium aparine	Cleavers	O	-
Geranium dissectum	Cut-leaved crane's-bill	O	-
Geranium molle	Dove's-foot crane's-bill	O	-
Geranium pusillum	Small-flowered crane's-bill	F	2
Helminthotheca echioides	Bristly ox-tongue	R	-
Heracleum sphondylium	Hogweed	O	-
Jacobaea vulgaris	Common ragwort	R	-
Lamium album	White dead-nettle	O	-
Leucanthemum vulgare	Ox-eye daisy	R	-
Linaria vulgaris	Common toadflax	R	-
Lolium perenne	Perennial rye-grass	O	-
Matricaria discoidea	Pineappleweed	O	-
Papaver rhoeas	Common poppy	R	-
Phacelia tanacetifolia	Phacelia	R	-
Plantago lanceolata	Ribwort plantain	O	-
Plantago major	Greater plantain	R	-
Poa annua	Annual meadow-grass	O	-
Poa trivialis	Rough meadow-grass	R	-
Polygonum aviculare	Common knotgrass	O	-
Reseda lutea	Wild mignonette	O	-
Rumex crispus	Curled dock	O	-

Species	Vernacular	Abundance	IAPA score
Senecio vulgaris	Common groundsel	R	-
Silene latifolia	White campion	R	-
Sison segetum	Corn parsley	O	3
Sisymbrium officinale	Hedge mustard	O	-
Solanum nigrum	Black nightshade	F	-
Solanum nitidibaccatum	Green nightshade	O	-
Sonchus asper	Prickly sow-thistle	O	-
Sonchus oleraceus	Smooth sow-thistle	R	-
Torilis japonica	Upright hedge parsley	R	-
Tripleurospermum inodorum	Scentless mayweed	O	-
Urtica dioica	Stinging nettle	O	-
Urtica urens	Annual nettle	O	-
Veronica persica	Common field-speedwell	F	-
Viola arvensis	Field pansy	R	-
IAPA Total			5

Field Three

Field Three is located in the central part of the Field Survey Area and is approximately 70ha in extent. Pig fields are present immediately west of this field. The field was sown with a break crop of opium poppy *Papaver somniferum* presumed to have been autumn sown and has developed a relatively diverse arable plant assemblage with 59 species recorded.

Further diversity was added by the presence of a storage area with manure heaps on the eastern side of the field, where a broad field margin supported various nutrient loving species.

The most noteworthy species recorded in Field Three was a single plant of dwarf spurge, present in the north-western corner of the field on the margin of the crop recorded during the July visit.

Other IAPA species included a single plant of bur chervil *Anthriscus caucalis* and small numbers of wild radish *Raphanus raphanistrum subsp. raphanistrum* and bugloss *Lycopsis arvensis* plants close to the pig field boundary. Small-flowered crane's-bill was again frequent in this field.



Photograph 5: View of Field Three in June with poppy crop.



Photograph 6: Dwarf spurge present in Field Three in July.

Table 3-3 Field Three survey results

Species name	Vernacular name	Abundance	IAPA score
Achillea millefolium	Yarrow	O	-
Anagallis arvensis	Scarlet pimpernel	R	-
Anthriscus caucalis	Bur chervil	R	3
Arrhenatherum elatius	False oat-grass	R	-
Artemesia vulgaris	Mugwort	R	-
Atriplex prostrata	Spear-leaved orache	R	-
Avena fatua	Wild oat	O	-
Bromus hordeaceus	Soft brome	O	-
Bromus sterilis	Barren brome	F	-
Capsella bursa-pastoris	Shepherd's purse	O	-
Chenopodium album	Fat hen	A	-
Cirsium arvense	Creeping thistle	F	-
Cirsium vulgare	Spear thistle	R	-
Convolvulus arvensis	Field bindweed	O	-
Dactylis glomerata	Cock's-foot	O	-
Elymus repens	Common couch	R	-
Epilobium ciliatum	American willowherb	O	-
Epilobium hirsutum	Great willowherb	R	-
Euphorbia exigua	Dwarf spurge	R	6
Euphorbia helioscopia	Sun spurge	O	-
Fallopia convolvulus	Black bindweed	A	-
Festuca rubra	Red fescue	F	-
Fumaria officinalis	Common fumitory	F	-
Galium aparine	Cleavers	O	-
Geranium molle	Dove's-foot crane's-bill	O	-
Geranium pusillum	Small-flowered crane's-bill	F	2
Helminthotheca echioides	Bristly ox-tongue	R	-
Hordeum murinum	Wall barley	O	-
Jacobaea vulgaris	Common ragwort	R	-
Lolium perenne	Perennial rye-grass	F	-
Lycopsis arvensis	Bugloss	R	1
Matricaria discoidea	Pineappleweed	O	-
Medicago lupulina	Black medick	R	-
Papaver rhoeas	Common poppy	O	-
Phacelia tanacetifolia	Phacelia	R	-
Plantago lanceolata	Ribwort plantain	R	-
Plantago major	Greater plantain	O	-
Poa annua	Annual meadow-grass	O	-
Poa trivialis	Rough meadow-grass	O	-
Polygonum aviculare	Common knotgrass	F	-
Pulicaria dysenterica	Common fleabane	R	-
Raphanus raphanistrum subsp. raphanistrum	Wild radish	R	1

Species name	Vernacular name	Abundance	IAPA score
Reseda lutea	Wild mignonette	R	-
Rumex crispus	Curled dock	R	-
Senecio vulgaris	Common groundsel	F	-
Silene latifolia	White campion	F	-
Sisymbrium officinale	Hedge mustard	O	-
Solanum tuberosum	Potato	O	-
Sonchus arvensis	Perennial sow-thistle	O	-
Sonchus asper	Prickly sow-thistle	R	-
Sonchus oleraceus	Smooth sow-thistle	R	-
Stellaria pallida	Lesser chickweed	F	-
Taraxacum agg.	Dandelion	R	-
Tragopogon pratensis	Goat's-beard	R	-
Tripleurospermum inodorum	Scentless mayweed	O	-
Urtica dioica	Stinging nettle	R	-
Urtica urens	Annual nettle	O	-
Veronica persica	Common field-speedwell	F	-
Viola arvensis	Field pansy	O	-
IAPA Total			13

Field Four

Field Four is located in the western part of the Field Survey Area and is approximately 42ha in extent. The field contained an autumn sown barley crop that was approaching maturity in June and was harvested by July.

A relatively typical range of arable plants was present within Field Four that could be expected in a cereal crop. The IAPA species small-flowered crane's-bill was again present along with one plant of bugloss on the western side of the field.

The most noteworthy species recorded in Field Four was a single plant of maple-leaved goosefoot *Chenopodium hybridum*, present adjacent to the grassed track on the southwestern margin of this field.



Photograph 7: View of Field Four in June with barley crop.



Photograph 8: Maple-leaved goosefoot in Field Four in Field Two in July.

Table 3-4 Field Four survey results

Species	Vernacular	Abundance	IAPA score
Aethusa cynapium	Fool's parsley	O	-
Anagallis arvensis	Scarlet pimpernel	R	-
Anthriscus sylvestris	Cow parsley	R	-
Arrhenatherum elatius	False oat-grass	R	-
Artemesia vulgaris	Mugwort	R	-
Avena fatua	Wild oat	O	-
Bromus hordeaceus	Soft brome	O	-
Bromus sterilis	Barren brome	F	-
Capsella bursa-pastoris	Shepherd's purse	R	-
Chenopodium album	Fat hen	A	-
Chenopodium hybridum	Maple-leaved goosefoot	R	3
Cirsium arvense	Creeping thistle	F	-
Convolvulus arvensis	Field bindweed	A	-
Dactylis glomerata	Cock's-foot	O	-
Elymus repens	Common couch	O	-
Epilobium hirsutum	Great willowherb	R	-
Epilobium tetragonum	Square-stalked willowherb	O	-
Euphorbia helioscopia	Sun spurge	F	-
Fallopia convolvulus	Black bindweed	F	-
Festuca rubra	Red fescue	F	-
Fumaria officinalis	Common fumitory	O	-
Galium aparine	Cleavers	O	-
Geranium molle	Dove's-foot crane's-bill	R	-
Geranium pusillum	Small-flowered crane's-bill	O	2
Heracleum sphondylium	Hogweed	R	-
Hypericum perforatum	Perforate St. John's-wort	R	-
Lolium perenne	Perennial rye-grass	F	-
Lycopsis arvensis	Bugloss	R	1
Papaver rhoeas	Common poppy	F	-
Plantago lanceolata	Ribwort plantain	R	-
Plantago major	Greater plantain	R	-
Poa annua	Annual meadow-grass	O	-
Polygonum aviculare	Common knotgrass	O	-
Potentilla reptans	Creeping cinque-foil	R	-
Reseda lutea	Wild mignonette	R	-
Reseda luteola	Weld	R	-
Rumex crispus	Curled dock	R	-
Senecio vulgaris	Common groundsel	F	-
Silene latifolia	White campion	F	-
Sinapsis arvensis	Charlock	R	-
Solanum nigrum	Black nightshade	O	-
Solanum tuberosum	Potato	O	-
Sonchus arvensis	Perennial sow-thistle	R	-

Species	Vernacular	Abundance	IAPA score
Sonchus oleraceus	Smooth sow-thistle	R	-
Urtica dioica	Stinging nettle	O	-
Urtica urens	Annual nettle	R	-
Viola arvensis	Field pansy	R	-
IAPA Total			6

Field Five

Field Five is located in the western part of the Field Survey Area. This is the smallest field in the Field Survey Area at approximately 18ha in extent. The field was similar to Field Four as it contained an autumn sown barley crop that was approaching maturity in June and was harvested by July. It was separated from Field Four by a grassy margin only with no dividing hedge or fence.

A relatively similar range of typical range arable plants was present within Field Five to Field Four, reflective of the same cropping type. The IAPA species small-flowered crane's-bill was again present.

The most significant species recorded in Field Five was a group of six plants of the rare IAPA species field gromwell *Buglossoides arvensis,* present on the crop margin on the eastern side of the field. The plants were first noted in June, but were still present post-harvest in July, though were rather desiccated by this time. This species and other IAPA indicator species are further discussed in Section 4.



Photograph 9: View of Field Four in July after barley crop harvested.



Photograph 10: Field gromwell in Field Five in June.

Table 3-5 Field Five survey results

Species	Vernacular	Abundance	IAPA score
Aethusa cynapium	Fool's parsley	R	-
Anthriscus sylvestris	Cow parsley	O	-
Artemesia vulgaris	Mugwort	R	-
Avena fatua	Wild oat	O	-
Bromus hordeaceus	Soft brome	O	-
Bromus sterilis	Barren brome	F	-
Buglossoides arvensis	Field gromwell	R	8
Capsella bursa-pastoris	Shepherd's purse	R	-
Chenopodium album	Fat hen	A	-
Cirsium arvense	Creeping thistle	F	-
Convolvulus arvensis	Field bindweed	F	-
Dactylis glomerata	Cock's-foot	O	-
Elymus repens	Common couch	R	-
Euphorbia helioscopia	Sun spurge	F	-
Fallopia convolvulus	Black bindweed	F	-
Festuca rubra	Red fescue	F	-

Species	Vernacular	Abundance	IAPA score
Fumaria officinalis	Common fumitory	O	-
Galium aparine	Cleavers	O	-
Geranium molle	Dove's-foot crane's-bill	R	-
Geranium pusillum	Small-flowered crane's-bill	R	2
Heracleum sphondylium	Hogweed	R	-
Holcus lanatus	Yorkshire fog	R	-
Leucanthemum vulgare	Ox-eye daisy	R	-
Lolium perenne	Perennial rye-grass	F	-
Papaver rhoeas	Common poppy	O	-
Plantago lanceolata	Ribwort plantain	R	-
Plantago major	Greater plantain	O	-
Poa annua	Annual meadow-grass	O	-
Potentilla reptans	Creeping cinque-foil	R	-
Reseda lutea	Wild mignonette	R	-
Rumex crispus	Curled dock	R	-
Senecio vulgaris	Common groundsel	O	-
Silene latifolia	White campion	F	-
Solanum tuberosum	Potato	O	-
Sonchus arvensis	Perennial sow-thistle	F	-
Tripleurospermum inodorum	Scentless mayweed	O	-
Urtica dioica	Stinging nettle	O	-
Veronica persica	Common field-speedwell	R	-
Vicia sativa	Common vetch	R	-
Viola arvensis	Field pansy	R	-
IAPA Total			10

4.0 Data Evaluation

4.1 Notable or protected arable plant species present

A total of seven species of plants listed by Plantlife as IAPA Species were recorded in the Field Survey Area (see Table 4-1 below).

Table 4-1: IAPA Indicator Species Combined for the Field Survey Area

Scientific name	Common name	IAPA Score	No. of fields	Other designations
Buglossoides arvensis	Field gromwell	8	1	Great Britain Red Data Book – **Critical** This distribution of *Buglossoides arvensis* appears to have genuinely crashed in recent years; it is assessed as CR on Criterion A as its geographic range has declined by 82% over 3 generations. It was assessed as EN for the 2005 GB Red List. Recorded in 30 hectads in Greater Lincolnshire since 1970 but in only six of those since 2000.
Chenopodium hybridum	Maple-leaved goosefoot	3	1	Great Britain Red Data Book – **Least Concern** Recorded in nine hectads (10km x 10km square) in Greater Lincolnshire since 1970 but in only six of those since 2000.
Euphorbia exigua	Dwarf spurge	6	2	Great Britain Red Data Book – **Vulnerable** Qualifies as VU on Criterion A as its geographic range has declined by 30% over 3 generations. **Specifically mentioned under Arable Field Margins habitat action plan in Lincolnshire BAP.**
Geranium pusillum	Small-flowered crane's-bill	2	5	Great Britain Red Data Book – **Least Concern**
Lycopsis arvensis	Bugloss	1	2	Great Britain Red Data Book – **Least Concern**
Raphanus raphanistrum subsp. raphanistrum	Wild radish	1	1	Great Britain Red Data Book – **Near Threatened** There has been decline in arable areas due to herbicide use and the abandonment of arable for pasture.
Sison segetum	Corn parsley	3	1	Great Britain Red Data Book – **Least Concern** Listed as rare in the county in the 1975 county flora.
Total IAPA score		**24**		

The most notable species recorded was field gromwell, a species now listed as critical in the 2025 Vascular Plant Red List. As with many arable plants, the origin of populations is hard to determine, but this species does not appear to be a common component of commercial seed mixes, although seed can be purchased. It has recently been discovered that field gromwell's seeds are extremely high in omega-3 and omega-6 fatty acids, both essential nutrients for humans, and trials are now underway to see if it can be grown as a crop. The seed is relatively short-lived in the soil, so the ground needs to be disturbed annually if the population is to persist[14].

Dwarf spurge was recorded in two fields on the margins of arable crops, and this species is now listed as vulnerable the 2025 Great Britain Red Data Book for vascular plants. The position of these plants was typical for the species and suggests a viable seed bank within the Field Survey Area.

None of the arable plant species named on the citation for High Dyke SSSI were recorded during the 2025 in the Field Survey Area. No protected plant species were recorded.

4.2 Conservation Importance of arable plant habitat

Using the Plantlife Important Plant Area Indicator Species scoring system and considering the thresholds for chalk and limestone derived soils, no single field supported a diverse assemblage of IAPA species and, with the exception of small-flowered crane's-bill, the IAPA species were very localised in their distribution and limited to very few individual plants. It is worth noting, however, that as stated in the Lincolnshire BAP[2], many scarce arable plant species may still be present in the seed-bank and simply need the right conditions to give them the opportunity grow, flower and set seed.

The NVC is not widely used in evaluating arable plant communities and a critical analysis of the NVC communities present was not performed. It is likely that the majority vegetation recorded in arable margins in the Field Study Area belong to the OV15a *Anagallis arvensis* (scarlet pimpernel) - *Veronica persica* (large field speedwell) community, *Stellaria media* (chickweed) - *Convolvulus arvensis* (field bindweed) sub-community. This is a widespread community on light, base-rich soils in the warmer and drier parts of southern Britain although as here, they are typically highly modified by the effects of herbicide use.

Some trampled areas around gateways and tracks included vegetation best described as OV21a *Poa annua* (annual meadow-grass) - *Plantago major* (greater plantain) community. This is a ubiquitous feature of farmland in lowland Britain.

Considering the overall score for the Field Survey Area (24) suggests the arable plant community falls below the threshold for county importance but may be of local value.

[14] https://wildseed.co.uk/product/species/wild-flowers/buglossoides-arvensis-lithospermum-arvense/

4.3 Discussion and Recommendations

The arable plant data set gathered in 2025 covers all of the of arable land in the Field Survey Area and is considered to provide a comprehensive baseline for the purpose of future Ecological Impact Assessment.

The data has highlighted that the arable plant community overall and selected rarer species are of local ecological value and their presence should be considered as the design of the project evolves.

All of the IAPA species require regular ground disturbance if their populations are to persist, so consideration should be given to retaining arable strips / marginal areas for these plants, working with local farmers to create suitable conditions for arable plants to thrive.

This could include the cessation of chemical treatment, rotational cultivation and associated monitoring.

Appendix A Figures

Arable Plants Baseline Report 2025

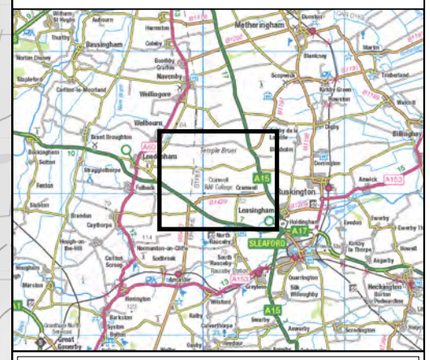
498000 500000 502000 504000

354000 352000 350000

N

LEGEND

Site Boundary



trio

SLR

WINDSOCK SOLAR FARM

ARABLE PLANTS REPORT

DESK STUDY SEARCH AREA

FIGURE 1

Scale 1:25,000 @ A3

Date OCTOBER 2026

0 0.5 1

Kilometres

405.065637.00001.0007.0 Desk Study Search Area

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500000

501000

502000

352000

351000

N

LEGEND

Site Boundary

Surveyed Field 1

Surveyed Field 2

Surveyed Field 3

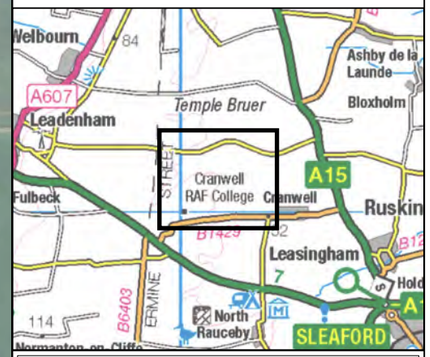
Surveyed Field 4

Surveyed Field 5

Photo Location

Photo Details

1 - Bugloss
2 - Corn Parsley
3 - Dwarf Spurge
4 - Field Gromwell
5 - Maple-leaved Goosefoot
6 - Wild Radish



0 0.5 1

Kilometres

trio

SLR

WINDSOCK SOLAR FARM

ARABLE PLANTS REPORT

FIELD SURVEY AREA

FIGURE 2

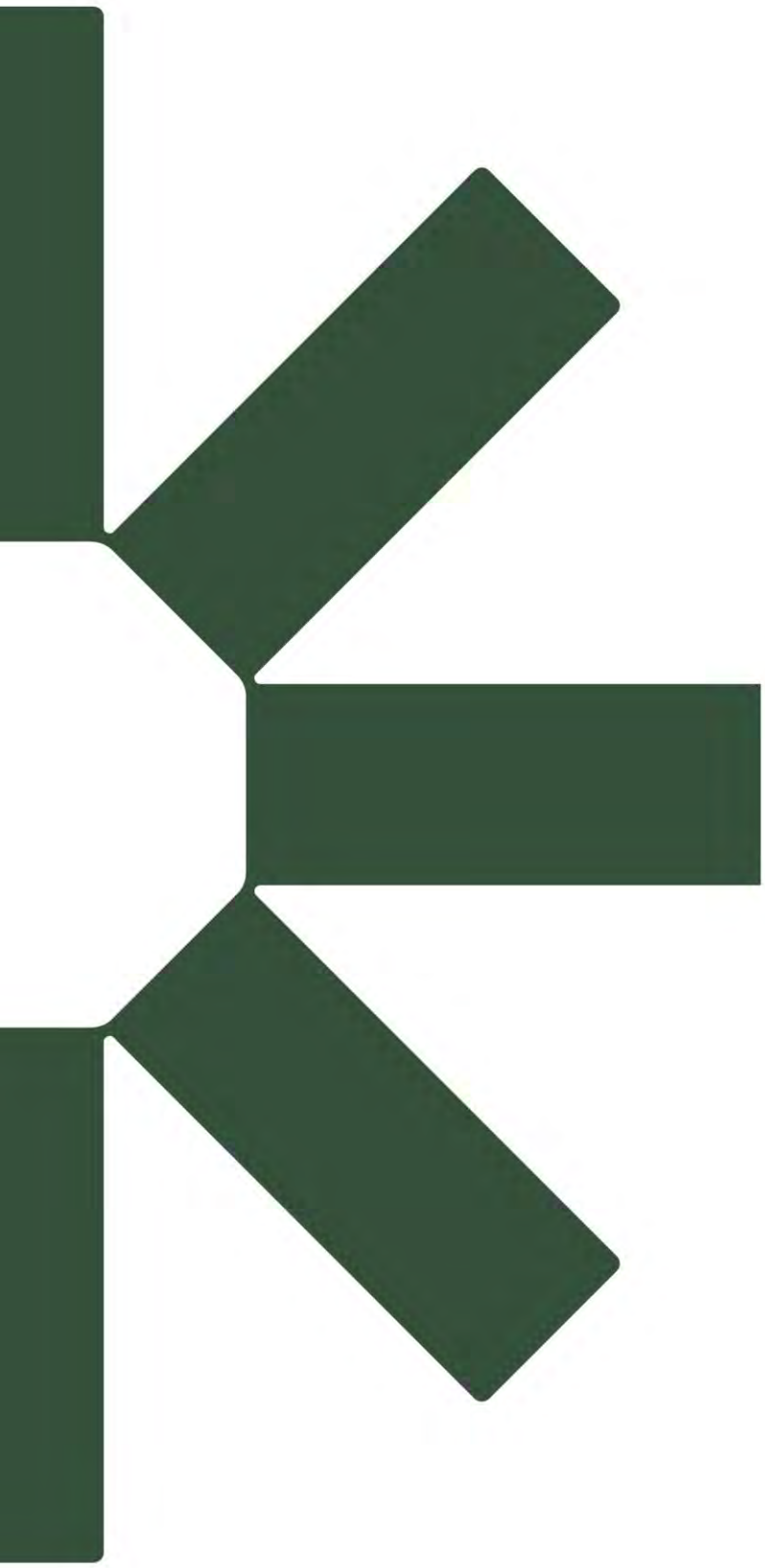
Scale 1:10,000 @ A3

Date OCTOBER 2026

405.065637.00001.0008.0 Field Survey Area

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APPENDIX G:
WINDSOCK SOLAR BAT SURVEY BASELINE REPORT

Survey information contained within this report forms part of the EIA Scoping Report for information only. The bat survey detailed within this appendix were undertaken between April 2025 and September 2025 and were based on a superseded version of the Site boundary that was larger than the current Site boundary detailed within the EIA Scoping Report.

Bat Survey Baseline Report 2025

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Client Reference No: CRAN123-3-5

16 December 2025

Revision: 1.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	16 December 2025	AV	PC	PC

Basis of Report

This document has been prepared by SLR Consulting Limited (SLR) with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with Trio Windsock Solar Farm Ltd (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

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Executive Summary

SLR Consulting Limited was commissioned by Trio Windsock Solar Farm Ltd to undertake baseline bat surveys for the proposed Windsock Solar Farm in Lincolnshire. The project involves a solar array of up to 200MW and a 100MW Battery Energy Storage System (BESS) across a 261-hectare site dominated by arable farmland. Surveys were conducted in accordance with Bat Conservation Trust guidelines and included a desk study, daytime walkover, three seasonal night-time walkovers, and automated static detector deployments. The primary aim was to establish bat species presence, site usage, and habitat suitability to inform future ecological impact assessment.

The desk study identified 43 bat records within 2km of the site, including pipistrelle and brown long-eared bats, and one EPS licence nearby. Field surveys confirmed low overall suitability for bats due to limited hedgerows, woodland parcels, and a single pond, but recorded at least nine species or species groups using the site. Common pipistrelle dominated activity (79% of passes), followed by ‘big bat ‘species, soprano pipistrelle, and occasional records of barbastelle, Nathusius’ pipistrelle, and Plecotus species. Activity was concentrated along woodland edges and hedgerows, with autumn showing the highest bat activity, likely linked to seasonal prey availability.

No roosts were detected, but some mature trees with potential roost features were noted. Recommendations include retaining and buffering woodland and hedgerows, avoiding artificial lighting on key commuting routes, and considering habitat enhancements during project design. The presence of barbastelle, a species of high conservation concern, though at relatively low level of activity, is noteworthy and should guide mitigation.

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Appendix A Night-Time Bat Walkover Plan
Appendix B Automated Surveys Plan

Acronyms and Abbreviations

BCT	Bat Conservation Trust
BESS	Battery Energy Storage System
CIEEM	Chartered Institute of Ecology and Environmental Management
DBW	Day-time Bat Walkover
EcIA	Ecological Impact Assessment
EPS	European Protected Species
GLNP	Greater Lincolnshire Nature Partnership
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographic Information for the Countryside
NBW	Night-time Bat Walkover
NERC	Natural Environment and Rural Communities
PRF	Potential Roost Feature
SSSI	Site of Special Scientific Interest

1.0 Introduction

1.1 Purpose of this report

SLR Consulting Limited (SLR) was commissioned by Trio Windsock Solar Farm Ltd in March 2025 to carry out a range of baseline ecological surveys to inform a proposed solar array and battery energy storage system (BESS) on Land to the South of Long Lane (central UK grid reference: TF 01602 51581), Brauncewell, Cranwell, NG34 8RL, herein referred to as the 'Site'. This report documents the methods and results of a suite of bat surveys undertaken in across the 2025 spring, summer and autumn period.

Trio Power Ltd is currently designing the Scheme at Cranwell. SLR are undertaking a range of ecological baseline surveys to inform scheme development, by avoiding and minimising impacts on sensitive habitats and species, and to inform possible mitigation requirements. Given the nature of habitats present on Site and wider value of the landscape for protected species, comprehensive survey data is required to inform a subsequent Ecological Impact Assessment (EcIA) for the project. Therefore, the assessment of impacts resulting from the proposed development and the identification of mitigation measures are beyond the scope of this report.

1.2 Project Background

At the time of writing, project proposals are at an early stage of development. The proposed development is likely to comprise a solar array of up to 200MW, and a 100MW BESS element. The layout of the project will be informed by a variety of site factors, including ecology constraints and opportunities.

1.3 Site Description

The Cranwell area of central Lincolnshire is low lying, relatively flat and dominated by agricultural land uses. These include large areas of arable farmland, which dominate the Site, with small parcels of woodland forming along field boundaries. A large part of the centre of the Site is currently occupied by a pig farm.

Beyond the Site boundary, RAF Cranwell, an active military training college is present directly to the south. To the north, east and west of the Site lie further arable fields. Brauncewell Quarries lies to the northeast of the Site.

The Site lies approximately 5.7km northwest of the centre of Sleaford and measures approximately 261ha in extent. The Site sits within the North Kesteven District Council's administrative boundary.

1.4 Aims and Objectives

The principal aim of the bat surveys was to provide baseline information about the presence of bat species within the Site, the species assemblage and how the Site is being used by bats. This was determined through a range of survey techniques including a daytime bat walkover (DBW), nighttime bat walkovers (NBWs) and static bat detector surveys.

1.5 Evidence of Technical Competence and Experience

The field surveys were undertaken by skilled bat workers at SLR, all of whom are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and adhere to their Code of Practice.

The bat sound analysis was undertaken using the software programme Kaleidoscope Pro by Pip Watt, BSc (Hons), an Assistant Ecologist at SLR, and Hannah Mercer BSc a Project

Ecologist at SLR. Pip has three seasons of experience of bat surveying and is a qualifying member of CIEEM. Hannah has over five years of experience in ecological consultancy and specialises in bat acoustic analysis. She holds a Level 2 Bat Licence (2025-80559-SCI-CL18) and has completed more than 1,000 hours of detailed bat sound analysis. Hannah has also undertaken multiple specialist training courses, including the BatAbility series, further strengthening her expertise in interpreting complex acoustic datasets.

The day-time bat walkover was completed and this report was authored by Anna Volak, BSc (Hons), a Senior Ecologist at SLR and qualifying member of CIEEM. Anna has over four years' experience as a professional ecological consultant and has completed numerous bat surveys (including sites of a similar scale and type to the Site) and reporting.

This report has been subject to Quality Assurance review as per SLR's policies by Dr Paul Clack, CEnv, MCIEEM, a Technical Director at SLR, with 25 years post-doctoral experience in ecological consultancy.

1.6 Legislation and Policy

All native species of bat are protected under the Conservation of Habitats and Species Regulations 2017 (as amended), which defines European Protected Species (EPS), and the Wildlife and Countryside Act 1981 (as amended). These pieces of legislation combine to give substantial protection to bats and their resting places (roosts), making it an offence to:

- Deliberately kill, injure, or take a bat;
- Deliberately disturb a bat or bats in such a way as to be likely to impair their ability to survive, breed, or rear or nurture their young; to hibernate or migrate; or to affect significantly the local distribution or abundance of that species;
- Damage or destroy the breeding or resting place of a bat;
- Intentionally or recklessly obstruct access to a place that bats use for shelter or protection; and
- Intentionally or recklessly disturb a bat whilst it is occupying a place which it uses for shelter or protection.

Seven species are also protected under the 2006 Natural Environment and Rural Communities (NERC) Act. These species include barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, brown long-eared *Plecotus auritus*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *Rhinolophus hipposideros*, noctule *Nyctalus noctule* and soprano pipistrelle *Pipistrellus pygmaeus*. Due to international and national policy, bats are a material consideration in the planning process.

2.0 Methodology

The methods used during each survey are in accordance with the Bat Conservation Trust (BCT) guidelines[1].

To establish the current baseline ecological conditions within the Site, a desk study and field surveys have been undertaken.

2.1 Study Area

For both the desk study and the field survey, habitat and bat data was gathered from within the Site and within 2km of the Site boundary. This area will be referred to as the 'Study Area'.

For statutory designated sites, the search was extended to 10km to account for movements of highly mobile species, including bats.

2.2 Desk Study

2.2.1 Habitat Assessment

Google Earth[2] was used to view aerial images and the Multi-Agency Geographic Information for the Countryside (MAGIC) website[3] was used to view Ordnance Survey maps of the Site and surrounding landscape. This data was used to determine the broad habitat types present on Site and in the wider area, and the location of potential roosting, foraging and commuting habitat for bats. The following information was gathered:

- Trees or woodland that may have potential roost features (PRFs);
- Buildings or structures that may have PRFs;
- Potential flightlines or foraging areas (scrub, woodland, hedgerow, wetlands, waterbodies or watercourses); and
- An overall assessment of the Site suitability for commuting and/or foraging bats, and the Site's connectivity to the wider landscape.

The results of the habitat assessment were used to determine the scope for the field survey work.

2.2.2 Data Search

An ecological data search was requested from the Greater Lincolnshire Nature Partnership (GLNP) in August 2025, which included bat records and designated sites that could support bats within the Study Area.

Further information from MAGIC was used to obtain information on granted EPS Licence Applications (England) for bats within the Study Area.

[1] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists. Good Practice Guidelines (4th edition). The Bat Conservation Trust, London.

[2] Google Earth was used to review available aerial imagery from years 2024 – 2016. Available online: https://earth.google.com/web

[3] Defra – Multi-Agency Geographic Information for the Countryside (MAGIC) (https://magic.defra.gov.uk/) [accessed: 04/08/2025]

2.3 Field Surveys

2.3.1 Day-time Bat Walkover

A DBW survey was conducted on the 22nd April 2025 and comprised of a walkover of all accessible areas of the Site. The aim of the DBW was to record any structures, trees or other features that could be suitable for bats to roost in and any habitats that could be suitable for bats to commute, forage or swarm in/at. The Site was then given a potential suitability rating, for roosting habitats, and potential flight-paths and foraging habitats respectively.

The Site was assessed as 'Low' suitability for foraging and commuting bats for the following reasons:

- The site is dominated by large arable fields within the Site where Project elements are likely to be located.
- The surrounding areas is likewise dominated by extensive arable fields.
- Within the Site there is just a single pond and a small number parcels of woodland and grassland, offering limited foraging opportunities for bats.
- The Site offers limited roosting potential for bats with most of the woodland parcels comprising of immature or semi-mature trees, and no buildings.

2.3.2 Night-time Bat Walkovers

In line with BCT best practice guidelines, one NBW was conducted per season (spring, summer and autumn) in 2025. Survey details can be found below in **Table 2-1**.

Following analysis of aerial imagery and the results of the DBW, initial NBW transect routes were devised, passing through the full range of broad habitats present within the Site. Due to the large extent of the Site, three routes were devised, one to cover the western, central and eastern parts respectively. These routes were surveyed once each, across the three survey visits. These are illustrated in **Appendix A**.

Surveys commenced at sunset and lasted for at least two hours. At the start of the survey, each surveyor stood for an hour at a single position. The starting points were chosen based on likely bat commuting routes or suspected roost resources, such as woodland parcels. For the remaining time, surveyors walked along the pre-defined NBW route but paused or diverted temporarily to observe or follow bat activity.

The surveyors were equipped with a Batlogger M or M2 (Elekon) full spectrum GPS enabled bat detectors. All bat passes were also recorded on a detailed plan of the Site including the time, location and where possible the species, bat behaviour, number of individuals and direction of flight.

Table 2-1: Summary of Weather and Timings of NBWs

Survey Date	Timing	Weather Conditions		Transect Points (UK Grid Reference)	
		Start	End	Start	End
Spring 14/05/2025	Start: 20:52 End: 23:41	Temp: 11°C Wind: Gentle breeze Wind direction: NE Precipitation: None Cloud (oktas): 1/8	Temp: 9°C Wind: Light breeze Wind direction: Precipitation: None Cloud (oktas): 1/8	TF 00148 50731	TF 00704 51336

Survey Date	Timing	Weather Conditions		Transect Points (UK Grid Reference)	
		Start	End	Start	End
Summer 21/08/2025	Start: 20:15 End: 22:52	Temp: 14°C Wind: Light air Wind direction: NE Precipitation: None Cloud (oktas): 3/8	Temp: 9°C Wind: Light air Wind direction: SW Precipitation: None Cloud (oktas): 1/8	TF 02162 51440	TF 01626 51249
Autumn 25/09/2025	Start: 18:53 End: 21:21	Temp: 14°C Wind: Light breeze Wind direction: NE Precipitation: None Cloud (oktas): 1/8	Temp: 10°C Wind: Light air Wind direction: NE Precipitation: None Cloud (oktas): 3/8	TF 00691 51560	TF 00316 50785

2.3.3 Automated Surveys

Bat activity data was also recorded with static bat detectors, using Song Meter, SM4BAT FS Ultrasonic Recorder (Wildlife Acoustics) full spectrum detectors. Due to the Site being assessed as 'Low' suitability for foraging and commuting bats and following BCT guidelines, these detectors were deployed at three locations covering the three main habitat types within the Site, for at least five consecutive nights per season (spring, summer and autumn) in 2025.

A summary of the survey dates, times and average weather conditions for each sampling period, are provided in **Table 2-2**. Detectors were programmed to start recording 30 minutes before sunset and stop recording 30 minutes after sunrise.

Table 2-2: Summary of Weather and Timings During Static Detector Deployment

Deployment Dates		Timings		Weather	
Spring	28th May – 2nd June	Sunset range	21:12 – 21:17	Average temp. at sunset	17°C
				Average min. temp.	12°C
		Sunrise range	04:44 – 04:41	Average max. temp	21°C
				Average wind speed	14.6mph
				Average precipitation at night	0.02mm/h
Summer	18th July – 25th July	Sunset range	21:16 – 21:08	Average temp. at sunset	18°C
				Average min. temp.	15°C
		Sunrise range	05:00 – 05:08	Average max. temp	22°C
				Average wind speed	8.02mph
				Average precipitation at night	0.51mm/h
Autumn	2nd September – 9th September	Sunset range	19:47 – 19:33	Average temp. at sunset	17°C
				Average min. temp.	13°C
				Average max. temp	21°C
		Sunrise range	06:15 – 06:25	Average wind speed	10.69mph
				Average precipitation at night	0.03mm/h

The locations of the static detectors are illustrated in **Appendix B**. The three main broad habitat types on Site were assessed as arable fields/pig farm fields, woodland and hedgerow.

Static 1 was located on the edge of a woodland parcel, along the south-western boundary of the Site, on a semi-mature tree with the microphone directed upwards. The static was placed here with the aim of capturing commuting bats along the woodland boundary and potentially bat emergences from trees within the woodland.



Photo 1: Static Location 1

Static 2 was located on a post, on the outer fence line of the pig farm, in the centre of the Site, with the microphone directed upwards. The static was placed here with the aim of capturing any bats that might be traversing across the centre of the Site where there are limited flight lines available (i.e. hedgerows, woodland edges etc) and if they might be flying over the pig farm.

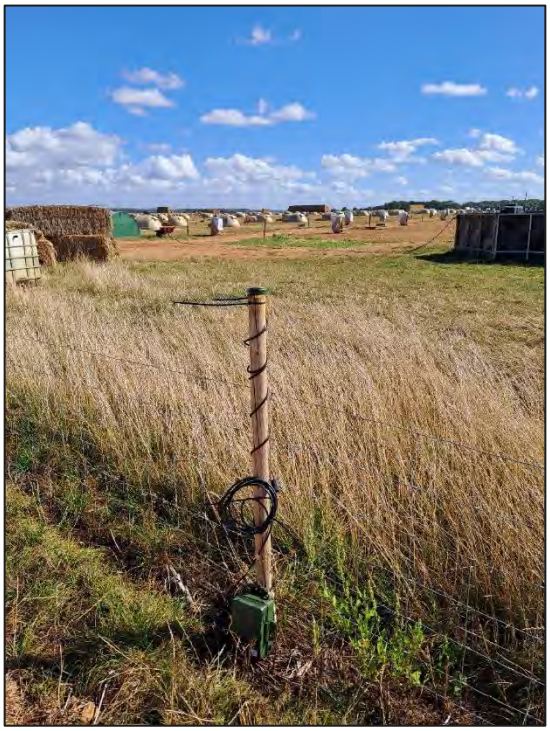


Photo 2: Static Location 2

Static 3 was located on a fence post, in a mature native hedgerow that separates two arable fields to the east of the Site, with the microphone directed upwards. This hedgerow, whilst short gaps are present, may be a good flight line for bats and the aim of this static location was to capture commuting bats.



Photo 3: Static Location 3

2.4 Bat Call Analysis

This report refers to 'registrations' or 'passes', these are single sound files captured by an automated detector. It is important to note that registrations/passes do not necessarily relate to the numbers of bats that may be present; a large number of registrations/passes can equally result from one bat passing a detector many times/feeding overhead, or many bats the detector.

Bat data from the NBW surveys and static detector surveys were analysed using Kaleidoscope Pro software[4] (Wildlife Acoustics) using the auto identification capability (Bats of Europe 5.7.1 filter). Sound files were then manually checked by an ecologist experienced in bat analysis to confirm identification.

Due to the large volume of calls from the static detectors, for brevity, only certain percentages of common species were manually checked. The percentages are as follows:

- For common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle, 10% each of the auto-ID results were checked and manually corrected if wrong.
- For all noctule and *Myotis* species, 20% each of the auto-ID results were checked and manually corrected if wrong.
- For all no-ID calls, 5% of the auto-ID results were checked and manually corrected if wrong.

For all other species 100% of the calls were manually checked.

During manual checking of bat calls, various characteristics of the calls were used to ascertain the species, including call shape, peak frequency (a.k.a. frequency of maximum energy), start and end frequency, call duration and time between calls. The call parameters contained within British Bat Calls[5] were used for species identification, in addition to Social Calls of the Bats of Britain and Ireland[6].

Different bat species can produce calls that resemble one another, and the echolocation of a single species can vary in frequency depending on whether the environment is open or cluttered. As a result, analysing bat calls can sometimes be ambiguous. To address this challenge, the following guiding principles have been applied:

- *Nyctalus* and *Cnephaeus* calls can easily be misclassified; particularly those recorded when the bats are in 'closed' or a cluttered environment. Due to the similarity of the calls, it is not always possible to accurately differentiate between the three species and in such cases, they have been labelled as "big bat" in the analysis.
- For the purpose of differentiating pipistrelle bats, characteristic peak frequencies for each of the three species has been used as an initial indicator. For soprano pipistrelle, above 50khz, for common pipistrelle, between 41khz and 50khz, and for Nathusius' pipistrelle *Pipistrellus nathusii*, below 40khz. For calls falling within or at close proximity to the boundaries of these ranges, a classification has been made based on several factors, including the broader dataset, inferred knowledge of the bats' surroundings and the effect this has on the call structure and other measured parameters. Pipistrelle registrations may however remain ambiguous, and as such were instead assigned to "pipistrelle species".

[4] Kaleidoscope Pro Analysis Software | Wildlife Acoustics

[5] John Russ and Bat Conservation Trust (2012) – British Bat Calls, A Guide to Species Identification. Pelagic Publishing

[6] Middleton, N., Froud, A. and French, K. (2014) – Social Calls of the Bats of Britain and Ireland. Pelagic Publishing

- Due to the difficulties of separating *Myotis* species from sonograms alone, *Myotis* calls have not been manually identified beyond genus level.
- Likewise, whilst long-eared bats in this location are likely to be brown long-eared, all records are reported as *Plecotus sp.* as from sonograms alone the rare grey long-eared bat *Plecotus austriacus* cannot be ruled out.
- Ambiguous or rare species were subject to a double check by an experienced bat worker at SLR.
- Where multiple bat species have been picked up on a file, all species have been identified (where possible).

2.5 Limitations

The following subsections detail the survey constraints encountered. None are considered to significantly affect the conclusions of this report and the data gathered are considered sufficient to meet the aims set out in **Section 1.4**.

2.5.1 Desk Study

Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that bat species not identified during the data search do in fact occur within the vicinity of the Site. Interpretation of maps and aerial photography has been conducted in good faith, using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the Study Area.

2.5.2 Field Surveys

An ecological study provides only a ‘snapshot’ of the conditions prevailing at the time of survey. Lack of evidence of any one protected species in particular does not necessarily preclude them from being present on Site at a later date.

During the spring and summer NBW surveys, the temperature dropped to below 10°C by the end of the survey, which is considered suboptimal for bat species. However, the majority of these surveys was undertaken at above 10°C and bat activity was consistent throughout the duration of each survey.

2.5.3 Data Analysis

It should be noted that Kaleidoscope Pro filters only give an estimate of the bat activity in a dataset. Faint or poor-quality bat sonograms can be missed if they are rejected by the noise filter. However, this is considered unlikely to affect the results significantly.

3.0 Results

3.1 Desk Study

3.1.1 Statutory Designated Sites

Seven statutory designated sites are found within 10km of the Site boundary. All of them are designated as Sites of Special Scientific Interest (SSSI). None of the SSSIs include bat species as a notified feature and are all designated predominantly for their habitats and plant species assemblages.

3.1.2 Non-Statutory Designated Sites

There are eight non-statutory designated sites within the Study Area. All are designated as Local Wildlife Sites (LWS). None of the LWSs include bat species as a notified feature and are all designated predominantly for their habitats and plant species assemblages.

3.1.3 Bat Records

The GLNP data search returned 43 records of bat species within the Study Area, including three records of common pipistrelle, seven records of brown long-eared bat, two records of whiskered bat *Myotis mystacinus*, eight records of unidentified pipistrelle species, and 33 records of unidentified bat species. The closest record of bat was an unidentified species in 2018, approximately 0.59km east of the Site Boundary.

The search on MAGIC returned one record of a granted protected species licence application. The licence ran from 2020 – 2021 and allowed for the damage of a resting place for brown long-eared bat, common pipistrelle and soprano pipistrelle. This licence is located 0.84km south of the Site boundary, within RAF Cranwell.

3.2 Field Surveys

3.2.1 Day-time Bat Walkover

The DBW found that the Site is comprised predominantly of very large arable fields used for growing cereal crops (in the west) and non-cereal crops (in the east). The habitats surrounding the Site are also predominantly arable fields. Central fields are used for pig husbandry. These fields offer suboptimal foraging opportunity and may limit habitat connectivity given their size and lack of hedgerows/ditches, resulting in lower levels of bat commuting.

Approximately 1.84km of native hedgerows are present along some of the field boundaries. These hedgerows are likely to provide suitable commuting opportunities for bat species, however, they are predominantly around the perimeter of the Site, with very few hedgerows present in the centre of the Site or forming boundaries between the arable fields.

Three small parcels of woodland fall within the Site boundary. The parcel in the south-western corner of the Site is thought to be plantation woodland, because of the linear nature of the trees and because the trees are all a similar age class (semi mature, <30 years old). No trees with roosting potential were recorded in this parcel and the woodland space was very cluttered because of the planting pattern. The other two parcels of woodland in the centre and to the east of the Site, contained more mature trees (>40 years) with multiple age classes and non-linear planting, although some supplementary planting was apparent. Some of the more mature trees within these parcels had bat roosting potential, with features such as knot holes and woodpecker holes. Additional parcels of woodland lie just outside of the Site boundary along the southwestern boundary in RAF Cranwell and just outside of the southeastern corner of the Site. The trees in these parcels have multiple age classes and

had some visible potential roost features when inspected from inside the Site boundary. It is anticipated that all of the woodland parcels and the trees within the parcels will be retained within the project and a suitably sized buffer will be established between the woodlands and the proposed development during construction and operation.

Along the western boundary of the southernmost field, there is a large, manmade pond. A pump is located along the northern edge, suggesting that water is pumped from an external source into the pond. The pond has a fringe of marginal vegetation, largely comprised of grasses and bulrush *Typha latifolia*. This pond may offer foraging opportunity for bats, however this is the only waterbody in the Site and within 500m of the Site boundary.

Due to the large arable fields providing limited habitat connectivity, within the Site and the surrounding area, only a small number parcels of woodland and grassland, and only one waterbody, offering limited foraging opportunity, the Site was assessed as 'Low' suitability for foraging and commuting bats.

3.2.2 Night-time Bat Walkovers

Table 3-1 below shows the total number of bat passes for each species within each month of survey.

Table 3-1: Summary of Bat Species Passes per NBW

NBW Month	Bat Species					Totals
	Myotis Sp.	Big bat Sp.	Common pipistrelle	Soprano pipistrelle	Plecotus Sp.	
May	5	1	50	2	0	**58**
August	5	5	57	3	2	**72**
September	2	17	110	19	2	**150**

The NBW surveys identified passes of individual or low numbers of at least five bat species. At the time of survey, not all of these species were observed by the surveyor however the recordings have been subject to analysis, and the species above were all recorded by the handheld detectors during the survey. The locations of the passes observed/heard during the field survey by the surveyors are illustrated in **Appendix A**.

Most bat activity was recorded along edge habitats, such as along woodland boundaries and along hedgerows, and the behaviours observed or heard on the sonograms, were foraging, commuting and socialising. No roosts were detected or suspected during the walkovers.

3.2.3 Automated Surveys

Based on the data gathered during the static detector surveys in 2025, at least nine bat species have been recorded within the Site. A summary of these species is shown below in **Table 3-2**.

Table 3-2: Species Recorded by Static Bat Detectors

Species	% of Total Passes	Total Number of Passes
Common pipistrelle	79.03%	6,334
Big bat sp.	9.37%	751
Soprano pipistrelle	5.33%	427

Species	% of Total Passes	Total Number of Passes
Myotis sp.	3.59%	288
Barbastelle	1.41%	113
Plecotus sp.	1.04%	83
Nathusius' pipistrelle	0.24%	19

Figure 3-1 provides an overview of bat activity as a whole (i.e. all species combined) at each static detector location provided as an average of passes per night (mean and median values).

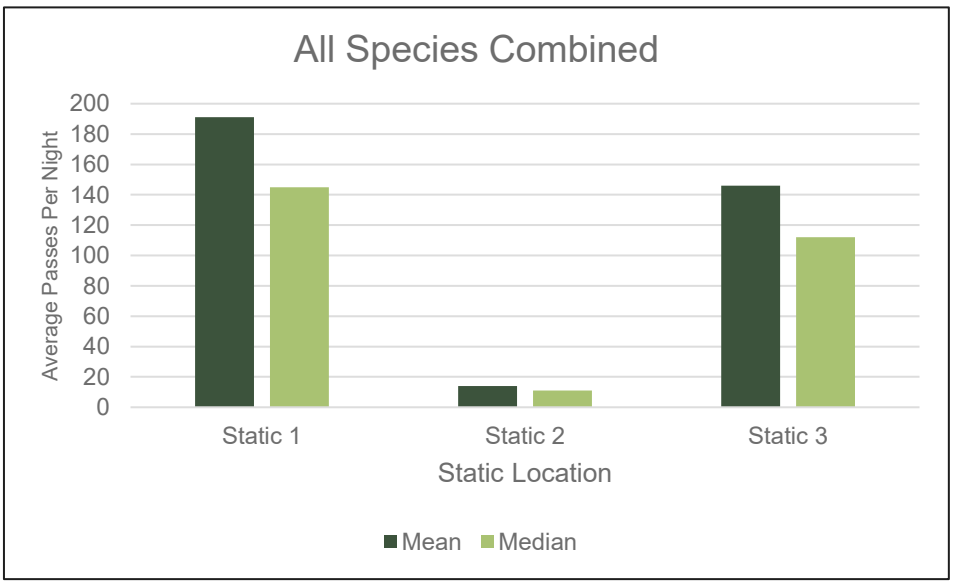


Figure 3-1: Static Bat Detector Activity by Location

The results illustrated above are as anticipated, with a higher rate of bat passes along the woodland edge and along the hedgerow, with fewer bat passes in the centre of the arable/pig fields. The locations of the static detectors are illustrated in **Appendix B**.

Figure 3-2 provides an overview of bat activity at the Site as a whole during each deployment month, provided as average passes per night (mean and median values).

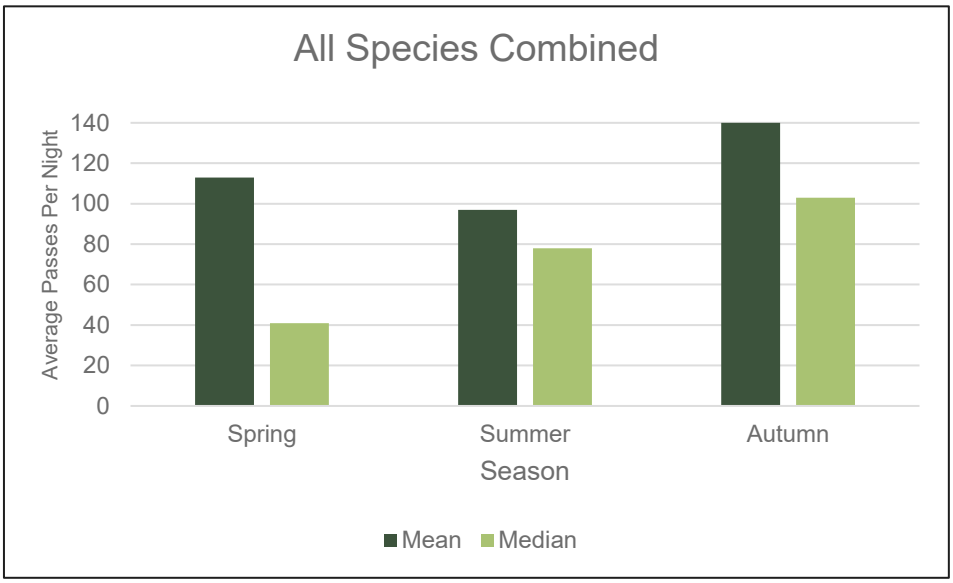


Figure 3-2: Static Bat Detector Activity by Season

Bat activity was highest on Site in the autumn, possibly as a result of the long hot summer giving way to milder, wetter weather and in turn greater invertebrate availability.

3.2.3.1 Pipistrelle Species

Common pipistrelles were the most frequently heard bat species on Site, making up 79.03% of bat passes. They were recorded at all three static locations across all three seasons. The number of passes was highest in September and static location 1 recorded the highest total number of passes across the whole survey season.

Soprano pipistrelles accounted for 5.33% of all bat passes recorded on the site. They were recorded in every season, with the highest activity again observed at static location 1. Consistent records were also made at static location 3 across all three seasons. In contrast, soprano pipistrelles were only recorded at static location 2 during July and September, with just three and four passes recorded respectively.

Nathusius' pipistrelle was recorded the least of all bat species on Site, with only 19 passes, and comprising just 0.24% of the total bat passes. The species was only recorded in May at static locations 1 and 2 and in September at all three locations.

3.2.3.2 'Big Bat' Species

Big bat species accounted for 9.37% of the species assemblage, with a total of 751 passes across the three survey periods. Big bats were recorded at all three static locations during every survey period. Static 1 recorded the highest number of passes out of the three locations, and September recorded a significantly higher number of big bat passes than the other two survey periods.

3.2.3.3 *Myotis* Species

As stated previously in **Section 0**, all *Myotis* species calls have been grouped together. *Myotis* species account for 3.59% of the total number of bat passes on Site. They were

recorded at all three static locations during all three seasons; however the number of calls was significantly higher in May and September, and at Static locations 1 and 3.

3.2.3.4 Barbastelle

A total of 113 barbastelle passes were recorded, making up 1.41% of the total number of bat passes. Peak barbastelle activity was recorded in September. In contrast, only three barbastelle passes were recorded at static location 1 in July. Barbastelles were heard predominantly at static location 1 and three, and only one barbastelle pass was recorded at static location 2, in September.

Table 3-3: Barbastelle Statistics

Month	Static	Barbastelle Passes		
May	Static 1	11	22	Monthly Totals
	Static 2	0		
	Static 3	11		
July	Static 1	3	3	
	Static 2	0		
	Static 3	0		
September	Static 1	48	88	
	Static 2	1		
	Static 3	39		
Total Barbastelle Passes		113		

The barbastelle passes were generally recorded over two hours after sunset or two hours before sunrise suggesting that individuals were travelling some distance to reach the Site. It is therefore considered that barbastelle are not roosting on Site and are simply using the the network of hedges and woodland edges to commute, and using the woodland to forage.

3.2.3.5 *Plecotus* bats

Plecotus calls account for 1.04% of all bat passes recorded on Site. September saw the highest frequency of *Plecotus* passes, and they were recorded at all three static locations during this month, with the highest number of passes being recorded at static location 2. In contrast *Plecotus* bats were only recorded at static location 1 and 3 in May and July.

4.0 Conclusion and Recommendations

A suite of bat surveys has been conducted for the proposed Windsock Solar Farm. A desk study using the data provided by GLNP and online resources has also been used to provide context with regard to habitats and identify any previous records of bats. Field surveys including a DBW, three NBWs and three rounds of static bat detector deployment have been undertaken on Site.

Data from GLNP includes records of pipistrelle bat species, brown long-eared bats and whiskered bats within the Study Area. One record of an EPS licence from 2020-2021 was returned within the Study Area.

Suitable habitat on Site for bats includes native hedgerows, potentially used by commuting bats, and woodland parcels which have the potential to be used for roosting, commuting and foraging. One pond on Site may also provide foraging opportunity for bat species. Trees with bat roosting potential were recorded within the parcels of woodland on Site and just outside of the Site boundary, however, no roosts were detected or suspected during any field surveys.

The NBW surveys and automated surveys recorded at least five different bat species and three species groups using the Site. Bat activity was highest along hedgerows and woodland boundaries. Observations of bats in flight and analysis of bat calls showed commuting and foraging behaviour, suggesting these areas are used as flightlines for local bat populations. Bat activity peaked during the autumn surveys possibly due to the transition to milder, wetter weather and in turn greater invertebrate availability.

The overall results were as expected for such a site in Lincolnshire, with the most notable feature being the recording of barbastelle bats, albeit at low levels of activity.

This data is valid for up to 18 months according to CIEEM advice, after which an updated desk study and bat surveys may need to be undertaken.

Solar projects can offer opportunities to improve conditions for bats, by improving conditions for roosting, foraging and commuting animals. Lighting should also be planned to avoid illumination of key features such as hedgerows and woodland edges, as this can have negative impacts on bats.

As the project evolves, consideration should be given to bats and bat habitat retention and enhancement. Mature trees with PRFs should be retained where possible and suitable buffers included on these and linear features used by foraging/commuting bats.

Appendix A Night-Time Bat Walkover Plan

499500 500000 500500 501000 501500

352000

351500

351000

N

LEGEND

Site Boundary

Bat Activity Night Walkover Survey Route

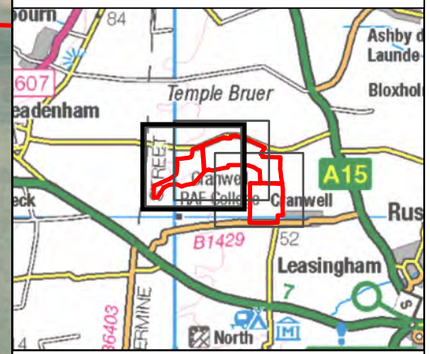
Western Route (14/05/2025)

Western Route Start Point

Western Route End Point

Species Record

Common Pipistrelle



0 250 500

Metres

trio

SLR

WINDSOCK SOLAR FARM

BAT REPORT

BAT WALKOVER SURVEY RESULTS

FIGURE 2.1

Scale 1:7,500 @ A3

Date OCTOBER 2026

405.065637.00001.0010.0 NBW Results

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500000 500500 501000 501500 502000

352000

351500

351000

N

LEGEND

Site Boundary

Bat Activity Night Walkover Survey Route

Middle Route (25/09/2025)

Middle Route Start Point

Middle Route End Point

Species Record

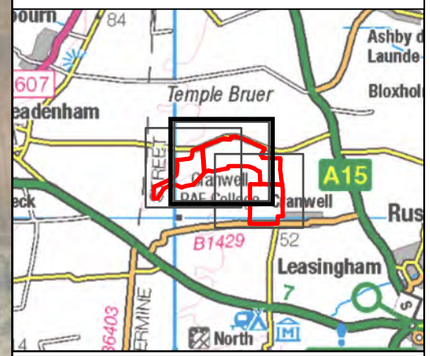
Big Bat sp.

Common Noctule

Common Pipistrelle

Non-Echolocating Bat

Soprano Pipistrelle



0 250 500

Metres

405.065637.00001.0010.0 NBW Results

WINDSOCK SOLAR FARM

BAT REPORT

BAT WALKOVER SURVEY RESULTS

FIGURE 2.2

Scale 1:7,500 @ A3

Date OCTOBER 2026

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501000 501500 502000 502500 503000

351500

351000

350500

N

LEGEND

Site Boundary

Bat Activity Night Walkover Survey Route

Eastern Route (21/08/2025)

Eastern Route Start Point

Eastern Route End Point

Species Record

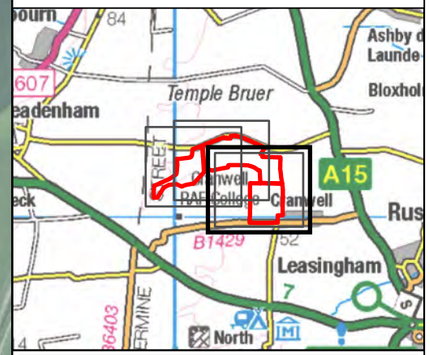
Common Noctule

Common Pipistrelle

Leisler's Bat

Pipistrelle Sp.

Soprano Pipistrelle



0 250 500

Metres

405.065637.00001.0010.0 NBW Results

trio

SLR

WINDSOCK SOLAR FARM

BAT REPORT

BAT WALKOVER SURVEY RESULTS

FIGURE 2.3

Scale 1:7,500 @ A3

Date OCTOBER 2026

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Appendix B Automated Surveys Plan

500000
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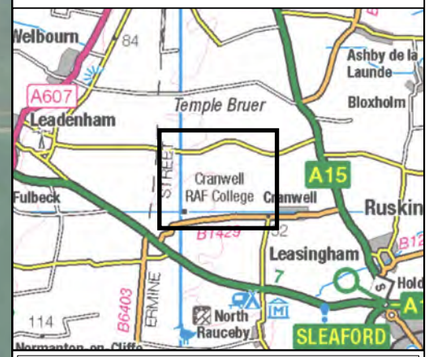
Static 1
Static 2
Static 3

0
0.5
1
Kilometres

LEGEND

Site Boundary

Bat Static Detector Location



trio

SLR

WINDSOCK SOLAR FARM

BAT REPORT

STATIC DETECTOR LOCATIONS

FIGURE 1

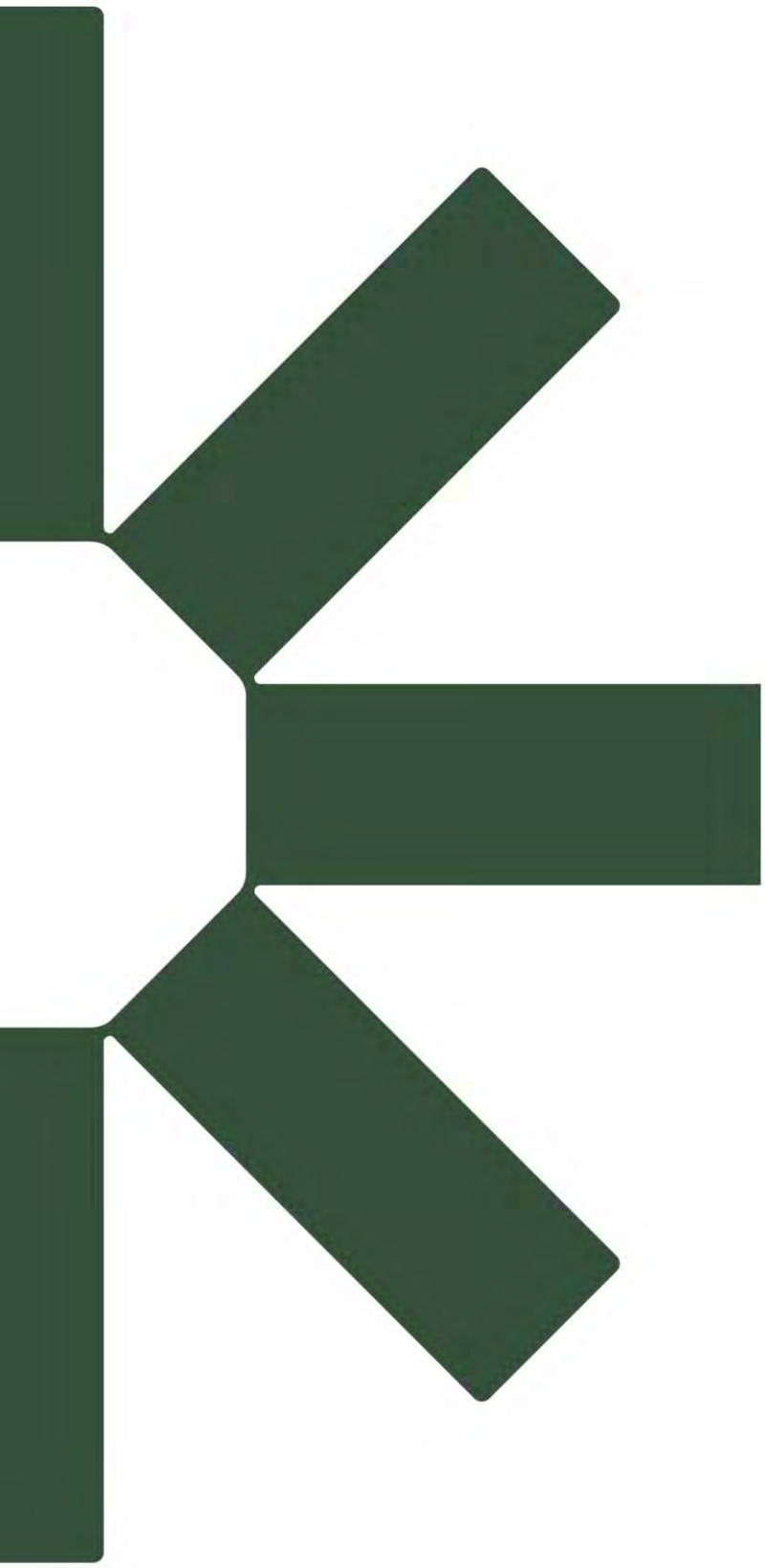
Scale 1:10,000 @ A3

Date OCTOBER 2026

405.065637.00001.0009.0 Static Detectors

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APPENDIX G:
WINDSOCK SOLAR BADGER SURVEY REPORT (CONFIDENTIAL)

This document contains confidential information and is only available on request to those who have a legitimate need to view it.

Survey information contained within this report forms part of the EIA Scoping Report for information only. The badger survey detailed within this appendix were undertaken in November 2025 and were based on a superseded version of the Site boundary that was larger than the current Site boundary detailed within the EIA Scoping Report.

APPENDIX G:
WINDSOCK SOLAR BREEDING BIRD SURVEYS BASELINE REPORT 2025

This document contains confidential information and is only available on request to those who have a legitimate need to view it.

Survey information contained within this report forms part of the EIA Scoping Report for information only. The breeding bird survey detailed within this appendix were undertaken between April 2025 and July 2025 and were based on a superseded version of the Site boundary that was larger than the current Site boundary detailed within the EIA Scoping Report.

APPENDIX G:
WINDSOCK SOLAR NON-BREEDING BIRD SURVEYS BASELINE REPORT

Survey information contained within this report forms part of the EIA Scoping Report for information only. The non-breeding bird survey detailed within this appendix were undertaken between October 2025 and March 2026 and were based on a superseded version of the Site boundary that was larger than the current Site boundary detailed within the EIA Scoping Report.

Non-Breeding Bird Surveys Baseline Report 2025-2026

Windsock Solar Farm, Lincolnshire

Trio Windsock Solar Farm Ltd.

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SLR Project No.: 405.065637.00001

Client Reference No: CRAN123-3-5

30 April 2026

Revision: 1.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	30 April 2026	PC	CKP	PC
	Click to enter a date.			
	Click to enter a date.			
	Click to enter a date.			

Basis of Report

This document has been prepared by SLR Consulting Limited (SLR) with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with Trio Windsock Solar Farm Ltd (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

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Executive Summary

Trio Windsock Solar Farm Ltd appointed SLR Consulting Limited to undertake a programme of non-breeding bird surveys at the proposed Windsock Solar Farm, Lincolnshire. The purpose of the surveys was to establish a robust baseline of bird species using the Site during the non-breeding period, to inform project design and to support future environmental assessment and planning requirements.

The Site extends to approximately 261 ha and comprises predominantly arable farmland, with smaller areas of woodland, hedgerows and a centrally located pig farm. The Site lies adjacent to RAF Cranwell and within a wider agricultural landscape typical of central Lincolnshire.

A desk study was undertaken to review statutory and non-statutory designated sites and existing ornithological records within the surrounding area. This included data obtained from the Greater Lincolnshire Nature Partnership and reviews of nationally designated sites. No internationally designated sites with ornithological features were identified within 10 km of the Site, and no nationally designated sites with ornithological interest were located within distances likely to be affected by the proposed development.

Field surveys comprised six non-breeding bird walkover surveys undertaken between October 2025 and March 2026, following standard industry guidance. Surveys were completed in suitable weather conditions and focused on recording species of conservation concern, including Birds of Conservation Concern (BoCC) Red- and Amber-listed species, Schedule 1 species and species listed under Section 41 of the Natural Environment and Rural Communities Act 2006.

Across the survey period, a total of 48 bird species w recorded, of which 26 were target species. The Site was found to support a typical but notable assemblage of farmland birds during the non-breeding season. Species of particular conservation interest included grey partridge, skylark, linnet and corn bunting, all of which were recorded frequently and distributed widely across the Site, indicating regular use for foraging throughout the winter period. Winter thrushes (fieldfare and redwing), along with starling and rook, were also recorded in moderate numbers, particularly in association with arable fields, pig fields and woodland margins.

Hedgerows and woodland edges supported a range of smaller passerines, including wren, dunnock, song thrush and house sparrow. Gulls were recorded regularly during the surveys, with common gull present in the highest numbers, often associated with agricultural activity. Raptors were infrequently recorded, with only occasional observations of red kite and buzzard. No significant use of the Site by wintering waders was identified.

Overall, the results indicate that the Site provides regular non-breeding foraging habitat for a range of farmland bird species of conservation concern, consistent with its existing land use and landscape context. As the project design progresses, opportunities should be explored to retain and enhance habitat features of value to non-breeding birds. This may include the provision of winter bird seed strips, retention and enhancement of hedgerows, and management of field margins to improve foraging resources.

The findings of this report provide a robust factual baseline and will be used to inform the Ecological Impact Assessment for the proposed development, including the identification of appropriate mitigation and enhancement measures.

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Appendix A Survey Metadata

Appendix B Bird Species Names

Acronyms and Abbreviations

BoCC	Birds of Conservation Concern
BESS	Battery Energy Storage System
BOU	British Ornithologists' Union
BTO	British Trust for Ornithology
CEnv	Chartered Environmentalist
CIEEM	Chartered Institute of Ecology and Environmental Management
EC	European Council
EcIA	Ecological Impact Assessment
EIA	Environmental Impact Assessment
GLNP	Greater Lincolnshire Nature Partnership
IRZ	Impact Risk Zone
IUCN	International Union for the Conservation of Nature
LERC	Local Environmental Records Centre
LNR	Local Nature Reserve
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographic Information for the Countryside
MoD	Ministry of Defence
NERC	Natural Environment and Rural Communities
NE	Natural England
PEA	Preliminary Ecological Appraisal
RSPB	Royal Society for the Protection of Birds
SLR	SLR Consulting Limited
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
WeBS	Wetland Bird Survey
WCA	Wildlife and Countryside Act

1.0 Introduction

1.1 Purpose of this report

SLR Consulting Ltd (SLR) was commissioned by Trio Windsock Solar Farm Ltd. in March 2025 to carry out a range of baseline ecological surveys to inform a proposed solar array and battery energy storage system (BESS) development.

This report documents the methods and results of non-breeding bird surveys undertaken in between October 2025 and March 2026. The assessment of impacts resulting from the proposed development and the identification of mitigation measures are beyond the scope of this report and will be covered in a separate Environmental Impact Assessment (EIA) report in due course.

1.2 Project Background

At the time of writing, project proposals are at an early stage of development. The proposed development is likely to comprise a solar array of up to 200MW, and a 100MW BESS element. The layout of the project will be informed by a variety of site factors, including ecology constraints and opportunities.

1.3 Site description

The Site is comprised predominantly of arable fields used to grow a variety of vegetable and cereal crops, with small parcels of woodland lying on the boundary of the Site and some parcels forming boundaries in between fields. A large part of the centre of the Site is currently occupied by a pig farm.

Directly to the south of the Site lies the Royal Air Force (RAF) College Cranwell, with residential areas, military barracks and Ministry of Defence (MoD) buildings, and an airstrip. To the north, east and west of the Site lie more arable fields. Brauncewell Quarries also lies to the northeast of the Site.

The Site lies approximately 5.7km northwest of the centre of Sleaford and measures approximately 261ha.

1.4 Aims and Objectives

SLR was commissioned to address the following study aims:

- Survey the non-breeding birds present within the Site;
- Identify any notable bird species that may be present using the Site; and
- Produce a factual baseline report of the survey findings suitable to accompany a future planning application for the Site.

To achieve these study aims, the study had the following objectives:

- Conduct a desk study to review evidence provided by third party organisations relating to birds within the Site and nearby; and
- Carry out a field survey work to determine the non-breeding bird species using the Site.

The results of this survey, and subsequent recommendations, are included within this report.

The contents of this report represent baseline survey findings collected to inform project design and associated planning requirements. Baseline data and associated findings and

recommendations presented in this report will be reviewed and summarised within the Ecological Impact Assessment for the project.

1.5 Evidence of technical competence and experience

Surveys were undertaken by Carl Platt ACIEEM, a Senior Ornithologist at SLR with seven years professional survey experience. The report was authored and approved by Dr Paul Clack CEnv MCIEEM, a Technical Director at SLR Consulting with 25 years post-doctoral experience in ecological consultancy. Technical review was conducted by Carl Platt.

1.6 Nomenclature

The phylogenetic order and nomenclature throughout this report follows The British List (10th Edition)[1], updated by the British Ornithologists' Union (BOU) Records Committee. A full list of the species referred to in this report, including scientific names, is provided in **Appendix A**.

[1] British Ornithologists' Union. 2022. The British List: A Checklist of Birds of Britain (10th edition), Ibis 164: pp.860 – 910.

2.0 Methodology

2.1 Desk study

2.1.1 Designated sites

For the ornithological aspect of the Site, a search was undertaken using the Multi-Agency Geographic Information for the Countryside (MAGIC) website[2] and Natural England designated sites website[3] for:

- Special Protection Areas (SPA), Ramsar sites, Sites of Special Scientific Interest (SSSI) with cited ornithological features within 10km of the Site;
- SSSI Impact Risk Zones (IRZ) overlapping with the Site; and
- Local Nature Reserves (LNR) with ornithological interest features and RSPB reserves within 2km of the Site.

Only sites of ornithological significance were highlighted for this report. Additionally, details of non-statutory Local Wildlife Sites (LWS) supplied by Greater Lincolnshire Nature Partnership (GLNP) in August 2025 were reviewed for any ornithological interest.

2.1.2 Bird records

Data searches were undertaken for records of protected and conservation priority species, which are those listed on:

- Annex I of European Council (EC) directive 2009/147/EC ('the Birds Directive');
- Schedule 1 of the Wildlife and Countryside Act (WCA) 1981 (as amended);
- Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006; and
- Birds of Conservation Concern (BoCC)[4] Red and Amber.

The data was sourced from ecological records supplied by GLNP.

2.2 Field survey

2.2.1 Non-breeding bird walkover surveys

The methodology for non-breeding walkover survey, as detailed in the Bird Survey Guidelines[5], was followed. Surveys sought to qualify the diversity and numbers of birds present, in the context of their specific ecology and population status.

The method involved walking a transect, with frequent stops to scan for target species. The route enabled visual coverage of the survey area. Target species were all species listed on Annex I, Schedule 1, NERC Section 41, and BoCC Red or Amber species, and these were given priority over non-target species. All species observations were recorded onto a map of

[2] https://magic.defra.gov.uk/ Accessed on 15/04/2026

[3] https://designatedsites.naturalengland.org.uk/ Accessed on 15/04/2026

[4] Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. British Birds 114: 723-747. Available online at https://britishbirds.co.uk/content/status-our-bird-populations.

[5] https://birdsurveyguidelines.org/non-breeding-walkover-survey/ Accessed 15/04/26

the survey area, using BTO notation to record behaviour. Table 2-1 details the Birds of Conservation Concern Criteria.

Table 2-1 Birds of Conservation Concern Criteria

Red criteria	Amber criteria
Species that are globally threatened according to the International Union for the Conservation of Nature (IUCN) criteria.	Species of European Conservation Concern.
Species with an historical decline in breeding population which have not shown a substantial recent recovery.	Species whose population has declined historically but which have made a substantial recent recovery.
Species that have shown a severe breeding decline over the last 25 years or longer term.	Species whose breeding population has declined moderately over the last 25 years or longer term.
Species that have shown a severe breeding range decline over the last 25 years or longer term.	Species that have shown a moderate breeding range decline over the last 25 years or longer term.
Species whose non-breeding population has declined over the last 25 years or longer term.	Species whose non-breeding population has declined moderately over the last 25 years or longer term.
	Rare breeders or non-breeding rarity species with internationally important or localised populations.
Green list criteria	
Species that fulfil none of the Red or Amber criteria detailed above at the publication of the most recent edition of BoCCUK, currently 2021.	

Each survey was conducted on a single day by the same surveyor, on the following dates:

- Visit 1 – 9th October 2025
- Visit 2 – 10th November 2025
- Visit 3 – 23rd December 2025
- Visit 4 – 29th January 2026
- Visit 5 – 11th February 2026
- Visit 6 – 17th March 2026

The dates, times and corresponding weather conditions for each survey are provided in **Appendix B**. Surveys were undertaken in suitable weather conditions, avoiding heavy rain, strong winds (Beaufort force >5) and low visibility (e.g. fog).

The method aims to measure the importance of the survey area for avian diversity, and which species may be using the Site during the non-breeding period. Results have been presented for each target species as peak flock counts and frequency of observation. Peak flock count refers to the highest count obtained for a certain species on a single visit. Frequency refers to the number of visits on which a certain species was recorded.

2.3 Limitations

Ornithological surveys are affected by a variety of factors that affect the presence of birds (e.g. season, weather, food availability, species behaviour and disturbance). The absence of any species within the study area should not be taken as conclusive evidence that the species is not present or that it will not be present in the future. The results of these bird surveys give an indication of the use of the Site by breeding bird species at the time of survey.

A central portion of the Site comprised of a pig farm. Due to strict biosecurity measures, this area wasn't accessed, but the perimeter was walked. It is therefore possible that some calling birds were missed, but given good visibility from the boundary this was not considered a significant limiting factor.

All surveys were carried out as planned in appropriate weather conditions and no access restrictions were experienced. As such, no additional limitations were encountered.

3.0 Results

3.1 Desk study

3.1.1 Designated sites

There are no internationally designated sites within 10km with ornithological features, including Ramsar sites and SPAs. The nearest such sites are over 40km east (The Wash SPA and Ramsar Site).

There are seven SSSIs within 10km of the Site. Of these, the only such site that mentions birds is Moor Closes SSSI. Although primarily designated for as traditionally managed calcareous pasture with high botanical value, the citation mentions this site supports breeding snipe and lapwing, along with foraging fieldfare and redwing over winter. This SSSI is located 7.5km south.

The Site is located within a SSSI IRZ, but solar / BESS are not a development types listed on the NE website that would trigger the need to consult with NE in this location.

There are no LNRs or RSPB reserves within 2km of the Site. LERC also provided details of non-statutory LWSs within 2km of the site. Although eight such sites are present, none mention birds as key features. Further details of LWSs are provided within the Preliminary Ecological Appraisal (PEA) report for the project.

3.1.2 Bird records

GLNP were able to provide record of birds noted within 2km of the Site. A summary of all red listed, amber listed, and protected species recorded can be found in Table 3-1.

Of the rarer species recorded, it should be noted that many of these have not been recorded in recent years. The only record of stone curlew dated from 1968, and other species have not been recorded within the last decade including Montagu's harrier (2008), hen harrier (2011), marsh harrier (2012) and turtle dove (2005). Many of the records lacked precise location, but it is noted there are more recent local records of quail (2020), barn owl (2023), peregrine (2022) and red kite (2023).

A good range of farmland bird species records were returned, with species that could use the Site in the non-breeding period including grey partridge, skylark, tree sparrow, linnet, yellowhammer and corn bunting all recorded locally within the last ten years.

Table 3-1 Summary of GLNP Records

Species	Conservation Status	Species	Conservation Status
Greylag Goose	BoCC Amber	Hobby	BoCC Green, Sch 1
Whooper Swan	BoCC Amber, Sch 1, Annex 1	Peregrine	BoCC Green, Sch 1, Annex 1
Grey Partridge	BoCC Red, Section 41	Skylark	BoCC Red, Section 41
Quail	BoCC Amber, Sch 1,	Grasshopper Warbler	BoCC Red, Section 41
Swift	BoCC Red	Starling	BoCC Red, Section 41
Turtle Dove	BoCC Red, Section 41	Song Thrush	BoCC Amber, Section 41
Stone-curlew	BoCC Amber, Sch 1, Annex 1, Section 41	Redwing	BoCC Amber, Section 41
Lapwing	BoCC Red, Section 41	Fieldfare	BoCC Red, Sch 1
Curlew	BoCC Red, Section 41	Ring Ouzel	BoCC Red, Section 41
Snipe	BoCC Amber	Spotted Flycatcher	BoCC Red, Section 41
Greenshank	BoCC Amber, Sch 1	Tree Sparrow	BoCC Red, Section 41
Mediterranean Gull	BoCC Amber, Sch 1, Annex 1	House Sparrow	BoCC Red, Section 41
Little Egret	BoCC Green, Annex 1	Yellow Wagtail	BoCC Red, Section 41
Osprey	BoCC Amber, Sch 1, Annex 1	Brambling	BoCC Green, Sch 1
Marsh Harrier	BoCC Amber, Sch 1, Annex 1	Bullfinch	BoCC Amber, Section 41
Hen Harrier	BoCC Red, Sch 1, Annex 1, Section 41	Linnet	BoCC Red, Section 41
Montagu's Harrier	BoCC Red, Sch 1, Annex 1	Corn Bunting	BoCC Red, Section 41
Red Kite	BoCC Amber, Sch 1, Annex 1	Yellowhammer	BoCC Red, Section 41
Barn Owl	BoCC Green, Sch 1	Reed Bunting	BoCC Amber, Section 41
Merlin	BoCC Red, Sch 1, Annex 1		

3.2 Field survey

3.2.1 Non-breeding bird surveys

3.2.1.1 Target species

A total of 26 target species were recorded during the non-breeding bird walkover surveys for the 2025/2026 non-breeding season. **Table 3-2** presents the peak flock counts and frequency of observation from each survey visit. Distribution of the target species within the survey area is presented in **Figures 1.1 – 1.11**.

Table 3-2: Peak flock counts and frequency of records from each survey visit during the 2025/2026 non-breeding season

Target species	Total number of records	Number of visits in which species recorded	Peak flock count[6] per visit					
			Visit No.					
			1 9th October	2 10th November	3 23rd December	4 29th January	5 11th February	6 17th March
Pink-footed goose	1	1	47	-	-	-	-	-
Mallard	2	2	-	-	-	2	-	2
Grey partridge	14	5	-	8	3	2	2	2
Red kite	7	2	1	-	-	1	-	-
Stock dove	3	3	4	-	-	2	-	2
Woodpigeon	43	6	50	62	23	108	200	200
Black-headed gull	21	6	1	12	85	125	17	57
Common gull	17	6	13	120	210	250	11	39
Herring gull	15	6	5	16	9	8	6	8
Lesser black-backed gull	6	2	7	3	-	-	-	-
Rook	31	6	300	150	300	200	150	250
Skylark	82	6	9	19	27	5	61	28
Starling	11	5	300	400	200	92	-	200
Mistle thrush	2	2	1	-	-	-	-	1
Song thrush	7	3	2	-	-	-	2	1
Redwing	3	3	-	8	-	7	25	-
Fieldfare	10	4	-	21	20	12	100	-
Wren	15	6	1	1	1	1	1	1

[6] Peak flock count' refers to the highest count of a single flock in a defined period (e.g. a single visit). It is considered inappropriate to sum the counts within the survey area on each visit, as the large survey area and survey methodology do not allow for simultaneous/instantaneous counts of the whole area and birds are likely to move between areas/fields, and therefore there would be a risk of repeat counting of birds. It is acknowledged that it is therefore not an estimate of the peak number of birds within the survey area at any one time and therefore the peak counts from individual fields/land parcels are also presented in the relevant figures.

Target species	Total number of records	Number of visits in which species recorded	Peak flock count[6] per visit					
			Visit No.					
			1 9th October	2 10th November	3 23rd December	4 29th January	5 11th February	6 17th March
Dunnock	15	5	2	1	1	2	-	1
Grey wagtail	4	2	2	2	-	-	-	-
Meadow pipit	33	6	7	7	6	2	3	2
House sparrow	5	4	6	8	-	7	-	9
Greenfinch	2	1	-	-	-	-	-	1
Linnet	31	6	37	27	41	34	110	15
Yellowhammer	3	2	-	-	-	-	1	1
Corn bunting	25	6	1	1	1	2	2	1

3.2.1.2 Non-target species

A further 22 non-target species were also recorded during the non-breeding bird walkover survey visits. These comprised a range of green listed and introduced species as follows:

- Buzzard
- Pheasant
- Red-legged partridge
- Collared dove
- Feral pigeon
- Green woodpecker
- Great spotted woodpecker
- Pied wagtail
- Blackbird
- Robin
- Stonechat
- Chiffchaff
- Great tit
- Coal tit
- Blue tit
- Long-tailed tit
- Treecreeper
- Magpie
- Jackdaw
- Carrion Crow
- Goldfinch
- Chaffinch

4.0 Summary

4.1 Legal and conservation status of target species recorded

Table 4-1 provides a summary of the target species recorded during the baseline surveys, their activity within the survey area, as well as their legal and conservation status.

Table 4-1: Summary of target species results and legal/conservation status

Target Species	Legal and Conservation Status	GLNP Sightings - Location	UK population[7]	Summary of Observations within the Survey Area
BoCC Red Listed Species				
Grey partridge	Section 41	Yes – Cranwell, Brauncewell, Temple Bruer and Welbourn Heath	UK population estimate: 37,000 territories	Recorded on every visit, with coveys of up to eight birds, mostly on cereal cropped stubble in the west of the site but several observations also in the east (**Fig. 1.3**).
Herring gull	Section 41	No	740,000 individuals over winter	Small numbers of herring gulls observed on Site, generally loafing in arable fields and around pigs. A maximum count of 16 birds on 11th October (**Fig. 1.4**).
Skylark	Section 41	Yes – Cranwell, Temple Bruer, Welbourn Heath, High Dyke, Byard's Leap Gorse, Byard's Leap Plantation, North Rauceby, RAF Cranwell, Leadenham	UK population estimate: 1,600,000 territories	Skylark were recorded across the Site and on all surveys. Most records were of less than 10 birds, but a flock of 61 birds was noted on 11th February. Most activity was recorded in arable fields, including cereals and sugar beet (**Fig. 1.6**).
Starling	Section 41	Yes – High Dyke, Byard's Leap Plantation, Bloxholm Wood, Temple Bruer, Cranwell, Fulbeck	UK population estimate: 1,800,000 pairs	Groups of starlings were recorded sporadically on Site, mostly foraging around the pig fields but also in sugar beet crop. A maximum count of 400 birds in October amongst the pigs (**Fig. 1.9**).
Mistle thrush		No	UK population estimate: 165,000 territories	Two observations of mistle thrush, both of single birds in hedgerows and woodland margins in the west of the site (**Fig. 1.8**). The bird seen on 17th March was in song.
Fieldfare	Schedule 1	Yes - High Dyke, Cranwell, Temple Bruer, Leadenham	720,000 individuals in winter	Small flocks of fieldfare (up to 21 birds) were seen foraging across the Site between October and February. A larger group of at least 100 birds was seen in woodland in the west of the Site on 11th November (**Fig. 1.8**).
House sparrow	Section 41	Yes – High Dyke, Cranwell, Temple Bruer, North Rauceby	UK population estimate: 5,300,000 pairs	Small groups of up to nine house sparrows were observed on five occasions, on site boundaries associated with residential properties in the extreme southeast and north of the Site. (**Fig. 1.9**).

[7] https://www.bto.org/learn/about-birds/birdfacts [Accessed April 2026]

Target Species	Legal and Conservation Status	GLNP Sightings - Location	UK population[7]	Summary of Observations within the Survey Area
Greenfinch		No	UK population estimate: 785,000 pairs	Only observed on the March survey, with singing males noted on the extreme west and northern Site boundaries (**Fig. 1.10**).
Linnet	Section 41	Yes – High Dyke, Byard's Leap Plantation, Temple Bruer, Cranwell, Welbourn Heath, Leadenham Heath	UK population estimate: 560,000 territories	Frequently recorded across the Site, both in field boundaries and foraging within fields. The largest flock of 110 birds on 11th February was in a northern hedgerow near the pig fields (**Fig. 1.10**).
Yellowhammer	Section 41	Yes - Byard's Leap Plantation, Cranwell, Heath Farm Road Verge, North Rauceby, High Dyke, Temple Bruer, Welbourn Heath	UK population estimate: 700,000 territories	Three observations of yellowhammer, one in November and two in March when a male was heard in song. All records were on or close to the northern Site boundary (**Fig. 1.10**).
Corn bunting	Section 41	Yes - Brauncewell, Byard's Leap, Byard's Leap Gorse, Byard's Leap Plantation, Cranwell, Fulbeck Heath, High Dyke, Leadenham Heath, North Rauceby, Temple Bruer, Welbourn Heath	UK population estimate: 11,000 territories	Single and pairs of corn buntings were most often observed along the main farm track with its well-developed hedgerow, with males heard in song on several occasions. Other birds observed on the northern and southeastern boundaries (**Fig 1.10**).
BoCC Amber Listed Species				
Pink-footed goose		No	UK population estimate: 510,000 over winter	A single flock of 47 birds flew high east over the eastern part of the Site on 9th October (**Fig. 1.2**). No birds recorded on the ground during the surveys.
Mallard		No	UK population estimate: 675,000 over winter	Two observations, a pair on the pond in the southeast of the site on 29th January and possibly the same pair in a waterlogged margin of the field to the north on 17th March (**Fig. 1.2**).
Stock dove		No	UK population estimate: 320,000 territories	Three scattered observations of small groups of up to 4 stock doves feeding in arable fields (**Fig. 1.5**).
Woodpigeon		No	UK population estimate: 5,200,000 pairs	Woodpigeon were recorded across the site, generally in small groups, feeding in pig and arable fields on all survey visits. By late winter flocks larger, up to 200 birds in February and March (**Fig. 1.5**).
Black-headed gull		No	UK winter population estimate: 2.2 million birds	Generally small numbers of black-headed gulls recorded foraging, loafing and flying over the site. A peak count of 85 feeding on site on 23rd December (**Fig. 1.4**).

Target Species	Legal and Conservation Status	GLNP Sightings - Location	UK population[7]	Summary of Observations within the Survey Area
Common gull		No	UK winter population estimate: 710,000 birds	Common gulls were recorded across the survey period in generally higher numbers than black-headed gulls, with a peak of 250 birds following agricultural vehicles on 29th January (**Fig. 1.4**).
Lesser black-backed gull		No	UK winter population estimate: 130,000 birds	Small numbers of this species recorded, generally only in flight over the Site. A maximum count of just three birds on the ground on 11th October (**Fig. 1.4**).
Rook		No	No winter population data- resident species 980,000 breeding pairs	Rooks were widely recorded, feeding in all arable and pig fields on all visits with flocks of up to 300 birds. In March, a small rookery was noted off site to the north, with 12 birds actively attending nests.
Song thrush	Section 41	Yes – High Dyke, Cranwell, Temple Bruer	UK population estimate: 1,300,000 territories	Scattered observations of song thrushes were made across the Site, mostly in February and March. All observations were of birds in woodland margins (**Fig. 1.8.**)
Redwing	Schedule 1	Yes - High Dyke, Cranwell, Temple Bruer, Leadenham	690,000 birds over winter	Generally small numbers of redwing were observed in woodland margins. The largest group was 25 birds on 11th February (**Fig. 1.8**).
Wren		No	UK population estimate: 11,000,000 territories	Wrens were mostly recorded in the margins of woodlands around the Site, with one bird in a hedgerow to the east (**Fig. 1.11**). Single birds on all occasions, often in song.
Dunnock	Section 41	No	UK population estimate: 2,500,000 territories	Dunnock was recorded across the Site with all records associated with hedgerows and woodland margins (**Fig. 1.9**). Most records of single birds, occasionally in song.
Grey wagtail		No	UK population estimate: 37,000 pairs	Four observations of this species on the October and November surveys. A maximum of two birds on both occasions around the pigs and within arable fields (**Fig. 1.7**).
Meadow pipit		No	UK population estimate: 2,500,000 pairs	Small groups of foraging meadow pipits recorded widely across the Site on all survey visits. Observations of between one and seven birds on all occasions (**Fig. 1.7**).
BoCC Green Listed Species				
Red kite	Schedule 1	Yes – Cranwell, Fullbeck Heath, Brauncewell, Ashy de la Launde	UK population estimate 4,400 pairs	Observations of a single adult red kite on 9th October and again on 29th January. The multiple observations on both dates may have involved the same mobile foraging individual (**Fig. 1.1**).

5.0 Discussion and Recommendations

The programme of non-breeding bird surveys was successfully completed as planned between October 2025 and March 2026.

Across the programme of six visits, a total of 48 species was recorded. Of these 26 were target species. As reported separately for the breeding season, the most notable feature of the Site was the assemblage of farmland birds, including species such as grey partridge, skylark, linnet and corn bunting that were found to be present across the non-breeding period and using the site for foraging.

Additionally, the arable and pig fields were found to support other declining species such as flocks of rook, starling and winter thrushes (redwing and fieldfare). Mature hedgerows and woodland fringes supported species including wren, dunnock, house sparrow and song thrush.

Moderate numbers of gulls were present throughout the winter, with common gull being the most abundant species, with high counts associated with agricultural activities. Raptors were scarce, with only occasional sightings of red kite and buzzard. No waders were recorded.

As the project design evolves, it is recommended that areas of potential habitat enhancement are identified to inform the EcIA for the project and to devise a suitable package of mitigation. This may include wintering bird seed strips in retained field margins to provide food and shelter for birds, such as grey partridge, corn bunting and yellowhammer, from winter through to early spring. Other measures could include retention and enhancement of hedgerows and management of field margins to improve foraging resources.

Figures

Non-Non-Breeding Bird Surveys Baseline Report 2025-2026/2026

500000 501000 502000 503000

352000

351000

405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

0 250 500

Metres

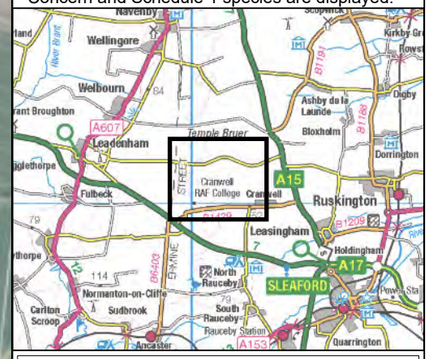
LEGEND

- Site Boundary
- Flight Line

Non-Breeding Bird Species Record

- Red Kite

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



trio

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WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: RED KITE

FIGURE 1.1

Scale 1:12,500 @ A3

Date OCTOBER 2026

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500000 501000 502000 503000

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405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

0 250 500

Metres

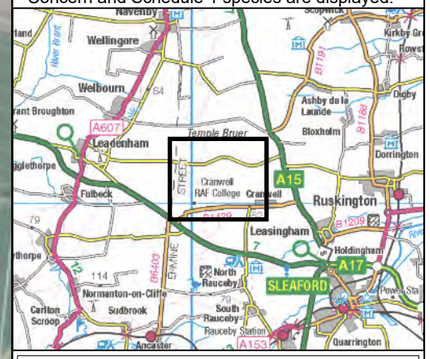
LEGEND

- Site Boundary
- Flight Line

Non-Breeding Bird Species Record

- Mallard
- Pink-footed Goose

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: WILDFOWL

FIGURE 1.2

Scale 1:12,500 @ A3

Date OCTOBER 2026

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405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

0 250 500

Metres

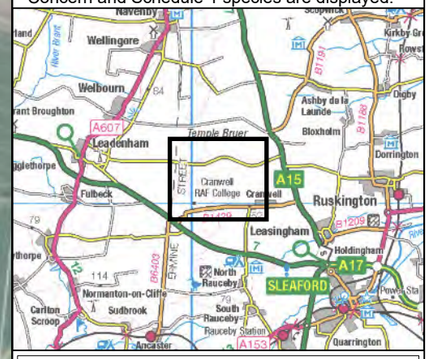
LEGEND

- Site Boundary
- Flight Line

Non-Breeding Bird Species Record

- Grey Partridge

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



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WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: GREY PARTRIDGE

FIGURE 1.3

Scale	Date
1:12,500 @ A3	OCTOBER 2026

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405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

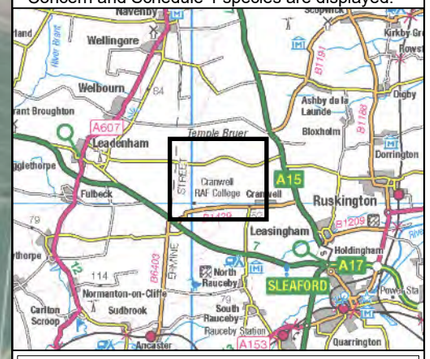
LEGEND

- Site Boundary
- Flight Line

Non-Breeding Bird Species Record

- Black-headed Gull
- Common Gull
- Herring Gull
- Lesser Black-backed Gull

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



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WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: GULLS

FIGURE 1.4

Scale 1:12,500 @ A3

Date OCTOBER 2026

0 250 500

Metres

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500000 501000 502000 503000

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405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

0 250 500

Metres

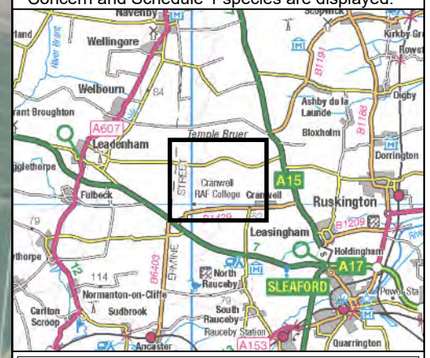
LEGEND

- Site Boundary
- Flight Line

Non-Breeding Bird Species Record

- Rook
- Stock Dove
- Woodpigeon

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



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WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: PIGEONS AND CORVIDS

FIGURE 1.5

Scale 1:12,500 @ A3

Date OCTOBER 2026

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352000

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405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

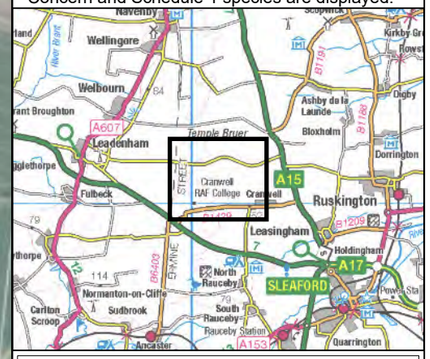
LEGEND

- Site Boundary
- Simultaneous Registration (Different Birds)

Non-Breeding Bird Species Record

- Skylark

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



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WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: SKYLARK

FIGURE 1.6

Scale 1:12,500 @ A3

Date OCTOBER 2026

0 250 500

Metres

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500000 501000 502000 503000

352000

351000

405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

0 250 500

Metres

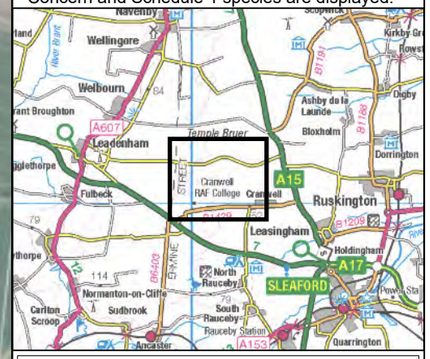
LEGEND

- Site Boundary

Non-Breeding Bird Species Record

- Grey Wagtail
- Meadow Pipit

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: PIPITS AND WAGTAILS

FIGURE 1.7

Scale 1:12,500 @ A3

Date OCTOBER 2026

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500000 501000 502000 503000

352000

351000

405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

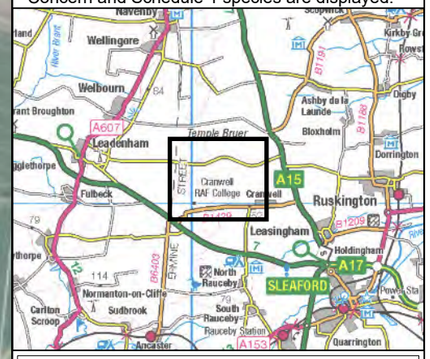
LEGEND

- Site Boundary
- Flight Line
- Simultaneous Registration (Different Birds)

Non-Breeding Bird Species Record

- Fieldfare
- Mistle Thrush
- Redwing
- Song Thrush

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



0 250 500

Metres

WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: THRUSHES

FIGURE 1.8

Scale 1:12,500 @ A3

Date OCTOBER 2026

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500000 501000 502000 503000

352000

351000

405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

0 250 500

Metres

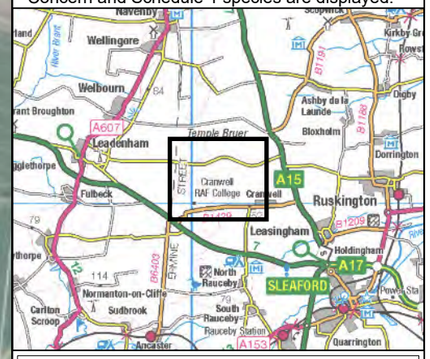
LEGEND

- Site Boundary
- Flight Line

Non-Breeding Bird Species Record

- Dunnock
- House Sparrow
- Starling

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



trio

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WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: STARLING, DUNNOCK AND HOUSE SPARROW

FIGURE 1.9

Scale	Date
1:12,500 @ A3	OCTOBER 2026

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500000 501000 502000 503000

352000

351000

405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

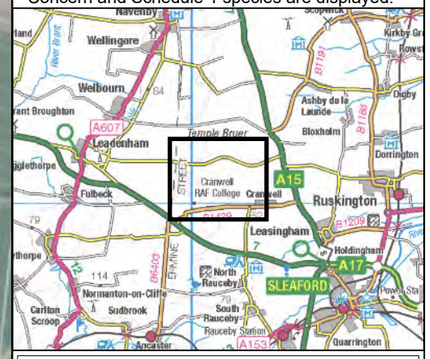
LEGEND

- Site Boundary
- Simultaneous Registration (Different Birds)

Non-Breeding Bird Species Record

- Corn Bunting
- Greenfinch
- Linnet
- Yellowhammer

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



0 250 500

Metres

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WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: FINCHES AND BUNTINGS

FIGURE 1.10

Scale 1:12,500 @ A3

Date OCTOBER 2026

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500000 501000 502000 503000

352000

351000

405.065637.00001.0013.0 Non Breeding Birds

Count

- 1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 200
- 201 - 300
- 301 - 500
- 501 - 2000

N

0 250 500

Metres

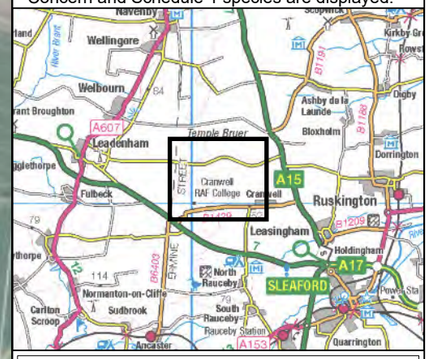
LEGEND

Site Boundary

Non-Breeding Bird Species Record

Wren

Note:
Only Amber and Red Birds of Conservation Concern and Schedule 1 species are displayed.



trio

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WINDSOCK SOLAR FARM

NON-BREEDING BIRD REPORT

NON-BREEDING BIRD RESULTS: WREN

FIGURE 1.11

Scale 1:12,500 @ A3

Date OCTOBER 2026

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Appendix A Bird Species Names

Non-bNon-Breeding Bird Surveys Baseline Report 2025-2026/2026

Table A-1: Common and scientific names of birds mentioned in the report

BTO code	Common name	Scientific name
GJ	Greylag goose	*Anser anser*
PG	Pink-footed goose	*Anser brachyrhynchus*
WS	Whooper swan	*Cygnus cygnus*
MA	Mallard	*Anas platyrhynchos*
PH	Pheasant	*Phasianus colchicus*
RL	Red-legged partridge	*Alectoris rufa*
P.	Grey partridge	*Perdix perdix*
Q.	Quail	*Coturnix coturnix*
SI	Swift	*Apus apus*
SD	Stock dove	*Columba oenas*
WP	Woodpigeon	*Columba palumbus*
FP	Feral pigeon	*Columba livia*
CD	Collared dove	*Streptopelia decaocto*
TD	Turtle dove	*Streptopelia turtur*
TN	Stone-curlew	*Burhinus oedicnemus*
L.	Lapwing	*Vanellus vanellus*
CU	Curlew	*Numenius arquata*
SN	Snipe	*Gallinago gallinago*
GK	Greenshank	*Tringa nebularia*
BH	Black-headed gull	*Chroicocephalus ridibundus*
MU	Mediterranean gull	*Ichthyaetus melanocephalus*
CM	Common gull	*Larus canus*
HG	Herring gull	*Larus argentatus*
LB	Lesser black-backed gull	*Larus fuscus*
ET	Little egret	*Egretta garzetta*
OP	Osprey	*Pandion haliaetus*
MR	Marsh harrier	*Circus aeruginosus*
HH	Hen harrier	*Circus cyaneus*
MO	Montagu's harrier	*Circus pygargus*
KT	Red kite	*Milvus milvus*
BZ	Buzzard	*Buteo buteo*
BO	Barn owl	*Tyto alba*
ML	Merlin	*Falco columbarius*
HY	Hobby	*Falco subbuteo*
PE	Peregrine	*Falco peregrinus*
G.	Green woodpecker	*Picus viridis*
GS	Great spotted woodpecker	*Dendrocopos major*
C.	Carrion crow	*Corvus corone*
RO	Rook	*Corvus frugilegus*
JD	Jackdaw	*Corvus monedula*
MG	Magpie	*Pica pica*

BTO code	Common name	Scientific name
S.	Skylark	*Alauda arvensis*
GH	Grasshopper warbler	*Locustella naevia*
CC	Chiffchaff	*Phylloscopus collybita*
WR	Wren	*Troglodytes troglodytes*
SG	Starling	*Sturnus vulgaris*
GT	Great tit	*Parus major*
BT	Blue tit	*Cyanistes caeruleus*
CT	Coal tit	*Periparus ater*
LT	Long-tailed-tit	*Aegithalos caudatus*
TC	Treecreeper	*Certhia familiaris*
ST	Song thrush	*Turdus philomelos*
M.	Mistle thrush	*Turdus viscivorus*
RE	Redwing	*Turdus iliacus*
FF	Fieldfare	*Turdus pilaris*
RZ	Ring ouzel	*Turdus torquatus*
R.	Robin	*Erithacus rubecula*
SC	Stonechat	*Saxicola rubicola*
SF	Spotted flycatcher	*Muscicapa striata*
TS	Tree sparrow	*Passer montanus*
HS	House sparrow	*Passer domesticus*
D.	Dunnock	*Prunella modularis*
YW	Yellow wagtail	*Motacilla flava*
GL	Grey wagtail	*Motacilla cinerea*
PW	Pied wagtail	*Motacilla alba*
MP	Meadow pipit	*Anthus pratensis*
CH	Chaffinch	*Fringilla coelebs*
BL	Brambling	*Fringilla montifringilla*
BF	Bullfinch	*Pyrrhula pyrrhula*
GR	Greenfinch	*Chloris chloris*
GO	Goldfinch	*Carduelis carduelis*
LI	Linnet	*Linaria cannabina*
CB	Corn bunting	*Emberiza calandra*
Y.	Yellowhammer	*Emberiza citrinella*
RB	Reed bunting	*Emberiza schoeniclus*



Appendix B Survey Metadata

Non-Non-Breeding Bird Surveys Baseline Report 2025-2026/2026

Table B-1: Non-breeding Bird Survey Metadata, Survey Dates, Timings and Surveyors

Visit	Date	Surveyor Initials	Start of Survey (hh:mm)	End of Survey (hh:mm)
1	09/10/2025	CP	08:02	13:56
2	10/11/2025	CP	08:10	12:44
3	23/12/2025	CP	08:19	11:13
4	29/01/2026	CP	08:22	14:08
5	11/02/2026	CP	07:58	12:23
6	17/03/2026	CP	08:23	14:15

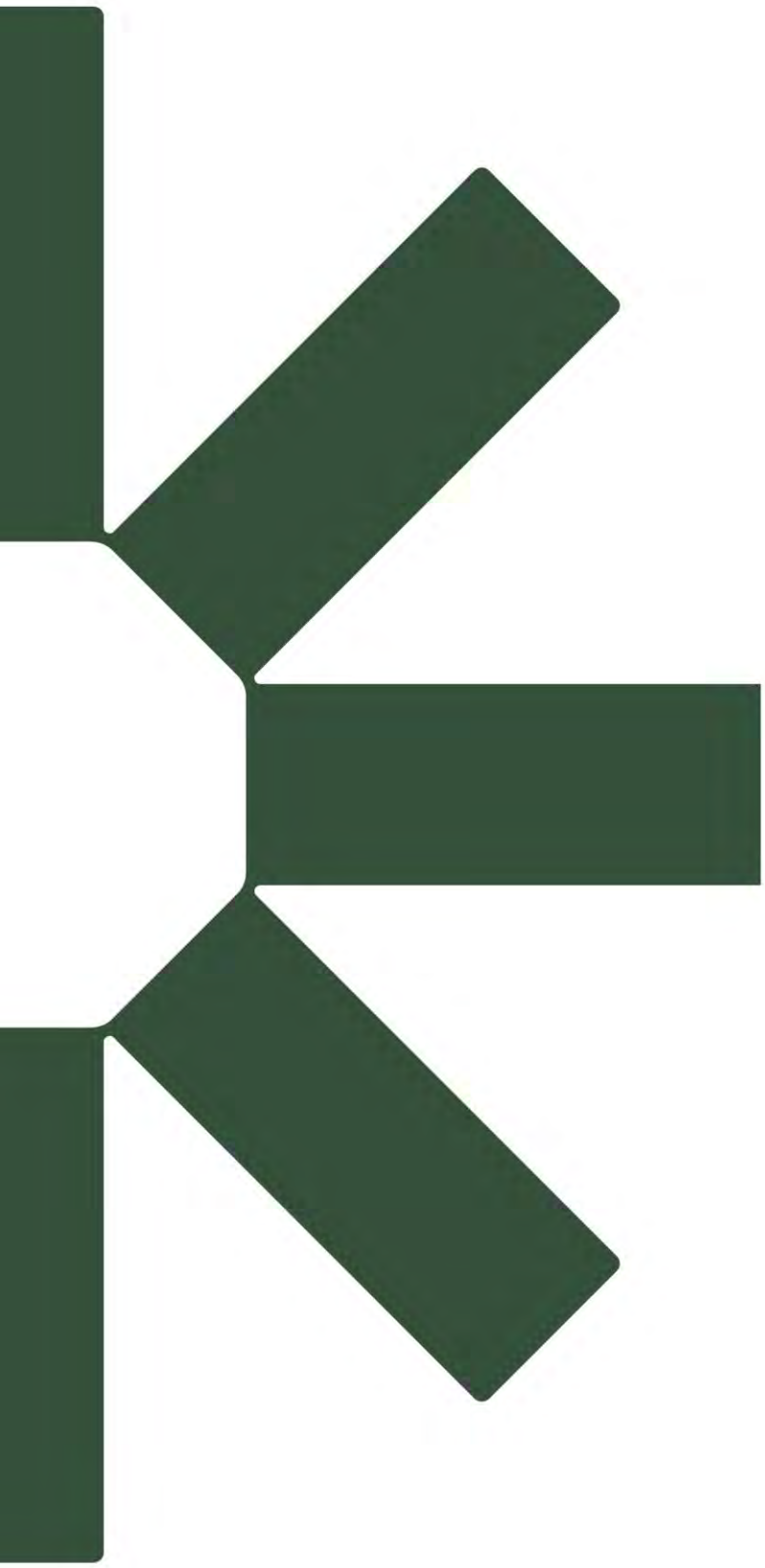
Table A-2: Wintering Bird Survey Metadata, Weather Conditions

Weather keys are as follows:

- wind speed: 0 = calm, 1 = light air, 2 = light breeze, 3 = gentle breeze, 4 = moderate breeze, 5 = fresh breeze, 6 = strong breeze, 7 = moderate gale, 8 = gale;
- rain: 0 = none, 1 = drizzle, 2 = light showers/snow, 3 = heavy showers/snow, 4 = heavy rain/snow;
- cloud height (height of clouds above average height of viewshed): 0 = <150 m, 1 = 150-500 m, 2 = >500 m;
- visibility: 0 = <1 km (poor), 1 = 1-3 km (moderate), 2 = >3 km (good);
- snow (lying): 0 = none, 1 = on site, 2 = on higher ground; and
- frost: 0 = none, 1 = on ground in morning, 2 = on ground all day.

Visit	Date	Start of Survey (hh:mm)	End of Survey (hh:mm)	Survey Hour	Wind Speed (Beaufort)	Wind Direction	Rain	Cloud Cover (okta)	Cloud Height	Visibility	Snow	Frost	Temp. (°C)
1	09/10/2025	08:02	13:56	1	3	W	0	7	2	2	0	0	12
1	09/10/2025	08:02	13:56	2	3	W	0	6	2	2	0	0	14
1	09/10/2025	08:02	13:56	3	3	W	0	3	2	2	0	0	15
1	09/10/2025	08:02	13:56	4	3	W	0	7	2	2	0	0	16
1	09/10/2025	08:02	13:56	5	3	W	0	7	2	2	0	0	17
1	09/10/2025	08:02	13:56	End	3	W	0	7	2	2	0	0	17
2	10/11/2025	08:10	12:44	1	3	S	0	2	2	2	0	0	12
2	10/11/2025	08:10	12:44	2	3	S	0	1	2	2	0	0	13
2	10/11/2025	08:10	12:44	3	3	S	0	4	2	2	0	0	13
2	10/11/2025	08:10	12:44	4	4	S	0	7	1	2	0	0	13
2	10/11/2025	08:10	12:44	End	4	S	2	8	1	1	0	0	14
3	23/12/2025	08:19	11:13	1	2	NE	0	8	1	2	0	0	6

Visit	Date	Start of Survey (hh:mm)	End of Survey (hh:mm)	Survey Hour	Wind Speed (Beaufort)	Wind Direction	Rain	Cloud Cover (okta)	Cloud Height	Visibility	Snow	Frost	Temp. (°C)
3	23/12/2025	08:19	11:13	2	2	NE	0	8	1	2	0	0	6
3	23/12/2025	08:19	11:13	3	2	NE	0	8	1	2	0	0	6
3	23/12/2025	08:19	11:13	End	2	NE	1	8	1	2	0	0	7
4	29/01/2026	08:22	14:08	1	3	SE	0	8	2	1	0	0	3
4	29/01/2026	08:22	14:08	2	3	SE	0	8	2	2	0	0	4
4	29/01/2026	08:22	14:08	3	3	SE	0	8	2	2	0	0	5
4	29/01/2026	08:22	14:08	4	3	SE	0	8	2	2	0	0	5
4	29/01/2026	08:22	14:08	5	3	SE	0	8	2	2	0	0	4
4	29/01/2026	08:22	14:08	End	3	SE	0	8	2	2	0	0	5
5	11/02/2026	07:58	12:23	1	2	SE	1	8	1	1	0	0	8
5	11/02/2026	07:58	12:23	2	2	SE	1	8	1	1	0	0	8
5	11/02/2026	07:58	12:23	3	2	SE	2	8	1	1	0	0	9
5	11/02/2026	07:58	12:23	4	2	SE	0	8	1	1	0	0	9
5	11/02/2026	07:58	12:23	End	2	SE	1	8	1	1	0	0	10
6	17/03/2026	08:23	14:15	1	3	SW	0	4	1	2	0	0	13
6	17/03/2026	08:23	14:15	2	3	SW	0	2	2	2	0	0	14
6	17/03/2026	08:23	14:15	3	3	SW	0	2	2	2	0	0	15
6	17/03/2026	08:23	14:15	4	3	SW	0	2	2	2	0	0	15
6	17/03/2026	08:23	14:15	5	3	SW	0	1	2	2	0	0	16
6	17/03/2026	08:23	14:15	End	3	SW	0	1	2	2	0	0	16



Making Sustainability Happen

APPENDIX G:
WINDSOCK SOLAR GREAT CRESTED NEWT SURVEY REPORT

Survey information contained within this report forms part of the EIA Scoping Report for information only. The GCN survey detailed within this appendix were undertaken in May 2025 and were based on a superseded version of the Site boundary that was larger than the current Site boundary detailed within the EIA Scoping Report.

Great Crested Newt Survey Report

Windsock Solar Farm, Lincolnshire

Trio Windsock Solar Farm Limited

UK House
5th Floor
164-18 Oxford Street
London
W1D 1NN

Prepared by:

SLR Consulting Limited

Cubo, Standard Court, Park Row, Nottingham, NG1 6GN

SLR Project No.: 405.065637.00001

Client Reference No: CRAN123-3-5

25 November 2025

Revision: 1.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
1.0	25 November 2025	AV	PC	PC
	Click to enter a date.			
	Click to enter a date.			
	Click to enter a date.			
	Click to enter a date.			

Basis of Report

This document has been prepared by SLR Consulting Limited (SLR) with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with Trio Windsock Solar Farm Ltd (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

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Appendix A UK Habitat Classification Plan

Appendix B eDNA Results Letter

Acronyms and Abbreviations

BESS	Battery Energy Storage System
CIEEM	Chartered Institute of Ecology and Environmental Management
EcIA	Ecological Impact Assessment
eDNA	Environmental DNA
EPS	European Protected Species
GCN	Great Crested Newt
GLNP	Greater Lincolnshire Nature Partnership
HSI	Habitat Suitability Index
LWS	Local Wildlife Site
MAGIC	Multi-Agency Geographic Information for the Countryside
SSSI	Site of Special Scientific Interest
UKHab	UK Habitat Classification

1.0 Introduction

SLR Consulting Limited (SLR) was commissioned by Trio Windsock Solar Farm Ltd in March 2025 to carry out a range of baseline ecological surveys to inform a proposed solar array and battery energy storage system (BESS) on Land to the South of Long Lane (central UK grid reference: TF 01602 51581), Brauncewell, Cranwell, NG34 8RL, herein referred to as the 'Site'. This report documents the methods and results of great crested newt (GCN) surveys undertaken in May 2025.

Trio Windsock Solar Farm Ltd is currently designing the Scheme at Cranwell. SLR are undertaking a range of ecological baseline surveys to inform scheme development, by avoiding and minimising impacts on sensitive habitats and species, and to inform possible mitigation requirements. Given the nature of habitats present on Site and wider value of the landscape for protected species, comprehensive survey data is required to inform a subsequent Ecological Impact Assessment (EcIA) for the project. Therefore, the assessment of impacts resulting from the proposed development and the identification of mitigation measures are beyond the scope of this report.

1.1 Project Background

At the time of writing, project proposals are at an early stage of development. The proposed development is likely to comprise a solar array of up to 200MW, and a 100MW BESS element. The layout of the project will be informed by a variety of site factors, including ecology constraints and opportunities.

1.2 Site Description

The Cranwell area of central Lincolnshire is low lying, relatively flat and dominated by agricultural land uses. These include large areas of arable farmland, which dominate the Site, with small parcels of woodland forming along field boundaries. A large part of the centre of the Site is currently occupied by a pig farm.

Beyond the Site boundary, RAF Cranwell, an active military training college is present directly to the south. To the north, east and west of the Site lie further arable fields. Brauncewell Quarries lies to the northeast of the Site.

The Site lies approximately 5.7km northwest of the centre of Sleaford and measures approximately 261ha in extent. The Site sits within the North Kesteven District Council's administrative boundary.

1.3 Aims and Objectives

The principal aim of the GCN surveys was to provide baseline information about the presence of likely absence of the species within the Site. This was determined through survey techniques including the use of Habitat Suitability Index (HSI) to assess aquatic habitats and environmental DNA (eDNA) sampling to test any waterbodies for GCN DNA.

1.4 Evidence of Technical Competence and Experience

The field surveys were conducted by George Parry, BSc (hons) MRes, a Senior Ecologist within SLR's Ecology and Biodiversity Team, and a second surveyor for health and safety reasons. George has over six years of experience as a professional ecological consultant and is an Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM). George holds a Level 1 Great Crested Newt Class Licence.

This report was written by Anna Volak, BSc (hons), a Senior Ecologist at SLR. Anna has over four years of experience as a professional ecological consultant and is a qualifying member of CIEEM.

This report has been subject to Quality Assurance review as per SLR's policies by Dr Paul Clack, CEnv, MCIEEM, a Technical Director at SLR, with 25 years post-doctoral experience in ecological consultancy.

1.5 Legislation and Policy

GCN are fully protected through inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and as a European Protected Species (EPS) listed on Schedule 2 of the Conservation of Habitats and Species Regulations 2017. In brief, this legislation makes it an offence to:

- Deliberately kill, injure or take a GCN;
- Deliberately disturb a GCN in such a way as to be likely to impair their ability to survive, breed or reproduce, or rear or nurture their young; to hibernate or migrate; or to affect significantly the local distribution or abundance of that species;
- Deliberately take or destroy the eggs of GCN;
- Damage or destroy the breeding or resting place of a GCN;
- Intentionally or recklessly obstruct access to a place that GCN use for shelter or protection; and
- Intentionally or recklessly disturb a GCN whilst it is occupying a place which it uses for shelter or protection.

2.0 Methods

2.1 Study Area

For both desk study and the field survey, GCN data was gathered from within the Site and within 500m of the Site boundary. This area will be referred to as the Study Area.

2.2 Desk Study

An ecological data search was requested from the Greater Lincolnshire Nature Partnership (GLNP) in August 2025, which included GCN records and designated sites that could support GCN within the Study Area.

Google Earth[1] was used to view aerial images and the Multi-Agency Geographic Information for the Countryside (MAGIC) website[2] was used to view OS maps of the Site and surrounding landscape. The data was used to locate ponds within the Study Area and identify suitable habitat for GCN that may connect to the Site, with no barriers or obstructions to dispersal. Only one pond was identified within the Study Area.

Further information from MAGIC was used to obtain information on granted EPS Licence Applications (England), GCN Survey Licence Returns (England), and GCN Pond Surveys (2017-2019) within the Study Area.

2.3 Field Survey

The GCN surveys were conducted on the 21st May 2025 and consisted of a HSI assessment and eDNA sampling.

2.3.1 Habitat Suitability Index

HSI surveys for GCN can be conducted at any time of year when the pond or waterbody is accessible. However, best practice guidelines[3] recommend conducting HSI surveys during spring to early summer, as this period typically offers the most reliable conditions for assessing habitat suitability for GCN, including stable water levels, visible vegetation, and the ability to assess factors such as shading and the presence of fish or waterfowl.

The HSI assessment, as described by Oldham et al. (2000)[4], is a standard method used to evaluate the suitability of ponds and ditches for supporting GCN. The HSI is calculated based on ten key habitat indices, including geographical location, pond are, water quality, waterbody permanence, shading, presence of fish and waterfowl, pond density, terrestrial habitat quality, and macrophyte coverage. These factors help determine the likelihood that a waterbody will support breeding GCN.

The ten factors in the HSI assessment are assigned a value ranging from 0.1 to 1. The geometric mean of these values provides the overall HSI score for the waterbody. This score is then categorised into one of five suitability levels to indicate the likelihood of the pond supporting GCN. The five suitability categories are summarised in **Table 2-1** below.

[1] Google Earth was used to review available aerial imagery from years 2024 – 2016. Available online: https://earth.google.com/web

[2] Defra – Multi-Agency Geographic Information for the Countryside (MAGIC) (https://magic.defra.gov.uk/) [accessed: 04/08/2025]

[3] ARG UK – Advice Note 5: Great Crested Newt Habitat Suitability Index

[4] Oldham *et al*. (2000) – Great Crested Newt Habitat Suitability Index

Table 2-1: HSI Assessment Categories[5]

Habitat Suitability Category	HSI Score
Poor	<0.5
Below Average	0.5 – 0.59
Average	0.6 – 0.69
Good	0.7 – 0.79
Excellent	>0.8

2.3.2 Environmental DNA Analysis

The eDNA survey was conducted in accordance with best practice guidelines[6]. Surveys can only be undertaken where the waterbody depth is greater than 10cm and must be carried out between the 15th April and 30th June to ensure the reliability of the results, as this period spans the GCN breeding season.

Water samples were collected from 20 locations around the surveyed waterbody. To avoid contamination, sterile sampling equipment and gloves were used, and the substrate was not disturbed during sampling. The water column was mixed using a ladle before 20 sub-samples were taken, with a focus on areas with potential egg-laying substrate and open water. Each sample was mixed thoroughly and preserved with ethanol before being sent to ADAS, an approved laboratory under the Natural England proficiency testing scheme, for analysis.

2.4 Limitations

2.4.1 Desk Study

Desk study data is unlikely to be exhaustive, specially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that important habitats or protected species not identified during the data search do in fact occur within the vicinity of the Site. Interpretation of maps and aerial photography has been conducted in good faith, using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the field study area.

2.4.2 Field Survey

The entire perimeter of the pond was accessible from all points, and 20 samples were able to be collected. As such, no limitations were encountered.

[5] Oldham *et al*. (2000) – Great Crested Newt Habitat Suitability Index

[6] Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA. Freshwater Habitats Trust, Oxford.

3.0 Results

3.1 Desk Study

3.1.1 Statutory Designated Sites

There is only one statutory designated site within the Study Area, High Dyke Site of Special Scientific Interest (SSSI) which lies approximately 400m to the west of the Site boundary. High Dyke SSSI does not include GCN as a notified feature and is designated for its terrestrial habitats and rare plant species only.

3.1.2 Non-Statutory Designated Sites

There is one non-statutory designated sites within the Study Area, Cranwell Grassland local wildlife site (LWS) which sits just outside of the Site boundary, to the southwest. Cranwell Grassland LWS does not include GCN as a notified feature and is designated for its calcareous grassland and plantation woodland.

3.1.3 GCN Records

The data request from GLNP returned no records of GCN within the Study Area, only other amphibian species such as common frog *Rana temporaria*, smooth newt *Lissotriton vulgaris* and common toad *Bufo bufo*.

The MAGIC website returned no granted EPS licences for GCN, or any GCN class survey licence returns within the Study Area.

3.1.4 Site Context

The Site is largely comprised of arable fields bordered by hedgerows and some pockets of grassland and woodland (as illustrated on the UK Habitat Classification (UKHab) Plan in **Appendix A)**. The arable fields are predominantly used for growing both cereal and non-cereal crops and are subject to regular disturbance. The fields offer sub-optimal habitat for commuting or sheltering GCN. The hedgerows, tussocky grassland and woodland offer habitat connectivity, and may provide opportunity for commuting GCN to move across the Site.

However, OS mapping and aerial imagery identified only one pond which sits within the Site boundary, in the southeast on the western margin of a large arable field. As a result, there is very limited suitable breeding habitat for GCN.

Just over 500m from the Site boundary are approximately four lagoons which sit within Brauncewell Quarry. The closest of the lagoons is approximately 509m from the Site boundary and 1.7km from the pond on Site. Movement between the pond on Site and the quarry lagoons would also be restricted by Long Lane to the north of the Site.

A review of North Kesteven's planning portal showed multiple planning applications for Brauncewell Quarry, however, no ecological documents were attached to any of the applications and GCN are presumed absent from the quarry.

3.2 Field Survey

3.2.1 Pond Description

The only pond within the Site and the Study Area lies along the western boundary of the southernmost arable field. It is hereafter be referred to as 'Pond 1' and is illustrated in **Appendix A** (habitat parcel reference: B63). It appears to be a large manmade drainage pond with a pump sitting along the northern edge. The water had low turbidity at the time of survey and a fringe of marginal vegetation, largely comprised of grasses and bulrush *Typha latifolia*. During other field surveys undertaken for the project in spring 2025, mallard ducks *Anas platyrhynchos* were observed using the pond. The pond is illustrated in **Figure 3-1** below.



Figure 3-1: Pond 1

3.2.2 Habitat Suitability Index

The results of the HSI assessment are summarised in **Table 3-1** below.

Table 3-1: Summary of HSI Assessment Score

HSI Indices	Score
SI1 Location	1
SI2 Pond area	0.9
SI3 Pond permanence	0.9
SI4 Water quality	0.67
SI5 Shade	1
SI6 Waterfowl	0.67
SI7 Fish	0.67
SI8 Pond density	0.1
SI9 Terrestrial habitat	0.33
SI10 Macrophyte cover	0.4
HSI Score	**0.56**
Habitat Suitability Category	**Below Average**

3.2.3 eDNA Survey

Analysis of the samples from Pond 1 were negative for GCN. A copy of the response letter from ADAS laboratory forms within **Appendix B** of this report.

4.0 Conclusions

GCN surveys have been conducted for the proposed Windsock Solar Farm Project. A desk study using data from GLNP and on-line sources has also been used to provide context with regard to habitats and identify any previous records of GCN. Field surveys including a HSI assessment and eDNA survey have been undertaken on one pond within the Site, which is the only pond within the Study Area.

Suitable connective and sheltering habitat for GCN on Site is limited to hedgerows and small parcels of woodland and grassland. The next nearest waterbodies are over 500m from the Site boundary and over 1.7km from the pond on Site. No records of GCN, EPS licences for GCN and GCN survey licence returns were returned in the desk study.

The HSI assessment found Pond 1 to be ‘below average’ in suitability for GCN, largely due to the presence of fish and waterfowl, and the low suitability of the surrounding habitat (arable fields). The eDNA survey returned a negative result for GCN DNA in the pond.

As a result of the limited terrestrial and aquatic habitat suitability and connectivity, the lack of species records and a negative result for GCN eDNA, GCN are likely absent from the Site. This data is valid for up to 18 months according to CIEEM advice, after which an updated desk study and GCN surveys may need to be undertaken.

Appendix A UK Habitat Classification Plan

Great Crested Newt Survey Report

Windsock Solar Farm, Lincolnshire

Trio Windsock Solar Farm Limited

Client Reference No: CRAN123-3-5

25 November 2025

499500 500000 500500 501000 501500 502000 502500

352000 351500 351000 350500

N

LEGEND

Site Boundary

Primary Habitat Classification

Heathland and Shrub - Hedgerows
- h2a - Hedgerow Priority Habitat
- h2a5 - Species-rich Native Hedgerow
- h2a6 - Other Native Hedgerow

Cropland - Arable and Horticulture
- c1 - Arable and Horticulture
- c1c - Cereal Crops
- c1d - Non-cereal Crops

Grassland - Calcerous Grassland
- g2c - Other Calcareous Grasslands

Grassland - Neutral Grassland
- g3 - Neutral Grassland
- g3c - Other Neutral Grassland

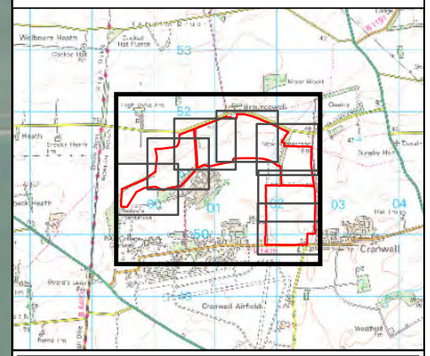
Grassland - Modified Grassland
- g4 - Modified Grassland

Heathland and Shrub - Dense Scrub
- h3 - Dense Scrub
- h3d - Bramble Scrub
- h3h - Mixed Scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing Open Water and Canal

Urban - Built-up Areas and Gardens
- u1 - Built-up Area and Garden
- u1b - Developed Land; Sealed Surface
- u1c - Artificial Unvegetated, Unsealed Surface
- u1f - Sparsely Vegetated Urban Land

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1f - Lowland Mixed Deciduous Woodland
- w1g - Other Woodland; Broadleaved
- w1h5 - Other Woodland; Mixed; Mainly Broadleaved



0 250 500

Metres

trio

SLR

WINDSOCK SOLAR FARM

PRELIMINARY ECOLOGICAL APPRAISAL

UK HABITAT BASELINE

FIGURE 1.1

Scale 1:10,000 @ A3

Date OCTOBER 2026

405.065637.00001.0005.0 UK Habitat Baseline

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502000

502500

351000

350500

405.065637.00001.0005.0 UK Habitat Baseline

Secondary Codes:
10 - Scattered Scrub
11 - Hedgerow with Trees
16 - Tall Forbs
29 - Plantation
32 - Scattered Trees
42 - Pond
81 - Ruderal or Ephemeral
104 - Other Grazed
128 - Tall or Tussocky Sward
507 - Nutrient Enriched Substrate
510 - Bare Ground
517 - Recent Management
521 - Unmanaged
839 - Track

B93: c1c
B72: g4 839
w1f
B74: g4 839
B73: g4 839
B92: c1d
B75: g4 839
LB12: h2a
LB13: h2a
LB6: h2a6 11
B90: g3c 128 10
LB4: h2a6 11
B95: c1c
LB5: h2a 521 c1c
u1c 839
B58: g3c 128 10 839
c1c
B57: c1c
B55: u1c 839
B54: g3c 128 10 839
B87: g3c 128 10 839
c1c
c1c
B96: g4 10
g4 10
h2a6 517
c1c
B91: c1d
LB8: h2a5 11 521
g3c 128 10 839
B59: g3c 128 10 839
c1d
B63: r1 42
B62: g3c 128 10 839
h3h
g3c 128 507
u1c
B60: u1c
B61: g3c 128 507
w1g

N

0 100 200
Metres

LEGEND

Site Boundary

Primary Habitat Classification

Heathland and Shrub - Hedgerows
- h2a - Hedgerow Priority Habitat
- h2a5 - Species-rich Native Hedgerow
- h2a6 - Other Native Hedgerow

Cropland - Arable and Horticulture
- c1c - Cereal Crops
- c1d - Non-cereal Crops

Grassland - Neutral Grassland
- g3c - Other Neutral Grassland

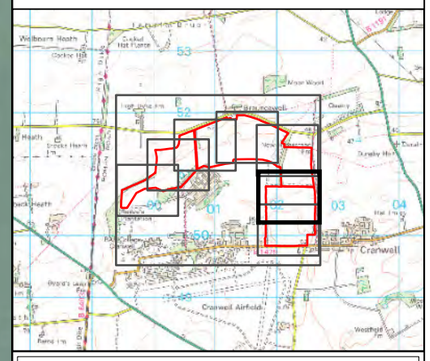
Grassland - Modified Grassland
- g4 - Modified Grassland

Heathland and Shrub - Dense Scrub
- h3h - Mixed Scrub

Rivers and Lakes - Standing Open Water and Canals
- r1 - Standing Open Water and Canal

Urban - Built-up Areas and Gardens
- u1c - Artificial Unvegetated, Unsealed Surface

Woodland and Forest - Broadleaved Mixed and Yew Woodland
- w1f - Lowland Mixed Deciduous Woodland
- w1g - Other Woodland; Broadleaved



trio

SLR

WINDSOCK SOLAR FARM

PRELIMINARY ECOLOGICAL APPRAISAL

UK HABITAT BASELINE

FIGURE 1.7

Scale 1:3,000 @ A3

Date OCTOBER 2026

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Appendix B eDNA Results Letter

Great Crested Newt Survey Report

Windsock Solar Farm, Lincolnshire

Trio Windsock Solar Farm Limited

Client Reference No: CRAN123-3-5

25 November 2025

Client:
[redacted] SLR Consulting
1040079-GP sLR, version 1

RSK ADAS Ltd
Spring Lodge
172 Chester Road
Helsby
WA6 0AR

Tel: [redacted]
Email: [redacted]@adas.co.uk

www.adas.uk

Sample ID: ADAS-9117	
Client Identifier: P1	Grid references/coordinates: Not Supplied
Description: pond water samples in preservative	Condition on Receipt: Good
Date of Receipt : 09/05/2025	Volume: Passed

Determinant	Result	Method	Date of Analysis
Inhibition Control[†]	2 of 2	Real Time PCR	21/05/2025
Degradation Control[§]	Within limits	Real Time PCR	21/05/2025
Great Crested Newt*	0 of 12 (negative)	Real Time PCR	21/05/2025
Negative PCR Control (Nuclease Free Water)	0 of 4	Real Time PCR	As above for GCN
Positive PCR Control (GCN DNA 10^{-4} ng/µL)[#]	4 of 4	Real Time PCR	As above for GCN

Report Prepared by:	[redacted]	eport Issued by:	[redacted]
Signed:		igned:	
Position:	Director: Biotechnology	Position:	MD: Biotechnology
Date of preparation:	21/05/2025	Date of issue:	21/05/2025

eDNA analysis was carried out in accordance with the stipulated methodology found in the Technical Advice Note (WC1067 Appendix 5 Technical Advice Note) published by DEFRA and adopted by Natural England.

** If all PCR controls and extraction blanks give the expected results a sample is considered: negative for GCN if all of the replicates are negative; positive for GCN if one or more of the replicates are positive.*

[†] Recorded as the number of positive replicate reactions at expected C_t value. If the expected C_t value is not

[§] No degradation is expected within time frame of kit preparation, sample collection and analysis.

[#] Additional positive controls (10^{-1}, 10^{-2}, 10^{-3} ng/µL) are also routinely run, results not shown here.

Appendix 1: Interpretation of results

Sample Condition

Upon sample receipt we score your samples according to quality: good, low sediment, medium sediment, high sediment, white precipitate, and presence of algae.

There are three reasons as to why sediment should be avoided:

1. It is possible for DNA to persist within the sediment for longer than it would if it was floating in the water which could lead to a false positive result i.e. in this case GCN not recently present but present a long time ago
2. In some cases sediment can cause inhibition of the PCR analysis used to detect GCN eDNA within samples which could lead to an indeterminate result.
3. In some cases sediment can interfere with the DNA extraction procedure resulting in poor recovery of the eDNA which in turn can lead to an indeterminate result.

Algae can make the DNA extraction more difficult to perform so if it can be avoided then this is helpful.

Sometimes samples contain a white precipitate which we have found makes the recovery of eDNA very difficult. This precipitate can be present in such high amounts that it interferes with the eDNA extraction process meaning that we cannot recover the degradation control (nor most likely the eDNA itself) at sufficient levels for the control to be within the acceptable limits for the assay, therefore we have to classify these type of samples as indeterminate.

What do my results mean?

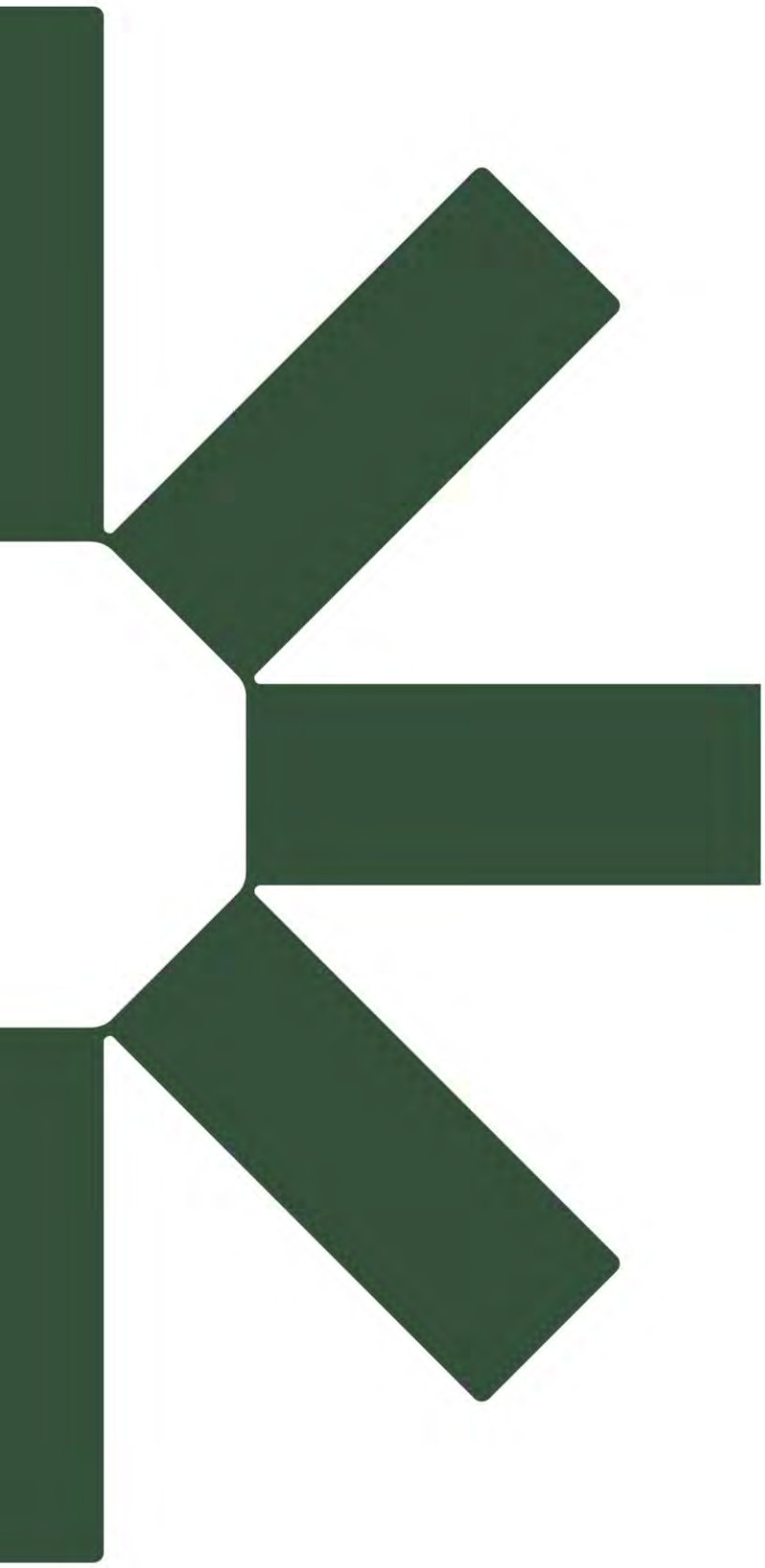
A positive result means that great crested newts are present in the water or have been present in the water in the recent past (eDNA degrades over around 7-21 days).

A negative result means that DNA from the great crested newt has not been detected in your sample.

On occasion an inconclusive result will be issued. This occurs where the DNA from the great crested newt has not been detected but the controls have indicated that either: the sample has been degraded and/or the eDNA was not fully extracted (poor recovery); or the PCR inhibited in some way. This may be due to the water chemistry or may be due to the presence of high levels of sediment in samples which can interfere with the DNA extraction process. A re-test could be performed but a fresh sample would need to be obtained. We have successfully performed re-tests on samples which have had high sediment content on the first collection and low sediment content (through improved sample collection) on the re-test. If water chemistry was the cause of the indeterminate then a re-test would most likely also return an inconclusive result.

The results will be recorded as indeterminate if the GCN result is negative and the degradation result is recorded as:

1. evidence of decay - meaning that the degradation control was outside of accepted limits
2. evidence of degradation or residual inhibition - meaning that the degradation control was outside of accepted limits but that this could have been due to inhibitors not being removed sufficiently by the dilution of inhibited samples (according to the technical advice note)



Making Sustainability Happen

Appendix H

Windsock
Solar Farm

APPENDIX H:
CULTURAL HERITAGE FIGURES AND STAGE 1 SETTING ASSESSMENT

Contents:

Cultural Heritage Figure:

- Figure 1
- Figure 2
- Figure 3
- Figure 4
- Figure 5

Stage 1 Setting Assessment

APPENDIX H:
CULTURAL HERITAGE FIGURES

493000 494000 495000 496000 497000 498000 499000 500000 501000 502000 503000 504000 505000 506000 507000 508000 509000

357000 356000 355000 354000 353000 352000 351000 350000 349000 348000 347000 346000 345000

NAVENBY CP
NORTH KESTEVEN DISTRICT
WELBOURN CP
LEADENHAM CP
FULBECK CP
CAYTHORPE CP
NORTH RAUCEBY CP
SOUTH RAUCEBY CP
CARLTON SCROOP CP
ANCASTER CP
ROXHOLM CP
DIGBY CP
LEASINGHAM CP
SLEAFORD CP
SLEAFORD
DORRINGTON
RUSKINGTON
KIRKBY LA THORPE

Legend:

- Site boundary
- 1km study area
- 5km study area
- Solar PV development, BESS and Substation screening ZTV
- Visibility
  - Both may be visible
  - Solar PV modules
  - Substation/BESS area only
- Listed Buildings
- Grade
  - I
  - II
  - II*
- Scheduled Monuments
- Conservation Areas
- Registered Parks and Gardens

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

North Hykeham
Woodhall Spa
Coningsby
Newark on Trent
Sleaford
Grantham

Rev	Date	Description	Drn	Chk	App
02	15/10/2026	CH ZTV	LN	DL	HH

Windsock Solar Farm

RSK Windsock Solar Farm

TITLE: Appendix H:
Figure 1: Designated heritage assets and ZTV used in the assessment

ID: Figure 1_

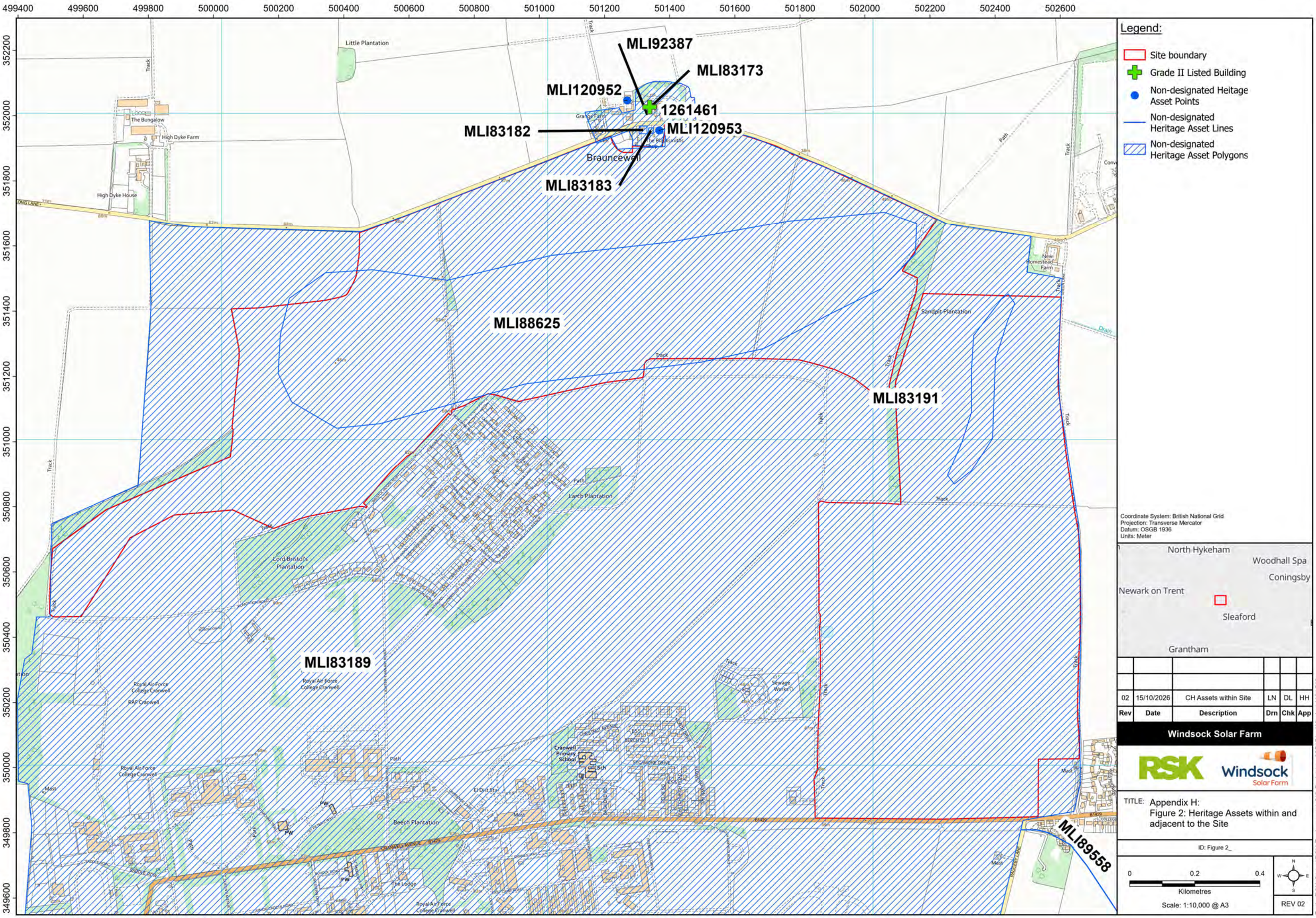
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N W E S

REV 02

Path: RSK Group\RSK Environment GIS Projects - 665151 - Windsock\01GIS

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Legend:

- Site boundary
- Grade II Listed Building
- Non-designated Heitage Asset Points
- Non-designated Heritage Asset Lines
- Non-designated Heritage Asset Polygons

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
02	15/10/2026	CH Assets within Site	LN	DL	HH

Windsock Solar Farm

RSK Windsock Solar Farm

TITLE: Appendix H:
Figure 2: Heritage Assets within and adjacent to the Site

ID: Figure 2_

0 0.2 0.4
Kilometres

Scale: 1:10,000 @ A3

REV 02

Path: RSK Group\RSK Environment GIS Projects - 665151 - Windsock\01GIS

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498500 499000 499500 500000 500500 501000 501500 502000 502500 503000 503500

353000 352500 352000 351500 351000 350500 350000 349500 349000

SB00302
SB00301
SB00303
1261461
SB00304
SB00300
Brauncewell
SB00298
SB00299
1254079
1254080
Byard's Leap
SB00360
SB00361
SB00362
SB00363
SB00359
1254155
SB00358
1254081
1254082
1009224
1254166
1254083
Cranwell

Legend:

- Site boundary
- 1km study area
- Locally Listed Buildings
- Scheduled Monuments

Listed Buildings

Grade

- I
- II
- II*

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

North Hykeham
Woodhall Spa
Coningsby
Newark on Trent
Sleaford
Grantham

Rev	Date	Description	Drn	Chk	App
02	15/10/2026	CH Desig LLB 1km	LN	DL	HH

Windsock Solar Farm

RSK Windsock Solar Farm

TITLE: Appendix H:
Figure 3: Designated heritage assets and locally listed buildings within 1km

ID: Figure 3_

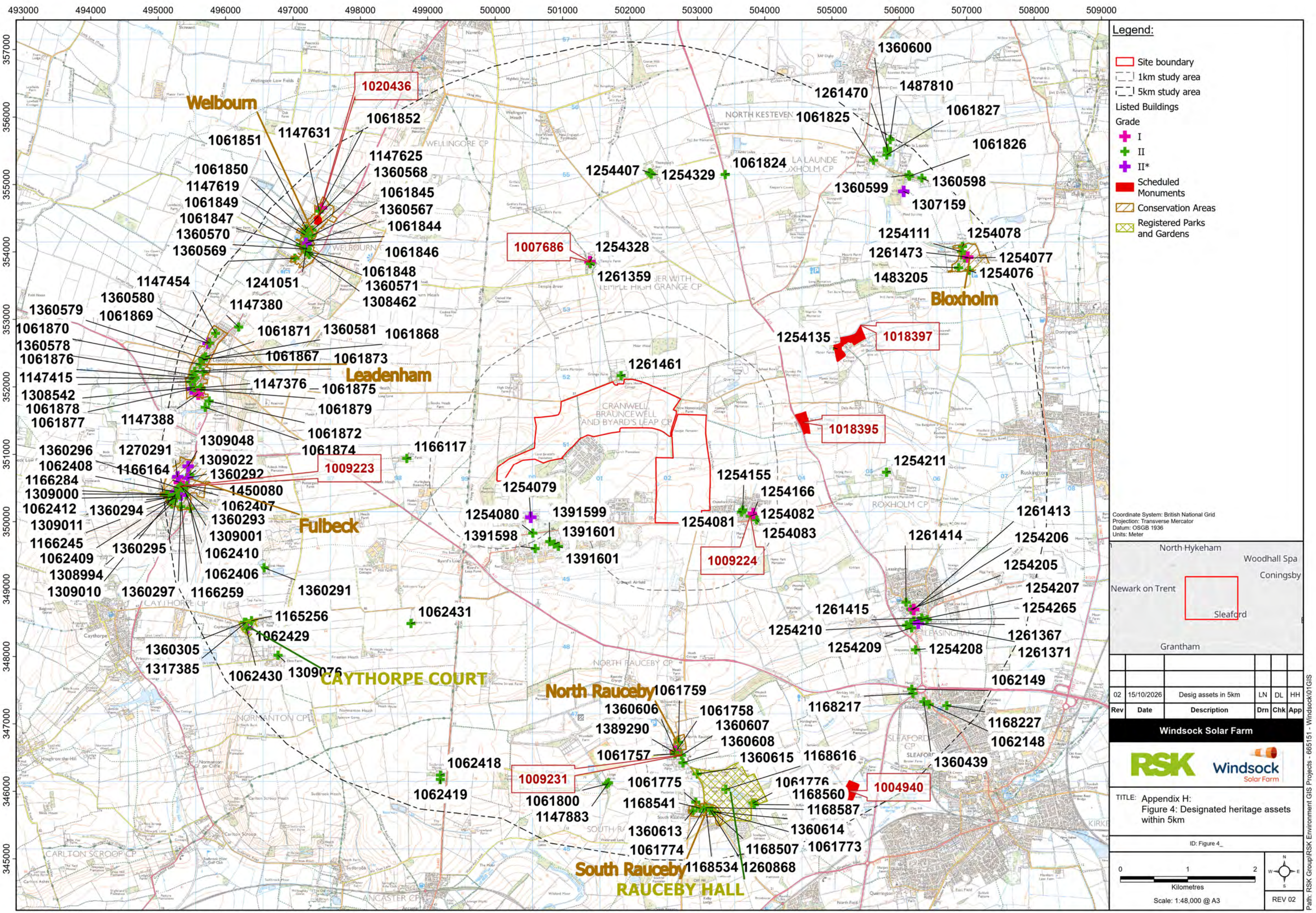
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Kilometres

Scale: 1:16,000 @ A3

REV 02

Path: RSK Group\RSK Environment GIS Projects - 665151 - Windsock\01GIS

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498500 499000 499500 500000 500500 501000 501500 502000 502500 503000 503500

353000 352500 352000 351500 351000 350500 350000 349500 349000

MLI81837
MLI81845
MLI81843
MLI81841
MLI98236
MLI81848
MLI81840
MLI81842
MLI81849
MLI81844
MLI81846
MLI81847
MLI91005
MLI120952
MLI92387
MLI83173
MLI86688
MLI120951
MLI83182
MLI120953
Braunceweil
MLI83183
MLI83184
MLI86621
MLI88625
MLI120955
MLI83191
MLI120956
MLI60638
MLI89505
MLI83000
MLI83189
MLI120957
MLI94172
MLI89249
MLI80352
MLI126816
MLI89251
MLI89287
MLI60390
MLI89250
MLI89500
MLI92363
MLI120958
MLI89252
MLI89503
MLI89501
MLI60276
Byard's Leap
MLI84445
MLI84444
MLI89558
MLI84443
MLI60303

Legend:

- Site boundary
- 1km study area
- Non-designated Heritage Assset Polygons
- Non-designated Heritage Assset Lines
- Non-designated Heritage Assset Points

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

North Hykeham
Woodhall Spa
Coningsby
Newark on Trent
Sleaford
Grantham

Rev	Date	Description	Drn	Chk	App
02	15/10/26	NDA in 1km	LN	DL	HH

Windsock Solar Farm

RSK Windsock Solar Farm

TITLE: Figure 5:
Non-designated heritage assets within 1km of the Site

ID: Figure 5_

0 0.3 0.6
Kilometres
Scale: 1:16,000 @ A3

N W E S

REV 02

Path: RSK Group\RSK Environment GIS Projects - 665151 - Windsock\01GIS

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APPENDIX H:
CULTURAL HERITAGE STAGE 1 SETTING ASSESSMENT

Table 1: Assets within the Site, scoped into assessment

Ref	Name	Description	E	N	Status	Period	Status
MLI83189	RAF Cranwell	AIRFIELD, AIRCRAFT OBSTRUCTION	500964	349889	NDA	First World War to 21st Century	Non-designated
MLI83191	Prehistoric cropmark boundary ditch, south of New Farm	BOUNDARY DITCH	502332	351155	NDA	Later Prehistoric	Non-designated
MLI88625	Probable modern cropmark and earthwork aircraft obstruction, Brauncewell	AIRCRAFT OBSTRUCTION	501154	351366	NDA	Second World War	Non-designated
MLI120956	Unnamed farmstead, Cranwell, Brauncewell and Byard's Leap	FARMSTEAD	500002	350965	NDA	Post Medieval to Mid 20th Century	Non-designated

Table 2: Locally listed assets within 1km

Ref	Name	E	N	Status	Cultural Significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
SB00056	Manor Farm, 19 COLLEGE ROAD CRANWELL	503162	349805	Local List	Architectural	Local village setting.	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance . Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
SB00358	12 Sleaford Road, Cranwell	503381	349917	Local List	Architectural	Local village setting.	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance . Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
SB00362	2,4 and 6 School Lane, Cranwell	503193	349988	Local List	Architectural	Local village setting.	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance . Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
SB00363	School, School Lane, Cranwell	503116	349981	Local List	Architectural	Local village setting.	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance . Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
SB00359	38 Sleaford Road, Cranwell	503598	349929	Local List	Architectural	Local village setting.	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance . Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
SB00298	Farm buildings Opposite Quarry, HILL TOP LONG LANE BRAUNCEWELL	502552	351572	Local List	Architectural	Landscape that contributes to significance potentially includes the Site	No	Agricultural context potentially affected	Site visit recommended to inform detailed assessment	Yes
SB00304	Lodge Cottage, Lincoln Road. THE BLACKSMITHS SHOP LONG LANE BRAUNCEWELL	501292	351953	Local List	Architectural	Landscape that contributes to significance potentially includes the Site	No	Associated with Brauncewell Lodge	Site visit recommended to inform detailed assessment	Yes

Ref	Name	E	N	Status	Cultural Significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
SB00302	Paliog Cottage, Lincoln Road. PALING COTTAGE LONG LANE BRAUNCEWELL	501255	351945	Local List	Architectural	Landscape that contributes to significance potentially includes the Site	No	Associated with Brauncewell Lodge	Site visit recommended to inform detailed assessment	Yes
SB00303	Cottage, Lincoln Road. LODGE COTTAGE LONG LANE BRAUNCEWELL	501274	351950	Local List	Architectural	Landscape that contributes to significance potentially includes the Site	No	Associated with Brauncewell Lodge	Site visit recommended to inform detailed assessment	Yes
SB00361	25 to 31 (odd) North Road, Cranwell	503123	350042	Local List	Architectural	Local village setting.	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance . Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
SB00300	Grange Farm Cottages, Lincoln Road, 3 GRANGE FARM COTTAGE LONG LANE BRAUNCEWELL	501162	351942	Local List	Architectural	Landscape that contributes to significance potentially includes the Site	No	Associated with Brauncewell Lodge	Site visit recommended to inform detailed assessment	Yes
SB00301	Grange Farm Cottages, Lincoln Road, Brauncewell	501143	351935	Local List	Architectural	Landscape that contributes to significance potentially includes the Site	No	Associated with Brauncewell Lodge	Site visit recommended to inform detailed assessment	Yes
SB00360	Oxenford Farm. WILLOW LANE CRANWELL	503057	350144	Local List	Architectural	Landscape that contributes to significance potentially includes the Site	No	Agricultural context potentially affected	Site visit recommended to inform detailed assessment	Yes
SB00299	House Opposite the Quarry. HILL TOP LONG LANE BRAUNCEWELL	502872	351548	Local List	Architectural	Local village setting.	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance . Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Table 3: Designated assets within 1km

Ref	Name	E	N	Status	Cultural Significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1009224 / 1254082	Cranwell village cross	503230	349937	SM / LB II	Architectural / Historical	Setting that contributes to significance comprises Cranwell village only.	No	Wider landscape makes no contribution to significance. Architectural and Historical significance unaffected. No relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254166	CHURCH OF ST ANDREW	503277	349976	LB I	Architectural / Historical / Communal	No spire or tower; not a prominent church visible over long distances such that long distance views contribute to its cultural significance. Local village setting, with no intervisibility with the Site.	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance. Architectural, historical and communal significance unaffected. Change within the Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254079	COLLEGE HALL AT ROYAL AIR FORCE CRANWELL	499973	349919	LB II*	Architectural / Historical	Axially aligned N-S with important views from and towards the building on this alignment, and manicured front lawn.	No	Historic link to airfield in north. Suggested it once had designed views from the mess and the airfield within the Site although it is not clear if these are still visible. Architectural and historical significance unaffected. Wider setting that contributes to significance comprises RAF Cranwell, none of which remains to be experienced within the Site. Change within Site could affect monument's cultural significance.	Site visit recommended to inform detailed assessment	Yes
1254080	GATES AND GATE LODGES TO COLLEGE HALL AT RAF CRANWELL	500004	349685	LB II	Architectural	Important viewpoint for 1254079 College (Grade II*), which would be unaffected as it lies outside the ZTV. Wider setting that contributes to significance comprises the extant elements of RAF Cranwell.	No	Wider landscape makes no contribution to significance . Architectural significance and group value unaffected. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254081	PAIR OF OUTBUILDINGS TO REAR OF NOS 17-23	503100	349996	LB II	Architectural	Local village setting.	No	Wider landscape makes no contribution to significance . Architectural significance unaffected. No historical or visual	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural Significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
								relationship with Site. Change within Site would not affect monument's cultural significance.		
1254083	HALL FARMHOUSE	503324	349882	LB II	Architectural	Relationship with agricultural land to the south of the farmhouse that provides contextual setting	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance . Architectural significance unaffected. Relationship with agricultural land to the south of the farmhouse that provides contextual setting unaffected. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254155	17-23, NORTH ROAD	503119	350028	LB II	Architectural	Local village setting.	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Wider landscape makes no contribution to significance . Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1261461 / MLI92387	BRAUNCEWELL LODGE. Farmhouse. Late C17 altered early C19. Coursed rubble with ashlar dressings / Brauncewell Lodge park, Brauncewell	501313	352020	LB II	Architectural	Landscape that contributes to significance potentially includes the Site	No	HER indicates that historic park providing contextual setting to lodge lies entirely outside the Site.	Site visit recommended to inform detailed assessment	Yes

Table 4: Designated assets within 2km from Site

Ref	Name	E	N	Status	Cultural Significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1007686	Remains of preceptory church, Temple Bruer	500840	353714	SM	Archaeological / Architectural / Historical / Communal	Setting that contributes to significance includes group value with adjacent listed buildings and approaches along Temple Road.	Yes	Wider landscape makes no contribution to significance. Architectural, historical, communal and archaeological significance unaffected. The SM area overlaps with the screening ZTV for a small part of its southern border. Sections of approaches along Temple Road do lie within the ZTV; however, views would remain unaffected by development within the Site as it lies in the opposite direction to the monument grouping. Prominence of church tower on approach would not be challenged by proposed development. No historical or visual relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1018395	Dunsby medieval village	504008	351343	SM	Archaeological / Historical	Landscape that contributes to significance potentially includes the Site	Yes	It is possible that the medieval village's hinterland extended 2km to the west and included the Site.	Historical research and site visit recommended to inform detailed assessment	Yes
1254328	CHURCH TOWER TO THE NORTH OF TEMPLE FARMHOUSE	500851	353709	LB I	Architectural / Historical / Communal	Wider landscape or long-distance views contribute to asset significance. Setting that contributes to significance includes group value with adjacent listed buildings and approaches along Temple Road.	No	Architectural, historical, communal and archaeological significance unaffected. Although SM itself lies outside the ZTV, parts of approaches along Temple Road do lie within the ZTV; however, views would remain unaffected by development within the Site as it lies in the opposite direction to the monument grouping. Prominence of church tower on approach would not be challenged by proposed development. No historical or visual relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural Significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1166117	RYLAND GRANGE FARMHOUSE	498134	350795	LB II	Architectural / Historical	Agricultural context	No	Wider landscape makes no contribution to significance. No intervisibility with the Site, with no important views looking towards the site within the ZTV. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1261359	TEMPLE FARMHOUSE	500857	353679	LB II	Architectural / Historical	Agricultural context	No	Wider landscape makes no contribution to significance. Architectural and historical significance unaffected. Preceptory church and tower, to a degree, although they are not contemporaneous, add a degree of interest through palimpsest nature of the site. These relationships would remain unaffected by the proposed development. Setting that contributes to significance comprises surrounding agricultural land, which provides context and would remain unaffected. No historical or visual relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1391598	BUILDING 16 (IOT HEADQUARTERS)	500039	349456	LB II	Architectural / Historical	Setting that contributes to significance comprises extant elements of RAF Cranwell.	No	Wider landscape makes no contribution to significance. Architectural and historical significance unaffected. No intervisibility with the Site, with no important views looking towards the site within the ZTV. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1391599	BUILDING 259 (STATION HEADQUARTERS)	500253	349560	LB II	Architectural / Historical	Setting that contributes to significance comprises extant elements of RAF Cranwell.	No	Wider landscape makes no contribution to significance. Architectural and historical significance unaffected. No intervisibility with the Site, with no important views looking towards the site within the ZTV. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1391601	BUILDING 279 (YORK HOUSE)	500385	349488	LB II	Architectural / Historical	Setting that contributes to significance comprises extant elements of RAF Cranwell.	No	Wider landscape makes no contribution to significance. Architectural and historical significance unaffected. No intervisibility with the Site, with no important views looking towards the site within the ZTV. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Table 5: Designated assets up to 5km from Site

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1000972	CAYTHORPE COURT	495783	348272	RPG II	Artistic / Historical	**Wider landscape or long-distance views contribute to asset significance**	No	RPG designed landscape setting to Grade II* Caythorpe Court, Grade II Garden Terraces, gate lodges and stables. Other than garden terraces, designed landscape comprises woodland planting, with some non-listed buildings. Designed views from the main house are over garden terraces only. Long distance views beyond the RPG boundary do not contribute to cultural significance. No intervisibility with the Site, and no historical or visual relationship with Site. Change within Site would not affect monument's cultural significance, or group value with listed buildings.	No effect predicted upon asset significance	No
1000987	RAUCEBY HALL	502918	345820	RPG II	Artistic / Historical	**Wider landscape or long-distance views contribute to asset significance**	Yes	RPG designed landscape setting to Grade II South Rauceby Hall and lodge. Designed landscape comprises open parkland planting. Long distance views beyond the RPG boundary do not contribute to cultural significance. The ZTV suggests very small zones of potential intervisibility with the Site at the northern boundary which would, at most, be glimpsed views of the Site through trees. There is no historical relationship with Site. Change within Site would not affect monument's cultural significance, or group value with listed buildings. Woodland blocks provide screening at the perimeter of the RPG.	No effect predicted upon asset significance	No
1009223	Fulbeck village cross	494774	350378	SM	Architectural / Historical	Setting that contributes to significance comprises village only. Wider landscape makes no contribution to significance	No	No relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1009231	North Rauceby village cross	502208	346390	SM	Architectural / Historical	Setting that contributes to significance comprises village only. Wider landscape makes no contribution to significance	No	No relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1020436	Castle Hill ringwork	496812	354323	SM	Archaeological	**Wider landscape or long-distance views contribute to asset significance**	No	Archaeological significance unaffected. Setting of ringwork compromised by modern village of Welbourn. Local prominence in views towards the monument would remain unaffected. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1004940	Settlement and enclosure, Holdingham	504670	345763	SM	Archaeological	Setting of settlement that contributes to cultural significance comprises adjacent River Slea, as a water source to the settlement. Wider landscape makes no contribution to significance	No	Archaeological significance unaffected. Setting of settlement that contributes to cultural significance comprises adjacent River Slea, as a water source to the settlement; this relationship would remain unaffected. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1018397	Brauncewell medieval village	504708	352563	SM	Architectural / Historical	Setting of settlement that contributes to cultural significance comprises adjacent agricultural land. Wider landscape makes no contribution to significance	Yes	Archaeological significance unaffected. Setting of settlement that contributes to cultural significance comprises adjacent agricultural land; this relationship would remain unaffected. Areas within west and east of SM have intervisibility with Site but at over 2km distance the Site is unlikely to have been within the hinterland of the medieval village. Change within Site is unlikely to affect the monument's cultural significance.	No effect predicted upon asset significance	No
4581	Leadenham	495108	352189	CA	Architectural / Historical	Wider landscape potentially contributes to CA character	No	No intervisibility or historical relationship with Site. There is no potential for the proposed development to change the character of the conservation area	No effect predicted upon asset significance	No
4597	Welbourn	496730	354125	CA	Architectural / Historical	Wider landscape potentially contributes to CA character	No	No intervisibility or historical relationship with Site. There is no potential for the proposed development to change the character of the conservation area	No effect predicted upon asset significance	No
4568	Bloxholm	506486	353747	CA	Architectural / Historical	Wider landscape potentially contributes to CA character	Yes. Screening ZTV indicates intervisibility with Site from treetops only, which	No intervisibility or historical relationship with Site. There is no potential for the proposed development to change the character of the conservation area	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
							is not a relevant viewpoint.			
4594	South Rauceby	502580	345550	CA	Architectural / Historical	Wider landscape potentially contributes to CA character	No	No intervisibility or historical relationship with Site. There is no potential for the proposed development to change the character of the conservation area	No effect predicted upon asset significance	No
4587	North Rauceby	502176	346537	CA	Architectural / Historical	Wider landscape potentially contributes to CA character	Yes. Screening ZTV indicates intervisibility with Site from treetops only, which is not a relevant viewpoint.	No long distance views from Site. Views of Site do not contribute to character of CA. No intervisibility or historical relationship with Site. There is no potential for the proposed development to change the character of the conservation area	No effect predicted upon asset significance	No
	Fulbeck			CA	Architectural / Historical	Wider landscape potentially contributes to CA character	No	No intervisibility or historical relationship with Site. There is no potential for the proposed development to change the character of the conservation area	No effect predicted upon asset significance	No
1061852	CHURCH OF ST CHAD	496868	354510	LB I	Architectural / Historical / Communal	**Wider landscape or long-distance views contribute to asset significance**	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance, or local prominence of the church within its parish setting.	No effect predicted upon asset significance	No
1147388	CHURCH OF ST SWITHIN	495038	351747	LB I	Architectural / Historical / Communal	**Wider landscape or long-distance views contribute to asset significance**	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance, or local prominence of the church within its parish setting.	No effect predicted upon asset significance	No
1166164	CHURCH OF ST NICHOLAS	494756	350438	LB I	Architectural / Historical / Communal	**Wider landscape or long-distance views contribute to asset significance**	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance, or local prominence of the church within its parish setting.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1261413	CHURCH OF ST ANDREW	505659	348553	LB I	Architectural / Historical / Communal	**Wider landscape or long-distance views contribute to asset significance**	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance, or local prominence of the church within its parish setting.	No effect predicted upon asset significance	No
1261473	CHURCH OF ST MARY	506461	353776	LB I	Architectural / Historical / Communal	**Wider landscape or long-distance views contribute to asset significance**	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance, or local prominence of the church within its parish setting.	No effect predicted upon asset significance	No
1360606	PARISH CHURCH OF ST PETER	502116	346448	LB I	Architectural / Historical / Communal	**Wider landscape or long-distance views contribute to asset significance**	No. Screening ZTV indicates intervisibility from tower only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance, or local prominence of the church within its parish setting.	No effect predicted upon asset significance	No
1061869	THE OLD HALL	495184	352501	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	Village setting. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061877	LEADENHAM HOUSE	494936	351823	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	Important views looking east along an avenue towards house lie outside the ZTV. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062408	ERMINE HOUSE	494697	350296	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	Village setting. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1062429	CAYTHORPE COURT	495769	348273	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	RPG designed landscape setting to Grade II* Caythorpe Court, Grade II Garden Terraces, gate lodges and stables. Other than garden terraces, designed landscape comprises woodland planting, with some non-listed buildings. Designed views from the main house are over garden terraces only. Long distance views beyond the RPG boundary do not contribute to cultural significance. No intervisibility with the Site, and no historical or visual relationship with Site. Change within Site would not affect monument's cultural significance, or group value with listed buildings.	No effect predicted upon asset significance	No
1166259	FULBECK MANOR	494784	350249	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	Village setting. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1261371	THE MANOR	505726	348348	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	Village setting. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1270291	FULBECK HALL	494733	350518	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	Village setting. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1307159	Church of St Hybald	505510	354754	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance, or local prominence of the church within its parish setting.	No effect predicted upon asset significance	No
1309048	FULBECK HOUSE	494888	350674	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	Village setting. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360292	GATES OF FULBECK HALL	494884	350501	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	Group value with Fulbeck Hall. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360567	WELBOURN MANOR	496637	353982	LB II*	Architectural	**Wider landscape or long-distance views contribute to asset significance**	No	Village setting. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1061757	LYCH GATE TO CHURCH OF ST PETER	502111	346410	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061758	THE OLD VICARAGE	502148	346473	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061759	19, MAIN STREET	502167	346583	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061773	23 AND 25, MAIN STREET	502692	345552	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061774	HILL HOUSE	502544	345601	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061775	70, MAIN STREET	502422	345694	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061776	FARMBUILDINGS AT HALL FARM	503270	345681	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1061800	FARMBUILDINGS AT LODGE FARM	501098	345962	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061824	MILE POST 20 METRES SOUTH OF ASHBY LODGE FARM	502859	355004	LB II	Architectural	Setting that contributes to significance comprises adjacent road only. Wider landscape makes no contribution to significance	Yes	No relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061825	HOME FARMHOUSE	505062	355215	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061826	PUMP SOUTH OF NO 24	505596	354978	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061827	ASHBY HALL	505259	355293	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061844	STABLES TO WELBOURN MANOR	496669	354022	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061845	WELLAND COTTAGE	496729	354097	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061846	THE OLD HOUSE	496670	353951	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1061847	BURTTS COTTAGE	496658	353897	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061848	MYRTLE COTTAGE AND CO-OPERATIVE COTTAGES	496630	353859	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061849	BLACKSMITH'S FORGE	496557	353959	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061850	27, HIGH STREET	496636	354148	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061851	WELBOURN HOUSE	496647	354194	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061867	FIELD HOUSE	494985	352084	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061868	49, HIGH STREET	495104	352264	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061870	THE GEORGE HOTEL	495067	352188	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061871	HOME FARMHOUSE	495146	352300	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061872	THE KENNELS	495201	351645	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1061873	WELL HEAD	495112	352072	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061874	SOUTH GATE TO LEADENHAM HOUSE	495142	351551	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061875	LYCHGATE AND WALLS	495060	351817	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061876	HIGH HOUSE	494993	351989	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061878	THE RECTORY	494988	351848	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1061879	COACH-HOUSE AT THE RECTORY	494978	351815	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062148	1, HOLDINGHAM	505889	347144	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062149	OUTBUILDINGS TO NORTH OF ANNA HOUSE FARMHOUSE	505629	347372	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062406	WASHDYKE FARM	494921	350050	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062407	MANOR FARM	494809	350393	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1062409	Apple Cross House	494686	350206	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062410	GATEWAY TO FULBECK MANOR	494860	350253	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062412	THE OLD FARM HOUSE	494584	350227	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062418	HEATHLAND HOUSE	498633	346093	LB II	Architectural	Within working farm. No design elements to setting identified. Enclosed by trees. Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062419	SUDBROOK HOUSE	498632	346031	LB II	Architectural	Within working farm. No design elements to setting identified. Enclosed by trees. Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1062430	GARDEN TERRACES, CAYTHORPE COURT	495754	348265	LB II	Architectural	RPG designed landscape setting to Grade II* Caythorpe Court, Grade II Garden Terraces, gate lodges and stables. Other than garden terraces, designed landscape comprises woodland planting, with some non-listed buildings. Designed views from the main	No	No intervisibility with the Site, and no historical or visual relationship with Site. Change within Site would not affect monument's cultural significance, or group value with listed buildings.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
						house are over garden terraces only. Long distance views beyond the RPG boundary do not contribute to cultural significance.				
1062431	BARNS FARM	498196	348344	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1147376	MANOR HOUSE	495079	351842	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1147380	The Old Station House	495638	352743	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1147415	GATEWAY TO LEADENHAM HOUSE	494970	351972	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1147454	5 AND 7, STATION TERRACE	495295	352648	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1147619	TREVELLA	496620	354107	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1147625	BARN AT GREENGATES	496621	354178	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1147631	WELBOURN FARMHOUSE	496834	354461	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1147883	LODGE FARM	501127	345982	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1165256	STABLES AT CAYTHORPE COURT	495830	348387	LB II	Architectural	RPG designed landscape setting to Grade II* Caythorpe Court, Grade II Garden Terraces, gate lodges and stables. Other than garden terraces, designed landscape comprises woodland planting, with some non-listed buildings. Designed views from the main house are over garden terraces only. Long distance views beyond the RPG boundary do not contribute to cultural significance.	No	No intervisibility with the Site, and no historical or visual relationship with Site. Change within Site would not affect monument's cultural significance, or group value with listed buildings.	No effect predicted upon asset significance	No
1166245	NORTH VIEW	494702	350207	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1166284	ERMINE COTTAGE	494550	350261	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1168217	ANNA HOUSE FARMHOUSE	505648	347308	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1168227	13 AND 14, HOLDINGHAM	506150	347126	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1168507	SAWYER'S HOUSE	502662	345571	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1168534	THE BUSTARD INN	502574	345599	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1168541	OLD SCHOOL HOUSE	502485	345604	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1168560	HALL FARMHOUSE	503291	345660	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1168587	FORMER BREWHOUSE AND STABLES TO BUSTARD INN	502572	345613	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1168616	SOUTH RAUCEBY HALL	502867	345883	LB II	Architectural	No intervisibility with the Site, and no historical or visual relationship with Site. Change within Site would not affect monument's cultural significance, or group value with listed	No	RPG designed landscape setting to Grade II South Rauceby Hall and lodge. Designed landscape comprises open parkland planting. Long distance views beyond the RPG boundary do not contribute to cultural significance. buildings. Screening ZTV indicates visibility from tree tops only, which are not a relevant viewpoint. Woodland blocks provide screening at the perimeter of the RPG	No effect predicted upon asset significance	No
1241051	K6 TELEPHONE KIOSK ON THE VILLAGE GREEN	496641	353917	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254076	THE ROUND HOUSE	506484	353582	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254077	GATEPIERS 20 METRES WEST OF CHURCH OF ST MARY	506416	353764	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
							only, which is not a relevant viewpoint.			
1254078	STABLE BLOCK AT BLOXHOLM HALL	506382	353934	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254111	BLOXHOLM HALL FARMHOUSE	506369	353857	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254135	CHURCH OF ALL SAINTS	504526	352418	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254205	HALL FARMHOUSE	505616	348556	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254206	MILEPOST 3 METRES SOUTH OF HALL FARMHOUSE	505634	348544	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254207	LEASINGHAM HALL	505659	348381	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254208	THE OLD RECTORY	505686	347954	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254209	OBELISK 4 METRES SOUTH EAST OF NUMBER 4, ROOKERY LANE	505627	348280	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254210	WELLHEAD 10 METRES NORTH OF ROOKERY COTTAGE	505551	348318	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1254211	DOVECOTE, 15 METRES NORTH WEST OF ROXHOLM HALL	505255	350587	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254265	WELLHEAD TO REAR OF NO 18	505858	348402	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254329	THOMPSON'S BOTTOM FARMHOUSE	501760	355011	LB II	Architectural	Wider landscape makes no contribution to significance. Well screened by woodlands within curtilage and over the road from the farmhouse. Contextual relationship with surrounding agricultural land	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Contextual relationship with surrounding agricultural land would remain unaffected. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1254407	STABLES AND COACH HOUSE AT THOMPSON'S BOTTOM FARMHOUSE	501737	355031	LB II	Architectural	Wider landscape makes no contribution to significance. Well screened by woodlands within curtilage and over the road from the farmhouse. Contextual relationship with surrounding agricultural land	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	Contextual relationship with surrounding agricultural land would remain unaffected. No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1260868	K6 KIOSK OPPPOSITE NUMBER 34	502637	345575	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1261367	HORSE MONUMENT 10 METRES NORTH WEST OF APRIL COTTAGE	505612	348344	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1261414	THE OLD HOUSE	505546	348660	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1261415	HOMELEIGH LLANBERIS	505778	348429	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1261470	ICEHOUSE 20 METRES NORTH OF ASHBY HALL, STABLE BLOCK	505268	355391	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1308462	STABLE TO REAR OF GREYSTONE COTTAGE	496684	353817	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1308542	THE STABLES TO LEADENHAM HOUSE	494924	351930	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1308994	WHEELWRIGHT'S HOUSE	494645	350116	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1309000	BARN AT THE OLD FARM HOUSE	494586	350255	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1309001	HARE AND HOUNDS PUBLIC HOUSE	494799	350356	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1309010	HOLLY COTTAGE	494702	350262	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1309011	THE READING ROOM COTTAGE	494700	350236	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1309022	GATEWAY OPPOSITE FULBECK HALL	494912	350550	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1309076	HOUSE AT KESTEVEN FARM INSTITUTE	496222	347873	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1317385	GATE LODGE CAYTHORPE COURT	495747	348362	LB II	Architectural	Wider landscape makes no contribution to significance	No	RPG designed landscape setting to Grade II* Caythorpe Court, Grade II Garden Terraces, gate lodges and stables. Other than garden terraces, designed landscape comprises woodland planting, with some non-listed buildings. Designed views from the main house are over garden terraces only. Long distance views beyond the RPG boundary do not contribute to cultural significance. No intervisibility with the Site, and no historical or visual relationship with Site. Change within Site would not affect monument's cultural significance, or group value with listed buildings.	No effect predicted upon asset significance	No
1360291	BLEAK HOUSE	496016	349171	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360293	CROSS BASE AND SHAFT	494775	350378	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360294	THE OLD READING ROOM	494695	350225	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360295	TOAD HALL	494713	350205	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1360296	LAMB'S COTTAGE	494748	350349	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360297	OLD HALL FARM HOUSE	494780	350076	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360305	GATE AND FLANKING WALLS, CAYTHORPE COURT	495724	348362	LB II	Architectural	RPG designed landscape setting to Grade II* Caythorpe Court, Grade II Garden Terraces, gate lodges and stables. Other than garden terraces, designed landscape comprises woodland planting, with some non-listed buildings. Designed views from the main house are over garden terraces only. Long distance views beyond the RPG boundary do not contribute to cultural significance.	No	No intervisibility with the Site, and no historical or visual relationship with Site. Change within Site would not affect monument's cultural significance, or group value with listed buildings.	No effect predicted upon asset significance	No
1360439	12, HOLDINGHAM	505810	347186	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360568	WHEELWRIGHT COTTAGE	496728	354176	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360569	LONG COTTAGE	496472	353761	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360570	HUNT HOUSE	496617	353896	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1360571	GREYSTONE COTTAGE	496669	353841	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360578	THE FEATHERS	494966	352030	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360579	51, HIGH STREET	495112	352277	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360580	STABLES TO THE OLD HALL	495209	352504	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360581	REDBERRY HOUSE	495118	352255	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360598	2 AND 4, MAIN STREET	505781	354951	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360599	26 AND 28, MAIN STREET	505585	354999	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360600	STABLE BLOCK TO THE NORTH OF ASHBY HALL	505271	355349	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360607	VILLAGE CROSS	502208	346390	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

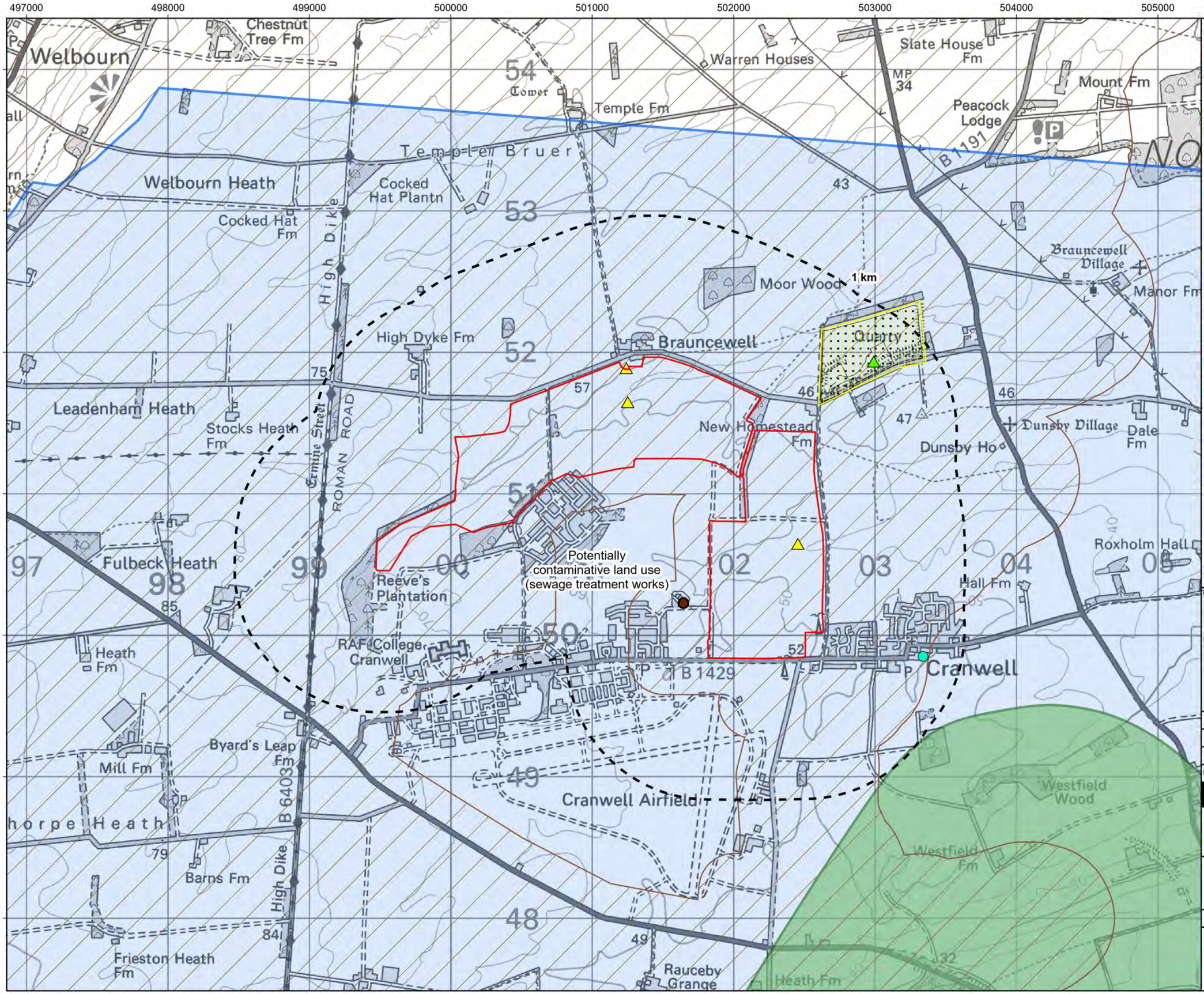
Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
							from roof only, which is not a relevant viewpoint.			
1360608	Snowdrop Cottage	502232	346277	LB II	Architectural	Wider landscape makes no contribution to significance	No. Screening ZTV indicates visibility from roof only, which is not a relevant viewpoint.	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360613	CORNER HOUSE	502380	345564	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360614	BARN AND PIGEONCOTE AT HILL FARM	502696	345551	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1360615	LODGE, GATES AND RAILINGS TO SOUTH RAUCEBY HALL	502444	346111	LB II	Architectural	RPG designed landscape setting to Grade II South Rauceby Hall and lodge. Designed landscape comprises open parkland planting. Long distance views beyond the RPG boundary do not contribute to cultural significance.	No	No intervisibility with the Site, and no historical or visual relationship with Site. Change within Site would not affect monument's cultural significance, or group value with listed buildings. Screening ZTV indicates visibility from tree tops only, which are not a relevant viewpoint. Woodland blocks provide screening at the perimeter of the RPG	No effect predicted upon asset significance	No
1389290	WAR MEMORIAL TO SOUTH OF PARISH CHURCH	502108	346432	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1450080	Fulbeck War Memorial	494869	350386	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Ref	Name	E	N	Status	Cultural significance	Setting Contribution to Significance	ZTV	Setting screening assessment	Likely effects	Scoped in for more detailed assessment
1483205	Walled garden, gate piers and attached gardeners' stores to the south of Bloxholm Hall	506330	353562	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No
1487810	Walled Garden north of Ashby Hall	505312	355488	LB II	Architectural	Wider landscape makes no contribution to significance	No	No intervisibility or relationship with Site. Change within Site would not affect monument's cultural significance.	No effect predicted upon asset significance	No

Appendix I

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APPENDIX I:
LAND AND GROUNDWATER FIGURE



Legend:

- Site boundary
- Land and Groundwater study area
- Operational mineral extraction site (limestone)
- Recorded historical mineral extraction site
- Licenced groundwater abstraction point
- Potentially contaminative land use (sewage treatment works)
- Local Geological Site (Brauncewell Quarry)
- Authorised Landfill Site
- Limestone Mineral Safeguarding Area

Source Protection Zone:

- 2 and 3
- 3

Note:

1. There are no Mineral Safeguarding Areas relating to other minerals within the Site or study area.

2. Recorded historical mineral extraction sites within the Site boundary are shown on this drawing. Off-site recorded historical mineral extraction sites within the study area are not shown on this drawing. See the Preliminary Risk Assessment for further details.

Coordinate System: British National Grid
Projection: Transverse Mercator
Datum: OSGB 1936
Units: Meter

Rev	Date	Description	Drn	Chk	App
02	30/09/2026	Updated Title	FA	FA	HH
01	28/09/2026	Updated RLB	FA	FA	HH
00	01/09/2026	Land and Groundwater	DL	FC	FC

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TITLE: Appendix I:
Figure 1:
Land and Groundwater Constraints

ID: P665151_Land_Groundwater

0 0.5 1
Kilometres
Scale: 1:25,000 @ A3

REV 02

Path: C:\Users\FAdair\OneDrive - RSK Group\Shortcuts\RSK Environment GIS Projects - 665151 - Windsock\01GIS\04Aprx\P665151_Scoping_Land_and_Groundwater_Groundwater.aprx\P665151_Land_Groundwater

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