

---

**Necton Greener Grid Park**  
on behalf of Statkraft UK  
Ecological Assessment Report



Document Control				
Project Name:		Necton Greener Grid Park		
Project Number:		Statk-713-1606		
Report Title:		Ecological Assessment Report		
Issue	Date	Notes	Prepared	Reviewed
V1	27/07/2023	Draft for Client Review	Z Hinchcliffe <i>MRes BSc (Hons.)</i>	J. Stevens <i>BSc (Hons)</i>

This report has been prepared in accordance with the terms and conditions of appointment [on request]. Avian Ecology Ltd. (6839201) cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

# CONTENTS

<b>1</b>	<b>INTRODUCTION .....</b>	<b>1</b>
1.2	Site Overview .....	1
1.3	Scope of Assessment .....	1
1.4	Legislative Framework, Planning Policy and Guidance .....	1
<b>2</b>	<b>METHODOLOGY .....</b>	<b>3</b>
2.1	Desk Study .....	3
2.2	Habitat surveys .....	3
2.3	Breeding Bird Survey.....	4
2.4	Preliminary Bat Roost Assessment .....	5
2.5	Great Crested Newt Presence/Absence surveys .....	6
2.6	Limitations of Surveys .....	7
<b>3</b>	<b>BASELINE .....</b>	<b>8</b>
3.1	Designated Sites for Nature Conservation .....	8
3.2	Priority Habitats – Existing Records.....	9
3.3	Ancient and irreplaceable habitats .....	9
3.4	Habitats .....	9
3.5	Protected and Notable Species .....	10
3.6	Invasive Non-native Species.....	13
<b>4</b>	<b>ASSESSMENT .....</b>	<b>14</b>
4.1	Overview.....	14
4.2	Designated Sites for Nature Conservation .....	14
4.3	Ancient and Irreplaceable Habitats.....	14
4.4	Habitats .....	14

4.5	Biodiversity Net Gain .....	15
4.6	Protected and Notable Species .....	16
<b>5</b>	<b>SUMMARY - ECOLOGY PRIORITY MATRIX.....</b>	<b>20</b>

## **FIGURES**

Figure 1: Habitat Plan

Figure 2: Statutory Designated Sites Plan

Figure 3: Non-statutory Designated Sites Plan

## **APPENDICES**

Appendix 1: Site Photographs

Appendix 2: Breeding Bird Survey Report

Appendix 3: Preliminary Roost Assessment (PRA)

Appendix 4: Great Crested Newt Presence or Absence Survey Report

Appendix 5: Reasonable Avoidance Measures Method Statement

Appendix 6: Biodiversity Management Plan (BMP)

Appendix 7: Biodiversity Net Gain (BNG)

# 1 INTRODUCTION

- 1.1.1 Avian Ecology Ltd. was commissioned by Statkraft UK to undertake an Ecological Assessment in relation to a proposed Greener Grid Park development located on land north-east of Necton, Norfolk (the 'Site').
- 1.1.2 The proposed development includes the construction, operation and subsequent decommissioning of the Greener Grid Park, plus associated infrastructure as illustrated on the *Landscape Mitigation Plan (Drawing N<sup>o</sup>: 12202\_LPM\_GA\_01 (7))*. The Greener Grid Park will be served by an existing access track and new temporary construction track to the west.

## 1.2 Site Overview

- 1.2.1 The Site as illustrated by the red-line application boundary shown on **Figure 1** is approximately 11.75ha, located adjacent to the south of the operational Necton Onshore Substation at approximate central grid reference TF 88826 10460.
- 1.2.2 The Site comprises an area of arable farmland with field boundaries nearby hedgerows, trees, pockets of broadleaved plantation woodland and ditches. The A47 runs along the western boundary of the access track.
- 1.2.3 In the wider context the Site is surrounded by further extensive areas of arable and pastoral farmland and urban settlements with the village of Necton.

## 1.3 Scope of Assessment

- 1.3.1 The objectives of the Ecological Assessment presented within this Report are to:
- Identify the proximity of any designated sites for nature conservation interest and provide an assessment of any potential effects the proposed development may have on these;
  - Provide baseline information on the current habitats and ecological features both within the Site and immediate surrounding area;
  - Identify the presence or potential presence of any protected species or habitats and provide an assessment of any potential effects the proposed development may have on these; and,
  - Provide recommendations for further pre-construction checks and / or mitigation measures, if required.
- 1.3.2 The Assessment has comprised a desk study review of existing ecological and ornithological information for the Site and surrounding area, together with an extended habitat survey, preliminary bat roost assessment, breeding bird surveys and great crested newt *Triturus cristatus* surveys.

## 1.4 Legislative Framework, Planning Policy and Guidance

- 1.4.1 During the preparation of this report, reference has been made to the following key pieces of legislation, planning policy and guidance listed in **Table 1.1** below.

**Table 1.1: Key legislation, planning policy and guidance.**

International
<ul style="list-style-type: none"> <li>• Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (hereafter referred to as the ‘the Ramsar Convention’<sup>1</sup>;</li> <li>• Convention on the Conservation of European Wildlife and Natural Habitats 1979 (hereafter referred to as the ‘the Bern Convention’<sup>2</sup>; and,</li> <li>• UNESCO convention on the protection of the World Cultural and Natural Heritage (1972)<sup>3</sup>.</li> </ul>
National
<ul style="list-style-type: none"> <li>• The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019<sup>4</sup>;</li> <li>• The ‘Conservation of Habitats and Species Regulations 2017 (as amended);</li> <li>• The Wildlife and Countryside Act 1981 (as amended);</li> <li>• The Environment Act 2021<sup>5</sup>;</li> <li>• Countryside and Rights of Way Act 2000;</li> <li>• The Invasive Alien Species (Enforcement and Permitting) Order 2019<sup>6</sup>;</li> <li>• Infrastructure Act 2015;</li> <li>• Protection of Badgers Act 1992;</li> <li>• Hedgerow Regulations 1997;</li> <li>• The Wild Mammals (Protection) Act 1996;</li> <li>• Natural Environment and Rural Communities (NERC) Act (2006);</li> <li>• The National Planning Policy Framework (NPPF, 2021)<sup>7</sup>;</li> <li>• ‘Birds of Conservation Concern 5’ (Stanbury <i>et al.</i>, 2021)<sup>8</sup>;</li> <li>• The United Kingdom Biodiversity Action Plan (UK BAP);</li> <li>• BS 42020:2013 Biodiversity – Code of Practice for Planning and Development;</li> <li>• BS 8683:2021 - Process for designing and implementing Biodiversity Net Gain. Specification; and,</li> <li>• Biodiversity Net Gain. Good practice principles for development<sup>9</sup>.</li> </ul>
Local
<ul style="list-style-type: none"> <li>• Norfolk Biodiversity Action Plan<sup>10</sup>;</li> </ul>

<sup>1</sup> <https://www.ramsar.org/>

<sup>2</sup> <https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/104>

<sup>3</sup> <https://whc.unesco.org/en/convention/>

<sup>4</sup> <https://www.legislation.gov.uk/uksi/2019/579/contents/made>

<sup>5</sup> <https://services.parliament.uk/Bills/2019-21/environment.html>

<sup>6</sup> <https://www.legislation.gov.uk/uksi/2019/527/introduction/made>

<sup>7</sup> <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

<sup>8</sup> 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. A

<sup>9</sup> <https://cieem.net/resource/biodiversity-net-gain-good-practice-principles-for-development-a-practical-guide/>

<sup>10</sup> <https://www.norfolkbiodiversity.org/habitats-and-species/>

- Norfolk County Council’s Environmental Policy<sup>11</sup>; and,
- North Norfolk District Council Local Plan – Policy SS4 Environment<sup>12</sup>.

- 1.4.2 The ‘UK Post-2010 Biodiversity Framework’ succeeds the UK Biodiversity Action Plan (UK BAP) and ‘Conserving Biodiversity – the UK Approach’. The lists of priority species and habitats agreed under UK BAP still form the basis of much biodiversity work and are therefore considered within this report in the context of the objectives of the Biodiversity Framework. BAPs identify habitats and species of nature conservation priority on a UK (UK BAP) and Local (LBAP) scale. UK BAPs formed the basis for statutory lists of priority species and habitats in England under Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006, and so are also relevant in the context of this legislation.
- 1.4.3 This report is provided in accordance with the provisions of British Standard 42020:2013 Biodiversity. Code of practice for planning and development and British Standard 8683:2021 Process for designing and implementing Biodiversity Net Gain specification.

## 2 METHODOLOGY

### 2.1 Desk Study

2.1.1 A desk study was undertaken to identify existing information on the presence of designated sites for nature conservation, protected and notable species and habitats within proximity to the Site as follows:

- Non-statutory designated sites for nature conservation within 2km of the Site;
- Statutory designated sites for nature conservation, within 5km of the Site for national sites and extended to 10km for international sites; and,
- Existing records of protected and notable faunal species, within 2km of the Site, from within the last ten years.

2.1.2 The following key sources were consulted:

- Natural England and Joint Nature Conservation Committee (JNCC) websites;
- The Multi Agency Geographic Information for the Countryside (MAGIC) website; and,
- Norfolk Biodiversity information Service (NBIS).

2.1.3 Reference was also made to Ordnance Survey maps of the wider area and online aerial images ([www.google.co.uk/maps](http://www.google.co.uk/maps)) in order to determine any features of nature conservation interest in the wider area.

### 2.2 Habitat surveys

#### *Preliminary Ecological Appraisal*

2.2.1 A Preliminary Ecological Appraisal survey of the Site was undertaken 10<sup>th</sup> February 2022 by J Jones BSc. The survey followed recorded habitat information using UK industry standard Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology (JNCC, 2010) and with reference to the

---

<sup>11</sup> <https://www.norfolk.gov.uk/-/media/norfolk/downloads/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/environment/norfolk-county-council-environmental-policy.pdf>

<sup>12</sup> <https://www.north-norfolk.gov.uk/info/planning-policy/current-local-plan/policies/policy-ss4-environment/>

Chartered Institute of Ecology and Environmental Management (CIEEM), Technical Guidance Series *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2013).

- 2.2.2 The visit was carried out as a scoping exercise to help to inform any decision regarding additional protected species surveys.

### **Extended Habitat Survey**

- 2.2.3 An extended Phase 1 habitat survey of the Site was undertaken 4<sup>th</sup> May 2022 by Z Hinchcliffe BSc MRes. The survey methodology followed the *UK Habitat Classification Manual Version 1.1* (UK Habitat Classification Working Group, 2020<sup>13</sup>). All habitats were mapped and described using a series of 'target notes' (TNs) to the highest level of UK habitat classification as possible, with each individual habitat feature being assigned to a primary habitat and then described with secondary codes if applicable. The survey was extended to include the additional recording of specific features indicating the presence, or likely presence, of protected species, invasive species and other species of conservation significance.
- 2.2.4 The survey covered land within the redline area and additional notes were made on any habitats of interest immediately adjacent to the Site. The extent of the Site and habitats located within the Site are detailed in **Figure 1**.
- 2.2.5 Habitats were mapped and described, using a series of 'target notes' (TNs). The survey was extended to include the additional recording of specific features indicating the presence, or likely presence, of protected species, invasive species and other species of conservation significance.

## **2.3 Breeding Bird Survey**

- 2.3.1 Three breeding bird surveys were undertaken between April and June 2022. The surveys were carried out between dawn and 09:30hrs and were carried out in conditions conducive for breeding bird surveys (avoiding heavy rain and strong winds). The survey area for the breeding bird survey was the Site, any adjoining habitats including woodland and a precautionary extension out to 100m for the recording all breeding species of the Wildlife and Countryside Act 1981 (as amended). This area is henceforth referred to as the Breeding Bird Survey Area (BBSA)
- 2.3.2 Breeding bird surveys were undertaken A Hulme BSc and P Baker, who are both experienced ornithologists.
- 2.3.3 The methodology employed was based upon a scaled-down version of the British Trust for Ornithology (BTO) Common Bird Census (CBC) technique, as detailed in Gilbert *et al.* (1998<sup>14</sup>). All bird registrations were recorded on suitably scaled field maps using standard BTO species codes and behaviour notations (such as singing, carrying food, active nest). The approximate locations of bird territories within the BBSA were determined using standard territory mapping techniques to identify and isolate areas within which birds consistently displayed breeding behaviours (following Gilbert *et al.* 1998). The territory mapping method is based on the observation that many species during the breeding season are territorial. This is most marked in passerines where territories are often determined by conspicuous song, display and territorial disputes with neighbouring conspecifics. The expected outcome of this technique is that mapped registrations fall into clusters, approximately coinciding with territories. Records of birds just visiting the BBSA (e.g. gulls feeding in fields) and birds flying over the Site were also made and the records of these summarised, however these have been discounted from further analysis, given they are not breeding within the BBSA and are therefore not considered relevant to the assessment.

---

<sup>13</sup> Available at: <https://ukhab.org/ukhab-documentation/> (accessed 16/05/2023)

<sup>14</sup> Gilbert, G., Gibbons, D.W & Evans, J. (1998) *Bird monitoring methods*. A manual of techniques for key UK species. RSPB.



- 2.3.4 For the purposes of the assessment, although the estimated number of breeding territories for all species is provided only the breeding territories of Notable Species are mapped, given these are the most relevant species to the assessment. Notable Species consist of Birds of Conservation Concern (BoCC Amber and Red List Species (Stanbury *et al.* 2022<sup>15</sup>) and Annex 1/Schedule 1 raptors and owls.
- 2.3.5 Details of the surveys undertaken to date are summarised in **Table 2.1** below. Full details of the methodology and results are presented in **Appendix 2**.

**Table 2.1: Breeding bird survey effort.**

Date	Start time (24hrs)	End time (24hrs)	Sunrise times (24hrs)	Survey conditions
13/04/2022	07:30	09:30	06:04	Southerly light breeze (2 on Beaufort Scale), overcast and dry. Good visibility. 9°C.
04/05/2022	05:50	08:40	05:20	North-westerly light breeze (2 on Beaufort Scale), overcast and dry. Good visibility. 13°C.
18/06/2022	05:00	07:40	04:32	Light northerly breeze (1 on the Beaufort Scale), overcast and dry. Good visibility. 17°C.

## 2.4 Preliminary Bat Roost Assessment

### Trees

- 2.4.1 A ground level preliminary roost assessment (PRA) of trees located within the Sites was undertaken on the 16<sup>th</sup> March 2023 along the section of hedgerow identified for removal along the western end of the Site where the access road meets the A47.
- 2.4.2 The PRA was undertaken in order to identify and record any trees that may be suitable for roosting bats. Trees within and immediately adjacent to the Site were subject to a ground-based assessment to look for features that bats could use for roosting and assess roost potential; their suitability for roosting bats was classified as follows (from Collins *et al.*, 2016<sup>16</sup>):
- **Negligible:** Negligible habitat features on site likely to be used by roosting bats.
  - **Low:** A tree of sufficient size and age to contain potential roost features but with none seen from the ground or with only very limited potential.
  - **Moderate:** A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
  - **High:** A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
- 2.4.3 The results of the tree PRA surveys are provided in **Appendix 3**.

<sup>15</sup> 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

<sup>16</sup> Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London.

## 2.5 Great Crested Newt Presence/Absence surveys

- 2.5.1 Eight ponds were identified on and within 250m of the Site from OS and aerial mapping, with an additional two ponds within 250m of the previous redline boundary at the time of surveys. Nine ponds (all ponds except Pond 8) were assessed for their suitability to support great crested newts using the Habitat Suitability Index (HSI) method as developed by Oldham *et al.* (2000<sup>17</sup>) and as detailed within ARG UK guidance (ARG UK, 2010<sup>18</sup>). Pond 8 was unable to be surveyed due to access constraints.
- 2.5.2 Of the nine accessible ponds, seven were subject to using conventional survey techniques. Two ponds (Ponds (P) 1 and 7) were discounted due to being dry at the time of survey.

### **Habitat Suitability Index**

- 2.5.3 The HSI assessment involves the measurement of ten different indices which, when combined, have been found to provide a good indication of the general suitability of ponds for great crested newts. Each of the indices is scored (between 0.01-1) using a series of graphs and figures within the guidance notes (ARG UK, 2010). These scores are then used to calculate an overall Habitat Suitability Score for each pond.
- 2.5.4 The HSI survey was undertaken alongside the extended Phase 1 habitat survey conducted on 4<sup>th</sup> May 2022 by experienced ecologist Z Hinchcliffe *BSc MRes*. Assessments were carried out on nine of the ten ponds within 250m, with Pond 8 not being surveyed due to access. Pond 8 was discounted from survey effort due to lack of access and the physical barrier of the A47 between the pond and Site was considered a sufficient physical barrier. At the time of survey Ponds 1 and 9 were also dry, so discounted.

### **Presence or Likely Absence Surveys**

- 2.5.5 The survey protocol followed that set out in the *Great Crested Newt Mitigation Guidelines* (English Nature, 2001<sup>19</sup>) and in line with discussions with Natural England.
- 2.5.6 Ponds were visited four times between April and early-May 2022 (i.e. within the optimum timeframes for undertaking amphibian surveys) to establish presence or likely absence of GCN and other amphibians, and to assess likely population numbers where appropriate. Visits were made in suitable weather conditions; avoiding strong winds and heavy rain and with an overnight temperature of greater than 5°C. Should GCN be recorded during these four visits, an additional four visits would be carried out to estimate the population of GCN using the Site.
- 2.5.7 Surveys were conducted by the following licenced personnel; Z Hinchcliffe *BSc MRes*, A Hulme *BSc* and J Stevens *BSc*, and authorised individuals/assistants; K Ward and P Baker.
- 2.5.8 Three out of the four recognised survey techniques were employed at each pond during each survey visit. Survey methods comprised netting, torch counts and egg searches as described below:
- Netting: A standard professional long handled net was used to sample the water column throughout each pond. The net was swept backwards and forwards through the water and emptied out into a white plastic container, the contents of which were examined and recorded.

---

<sup>17</sup> Oldham R.S., Keeble J., Swan M.J.S. and Jeffcote M. (2000) Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*, 10(4), pp. 143-155.

<sup>18</sup> ARG UK (2010) ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom.

<sup>19</sup> [https://mokrady.wbs.cz/literatura\\_ke\\_stazeni/great\\_crested\\_newt\\_mitigation\\_guidelines.pdf](https://mokrady.wbs.cz/literatura_ke_stazeni/great_crested_newt_mitigation_guidelines.pdf)

- Torch survey: The ponds were searched for great crested newts at night by shining a torch into the water. Surveyors were equipped with 1,000,000 candlepower lamps to search the accessible margins of the water bodies.
- Egg search: A thorough search was made for newt eggs of any suitable vegetation present along the water's margin. This comprised a search for any folded leaves of emergent or marginal vegetation. To reduce disturbance, once eggs were confirmed in a pond no further egg searches were completed.

2.5.9 Additionally, where suitable for survey, the ponds were also subject to eDNA survey sampling to determine the presence or likely absence of GCN.

2.5.10 Detailed survey methodologies and full results are presented as Appendix 4: Great Crested Newt Presence/Absence Survey Report.

## 2.6 Limitations of Surveys

2.6.1 An extended Phase 1 habitat survey does not constitute a detailed botanical survey or faunal species list or provide a full protected species survey but, enables competent ecologists to ascertain an understanding of the ecology of the site in order to:

- Broadly identify the nature conservation value of a site and assess the significance of any potential impacts on habitat/species recorded; and/or,
- Confirm the need and extent of any additional specific ecological surveys that are required to identify the true nature conservation value of a site (if any).

2.6.2 The extended Phase 1 habitat survey visit was undertaken in May 2022 and therefore within the optimal period for botanical surveys (approximately April to September).

2.6.3 Access to all areas within the Site were possible for the breeding bird survey. It is accepted that cropping regime and agricultural intensification may vary from year to year, so the results of the breeding bird survey are to be considered a snap-shot of the potential breeding population of birds using the Site.

2.6.4 Access to all suitable ponds was possible, with the exception of pond 8, located within 250m of the Site. The pond is located on the western side of the A47, which runs between the pond and Site boundary. This is considered to act as a significant physical buffer for GCN, so any newts that may or may not be present within the pond are unlikely to access the Site.

### 3 BASELINE

#### 3.1 Designated Sites for Nature Conservation

##### *Statutory Designated Sites*

- 3.1.1 This Section should be read with reference to **Figure 2**.
- 3.1.2 A summary of statutory designated wildlife sites of national importance within 5km and international importance within 10km of the Site is provided in **Table 3.1**.
- 3.1.3 The Site is not located within or adjacent to any statutory designated wildlife sites. The Site does not lie within 5km of any statutory designated sites but falls within the Impact Risk Zone (IRZ) of Breckland Site of Special Scientific Interest (SSSI) located 5.9km south west of the Site. The proposed development does not meet the requirements whereby Natural England would have to be consulted regarding the development.
- 3.1.4 Two internationally designated sites are located within 10km of the Site: Norfolk Valley Fens Special Area of Conservation (SPA) and Breckland Special Protection Area (SPA).

**Table 3.1: Statutory designated sites. (SAC: Special Area of Conservation; SPA: Special Protection Area)**

Site Name	Distance and Direction from Site	Reason for Designation
Breckland SPA	6.3km south west	Designated for breeding species of birds: <ul style="list-style-type: none"> <li>• Stone-curlew <i>Burhinus oedicnemus</i>;</li> <li>• European nightjar <i>Caprimulgus europaeus</i>; and,</li> <li>• Woodlark <i>Lullula arborea</i>.</li> </ul>
Norfolk Valley Fens SAC	9.1km east	Designated for it's Annex 1 Alkaline Fen habitat featuring rare plant species including grass-of-Parnassus <i>Parnassia palustris</i> , common butterwort <i>Pinguicula vulgaris</i> , marsh helleborine <i>Epipactis palustris</i> and narrow-leaved marsh-orchid <i>Dactylorhiza traunsteineri</i> . Additionally designated for its Annex 2 Narrow-mouthed whorl snail <i>Vertigo angustior</i> and Desmoulin's whorl snail <i>Bertigo moulinsiana</i> .

##### *Non-statutory Designated Sites*

- 3.1.5 This Section should be read with reference to **Figure 3**.
- 3.1.6 A review of the data provided by NBIC confirms that the Site is not located within any non-statutory designated sites for nature conservation. Three County Wildlife Sites (CWS) were identified within 2km of the Site. Details of these non-statutory designations are provided in **Table 3.2**.

**Table 3.2: Non-statutory designated sites.**

Site Name	Distance and Direction from Site	Description
Necton Old Common CWS	720m south	This site is composed of two habitats: semi-natural woodland to the north and acidic grassland to the south

Necton Wood CWS	900m east	Ancient, damp broad-leaved semi-natural woodland, enclosed by boundary ditches and surrounded by intensively farmed arable land.
Fox Covert CWS	980m south	An area of semi-natural broad-leaved woodland with some scattered coniferous species and one coniferous plantation block.

## 3.2 Priority Habitats – Existing Records

- 3.2.1 In review of MAGIC and of the data provided by NBIC, five priority habitats listed under Section 41 of the NERC Act/UK Biodiversity Action Plan and the Norfolk Biodiversity Partnership Biodiversity Action Plan were identified within 2km of the Site.
- 3.2.2 Information on priority habitats within 2km of the Site is presented in **Table 3.3** below. Where numerous records of a particular habitat were recorded, only the closest record to the Site has been provided, in order to provide context for the Site and surrounding area.

**Table 3.3: Priority habitats – existing records.**

Priority Habitat Name	Designation	Distance from Site
Hedgerows	NERC S41, UKBAP, LBAP	Adjacent to Site
Deciduous woodland	NERC S41, UKBAP, LBAP	Adjacent to Site
Ponds	LBAP	100m south
Lowland dry acid grassland	NERC S41, UKBAP, LBAP	1.4km south
Lowland heathland	NERC S41, UKBAP, LBAP	1.9km south

### Key

**NERC S41:** Natural Environment and Rural Communities (NERC) Act (2006)

**UKBAP:** UK Biodiversity Action Plan Priority Habitat

**LBAP:** Norfolk Biodiversity Partnership Biodiversity Action Plan habitat

## 3.3 Ancient and irreplaceable habitats

- 3.3.1 One records of ancient woodland as included on the Ancient Woodland Inventory<sup>20</sup> is located 1km north-east of the Site. No ancient or veteran trees as included on the Ancient Tree Inventory<sup>21</sup> are identified within 500m of the Site.

## 3.4 Habitats

- 3.4.1 This section should be read in conjunction with the Extended Phase 1 Plan presented as **Figure 1**, Target Notes (TNs) are presented in **Table 3.1** and photographs presented in **Appendix 1**.
- 3.4.2 The Site is dominated by arable farmland with cereal crops and tilled land being recorded at the time of survey.

<sup>20</sup> <http://publications.naturalengland.org.uk/map?category=552039>

<sup>21</sup> <https://ati.woodlandtrust.org.uk/>

- 3.4.3 Fields are bounded by a combination of species-rich hedgerow, species-poor hedgerow, dry ditches and sections of woodland. In addition, several pockets of plantation woodland are present immediately adjacent to the Site and there is evidence of recent planting along the Site boundaries and immediately adjacent with several patches of young trees, generally located close to the adjacent Necton Substation which borders the Site.
- 3.4.4 Species-rich hedgerows are dominated by hawthorn *Crataegus monogyna* and field maple *Acer campestre* with aspen *Populus tremula*, hazel *Corylus avellana*, elder *Sambucus nigra*, holly *Ilex aquifolium*, cherry *Prunus avium*, crab apple *Malus sylvestris*, hornbeam *Carpinus betulus*, ash *Fraxinus excelsior*, dog rose *Rosa canina*, pedunculate oak *Quercus robur*, guelder rose *Viburnum opulus*, buckthorn *Rhamnus cathartica*, blackthorn *Prunus spinosa*, damson *Prunus domestica*, silver birch *Betula pendula* and Scot's pine *Pinus sylvestris* all occurring in varying densities across the Site.
- 3.4.5 Wet ditches are present within the local area, although within the Site, no wet ditches are present. A single dry ditch is intersected by the proposed temporary access track.
- 3.4.6 Habitats recorded within the Survey Area are considered typical of dominant habitats within the wider landscape.
- 3.4.7 A section of 0.9ha of arable farmland located approximately 700 m west of the main Site has been identified for habitat compensation to increase the biodiversity net gain of the proposed development. The agreed area is occupied entirely by cereal crop.

**Table 3.1: Habitat and Protected Species Notes**

Map Ref.	Details
TN1	Tall ruderals with a dry ditch. Species comprising bramble <i>Rubus fruticosus</i> , barren brome <i>Bromus sterilis</i> , great willowherb <i>Epilobium hirsutum</i> , dandelion <i>Taraxacum officinale</i> agg., knapweed <i>Centaurea nigra</i> , hogweed <i>Heracleum sphondylium</i> , horsetail <i>Equisetum arvense</i> , ground ivy <i>Glechoma hederacea</i> , creeping thistle <i>Cirsium arvense</i> , prickly sow thistle <i>Sonchus asper</i> , white dead nettle <i>Lamium album</i> , creeping buttercup <i>Ranunculus repens</i> , common nettle <i>Urtica dioica</i> and red fescue <i>Festuca rubra</i> . In places, very dense will bramble cover.
TN2	Introduced plantation woodland with silver birch, downy birch <i>Betula pubescens</i> , hawthorn, holly, pedunculate oak, cherry, guelder rose, damson, Scots pine, rowan <i>Sorbus aucuparia</i> and field maple. All trees retaining plastic tubes at the base of trunks.
TN3	Tall ruderals dominated by cock's-foot <i>Dactylis glomerata</i> , common nettle, broad-leaved dock <i>Rumex obtusifolius</i> , creeping thistle, red fescue, knapweed and meadow foxtail <i>Alopecurus pratensis</i> .
H1	Hedge and tree line dominated by hawthorn, field maple and blackthorn. Additional species included cheery, dog rose, pedunculate oak, ash and hornbeam. Additionally two mature non-native oak species <i>Quercus</i> sp. Blackthorn saplings encroaching out either side of the tree line. Some dead ash trees suggesting possible ash dieback.
H2	Planted hedgerow (plastic tubes still intact) with species including hawthorn, hazel, dog rose, damson and holly. 1.5m tall and 1m wide. Not yet intact.

## 3.5 Protected and Notable Species

### Birds

- 3.5.1 NBIS returned records of 35 species within 2km of the Site in the last ten years since 2013 with species including woodlark *Lullula arbora*, hen harrier *Circus cyaneus* and bee-eater *Merops apiaster*, listed as Schedule 1 species on the Wildlife & Countryside Act 1981 (as amended).

- 3.5.2 Habitats within the Site are typical of the surrounding area. To date, a range of species have been recorded with an assemblage typical of those arable habitats within the Site. Most species, including notable species are confined to boundary habitats including woodland and hedgerows.
- 3.5.3 The only open-ground nesting notable species recorded within the Site was skylark *Alauda arvensis*, with three territories across the Wider Survey Area (within 100m of the Site).
- 3.5.4 No Schedule 1 species have been recorded within the Site, although it is likely that barn owl *Tyto alba* will be present within the surrounding area and may use the Site to feed or commute to increased quality foraging habitat in the wider area.

#### **Bats**

- 3.5.5 The NBIS desk study returned 34 records of seven species of bat within 2km of the Site since 2013 with common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, barbastelle *Barbastella barbastellus*, serotine *Eptesicus serotinus*, natterer's *Myotis nattereri* and brown long-eared bat *Plecotus auritus*.
- 3.5.6 No EPS licences have been granted for bats within 2km of the Site.

#### **Preliminary Bat Roost Assessment**

##### Trees

- 3.5.7 All mature trees along the western boundary of the Site were assessed for bat roost potential which included 10 trees.
- 3.5.8 Trees within this hedgerow included ash *Fraxinus excelsior*, pedunculate oak and oak species *Quercus sp.*
- 3.5.9 All trees assessed were considered to be surrounded by moderate foraging habitat and all, except T4 (unidentified oak species *Quercus sp.*) were considered to have negligible bat roost potential. T4 was considered to have Low bat roost potential showing peeled bark and a single dead branch which has the potential to support small numbers of bats on a transitory basis.
- 3.5.10 Full details are presented in **Appendix 3**.

##### Foraging and Commuting Bats

- 3.5.11 The dominant arable habitats within the Site were considered to most closely fit the description for land of 'poor' interest for foraging bats in accordance with BCT guidance. Field boundary habitats, including ponds, hedgerows, woodland edge and ditches provide continuous habitat connectivity to the wider landscape that could be used for commuting and also foraging habitats that are well connected to the wider landscape, so boundary habitats within the Site are likely to be considered 'moderate'.

#### **Badger**

- 3.5.12 The NBIS desk study returned 15 records of badger within 2km of the Site since 2013.
- 3.5.13 No field signs indicative of badger activity were recorded during the extended Phase 1 habitat survey. However, surrounding habitats including hedgerows and woodland, provide suitable habitat for commuting, foraging badgers and sett creation. Although no evidence of badger activity was noted within the Site, signs of badger were found within the wider area indicating badgers are present and active in the area and may occasionally use the Site.

### **Water Vole & Otter**

- 3.5.14 No wet ditches are present within the Site with the closest wet ditches being located 375m east of the Proposed Development. The ditches in the wider area vary in suitability for water vole *Arvicola amphibius*, however the combination of aquatic vegetation, clear flowing water and steep vegetated banks do provide suitable habitat for water voles. A bank top search with the aid of binoculars was carried out in several locations and no signs were found, although evidence of brown rat *Rattus norvegicus* was noted, including a latrine.
- 3.5.15 There is no suitable habitat within the Site or immediate surrounding area for otter *Lutra lutra*.
- 3.5.16 Due to separation distance from any nearby suitable watercourses, neither species is considered further in this assessment.

### **Amphibians**

- 3.5.17 The NBIS desk study returned five records of GCN between 2016 and 2019 with the closest record being 700m north of the Site, across the A47.
- 3.5.18 One EPS licence has been granted for GCN within 2km of the Site (2020-49033-EPS-MIT) located 1.2km north east of the Site in 2020. Class Licence surveys of nearby ponds has the closest confirmed GCN pond being 640m north west of the Site.
- 3.5.19 Four manual surveys were carried out on 7 ponds between April and May 2022 as well as eDNA surveys which were carried out on were carried out on 3<sup>rd</sup> May.
- 3.5.20 Surveys did not yield any observations of great crested newt, however smooth newt *Lissotriton vulgaris* were recorded in two of the seven surveyed ponds in low numbers.
- 3.5.21 All surveyed ponds returned a negative result for GCN eDNA.
- 3.5.22 The arable farmland habitats that dominate the Site provide very low suitability as amphibian terrestrial habitat, however, field boundary features such as, hedgerows, woodland and drainage ditches (wet or dry) provide more suitable terrestrial habitat for shelter, dispersal and foraging.
- 3.5.23 Full details of survey results are presented in **Appendix 4**.

### **Reptiles**

- 3.5.24 The NBIS date search returned four records of grass snake *Natrix Helvetica* within 2km of the Site from 2015.
- 3.5.25 The Site is dominated by arable farmland, which is considered to be of negligible value for reptile species. However, the field boundary habitats do provide some opportunities for foraging/hibernation purposes.

### **Other Notable Species**

- 3.5.26 The NBIS desk study returned records of brown hare *Lepus europaeus* and Western hedgehog *Erinaceus europaeus*.
- 3.5.27 The habitats within the Site are not considered to be of a floristic structural quality which could support significant assemblages of invertebrates or notable species.
- 3.5.28 Brown hare were recorded in large numbers across the Survey Area during the extended Phase 1 habitat survey. In addition, it is likely that Western hedgehog is likely to be present within the Site.



## **3.6 Invasive Non-native Species**

- 3.6.1 The NBIS desk study returned records of Chinese muntjack *Muntiacus reevesi* and grey squirrel *Sciurus carolinensis*.
- 3.6.2 No invasive non-native plant species were recorded within the Site during surveys.
- 3.6.3 Chinese muntjac were recorded on multiple occasions during the extended Phase 1 survey.

## **4 ASSESSMENT**

### **4.1 Overview**

- 4.1.1 This section seeks to identify the potential for effects to occur on habitats and protected and notable species which could be considered as reasonably likely to occur, as a result of the proposed development. The Site's proximity to statutory and non-statutory designated sites and potential effects on their qualifying interests is discussed. Measures are proposed for the protection of sensitive habitats and species throughout the construction phase of development and recommendations are made for further pre-construction surveys and mitigation, if required.
- 4.1.2 This section also introduces opportunities for post-development habitat enhancement as part of the proposed project for the benefit of local biodiversity.

### **4.2 Designated Sites for Nature Conservation**

#### ***Statutory Designated Sites***

- 4.2.1 The Site is not located within or adjacent to any statutory designated wildlife sites. The Site lies within the Impact Risk Zone (IRZ) for Breckland Forest SSSI, 5.9km to the south west; however, Greener Grid Parks are not listed on the qualifying criteria whereby the LPA would be required to consult with Natural England.
- 4.2.2 There are two internationally important statutory designated sites within 10km of the Site. The closest of these is Breckland SPA located 6.3km away, designated for breeding birds associated with heathland habitats. These designations are of sufficient distance that no impacts are anticipated.
- 4.2.3 Standard measures to ensure runoff control and pollution prevention will be implemented during the construction of the proposed development; these measures will further minimise the likelihood of any pollution effects on these statutory designated sites.

#### ***Non-statutory Designated Sites***

- 4.2.4 The Site does not form part of any non-statutory designated site for nature conservation. Three non-statutory designations were identified within 2km of the Site. The closest of these is 900m away and considered to be of sufficient distant that no impacts are anticipated.
- 4.2.5 Standard measures to ensure runoff control and pollution prevention will be implemented during the construction of the proposed development; these measures will further minimise the likelihood of any pollution effects on these non-statutory designated sites.

### **4.3 Ancient and Irreplaceable Habitats**

- 4.3.1 No ancient or irreplaceable habitats were located within 500m of the Site, and there are no pathways by which impacts could occur.

### **4.4 Habitats**

- 4.4.1 The proposed development has been designed to avoid the hedgerows (with the exception of a 25m section of hedgerow along the western boundary that will be replaced once the construction has been completed) within and along Site boundaries and immediately surrounding the Site in so far as has been possible. A vegetation buffer will be maintained between these features and the construction zone in line with BS 5837:2012 *Trees in relation to design, demolition and construction*.

- 4.4.2 The proposed Greener Grid Park will result in the permanent loss of arable farmland. This habitat has low ecological value and is prevalent within the wider landscape and therefore, impacts as a result of this loss are considered to be negligible.
- 4.4.3 The proposed temporary construction access track to the west will result in the temporary loss of arable land which will be reinstated upon completion. The track will require a 25m section of hedgerow to be removed. Upon completion of construction this track will be removed and replaced with hedgerow of a species-rich composition.
- 4.4.4 The proposed access track will also cross the dry ditch and this will be done via a culvert crossing which will be removed upon completion of construction.
- 4.4.5 Standard measures to ensure runoff control and pollution prevention will be implemented during the construction of the proposed development; these measures will safeguard retained habitats within and surrounding the Site and the species they support.
- 4.4.6 Opportunities have been sought for biodiversity enhancement within the Site as part of the proposed development, in order to provide an overall biodiversity net-gain; in line with National Planning Policy Framework 2 (2019) and BS42020 – *A Code of Practice for Biodiversity in Planning and Development*.
- 4.4.7 Biodiversity enhancement measures proposed as part of the proposed development and which are illustrated in *Landscape Mitigation Plan* consist of:
- The creation of approximately 0.65ha of native broadleaved woodland is proposed within the Site;
  - The creation of 0.3ha of native mixed scrub;
  - The creation of 0.04ha of species-diverse grassland to be sown over a depression set out as a sustainable drainage system (SuDS) comprising Emorsgate EM8 Meadow mixture for wet soils (or similar); and,
  - Approximately 330m of new native species-rich hedgerows, as well as replacing and 25m section of species-poor existing hedgerow with native species-rich hedgerow species.
- 4.4.8 Additionally, an area of 0.9ha of cereal crops will be replaced with the creation of 0.9ha of native mixed scrub.
- 4.4.9 It is considered that a benefit to wildlife within the Site will be achieved through the addition of further native woodland and scrub planting which will also create and enhance potentially important wildlife corridors within and around the Site, improving the functionality of habitats for birds, mammals, amphibians, reptiles and invertebrates locally.
- 4.4.10 Biodiversity mitigation and enhancement measures are described further in the Biodiversity Management Plan (BMP), provided as **Appendix 6**, which describes ongoing management and monitoring for the lifetime of the development.

## 4.5 Biodiversity Net Gain

- 4.5.1 The habitat creation and associated biodiversity net gain that will accompany the proposed development has been assessed using the Defra Biodiversity Net Gain Calculator Metric (version 4.0). The habitat proposals for the proposed development contribute to a net gain of **13.49%** of habitat units, as well as a substantial gain of **86.45%** of hedgerow units within the Site. No watercourses are present within the redline boundary. Details of the BNG calculation is summarised in **Appendix 7**. The full calculation is provided as a separate Excel spreadsheet.

## 4.6 Protected and Notable Species

### *Amphibians*

- 4.6.1 GCN and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). The Act and Regulations make it an offence to kill, injure or take a great crested newt; damage, destroy or obstruct access to any place that a great crested newt uses for shelter or protection; and intentionally or recklessly disturb a great crested newt while it is occupying a structure or place that it uses for shelter or protection.
- 4.6.2 GCN and common toad are listed as a species of principal importance within Section 41 of the NERC Act and GCN are also listed as a priority species within Norfolk Biodiversity Action Plan and therefore, are also of material consideration within the planning process.
- 4.6.3 During surveys, no evidence was found to suggest that great crested newts are present within the Site or within nearby pond habitats.
- 4.6.4 The arable farmland present provides negligible suitable habitat for amphibians (foraging/hibernation), however, field boundary features, such as hedgerows and ditches and their banksides potentially provide suitable foraging habitat and cover for amphibians.
- 4.6.5 As a precaution, the implementation of buffers and standard good practice measures to ensure runoff control and pollution prevention during the construction of the proposed development will safeguard nearby ponds, ditches and any amphibians present.
- 4.6.6 The proposed temporary access track will result in the removal of short sections of hedgerow (up to 25m) and will also require the installation of a culvert crossing over the dry ditch. Given these works are temporary and habitats will be reinstated, the loss of habitat will be inconsequential to local amphibian populations. However, any amphibians present in these areas are at risk of killing or injury during these works.
- 4.6.7 In order to avoid and minimise and risk of harm to amphibians through construction a series of Reasonable Avoidance Measures (RAMs) will be implemented during construction, as presented in **Appendix 5**. If a great crested newt is found, all works must stop and a European Protected Species Mitigation licence must be granted from Natural England before works can proceed.
- 4.6.8 Linear enhancements including species-rich hedgerows will increase suitable terrestrial habitat for amphibians and reptiles within the Site as well as increase the habitat connectivity of commuting populations of amphibians. The onsite creation of woodland and scrub also provides suitable foraging habitat for amphibians.

### *Reptiles*

- 4.6.9 Widespread reptile species namely the common lizard *Zootoca vivipara*, slow-worm, grass snake and adder *Vipera berus* are protected against killing, injuring and sale under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). These species are also listed as priority species under Section 41 of the NERC Act 2006 and therefore, are also of material consideration within the planning process.
- 4.6.10 The hedgerows and adjacent woodland edge do provide opportunities for reptiles to forage, breed, seek shelter and hibernate. However, the Site is not well connected to other areas of more suitable reptile habitat and basking opportunities are also limited. For this reason, it is considered unlikely that the Site would support significant populations of reptiles.

- 4.6.11 The proposed temporary access track will result in the removal of short sections of hedgerow (up to 25m) and permanent 10m loss of species-poor hedgerow along the of the proposed permanent access track . Given these works are temporary and habitats will be reinstated, the loss of habitat will be inconsequential to local reptile populations. However, any reptiles present in these areas are at risk of killing or injury during these works.
- 4.6.12 In order to avoid and minimise and risk of harm to reptiles through construction a series of RAMs will be implemented during construction, as presented in **Appendix 5**.

### ***Badger***

- 4.6.13 Badgers and their setts are protected under the Protection of Badgers Act 1992. Under the Act it is an offence to: wilfully kill, injure, take, possess or cruelly ill-treat a badger; to attempt to do so: or, intentionally or recklessly interfere with a sett.
- 4.6.14 Sett interference includes damaging or destroying a sett, obstructing access to a sett, and disturbing a badger whilst it is occupying a sett. It is not illegal, and therefore a licence is not required, to carry out disturbing activities in the vicinity of a sett if no badger is disturbed and the sett is not damaged or destroyed.
- 4.6.15 Where an activity is likely to result in an offence under the Protection of Badgers Act 1992 a licence from Natural England is required.
- 4.6.16 No evidence of badger was identified during the habitat survey, although this species could be present in the locality.
- 4.6.17 During construction excavations and trenches will be minimal and where required these will be back-filled, covered or fitted with a ramp overnight to prevent badger (or other animal) entrapment.
- 4.6.18 Badgers are highly mobile throughout their range and therefore a pre-construction inspection of the Site will be undertaken to identify any new sett creation that may have occurred during the intervening period between the initial survey and the start of construction.

### ***Bats***

- 4.6.19 All species of British bat are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Bats are further protected under the Conservation of Habitats and Species Regulations 2017 (as amended).
- 4.6.20 The Act and Regulations make it an offence to:
- Kill, injure or take any wild bat;
  - Damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection; or,
  - Intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection.
- 4.6.21 Seven bat species in the UK are also listed as species of principal importance for the purpose of conserving biodiversity under Section 41 of the NERC Act 2006. Four UK bat species (barbastelle, noctule, brown long-eared bat and soprano pipistrelle) are also listed as a priority species within the Norfolk Biodiversity Action Plan and therefore, are also of material consideration within the planning process.
- 4.6.22 No built structures are present within the Site and all trees identified for removal along the 25m section of hedgerow removal associated with the access track are considered to offer Negligible bat

roost potential. Elsewhere, any adjacent trees or woodland will be retained and protected within the proposed development. Therefore, no impacts to roosting bats are anticipated.

- 4.6.23 The habitats within the Site, largely comprising arable habitats provide little foraging interest for bats. The proposed development has been designed to avoid impacts to more valuable habitats such as woodland and hedgerows insofar as possible. A 25m section of hedgerow and trees will be removed during construction, but later reinstated. The trees and shrubs identified for removal have been assessed for their bat roost potential and all are found to offer Negligible bat roost potential. A 10m section of species-poor hedgerow will be removed to accommodate the permanent access track to the north of the proposed development footprint.
- 4.6.24 The inclusion of additional habitat planting i.e. scrub, woodland and hedgerow will increase the foraging opportunities for bats compared to the existing arable farmland habitats present within the Site.
- 4.6.25 The construction of the proposed development will be undertaken during daylight hours. Any temporary lighting where required will be temporary and focused on working areas within open fields and therefore away from nearby woodland. As such temporary lighting, if required, is unlikely to affect bat foraging patterns.
- 4.6.26 During operation the Greener Grid Park will not be lit, apart from very limited emergency lighting at, for example, the Site entrance for occasional maintenance visits. Any lighting installed will be directed away from nearby woodland and boundary features with in accordance with Lighting in the UK, Bats and the Built Environment Series, Bat Conservation Trust and Institute for Lighting Engineers<sup>22</sup>.

### **Birds**

- 4.6.27 All wild birds, their nests, eggs and dependent young are, with few exceptions, protected under the Wildlife and Countryside Act 1981 (as amended). Additional protected is also afforded to those species listed on Schedule 1 of the Act, with regards to disturbance at or around their nest sites.
- 4.6.28 The arable crops and hedgerows within the Site could provide opportunities for breeding birds. The loss of the onsite cropland is unlikely to significantly impact local bird populations but could result in disturbance whilst nesting.
- 4.6.29 In order to avoid impacts on nesting birds and to ensure compliance with the provisions of the Wildlife and Countryside Act 1981 (as amended), it is recommended that construction and any associated vegetation removal takes place outside of the bird breeding season (March-August inclusive). If vegetation works are necessary during the breeding season any suitable nesting habitat to be affected by works; including agricultural cropland habitats, should be checked by a suitably experienced ecologist prior to works commencing. Works would be permitted to proceed only when the ecologist is satisfied that no offence will occur under the legislation.
- 4.6.30 Skylarks are the only ground-nesting species to be recorded within the Site. 3.81ha of arable farmland will be removed as a result of the Proposed Development. This will result in the direct habitat loss of 3.81ha of potentially suitable breeding and foraging habitat for skylarks. The Site is located within a wider area of arable farmland which is considered ubiquitous in the surrounding area. The construction of the Proposed Development may temporarily displace skylark onsite and immediately adjacent to the Site and following construction permanently displace skylark from the development footprint. Based on the small size of the development and the available suitable habitat immediately surrounding the Site, the impact on local skylark is not considered to be significant.

---

<sup>22</sup> Institution of Lighting Professionals & the Bat Conservation Trust. (2018). *Guidance Note 08/18: Bats and artificial lighting in the UK Bats and the Built Environment series* (Accessed on 03/03/2020)

4.6.31 The creation of 330m of hedgerows, 0.3 hectares of structured native scrub and 0.65ha of structured woodland planting will increase the long term breeding potential habitat for breeding birds associated with field boundary habitats. Additional planting of 0.9ha of native scrub within off-site habitats will further increase the habitat suitability of the local area.

### ***Other Species***

4.6.32 The hedgerow habitats located within the Site may also be utilised by Western hedgehog (a priority species listed on Section 41 of the NERC Act 2006) as part of a wider population. Hedgerow losses will be minimised and hedgerows will be re-instated where possible. The loss of the arable habitats is unlikely to local hedgehog populations.

4.6.33 Security fencing located around the Site perimeter will have sufficient gaps positioned at several locations along the base of fences in order to allow Western hedgehog to continue to use the habitats on Site during the operational period. The measures outlined for badger, regarding excavation covers, and for amphibians and reptiles, in relation to the RAMs, will also benefit hedgehog.

4.6.34 The loss of arable habitat is unlikely to significantly affect local invertebrate populations due to the prevalence of such habitats locally.

### ***Invasive Non-native Species***

4.6.35 Chinese muntjack was the only invasive non-native species listed under Schedule 9 of The Wildlife & Countryside Act 1981 (as amended) to be recorded on Site during the extended Phase 1 habitat survey. No Schedule 9 plants were recorded within the Site. It is an offence to plant or otherwise cause such species to grow in the wild. This includes allowing the species to grow/spread, spreading the species or transferring polluted ground material from one area to another.

4.6.36 These species and soil containing these species are also classed as controlled waste and as such must be disposed of safely at a licensed landfill site according to the Environmental Protection Act (Duty of Care) Regulations 1991.

4.6.37 Should any further invasive species encountered on Site prior to or during construction, the advice of a suitably qualified ecologist should be sought and the appropriate measures taken.

## 5 SUMMARY - ECOLOGY PRIORITY MATRIX

5.1.1 An Ecological Assessment was undertaken for the proposed Greener Grid Park development at Necton, Norfolk.

5.1.2 **Table 5.1** summarises the ecological constraints and opportunities associated with the development, and makes recommendations for pre-construction survey work and/or mitigation measures as required.

**Table 5.1: Ecological Constraints and Opportunities**

Feature		Details
Statutory and Non-statutory designated sites for Nature Conservation	Constraints & Opportunities	<p>a. Two internationally designated sites are present within 10km of the Site, but based on the proposed development type and the separation distance from the designated sites, there are no direct or indirect impacts upon these sites as a result of the proposed development.</p> <p>b. There are three statutory and non-statutory designations within influencing distance of the Site; however, it is not anticipated that there will be any detrimental impacts on these designations as a result of the proposed development due to the consideration of ecological constraints during the design process and the proposed measures outlined to protect and enhance biodiversity within the Site.</p>
	Protection Measures	c. Standard measures to ensure runoff control and pollution prevention will be implemented; these measures will safeguard statutory and non-statutory designated sites. No indirect effects are therefore anticipated on statutory or non-statutory designated sites in the wider area.
Habitats & Flora	Constraints & Opportunities	<p>d. The main habitats within the development footprint are arable farmland which are widespread and generally of low value to wildlife.</p> <p>e. Habitat enhancement measures are proposed as part of the development and will serve to enhance the development for local biodiversity. Enhancement measures include the planting of hedgerow screening and creation of woodland and scrub creation.</p> <p>f. The proposed development will result in a net gain of 13.49% Habitat Units and 86.45% Hedgerow Units.</p>
	Protection Measures	g. Standard measures to ensure runoff control and pollution prevention will be implemented; these measures will safeguard retained terrestrial habitats within the Site and the wider environment.
Reptiles and amphibians	Constraints & Opportunities	<p>h. The Site offers minimal suitable habitat for reptiles and amphibians. A small section of hedgerow (c. 25m) will be removed and later replaced and a 10m section of species-poor hedgerow will be permanently removed to accommodate the permanent access track. Amphibian surveys are suggestive of there being no great crested newt present in the local area, though field boundary habitats offer potential suitable habitat for both amphibians and reptiles.</p> <p>i. Newly created linear hedgerow habitats, woodland and scrub will provide terrestrial foraging and hibernation habitat for reptiles and amphibians.</p>
	Legislative Compliance – WCA**	j. Reasonable Avoidance Measures (RAMs) will be implemented to minimise risk of harm to individual animals.
Badgers	Constraints & Opportunities	k. No evidence of badgers was found on the Site but this species could be present within the locality.
	Legislative Compliance – PBA****	<p>l. A pre-construction inspection of the Site for badger will be undertaken to identify any newly created setts.</p> <p>m. No trenches or excavations will be left open overnight; these will be back-filled or covered to avoid entrapment of badgers during construction.</p>



Feature		Details
Bats	Constraints & Opportunities	<p>n. Several mature trees are present adjacent to the Site, however no trees were observed within the Site and/or identified for removal to have any bat roost potential. Field and woodland boundary habitats offer moderate foraging and commuting habitats, however the dominating habitat, cereal crops, offers low foraging and commuting potential.</p> <p>o. The proposed development also provides positive measures for bats, through the enhancement of hedgerows, creation of hedgerows, woodland and scrubland within the Site.</p>
	Legislative Compliance – WCA**, HR***	<p>p. Any lighting required during construction and/or operation of the Greener Grid Park should be directed away from adjacent woodlands (further information is provided in Lighting in the UK, Bats and the Built Environment Series, Bat Conservation Trust and Institute for Lighting Engineers).</p>
Birds	Constraints & Opportunities	<p>q. The arable farmland habitat that dominates the Site offers minimal habitat for the majority of species recorded during breeding bird surveys that generally favour field boundary habitats. Ground-nesting species including skylark were recorded within the arable farmland and there will be minor anticipated habitat loss for this species.</p> <p>r. The proposed development also provides positive measures for breeding birds, through enhancement and maintenance of hedgerows, woodland trees and scrubland.</p>
	Legislative Compliance – WCA**	<p>s. Removal of nesting bird habitats should be undertaken outside of the bird breeding season (01 March to 31 August inclusive). If vegetation works are necessary during the breeding season, suitable nesting habitat should be searched by a suitably experienced ecologist prior to works commencing. Only when the ecologist is satisfied that no offence will occur under the legislation will works be permitted to proceed.</p>
Other Species	Constraints & Opportunities	<p>t. The adjacent woodland may be utilised by Western hedgehog and open arable fields are used by brown hare.</p> <p>u. Security fencing located around the Site perimeter will have sufficient gaps positioned at several locations along the base of fences in order to allow Western hedgehog and brown hare to continue to use the habitats on Site during the operational period.</p> <p>v. The measures outlined for badgers and reptiles will also be of benefit to hedgehog.</p> <p>w. Planting of hedgerows, woodland and scrub will also benefit hedgehogs and brown hare.</p>
Invasive Non-native Species	Constraints & Opportunities	<p>x. No invasive non-native plant species listed under Schedule 9 of The Wildlife &amp; Countryside Act 1981 (as amended) were recorded on Site.</p> <p>y. Chinese muntjack were recorded within the Site in small numbers, although not recorded as a breeding species.</p>
	Legislative Compliance – WCA**	<p>z. Should any invasive plant species encountered on Site prior to or during construction, the advice of a suitably qualified ecologist should be sought and the appropriate measures taken.</p>

#### **Legislative Compliance Key**

\* The Hedgerows Regulations 1997

\*\*Wildlife & Countryside Act 1981 (as amended)

\*\*\*The Conservation of Habitats and Species Regulations 2017 (as amended)

\*\*\*\*Protection of Badgers Act 1992

# FIGURES

**Figure 1: Habitat Plan**

**Figure 2: Statutory Designated Sites Plan**

**Figure 3: Non-statutory Designated Sites Plan**

Figure 1: Habitat Plan

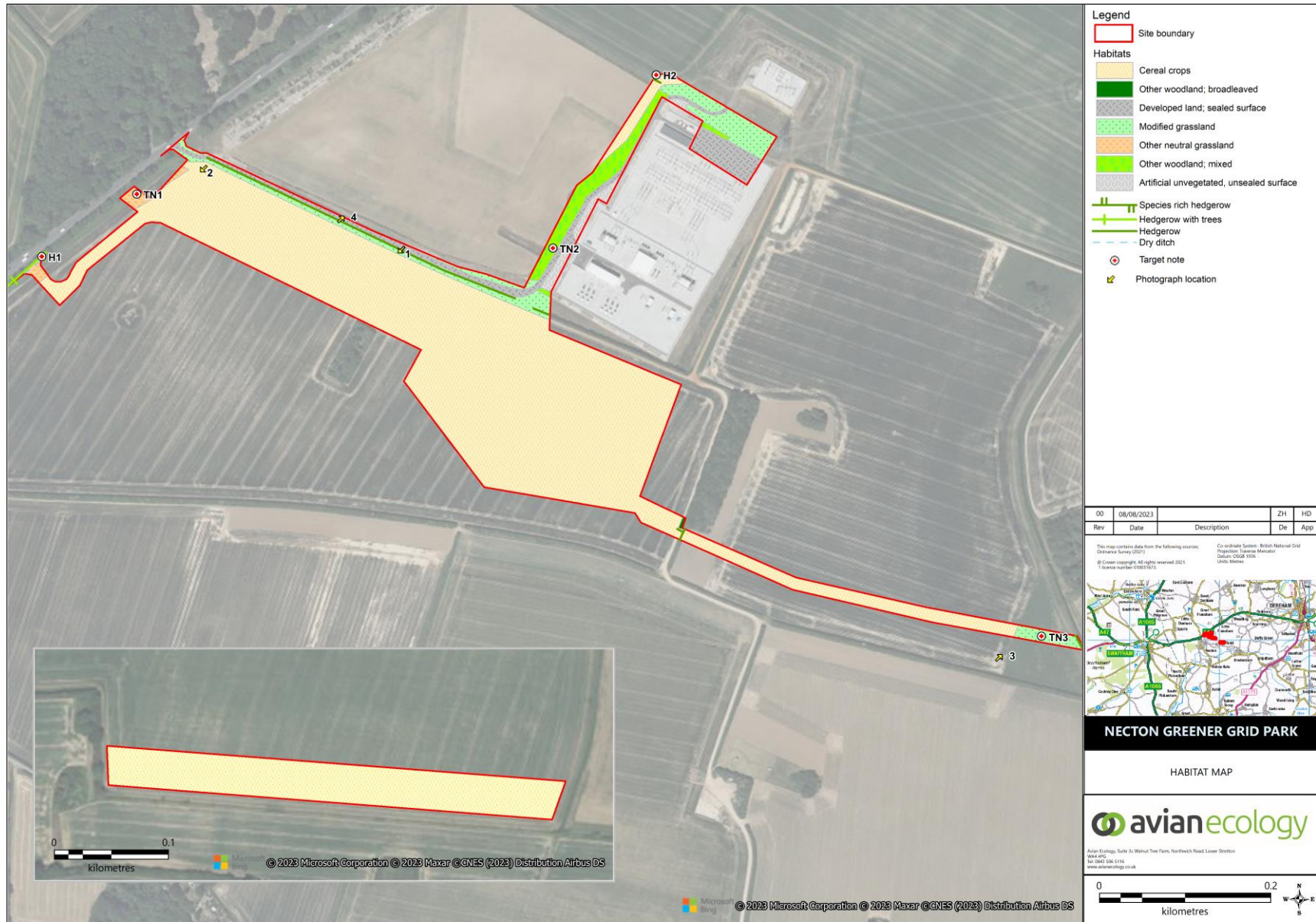
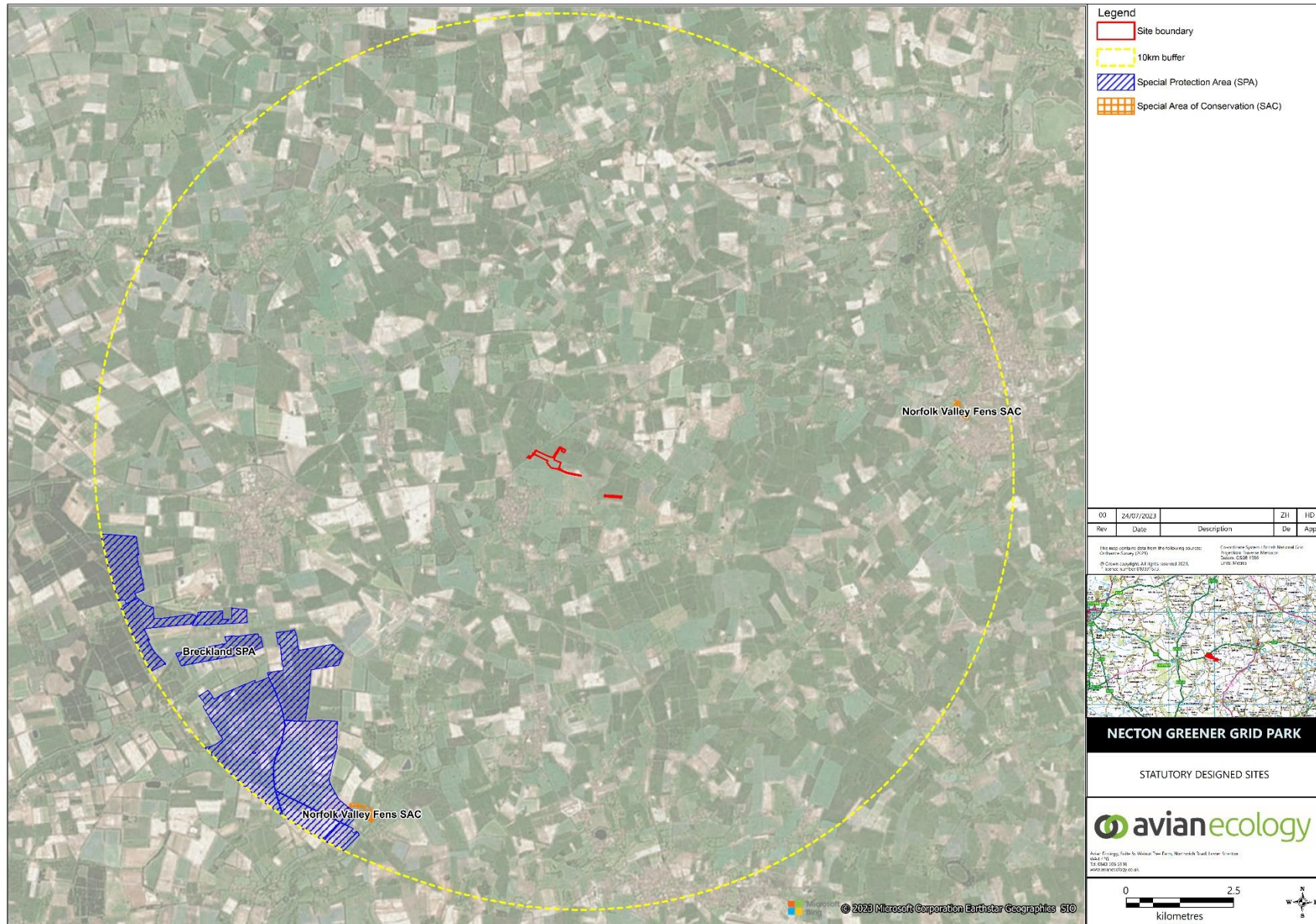


Figure 2: Statutory Designated Sites Plan








## **APPENDIX 1**

### **Site Photographs**

(Photo locations shown on Figure 1)

---

Photograph	Description
	<p><b>Photograph 1:</b> Arable cereal crop with adjacent plantation wood.</p>
	<p><b>Photograph 2:</b> Neutral grassland strip along western boundary of the Site (TN1)</p>
	<p><b>Photograph 3:</b> Area of modified grassland set aside (TN3).</p>

**Photograph****Description**

**Photograph 4:** Species-poor native hedgerow along northern field boundary.



**APPENDIX 2**  
**Breeding Bird Survey Report**

---

## **Appendix 3**

### **Preliminary Bat Roost Assessment**

## **Appendix 4**

### **Great Crested Newt Presence or Absence Survey Report**

## **APPENDIX 5**

### **Reasonable Avoidance Measures (RAMs)**

# Reasonable Avoidance Measures (RAMs)

## *Method Statement Objectives*

1. Any development related activities on the Site, such as vegetation clearance or excavations in areas of suitable habitat (hedgerows, ditches and trees) for amphibians, reptiles and hedgehogs may potentially affect these species. As a result, safeguards must be implemented to protect these species and the Method Statement below details measures to be implemented to ensure these objectives are achieved. If these measures are followed then no impacts are likely to occur.

## *Method Statement*

2. This Method Statement should be followed for the construction of the temporary access road within the Site, which may affect the surrounding terrestrial habitat, to ensure legal compliance and to ensure the objectives are achieved.
3. The following measures will be adopted throughout the construction period of the Proposed Development:
  - Site operatives will be informed by 'tool box' talk of the potential for amphibian and reptile species and hedgehog to occur on-site, what to look out for and what to do in the event that animal is found.
  - Works to be carried out within hedgerow, tree and ditch habitats on Site should only commence after a careful visual inspection has determined that no animals are present. Vegetation should be reduced (by hand trimmer or similar hand tools) to a height of c.150mm prior to ground works commencing to aid visual searches and encourage individuals to temporarily move away from the working areas.
  - Should any trenches and excavations be required, an escape route for animals that enter the trench must be provided, especially if left open overnight. Ramps should be no greater than 45 degrees in angle. Ideally, any holes should be covered.
  - All excavations left open overnight or longer should be checked for animals prior to the continuation of works or infilling.
  - Any excavated material stored overnight should be searched prior to being used as infill.

**If a great crested newt or a hazel dormouse is found, work must stop immediately and contact should be made with a suitably experienced ecologist to discuss potential licensing requirements.**

**If any other amphibians, reptiles or hedgehog are found, work must stop immediately and until the animal has moved away from the works area, if this is not possible contact should be made with a suitably experienced ecologist.**

---

**Appendix 6**  
**Biodiversity Management Plan (BMP)**

---

**APPENDIX 7**  
**Biodiversity Net Gain (BNG)**

---